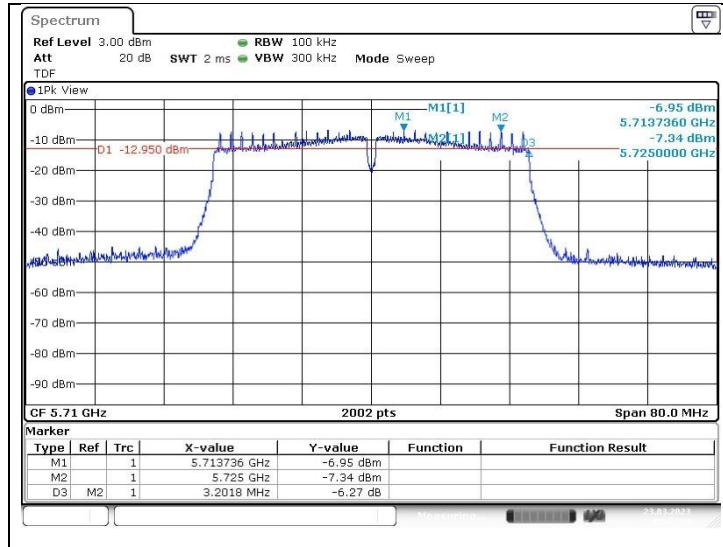


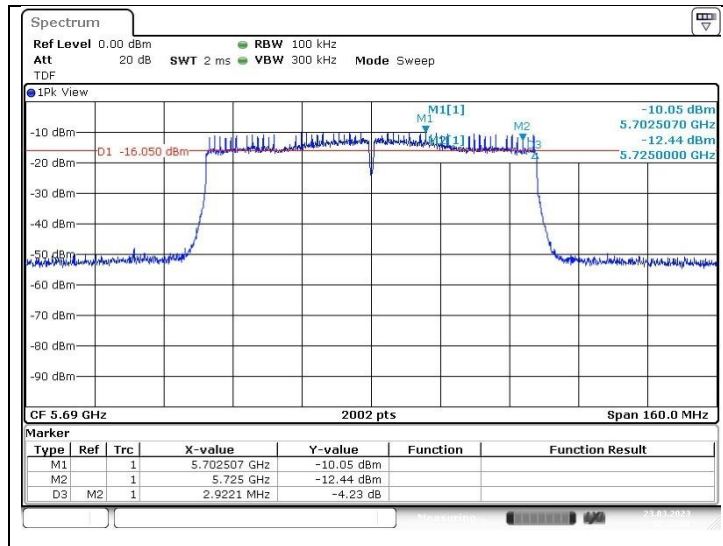
802.11n_HT40 (Band 3)

High Channel
(5 710 MHz)



802.11ac_VHT80 (Band 3)

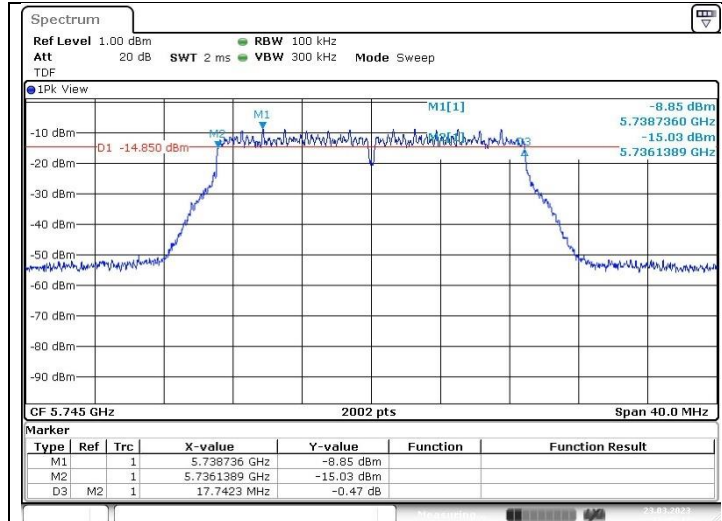
Middle Channel
(5 690 MHz)



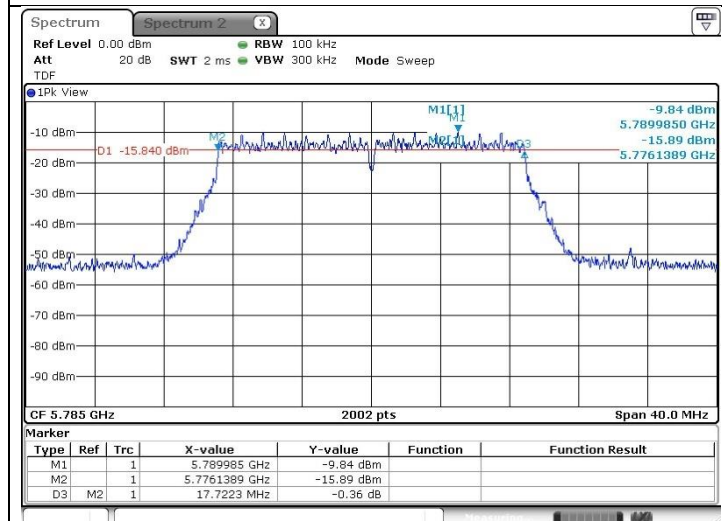
- MIMO_Core 0

802.11n_HT20 (Band 3)

