

Band	Operating mode	Channel Number	Channel Freq. (MHz)	Conducted Output Power(dBm)	Limit (dBm)	Verdict
U-NII - 2A	802.11n-HT20	CH52	5260	14.82	21.5	Pass
		CH56	5280	14.36	21.5	Pass
		CH64	5320	14.48	21.5	Pass
	802.11ac(HT20)	CH52	5260	14.82	21.5	Pass
		CH56	5280	14.42	21.5	Pass
		CH64	5320	14.54	21.5	Pass
	802.11n-HT40	CH54	5270	14.82	21.5	Pass
		CH62	5310	14.47	21.5	Pass
	802.11ac(HT40)	CH54	5270	14.78	21.5	Pass
		CH62	5310	14.38	21.5	Pass
	802.11ac(HT80)	CH58	5290	14.67	21.5	Pass

Band	Operating mode	Channel Number	Channel Freq. (MHz)	Conducted Output Power(dBm)	Limit (dBm)	Verdict
U-NII - 2C	802.11n-HT20	CH100	5500	13.40	21.5	Pass
		CH116	5580	13.86	21.5	Pass
		CH140	5700	15.06	21.5	Pass
	802.11ac(HT20)	CH100	5500	13.42	21.5	Pass
		CH116	5580	13.90	21.5	Pass
		CH140	5700	15.13	21.5	Pass
	802.11n-HT40	CH102	5510	13.74	21.5	Pass
		CH134	5670	15.00	21.5	Pass
	802.11ac(HT40)	CH102	5510	13.73	21.5	Pass
		CH134	5670	14.98	21.5	Pass
	802.11ac(HT80)	CH106	5530	14.56	21.5	Pass

Band	Operating mode	Channel Number	Channel Freq. (MHz)	Conducted Output Power(dBm)	Limit (dBm)	Verdict
U-NII - 3	802.11n-HT20	CH149	5745	13.58	27.5	Pass
		CH157	5785	13.49	27.5	Pass
		CH165	5825	12.39	27.5	Pass
	802.11ac(HT20)	CH149	5745	13.66	27.5	Pass
		CH157	5785	13.54	27.5	Pass
		CH165	5825	12.43	27.5	Pass
	802.11n-HT40	CH151	5755	13.83	27.5	Pass
		CH159	5795	13.41	27.5	Pass
	802.11ac(HT40)	CH151	5755	13.86	27.5	Pass
		CH159	5795	13.43	27.5	Pass
	802.11ac(HT80)	CH155	5775	13.72	27.5	Pass

## 8.3 MAXIMUM PEAK POWER DENSITY

### 8.3.1 Applicable Standard

According to FCC Part 15.407(a)(1) for UNII Band I

According to FCC Part 15.407(a)(2) for UNII Band II-A and UNII Band II-C

According to FCC Part 15.407(a)(3) for UNII Band III

According to 789033 D02 Section II(F)

### 8.3.2 Conformance Limit

#### ■ For the band 5.15-5.25 GHz,

(a) (1) (i) For an outdoor 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. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(a) (1) (ii) 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.

(a) (1) (iii) For fixed point-to-point access points 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. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

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

#### ■ For the 5.25-5.35 GHz and 5.47-5.725 GHz bands

(b) (2) The maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### ■ For the band 5.725-5.85 GHz

(a) (3) 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 power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

### 8.3.3 Test Configuration

Test according to clause 6.1 radio frequency test setup

### 8.3.4 Test Procedure

Methods refer to FCC KDB 789033

For devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz, the above procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in § 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 MHz, or 500 kHz, “provided that the measured power is integrated over the full reference bandwidth” to show the total power over the specified measurement bandwidth (i.e., 1 MHz, or 500 kHz). If measurements are performed using a reduced resolution bandwidth (< 1 MHz, or < 500 kHz) and integrated over 1 MHz, or 500 KHz bandwidth, the following adjustments to the procedures apply:

- a) Set RBW  $\geq 1/T$ , where T is defined in section II.B.I.a).
- b) Set VBW  $\geq 3$  RBW.
- c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add  $10\log(500\text{kHz}/\text{RBW})$  to the measured result, whereas RBW (< 500 KHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
- d) If measurement bandwidth of Maximum PSD is specified in 1 MHz, add  $10\log(1\text{MHz}/\text{RBW})$  to the measured result, whereas RBW (< 1 MHz) is the reduced resolution bandwidth of spectrum analyzer set during measurement.
- e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

Note: As a practical matter, it is recommended to use reduced RBW of 100 KHz for the sections

5.c) and 5.d) above, since RBW=100 KHZ is available on nearly all spectrum analyzers.

### 8.3.5 Test Results

#### For 1T1R-Antenna 1

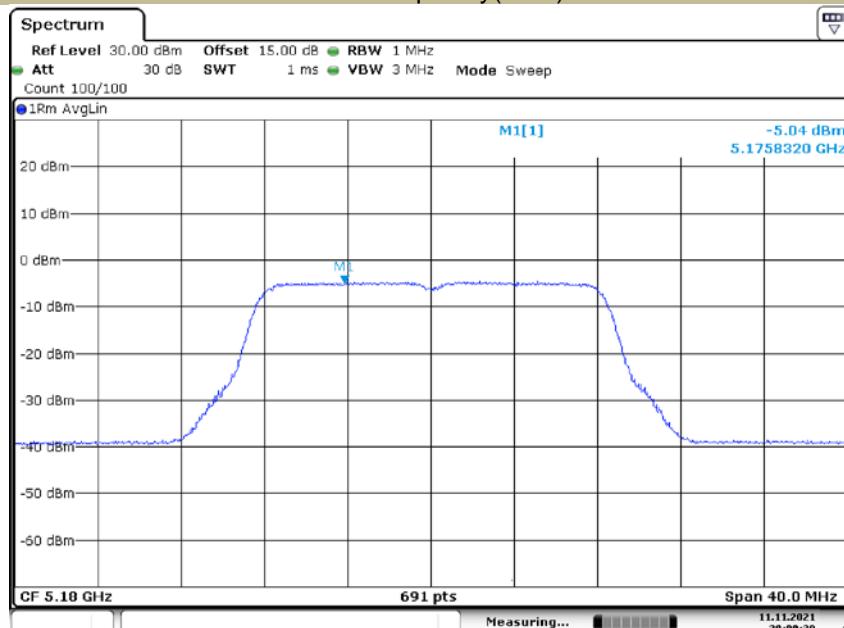
5150-5250MHz

Operating mode	Test Channel	Power Spectral Density dBm/MHz	Limit (dBm/MHz)
802.11a	5180	-5.04	11
	5200	-5.26	11
	5240	-6.08	11
802.11n-HT20	5180	-5.63	11
	5200	-5.85	11
	5240	-6.45	11
802.11ac(HT20)	5180	-5.67	11
	5200	-5.95	11
	5240	-6.18	11
802.11n-HT40	5190	-8.85	11
	5230	-9.15	11
802.11ac(HT40)	5190	-8.39	11
	5230	-9.52	11
802.11ac(HT80)	5210	-13.38	11

Power Spectral Density  
Test Model 802.11a

U-NII - 1  
Frequency(MHz)

5180



Date: 11.NOV.2021 20:00:39

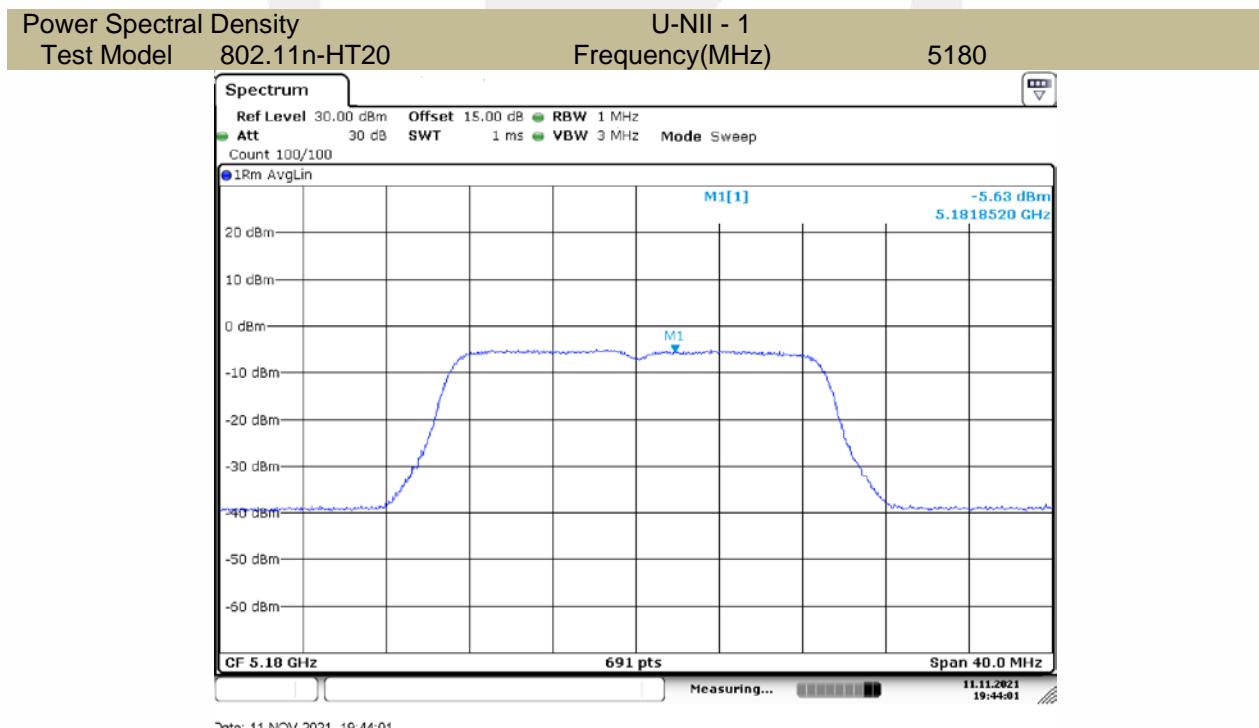
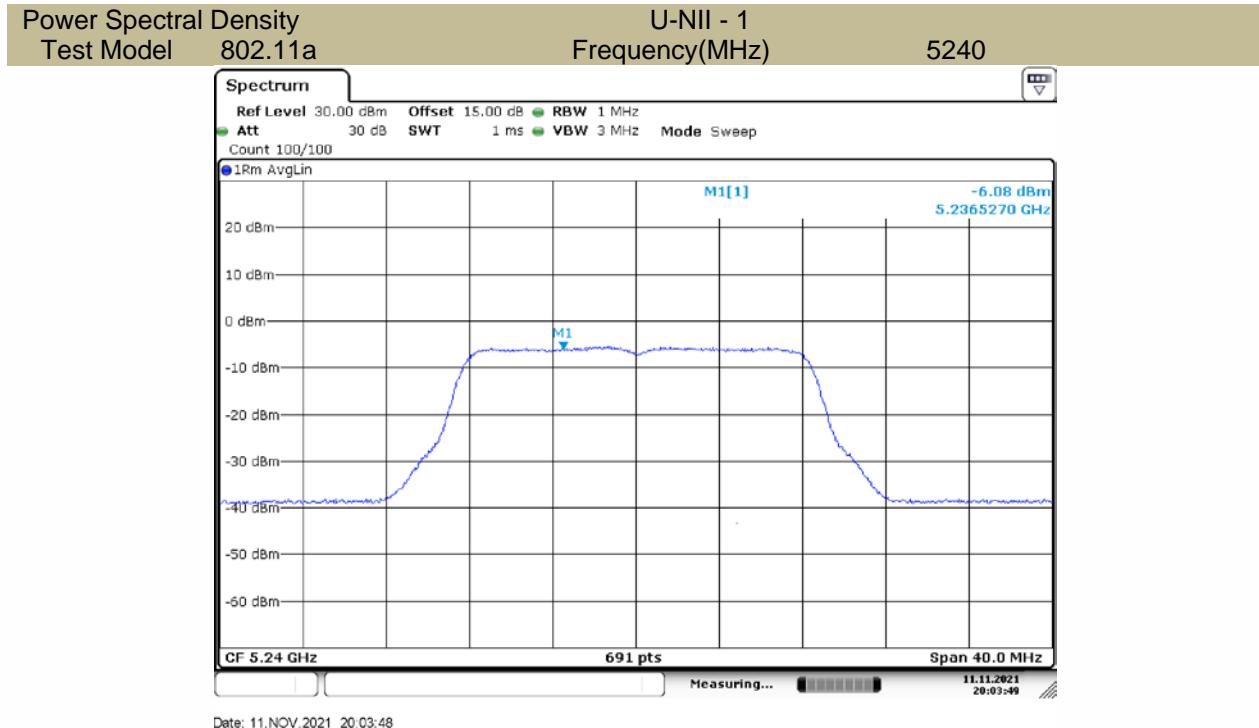
Power Spectral Density  
Test Model 802.11a

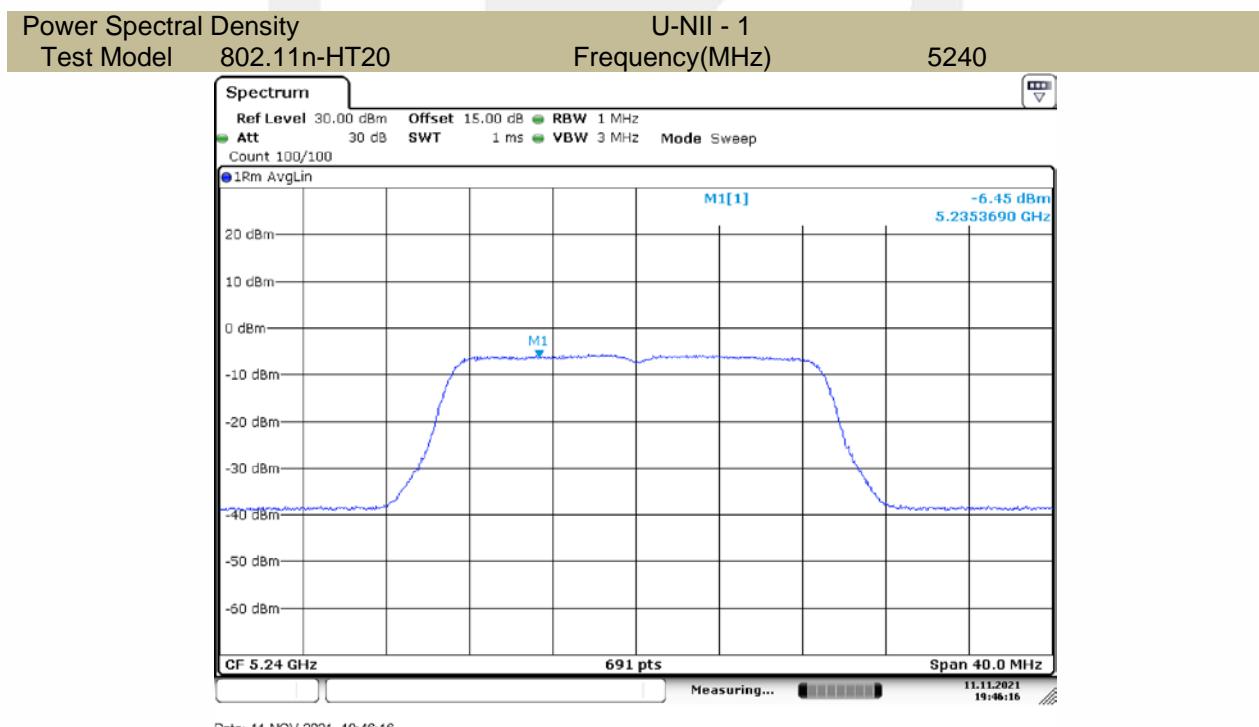
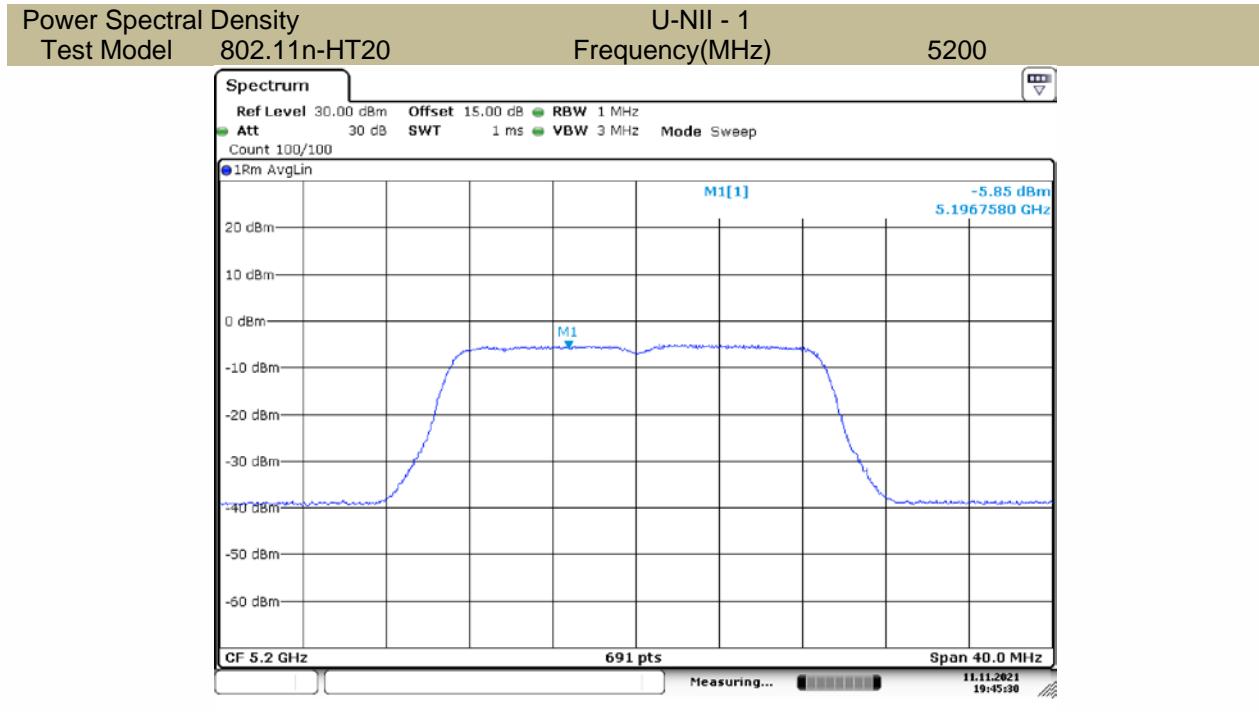
U-NII - 1  
Frequency(MHz)

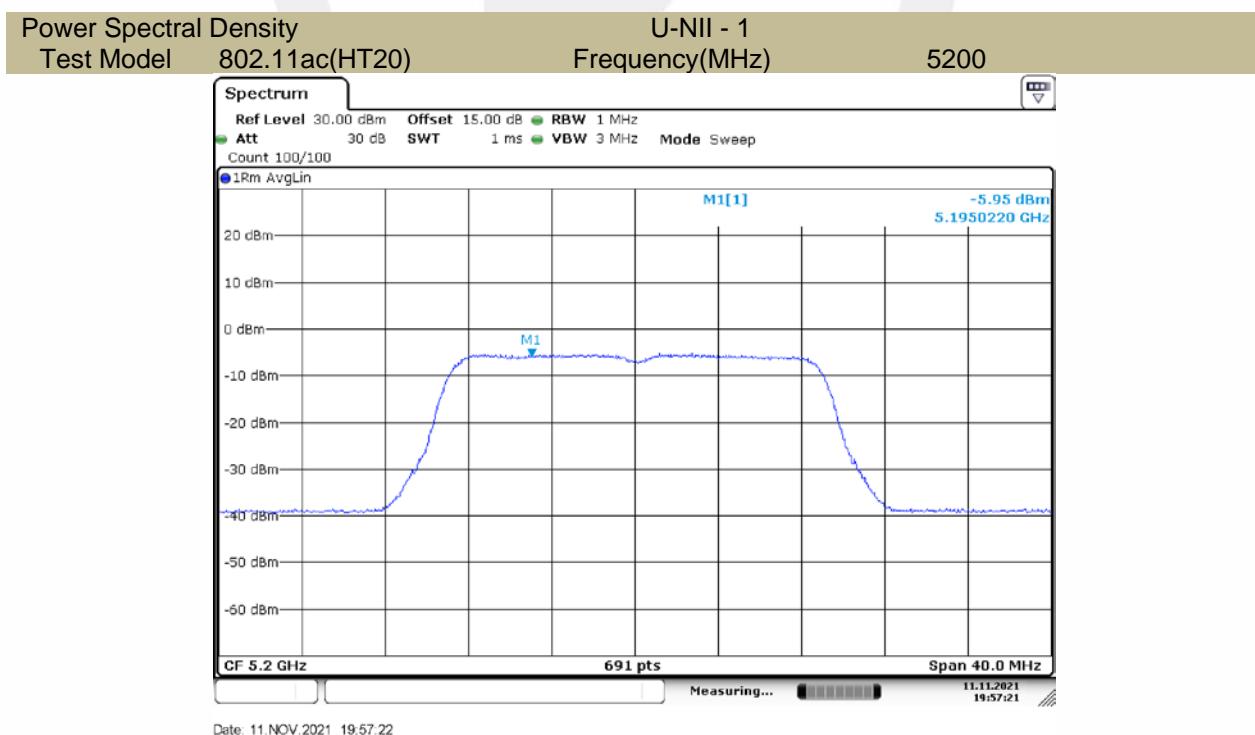
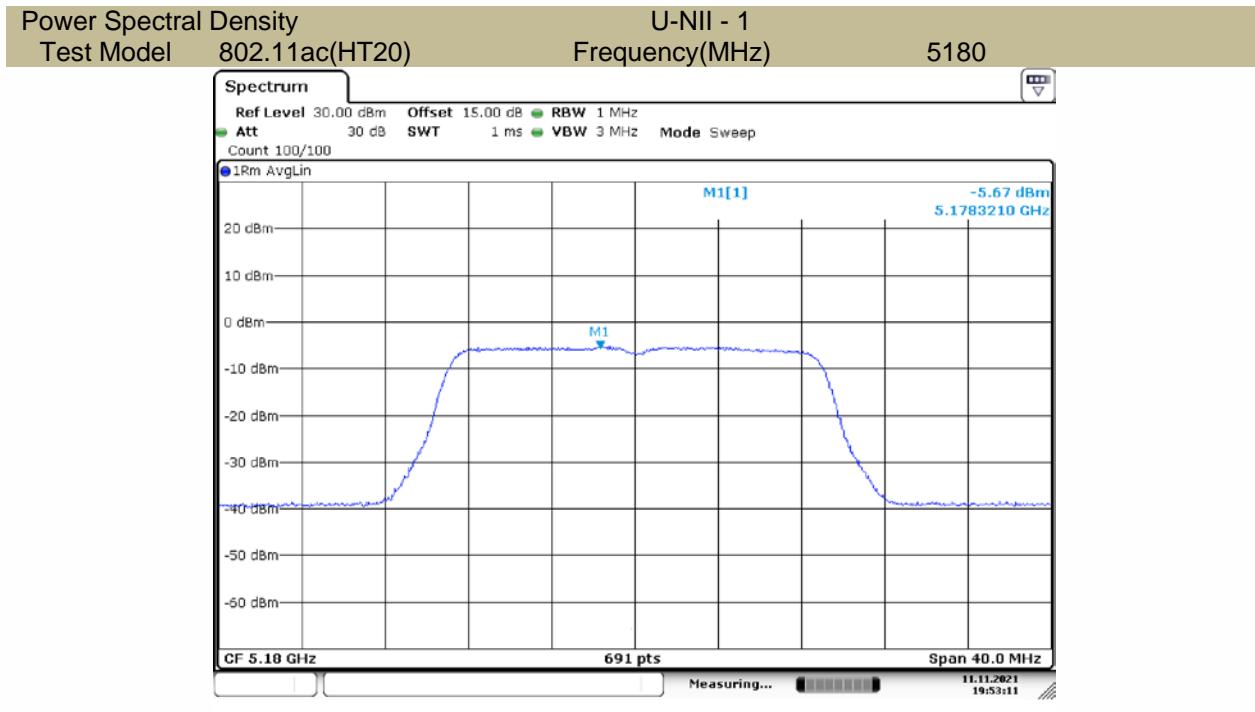
5200

