



RF TEST REPORT

Applicant	Starry, Inc.
FCC ID	2AGZ3S00111
Product	Starry Station
Model	S00111
Report No.	RXA1512-0225RF02R2
Issue Date	February 3, 2016

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 15E (2014)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Handwritten signature of Lingling Kang in black ink.

Reviewed by: *Lingling Kang*

Handwritten signature of Kai Xu in black ink.

Approved by: *Kai Xu*



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Summary of measurement results

Number	Summary of measurements of results	Clause in FCC rules	Verdict
1	Maximum peak conducted output power	15.407(a)	PASS
2	Occupied bandwidth	15.407(e)	PASS
3	Frequency stability	15.407(g)	PASS
4	Maximum power spectral density	15.407(a)	PASS
5	Unwanted Emissions	15.407(b)	PASS
6	Conducted Emissions	15.207	PASS
Date of Testing: December 28, 2015~ January 20, 2016			



1. Test Laboratory

1.1. Notes of the test report

This report shall not be reproduced in full or partial, without the written approval of TA technology (shanghai) co., Ltd).The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein .Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above. This report must not be used by the client to claim product certification, approval, or endorsement by CNAS or any government agencies.

1.2. Test facility

CNAS (accreditation number:L2264)

TA Technology (Shanghai) Co., Ltd. has obtained the accreditation of China National Accreditation Service for Conformity Assessment (CNAS).

FCC (recognition number is 428261)

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

IC (recognition number is 8510A)

TA Technology (Shanghai) Co., Ltd. has been listed by industry Canada to perform electromagnetic emission measurement.

VCCI (recognition number is C-4595, T-2154, R-4113, G-766)

TA Technology (Shanghai) Co., Ltd. has been listed by industry Japan to perform electromagnetic emission measurement.

A2LA(Certificate Number: 3857.01)

TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.



1.3. Testing Location

Company: TA Technology (Shanghai) Co., Ltd.
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2. General Description of Equipment under Test

Client Information

Applicant	Starry, Inc.
Applicant address	745 Atlantic Ave Fl 8, Boston, MA, United States
Manufacturer	Flextronics Manufacturing(Zhuhai) Co. Ltd
Manufacturer address	XinQing Science&Technology Industrial Park, Doumen County.Zhuhai

General information

Model:	S00111
SN:	0010000998
Hardware Version:	1.9
Software Version:	1.0
Power Supply:	AC Power Supply
Antenna Type:	Internal Antenna
Test Mode:	U-NII-1(5150MHz-5250MHz) U-NII-3(5725MHz-5850MHz)
Modulation Type:	802.11a/n (HT20/HT40) : OFDM 802.11ac (HT20.HT40/HT80): OFDM
Max. Conducted Power	802.11a: 20.35 dBm 802.11n HT20: 20.55 dBm 802.11n HT40: 19.99 dBm 802.11ac HT20: 20.59 dBm 802.11ac HT40: 19.95 dBm 802.11ac HT80: 19.35 dBm
Operating Frequency Range(s)	U-NII-1: 5150-5250MHz U-NII-3: 5725-5850MHz
Note: The information of the EUT is declared by the manufacturer. Please refer to the specifications or user manual for details.	



3. Test Information

According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC CFR47 Part 15E (2014) Unlicensed National Information Infrastructure Devices

ANSI C63.10 (2009)

KDB789033 D02 General UNII Test Procedures New Rules v01r01

KDB 662911 D01 Multiple Transmitter Output v02r01



4. Test Configuration

Test Mode

The EUT was programmed to be in continuously transmitting mode and the transmit duty cycle is not less than 98%.

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (Z axis) and the worst case was recorded.

In order to find the worst case condition, Pre-tests are needed at the presence of different data rate. Preliminary tests have been done on all the configuration for confirming worst case. Data rate below means worst-case rate of each test item.

Worst-case data rates are shown as following table.

Band		Data Rate				
		Antenna1	Antenna2	Antenna3	Antenna4	MIMO
802.11a	U-NII-1	6 Mbps	6 Mbps	6 Mbps	6 Mbps	/
	U-NII-3	54 Mbps	54 Mbps	54 Mbps	54 Mbps	/
802.11n HT20	U-NII-1	MCS0	MCS0	MCS0	MCS0	MCS8
	U-NII-3	MCS2	MCS2	MCS2	MCS2	MCS8
802.11n HT40	U-NII-1	MCS0	MCS0	MCS0	MCS0	MCS8
	U-NII-3	MCS6	MCS6	MCS6	MCS6	MCS8
802.11ac HT20	U-NII-1	MCS0	MCS0	MCS0	MCS0	MCS9
	U-NII-3	MCS8	MCS8	MCS8	MCS8	MCS9
802.11ac HT40	U-NII-1	MCS7	MCS7	MCS7	MCS7	MCS17
	U-NII-3	MCS0	MCS0	MCS0	MCS0	MCS17
802.11ac HT80	U-NII-1	MCS1	MCS1	MCS1	MCS1	MCS16
	U-NII-3	MCS6	MCS6	MCS6	MCS6	MCS16

The device supports non-beamforming and beamforming function in 802.11n/ac, after pre-testing, beamforming mode has the worst emission value, so the worst case was recorded.



The EUT is 4x4 MIMO antennas, for RE&CE& Frequency stability, In order to find the worst antenna; Pre-tests are needed at the presence of different antenna. And the worst antenna was recorded for RE&CE.

The worst case Antenna mode for each of the following tests for Wi-Fi:

Test Cases	Antenna 1	Antenna 2	Antenna 3	Antenna 4	MIMO
Maximum peak conducted output power	O	O	O	O	802.11n HT20/40 802.11ac HT20/40/80
Occupied bandwidth	O	O	O	O	-
Frequency stability	O	-	-	-	-
Maximum power spectral density	O	O	O	O	802.11n HT20/40 802.11ac HT20/40/80
Unwanted Emissions	802.11a	-	-	-	802.11n HT20/40 802.11ac HT20/40/80
Conducted Emissions	O	-	-	-	-
Note: "O": test all bands					

5. Test Case Results

5.1. Peak Power Output –Conducted

Ambient condition

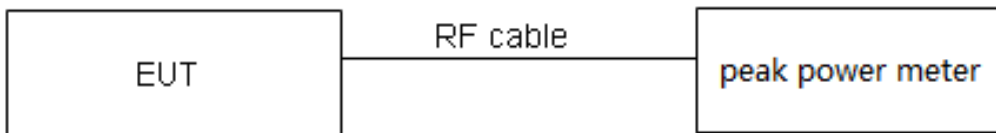
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Methods of Measurement

During the process of the testing, The EUT was connected to the peak power meter through an external attenuator and a known loss cable. The EUT is max power transmission with proper modulation. We use Maximum Peak Conducted Output Power Level Method in KDB789033 for this test

The conducted Power is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically.

Test Setup



Limits

Rule FCC Part 15.407(a)(3)/ Part 15.407(a)(1)

For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W .In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum powerspectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Peak Output Power	$\leq 1W$ (30dBm)
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Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 0.44$ dB.



Test Results

U-NII-1

Network Standards	Channel/ Frequency (MHz)	Peak Output Power (dBm)				Concl usion
		Antenna 1	Antenna 2	Antenna 3	Antenna 4	
Power Tx Setup		23				
802.11a	36/5180	15.40	16.83	16.85	18.35	PASS
	40/5200	16.50	17.69	18.30	19.05	PASS
	48/5240	19.21	18.60	20.22	19.45	PASS
802.11n HT20	36/5180	15.54	17.01	17.05	18.45	PASS
	40/5200	16.73	17.99	18.46	19.30	PASS
	48/5240	19.30	18.48	20.35	19.63	PASS
802.11n HT40	38/5190	15.73	17.13	17.35	18.46	PASS
	46/5230	18.50	18.02	19.68	19.28	PASS
802.11ac HT20	36/5180	15.60	19.02	16.95	18.55	PASS
	40/5200	16.71	17.86	18.47	19.18	PASS
	48/5240	19.30	18.31	20.33	19.55	PASS
802.11ac HT40	38/5190	15.80	17.11	17.38	18.55	PASS
	46/5230	18.50	18.07	19.65	19.26	PASS
802.11ac HT80	42/5210	17.21	17.06	18.35	18.55	PASS

U-NII-3

Network Standards	Channel/ Frequency (MHz)	Peak Output Power (dBm)				Concl usion
		Antenna 1	Antenna 2	Antenna 3	Antenna 4	
Power Tx Setup		23				
802.11a	149/5745	17.73	17.60	19.07	19.15	PASS
	157/5785	18.67	18.22	19.91	19.03	PASS
	165/5825	19.21	17.85	20.35	18.66	PASS
802.11n HT20	149/5745	17.96	17.67	19.25	19.25	PASS
	157/5785	18.87	18.30	19.98	19.19	PASS
	165/5825	19.31	18.10	20.55	18.83	PASS
802.11n HT40	151/5755	18.05	17.61	19.23	18.45	PASS
	159/5795	18.73	18.01	19.99	19.17	PASS
802.11ac HT20	149/5745	17.86	17.71	19.35	19.65	PASS
	157/5785	18.70	18.32	20.10	19.11	PASS
	165/5825	19.22	18.07	20.59	19.33	PASS
802.11ac HT40	151/5755	18.09	17.61	19.21	19.46	PASS
	159/5795	18.73	17.96	19.95	18.20	PASS
802.11ac HT80	155/5775	18.16	17.49	19.35	18.47	PASS

**U-NII-1 MIMO**

Network Standards	Channel/ Frequency (MHz)	Peak Output Power (dBm)				SUM (dBm)	Concl usion
		Antenna 1	Antenna 2	Antenna 3	Antenna 4		
Power Tx Setup		13					
802.11n HT20	36/5180	4.23	4.47	4.74	4.58	10.53	PASS
	40/5200	5.81	5.33	5.32	5.07	11.41	PASS
	48/5240	6.03	5.73	5.69	5.48	11.76	PASS
802.11n HT40	38/5190	3.89	3.67	3.98	3.97	9.90	PASS
	46/5230	5.13	4.74	4.76	4.69	10.85	PASS
802.11ac HT20	36/5180	5.72	5.17	5.43	5.62	11.51	PASS
	40/5200	5.30	5.27	4.91	4.84	11.11	PASS
	48/5240	5.24	5.21	4.93	4.69	11.04	PASS
802.11ac HT40	38/5190	4.13	4.16	4.28	4.09	10.19	PASS
	46/5230	4.75	4.64	4.54	4.51	10.63	PASS
802.11ac HT80	42/5210	4.21	4.01	4.23	4.30	10.21	PASS

U-NII-3 MIMO

Network Standards	Channel/ Frequency (MHz)	Peak Output Power (dBm)				SUM (dBm)	Concl usion
		Antenna 1	Antenna 2	Antenna 3	Antenna 4		
Power Tx Setup		13					
802.11n HT20	149/5745	5.88	5.80	5.76	5.75	11.82	PASS
	157/5785	6.31	6.38	6.33	6.52	12.41	PASS
	165/5825	6.73	6.66	6.61	6.65	12.68	PASS
802.11n HT40	151/5755	5.18	5.04	5.11	5.17	11.15	PASS
	159/5795	5.72	5.63	5.58	5.61	11.66	PASS
802.11ac HT20	149/5745	5.46	5.39	5.36	5.30	11.40	PASS
	157/5785	6.01	5.95	6.03	5.90	11.99	PASS
	165/5825	6.23	6.17	6.24	6.08	12.20	PASS
802.11ac HT40	151/5755	5.44	5.27	5.31	5.23	11.33	PASS
	159/5795	6.10	6.02	5.95	5.94	12.02	PASS
802.11ac HT80	155/5775	5.50	5.61	5.74	5.42	11.59	PASS

5.2. Occupied Bandwidth

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable.

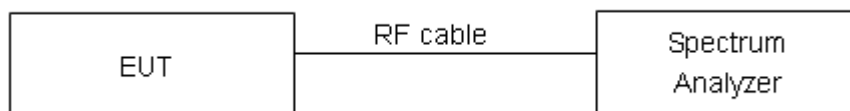
For U-NII-1, set RBW \approx 1% OCB kHz, VBW \geq 3 \times RBW, measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 26 dB relative to the maximum level measured in the fundamental emission.

For U-NII-3, Set RBW = 100 kHz, VBW \geq 3 \times RBW, measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Note: The automatic bandwidth measurement capability of a spectrum analyzer or EMI receiver may be employed if it implements the functionality described above.

Use the 99 % power bandwidth function of the instrument

Test Setup



Limits

Rule FCC Part 15.407(a)(5)/15.407(e)

The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements in the 5.725-5.85 GHz band are made over a reference bandwidth of 500 kHz or the 26 dB emission bandwidth of the device, whichever is less. Measurements in the 5.15-5.25 GHz, 5.25-5.35 GHz, and the 5.47-5.725 GHz bands are made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full reference bandwidth.

Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 936$ Hz.

**Test Results:****Antenna 1****U-NII-1**

Network Standards	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Limit(kHz)	Conclusion
802.11a	5180	16.578	19.39	500	PASS
	5200	16.590	19.53	500	PASS
	5240	16.578	19.47	500	PASS
802.11n HT20	5180	17.635	19.95	500	PASS
	5200	17.652	19.72	500	PASS
	5240	17.696	22.52	500	PASS
802.11n HT40	5190	36.084	39.86	500	PASS
	5230	36.083	39.72	500	PASS
802.11ac HT20	5180	17.633	19.86	500	PASS
	5200	17.622	19.78	500	PASS
	5240	17.664	19.75	500	PASS
802.11ac HT40	5190	36.123	40.01	500	PASS
	5230	36.069	39.90	500	PASS
802.11ac HT80	5210	76.137	81.41	500	PASS

U-NII-3

Network Standards	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 6 dB bandwidth (MHz)	Limit(kHz)	Conclusion
802.11a	5745	16.479	16.60	500	PASS
	5785	16.459	16.56	500	PASS
	5825	16.457	16.55	500	PASS
802.11n HT20	5745	17.603	17.72	500	PASS
	5785	17.624	17.70	500	PASS
	5825	17.616	17.76	500	PASS
802.11n HT40	5755	36.074	36.48	500	PASS
	5795	36.079	36.47	500	PASS
802.11ac HT20	5745	17.622	17.74	500	PASS
	5785	17.616	17.68	500	PASS
	5825	17.614	17.77	500	PASS
802.11ac HT40	5755	36.072	36.45	500	PASS
	5795	36.078	36.45	500	PASS
802.11ac HT80	5775	75.862	76.62	500	PASS

**Antenna 2****U-NII-1**

Network Standards	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Limit(kHz)	Conclusion
802.11a	5180	16.592	19.45	500	PASS
	5200	16.603	19.29	500	PASS
	5240	16.562	19.22	500	PASS
802.11n HT20	5180	17.627	20.03	500	PASS
	5200	17.630	19.77	500	PASS
	5240	17.639	19.76	500	PASS
802.11n HT40	5190	36.075	40.24	500	PASS
	5230	36.068	40.33	500	PASS
802.11ac HT20	5180	17.639	19.66	500	PASS
	5200	17.630	19.82	500	PASS
	5240	17.634	19.84	500	PASS
802.11ac HT40	5190	36.065	39.94	500	PASS
	5230	36.087	40.11	500	PASS
802.11ac HT80	5210	76.271	81.70	500	PASS

U-NII-3

Network Standards	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 6 dB bandwidth (MHz)	Limit(kHz)	Conclusion
802.11a	5745	16.457	16.55	500	PASS
	5785	16.454	16.57	500	PASS
	5825	16.488	16.60	500	PASS
802.11n HT20	5745	17.616	17.69	500	PASS
	5785	17.607	17.70	500	PASS
	5825	17.593	17.70	500	PASS
802.11n HT40	5755	36.048	36.46	500	PASS
	5795	36.070	36.45	500	PASS
802.11ac HT20	5745	17.610	17.75	500	PASS
	5785	17.605	17.75	500	PASS
	5825	17.614	17.70	500	PASS
802.11ac HT40	5755	36.077	36.45	500	PASS
	5795	36.050	36.45	500	PASS
802.11ac HT80	5775	75.892	76.63	500	PASS

**Antenna 3****U-NII-1**

Network Standards	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Limit(kHz)	Conclusion
802.11a	5180	16.596	19.49	500	PASS
	5200	16.605	19.49	500	PASS
	5240	16.603	19.21	500	PASS
802.11n HT20	5180	17.637	19.85	500	PASS
	5200	17.664	19.68	500	PASS
	5240	17.653	19.98	500	PASS
802.11n HT40	5190	36.070	40.23	500	PASS
	5230	36.096	41.39	500	PASS
802.11ac HT20	5180	17.642	19.83	500	PASS
	5200	17.657	19.77	500	PASS
	5240	17.631	19.84	500	PASS
802.11ac HT40	5190	36.063	39.87	500	PASS
	5230	36.075	40.24	500	PASS
802.11ac HT80	5210	76.218	81.53	500	PASS

U-NII-3

Network Standards	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 6 dB bandwidth (MHz)	Limit(kHz)	Conclusion
802.11a	5745	16.457	16.56	500	PASS
	5785	16.464	16.57	500	PASS
	5825	16.469	16.58	500	PASS
802.11n HT20	5745	17.618	17.70	500	PASS
	5785	17.619	17.73	500	PASS
	5825	17.625	17.74	500	PASS
802.11n HT40	5755	36.060	36.45	500	PASS
	5795	36.061	36.44	500	PASS
802.11ac HT20	5745	17.606	17.71	500	PASS
	5785	17.616	17.71	500	PASS
	5825	17.625	17.78	500	PASS
802.11ac HT40	5755	36.067	36.46	500	PASS
	5795	36.065	36.45	500	PASS
802.11ac HT80	5775	75.934	76.62	500	PASS

**Antenna 4****U-NII-1**

Network Standards	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Limit(kHz)	Conclusion
802.11a	5180	16.608	19.50	500	PASS
	5200	16.581	19.33	500	PASS
	5240	16.630	19.67	500	PASS
802.11n HT20	5180	17.672	20.26	500	PASS
	5200	17.667	20.24	500	PASS
	5240	17.662	20.28	500	PASS
802.11n HT40	5190	36.081	40.33	500	PASS
	5230	36.140	42.08	500	PASS
802.11ac HT20	5180	17.648	20.02	500	PASS
	5200	17.650	20.06	500	PASS
	5240	17.670	20.26	500	PASS
802.11ac HT40	5190	36.105	40.15	500	PASS
	5230	36.135	40.44	500	PASS
802.11ac HT80	5210	76.152	86.32	500	PASS

U-NII-3

Network Standards	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 6 dB bandwidth (MHz)	Limit(kHz)	Conclusion
802.11a	5745	16.458	16.57	500	PASS
	5785	16.467	16.59	500	PASS
	5825	16.471	16.59	500	PASS
802.11n HT20	5745	17.612	17.69	500	PASS
	5785	17.618	17.72	500	PASS
	5825	17.630	17.69	500	PASS
802.11n HT40	5755	36.063	36.46	500	PASS
	5795	36.061	36.47	500	PASS
802.11ac HT20	5745	17.609	17.70	500	PASS
	5785	17.613	17.76	500	PASS
	5825	17.612	17.67	500	PASS
802.11ac HT40	5755	36.091	36.49	500	PASS
	5795	36.071	36.48	500	PASS
802.11ac HT80	5775	75.864	76.64	500	PASS



Antenna 1

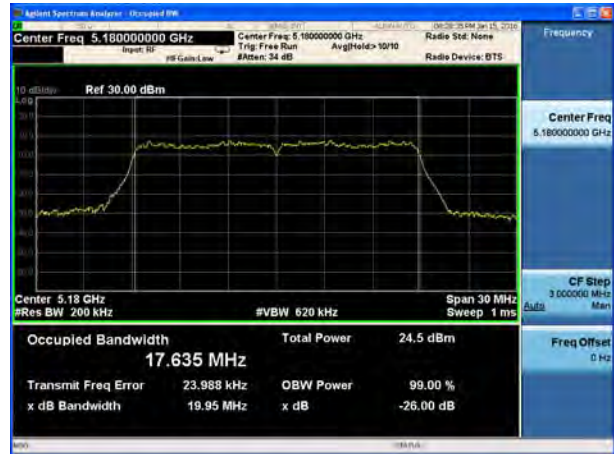
U-NII-1, 802.11a

Carrier frequency (MHz): 5180



U-NII-1, 802.11n HT20

Carrier frequency (MHz): 5180



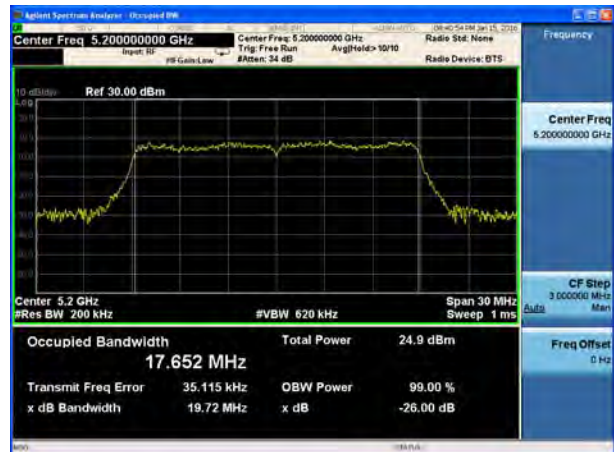
U-NII-1, 802.11a

Carrier frequency (MHz): 5200



U-NII-1, 802.11n HT20

Carrier frequency (MHz): 5200



U-NII-1, 802.11a

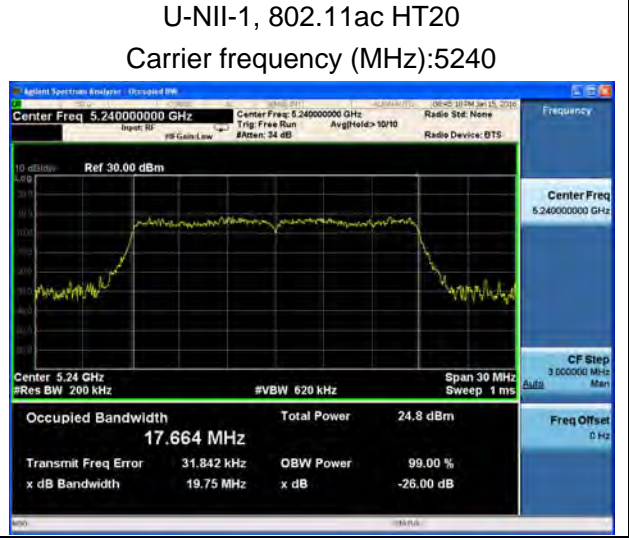
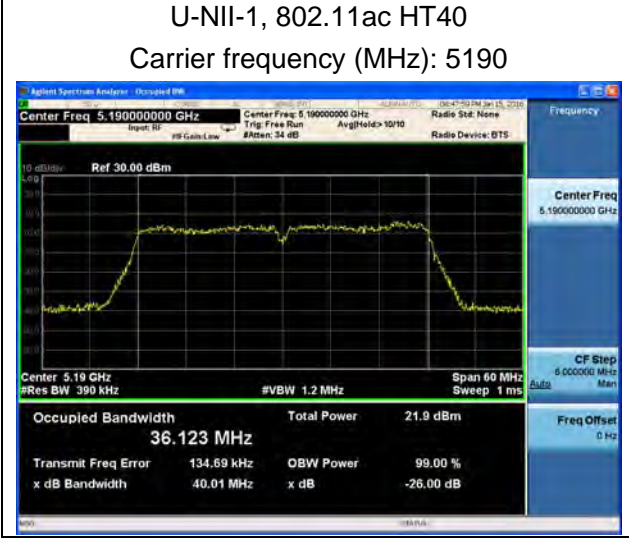
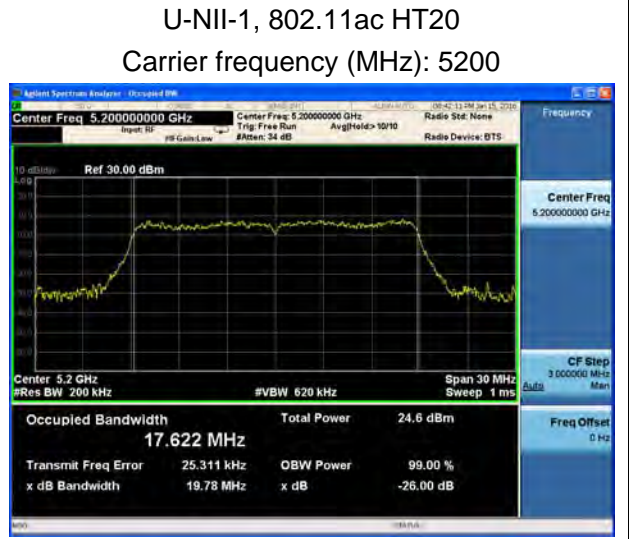
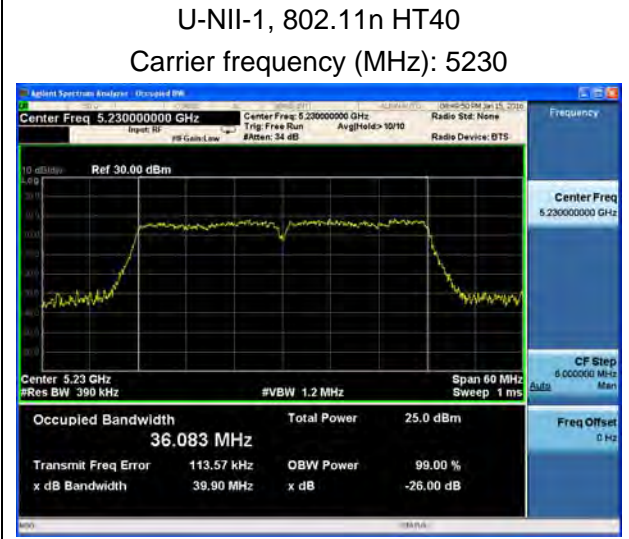
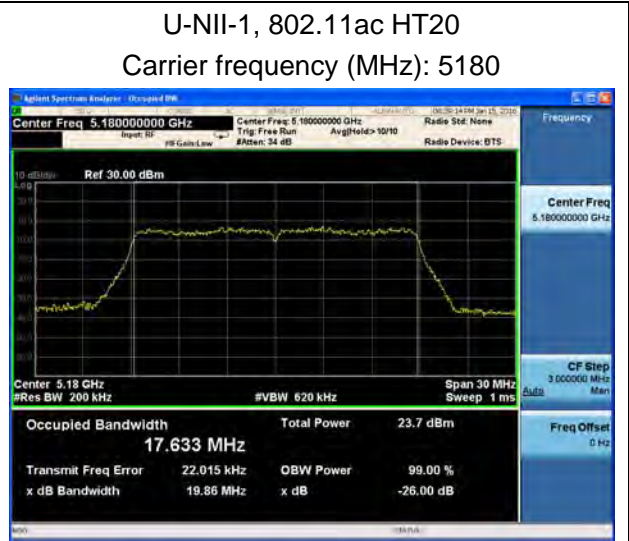
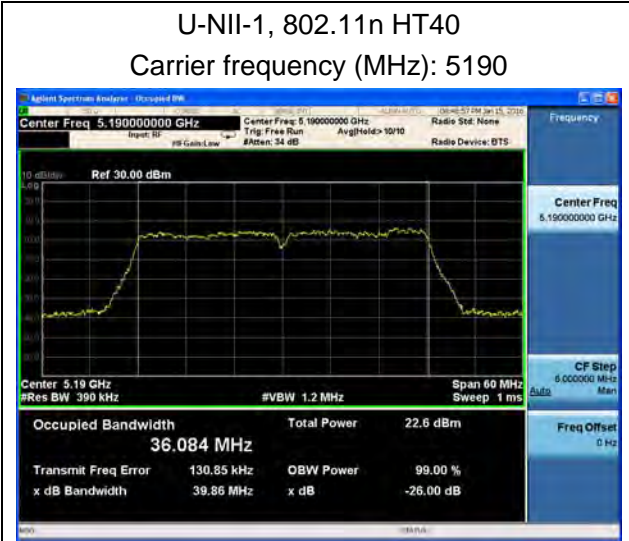
Carrier frequency (MHz): 5240