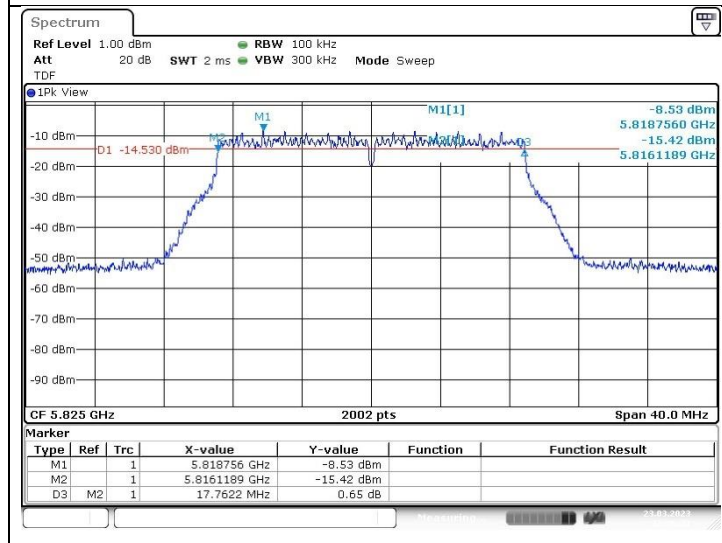
Low Channel
(5 745 MHz)



Middle Channel
(5 785 MHz)

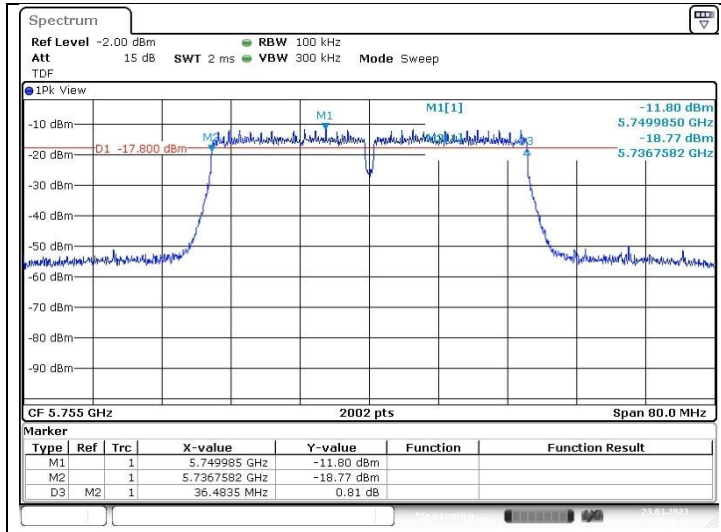


High Channel
(5 825 MHz)

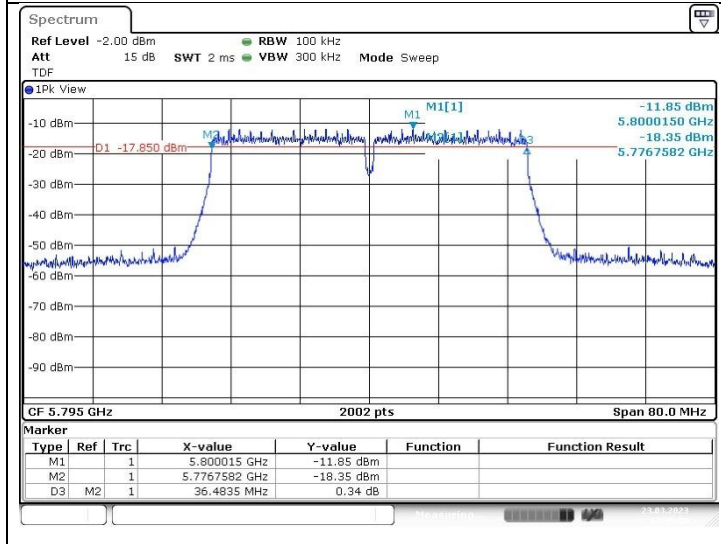


802.11ac_VHT40 (Band 3)

Low Channel
(5 755 MHz)

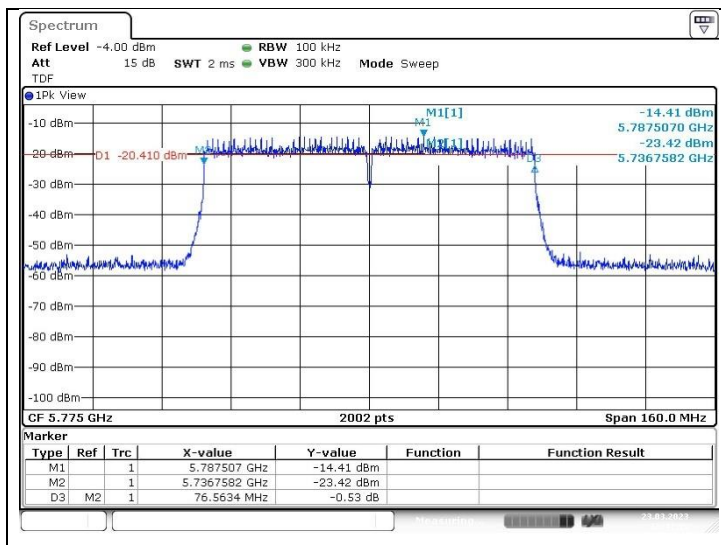


High Channel
(5 795 MHz)



802.11ac_VHT80 (Band 3)