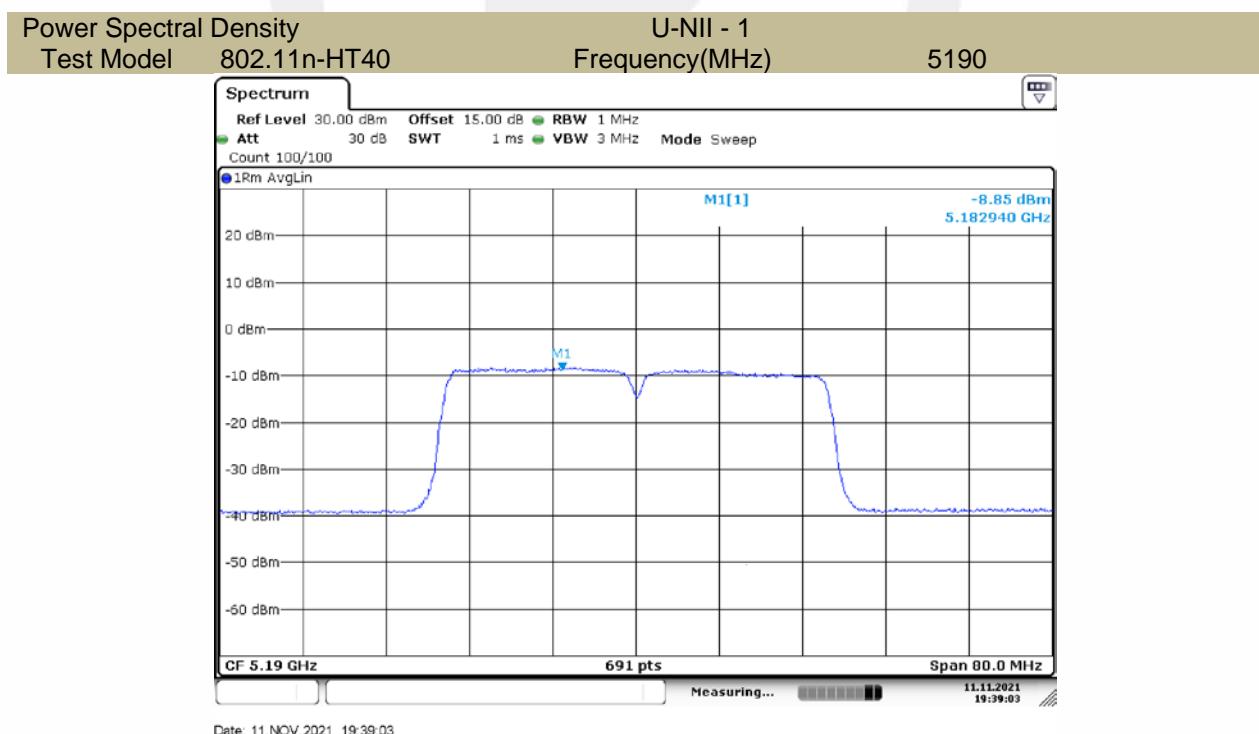
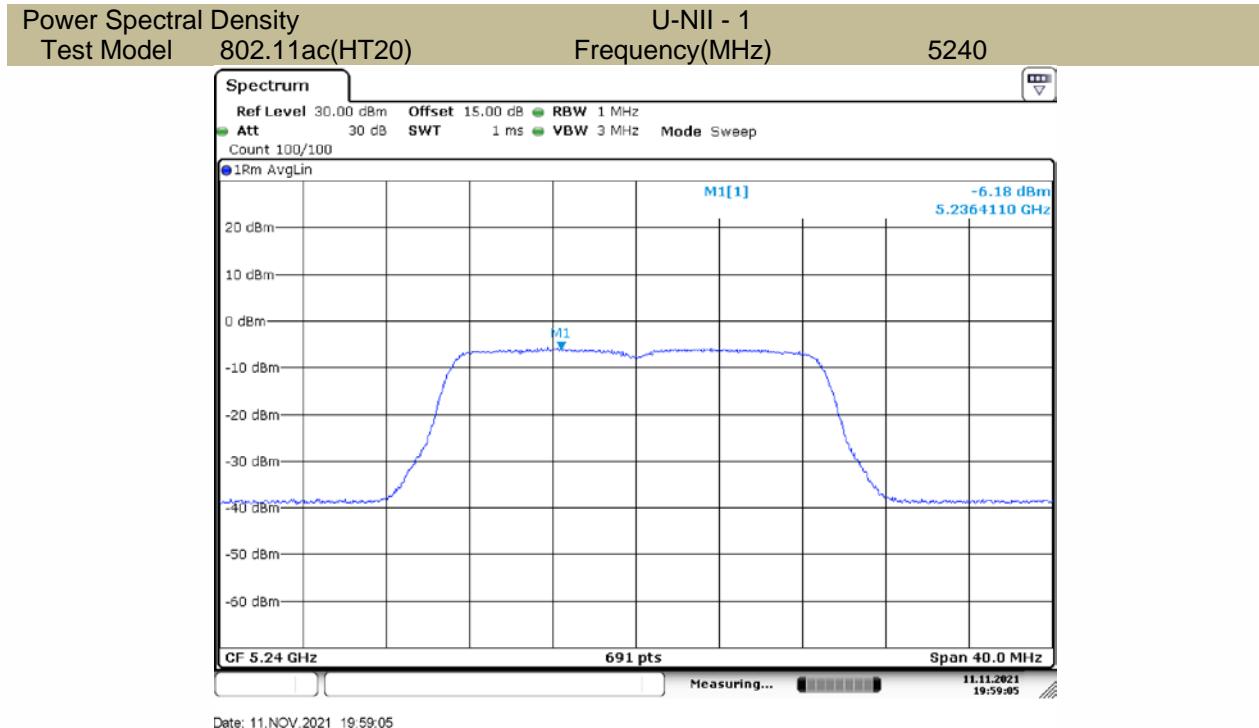


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Power Spectral Density  
Test Model 802.11n-HT40

U-NII - 1  
Frequency(MHz)

5230

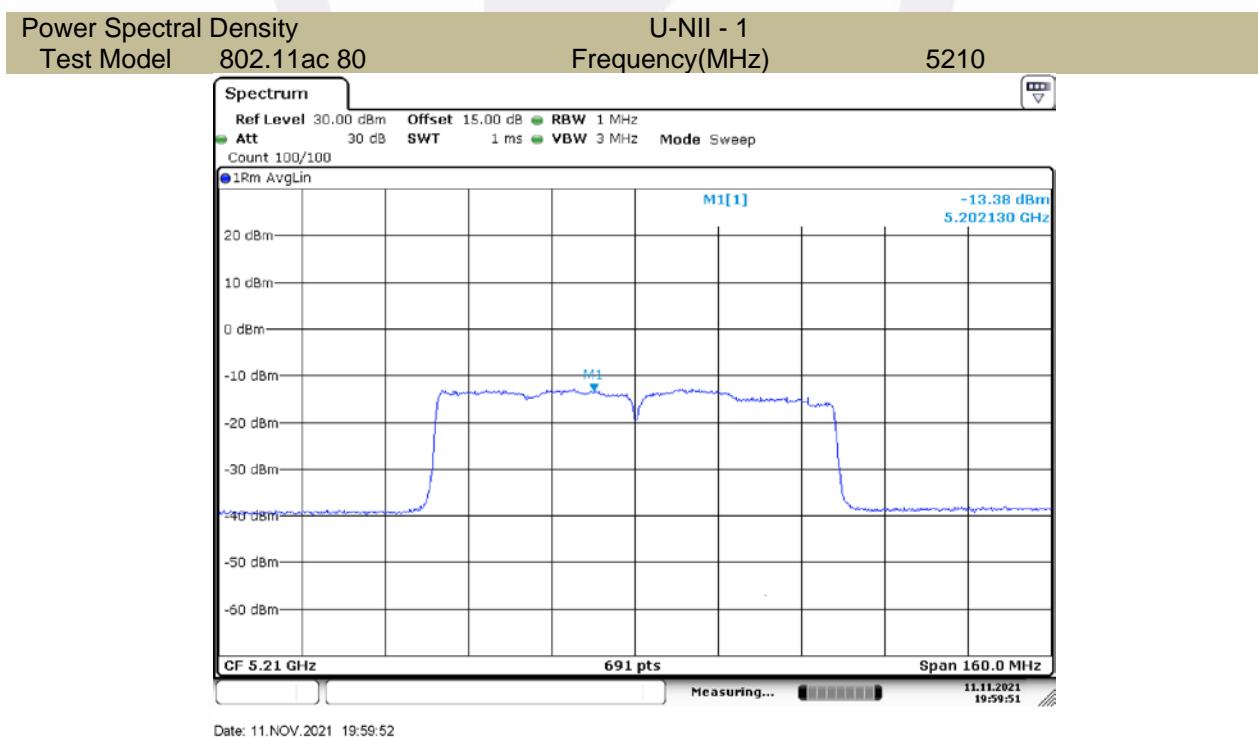
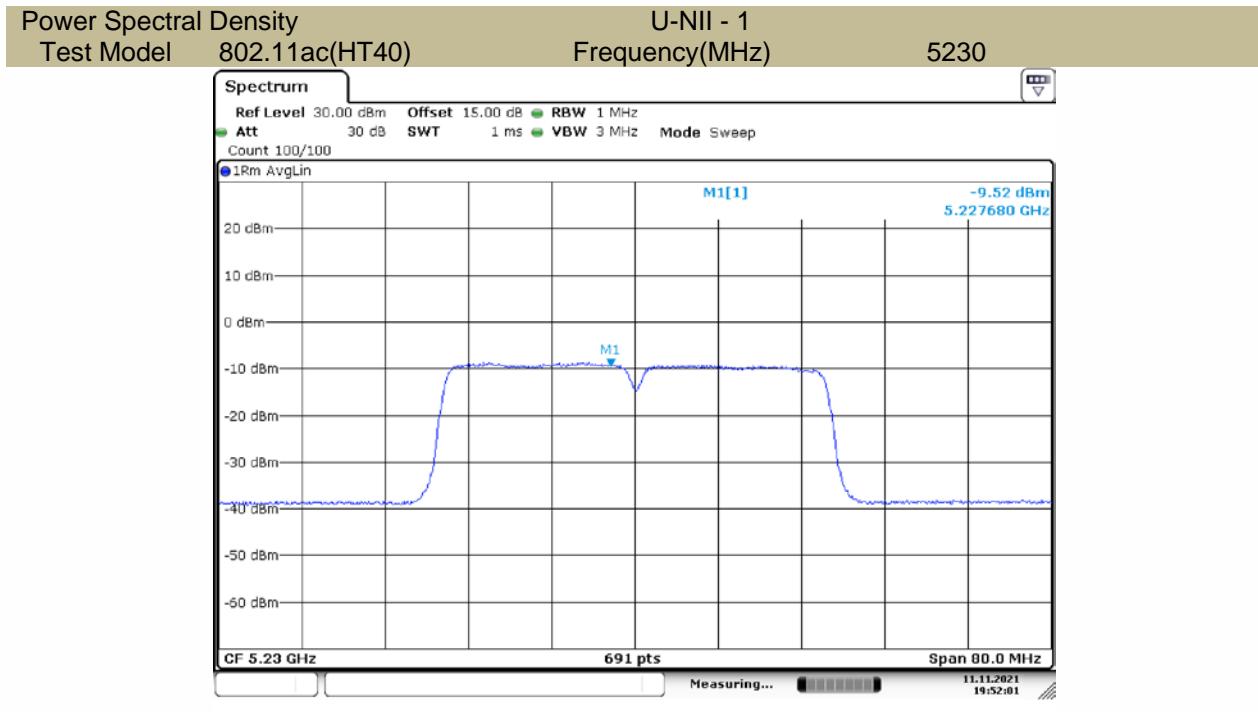


Power Spectral Density  
Test Model 802.11ac(HT40)

U-NII - 1  
Frequency(MHz)

5190



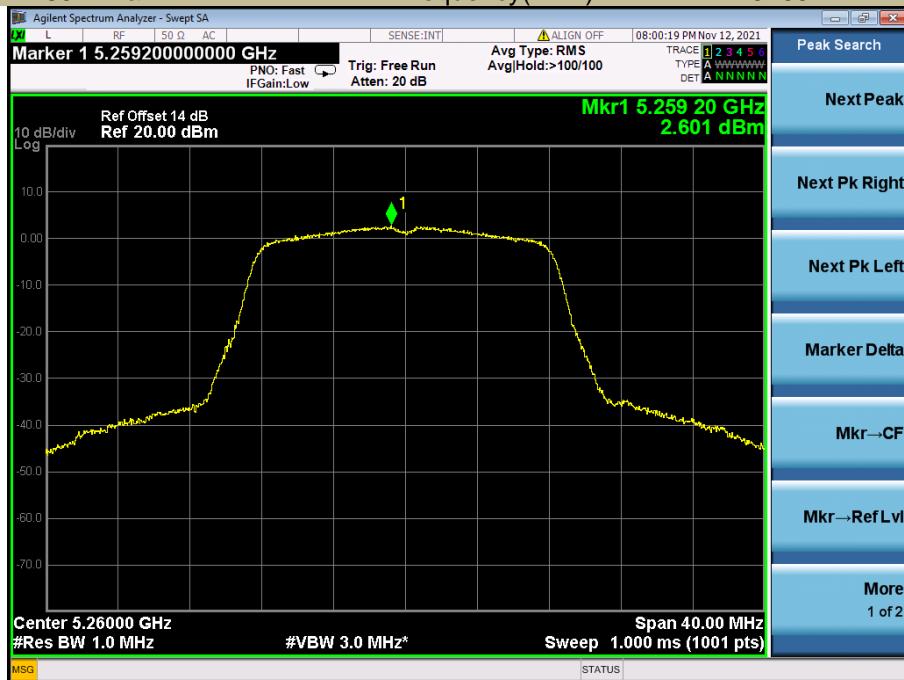


## 5250-5350MHz

Operating mode	Test Channel	Power Spectral Density dBm/MHz	Limit (dBm/MHz)
802.11a	5260	2.60	11
	5280	2.45	11
	5320	2.71	11
802.11n-HT20	5260	1.29	11
	5280	0.91	11
	5320	1.17	11
802.11ac(HT20)	5260	1.27	11
	5280	0.88	11
	5320	1.40	11
802.11n-HT40	5270	-1.68	11
	5310	-1.92	11
802.11ac(HT40)	5270	-1.93	11
	5310	-2.20	11
802.11ac(HT80)	5290	-4.96	11

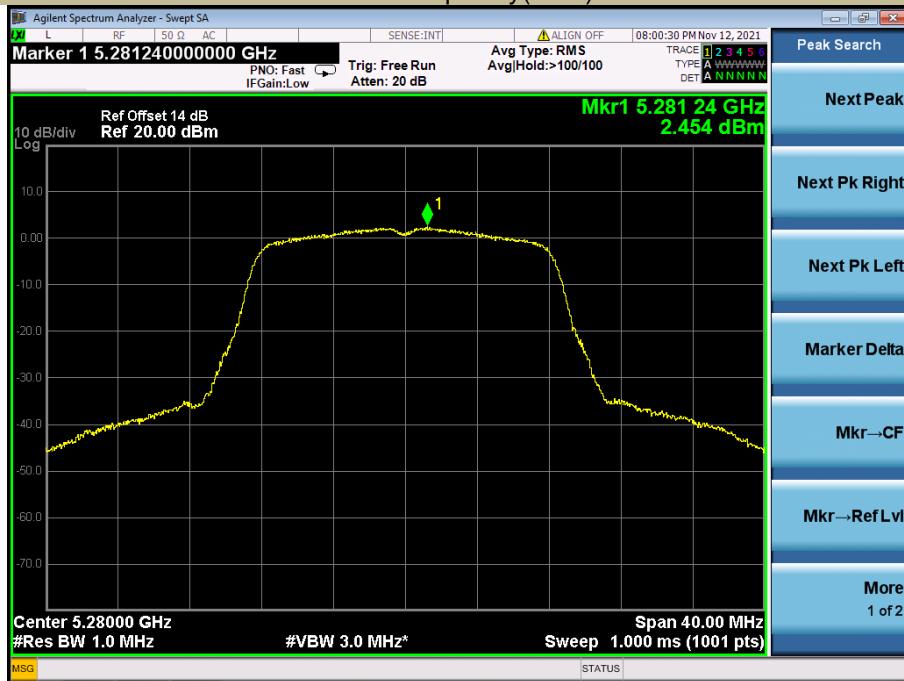
Power Spectral Density  
Test Model 802.11a

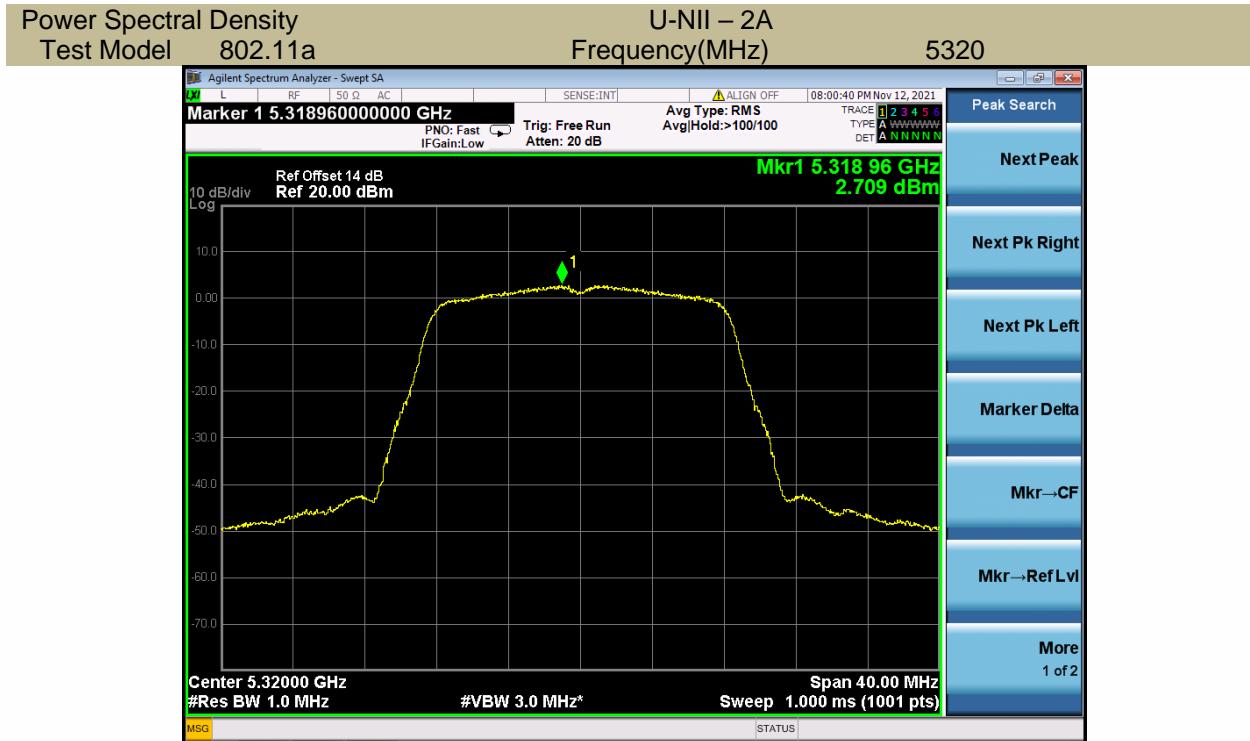
U-NII – 2A  
Frequency(MHz) 5260

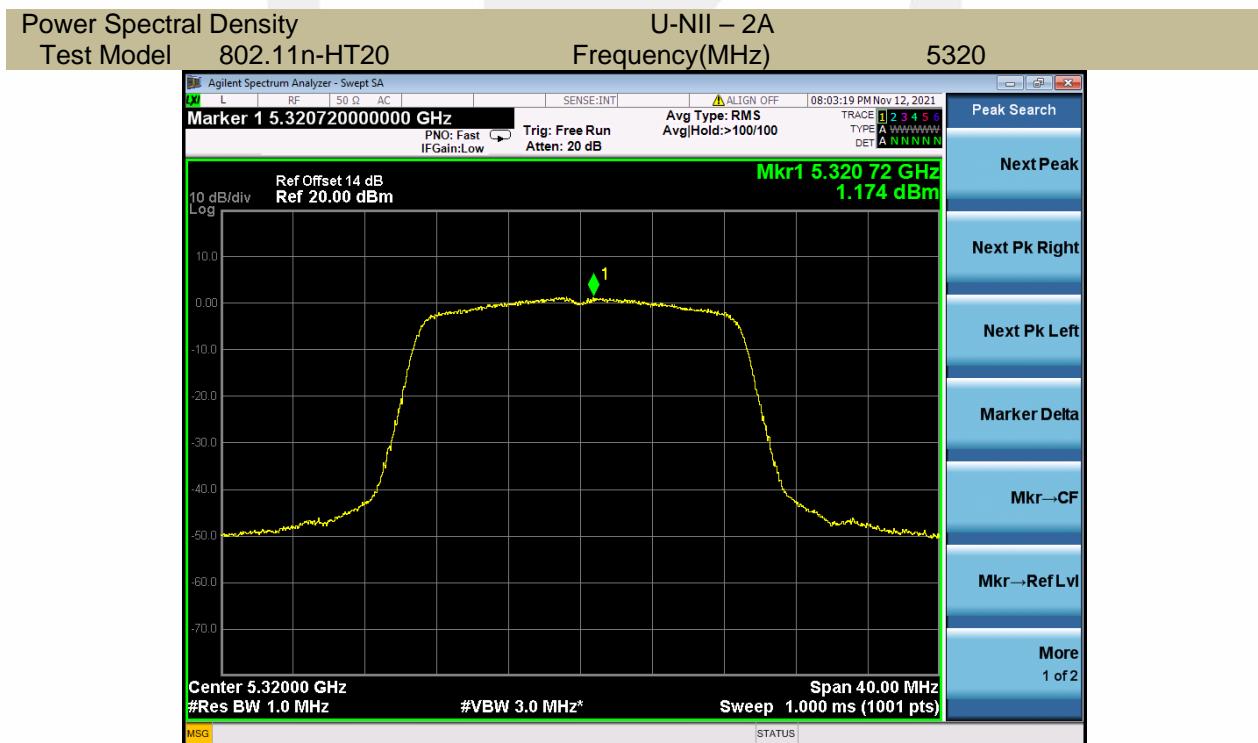
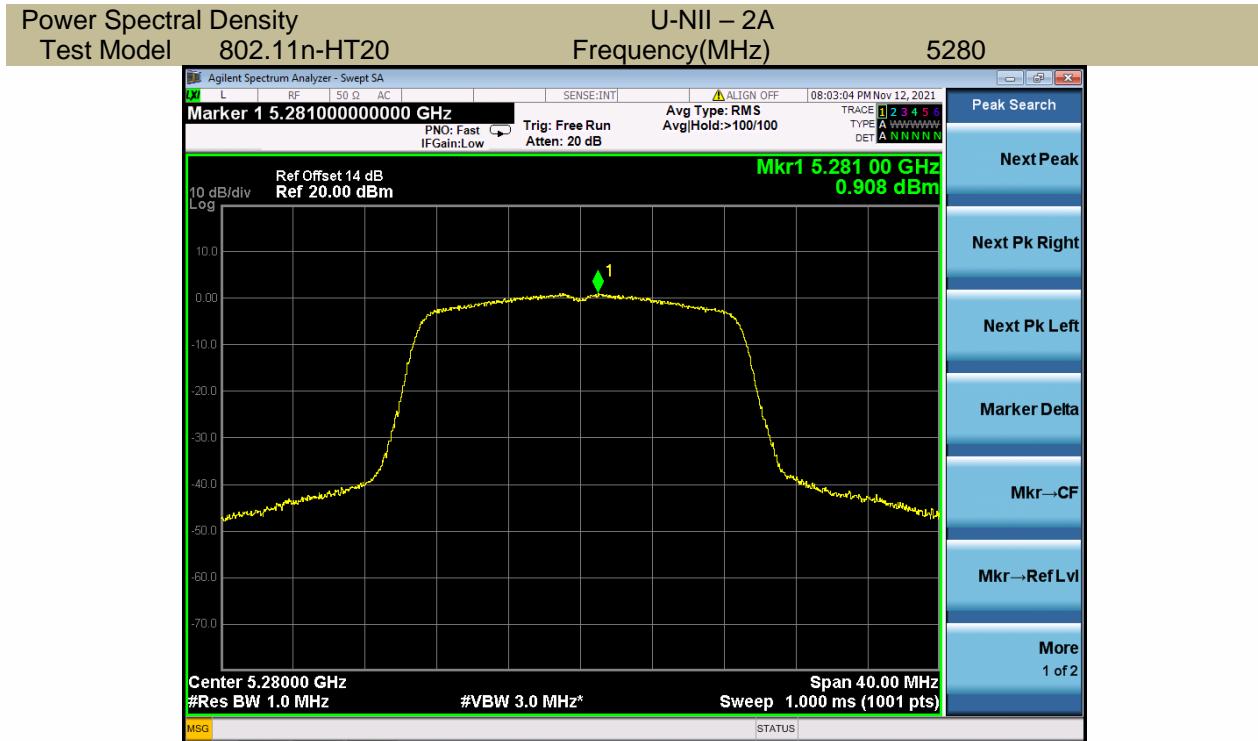