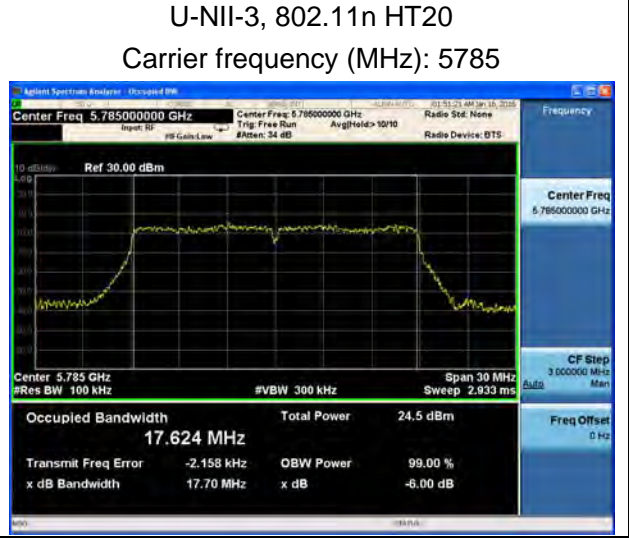
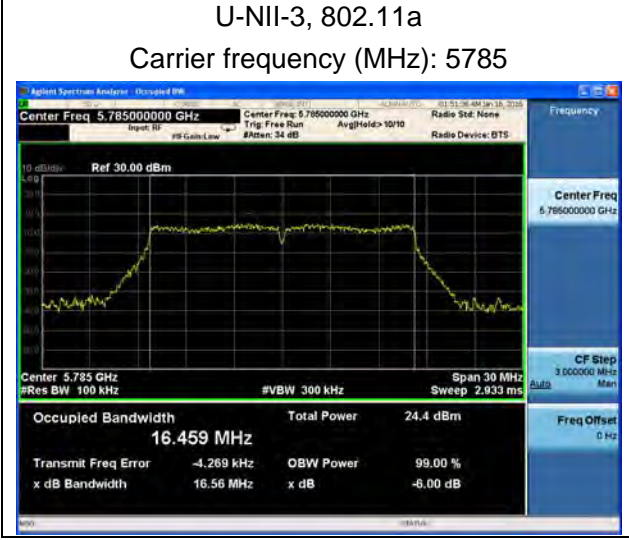
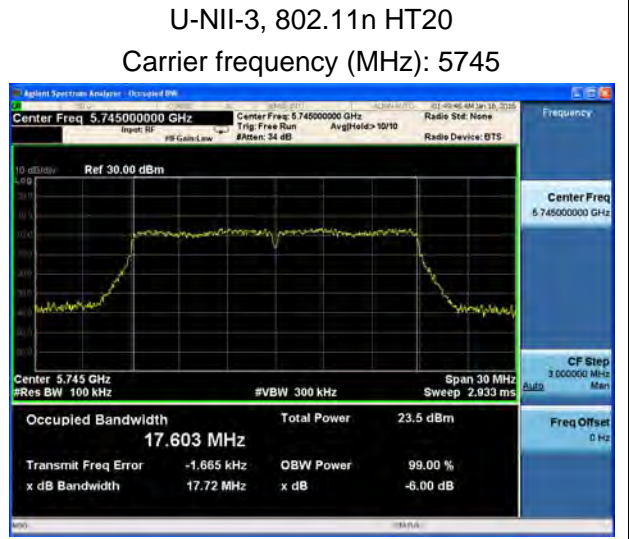
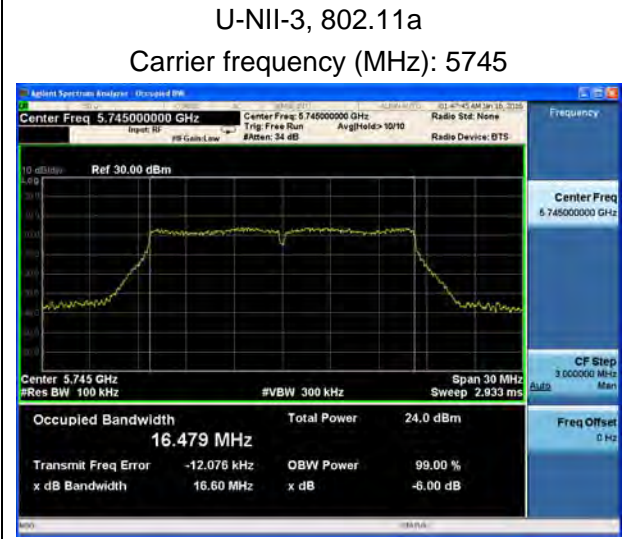
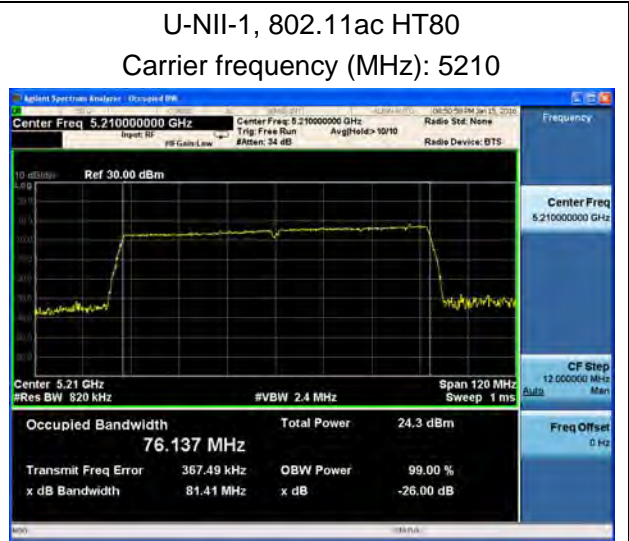
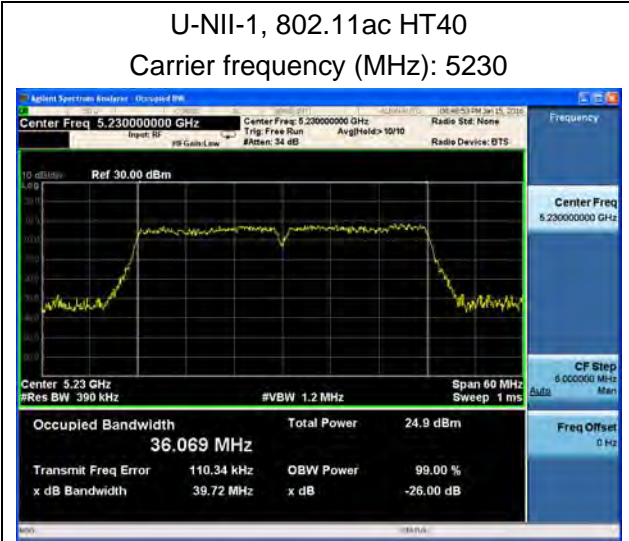


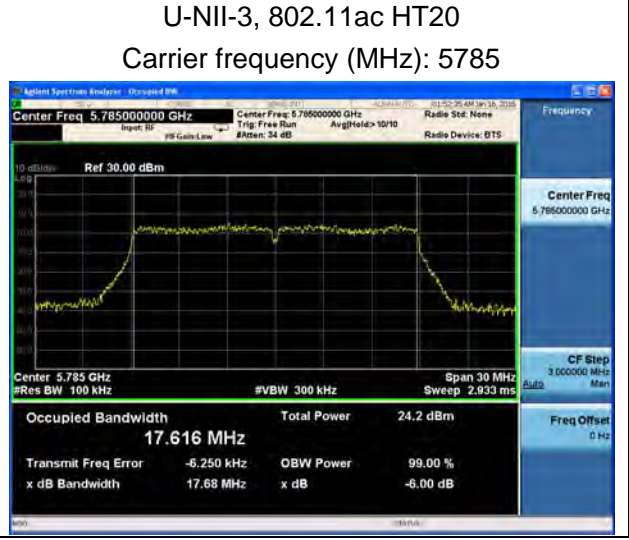
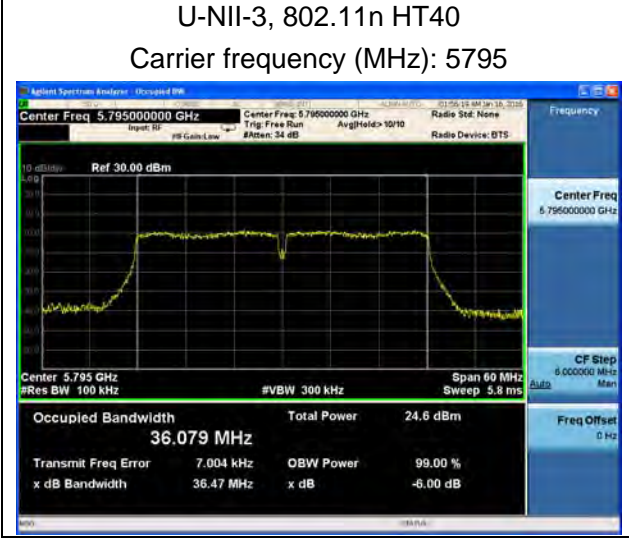
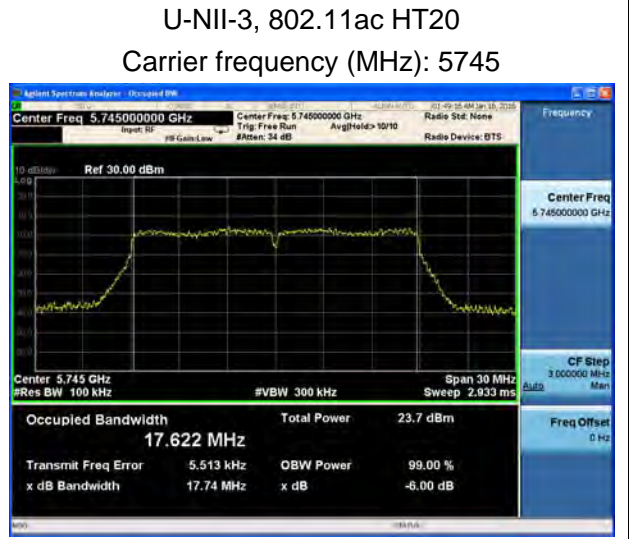
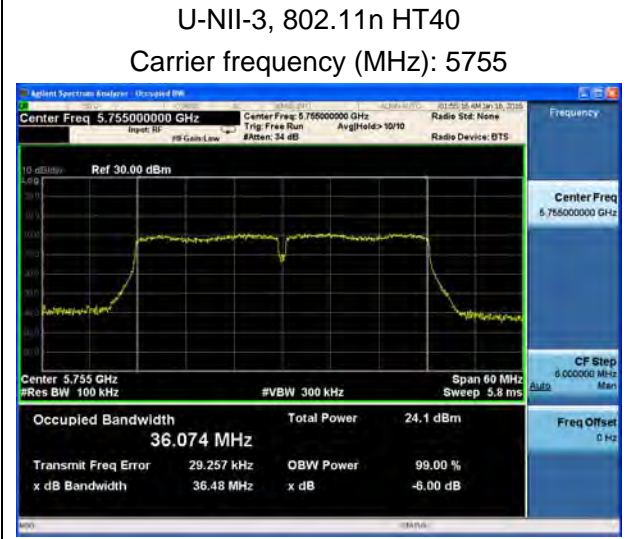
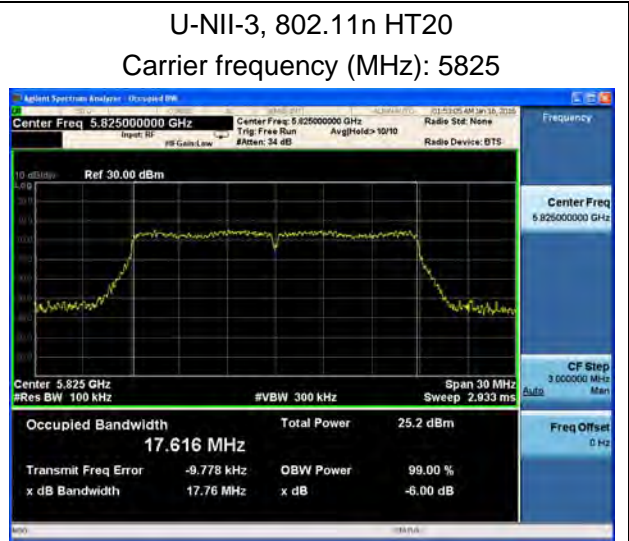
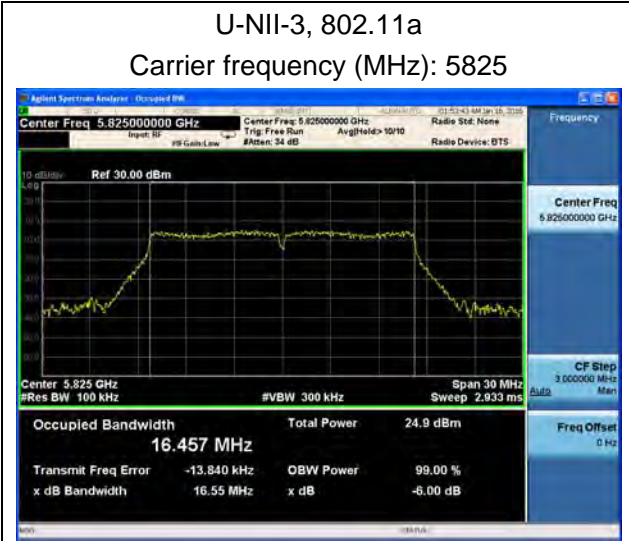
U-NII-1, 802.11n HT20

Carrier frequency (MHz): 5240



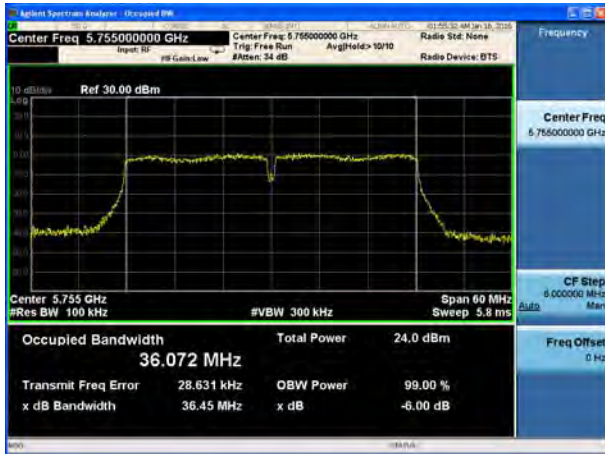




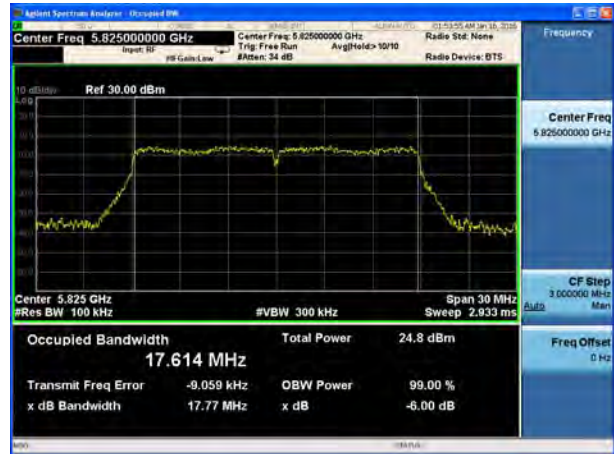




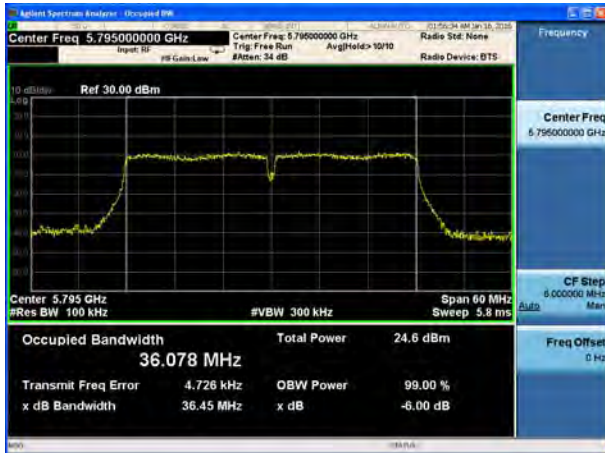
U-NII-3, 802.11ac HT40
Carrier frequency (MHz): 5755



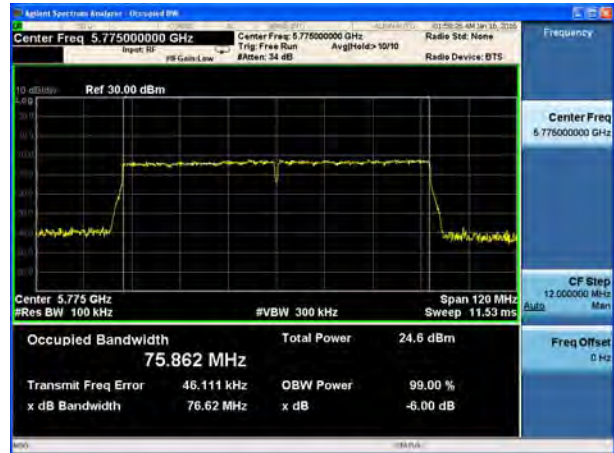
U-NII-3, 802.11ac HT20
Carrier frequency (MHz): 5825



U-NII-3, 802.11ac HT40
Carrier frequency (MHz): 5795



U-NII-3, 802.11ac HT80
Carrier frequency (MHz): 5775

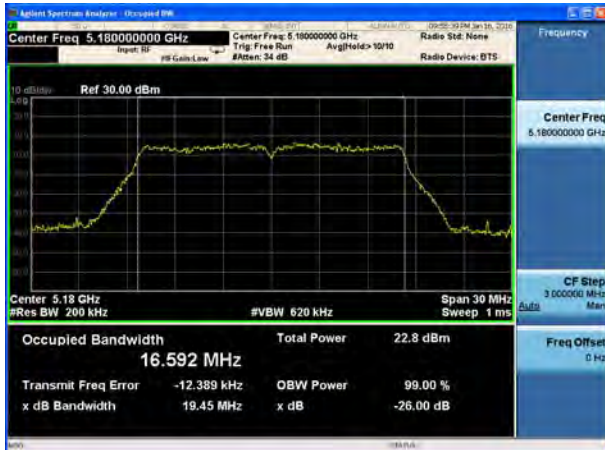




Antenna 2

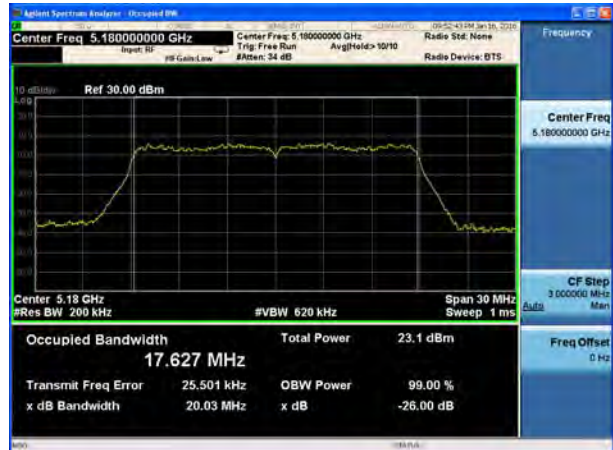
U-NII-1, 802.11a

Carrier frequency (MHz): 5180



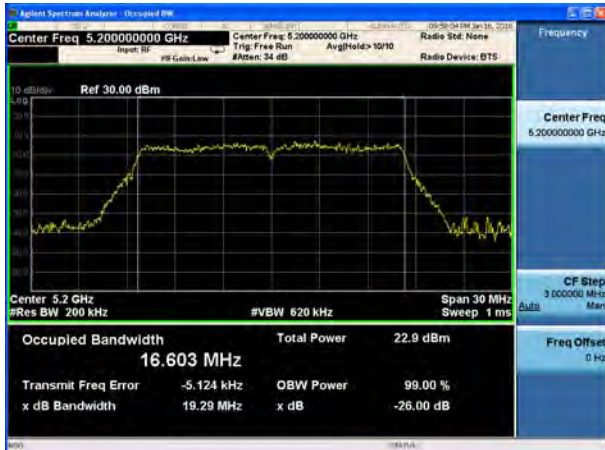
U-NII-1, 802.11n HT20

Carrier frequency (MHz): 5180



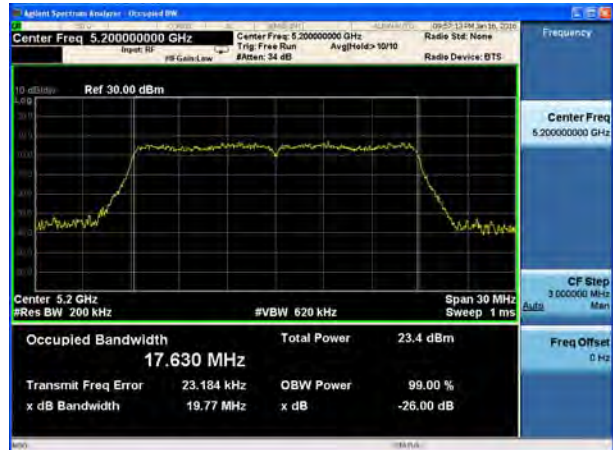
U-NII-1, 802.11a

Carrier frequency (MHz): 5200



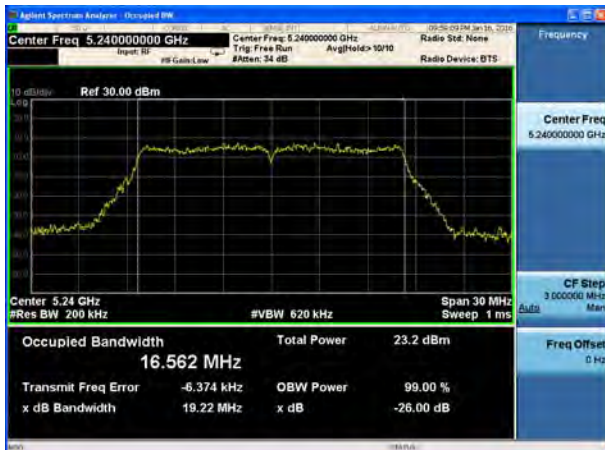
U-NII-1, 802.11n HT20

Carrier frequency (MHz): 5200



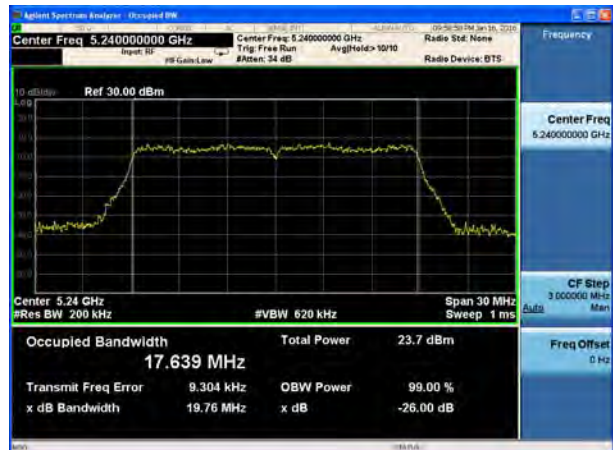
U-NII-1, 802.11a

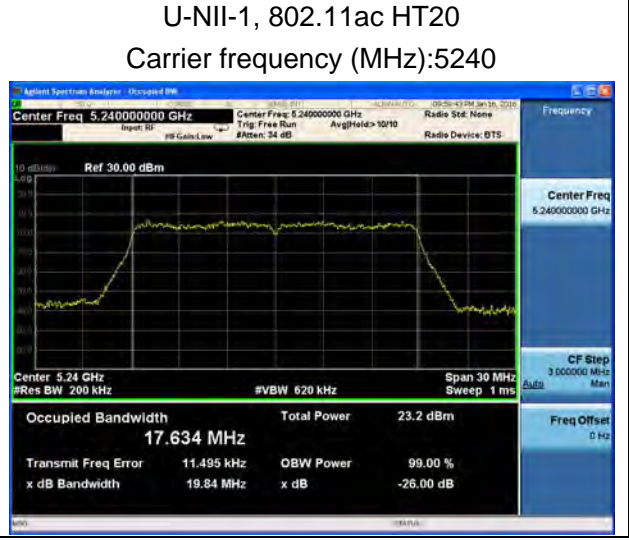
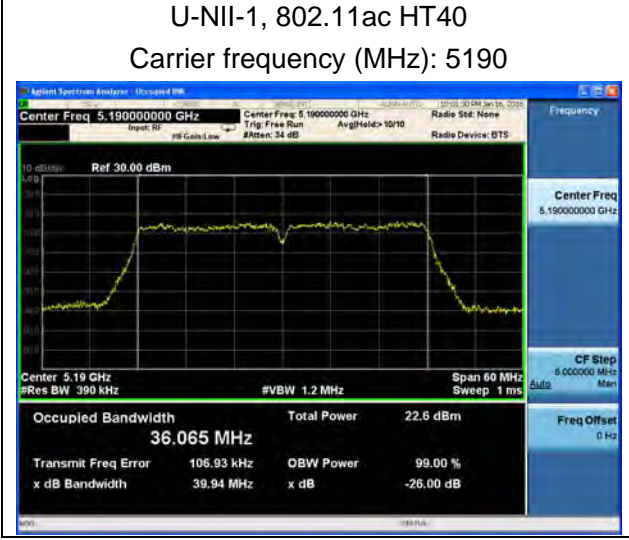
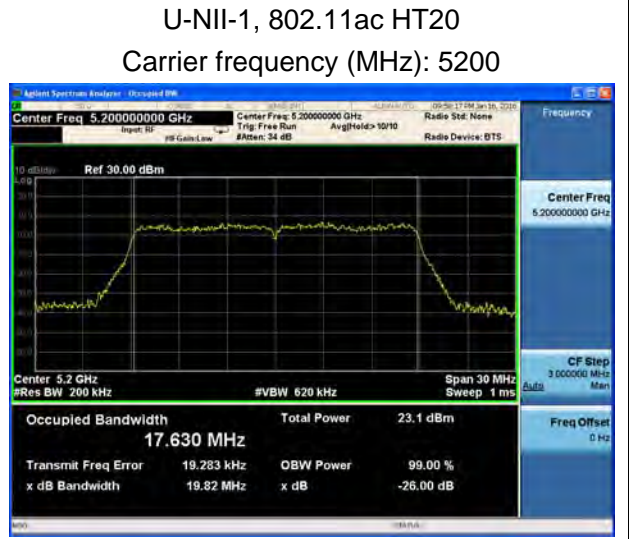
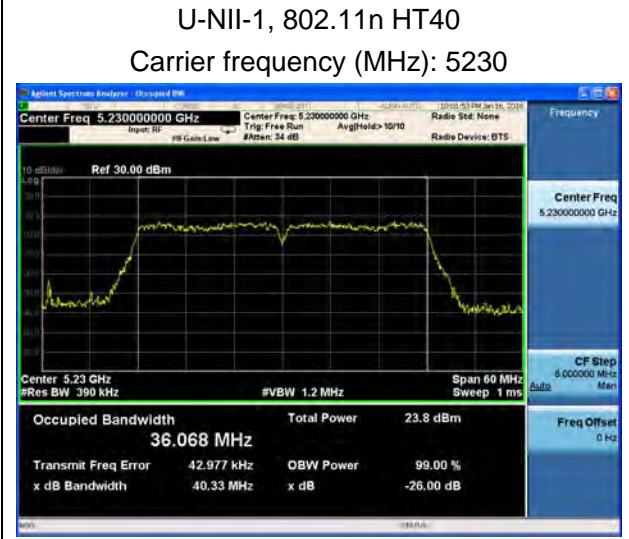
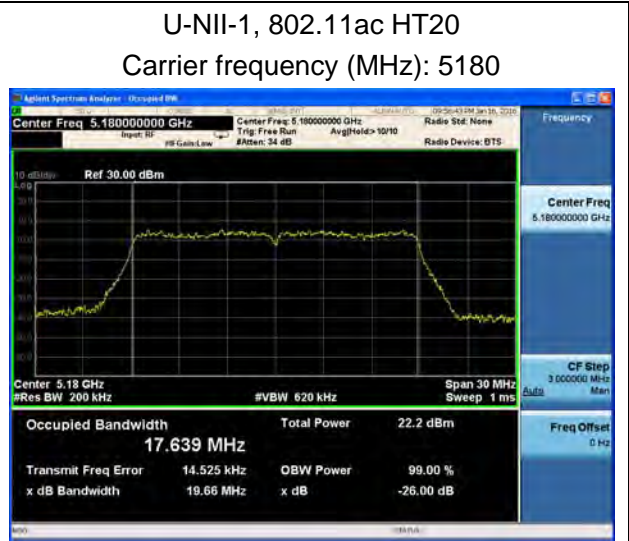
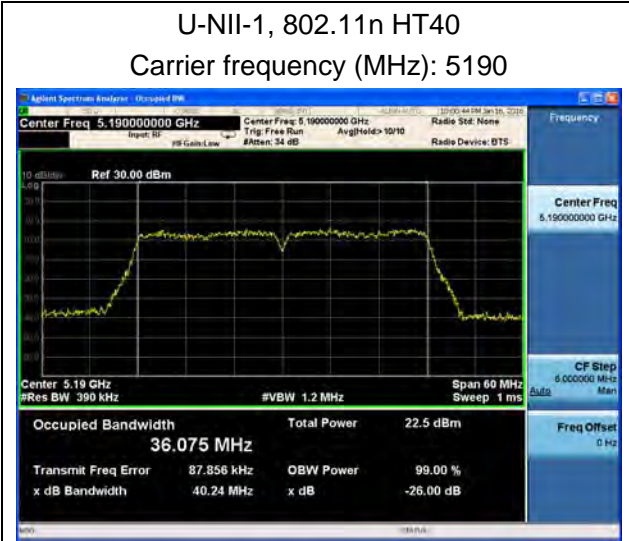
Carrier frequency (MHz):5240