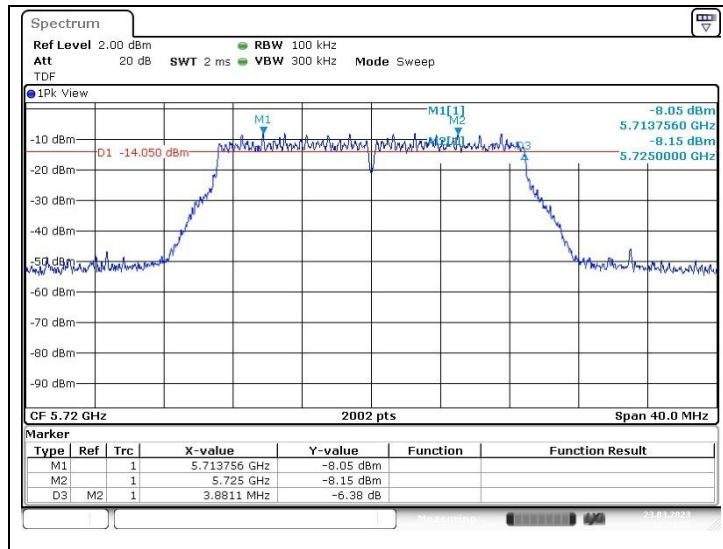
Middle Channel
(5 775 MHz)



Band-crossing channels

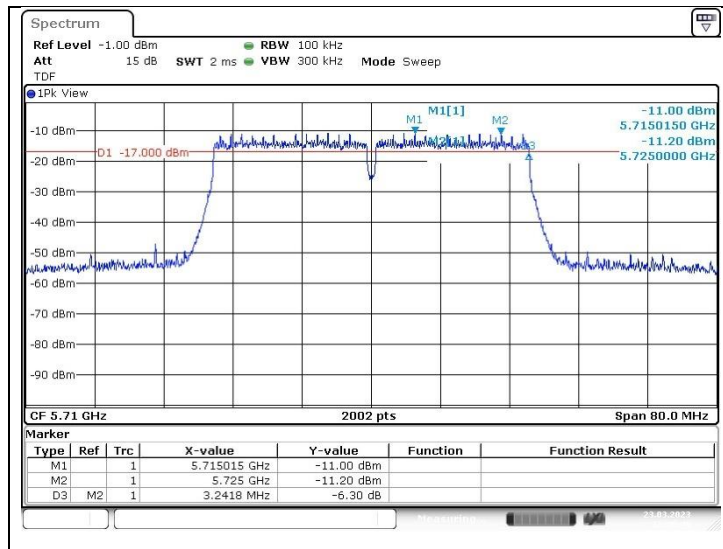
802.11n_HT20 (Band 3)

High Channel
(5 720 MHz)

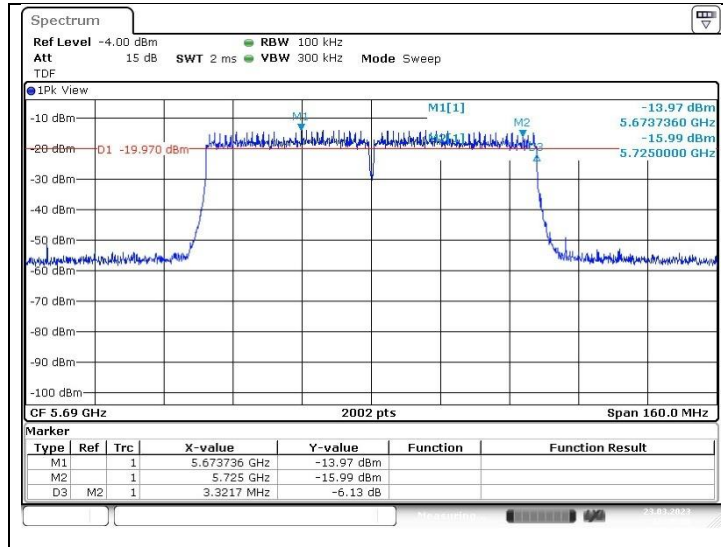


802.11ac_VHT40 (Band 3)

High Channel
(5 710 MHz)



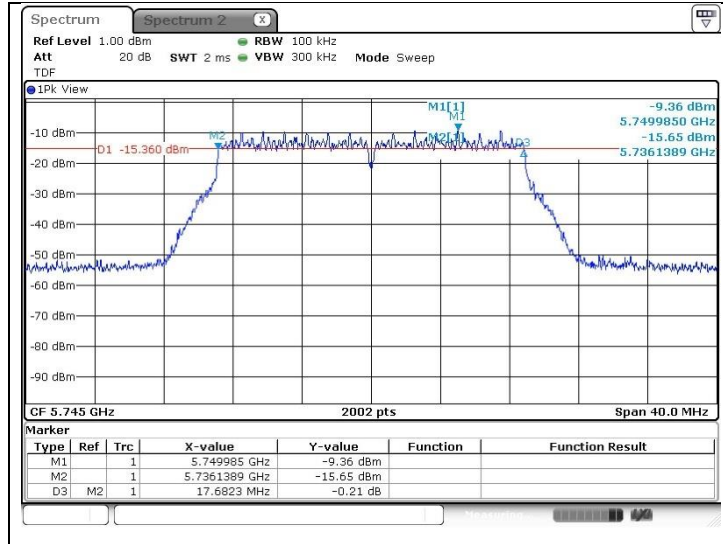
802.11ac_VHT80 (Band 3)
 High Channel
 (5 690 MHz)



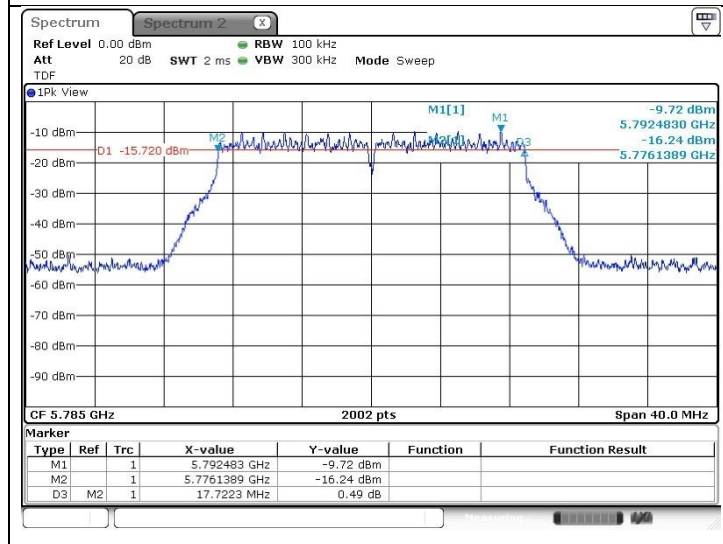
- MIMO_Core 1

802.11n_HT20 (Band 3)