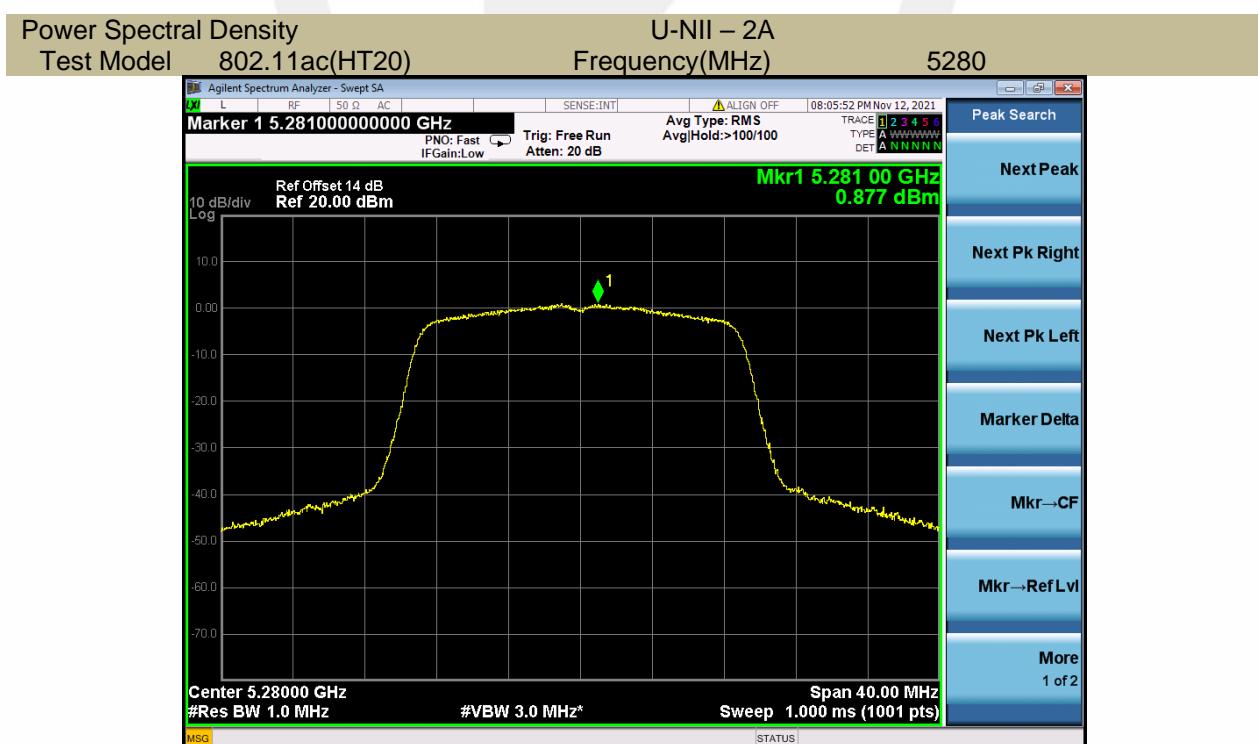
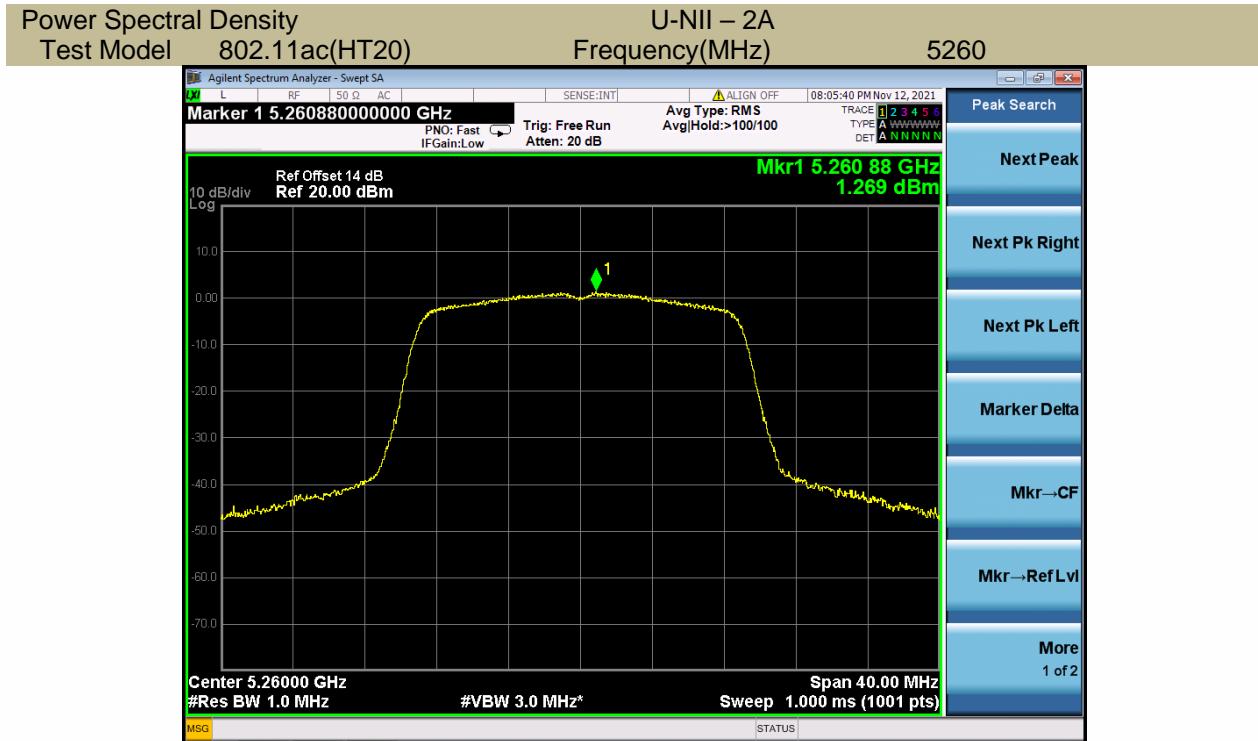
Power Spectral Density  
Test Model 802.11a

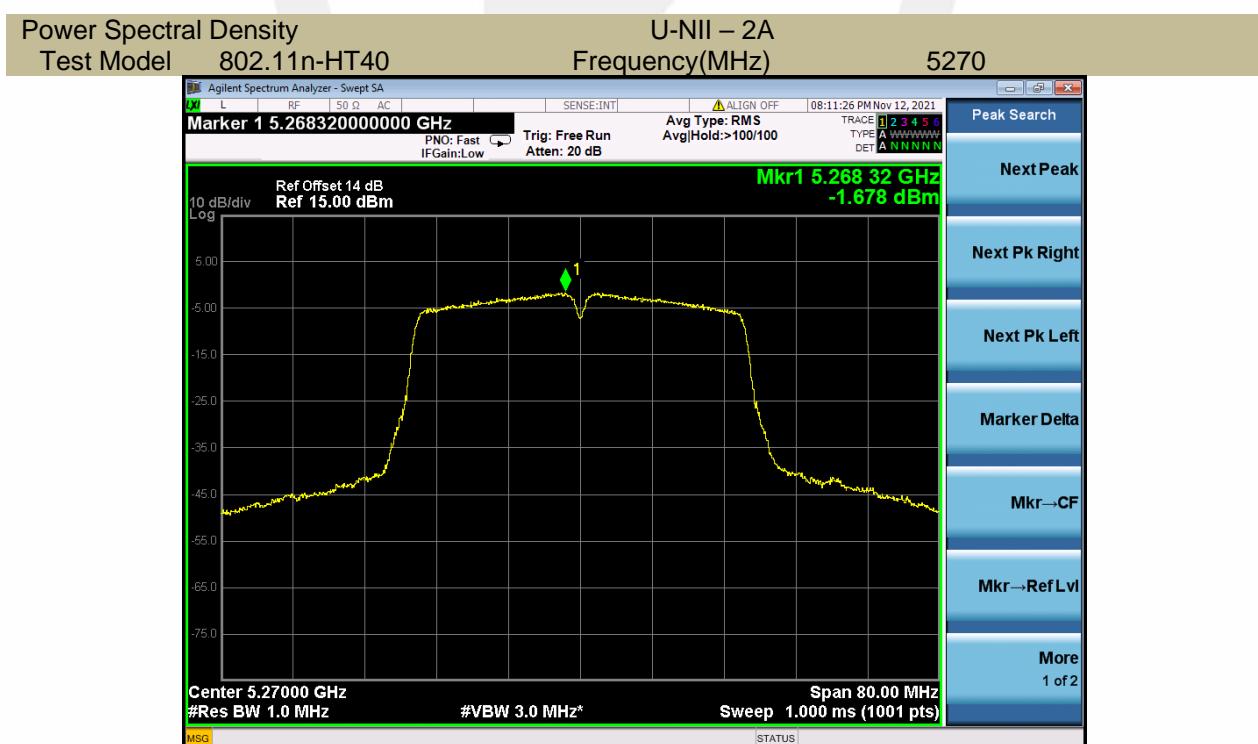
U-NII – 2A  
Frequency(MHz) 5280







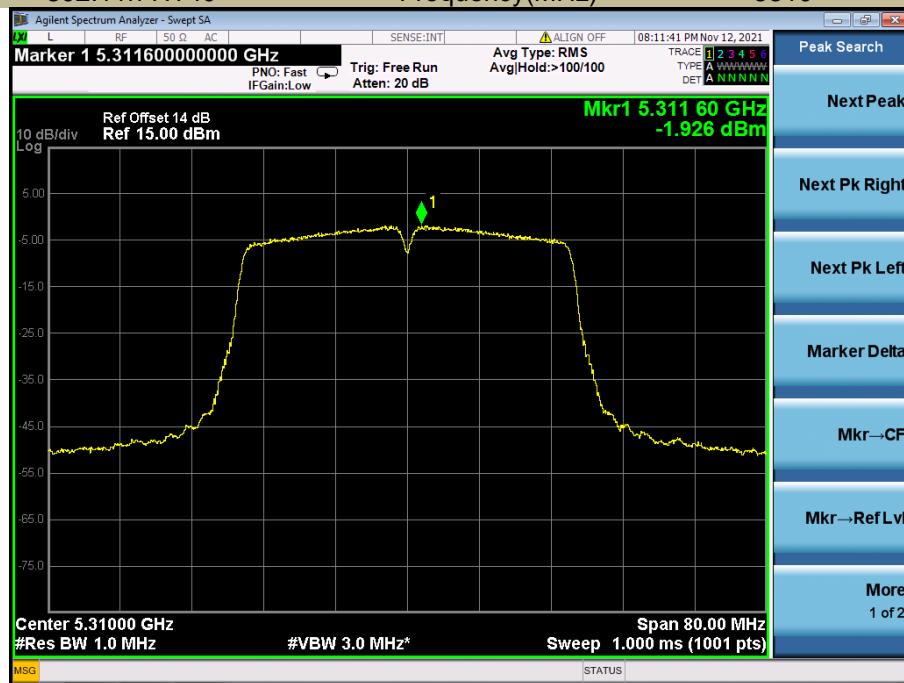




Power Spectral Density  
Test Model 802.11n-HT40

U-NII – 2A  
Frequency(MHz)

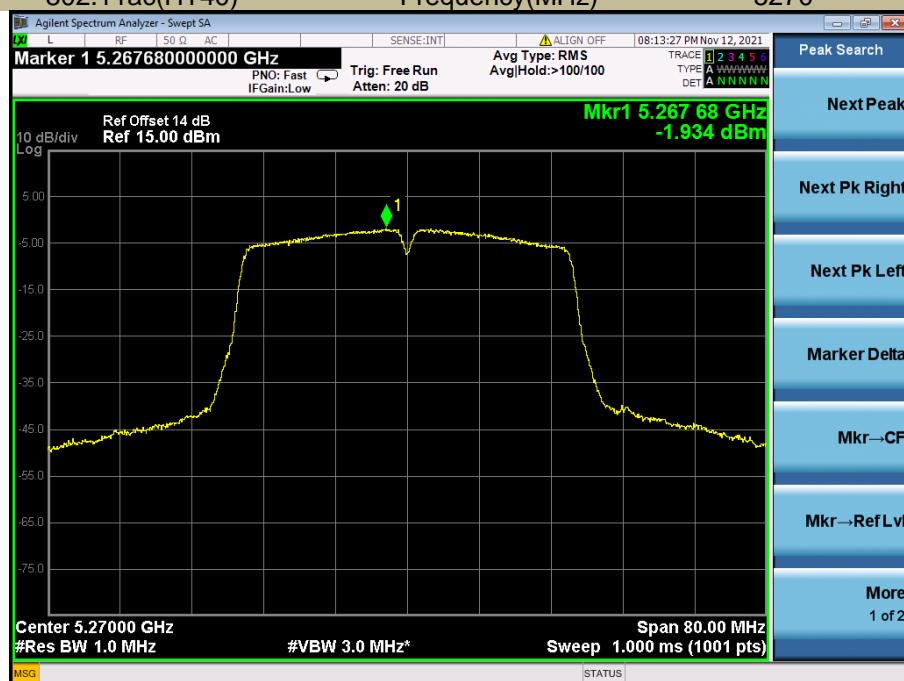
5310



Power Spectral Density  
Test Model 802.11ac(HT40)

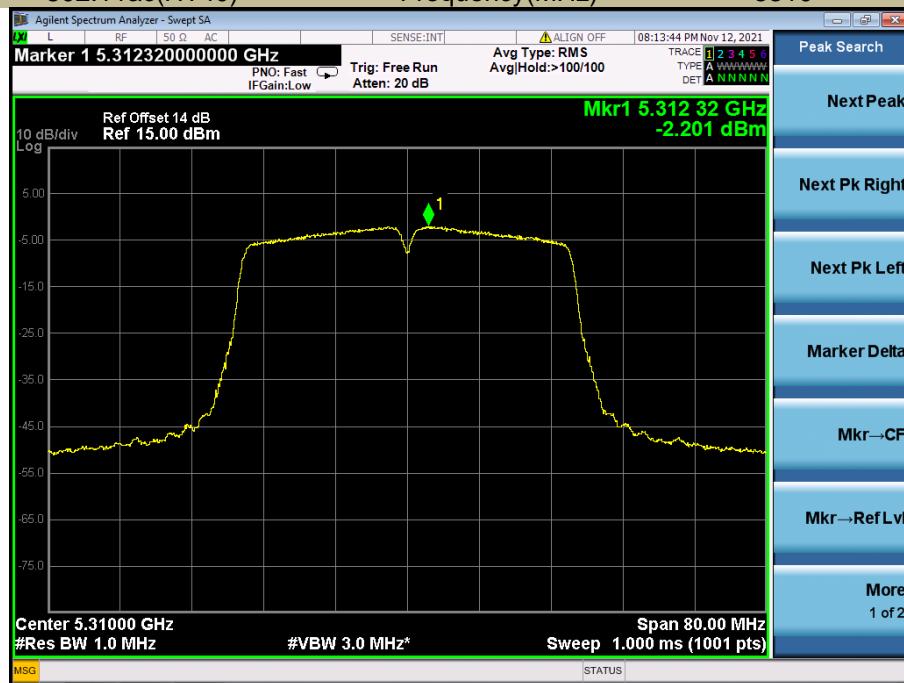
U-NII – 2A  
Frequency(MHz)

5270



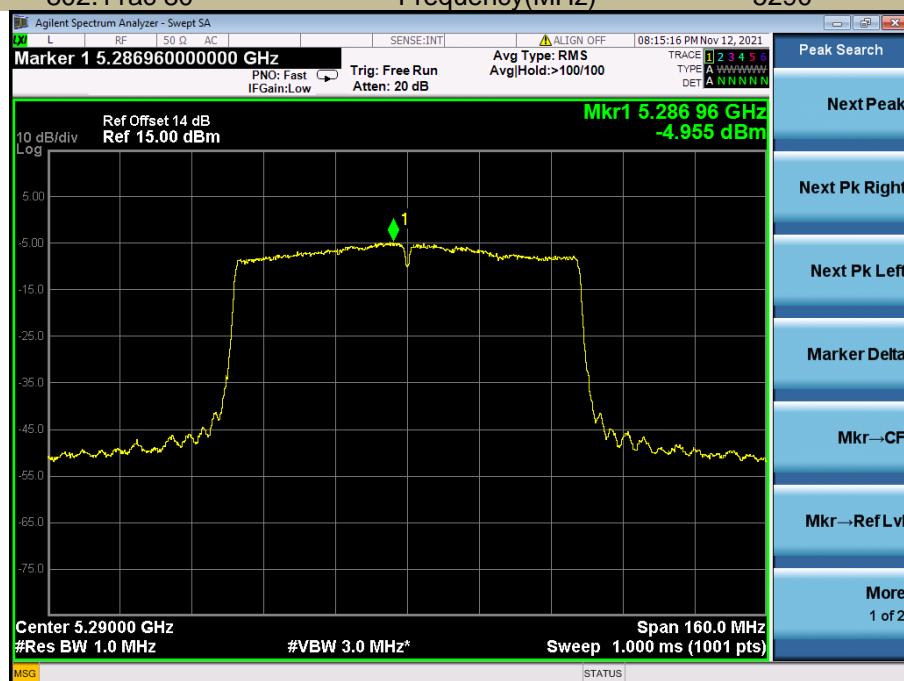
Power Spectral Density  
Test Model 802.11ac(HT40)