U-NII-1, 802.11n HT20

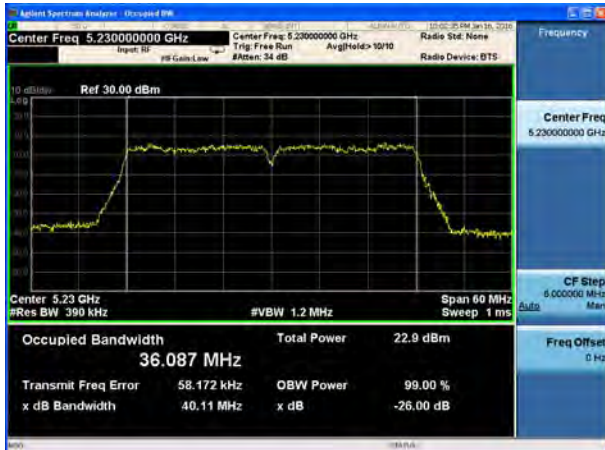
Carrier frequency (MHz):5240







U-NII-1, 802.11ac HT40
Carrier frequency (MHz): 5230



U-NII-1, 802.11ac HT80
Carrier frequency (MHz): 5210



U-NII-3, 802.11a
Carrier frequency (MHz): 5745



U-NII-3, 802.11n HT20
Carrier frequency (MHz): 5745



U-NII-3, 802.11a
Carrier frequency (MHz): 5785



U-NII-3, 802.11n HT20
Carrier frequency (MHz): 5785

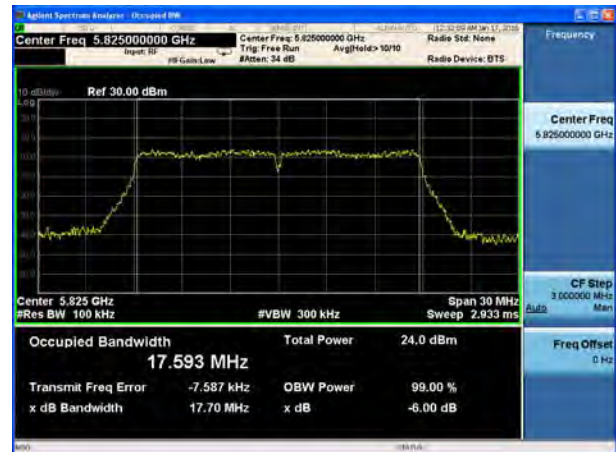




U-NII-3, 802.11a
Carrier frequency (MHz): 5825



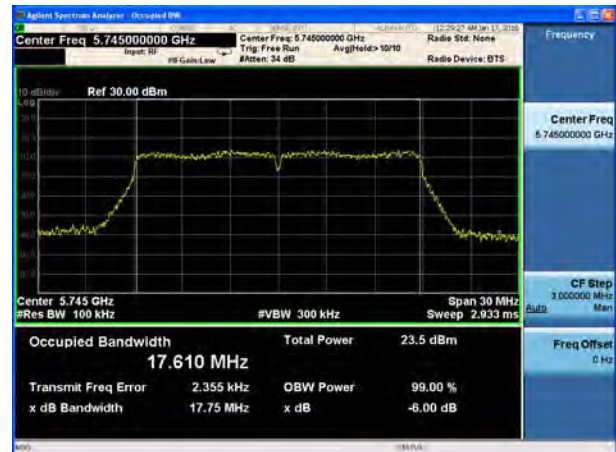
U-NII-3, 802.11n HT20
Carrier frequency (MHz): 5825



U-NII-3, 802.11n HT40
Carrier frequency (MHz): 5755



U-NII-3, 802.11ac HT20
Carrier frequency (MHz): 5745



U-NII-3, 802.11n HT40
Carrier frequency (MHz): 5795

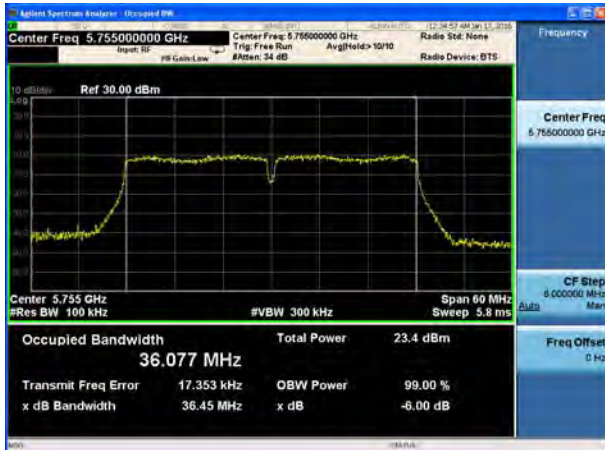


U-NII-3, 802.11ac HT20
Carrier frequency (MHz): 5785





U-NII-3, 802.11ac HT40
Carrier frequency (MHz): 5755



U-NII-3, 802.11ac HT20
Carrier frequency (MHz): 5825



U-NII-3, 802.11ac HT40
Carrier frequency (MHz): 5795



U-NII-3, 802.11ac HT80
Carrier frequency (MHz): 5775

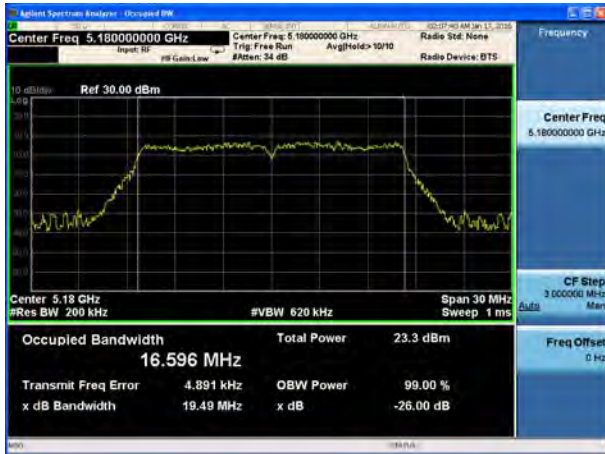




Antenna 3

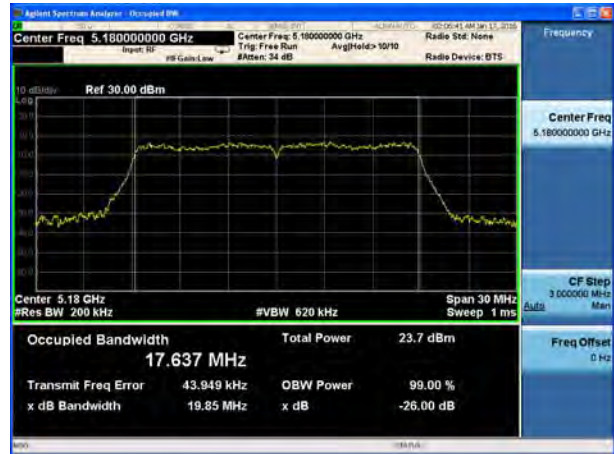
U-NII-1, 802.11a

Carrier frequency (MHz): 5180



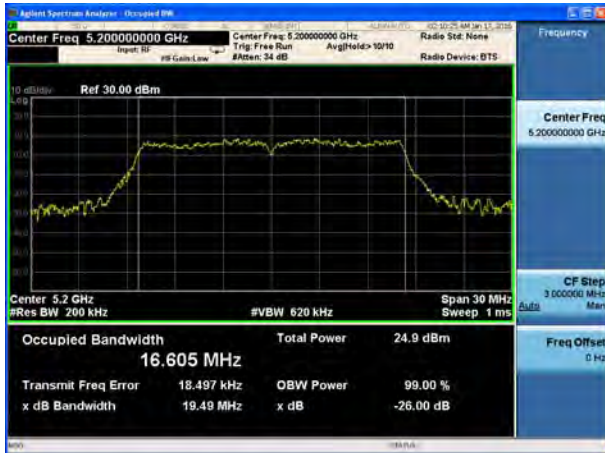
U-NII-1, 802.11n HT20

Carrier frequency (MHz): 5180



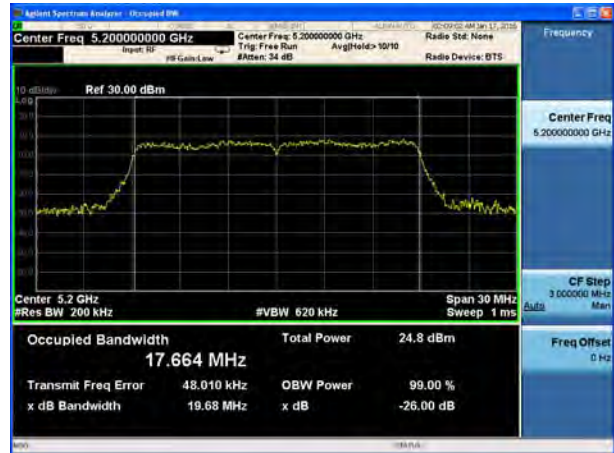
U-NII-1, 802.11a

Carrier frequency (MHz): 5200



U-NII-1, 802.11n HT20

Carrier frequency (MHz): 5200



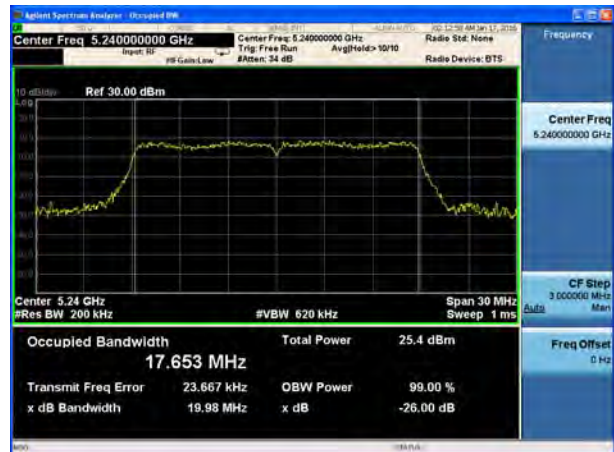
U-NII-1, 802.11a

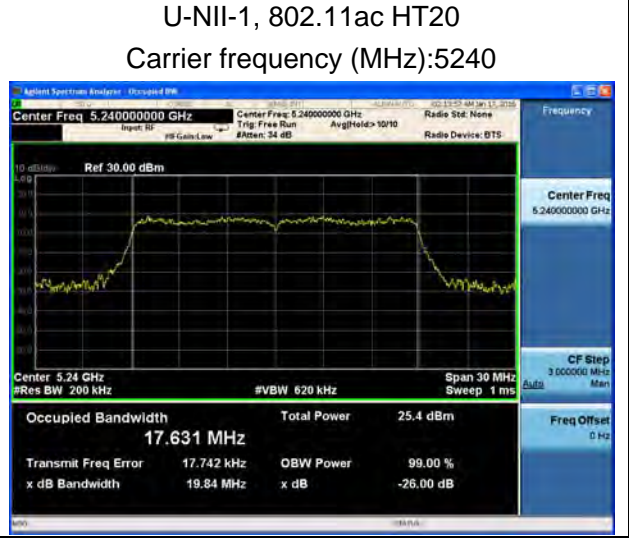
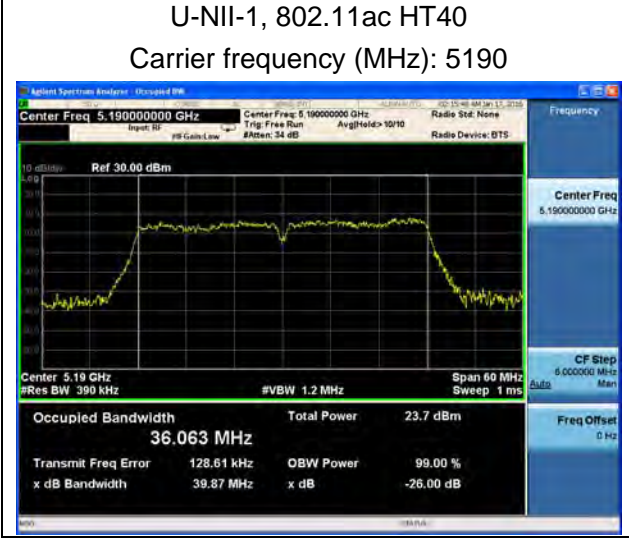
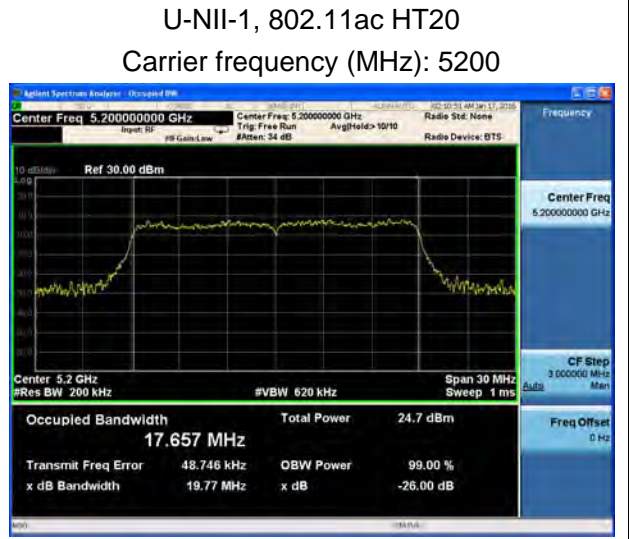
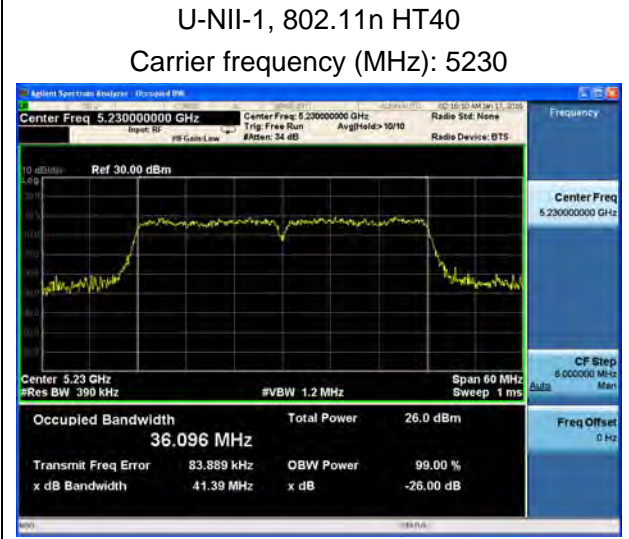
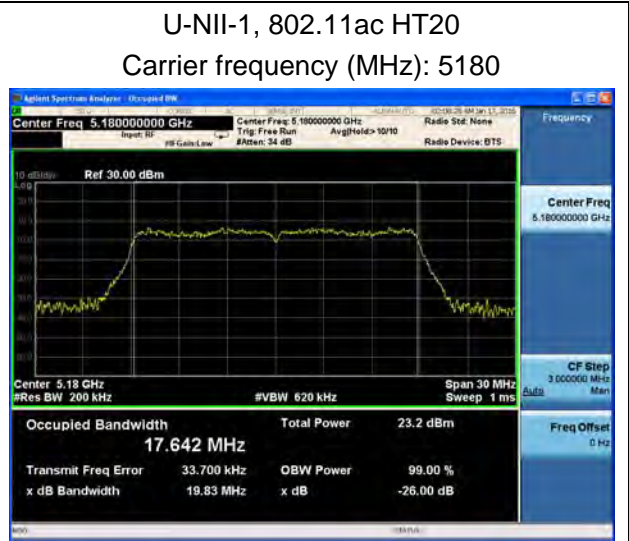
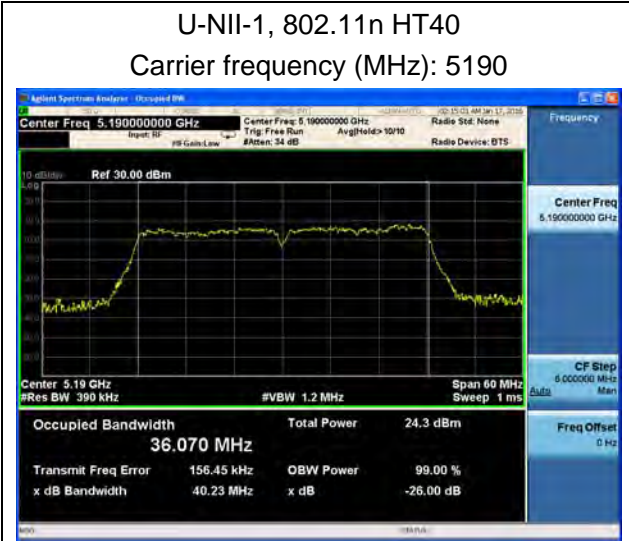
Carrier frequency (MHz):5240



U-NII-1, 802.11n HT20

Carrier frequency (MHz):5240







U-NII-1, 802.11ac HT40
Carrier frequency (MHz): 5230



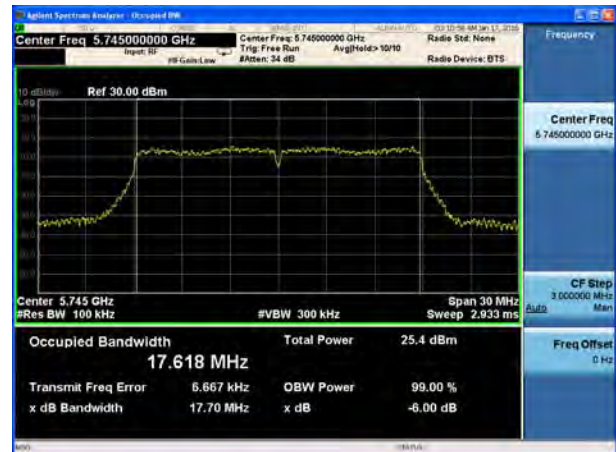
U-NII-1, 802.11ac HT80
Carrier frequency (MHz): 5210



U-NII-3, 802.11a
Carrier frequency (MHz): 5745



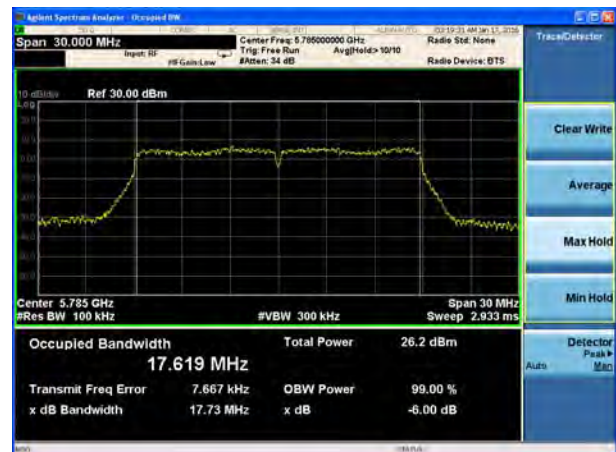
U-NII-3, 802.11n HT20
Carrier frequency (MHz): 5745



U-NII-3, 802.11a
Carrier frequency (MHz): 5785

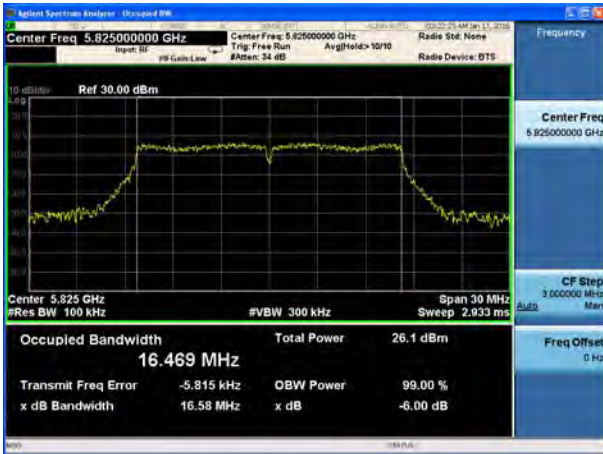


U-NII-3, 802.11n HT20
Carrier frequency (MHz): 5785

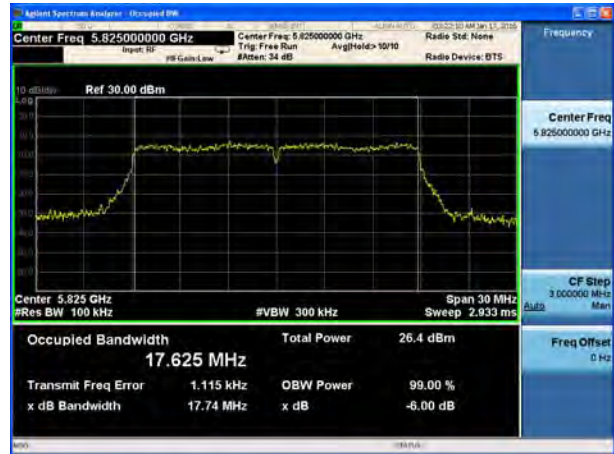




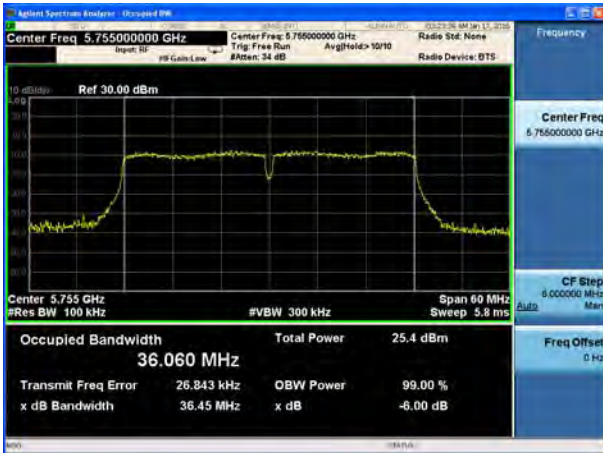
U-NII-3, 802.11a
Carrier frequency (MHz): 5825



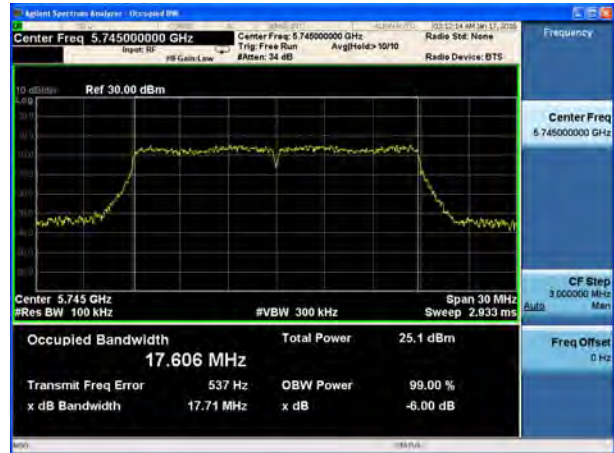
U-NII-3, 802.11n HT20
Carrier frequency (MHz): 5825



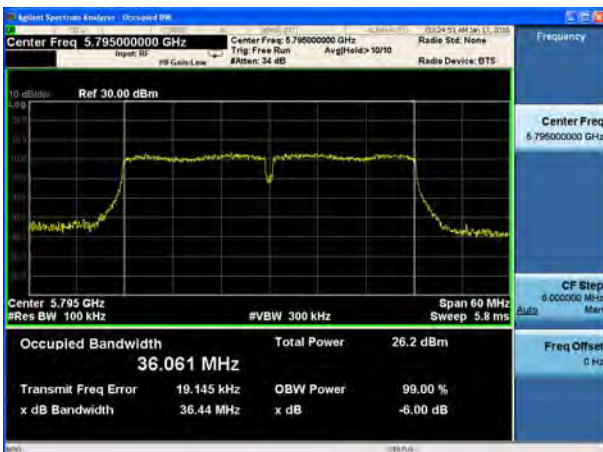
U-NII-3, 802.11n HT40
Carrier frequency (MHz): 5755



U-NII-3, 802.11ac HT20
Carrier frequency (MHz): 5745



U-NII-3, 802.11n HT40
Carrier frequency (MHz): 5795



U-NII-3, 802.11ac HT20
Carrier frequency (MHz): 5785

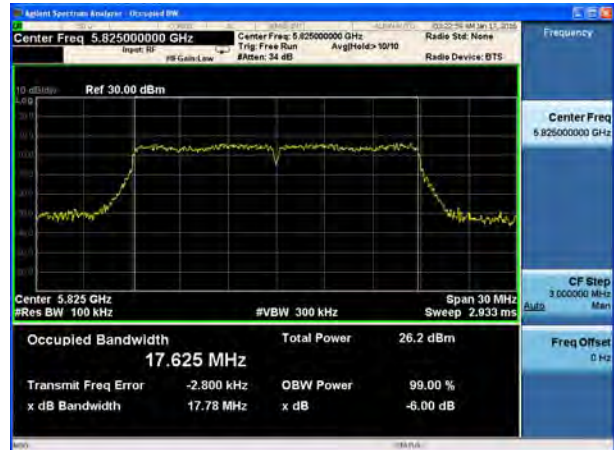




U-NII-3, 802.11ac HT40
Carrier frequency (MHz): 5755



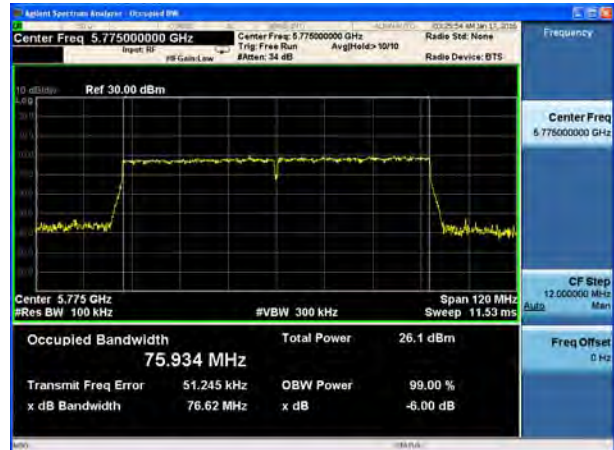
U-NII-3, 802.11ac HT20
Carrier frequency (MHz): 5825