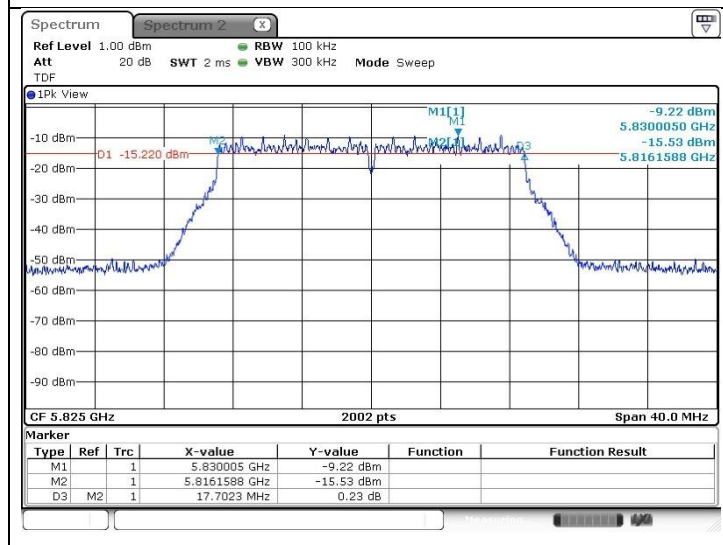
Low Channel
(5 745 MHz)



Middle Channel
(5 785 MHz)

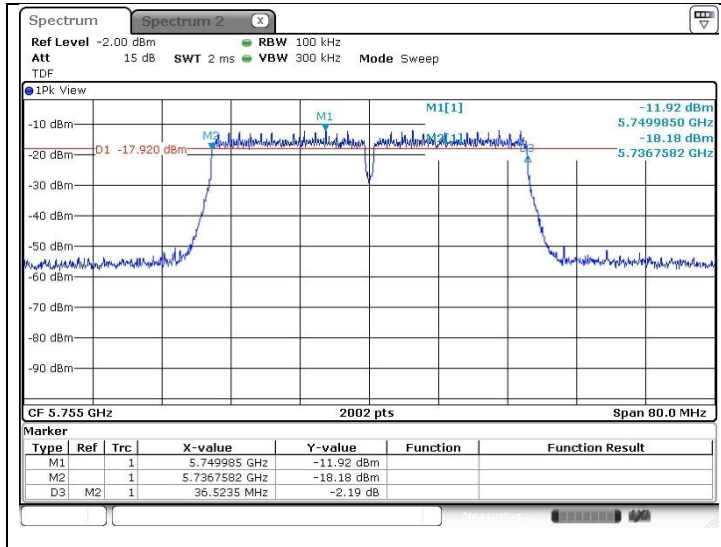


High Channel
(5 825 MHz)

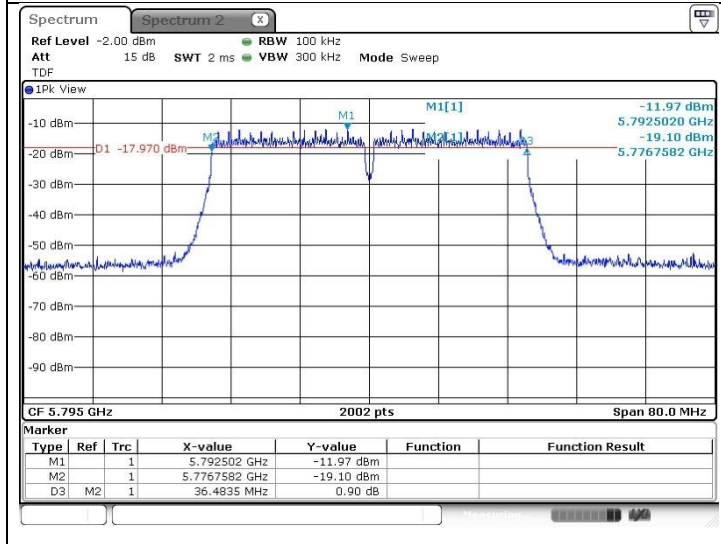


802.11ac_VHT40 (Band 3)

Low Channel
(5 755 MHz)

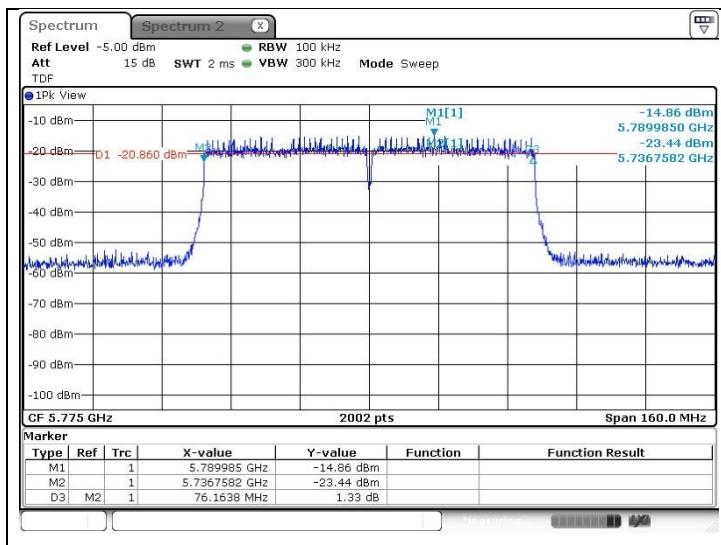


High Channel
(5 795 MHz)