U-NII – 2A  
Frequency(MHz) 5310



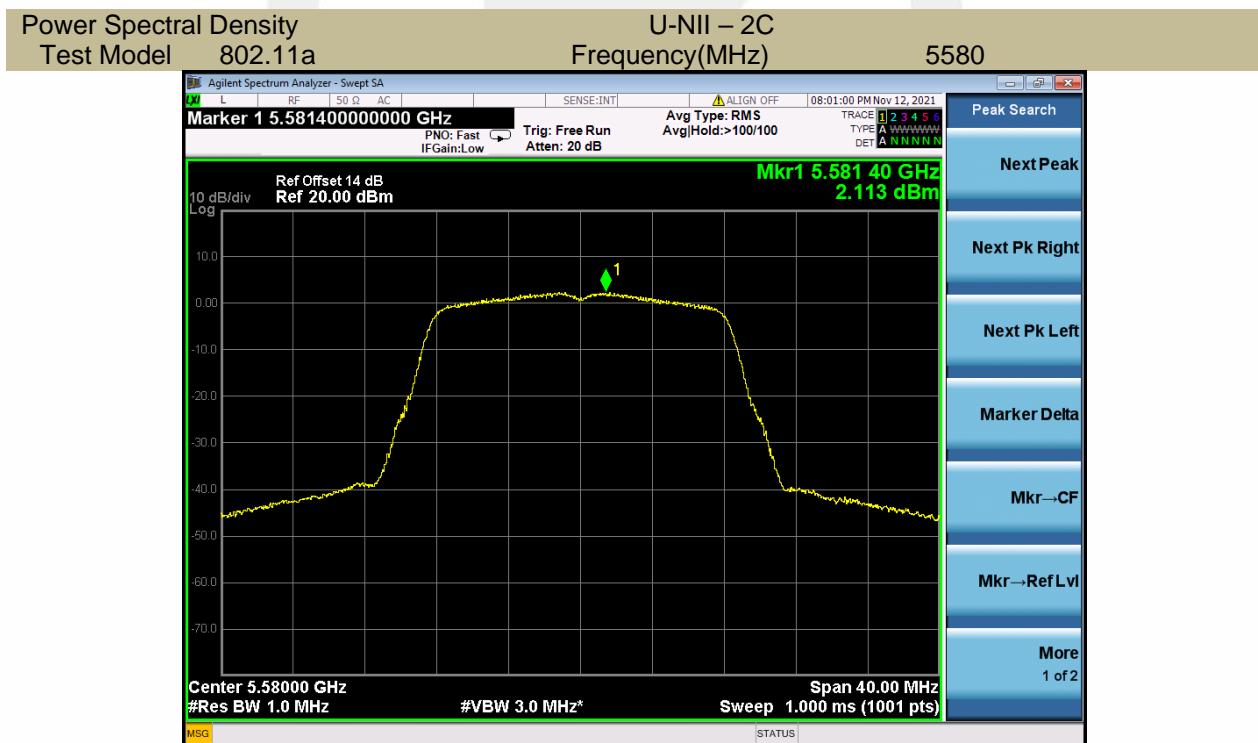
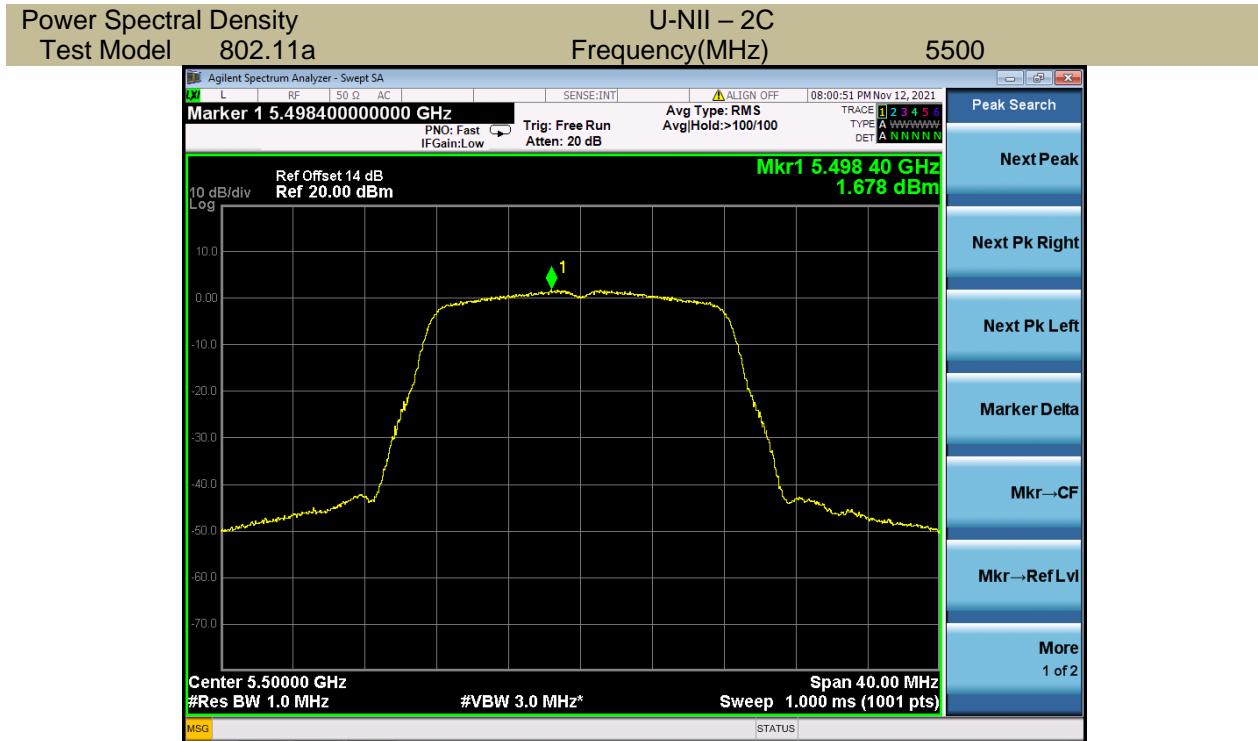
Power Spectral Density  
Test Model 802.11ac 80

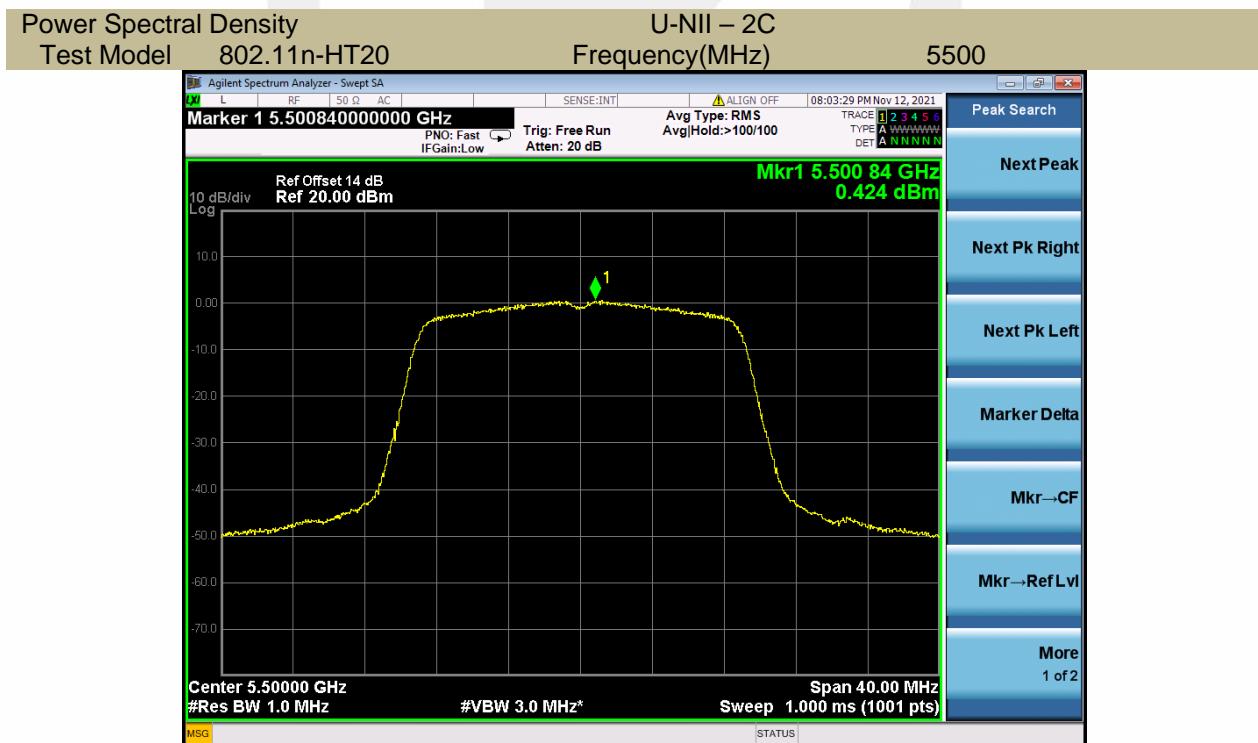
U-NII – 2A  
Frequency(MHz) 5290

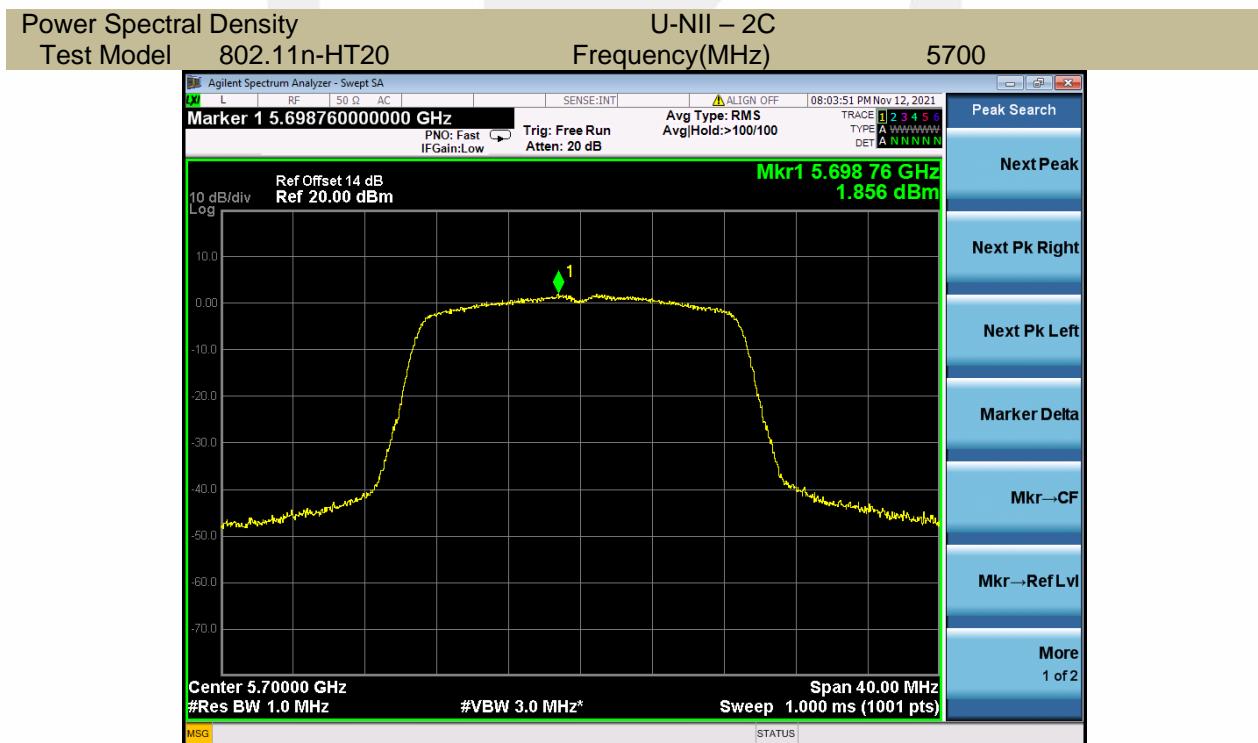
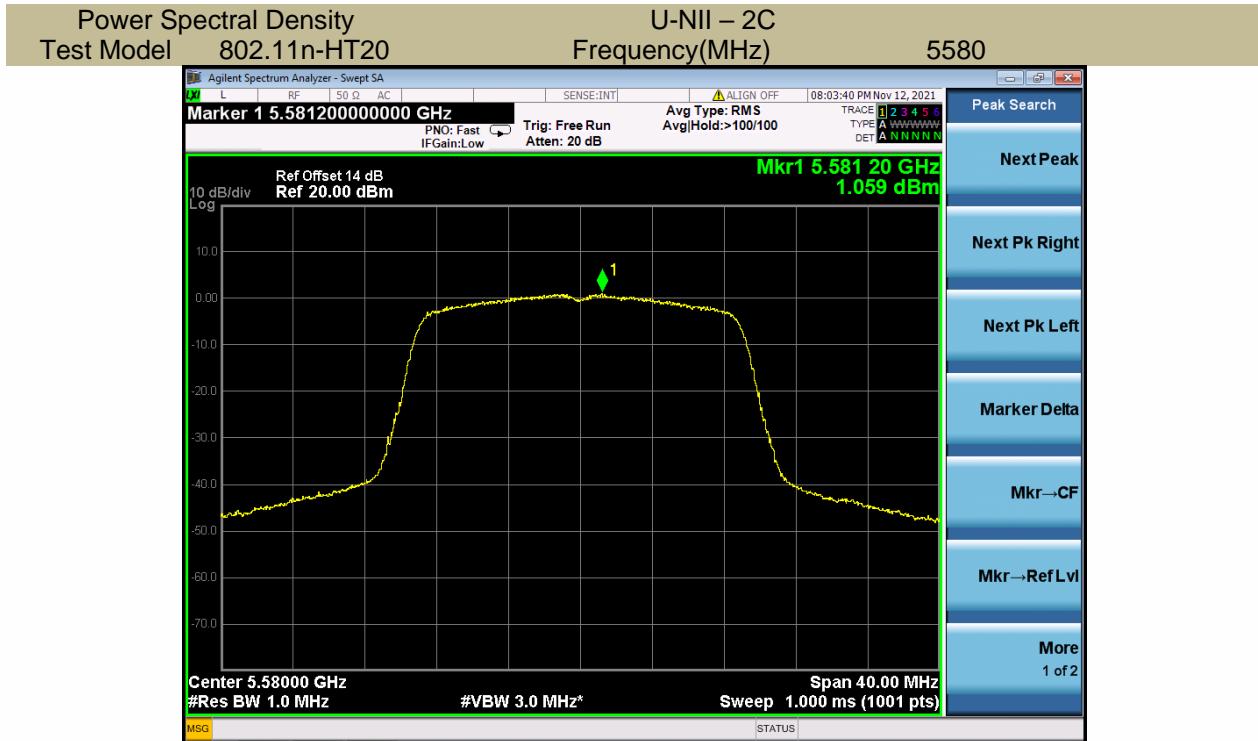


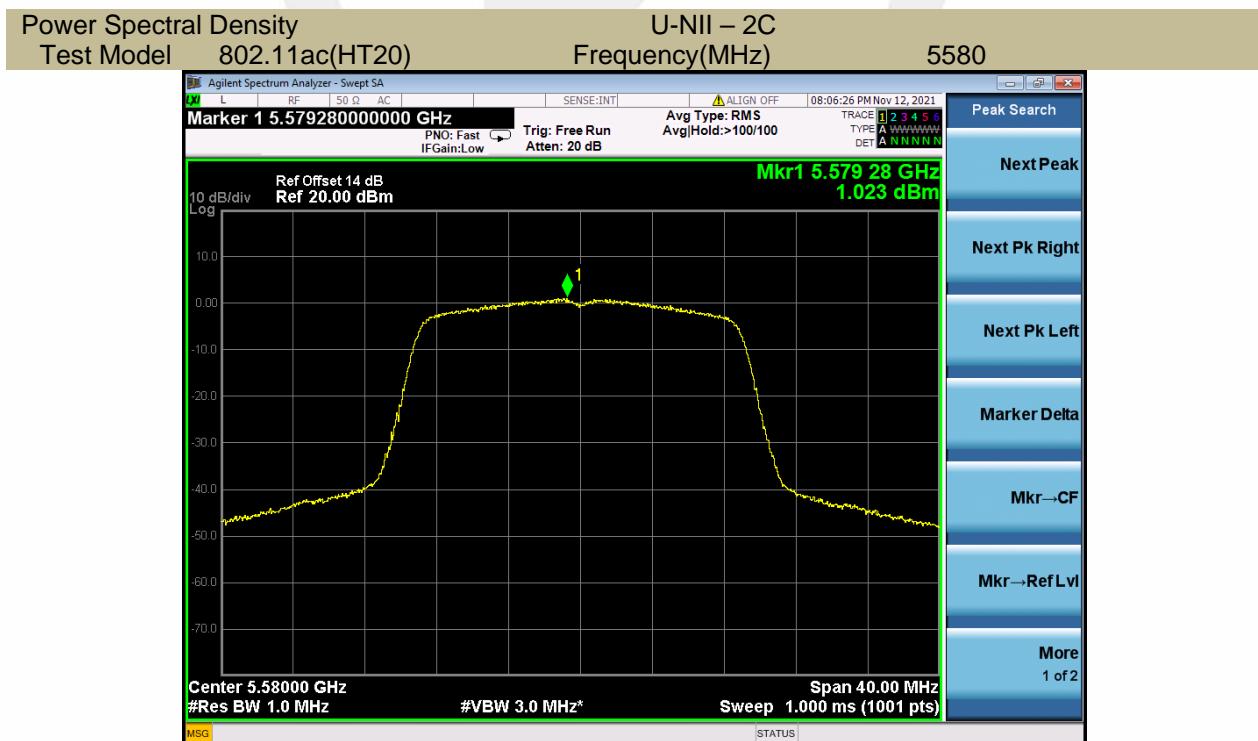
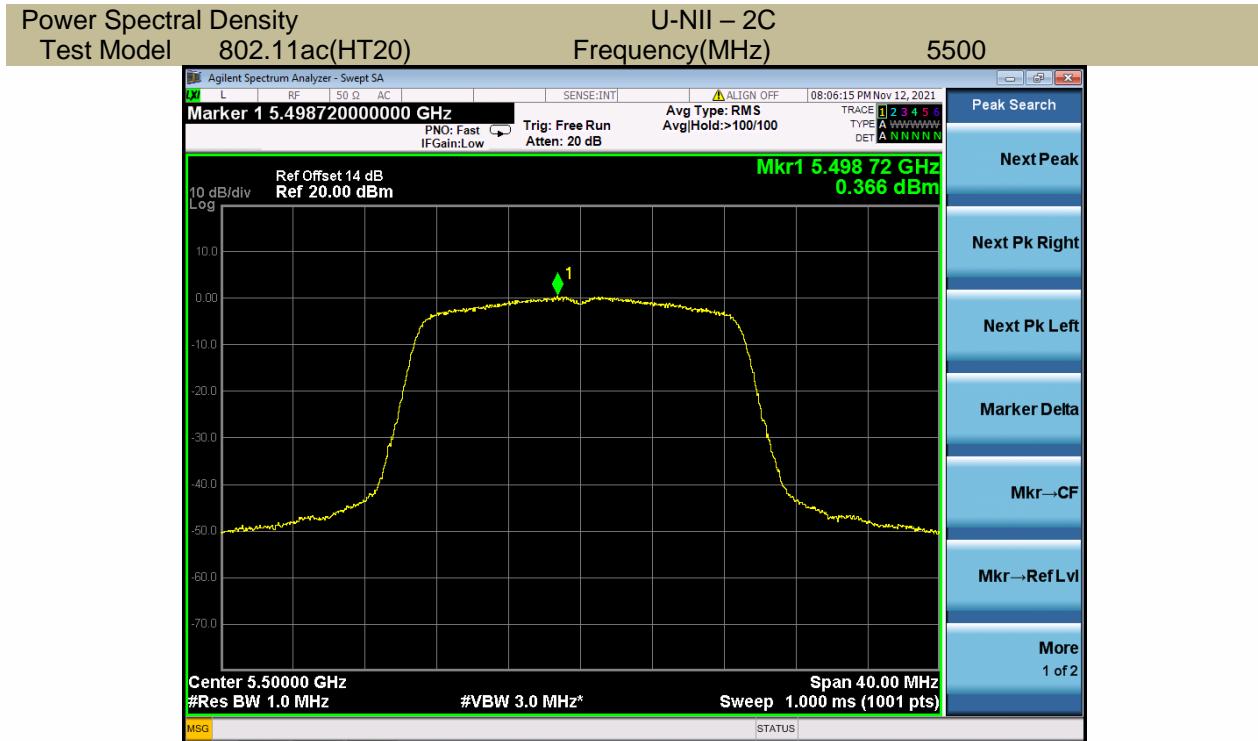
## 5470-5725MHz

Operating mode	Test Channel	Power Spectral Density dBm/MHz	Limit (dBm/MHz)
802.11a	5500	1.68	11
	5580	2.11	11
	5700	3.27	11
802.11n-HT20	5500	0.42	11
	5580	1.06	11
	5700	1.86	11
802.11ac(HT20)	5500	0.37	11
	5580	1.02	11
	5700	1.90	11
802.11n-HT40	5510	-2.45	11
	5670	-1.21	11
802.11ac(HT40)	5510	-2.26	11
	5670	-1.04	11
802.11ac(HT80)	5530	-4.67	11



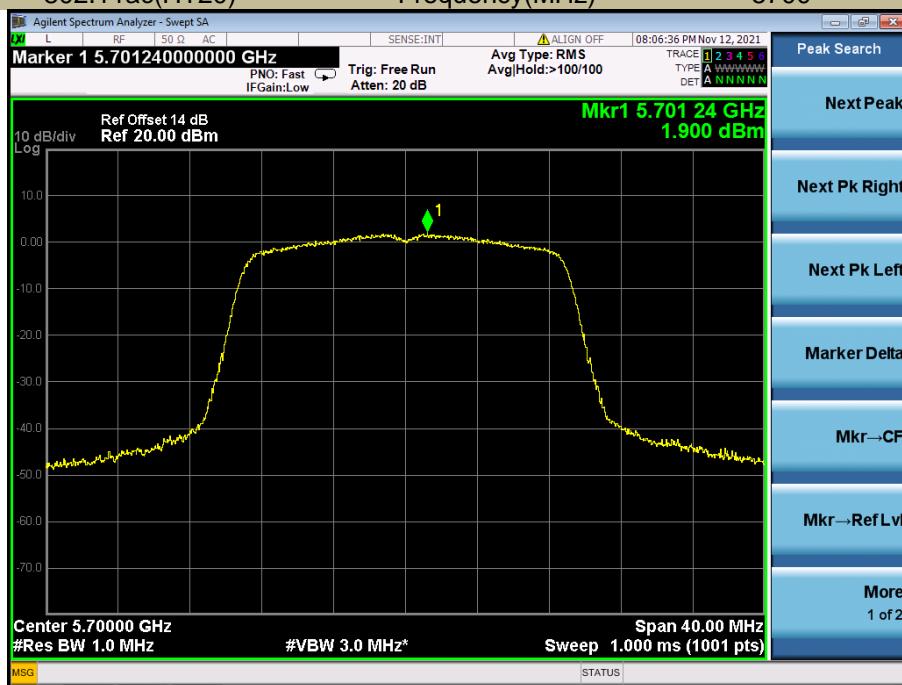






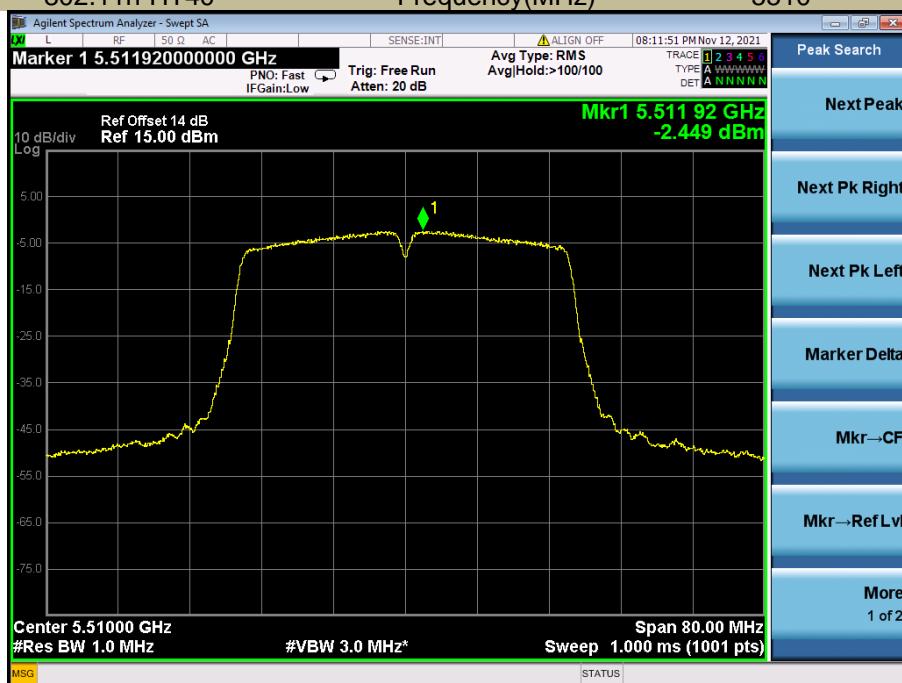
Power Spectral Density  
Test Model 802.11ac(HT20)