U-NII-3, 802.11ac HT40
Carrier frequency (MHz): 5795



U-NII-3, 802.11ac HT80
Carrier frequency (MHz): 5775





Antenna 4

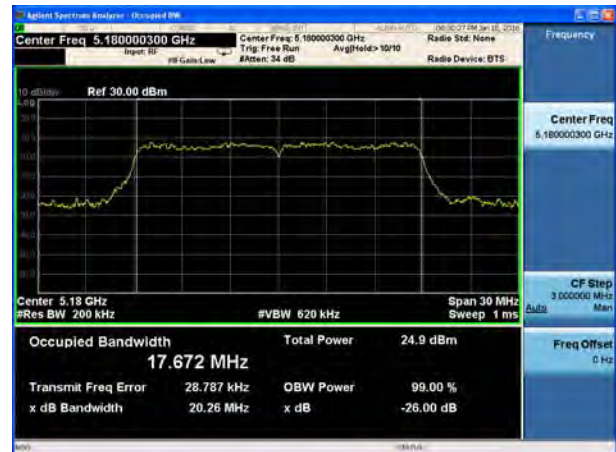
U-NII-1, 802.11a

Carrier frequency (MHz): 5180



U-NII-1, 802.11n HT20

Carrier frequency (MHz): 5180



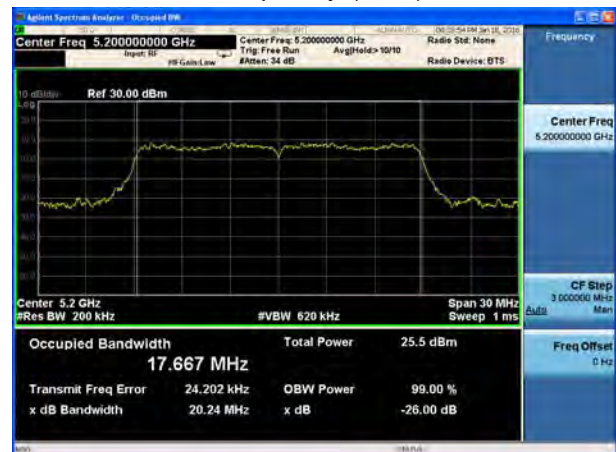
U-NII-1, 802.11a

Carrier frequency (MHz): 5200



U-NII-1, 802.11n HT20

Carrier frequency (MHz): 5200



U-NII-1, 802.11a

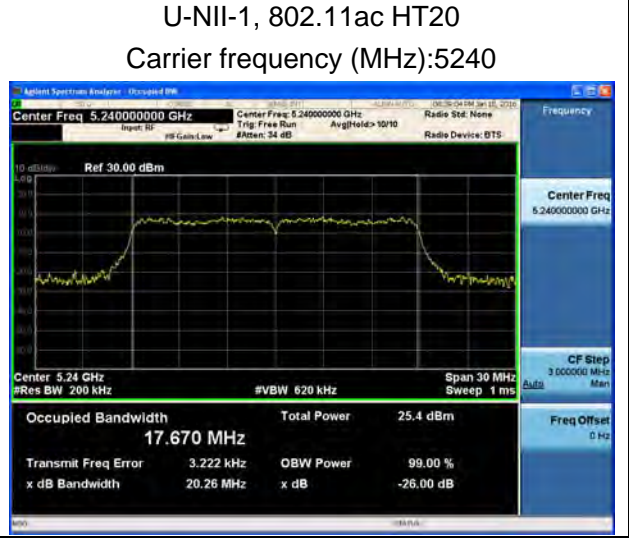
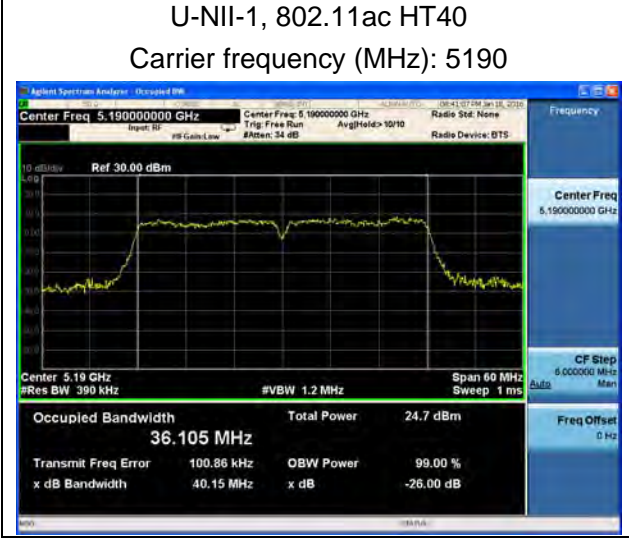
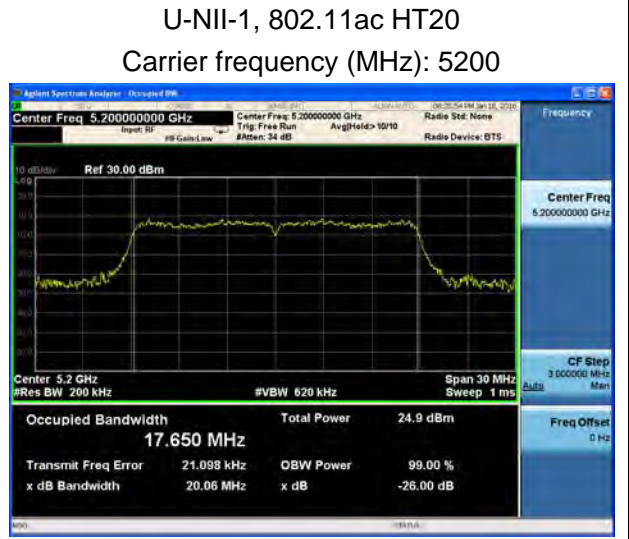
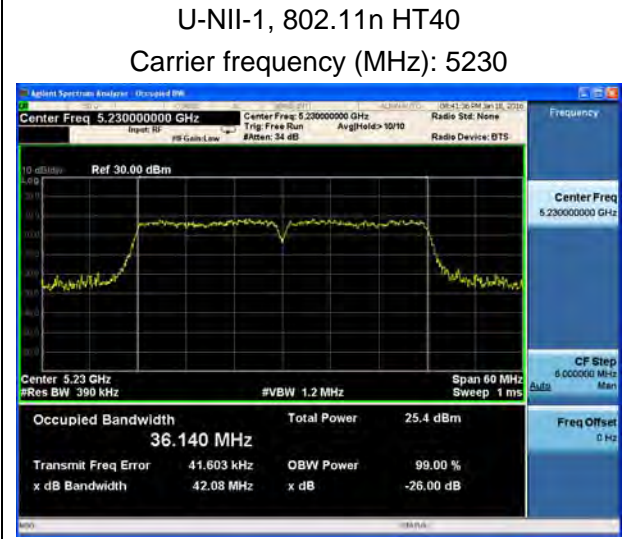
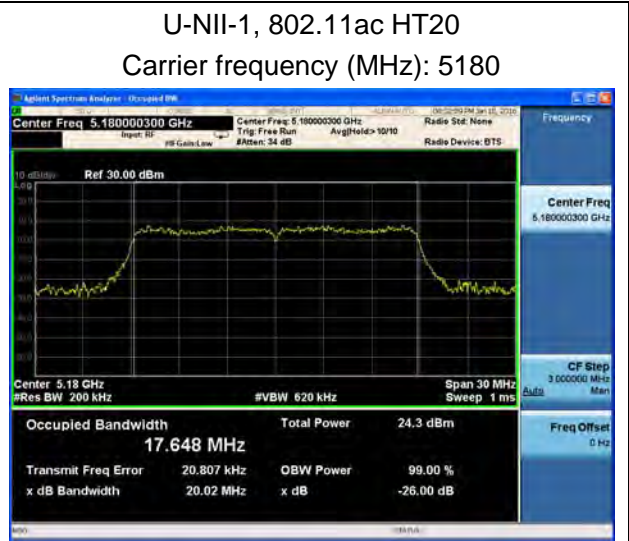
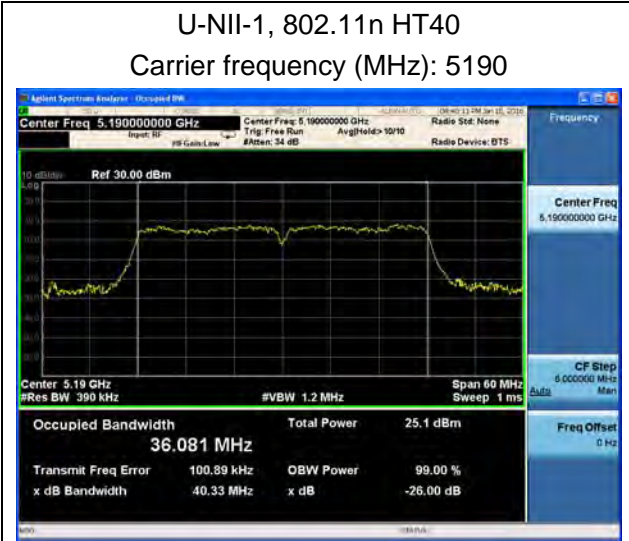
Carrier frequency (MHz):5240



U-NII-1, 802.11n HT20

Carrier frequency (MHz):5240







U-NII-1, 802.11ac HT40
Carrier frequency (MHz): 5230



U-NII-1, 802.11ac HT80
Carrier frequency (MHz): 5210



U-NII-3, 802.11a
Carrier frequency (MHz): 5745



U-NII-3, 802.11n HT20
Carrier frequency (MHz): 5745

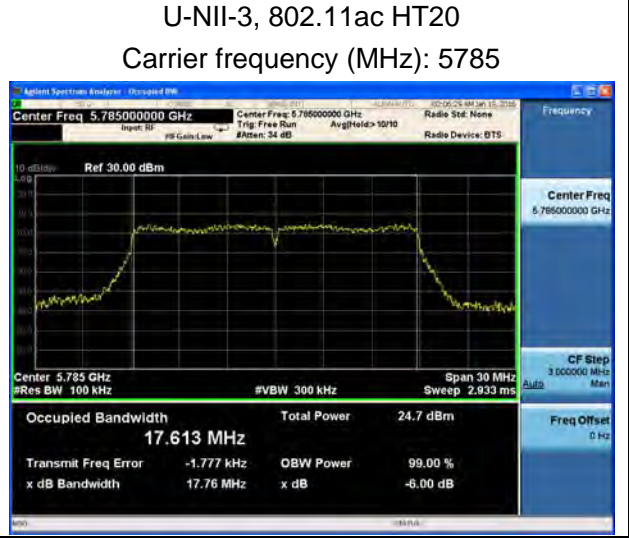
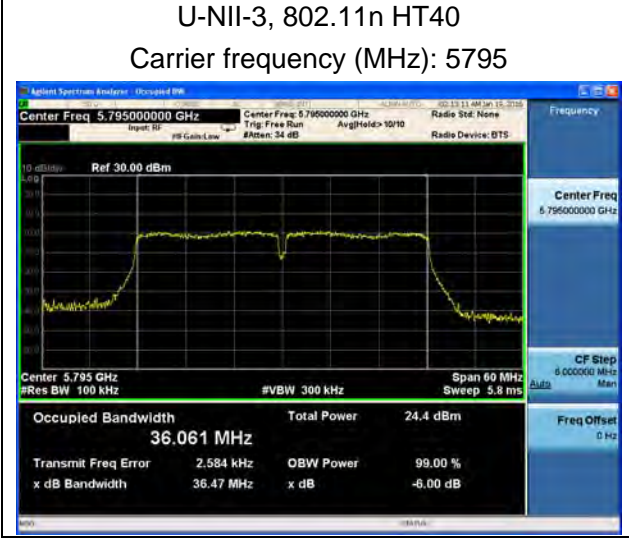
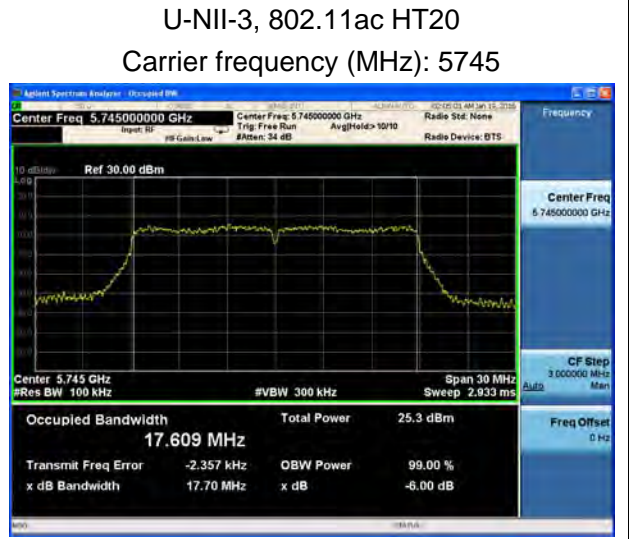
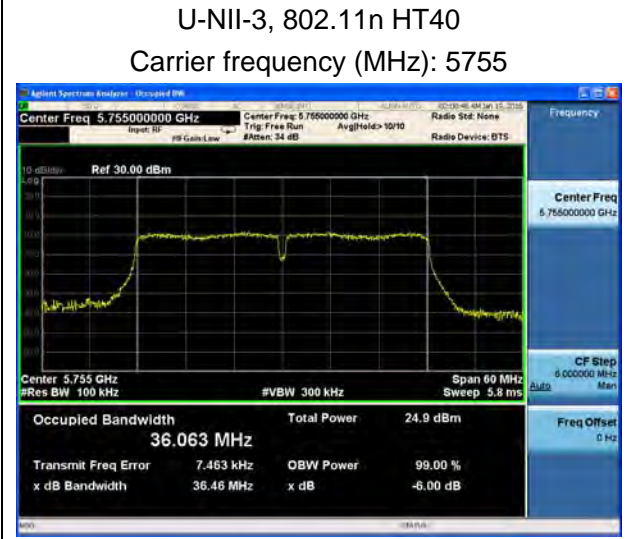
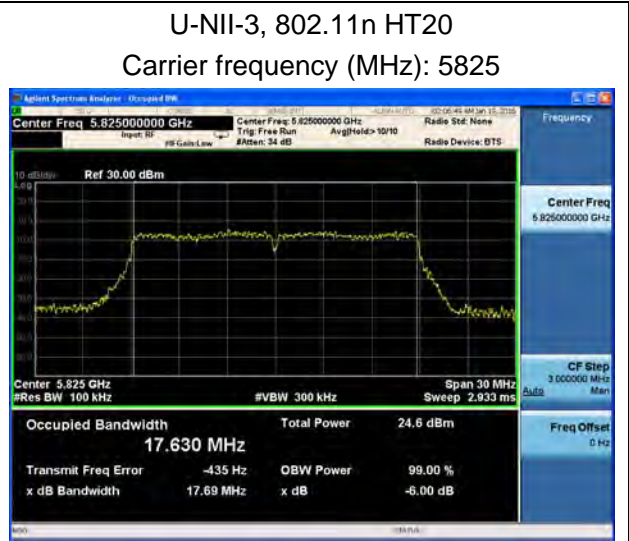
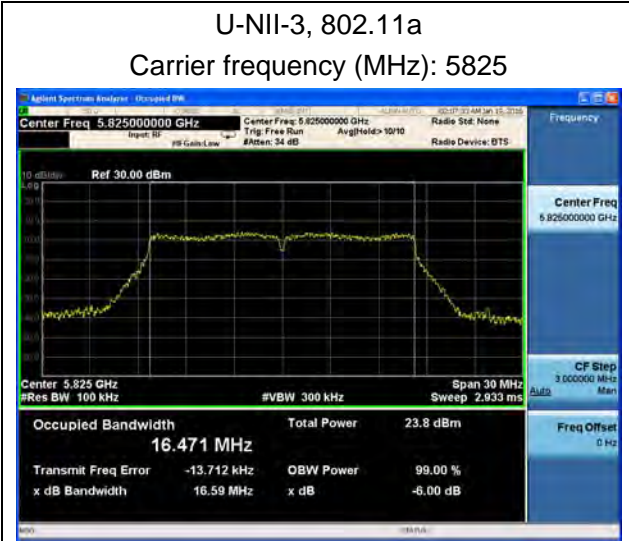


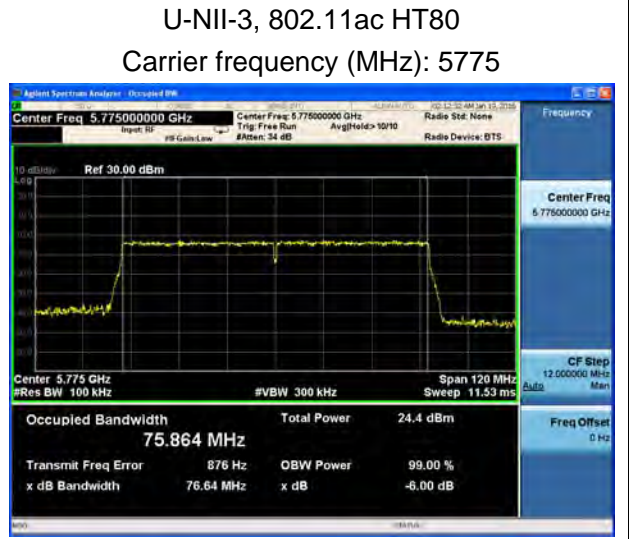
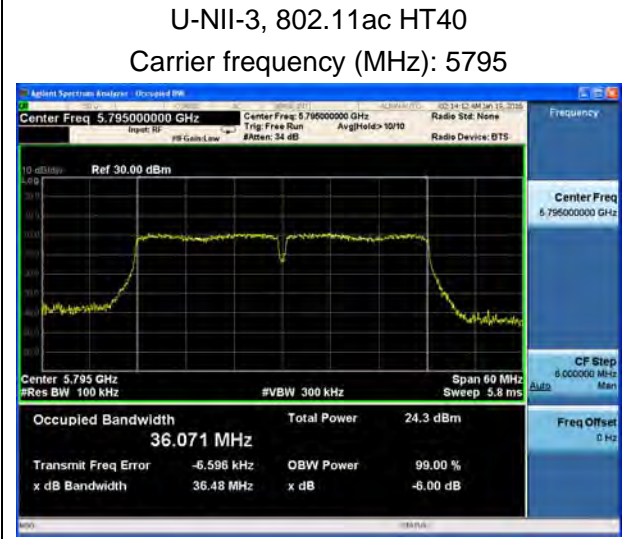
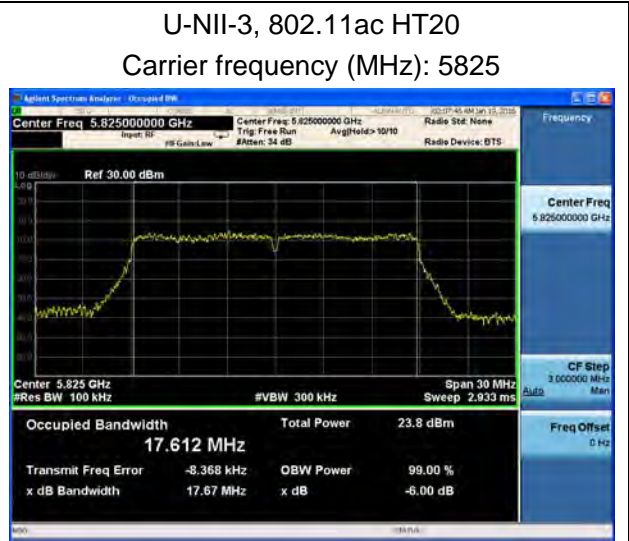
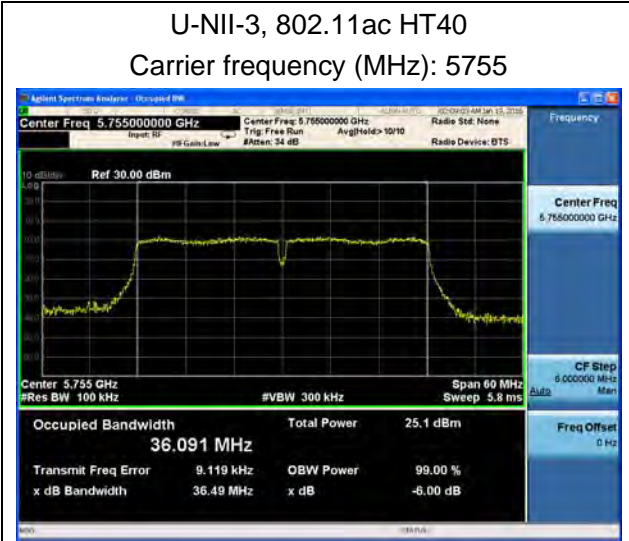
U-NII-3, 802.11a
Carrier frequency (MHz): 5785



U-NII-3, 802.11n HT20
Carrier frequency (MHz): 5785







5.3. Frequency Stability

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

1. Frequency stability with respect to ambient temperature

a) Supply the EUT with a nominal ac voltage or install a new or fully charged battery in the EUT. If possible, a dummy load shall be connected to the EUT because an antenna near the metallic walls of an environmental test chamber could affect the output frequency of the EUT. If the EUT is equipped with a permanently attached, adjustable-length antenna, then the EUT shall be placed in the center of the chamber with the antenna adjusted to the shortest length possible. Turn ON the EUT and tune it to one of the number of frequencies shown in 5.6.

b) Couple the unlicensed wireless device output to the measuring instrument by connecting an antenna to the measuring instrument with a suitable length of coaxial cable and placing the measuring antenna near the EUT (e.g., 15 cm away), or by connecting a dummy load to the measuring instrument, through an attenuator if necessary.

c) Adjust the location of the measurement antenna and the controls on the measurement instrument to obtain a suitable signal level (i.e., a level that will not overload the measurement instrument but is strong enough to allow measurement of the operating or fundamental frequency of the EUT).

d) Turn the EUT OFF and place it inside the environmental temperature chamber. For devices that have oscillator heaters, energize only the heater circuit.

e) Set the temperature control on the chamber to the highest specified in the regulatory requirements for the type of device and allow the oscillator heater and the chamber temperature to stabilize.

f) While maintaining a constant temperature inside the environmental chamber, turn the EUT ON and record the operating frequency at startup, and at 2 minutes, 5 minutes, and 10 minutes after the EUT is energized. Four measurements in total are made.

g) Measure the frequency at each of frequencies specified in 5.6.

h) Switch OFF the EUT but do not switch OFF the oscillator heater.

i) Lower the chamber temperature by not more than 10 C, and allow the temperature inside the chamber to stabilize.

j) Repeat step f) through step i) down to the lowest specified temperature.

2. Frequency stability when varying supply voltage

Unless otherwise specified, these tests shall be made at ambient room temperature (+15 C to +25 C). An antenna shall be connected to the antenna output terminals of the EUT if possible. If the EUT is equipped with or uses an adjustable-length antenna, then it shall be fully extended.

a) Supply the EUT with nominal voltage or install a new or fully charged battery in the EUT. Turn ON the EUT and couple its output to a frequency counter or other frequency-measuring instrument.



- b) Tune the EUT to one of the number of frequencies required in 5.6. Adjust the location of the measurement antenna and the controls on the measurement instrument to obtain a suitable signal level (i.e., a level that will not overload the measurement instrument but is strong enough to allow measurement of the operating or fundamental frequency of the EUT).
- c) Measure the frequency at each of the frequencies specified in 5.6.
- d) Repeat the above procedure at 85% and 115% of the nominal supply voltage.

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.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 936\text{Hz}$

**Test Results****Antenna 1****U-NII-1**

Temperature (°C)	Test Results / 220V Power supply			
	5200MHz			
	1min	2min	5min	10min
-20	5199.9676	5199.9663	5199.9646	5199.9625
-10	5199.9661	5199.9649	5199.9633	5199.9614
0	5199.9647	5199.9633	5199.9614	5199.9592
10	5199.9634	5199.9621	5199.9606	5199.9588
20	5199.9622	5199.9609	5199.9593	5199.9574
30	5199.9608	5199.9597	5199.9583	5199.9567
40	5199.9593	5199.958	5199.9554	5199.9545
50	5199.9576	5199.9564	5199.9549	5199.9526
MHz	0.0424	0.0436	0.0451	0.0474
PPM	8.15	8.38	8.67	9.12

Voltage (V)	Test Results / 20°C			
	5200MHz			
	1min	2min	5min	10min
242	5199.9634	5199.9623	5199.9608	5199.9588
220	5199.9622	5199.9609	5199.9593	5199.9574
198	5199.9608	5199.9599	5199.9585	5199.9567
MHz	0.0392	0.0401	0.0415	0.0433
PPM	7.54	7.71	7.98	8.33



Temperature (°C)	Test Results / 110V Power supply			
	5190MHz			
	1min	2min	5min	10min
0	5189.9598	5189.9585	5189.9568	5189.9547
10	5189.9583	5189.9571	5189.9555	5189.9536
20	5189.9569	5189.9555	5189.9536	5189.9514
30	5189.9556	5189.9543	5189.9528	5189.951
40	5189.9544	5189.9531	5189.9515	5189.9496
50	5189.953	5189.9519	5189.9505	5189.9498
60	5189.9515	5189.9502	5189.9486	5189.9467
70	5189.9498	5189.9486	5189.9471	5189.9448
MHz	0.0502	0.0514	0.0529	0.0552
PPM	9.67	9.9	10.19	10.64

Voltage (V)	Test Results / 20°C			
	5190MHz			
	1min	2min	5min	10min
121	5189.9556	5189.9545	5189.953	5189.951
110	5189.9544	5189.9531	5189.9515	5189.9496
109	5189.953	5189.9521	5189.9507	5189.9489
MHz	0.047	0.0479	0.0493	0.0511
PPM	9.06	9.23	9.5	9.85



Temperature (°C)	Test Results / 110V Power supply			
	5210MHz			
	1min	2min	5min	10min
0	5209.9538	5209.9525	5209.9508	5209.9487
10	5209.9523	5209.9511	5209.9495	5209.9476
20	5209.9509	5209.9495	5209.9476	5209.9454
30	5209.9496	5209.9483	5209.9468	5209.945
40	5209.9484	5209.9471	5209.9455	5209.9436
50	5209.947	5209.9459	5209.9445	5209.9429
60	5209.9455	5209.9442	5209.9426	5209.9407
70	5209.9438	5209.9426	5209.9411	5209.949
MHz	0.0562	0.0574	0.0589	0.061
PPM	10.79	11.02	11.31	11.71

Voltage (V)	Test Results / 20°C			
	5210MHz			
	1min	2min	5min	10min
121	5209.9496	5209.9485	5209.947	5209.945
110	5209.9484	5209.9471	5209.9455	5209.9436
109	5209.947	5209.9461	5209.9447	5209.9429
MHz	0.053	0.0539	0.0553	0.0571
PPM	10.17	10.35	10.61	10.96



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Temperature (°C)	Test Results / 110V Power supply			
	5755MHz			
	1min	2min	5min	10min
0	5754.9542	5754.9538	5754.9533	5754.9529
10	5754.9537	5754.9531	5754.9528	5754.9521
20	5754.9529	5754.9527	5754.9519	5754.9516
30	5754.9521	5754.952	5754.9508	5754.9509
40	5754.9513	5754.9512	5754.9501	5754.9499
50	5754.9507	5754.9505	5754.9497	5754.9491
60	5754.9499	5754.9494	5754.9489	5754.9487
70	5754.949	5754.9488	5754.948	5754.9478
MHz	0.051	0.0512	0.052	0.0522
PPM	8.86	8.90	9.04	9.07

Voltage (V)	Test Results / 20°C			
	5755MHz			
	1min	2min	5min	10min
121	5754.9555	5754.9548	5754.9543	5754.9533
110	5754.9549	5754.9541	5754.9538	5754.9527
109	5754.9541	5754.9539	5754.9529	5754.9521
MHz	0.0459	0.0461	0.0471	0.0479
PPM	7.98	8.01	8.18	8.32



Temperature (°C)	Test Results / 110V Power supply			
	5775MHz			
	1min	2min	5min	10min
0	5774.9567	5774.9555	5774.9549	5774.9541
10	5774.956	5774.9549	5774.9541	5774.9534
20	5774.9553	5774.9541	5774.9537	5774.9529
30	5774.9548	5774.9533	5774.9529	5774.9518
40	5774.9541	5774.9528	5774.9518	5774.9509
50	5774.9534	5774.9522	5774.9509	5774.9499
60	5774.9529	5774.9513	5774.9502	5774.9491
70	5774.9522	5774.9507	5774.9494	5774.9487
MHz	0.0478	0.0493	0.0506	0.0513
PPM	8.28	8.54	8.76	8.88

Voltage (V)	Test Results / 20°C			
	5775MHz			
	1min	2min	5min	10min
121	5774.9558	5774.9549	5774.9539	5774.9532
110	5774.9552	5774.9541	5774.9533	5774.9525
109	5774.9547	5774.9534	5774.9528	5774.9517
MHz	0.0453	0.0466	0.0472	0.0483
PPM	7.84	8.07	8.17	8.36



Temperature (°C)	Test Results / 110V Power supply			
	5785MHz			
	1min	2min	5min	10min
0	5784.9456	5785.9444	5784.9439	5784.9431
10	5784.9449	5784.9438	5784.9433	5784.9423
20	5784.9441	5784.9431	5784.9428	5784.9417
30	5784.9435	5784.9427	5784.9422	5784.9409
40	5784.9429	5784.9421	5784.9418	5784.94
50	5784.9421	5784.9416	5784.941	5784.9393
60	5784.9417	5784.9409	5784.9404	5784.9385
70	5784.9409	5784.9401	5784.9398	5784.9378
MHz	0.0591	0.0599	0.0602	0.0622
PPM	10.22	10.35	10.41	10.75

Voltage (V)	Test Results / 20°C			
	5785MHz			
	1min	2min	5min	10min
121	5784.9545	5784.9537	5784.9529	5784.9515
110	5784.9539	5784.9528	5784.9518	5784.9507
109	5784.9531	5784.9517	5784.9511	5784.9501
MHz	0.0469	0.0483	0.0489	0.0499
PPM	8.11	8.35	8.45	8.63

5.4. Power Spectral Density

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

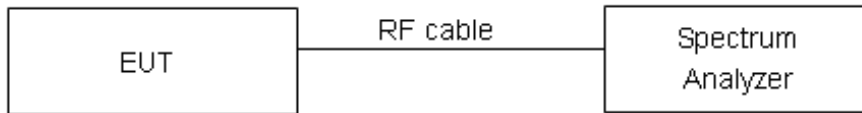
The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable.