802.11ac_VHT80 (Band 3)

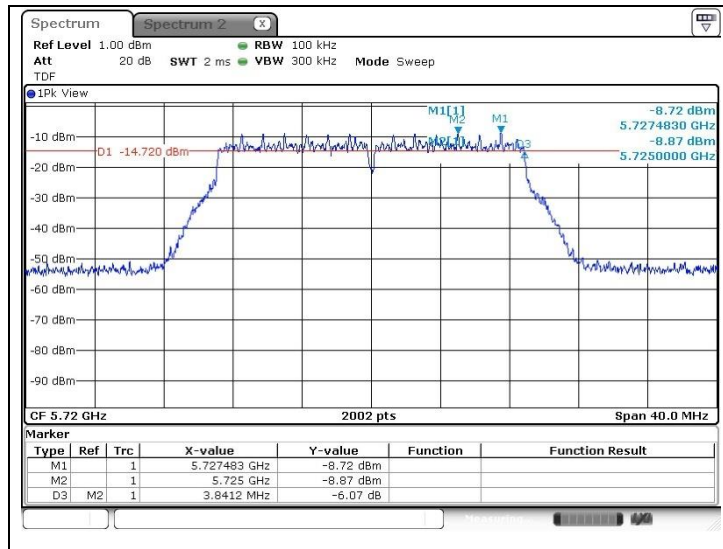
Middle Channel
(5 775 MHz)



Band-crossing channels

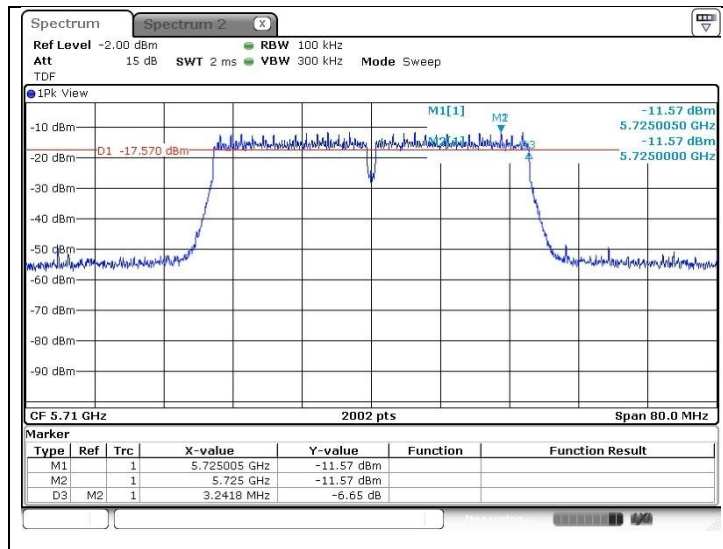
802.11n_HT20 (Band 3)

High Channel
(5 720 MHz)

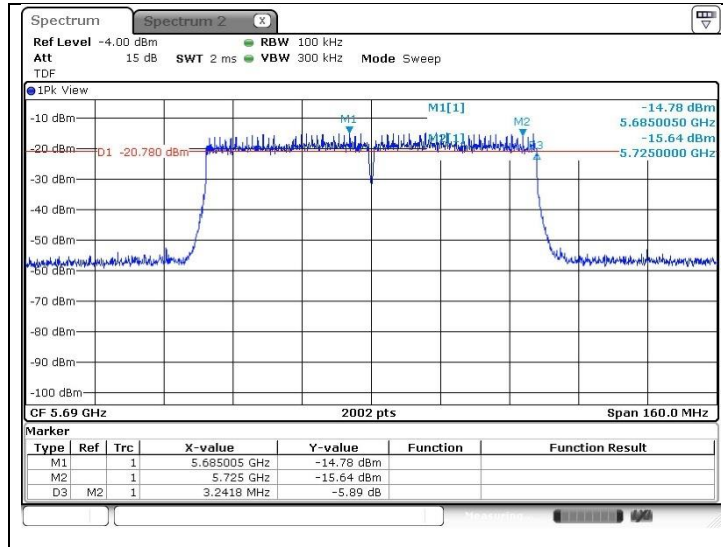


802.11ac_VHT40 (Band 3)

High Channel
(5 710 MHz)

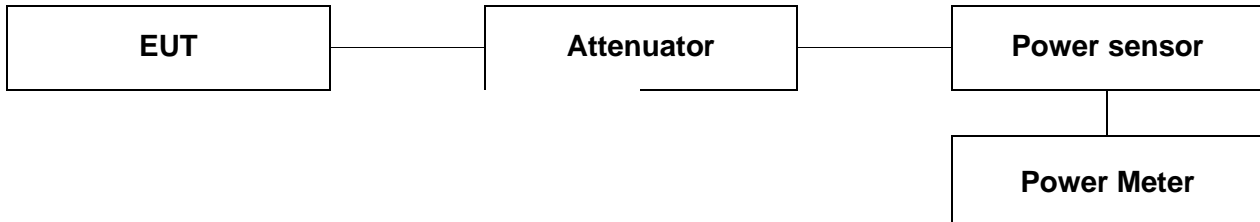


802.11ac_VHT80 (Band 3)
 High Channel
 (5 690 MHz)



5. Maximum Conducted Output Power

5.1. Test Setup



5.2. Limit

5.2.1. FCC

According to 15.407(a)(1)(iv)

For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dB i. In addition, the maximum power spectral density shall not exceed 11 dB m in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dB i 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 dB i.