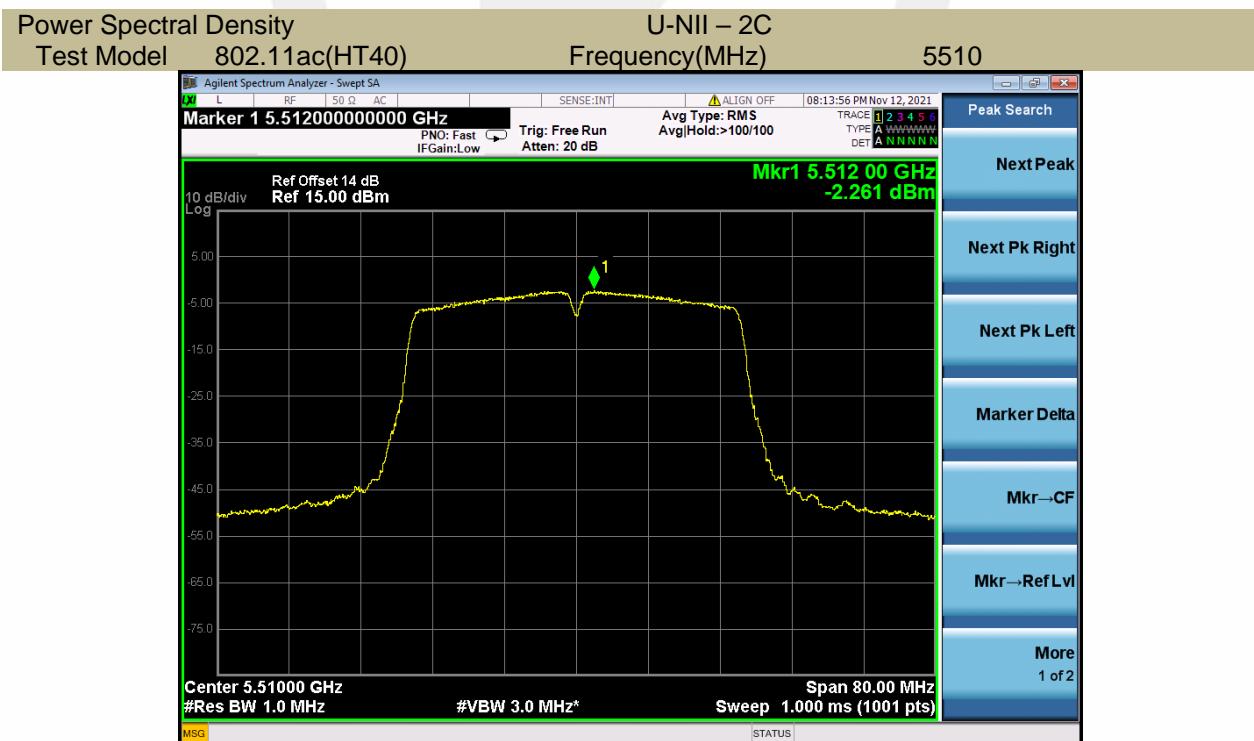
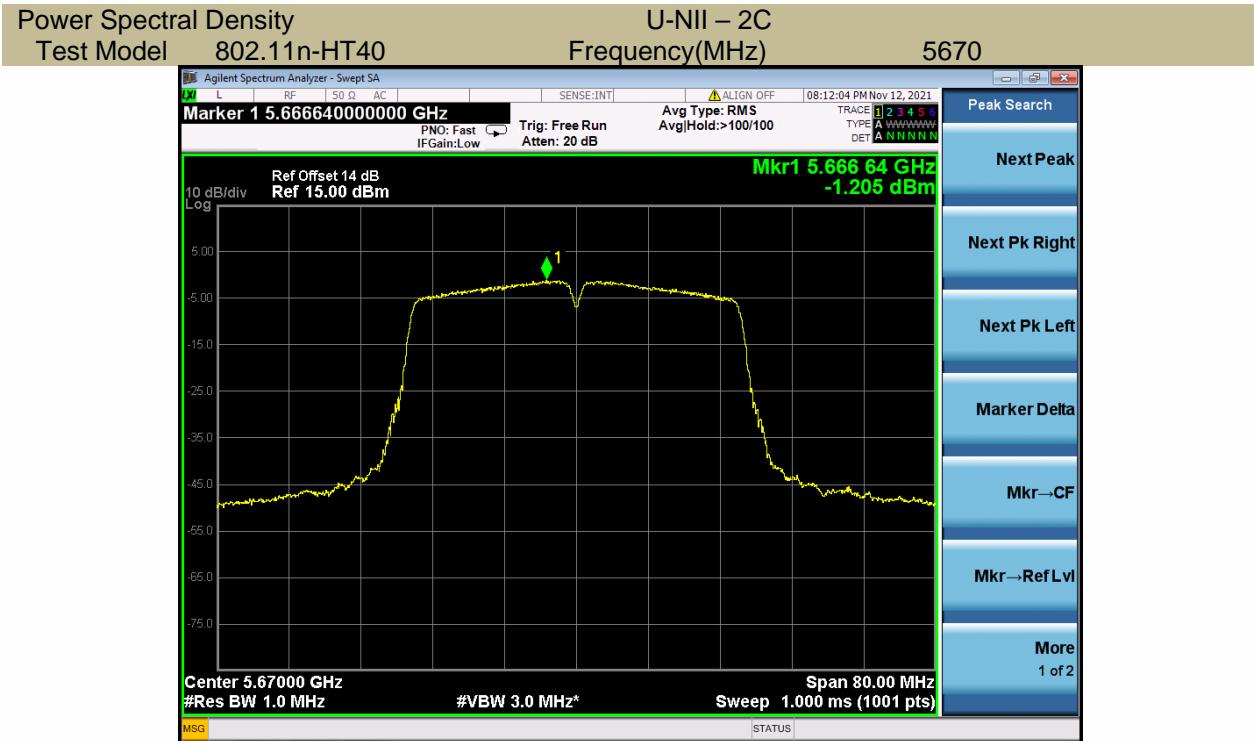
U-NII – 2C  
Frequency(MHz) 5700

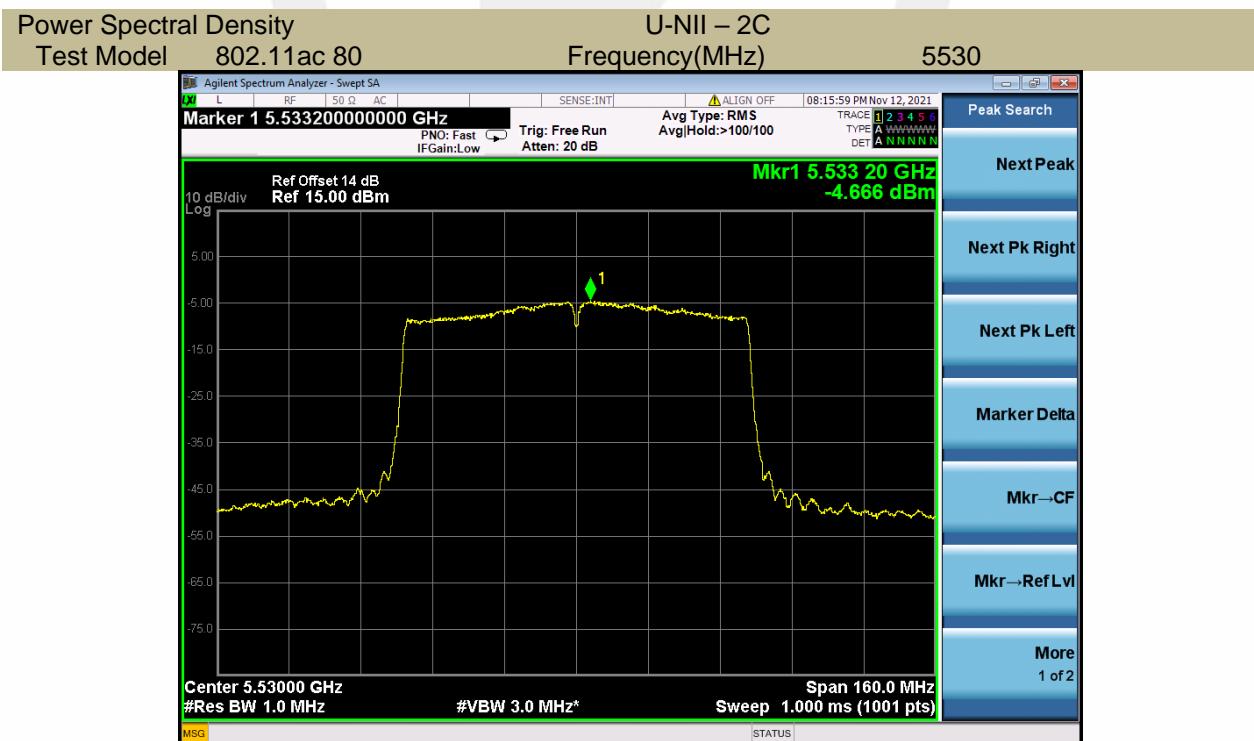
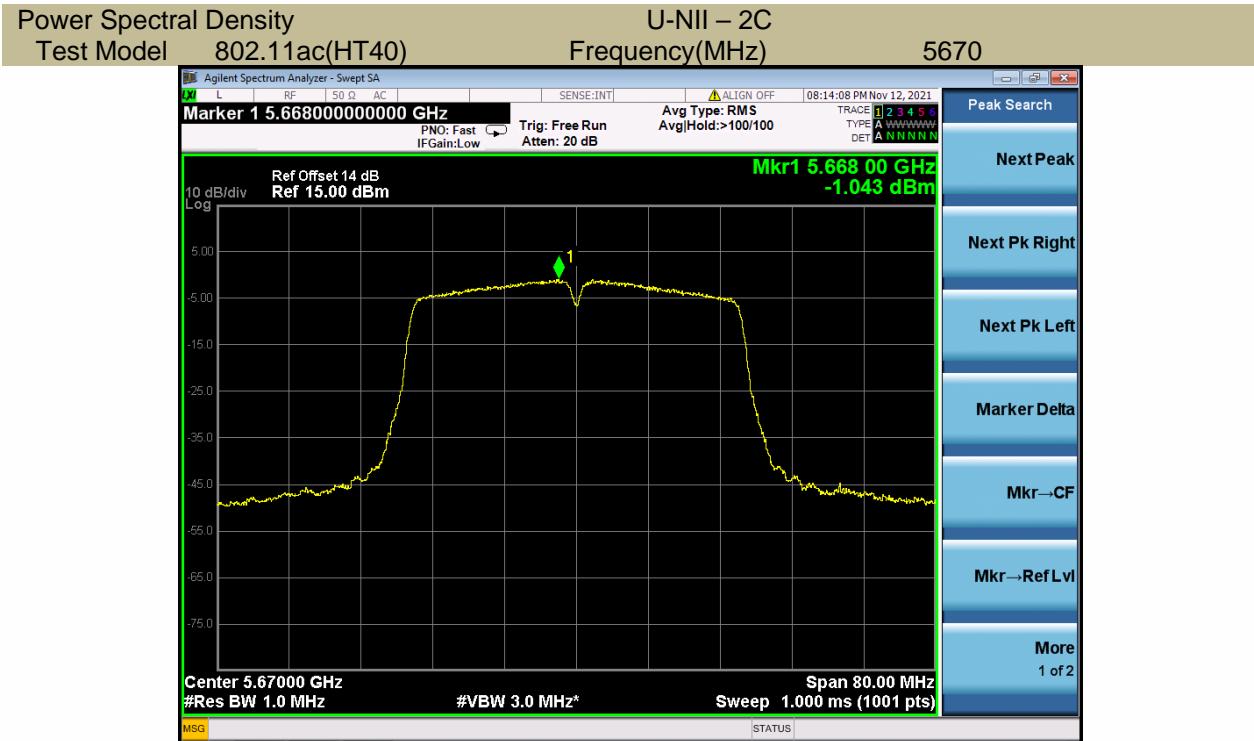


Power Spectral Density  
Test Model 802.11n-HT40

U-NII – 2C  
Frequency(MHz) 5510







## 5725-5850MHz

Operating mode	Test Channel	Power Spectral Density dBm/500kHz	Limit ( dBm/500kHz)
802.11a	5745	-0.33	30
	5785	-0.60	30
	5825	-1.71	30
802.11n-HT20	5745	-1.95	30
	5785	-1.93	30
	5825	-3.02	30
802.11ac(HT20)	5745	-1.99	30
	5785	-2.47	30
	5825	-2.87	30
802.11n-HT40	5755	-5.22	30
	5795	-5.31	30
802.11ac(HT40)	5755	-5.06	30
	5795	-5.59	30
802.11ac(HT80)	5775	-8.03	30

Power Spectral Density  
Test Model 802.11a

U-NII - 3  
Frequency(MHz)

5745



Power Spectral Density  
Test Model 802.11a

U-NII - 3  
Frequency(MHz)

5785



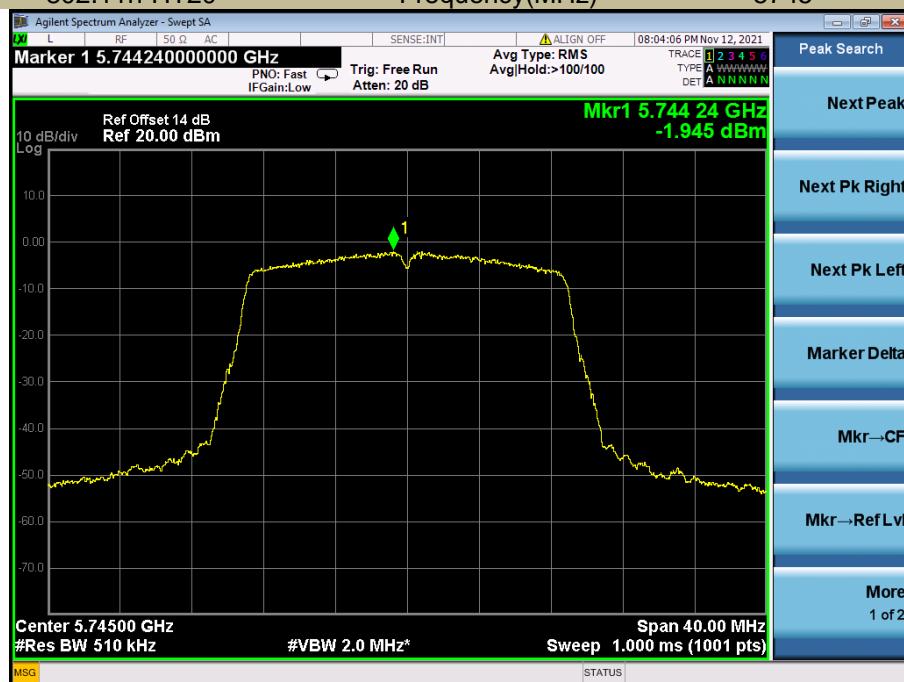
Power Spectral Density  
Test Model 802.11a

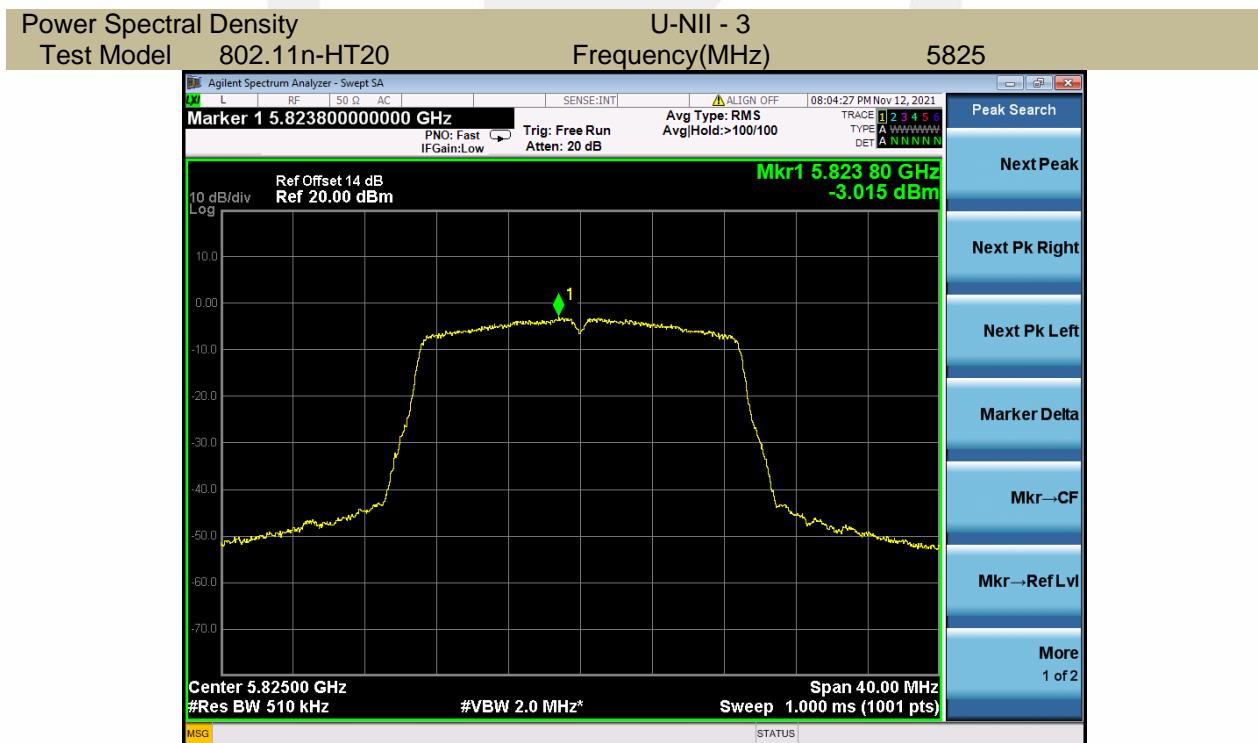
U-NII - 3  
Frequency(MHz) 5825

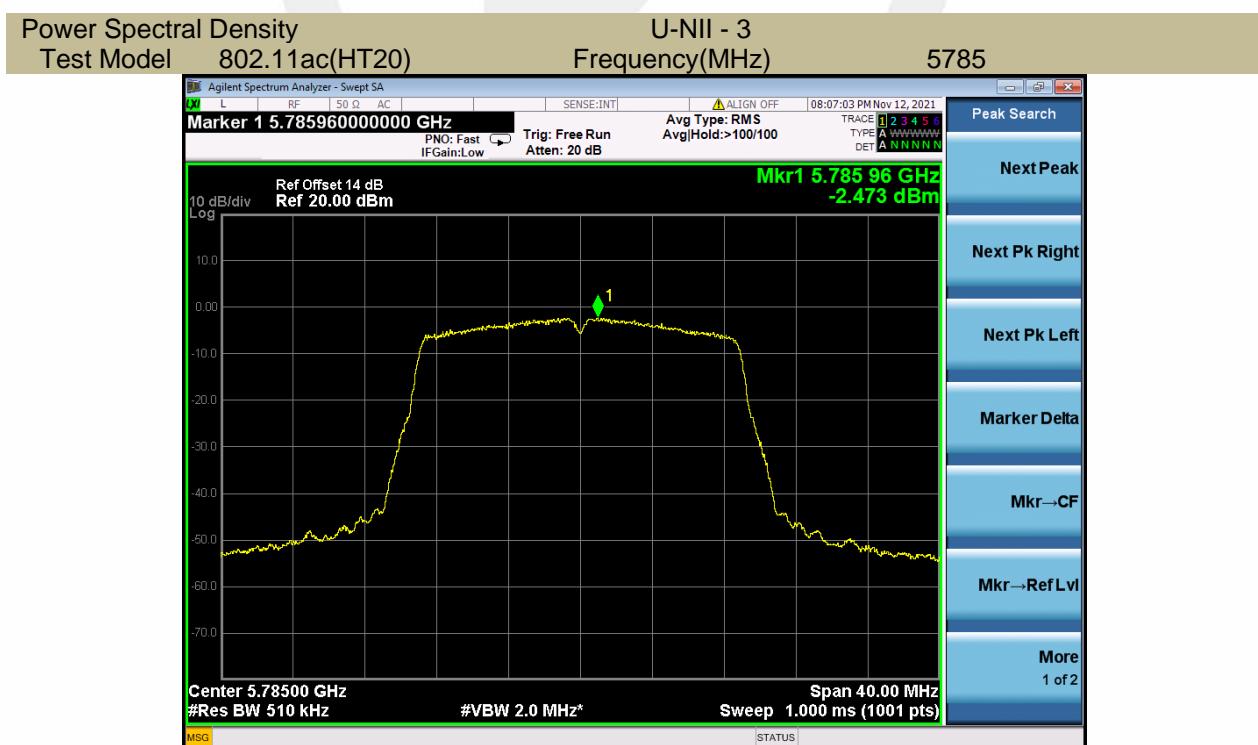


Power Spectral Density  
Test Model 802.11n-HT20

U-NII - 3  
Frequency(MHz) 5745



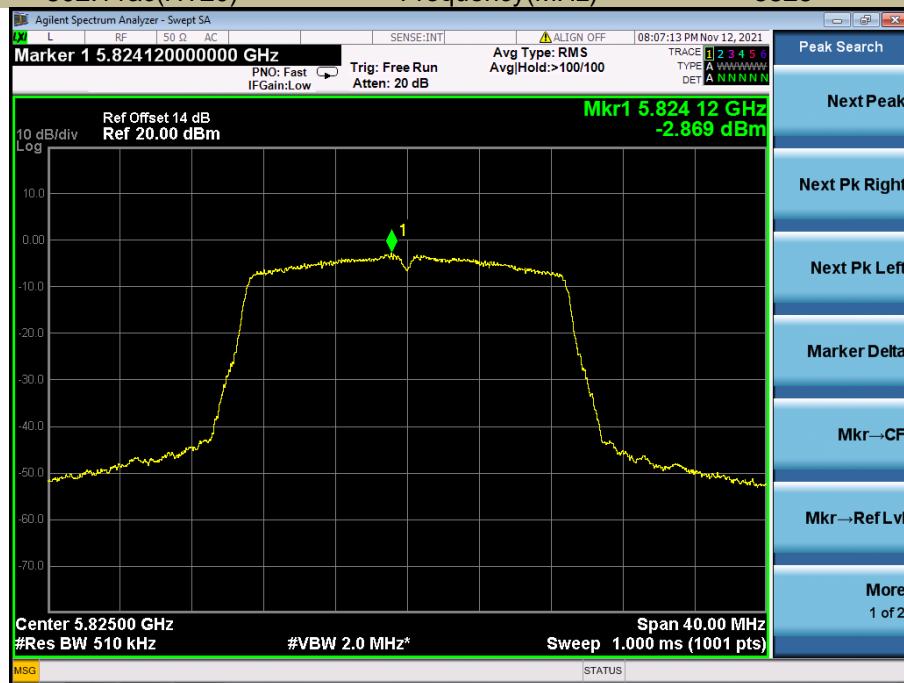




Power Spectral Density  
Test Model 802.11ac(HT20)

U-NII - 3  
Frequency(MHz)