Set RBW = 500 kHz, VBW =1.5MHz for the band 5.725-5.85 GHz

Set RBW = 1 MHz, VBW =3MHz for the band 5.150-5.250 GHz

The conducted PSD is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically.

Test setup



Limits

Rule FCC Part 15.407(a)(3)/ Part 15.407(a)(1)

For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum powerspectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Frequency Bands/MHz	Limits
5725-5850	30dBm/500kHz
5150-5250	17dBm/MHz

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 0.75\text{dB}$.

**Test Results:****Antenna 1****U-NII-1**

Network Standards	Channel Number	Power Spectral Density (dBm / 3kHz)	Limit (dBm / MHz)	Conclusion
802.11a	36	12.057	17	PASS
	40	13.635	17	PASS
	48	15.936	17	PASS
802.11n HT20	36	14.554	17	PASS
	40	15.574	17	PASS
	48	15.927	17	PASS
802.11n HT40	38	9.945	17	PASS
	46	12.086	17	PASS
802.11ac HT20	36	14.577	17	PASS
	40	15.632	17	PASS
	48	16.066	17	PASS
802.11ac HT40	38	10.055	17	PASS
	46	12.417	17	PASS
802.11ac HT80	42	8.436	17	PASS

U-NII-3

Network Standards	Channel Number	Power Spectral Density (dBm / 3kHz)	Limit (dBm / 3kHz)	Conclusion
802.11a	149	11.266	30	PASS
	157	11.969	30	PASS
	165	12.371	30	PASS
802.11n HT20	149	10.861	30	PASS
	157	11.706	30	PASS
	165	12.462	30	PASS
802.11n HT40	151	8.341	30	PASS
	159	8.778	30	PASS
802.11ac HT20	149	10.732	30	PASS
	157	11.695	30	PASS
	165	12.172	30	PASS
802.11ac HT40	151	8.636	30	PASS
	159	8.801	30	PASS
802.11ac HT80	155	4.978	30	PASS

**Antenna 2****U-NII-1**

Network Standards	Channel Number	Power Spectral Density (dBm / 3kHz)	Limit (dBm / MHz)	Conclusion
802.11a	36	12.129	17	PASS
	40	14.099	17	PASS
	48	13.987	17	PASS
802.11n HT20	36	13.316	17	PASS
	40	13.874	17	PASS
	48	14.900	17	PASS
802.11n HT40	38	10.397	17	PASS
	46	10.713	17	PASS
802.11ac HT20	36	13.225	17	PASS
	40	13.952	17	PASS
	48	14.073	17	PASS
802.11ac HT40	38	10.339	17	PASS
	46	10.328	17	PASS
802.11ac HT80	42	6.588	17	PASS

U-NII-3

Network Standards	Channel Number	Power Spectral Density (dBm / 3kHz)	Limit (dBm / 3kHz)	Conclusion
802.11a	149	10.664	30	PASS
	157	11.095	30	PASS
	165	10.789	30	PASS
802.11n HT20	149	10.525	30	PASS
	157	11.037	30	PASS
	165	10.451	30	PASS
802.11n HT40	151	7.670	30	PASS
	159	8.037	30	PASS
802.11ac HT20	149	10.445	30	PASS
	157	11.152	30	PASS
	165	10.802	30	PASS
802.11ac HT40	151	7.697	30	PASS
	159	7.744	30	PASS
802.11ac HT80	155	4.229	30	PASS

**Antenna 3****U-NII-1**

Network Standards	Channel Number	Power Spectral Density (dBm / 3kHz)	Limit (dBm / MHz)	Conclusion
802.11a	36	14.204	17	PASS
	40	15.550	17	PASS
	48	16.240	17	PASS
802.11n HT20	36	14.340	17	PASS
	40	15.797	17	PASS
	48	16.393	17	PASS
802.11n HT40	38	12.048	17	PASS
	46	13.489	17	PASS
802.11ac HT20	36	14.243	17	PASS
	40	15.639	17	PASS
	48	16.228	17	PASS
802.11ac HT40	38	11.509	17	PASS
	46	13.404	17	PASS
802.11ac HT80	42	9.530	17	PASS

U-NII-3

Network Standards	Channel Number	Power Spectral Density (dBm / 3kHz)	Limit (dBm / 3kHz)	Conclusion
802.11a	149	12.662	30	PASS
	157	13.352	30	PASS
	165	13.553	30	PASS
802.11n HT20	149	12.256	30	PASS
	157	12.674	30	PASS
	165	13.526	30	PASS
802.11n HT40	151	9.253	30	PASS
	159	9.909	30	PASS
802.11ac HT20	149	12.331	30	PASS
	157	13.160	30	PASS
	165	13.275	30	PASS
802.11ac HT40	151	9.825	30	PASS
	159	10.037	30	PASS
802.11ac HT80	155	5.898	30	PASS

**Antenna 4****U-NII-1**

Network Standards	Channel Number	Power Spectral Density (dBm / 3kHz)	Limit (dBm / MHz)	Conclusion
802.11a	36	15.131	17	PASS
	40	15.733	17	PASS
	48	16.116	17	PASS
802.11n HT20	36	15.174	17	PASS
	40	15.510	17	PASS
	48	16.050	17	PASS
802.11n HT40	38	12.065	17	PASS
	46	12.437	17	PASS
802.11ac HT20	36	15.014	17	PASS
	40	15.618	17	PASS
	48	15.977	17	PASS
802.11ac HT40	38	12.087	17	PASS
	46	12.627	17	PASS
802.11ac HT80	42	8.835	17	PASS

U-NII-3

Network Standards	Channel Number	Power Spectral Density (dBm / 3kHz)	Limit (dBm / 3kHz)	Conclusion
802.11a	149	11.918	30	PASS
	157	12.173	30	PASS
	165	11.298	30	PASS
802.11n HT20	149	12.106	30	PASS
	157	12.916	30	PASS
	165	11.605	30	PASS
802.11n HT40	151	9.037	30	PASS
	159	8.113	30	PASS
802.11ac HT20	149	12.011	30	PASS
	157	12.053	30	PASS
	165	11.120	30	PASS
802.11ac HT40	151	8.781	30	PASS
	159	7.919	30	PASS
802.11ac HT80	155	4.591	30	PASS

**U-NII-1 MIMO**

Network Standards	Channel Number	Power Spectral Density (dBm / 3kHz)				SUM (dBm / 3kHz)	Limit (dBm / MHz)	Conclusion
		Ant.1	Ant.2	Ant.3	Ant.4			
802.11n HT20	36	2.89	2.63	2.76	2.54	8.73	17	PASS
	40	3.44	3.12	2.96	3.15	9.19	17	PASS
	48	4.42	4.13	4.22	3.99	10.21	17	PASS
802.11n HT40	38	-0.16	-0.35	-0.25	-0.56	5.69	17	PASS
	46	1.23	1.01	1.11	1.07	7.13	17	PASS
802.11ac HT20	36	3.45	3.13	3.24	3.31	9.3	17	PASS
	40	4.78	4.63	4.52	4.13	10.54	17	PASS
	48	5.13	4.99	5.07	4.85	11.03	17	PASS
802.11ac HT40	38	0.99	0.85	0.77	0.79	6.87	17	PASS
	46	1.05	0.96	1.00	0.88	6.99	17	PASS
802.11ac HT80	42	-1.12	-1.45	-1.33	-1.62	4.64	17	PASS

U-NII-3 MIMO

Network Standards	Channel Number	Power Spectral Density (dBm / 3kHz)				SUM (dBm / 3kHz)	Limit (dBm / MHz)	Conclusion
		Ant.1	Ant.2	Ant.3	Ant.4			
802.11n HT20	149	2.96	2.71	2.67	2.43	8.72	30	PASS
	157	3.5	3.31	3.12	2.96	9.25	30	PASS
	165	3.92	3.88	3.61	3.43	9.74	30	PASS
802.11n HT40	151	-1.6	-1.82	-2.01	-2.32	4.09	30	PASS
	159	-0.82	-0.98	-1.21	-1.38	4.93	30	PASS
802.11ac HT20	149	1.98	1.82	1.67	1.43	7.75	30	PASS
	157	2.23	2.12	1.94	1.73	8.03	30	PASS
	165	2.41	2.29	2.11	1.98	8.22	30	PASS
802.11ac HT40	151	-1.73	-1.98	-2.21	-2.54	3.92	30	PASS
	159	-0.47	-0.68	-0.83	-1.12	5.25	30	PASS
802.11ac HT80	155	-4.03	-4.23	-4.58	-4.82	1.62	30	PASS



Antenna 1

U-NII-1, 802.11a, Channel No.: 36



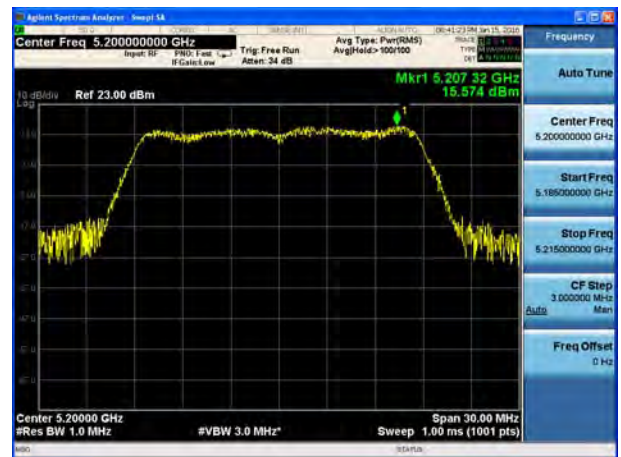
U-NII-1, 802.11n HT20, Channel No.: 36



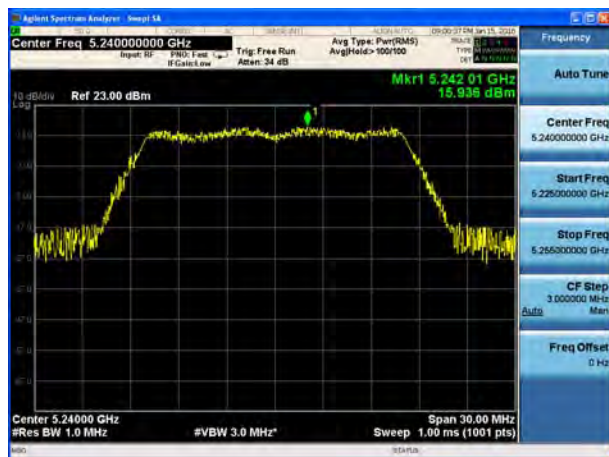
U-NII-1, 802.11a, Channel No.: 40



U-NII-1, 802.11n HT20, Channel No.: 40



U-NII-1, 802.11a, Channel No.: 48



U-NII-1, 802.11n HT20, Channel No.: 48

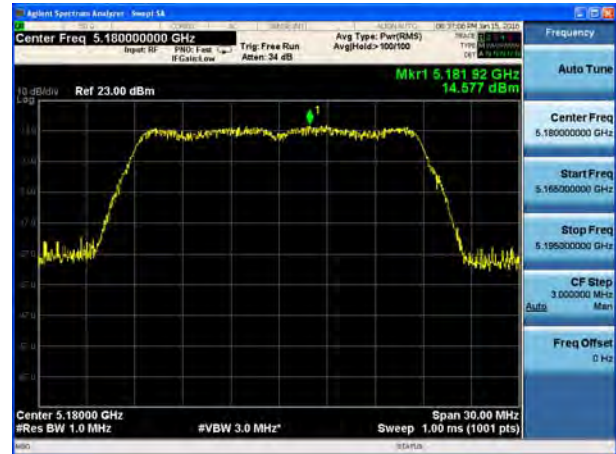




U-NII-1, 802.11n HT40, Channel No.: 38



U-NII-1, 802.11ac HT20, Channel No.: 36



U-NII-1, 802.11n HT40, Channel No.: 46



U-NII-1, 802.11ac HT20, Channel No.: 40



U-NII-1, 802.11ac HT40, Channel No.: 38



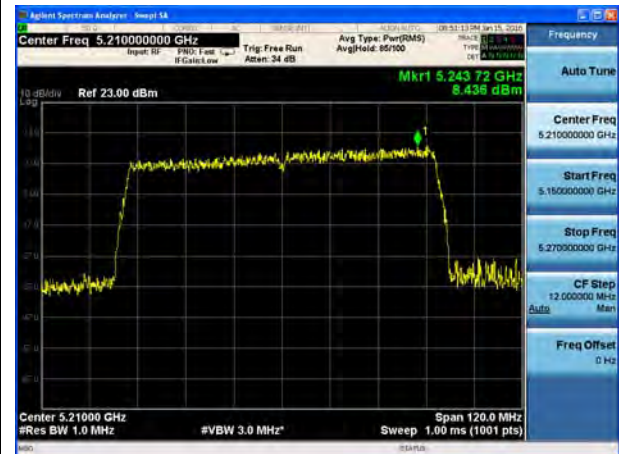
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U-NII-1, 802.11ac HT40, Channel No.: 46



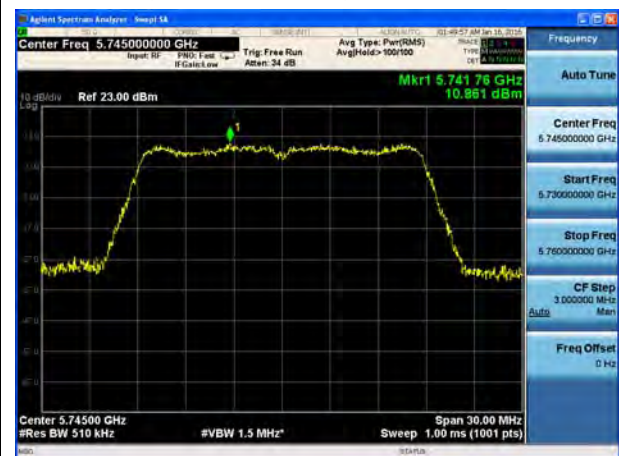
U-NII-1, 802.11ac HT80, Channel No.: 42



U-NII-3, 802.11a, Channel No.: 149



U-NII-3, 802.11n HT20, Channel No.: 149



U-NII-3, 802.11a, Channel No.: 157



U-NII-3, 802.11n HT20, Channel No.: 157





U-NII-3, 802.11a, Channel No.: 165



U-NII-3, 802.11n HT20, Channel No.: 165



U-NII-3, 802.11n HT40, Channel No.: 151



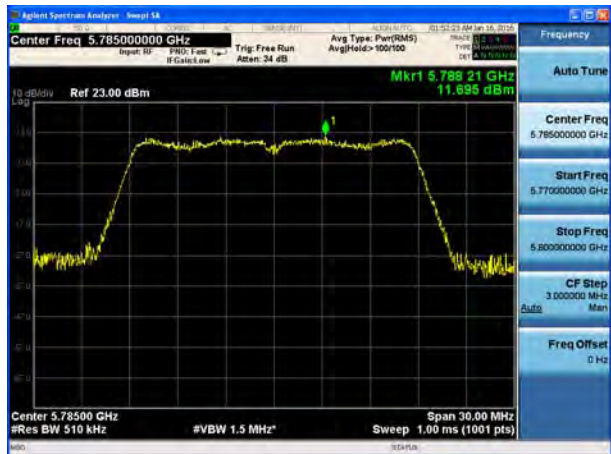
U-NII-3, 802.11ac HT20, Channel No.: 149



U-NII-3, 802.11n HT40, Channel No.: 159



U-NII-3, 802.11ac HT20, Channel No.: 157





U-NII-3, 802.11ac HT40, Channel No.: 151



U-NII-3, 802.11ac HT20, Channel No.: 165



U-NII-3, 802.11ac HT40, Channel No.: 159



U-NII-3, 802.11ac HT80, Channel No.: 155





Antenna 2

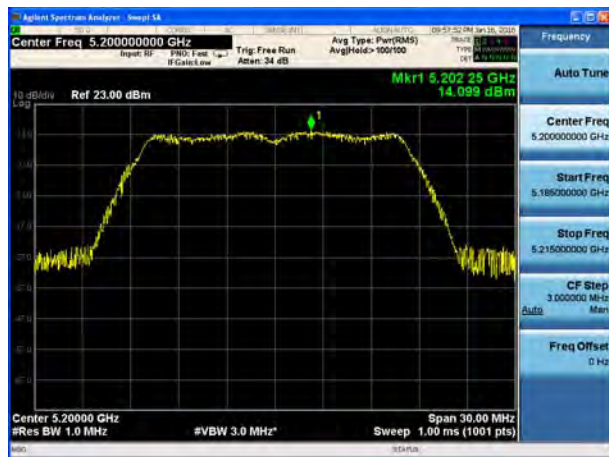
U-NII-1, 802.11a, Channel No.: 36



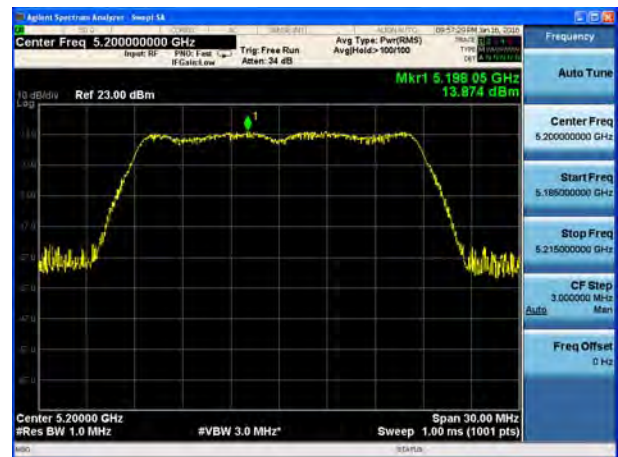
U-NII-1, 802.11n HT20, Channel No.: 36



U-NII-1, 802.11a, Channel No.: 40



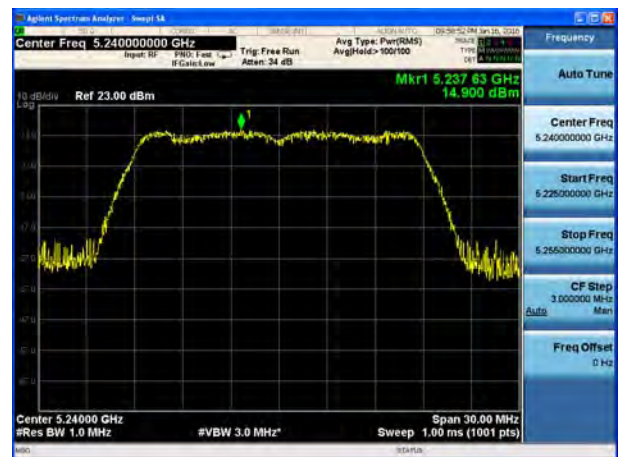
U-NII-1, 802.11n HT20, Channel No.: 40



U-NII-1, 802.11a, Channel No.: 48



U-NII-1, 802.11n HT20, Channel No.: 48



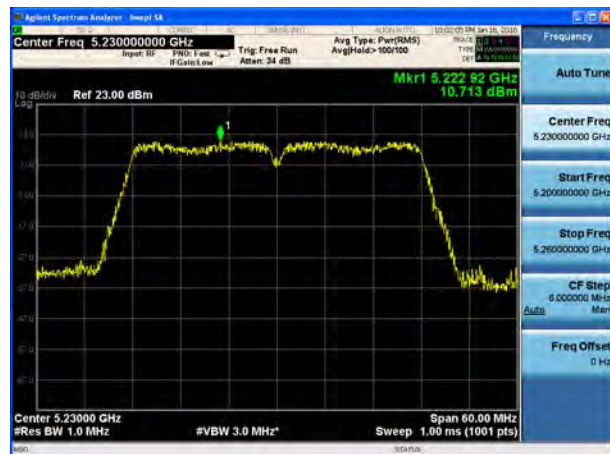
U-NII-1, 802.11n HT40, Channel No.: 38



U-NII-1, 802.11ac HT20, Channel No.: 36



U-NII-1, 802.11n HT40, Channel No.: 46



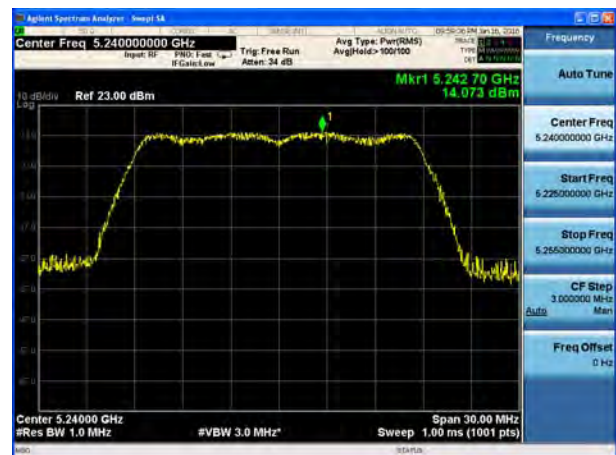
U-NII-1, 802.11ac HT20, Channel No.: 40



U-NII-1, 802.11ac HT40, Channel No.: 38



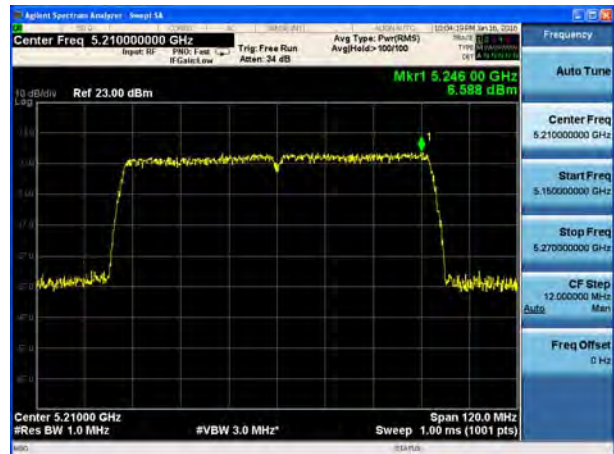
U-NII-1, 802.11ac HT20, Channel No.: 48



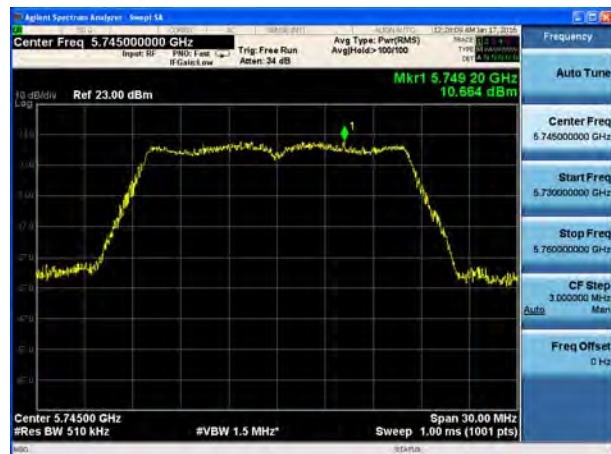
U-NII-1, 802.11ac HT40, Channel No.: 46



U-NII-1, 802.11ac HT80, Channel No.: 42



U-NII-3, 802.11a, Channel No.: 149



U-NII-3, 802.11n HT20, Channel No.: 149



U-NII-3, 802.11a, Channel No.: 157



U-NII-3, 802.11n HT20, Channel No.: 157



U-NII-3, 802.11a, Channel No.: 165



U-NII-3, 802.11n HT20, Channel No.: 165



U-NII-3, 802.11n HT40, Channel No.: 151



U-NII-3, 802.11ac HT20, Channel No.: 149



U-NII-3, 802.11n HT40, Channel No.: 159



U-NII-3, 802.11ac HT20, Channel No.: 157





U-NII-3, 802.11ac HT40, Channel No.: 151



U-NII-3, 802.11ac HT20, Channel No.: 165



U-NII-3, 802.11ac HT40, Channel No.: 159



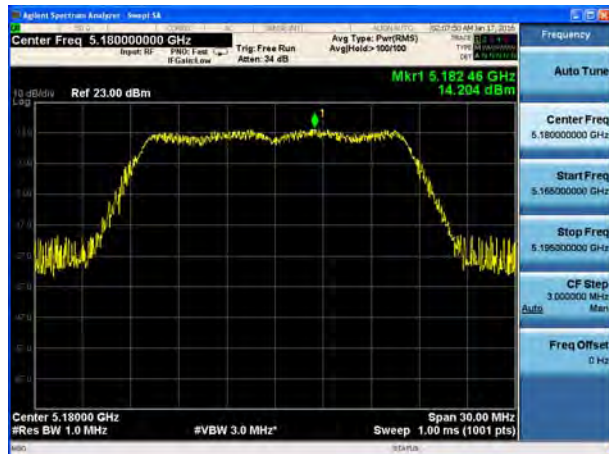
U-NII-3, 802.11ac HT80, Channel No.: 155