According to 15.407(a)(2)

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dB m + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dB m in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dB i 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 dB i.

According to 15.407(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 dB m in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dB i 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 dB i. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dB i 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.

5.2.2. IC

According to RSS-247 Issue 2,

6.2.1.1 Frequency band 5 150-5 250 MHz

For OEM devices installed in vehicles, the maximum e.i.r.p. shall not exceed 30 mW or $1.76 + 10 \log_{10}B$, dB m, whichever is less. Devices shall implement transmitter power control (TPC) in order to have the capability to operate at least 3 dB below the maximum permitted e.i.r.p. of 30 mW.

For other devices, the maximum e.i.r.p. shall not exceed 200 mW or $10 + 10 \log_{10}B$, dB m, whichever power is less. B is the 99 % emission bandwidth in megahertz. The e.i.r.p. spectral density shall not exceed 10 dB m in any 1.0 MHz band.

6.2.2.1 Frequency band 5 250-5 350 MHz

For OEM devices installed in vehicles, the maximum e.i.r.p. shall not exceed 30 mW or $1.76 + 10 \log_{10}B$, dB m, whichever is less. Devices shall implement TPC in order to have the capability to operate at least 3 dB below the maximum permitted e.i.r.p. of 30 mW.

Devices, other than devices installed in vehicles, shall comply with the following:

a) The maximum conducted output power shall not exceed 250 mW or $11 + 10 \log_{10}B$, dB m, whichever is less. The power spectral density shall not exceed 11 dB m in any 1.0 MHz band;

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

6.2.3.1 Frequency band 5 470-5 600 MHz and 5 650-5 725 MHz

The maximum conducted output power shall not exceed 250 mW or $11 + 10 \log_{10}B$, dB m, whichever is less. The power spectral density shall not exceed 11 dB m in any 1.0 MHz band.

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

6.2.4.1 Frequency band 5 725-5 850 MHz

For equipment operating in the band 5 725-5 850 MHz, the minimum 6 dB bandwidth shall be at least 500 kHz. The maximum conducted output power shall not exceed 1 W. The output power spectral density shall not exceed 30 dB m in any 500 kHz band. If transmitting antennas of directional gain greater than 6 dB i are used, both the maximum conducted output power and the output power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dB i. However, fixed point-to-point devices operating in this band may employ transmitting antennas with directional gain greater than 6 dB i without any corresponding reduction in transmitter conducted power. Fixed point-to-point operations exclude the use of point-to-multipoint³ systems, omnidirectional applications and multiple collocated transmitters transmitting the same information.

5.3. Test Procedure

1. This measurement settings are specified in section II.E.3.a of KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
2. Measurements may be performed using a wideband RF power meter with a thermocouple detector or equivalent if all of the conditions listed below are satisfied:
 - The EUT is configured to transmit continuously or to transmit with a consistent duty cycle.
 - At all times when the EUT is transmitting, it must be transmitting at its maximum power control level.
 - The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five.
3. If the transmitter does not transmit continuously, measure the duty cycle, x , of the transmitter output signal as described in section II.B.
4. Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.
5. Adjust the measurement in dBm by adding $10 \log (1/x)$ where x is the duty cycle (e.g., $10 \log (1/0.25)$ if the duty cycle is 25 %).
6. In case of band crossing channels 138, 142 and 144, the measurement is complied with section III.A of KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

5.4. Test Result

Ambient temperature : (23 ± 1) °C
 Relative humidity : 47 % R.H.

- SISO_Core 0

Test mode: 11a

Band	Frequency (MHz)	Data Rate (Mbps)	Average Power (dB m)	Duty Cycle Correction Factor (dB)	Average Power Result (dB m)
U-NII 1	5 180	9	6.50	0.43	6.93
	5 220		6.57		7.00
	5 240		6.62		7.05
U-NII 2A	5 260		5.99		6.42
	5 300		6.08		6.51
	5 320		6.06		6.49
U-NII 2C	5 500		6.04		6.47
	5 580		6.11		6.54
	5 700		6.63		7.06
U-NII 3	5 745		6.43		6.86
	5 785		6.50		6.93
	5 825		6.58		7.01

Band	Frequency (MHz)	Data Rate (Mbps)	Average Power Result (dB m)	Antenna Gain (dB i)	E.I.R.P. (dB m)
U-NII 1	5 180	9	6.93	1.68	8.61
	5 220		7.00		8.68
	5 240		7.05		8.73
U-NII 2A	5 260		6.42	8.10	
	5 300		6.51	8.19	
	5 320		6.49	8.17	
U-NII 2C	5 500		6.47	8.85	
	5 580		6.54	8.92	
	5 700		7.06	9.44	
U-NII 3	5 745		6.86	9.90	
	5 785		6.93	9.97	
	5 825		7.01	10.05	

Band	FCC Limit					
	Frequency (MHz)	Fixed Limit (dB m)	26 dB BW (MHz)	11+10LogB (dB m)	Antenna Gain (dB i)	Limit (dB m)
U-NII 1	5 180	23.98	/		1.68	23.98
	5 220					
	5 240					
U-NII 2A	5 260		21.059	24.23	1.68	
	5 300		21.259	24.28		
	5 320		21.179	24.26		
U-NII 2C	5 500		21.139	24.25	2.38	
	5 580		21.179	24.26		
	5 700		21.059	24.23		
U-NII 3	5 745		30	/		
	5 785					
	5 825					