5825



Power Spectral Density  
Test Model 802.11n-HT40

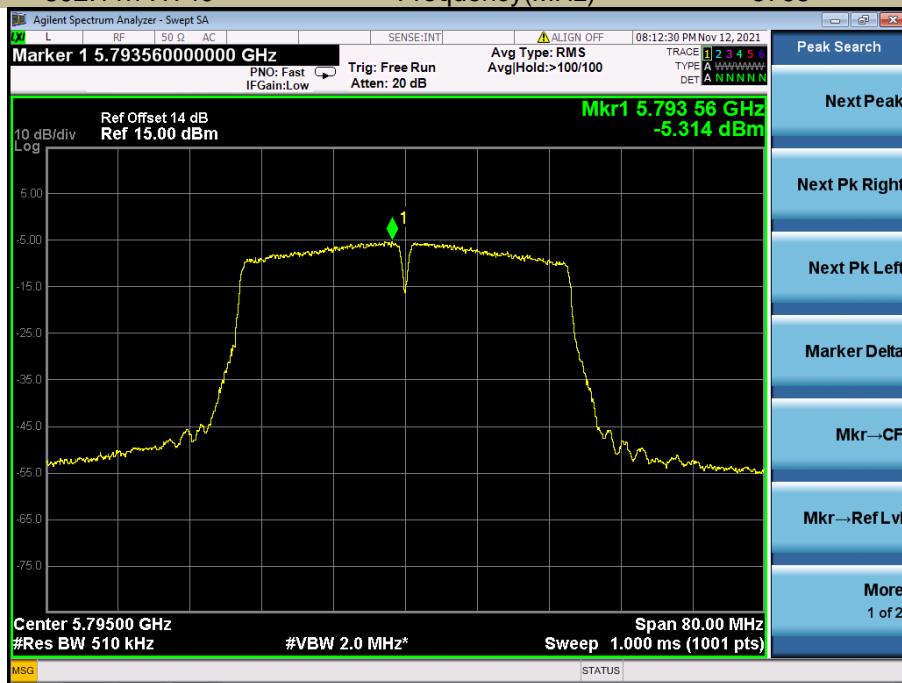
U-NII - 3  
Frequency(MHz)

5755



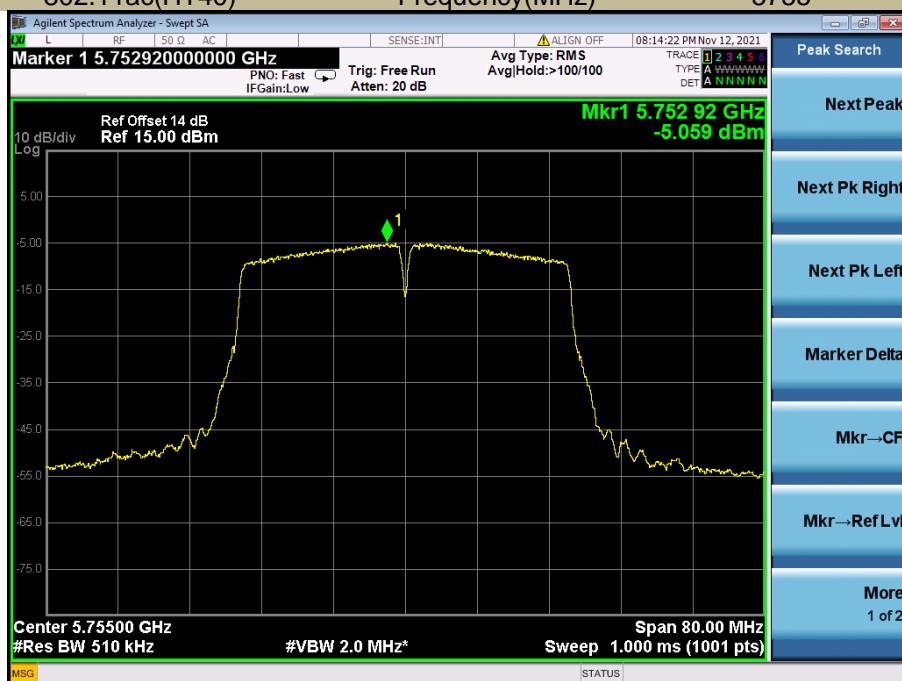
Power Spectral Density  
Test Model 802.11n-HT40

U-NII - 3  
Frequency(MHz) 5795



Power Spectral Density  
Test Model 802.11ac(HT40)

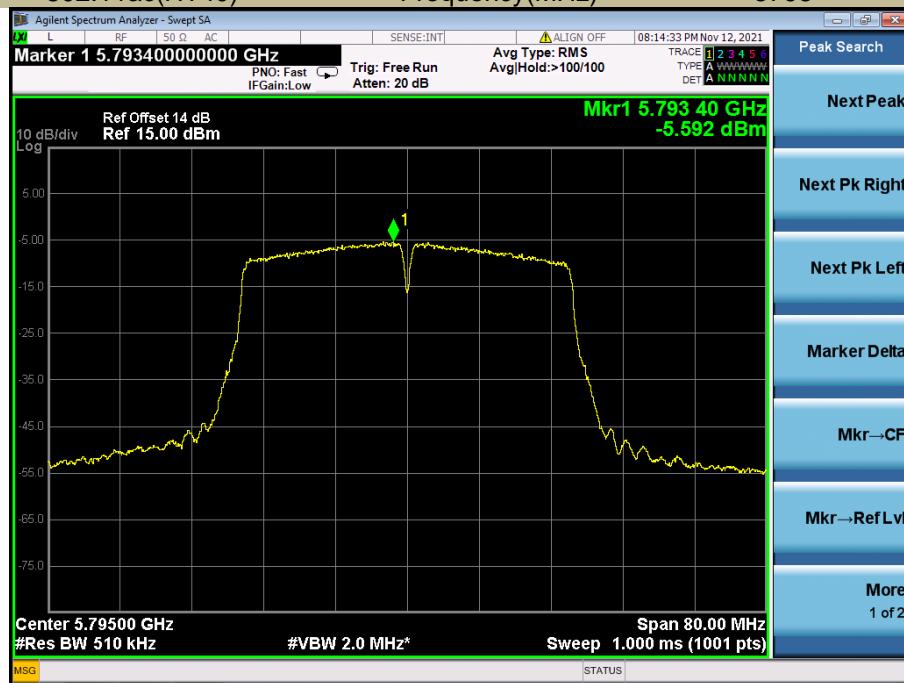
U-NII - 3  
Frequency(MHz) 5755



Power Spectral Density  
Test Model 802.11ac(HT40)

U-NII - 3  
Frequency(MHz)

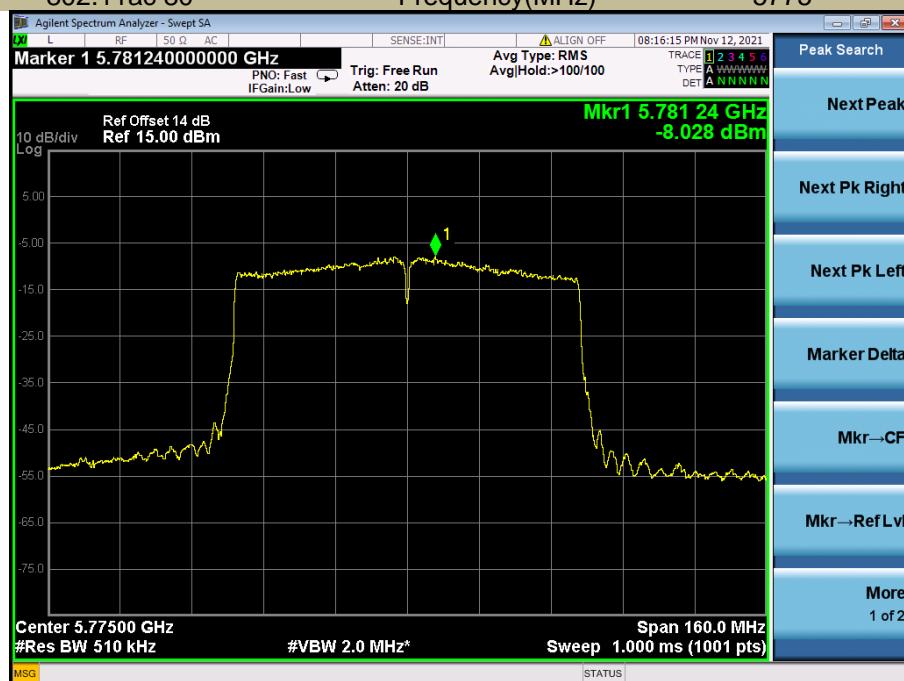
5795



Power Spectral Density  
Test Model 802.11ac 80

U-NII - 3  
Frequency(MHz)

5775



## For 1T1R-Antenna 2

**5150-5250MHz**

Operating mode	Test Channel	Power Spectral Density dBm/MHz	Limit (dBm/MHz)
802.11a	5180	-1.96	11
	5200	-1.66	11
	5240	-0.57	11
802.11n-HT20	5180	-2.01	11
	5200	-3.39	11
	5240	-3.41	11
802.11ac(HT20)	5180	-2.82	11
	5200	-3.66	11
	5240	-3.04	11
802.11n-HT40	5190	-0.89	11
	5230	-0.16	11
802.11ac(HT40)	5190	-9.36	11
	5230	-8.63	11
802.11ac(HT80)	5210	-2.95	11

Power Spectral Density  
Test Model 802.11a

U-NII - 1  
Frequency(MHz)

5180

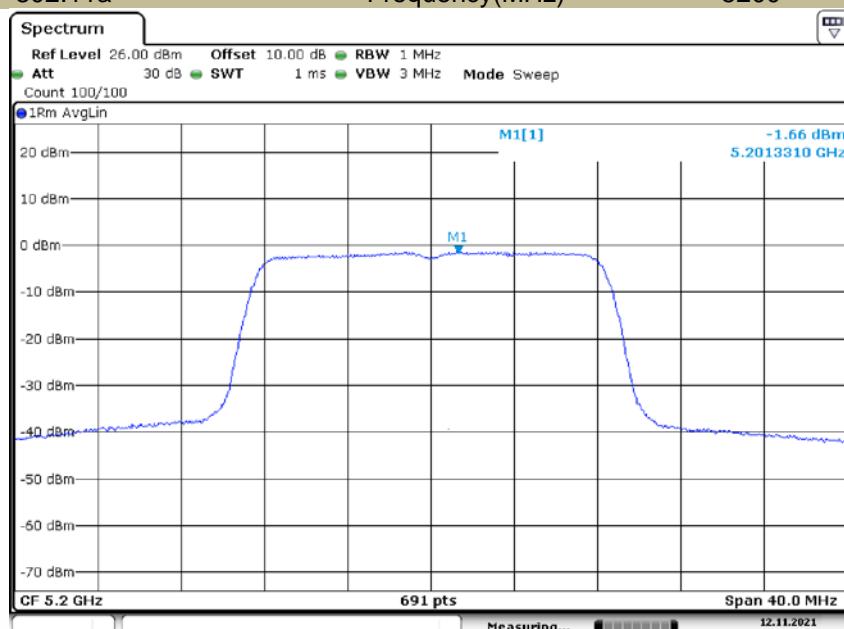


Date: 12.NOV.2021 21:37:48

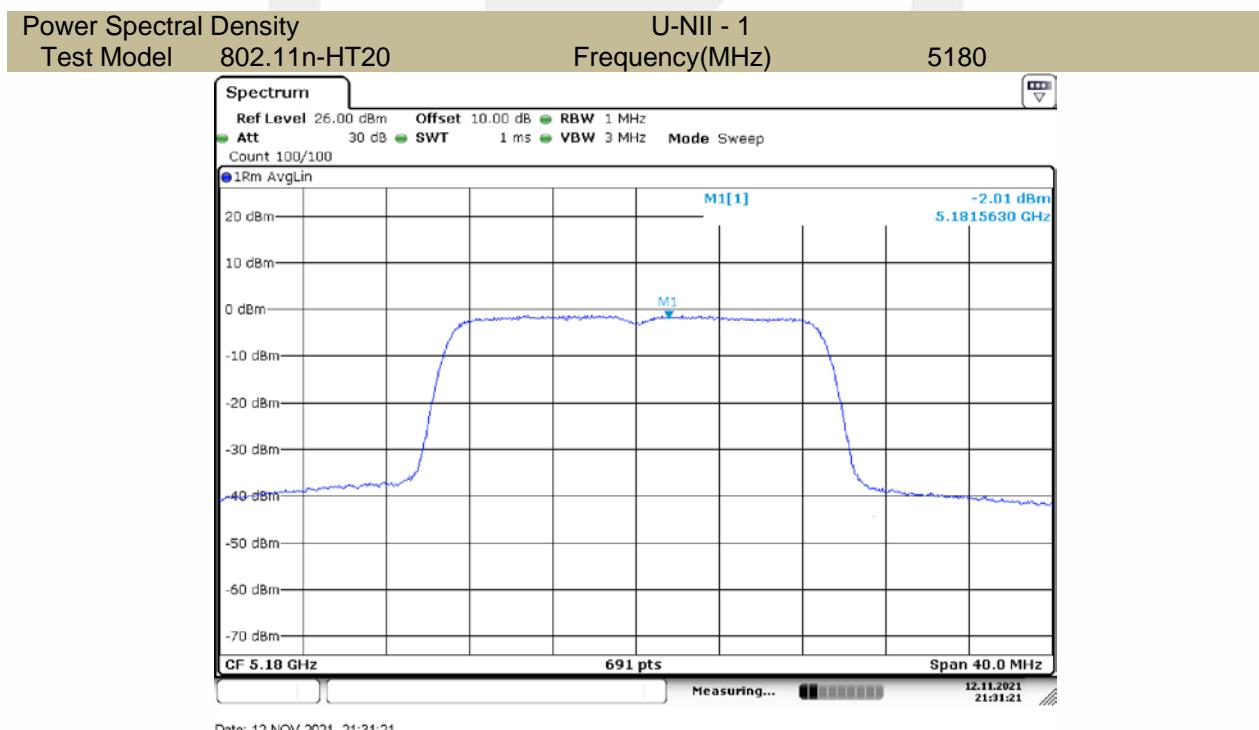
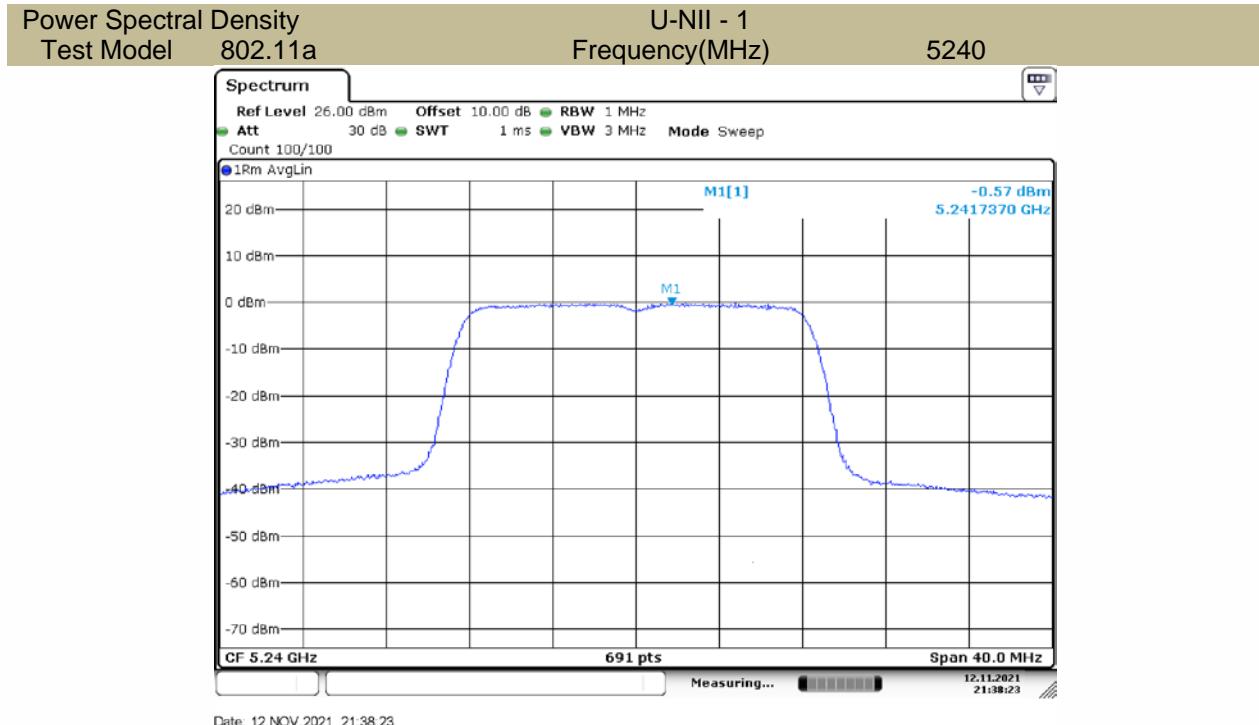
Power Spectral Density  
Test Model 802.11a

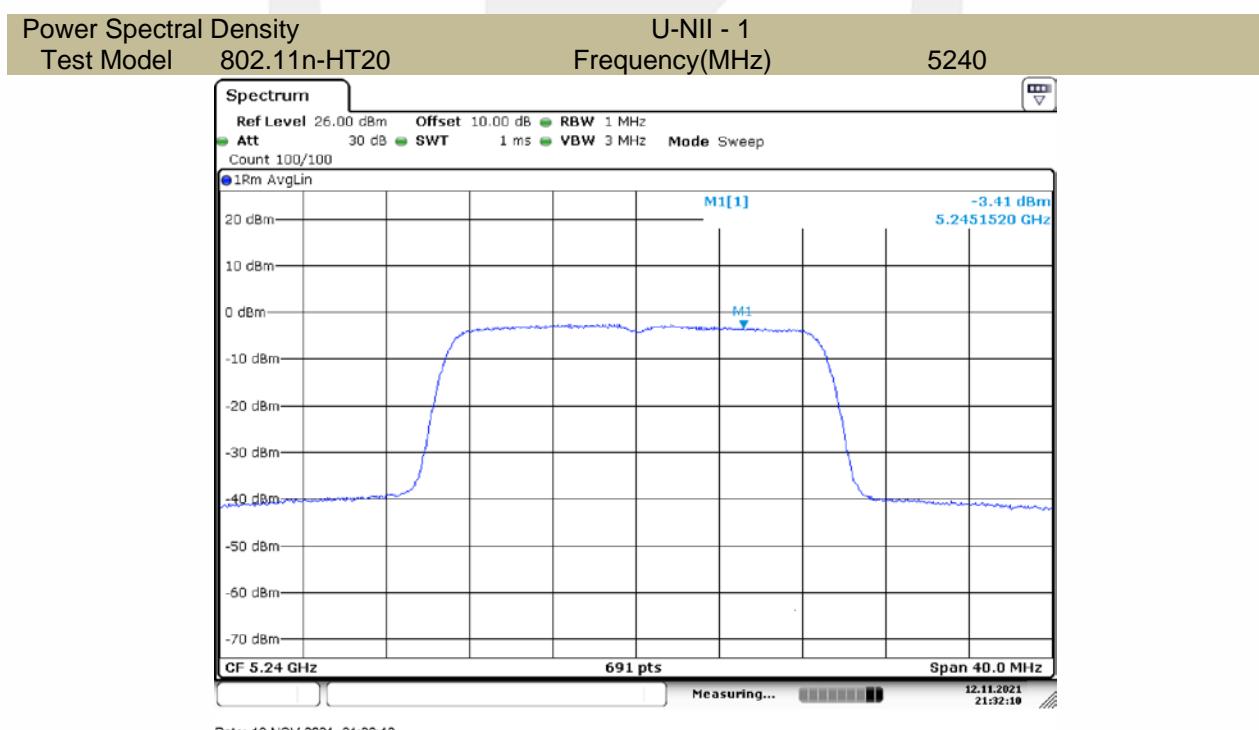
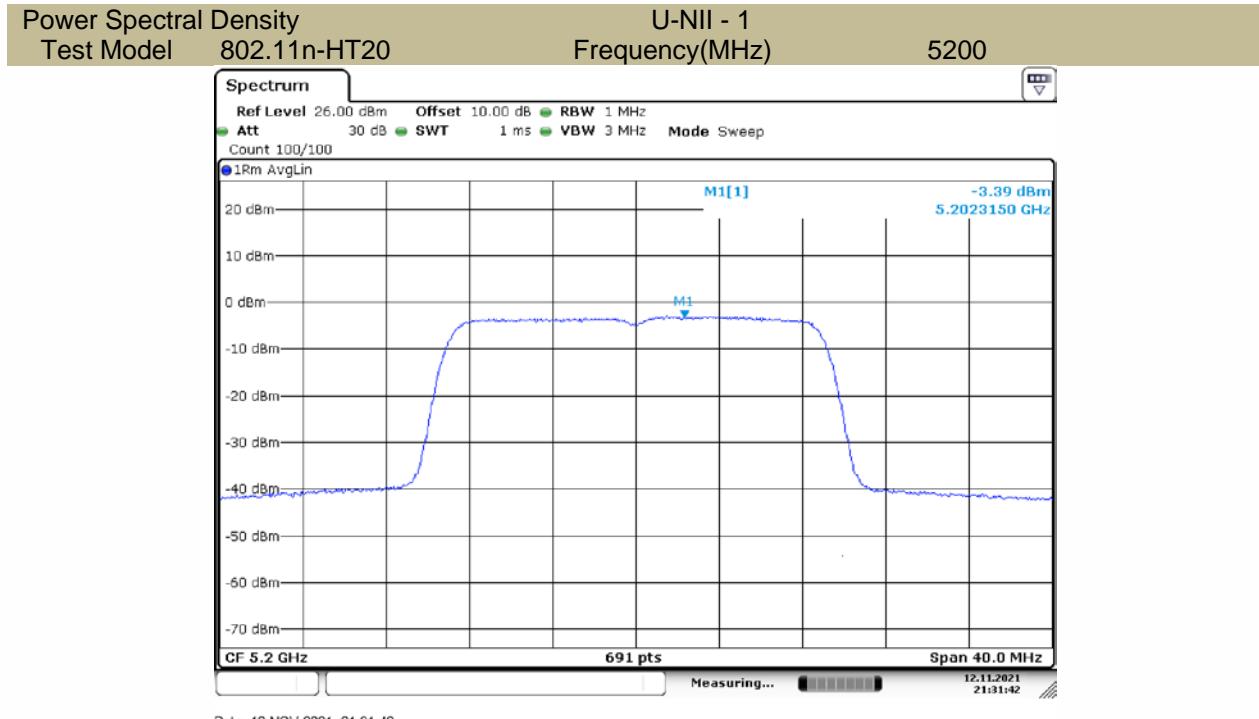
U-NII - 1  
Frequency(MHz)