Antenna 3

U-NII-1, 802.11a, Channel No.: 36



U-NII-1, 802.11n HT20, Channel No.: 36



U-NII-1, 802.11a, Channel No.: 40



U-NII-1, 802.11n HT20, Channel No.: 40



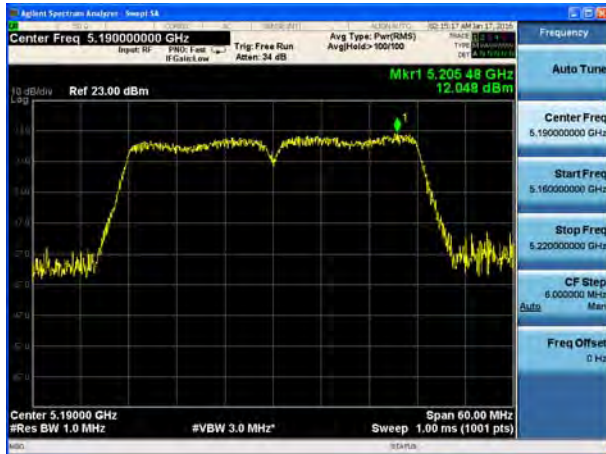
U-NII-1, 802.11a, Channel No.: 48



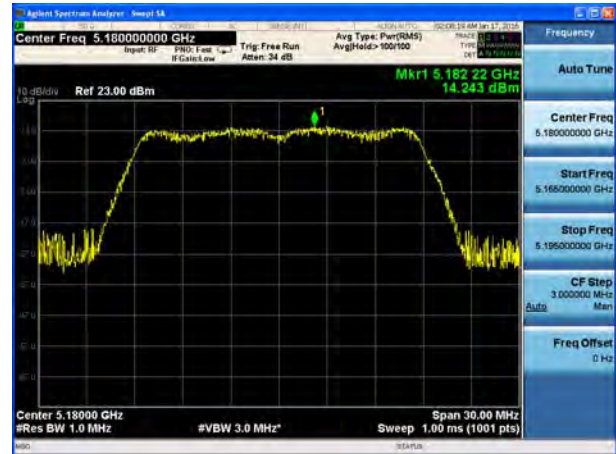
U-NII-1, 802.11n HT20, Channel No.: 48



U-NII-1, 802.11n HT40, Channel No.: 38



U-NII-1, 802.11ac HT20, Channel No.: 36



U-NII-1, 802.11n HT40, Channel No.: 46



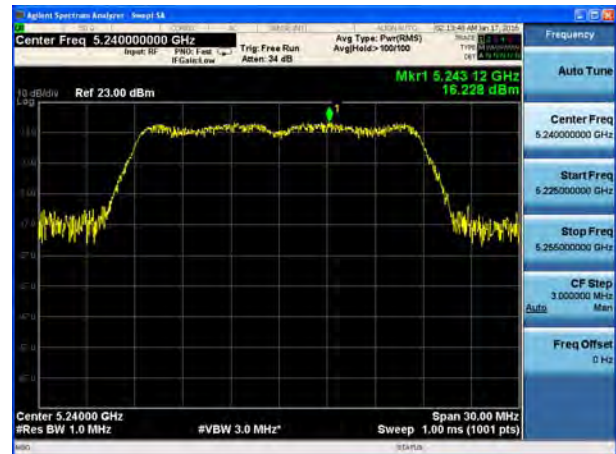
U-NII-1, 802.11ac HT20, Channel No.: 40



U-NII-1, 802.11ac HT40, Channel No.: 38



U-NII-1, 802.11ac HT20, Channel No.: 48

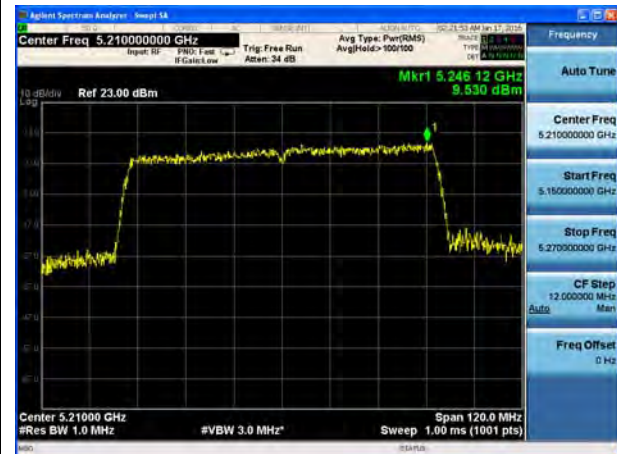




U-NII-1, 802.11ac HT40, Channel No.: 46



U-NII-1, 802.11ac HT80, Channel No.: 42



U-NII-3, 802.11a, Channel No.: 149



U-NII-3, 802.11n HT20, Channel No.: 149



U-NII-3, 802.11a, Channel No.: 157



U-NII-3, 802.11n HT20, Channel No.: 157





U-NII-3, 802.11a, Channel No.: 165



U-NII-3, 802.11n HT20, Channel No.: 165



U-NII-3, 802.11n HT40, Channel No.: 151



U-NII-3, 802.11ac HT20, Channel No.: 149



U-NII-3, 802.11n HT40, Channel No.: 159



U-NII-3, 802.11ac HT20, Channel No.: 157





U-NII-3, 802.11ac HT40, Channel No.: 151



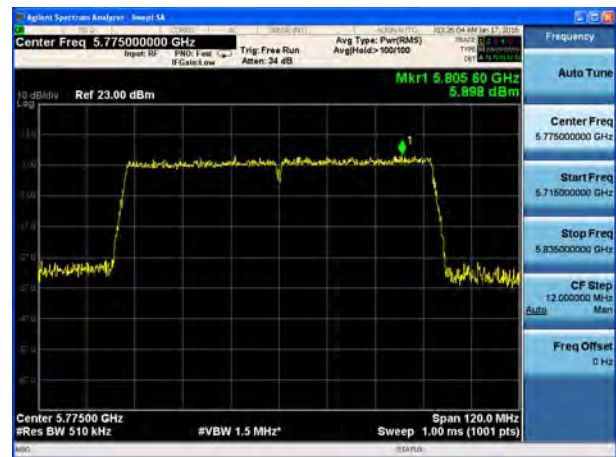
U-NII-3, 802.11ac HT20, Channel No.: 165



U-NII-3, 802.11ac HT40, Channel No.: 159



U-NII-3, 802.11ac HT80, Channel No.: 155





Antenna 4

U-NII-1, 802.11a, Channel No.: 36



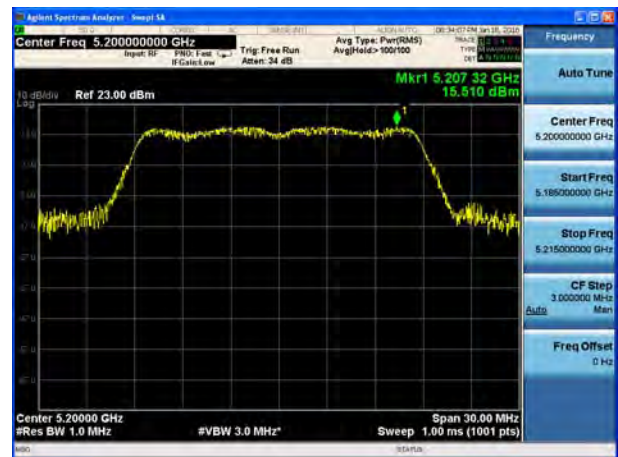
U-NII-1, 802.11n HT20, Channel No.: 36



U-NII-1, 802.11a, Channel No.: 40



U-NII-1, 802.11n HT20, Channel No.: 40



U-NII-1, 802.11a, Channel No.: 48



U-NII-1, 802.11n HT20, Channel No.: 48





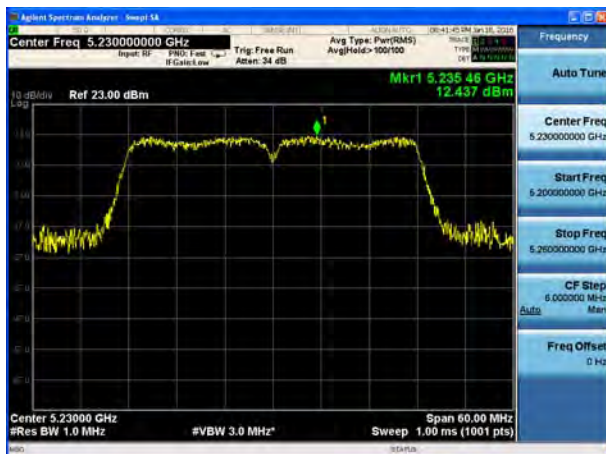
U-NII-1, 802.11n HT40, Channel No.: 38



U-NII-1, 802.11ac HT20, Channel No.: 36



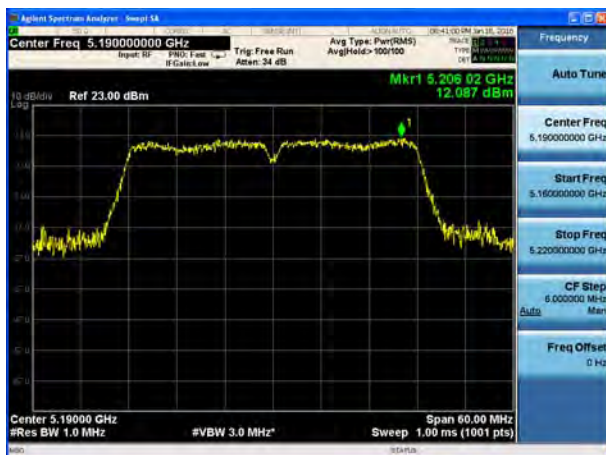
U-NII-1, 802.11n HT40, Channel No.: 46



U-NII-1, 802.11ac HT20, Channel No.: 40



U-NII-1, 802.11ac HT40, Channel No.: 38

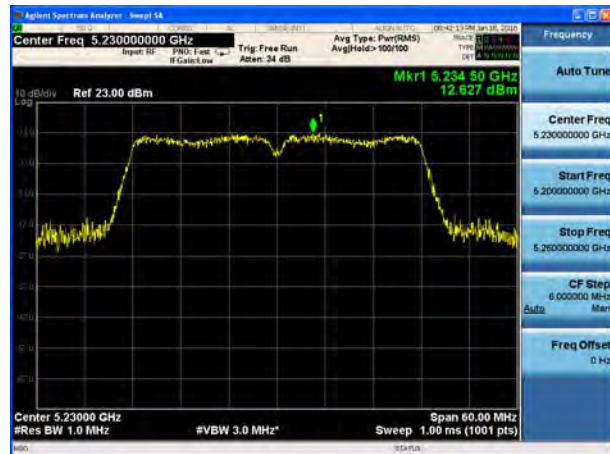


U-NII-1, 802.11ac HT20, Channel No.: 48

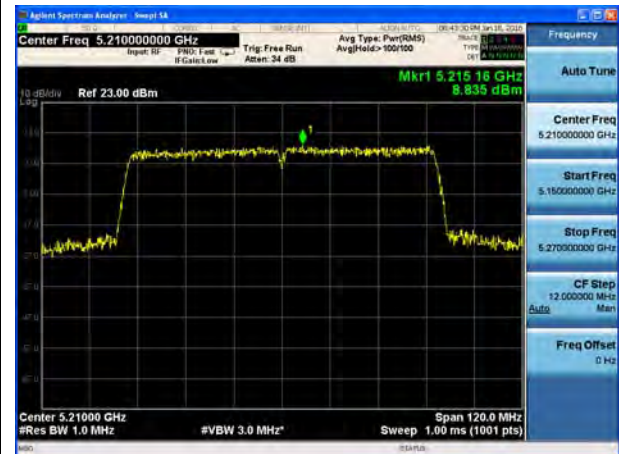




U-NII-1, 802.11ac HT40, Channel No.: 46



U-NII-1, 802.11ac HT80, Channel No.: 42



U-NII-3, 802.11a, Channel No.: 149



U-NII-3, 802.11n HT20, Channel No.: 149



U-NII-3, 802.11a, Channel No.: 157



U-NII-3, 802.11n HT20, Channel No.: 157





U-NII-3, 802.11a, Channel No.: 165



U-NII-3, 802.11n HT20, Channel No.: 165



U-NII-3, 802.11n HT40, Channel No.: 151



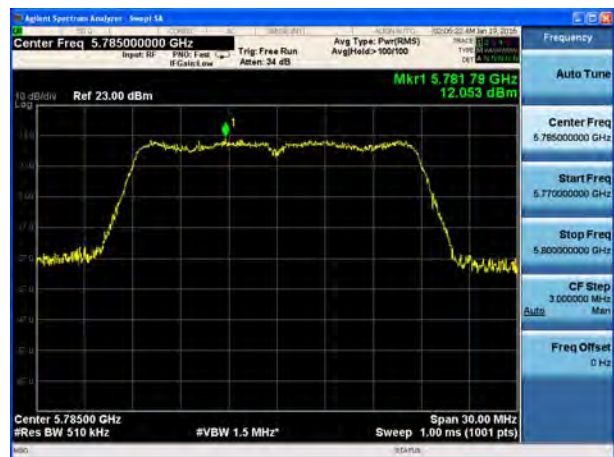
U-NII-3, 802.11ac HT20, Channel No.: 149



U-NII-3, 802.11n HT40, Channel No.: 159



U-NII-3, 802.11ac HT20, Channel No.: 157



U-NII-3, 802.11ac HT40, Channel No.: 151



U-NII-3, 802.11ac HT20, Channel No.: 165



U-NII-3, 802.11ac HT40, Channel No.: 159



U-NII-3, 802.11ac HT80, Channel No.: 155



U-NII-3, 802.11n HT20, Channel No.: 149



U-NII-3, 802.11n HT40, Channel No.: 151



U-NII-3, 802.11n HT20, Channel No.: 157

U-NII-3, 802.11n HT40, Channel No.: 159



U-NII-3, 802.11n HT20, Channel No.: 165

U-NII-3, 802.11ac HT40, Channel No.: 151



U-NII-3, 802.11ac HT20, Channel No.: 149



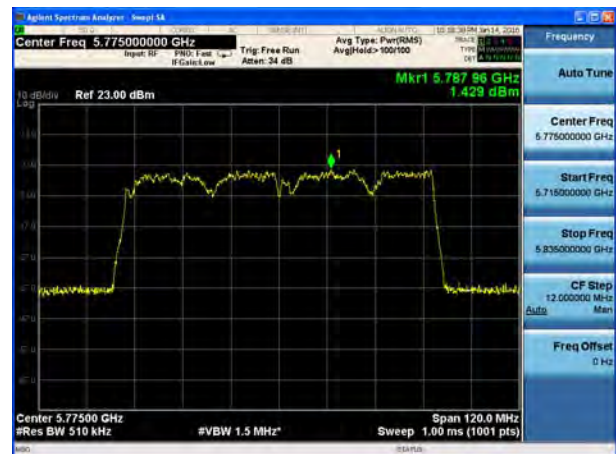
U-NII-3, 802.11ac HT40, Channel No.: 159



U-NII-3, 802.11ac HT20, Channel No.: 157



U-NII-3, 802.11ac HT80, Channel No.: 155



U-NII-3, 802.11ac HT20, Channel No.: 165



5.5. Unwanted Emission

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The test set-up was made in accordance to the general provisions of ANSI C63.10-2009. The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna. The radiated emissions measurements were made in a typical installation configuration.

Sweep the whole frequency band range from 9kHz to the 10th harmonic of the carrier, and the emissions less than 20 dB below the permissible value are reported.

During the test, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turntable shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.

Set the spectrum analyzer in the following:

Below 1GHz (detector: Peak and Quasi-Peak)

RBW=100kHz / VBW=300kHz / Sweep=AUTO

Above 1GHz (detector: Peak):

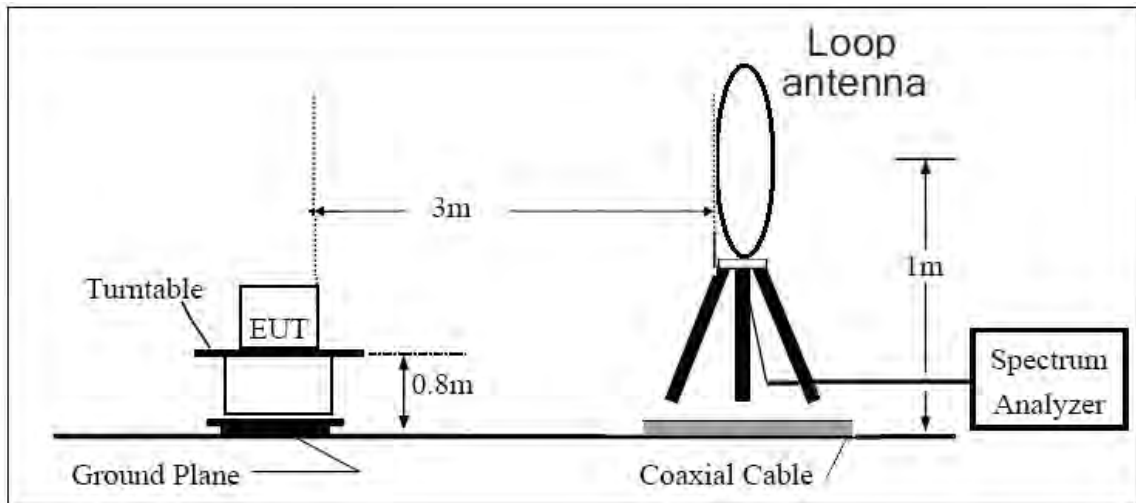
(a) PEAK: RBW=1MHz VBW=3MHz/ Sweep=AUTO

(b) AVERAGE: RBW=1MHz / VBW=3MHz / Sweep=AUTO

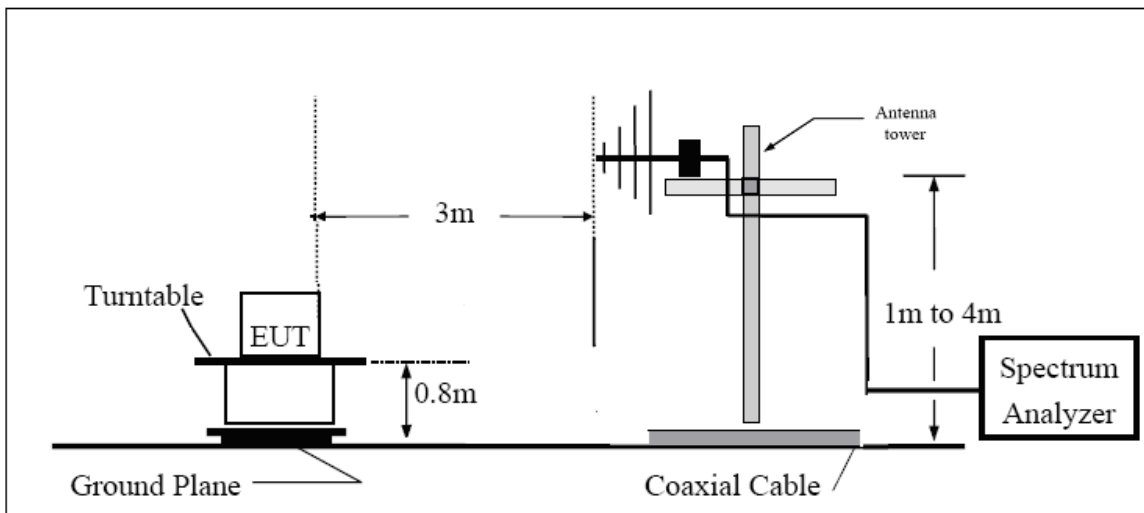
The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (Z axis) and the worst case was recorded.

The test is in transmitting mode.

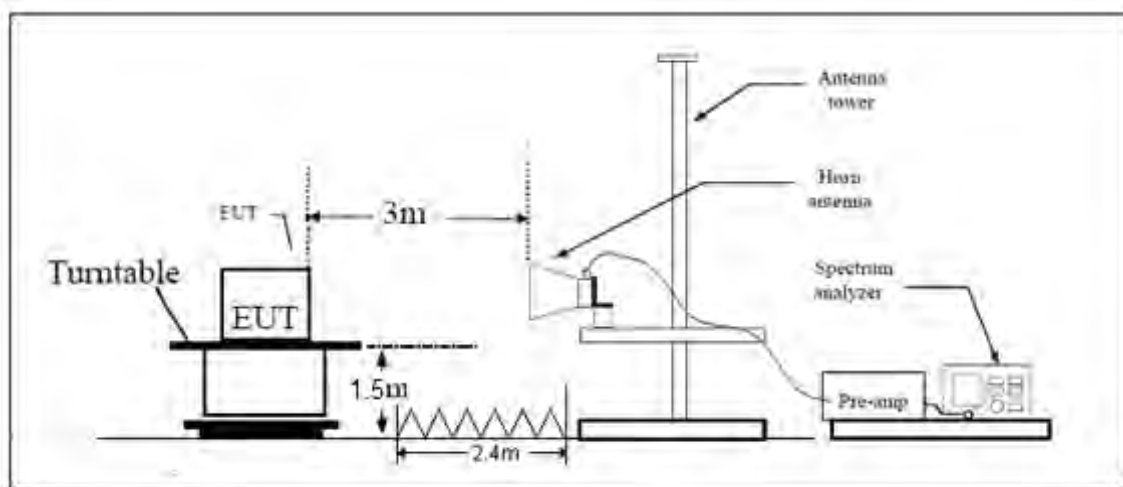
9KHz~~~30MHz



30MHz~~~ 1GHz



Above 1GHz



Note: Area side:2.4mX3.6m

**Limits**

- (1) For transmitters operating in the 5725-5850 MHz band: all emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an EIRP of -17dBm/MHz (78.3dBμV/m); for frequencies 10MHz or greater above or below the band edge, emissions shall not exceed an EIRP of -27dBm/MHz(68.3dBμV/m).

Note: The following formula is used to convert the EIRP to field strength.

$$E = \frac{1000000\sqrt{30P}}{3} \mu\text{V/m, where P is the eirp (Watts)}$$

EIRP (dBm)	Field Strength at 3m (dBμV/m)
-17	78.3
-27	68.3

- (2) 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 -27 dBm/MHz(68.3dBμV/m)..
- (3) Unwanted spurious emissions fallen in restricted bands per FCC Part15.205 shall comply with the general field strength limits set forth in § 15.209 as below table.

Frequency of emission (MHz)	Field strength(uV/m)	Field strength(dBuV/m)
0.009–0.490	2400/F(kHz)	/
0.490–1.705	24000/F(kHz)	/
1.705–30.0	30	/
30-88	100	40
88-216	150	43.5
216-960	200	46
Above960	500	54

- (4) Spurious Radiated Emissions are permitted in any of the frequency bands listed below:



MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)
13.36 - 13.41			

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

Frequency	Uncertainty
9KHz-30MHz	3.55 dB
30MHz-200MHz	4.19 dB
200MHz-1GHz	3.63 dB
1GHz-26.5G	3.68 dB
26.5G-40GHz	4.76dB



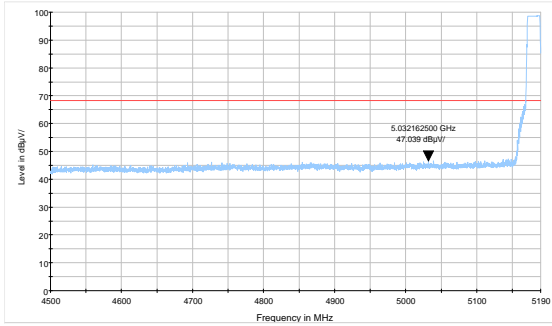
Test Results:

PASS

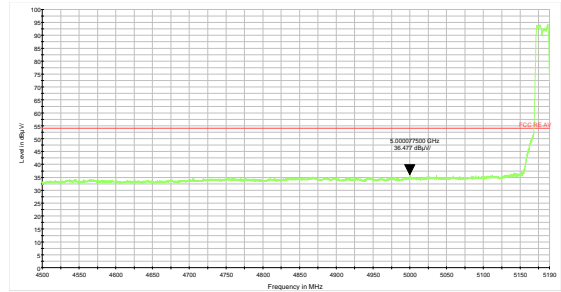
The messy code (dB_{μV/m}) including in the following plots mean dBuV/m.

The signal beyond the limit is carrier.