Band	IC Limit					
	Frequency (MHz)	Fixed Limit (dB m)	99 % BW (MHz)	1.76+10LogB (dB m)	Antenna Gain (dB i)	Limit (dB m)
U-NII 1	5 180	14.77	16.961	14.05	1.68	14.05
	5 220		17.019	14.07		14.07
	5 240		17.019	14.07		14.07
U-NII 2A	5 260		16.961	14.05	1.68	14.05
	5 300		16.961	14.05		14.05
	5 320		16.961	14.05		14.05

Band	IC Limit					
	Frequency (MHz)	Fixed Limit (dB m)	99 % BW (MHz)	11+10LogB (dB m)	Antenna Gain (dB i)	Limit (dB m)
U-NII 2C	5 500	23.98	17.019	23.31	2.38	23.31
	5 580		17.019	23.31		23.31
	5 700		17.019	23.31		23.31
U-NII 3	5 745	30	/		3.04	30
	5 785					
	5 825					

Remark;

1. Average Power Result (dB m) = Average Power (dB m) + Duty Cycle Correction Factor (dB)
2. E.I.R.P. (dB m) = Average Power Result (dB m) + Antenna Gain (dB i)

Test mode: 11n_HT20

Band	Frequency (MHz)	Data Rate (Mbps)	Average Power (dB m)	Duty Cycle Correction Factor (dB)	Average Power Result (dB m)
U-NII 1	5 180	MCS2	6.12	0.84	6.96
	5 220		6.10		6.94
	5 240		5.99		6.83
U-NII 2A	5 260		5.49		6.33
	5 300		5.64		6.48
	5 320		5.59		6.43
U-NII 2C	5 500		5.52		6.36
	5 580		5.76		6.60
	5 700		6.05		6.89
U-NII 3	5 745		5.92		6.76
	5 785		6.06		6.90
	5 825		6.02		6.86

Band	Frequency (MHz)	Data Rate (Mbps)	Average Power Result (dB m)	Antenna Gain (dB i)	E.I.R.P. (dB m)
U-NII 1	5 180	MCS2	6.96	1.68	8.64
	5 220		6.94		8.62
	5 240		6.83		8.51
U-NII 2A	5 260		6.33	1.68	8.01
	5 300		6.48		8.16
	5 320		6.43		8.11
U-NII 2C	5 500		6.36	2.38	8.74
	5 580		6.60		8.98
	5 700		6.89		9.27
U-NII 3	5 745		6.76	3.04	9.80
	5 785		6.90		9.94
	5 825		6.86		9.90

Band	FCC Limit							
	Frequency (MHz)	Fixed Limit (dB m)	26 dB BW (MHz)	11+10LogB (dB m)	Antenna Gain (dB i)	Limit (dB m)		
U-NII 1	5 180	23.98			1.68	23.98		
	5 220							
	5 240							
U-NII 2A	5 260		21.259	24.28	1.68			
	5 300		21.419	24.31				
	5 320		21.379	24.30				
U-NII 2C	5 500		21.419	24.31	2.38			
	5 580		21.379	24.30				
	5 700		21.179	24.26				
U-NII 3	5 745		30				3.04	30
	5 785							
	5 825							
Band	IC Limit							

	Frequency (MHz)	Fixed Limit (dB m)	99 % BW (MHz)	1.76+10LogB (dB m)	Antenna Gain (dB i)	Limit (dB m)
U-NII 1	5 180	14.77	17.887	14.29	1.68	14.29
	5 220		17.945	14.30		14.30
	5 240		18.003	14.31		14.31
U-NII 2A	5 260		17.945	14.30	1.68	14.30
	5 300		17.945	14.30		14.30
	5 320		17.945	14.30		14.30

Band	IC Limit					
	Frequency (MHz)	Fixed Limit (dB m)	99 % BW (MHz)	11+10LogB (dB m)	Antenna Gain (dB i)	Limit (dB m)
U-NII 2C	5 500	23.98	17.887	23.53	2.38	23.53
	5 580		17.945	23.54		23.54
	5 700		18.003	23.55		23.55
U-NII 3	5 745	30	/		3.04	30
	5 785		/			
	5 825		/			

Remark;

1. Average Power Result (dB m) = Average Power (dB m) + Duty Cycle Correction Factor (dB)
2. E.I.R.P. (dB m) = Average Power Result (dB m) + Antenna Gain (dB i)

Test mode: 11n_HT40

Band	Frequency (MHz)	Data Rate (Mbps)	Average Power (dB m)	Duty Cycle Correction Factor (dB)	Average Power Result (dB m)
U-NII 1	5 190	MCS0	6.13	0.62	6.75
	5 230		6.15		6.77
U-NII 2A	5 270		5.68		6.30
	5 310		5.64		6.26
U-NII 2C	5 510		5.69		6.31
	5 550		5.90		6.52
	5 670		5.95		6.57
U-NII 3	5 755		5.86		6.48
	5 795		5.96		6.58

Band	Frequency (MHz)	Data Rate (Mbps)	Average Power Result (dB m)	Antenna Gain (dB i)	E.I.R.P. (dB m)
U-NII 1	5 190	MCS0	6.75	1.68	8.43
	5 230		6.77		8.45
U-NII 2A	5 270		6.30	1.68	7.98
	5 310		6.26		7.94
U-NII 2C	5 510		6.31	2.38	8.69
	5 550		6.52		8.90
	5 670		6.57		8.95
U-NII 3	5 755		6.48	3.04	9.52
	5 795		6.58		9.62