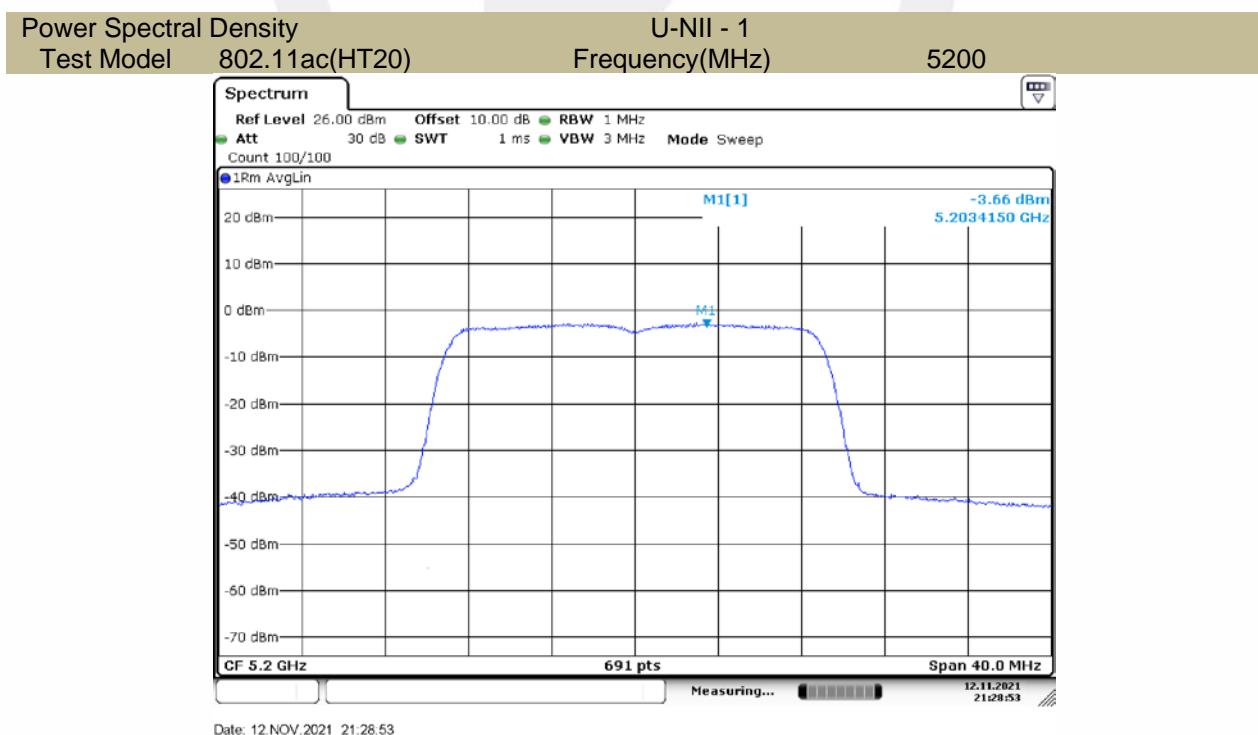
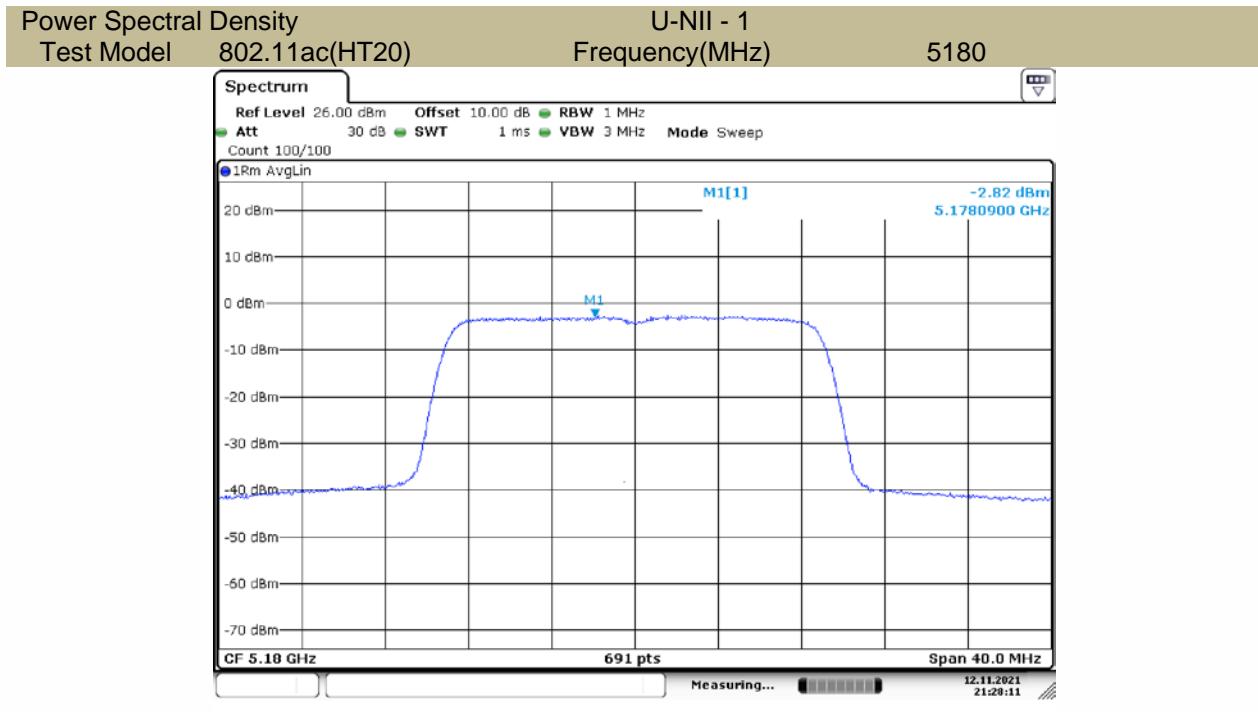
5200

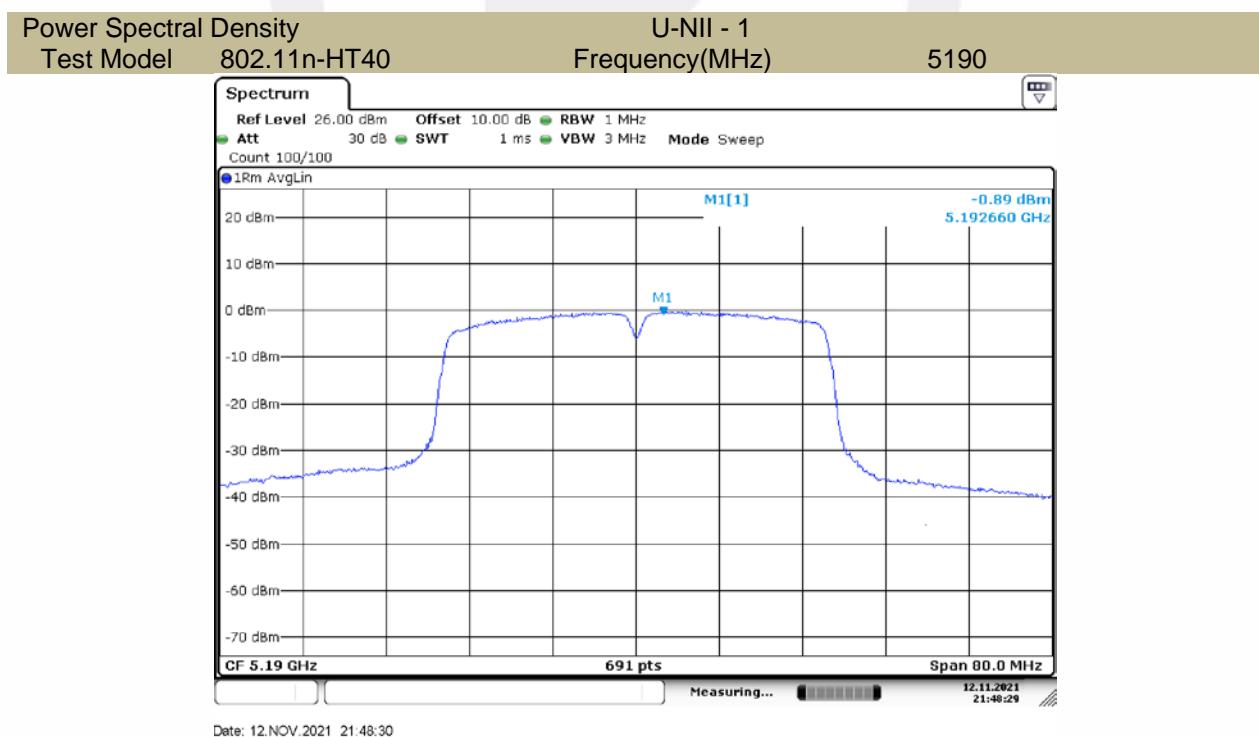
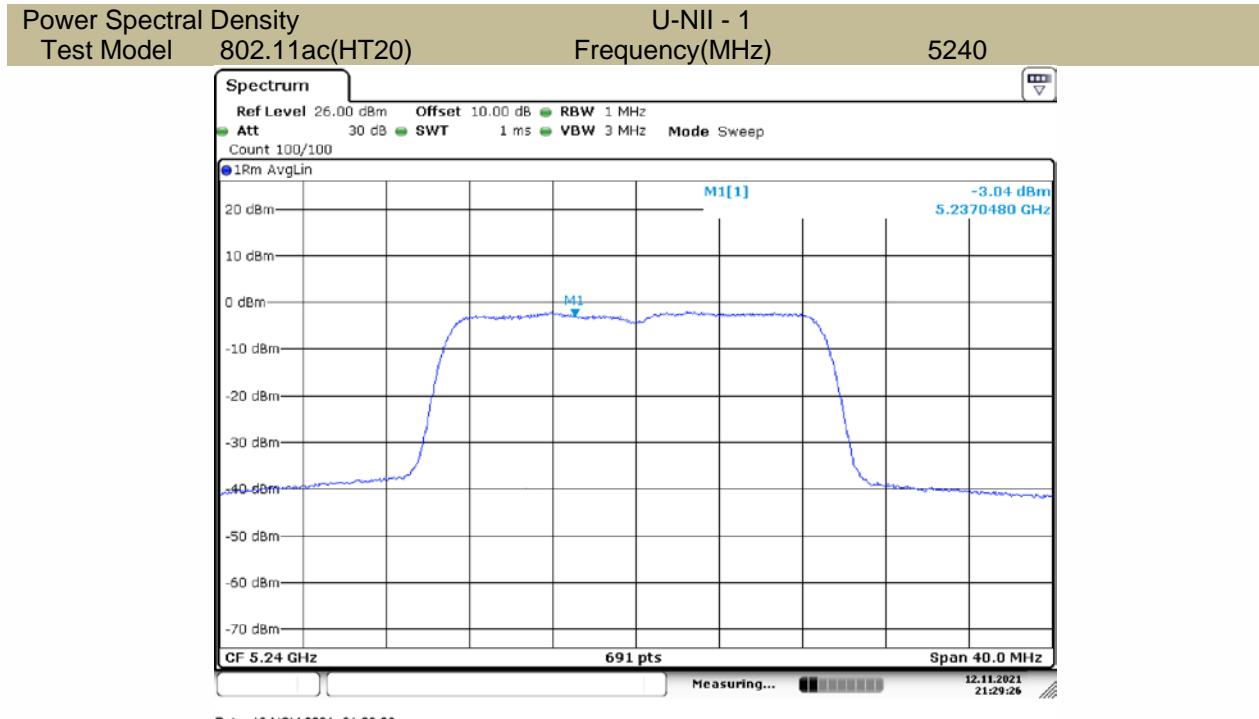


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Power Spectral Density  
Test Model 802.11n-HT40

U-NII - 1  
Frequency(MHz)

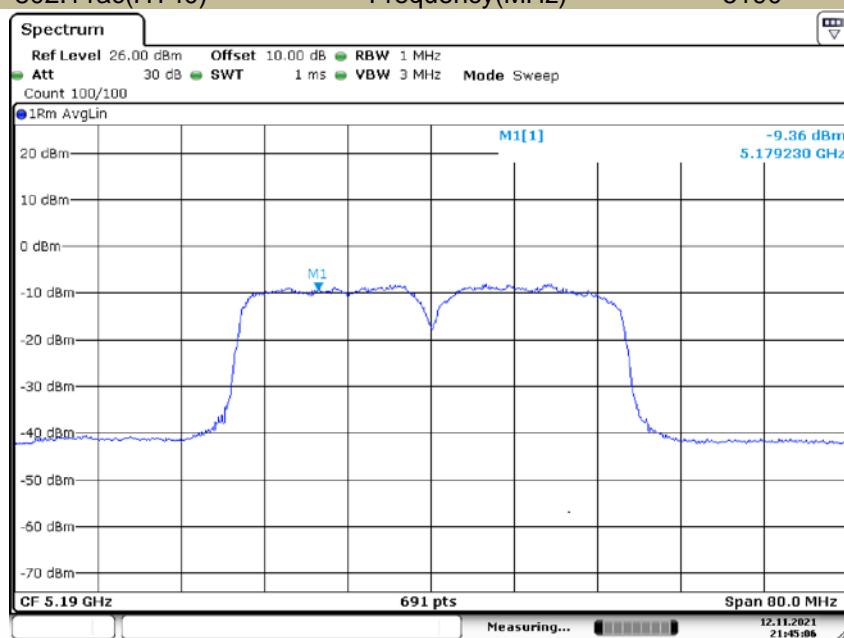
5230

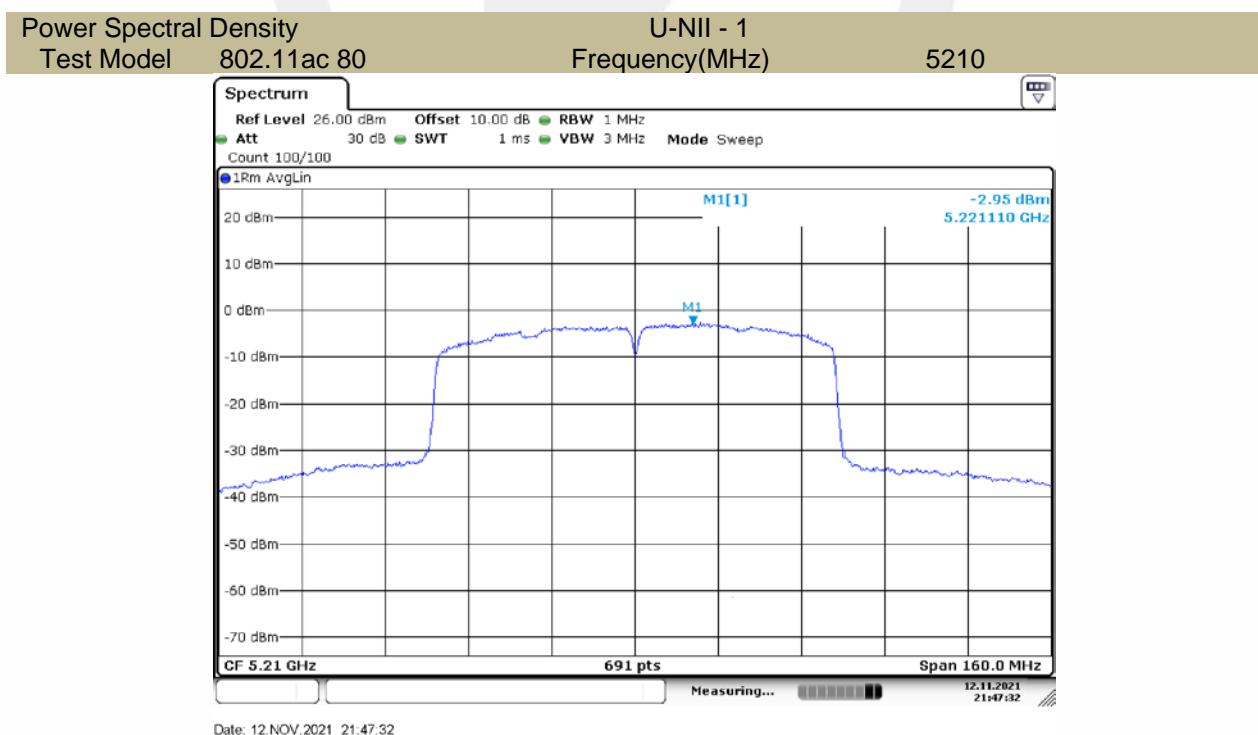
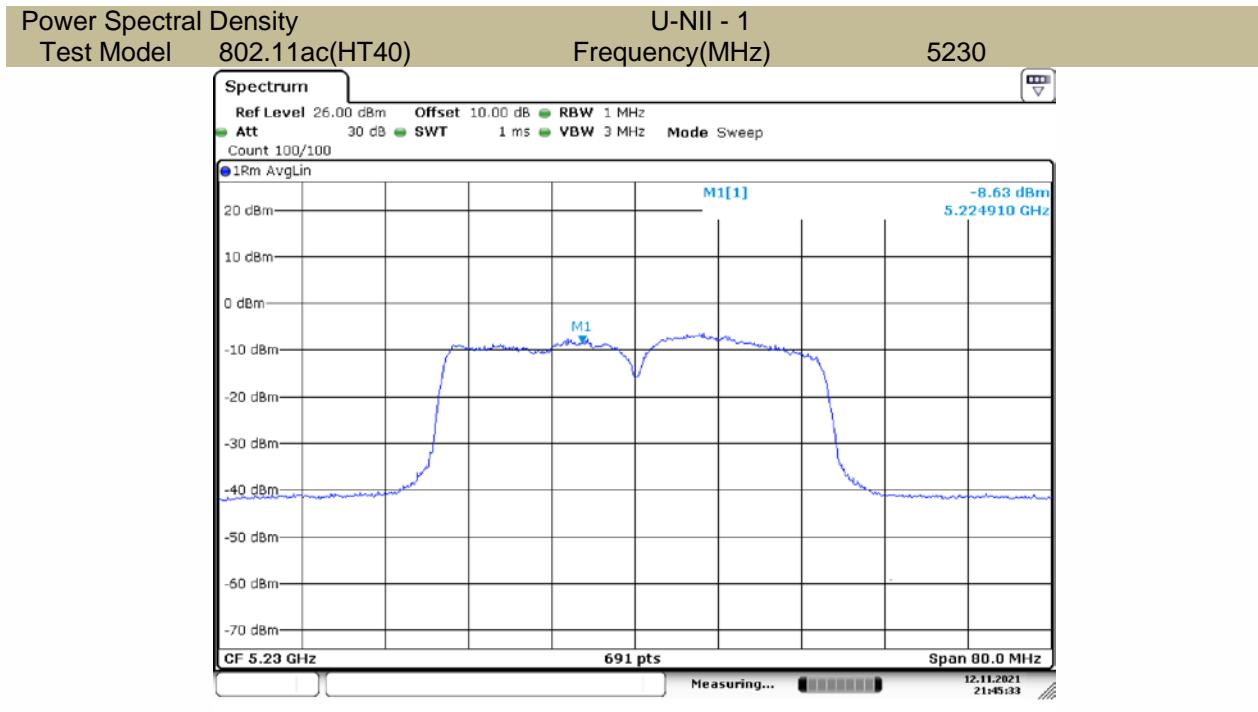


Power Spectral Density  
Test Model 802.11ac(HT40)

U-NII - 1  
Frequency(MHz)

5190



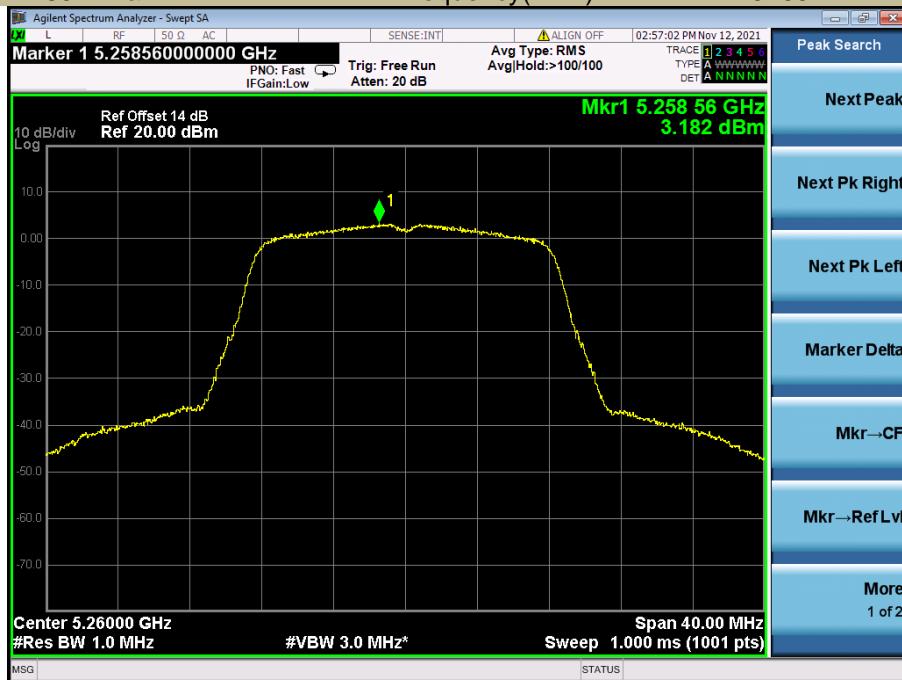


## 5250-5350MHz

Operating mode	Test Channel	Power Spectral Density dBm/MHz	Limit (dBm/MHz)
802.11a	5260	3.18	11
	5280	2.63	11
	5320	2.91	11
802.11n-HT20	5260	1.91	11
	5280	1.30	11
	5320	1.23	11
802.11ac(HT20)	5260	1.72	11
	5280	1.53	11
	5320	1.30	11
802.11n-HT40	5270	-1.31	11
	5310	-2.11	11
802.11ac(HT40)	5270	-1.29	11
	5310	-2.11	11
802.11ac(HT80)	5290	-4.90	11

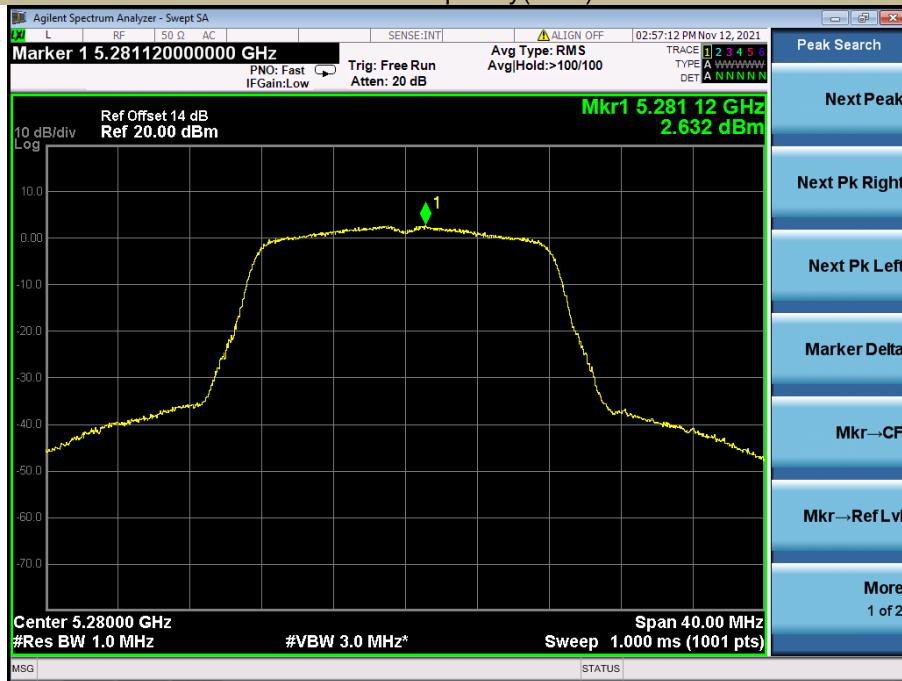
Power Spectral Density  
Test Model 802.11a