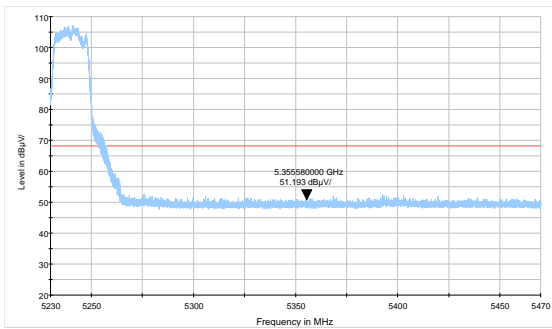
802.11a-Channel 36: Peak



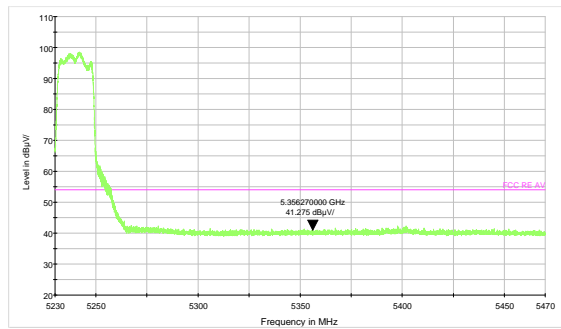
802.11a-Channel 36: Average



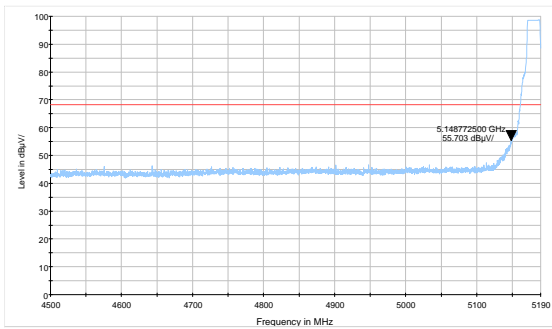
802.11a-Channel 48: Peak



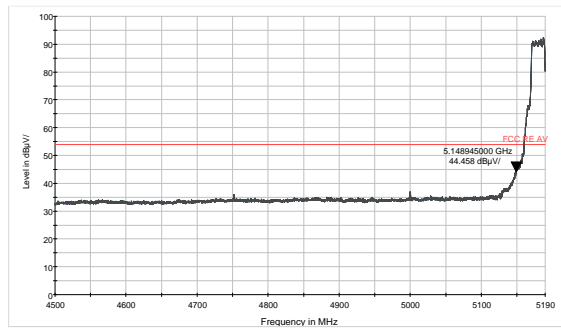
802.11a-Channel 48: Average



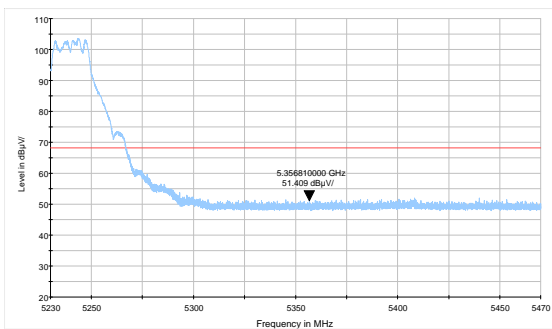
802.11n HT20-Channel 36: Peak



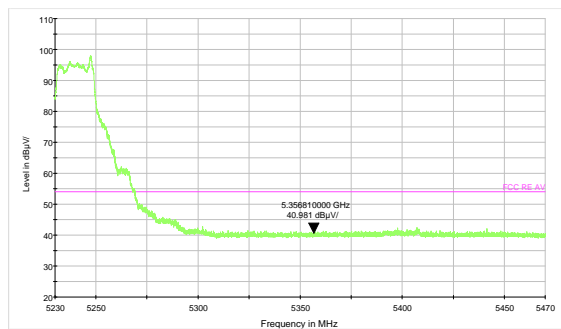
802.11n HT20-Channel 36: Average



802.11n HT20-Channel 48: Peak

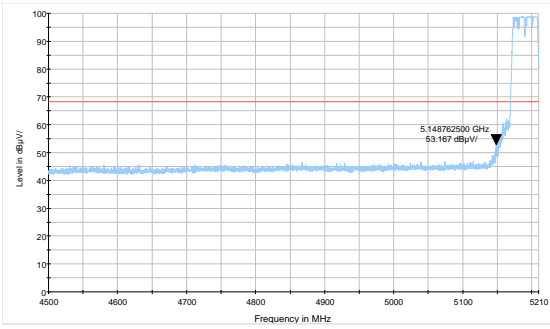


802.11n HT20-Channel 48: Average

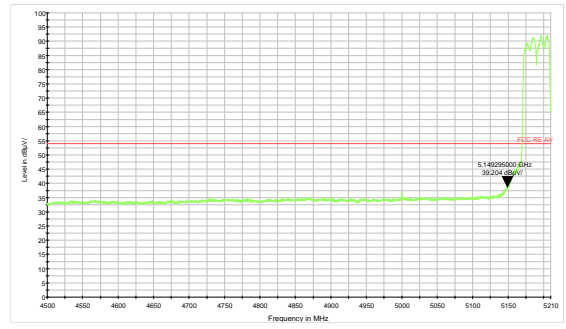




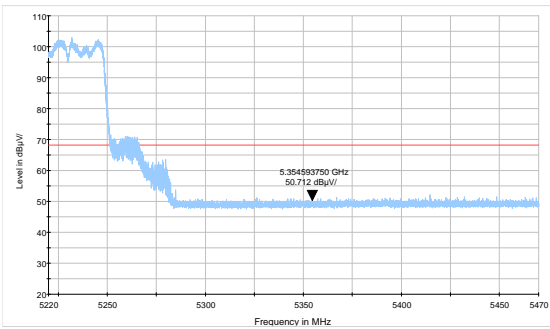
802.11n HT40-Channel 38: Peak



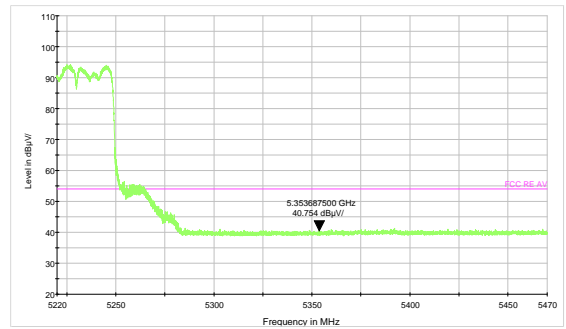
802.11n HT40-Channel 38: Average



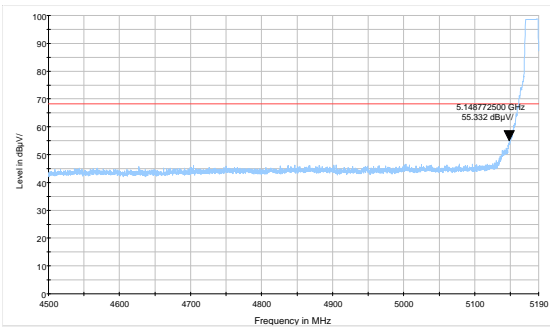
802.11n HT40-Channel 46: Peak



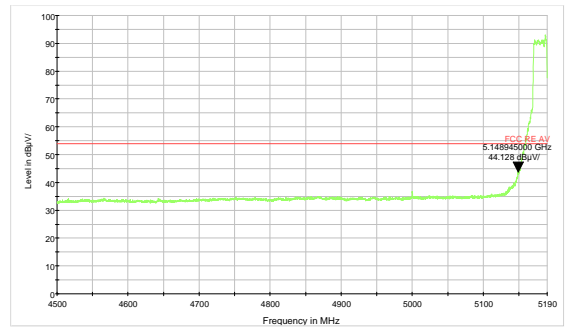
802.11n HT40-Channel 46: Average



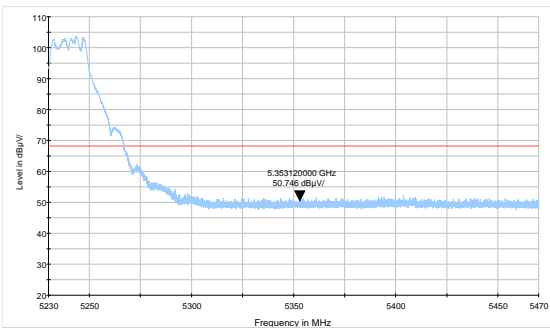
802.11ac HT20 -Channel 36: Peak



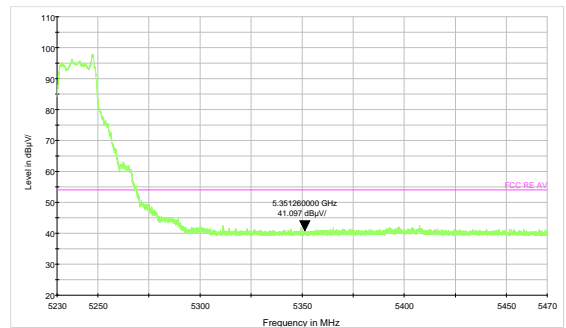
802.11ac HT20-Channel 36: Average



802.11ac HT20 -Channel 48: Peak

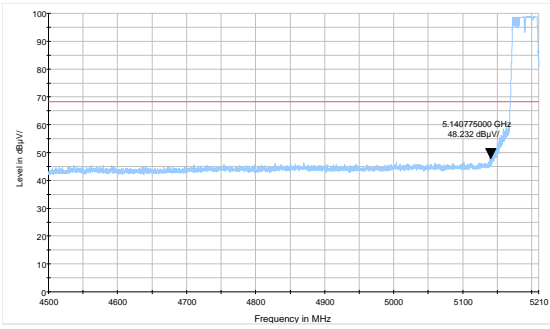


802.11ac HT20 -Channel 48: Average

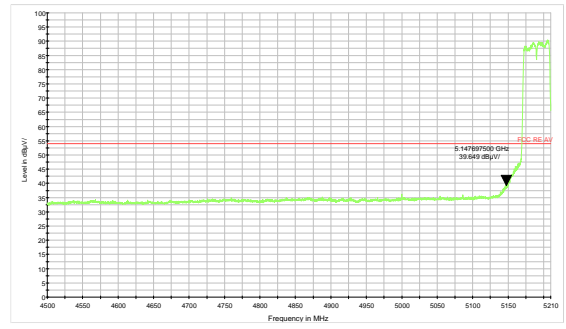




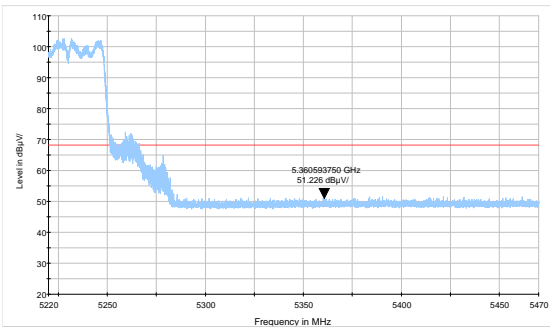
802.11ac HT40-Channel 38: Peak



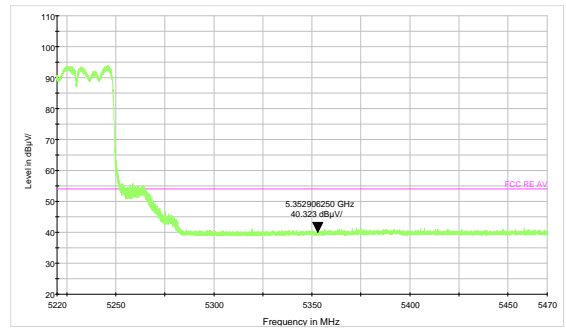
802.11ac HT40-Channel 38: Average



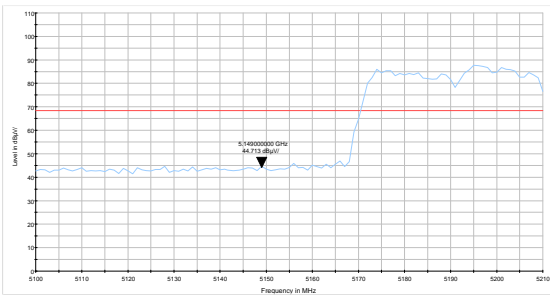
802.11ac HT40-Channel 46: Peak



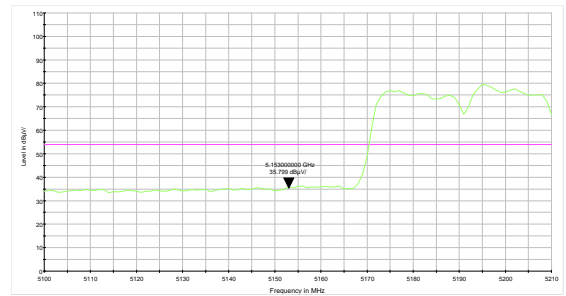
802.11ac HT40-Channel 46: Average



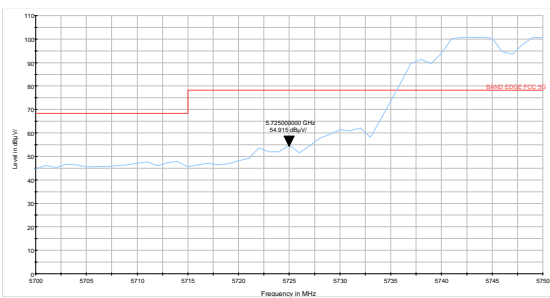
802.11ac HT80 -Channel 42: Peak



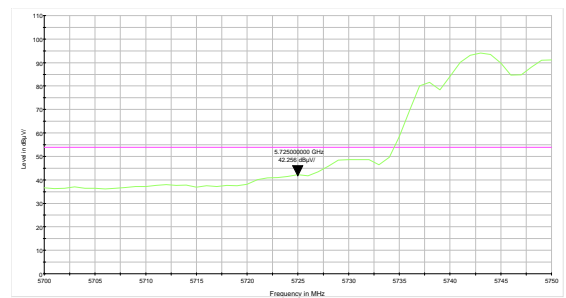
802.11ac HT80- Channel 42: Average



802.11a-Channel 149: Peak

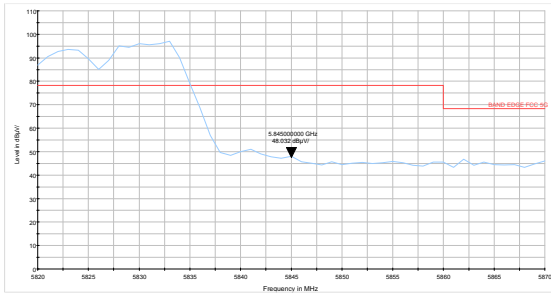


802.11a-Channel 149: Average

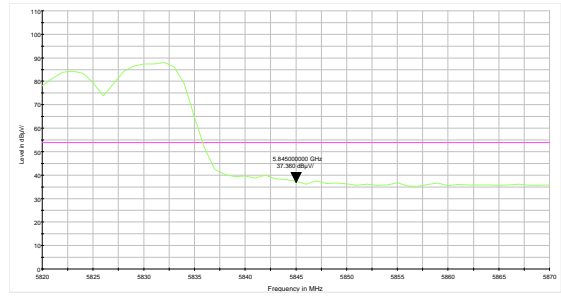




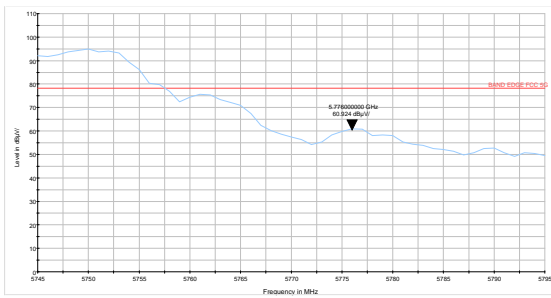
802.11a-Channel 165: Peak



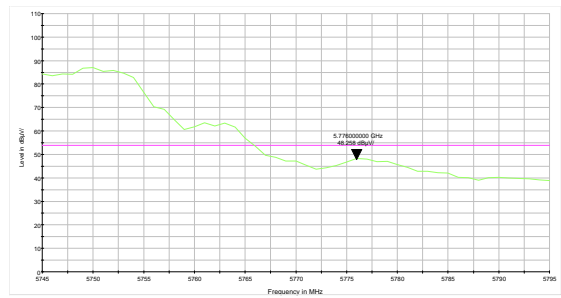
802.11a-Channel 165: Average



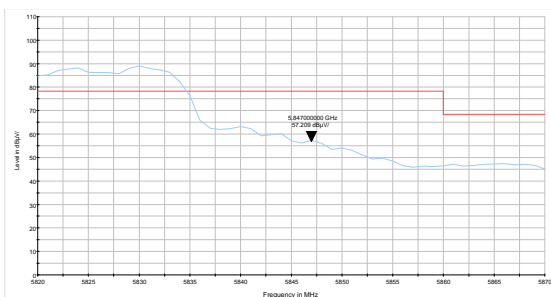
802.11n HT20-Channel 149: Peak



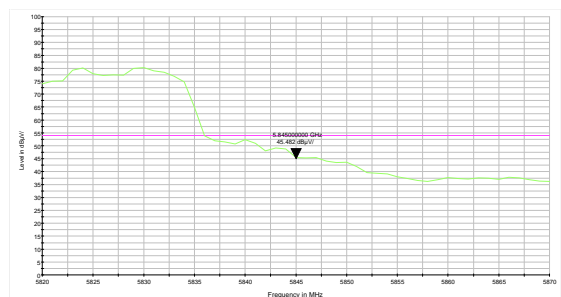
802.11n HT20-Channel 149: Average



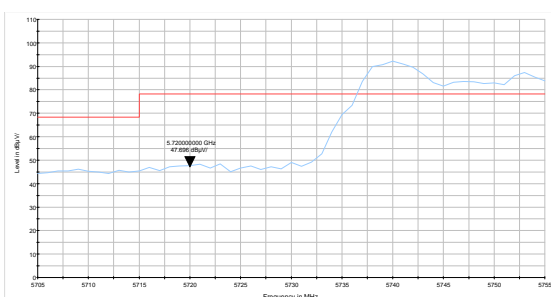
802.11n HT20-Channel 165: Peak



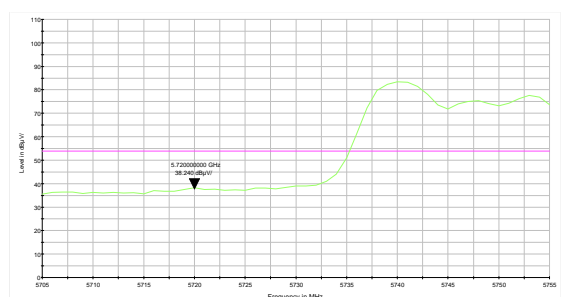
802.11n HT20-Channel 165: Average



802.11n HT40-Channel 151: Peak

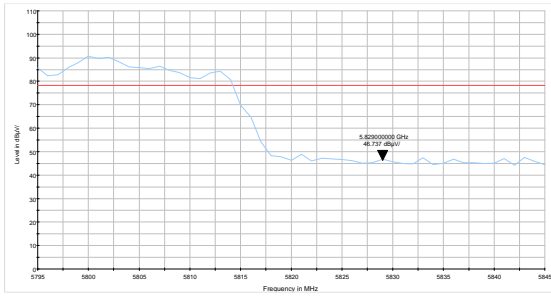


802.11n HT40-Channel 151: Average

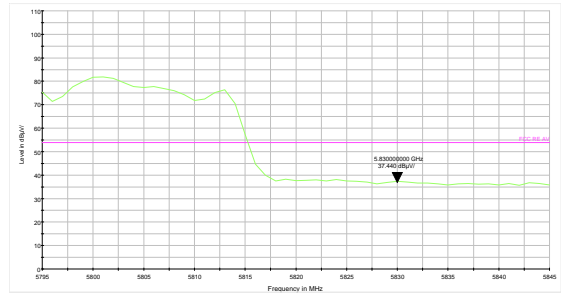




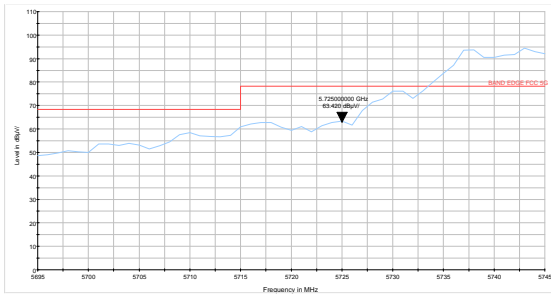
802.11n HT40-Channel 159: Peak



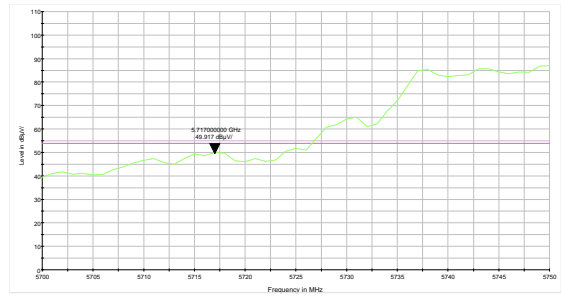
802.11n HT40-Channel 159: Average



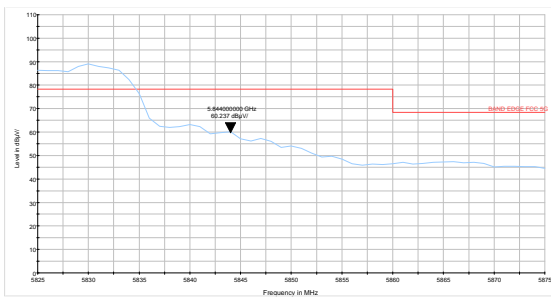
802.11ac HT20-Channel 149: Peak



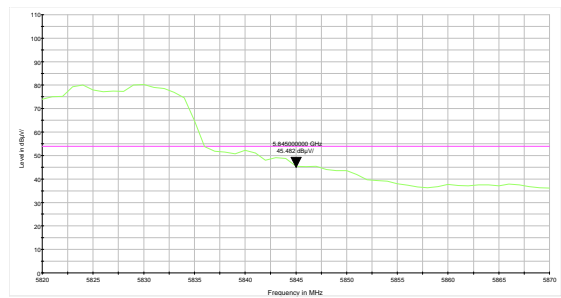
802.11ac HT20-Channel 149: Average



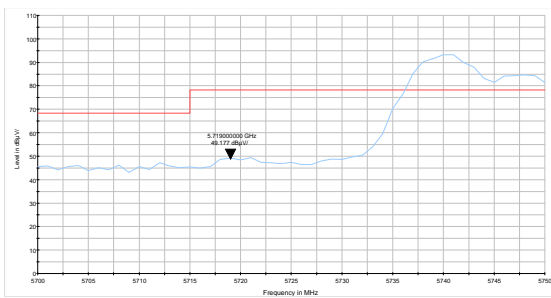
802.11ac HT20-Channel 165: Peak



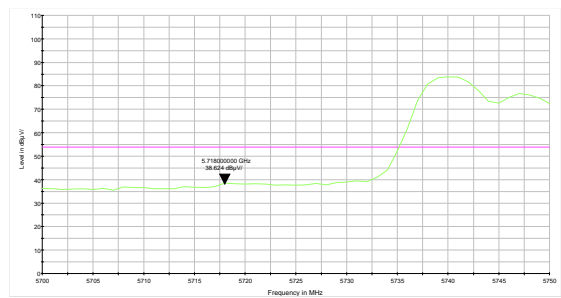
802.11ac HT20-Channel 165: Average



802.11ac HT40-Channel 151: Peak

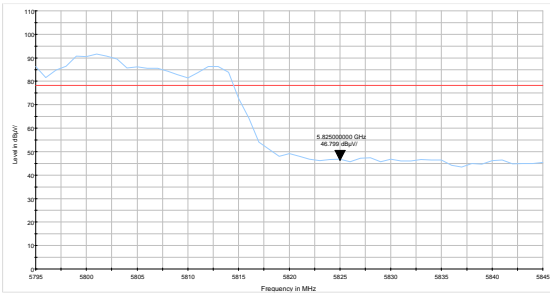


802.11ac HT40-Channel 151: Average

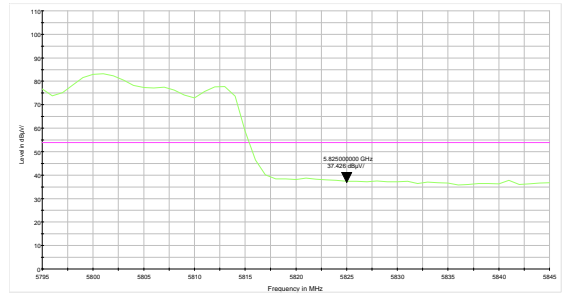




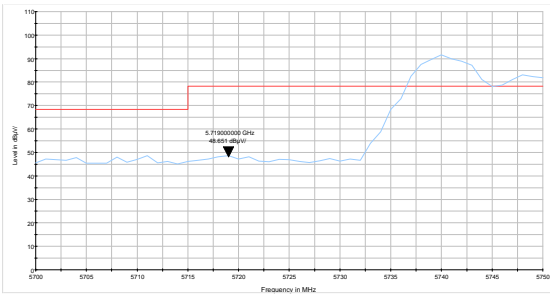
802.11ac HT40-Channel 159: Peak



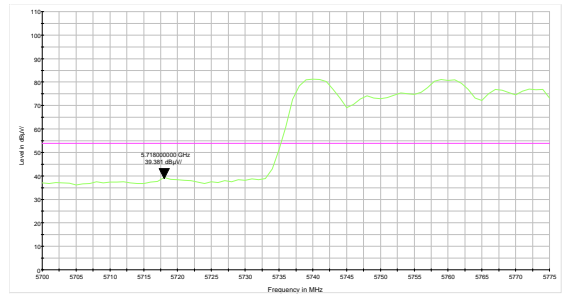
802.11ac HT40-Channel 159: Average



802.11ac HT80- Channel 155: Peak



802.11ac HT80- Channel 155: Average





Result of RE

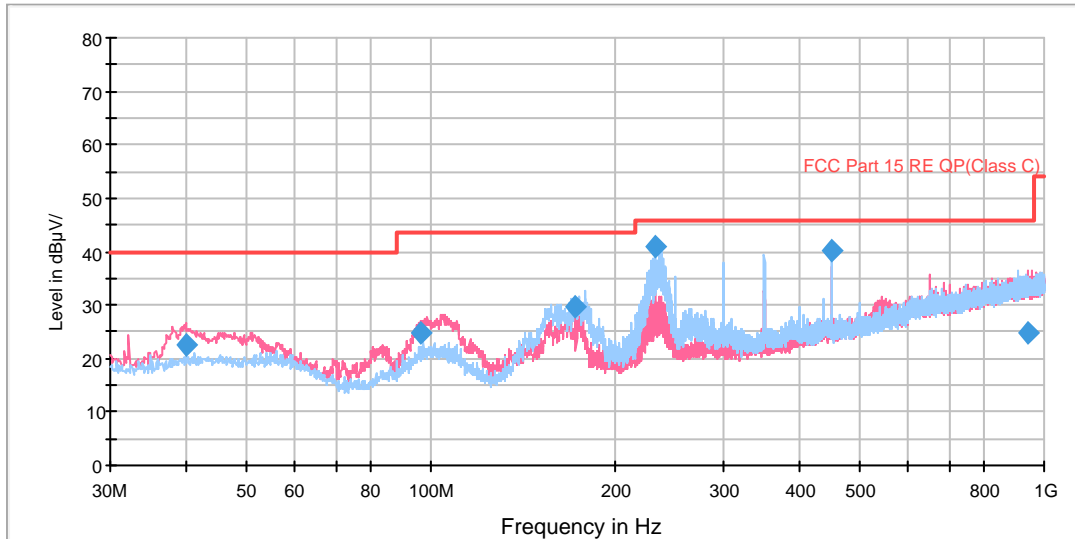
Test result

Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, and 9KHz-30MHz, the emissions more than 20 dB below the permissible value are not reported.

U-NII-1

802.11a CH36

RE 0.03-1GHz QP Class B



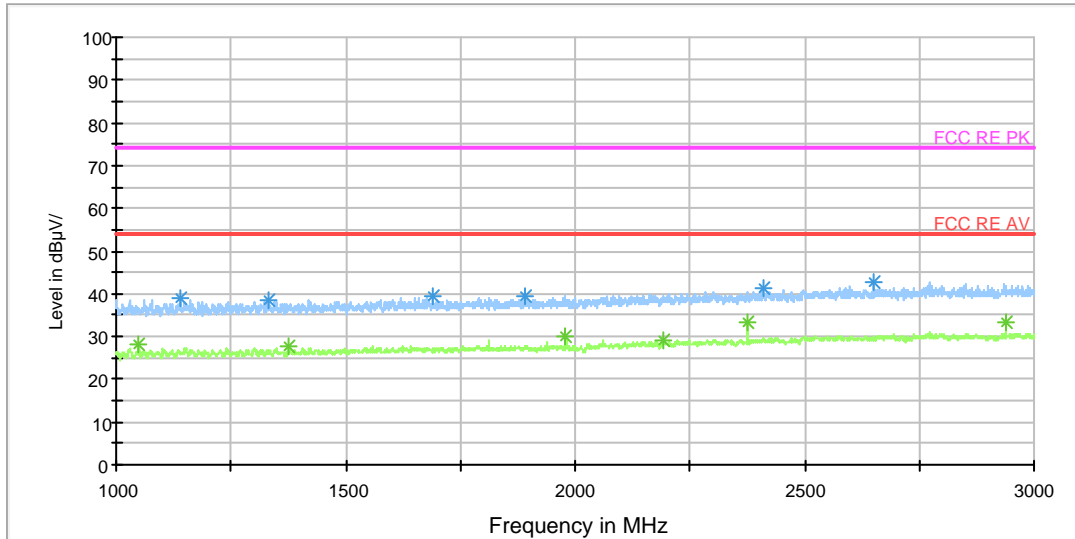
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
39.981250	22.4	100.0	V	322.0	35.6	13.2	17.6	40.0
96.561250	24.6	125.0	V	37.0	37.4	12.8	18.9	43.5
171.741250	29.5	125.0	H	292.0	39.9	10.4	14.0	43.5
233.012500	40.8	125.0	H	208.0	54.2	13.4	5.2	46.0
450.010000	40.2	100.0	H	194.0	59.2	19.0	5.8	46.0
942.975000	24.9	125.0	V	256.0	50.9	26.0	21.1	46.0

Remark: 1. Quasi-Peak = Reading value + Correction factor

2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)

3. Margin = Limit – Quasi-Peak



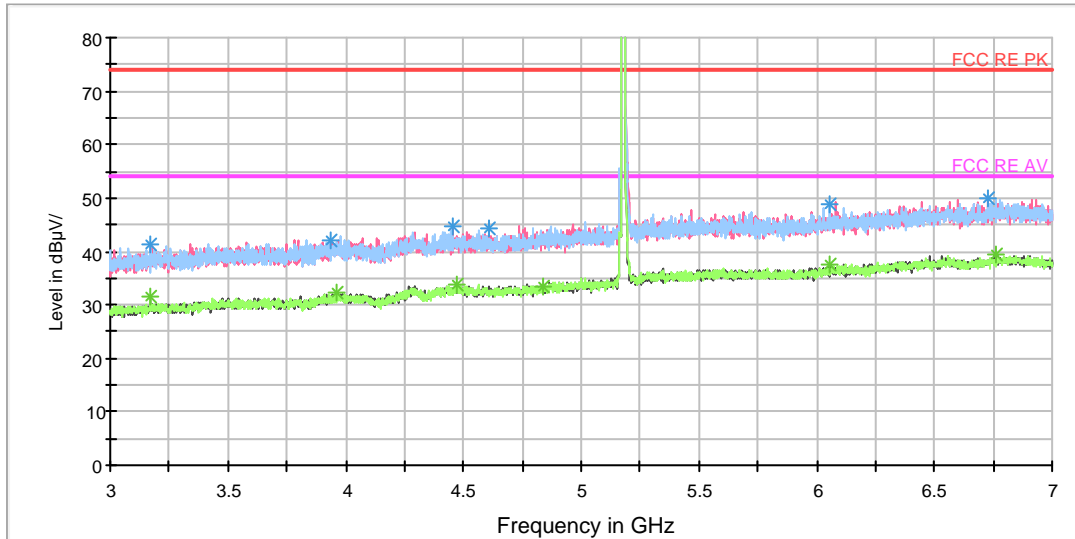
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1139.000000	38.8	100.0	V	359.0	49.7	-10.9	35.2	74
1333.500000	38.7	100.0	V	48.0	48.7	-10.0	35.3	74
1690.500000	39.3	100.0	V	339.0	48.0	-8.7	34.7	74
1889.500000	39.6	100.0	V	206.0	47.7	-8.1	34.4	74
2408.500000	41.3	100.0	V	0.0	46.9	-5.6	32.7	74
2651.500000	42.6	100.0	V	0.0	47.2	-4.6	31.4	74

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1050.000000	28.0	100.0	H	345.0	39.2	-11.2	26.0	54
1375.000000	27.6	100.0	V	346.0	37.5	-9.9	26.4	54
1980.000000	30.0	100.0	H	6.0	37.9	-7.9	24.0	54
2191.500000	29.0	100.0	H	37.0	35.6	-6.6	25.0	54
2376.000000	33.4	100.0	H	163.0	39.1	-5.7	20.6	54
2938.000000	33.4	100.0	H	27.0	37.5	-4.1	20.6	54

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)



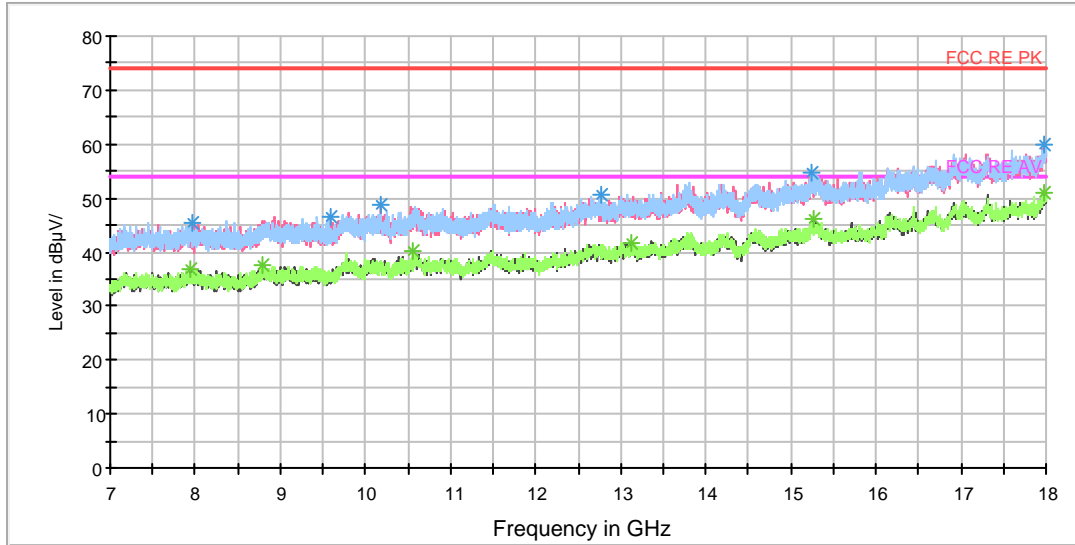
Note: The signal beyond the limit is carrier.
Radiates Emission from 3GHz to 7GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3167.000000	41.4	100.0	H	0.0	44.8	-3.4	32.6	74
3963.000000	41.2	100.0	H	0.0	43.3	-2.1	32.8	74
4476.000000	42.5	100.0	H	0.0	43.6	-1.1	31.5	74
6057.000000	45.0	100.0	V	0.0	48.1	3.1	29.0	74
6760.000000	46.8	100.0	V	0.0	51.8	5.0	27.2	74
4837.000000	41.3	100.0	V	0.0	41.8	-0.5	32.7	74

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3167.000000	31.5	100.0	H	0.0	34.9	-3.4	22.5	54
3963.000000	32.2	100.0	H	0.0	34.3	-2.1	21.8	54
4476.000000	33.8	100.0	H	0.0	34.9	-1.1	20.2	54
6057.000000	37.4	100.0	V	0.0	40.5	3.1	16.6	54
6760.000000	39.5	100.0	V	0.0	44.5	5.0	14.5	54
4837.000000	33.6	100.0	V	0.0	34.1	-0.5	20.4	54

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)



Radiates Emission from 7GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
7952.875000	42.9	101.0	V	3.0	51.7	8.8	31.1	74
8784.750000	45.7	101.0	V	13.0	54.9	9.2	28.3	74
10562.625000	47.2	101.0	H	0.0	60.5	13.3	26.8	74
13116.000000	46.8	101.0	V	29.0	62.8	16.0	27.2	74
15262.375000	53.0	101.0	V	13.0	72.7	19.7	21.0	74
17979.375000	57.9	101.0	V	45.0	83.1	25.2	16.1	74

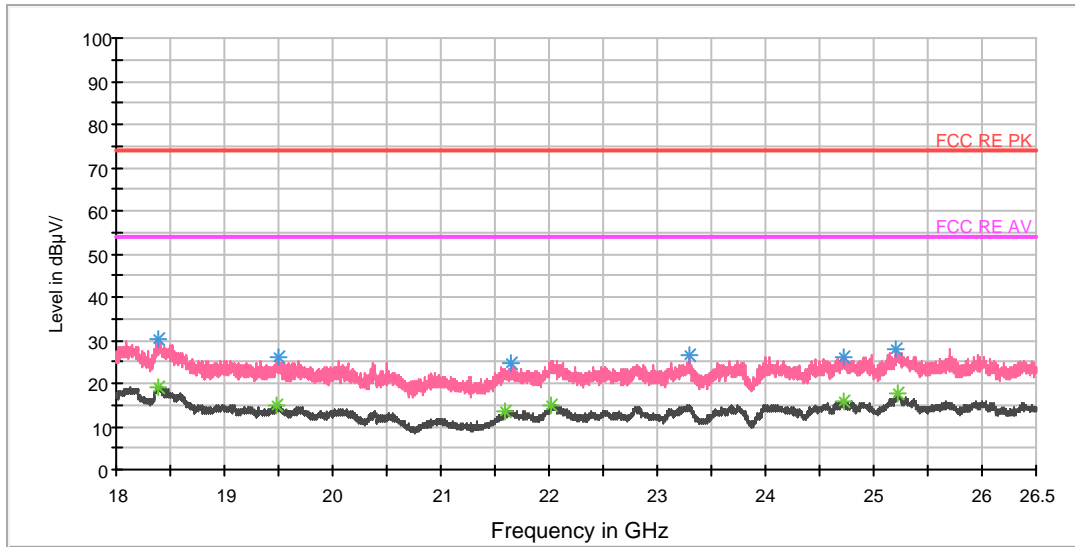
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
7952.875000	37.0	101.0	V	3.0	45.8	8.8	17.0	54
8784.750000	37.5	101.0	V	13.0	46.7	9.2	16.5	54
10562.625000	40.2	101.0	H	0.0	53.5	13.3	13.8	54
13116.000000	41.8	101.0	V	29.0	57.8	16.0	12.2	54
15262.375000	46.0	101.0	V	13.0	65.7	19.7	8.0	54
17979.375000	51.1	101.0	V	45.0	76.3	25.2	2.9	54

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)



RE 18-26.5GHz PK+AV



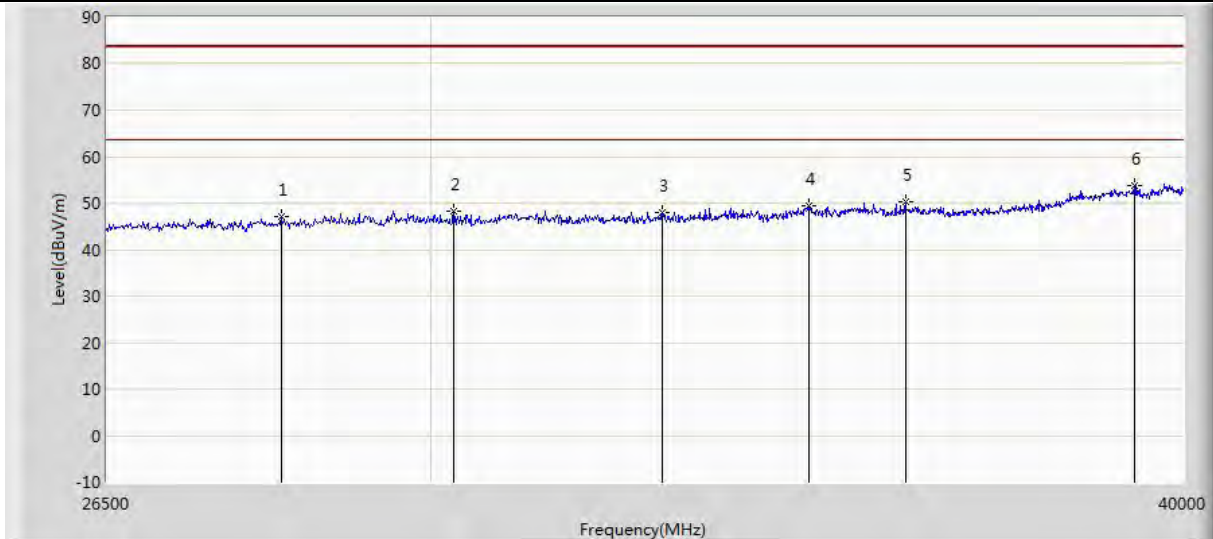
Radiates Emission from 18GHz to 26.5GHz

Frequency (MHz)	Peak (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18397.375000	28.5	V	0.0	33.4	-4.9	45.5	74
19486.437500	25.3	V	0.0	33.0	-7.7	48.7	74
21593.375000	21.6	V	0.0	30.3	-8.7	52.4	74
22024.750000	23.0	V	0.0	31.0	-8.0	51.0	74
24722.437500	25.7	V	0.0	31.9	-6.2	48.3	74
25231.375000	25.8	V	0.0	31.7	-5.9	48.2	74

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18397.375000	19.3	V	0.0	24.2	-4.9	34.7	54
19486.437500	15.0	V	0.0	22.7	-7.7	39.0	54
21593.375000	13.6	V	0.0	22.3	-8.7	40.4	54
22024.750000	14.8	V	0.0	22.8	-8.0	39.2	54
24722.437500	15.9	V	0.0	22.1	-6.2	38.1	54
25231.375000	17.7	V	0.0	23.6	-5.9	36.3	54

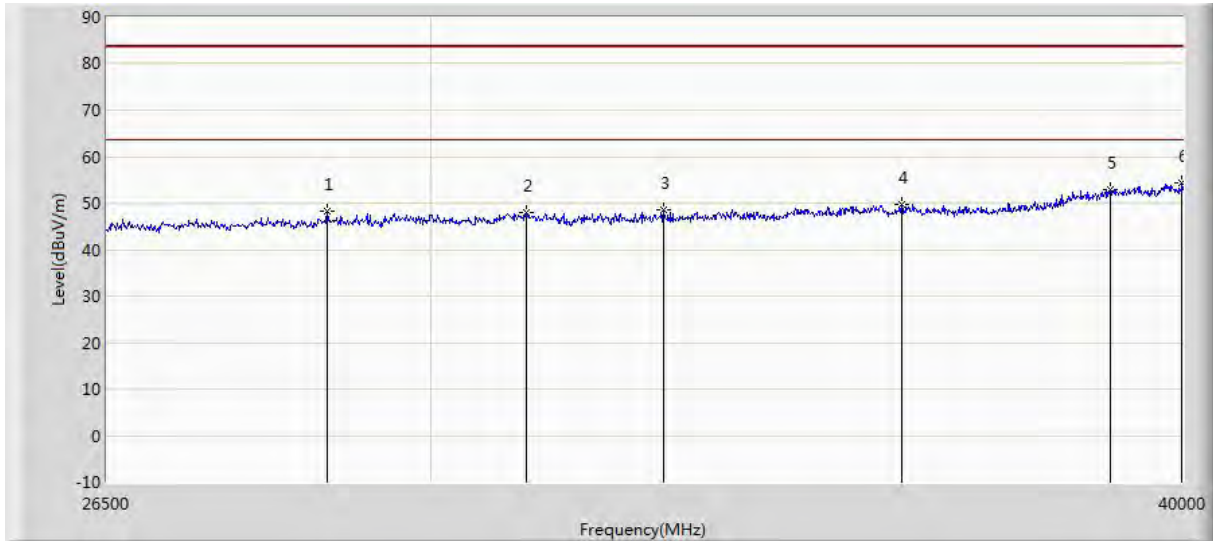
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)



Radiates Emission from 26.5GHz to 40GHz

Frequency (MHz)	Peak (dBuV/m)	Reading value (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Correct Factor (dB)	Polarization
28329.000	46.998	34.860	36.502	83.500	12.137	H
30265.000	48.327	35.380	35.173	83.500	12.946	H
32784.000	47.943	36.262	35.557	83.500	11.681	H
34676.000	49.413	38.089	34.087	83.500	11.324	H
35974.000	50.190	38.635	33.310	83.500	11.556	H
39274.000	53.805	36.294	29.695	83.500	17.512	H

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)



Radiates Emission from 26.5GHz to 40GHz

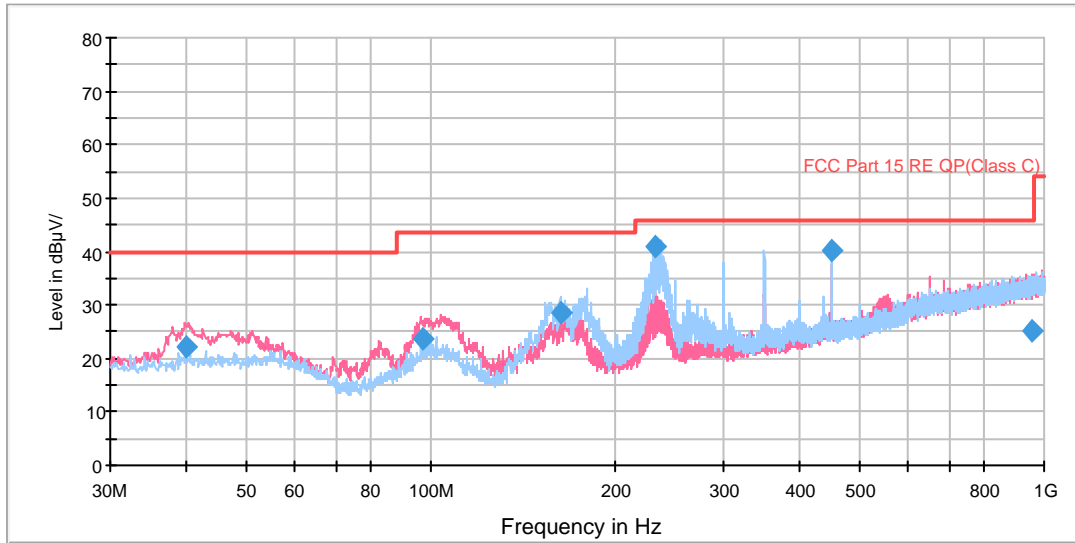
Frequency (MHz)	Peak (dBuV/m)	Reading value (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Correct Factor (dB)	Polarization
28835.000	48.195	35.567	35.305	83.500	12.628	V
31123.000	48.070	34.832	35.430	83.500	13.238	V
32795.000	48.531	36.828	34.969	83.500	11.703	V
35919.000	49.843	38.410	33.657	83.500	11.433	V
38911.000	53.005	35.916	30.495	83.500	17.089	V
39989.000	54.209	35.245	29.291	83.500	18.964	V

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)



802.11a CH40

RE 0.03-1GHz QP Class B



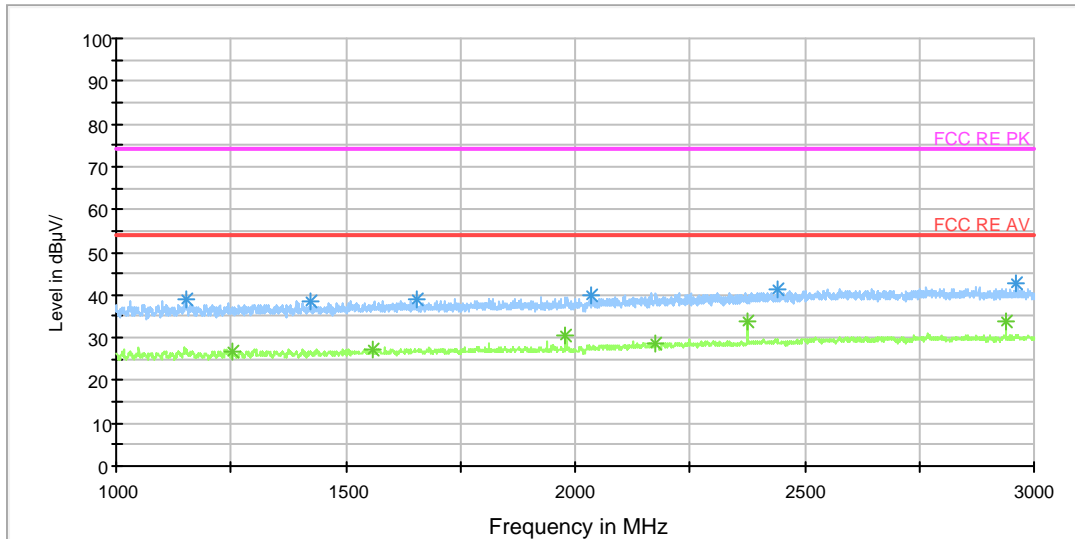
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
39.986250	22.1	100.0	V	0.0	35.3	13.2	17.9	40.0
96.923750	23.8	125.0	V	0.0	36.6	12.8	19.7	43.5
163.046250	28.5	125.0	H	286.0	38.4	9.9	15.0	43.5
233.012500	40.9	125.0	H	208.0	54.3	13.4	5.1	46.0
450.010000	40.1	100.0	H	192.0	59.1	19.0	5.9	46.0
959.103750	25.0	100.0	V	10.0	51.2	26.2	21.0	46.0

Remark: 1. Quasi-Peak = Reading value + Correction factor

2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)

3. Margin = Limit – Quasi-Peak



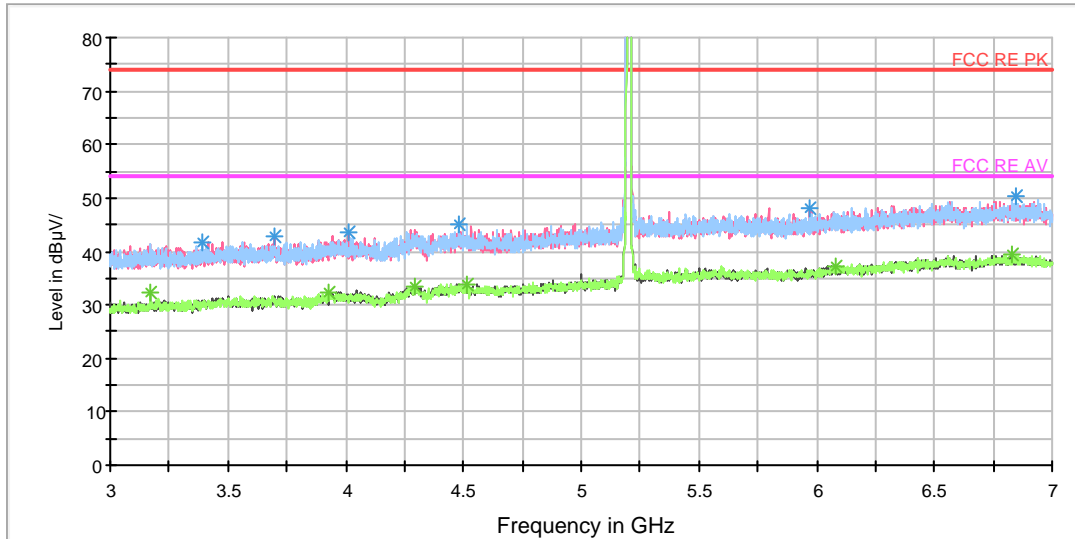
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1251.500000	35.5	100.0	H	205.0	45.9	-10.4	38.5	74
1560.500000	36.5	100.0	V	344.0	45.7	-9.2	37.5	74
1980.000000	39.5	100.0	H	183.0	47.4	-7.9	34.5	74
2176.500000	40.5	100.0	H	9.0	47.2	-6.7	33.5	74
2376.000000	39.6	100.0	H	0.0	45.3	-5.7	34.4	74
2938.000000	40.8	100.0	H	14.0	44.9	-4.1	33.2	74

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1153.000000	26.5	100.0	H	48.0	37.3	-10.8	27.5	54
1424.000000	26.5	100.0	V	0.0	36.3	-9.8	27.5	54
1654.500000	26.4	100.0	H	111.0	35.2	-8.8	27.6	54
2033.000000	27.4	100.0	V	329.0	35.0	-7.6	26.6	54
2443.000000	28.9	100.0	V	0.0	34.3	-5.4	25.1	54
2960.000000	30.5	100.0	H	2.0	34.6	-4.1	23.5	54

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)



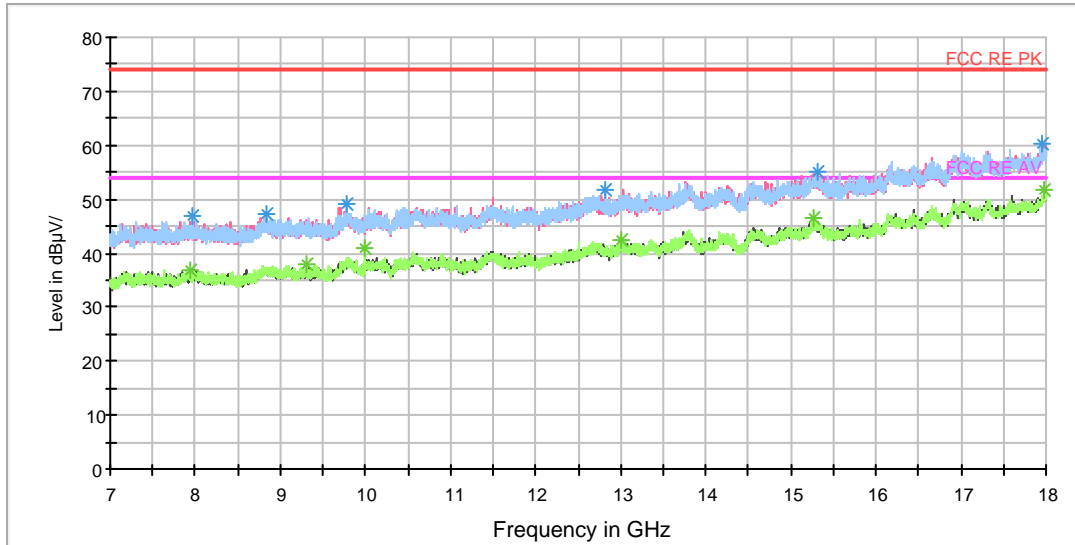
Note: The signal beyond the limit is carrier.
Radiates Emission from 3GHz to 7GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3167.000000	41.4	100.0	H	0.0	44.8	-3.4	32.6	74
3928.000000	41.1	100.0	V	0.0	43.2	-2.1	32.9	74
4511.000000	40.8	100.0	H	0.0	41.9	-1.1	33.2	74
6078.000000	44.0	100.0	H	0.0	47.2	3.2	30.0	74
6829.000000	48.9	100.0	V	0.0	53.9	5.0	25.1	74
4291.000000	41.3	100.0	H	0.0	42.3	-1.0	32.7	74

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3167.000000	32.4	100.0	H	0.0	35.8	-3.4	21.6	54
3928.000000	32.4	100.0	V	0.0	34.5	-2.1	21.6	54
4511.000000	33.9	100.0	H	0.0	35.0	-1.1	20.1	54
6078.000000	37.3	100.0	H	0.0	40.5	3.2	16.7	54
6829.000000	39.3	100.0	V	0.0	44.3	5.0	14.7	54
4291.000000	33.3	100.0	H	0.0	34.3	-1.0	20.7	54

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)



Radiates Emission from 7GHz to 18GHz

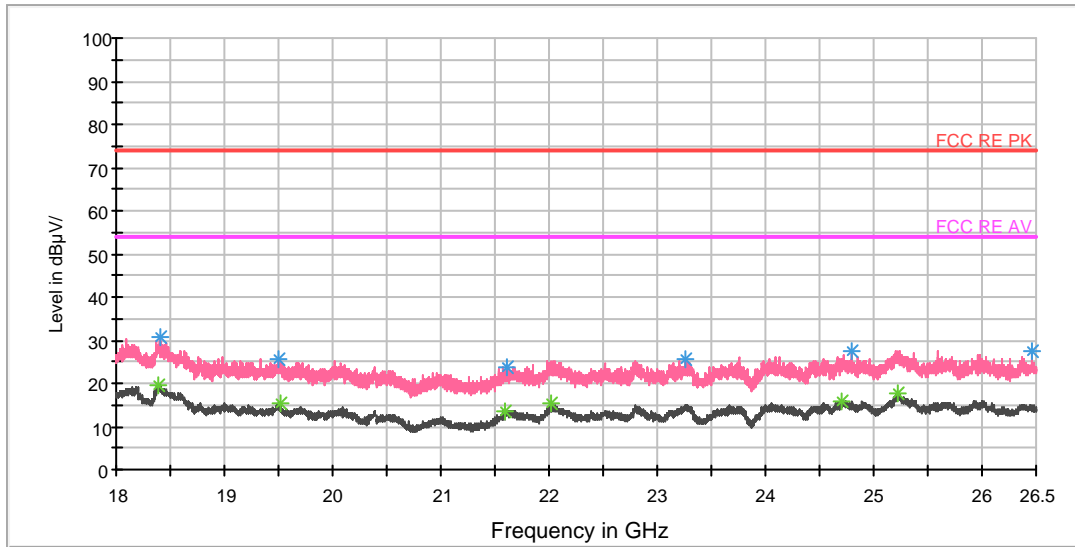
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
7937.750000	44.5	101.0	V	309.0	53.4	8.9	29.5	74
9312.750000	44.1	101.0	H	307.0	54.7	10.6	29.9	74
10000.250000	46.8	101.0	H	307.0	59.9	13.1	27.2	74
13017.000000	49.7	101.0	H	114.0	65.9	16.2	24.3	74
15265.125000	52.8	101.0	H	114.0	72.5	19.7	21.2	74
17982.125000	58.1	101.0	V	357.0	83.3	25.2	15.9	74

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
7937.750000	36.9	101.0	V	309.0	45.8	8.9	17.1	54
9312.750000	38.0	101.0	H	307.0	48.6	10.6	16.0	54
10000.250000	40.8	101.0	H	307.0	53.9	13.1	13.2	54
13017.000000	42.4	101.0	H	114.0	58.6	16.2	11.6	54
15265.125000	46.3	101.0	H	114.0	66.0	19.7	7.7	54
17982.125000	51.8	101.0	V	357.0	77.0	25.2	2.2	54

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz

Frequency (MHz)	Peak (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18389.937500	28.0	V	0.0	32.9	-4.9	46.0	74
19510.875000	23.9	V	0.0	31.4	-7.5	50.1	74
21600.812500	22.1	V	0.0	30.9	-8.8	51.9	74
22026.875000	22.0	V	0.0	29.9	-7.9	52.0	74
24703.312500	23.1	V	0.0	29.8	-6.7	50.9	74
25215.437500	25.7	V	0.0	31.8	-6.1	48.3	74

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18389.937500	19.5	V	0.0	24.4	-4.9	34.5	54
19510.875000	15.2	V	0.0	22.7	-7.5	38.8	54
21600.812500	13.6	V	0.0	22.4	-8.8	40.4	54
22026.875000	15.2	V	0.0	23.1	-7.9	38.8	54
24703.312500	16.0	V	0.0	22.7	-6.7	38.0	54
25215.437500	17.7	V	0.0	23.8	-6.1	36.3	54

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)