U-NII – 2A  
Frequency(MHz) 5260



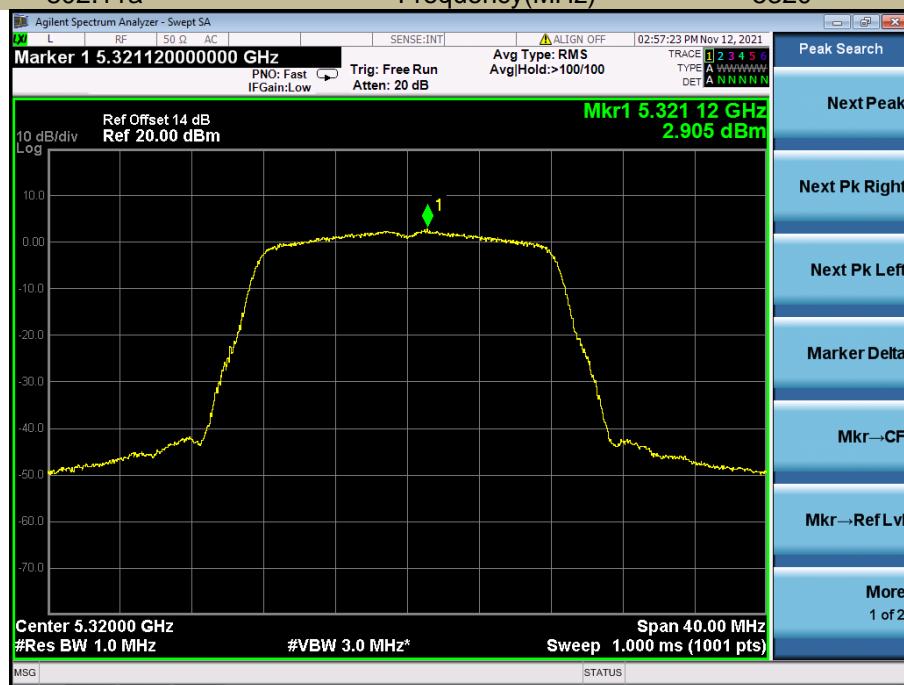
Power Spectral Density  
Test Model 802.11a

U-NII – 2A  
Frequency(MHz) 5280



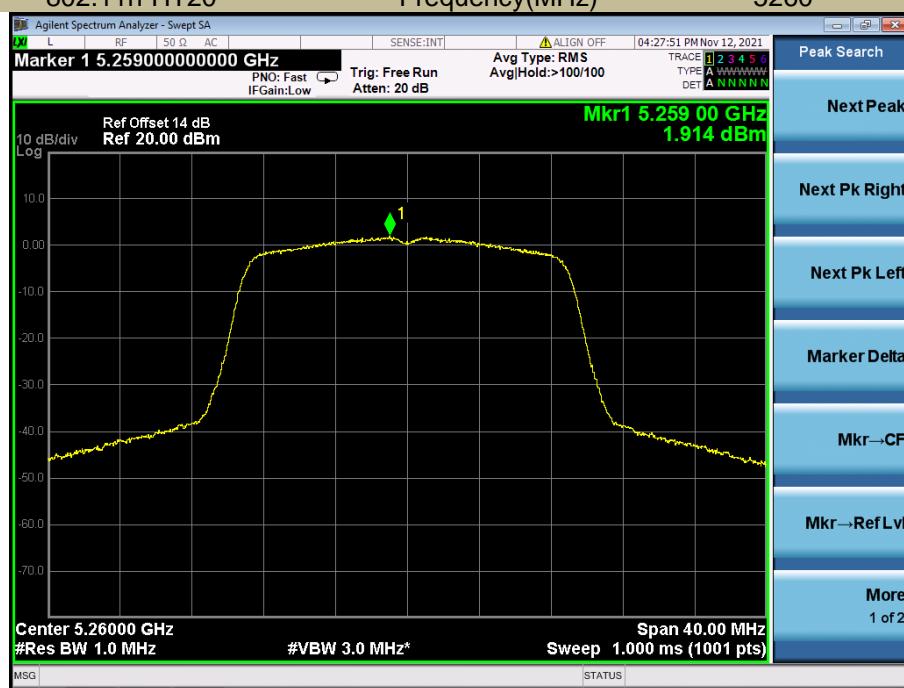
Power Spectral Density  
Test Model 802.11a

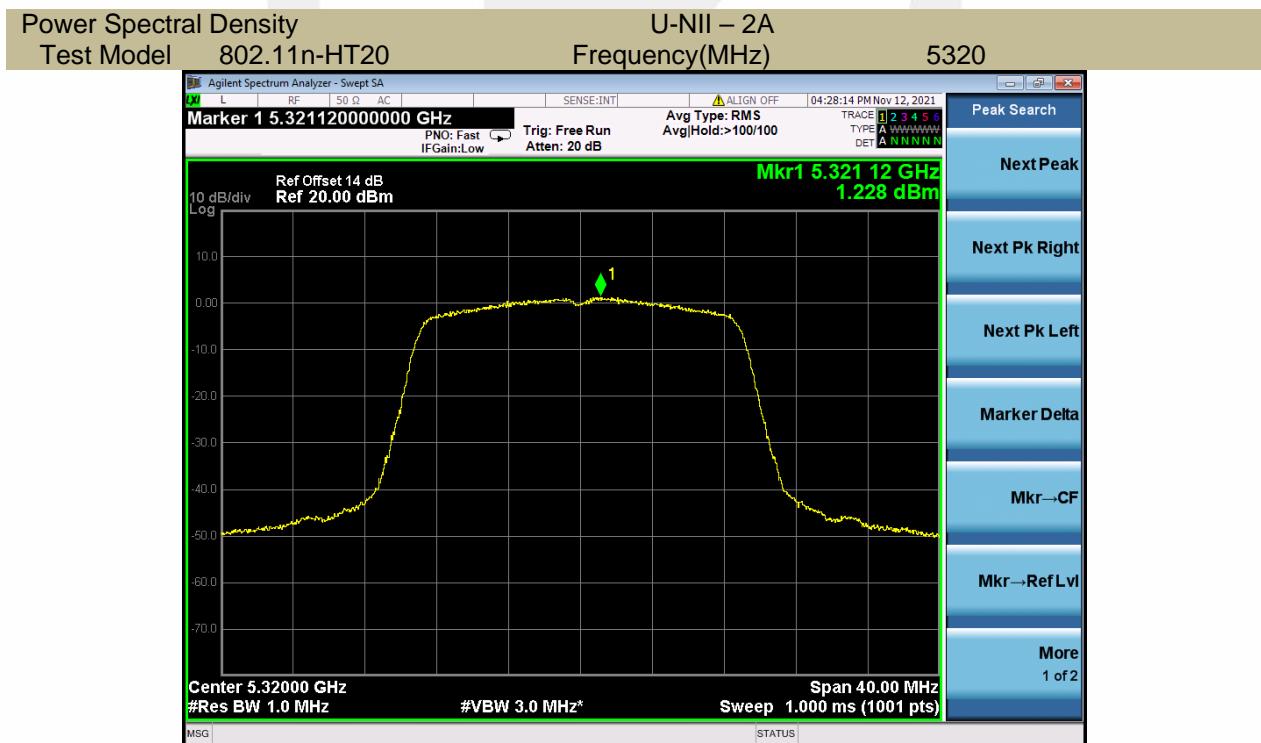
U-NII – 2A  
Frequency(MHz) 5320

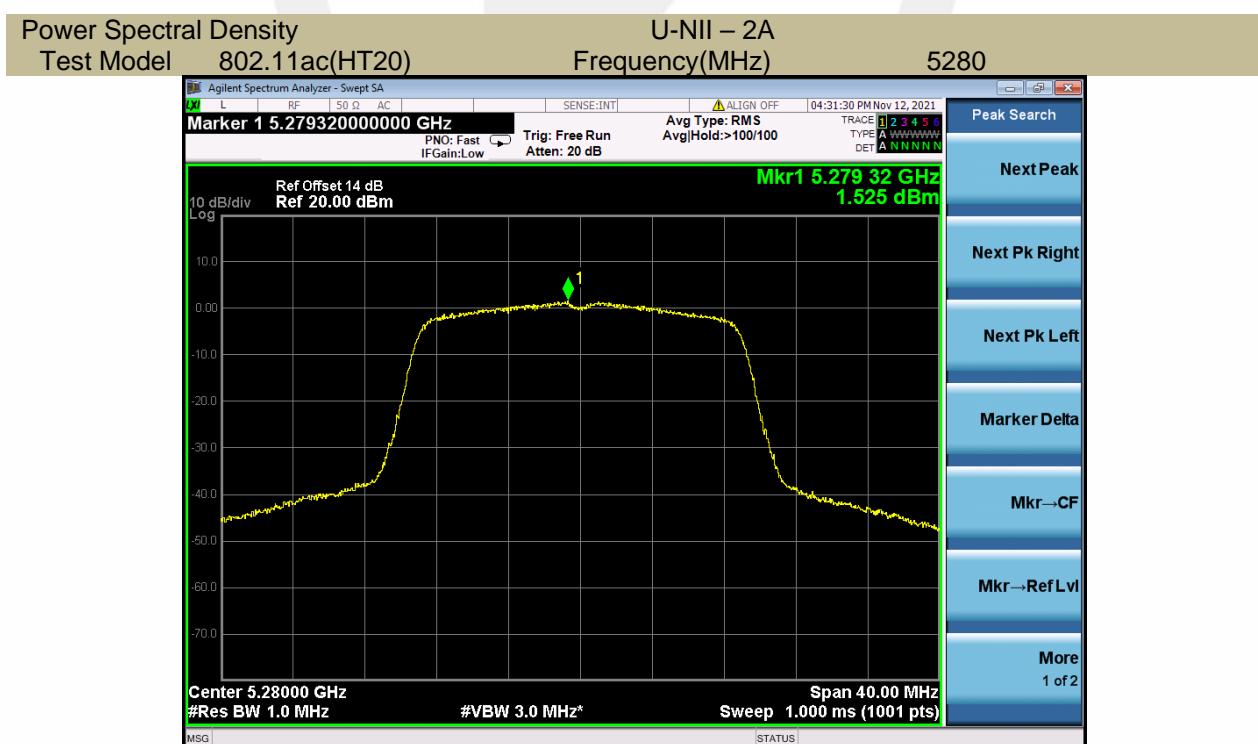
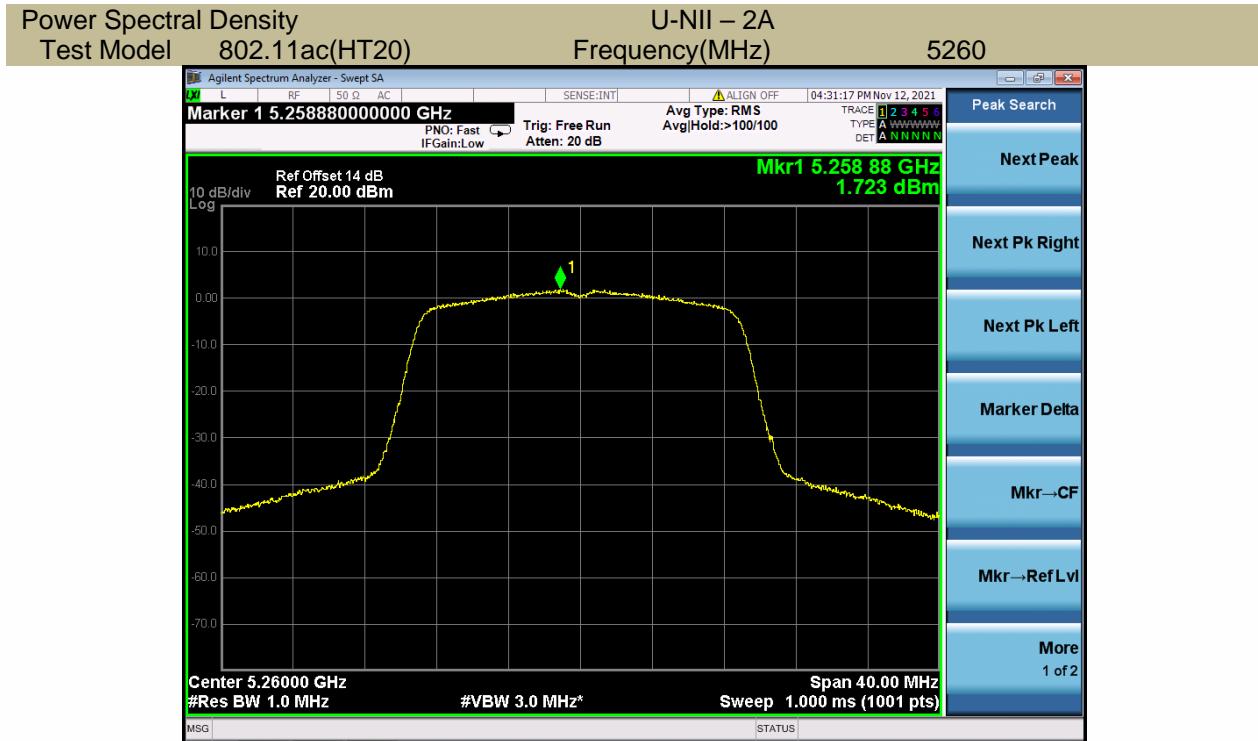


Power Spectral Density  
Test Model 802.11n-HT20

U-NII – 2A  
Frequency(MHz) 5260

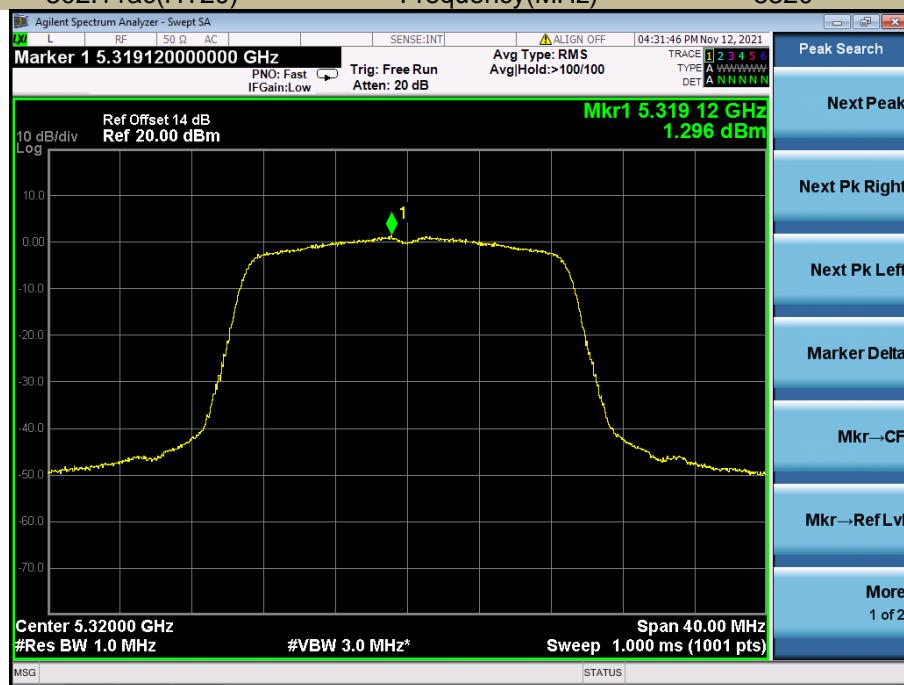






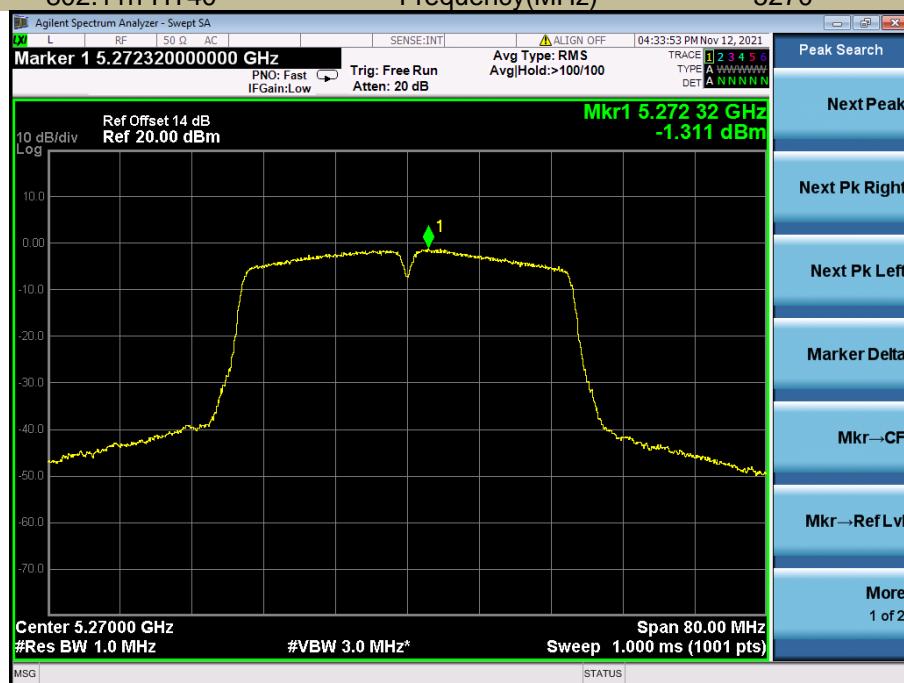
Power Spectral Density  
Test Model 802.11ac(HT20)

U-NII – 2A  
Frequency(MHz) 5320



Power Spectral Density  
Test Model 802.11n-HT40

U-NII – 2A  
Frequency(MHz) 5270



Power Spectral Density  
Test Model 802.11n-HT40

U-NII – 2A  
Frequency(MHz)

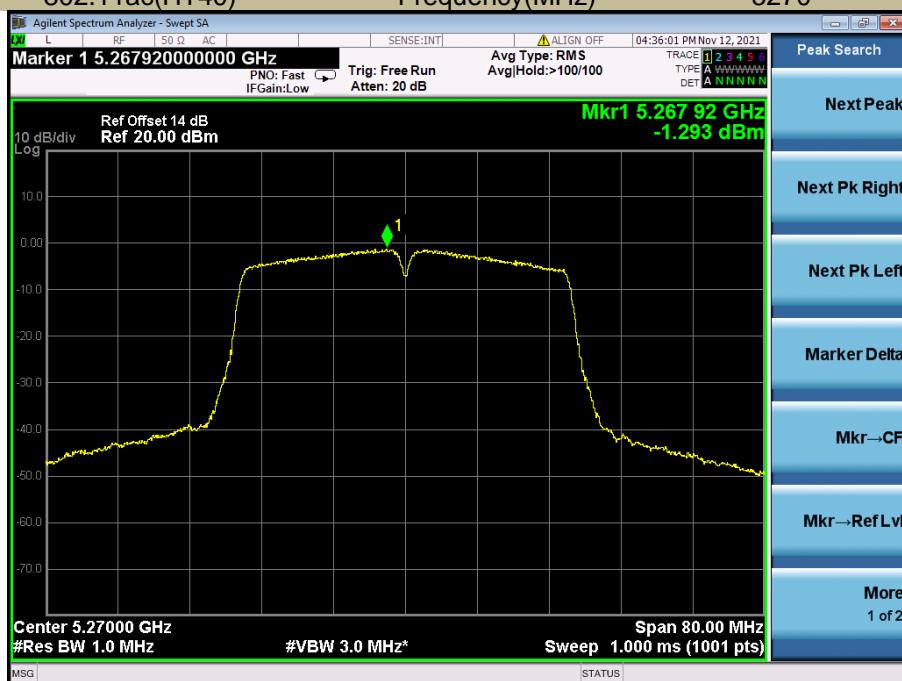
5310



Power Spectral Density  
Test Model 802.11ac(HT40)

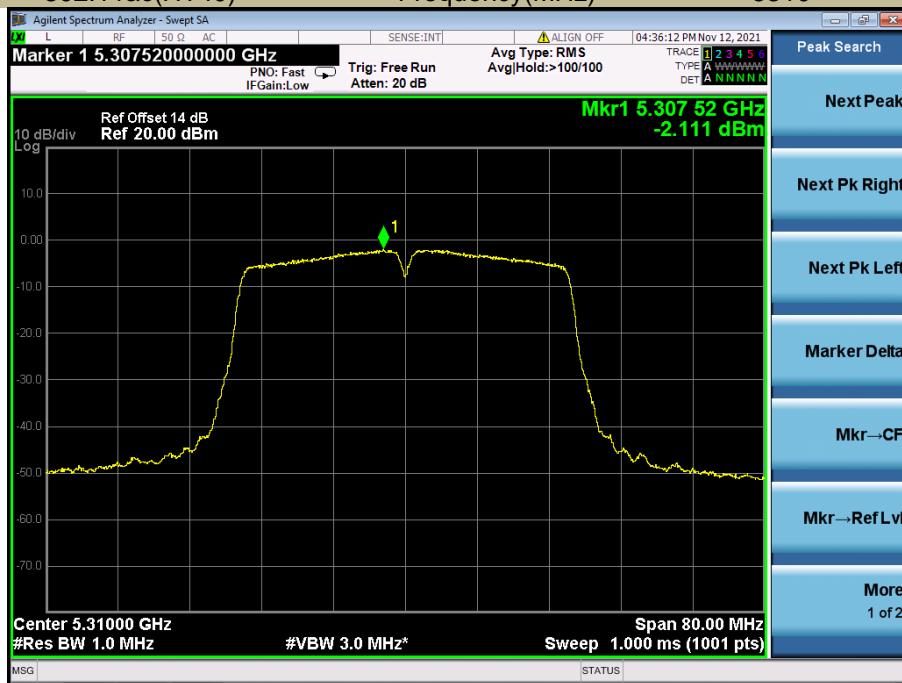
U-NII – 2A  
Frequency(MHz)

5270



Power Spectral Density  
Test Model 802.11ac(HT40)

U-NII – 2A  
Frequency(MHz) 5310



Power Spectral Density  
Test Model 802.11ac 80

U-NII – 2A  
Frequency(MHz) 5290



## 5470-5725MHz

Operating mode	Test Channel	Power Spectral Density dBm/MHz	Limit (dBm/MHz)
802.11a	5500	1.21	11
	5580	1.85	11
	5700	3.20	11
802.11n-HT20	5500	-0.18	11
	5580	0.44	11
	5700	1.78	11
802.11ac(HT20)	5500	-0.20	11
	5580	0.34	11
	5700	1.78	11
802.11n-HT40	5510	-3.13	11
	5670	-1.35	11
802.11ac(HT40)	5510	-2.69	11
	5670	-1.35	11
802.11ac(HT80)	5530	-4.94	11