Band	FCC Limit							
	Frequency (MHz)	Fixed Limit (dB m)	26 dB BW (MHz)	11+10LogB (dB m)	Antenna Gain (dB i)	Limit (dB m)		
U-NII 1	5 190	23.98			1.68	23.98		
	5 230							
U-NII 2A	5 270		40.040	27.02	1.68			
	5 310		40.040	27.02				
U-NII 2C	5 510		40.120	27.03	2.38			
	5 550		40.440	27.07				
	5 670		40.120	27.03				
U-NII 3	5 755		30				3.04	30
	5 795							

Band	IC Limit					
	Frequency (MHz)	Fixed Limit (dB m)	99 % BW (MHz)	1.76+10LogB (dB m)	Antenna Gain (dB i)	Limit (dB m)
U-NII 1	5 190	14.77	36.237	17.35	1.68	14.77
	5 230		36.237	17.35		
U-NII 2A	5 270		36.237	17.35	1.68	
	5 310		36.353	17.37		

Band	IC Limit					
	Frequency (MHz)	Fixed Limit (dB m)	99 % BW (MHz)	11+10LogB (dB m)	Antenna Gain (dB i)	Limit (dB m)
U-NII 2C	5 510	23.98	36.237	26.59	2.38	23.98
	5 550		36.353	26.61		
	5 670		36.237	26.59		
U-NII 3	5 755	30			3.04	30
	5 795					

Remark;

1. Average Power Result (dB m) = Average Power (dB m) + Duty Cycle Correction Factor (dB)
2. E.I.R.P. (dB m) = Average Power Result (dB m) + Antenna Gain (dB i)

Test mode: 11ac_VHT80

Band	Frequency (MHz)	Data Rate (Mbps)	Average Power (dB m)	Duty Cycle Correction Factor (dB)	Average Power Result (dB m)
U-NII 1	5 210	MCS2	4.29	2.32	6.61
U-NII 2A	5 290		3.55		5.87
U-NII 2C	5 530		3.67		5.99
U-NII 3	5 775		3.94		6.26

Band	Frequency (MHz)	Data Rate (Mbps)	Average Power Result (dB m)	Antenna Gain (dB i)	E.I.R.P. (dB m)
U-NII 1	5 210	MCS2	6.61	1.68	8.29
U-NII 2A	5 290		5.87	1.68	7.55
U-NII 2C	5 530		5.99	2.38	8.37
U-NII 3	5 775		6.26	3.04	9.30

Band	FCC Limit					
	Frequency (MHz)	Fixed Limit (dB m)	26 dB BW (MHz)	11+10LogB (dB m)	Antenna Gain (dB i)	Limit (dB m)
U-NII 1	5 210	23.98			1.68	23.98
U-NII 2A	5 290		81.998	30.14	1.68	
U-NII 2C	5 530		81.518	30.11	2.38	
U-NII 3	5 775	30			3.04	30

Band	IC Limit					
	Frequency (MHz)	Fixed Limit (dB m)	99 % BW (MHz)	1.76+10LogB (dB m)	Antenna Gain (dB i)	Limit (dB m)
U-NII 1	5 210	14.77	75.716	20.55	1.68	14.77
U-NII 2A	5 290		75.716	20.55	1.68	

Band	IC Limit					
	Frequency (MHz)	Fixed Limit (dB m)	99 % BW (MHz)	11+10LogB (dB m)	Antenna Gain (dB i)	Limit (dB m)
U-NII 2C	5 530	23.98	75.716	29.79	2.38	23.98
U-NII 3	5 775	30			3.04	30

Remark;

1. Average Power Result (dB m) = Average Power (dB m) + Duty Cycle Correction Factor (dB)
2. E.I.R.P. (dB m) = Average Power Result (dB m) + Antenna Gain (dB i)

- Band-crossing channels

Mode	Band	Frequency (MHz)	Data Rate (Mbps)	Average Power (dB m)	Duty Cycle Correction Factor (dB)	Average Power Result (dB m)
11a	U-NII 2C	5 720	9	5.93	0.43	6.36
	U-NII 3			-1.22		-0.79
11n_HT20	U-NII 2C	5 720	MCS2	5.19	0.84	6.03
	U-NII 3			-1.34		-0.50
11n_HT40	U-NII 2C	5 710	MCS0	6.05	0.62	6.67
	U-NII 3			-5.67		-5.05
11ac_VHT80	U-NII 2C	5 690	MCS2	4.13	2.32	7.00
	U-NII 3			-10.47		-8.15

Mode	Band	Limit					
		Frequency (MHz)	Fixed Limit (dB m)	26 dB BW (MHz)	11+10LogB (dB m)	Antenna Gain (dB i)	Limit (dB m)
11a	U-NII 2C	5 720	23.98	15.589	22.93	2.38	22.93
	U-NII 3		30			3.04	30
11n_HT20	U-NII 2C	5 720	23.98	15.629	22.94	2.38	22.94
	U-NII 3		30			3.04	30
11n_HT40	U-NII 2C	5 710	23.98	34.980	26.44	2.38	23.98
	U-NII 3		30			3.04	30
11ac_VHT80	U-NII 2C	5 690	23.98	75.759	29.79	2.38	23.98
	U-NII 3		30			3.04	30

Remark;

1. Average Power Result (dB m) = Average Power (dB m) + Duty Cycle Correction Factor (dB)

- SISO_Core 1

Test mode: 11a

Band	Frequency (MHz)	Data Rate (Mbps)	Average Power (dB m)	Duty Cycle Correction Factor (dB)	Average Power Result (dB m)
U-NII 1	5 180	6	6.41	0.29	6.70
	5 220		6.49		6.78
	5 240		6.32		6.61
U-NII 2A	5 260		6.14		6.43
	5 300		6.15		6.44
	5 320		6.29		6.58
U-NII 2C	5 500		6.01		6.30
	5 580		6.41		6.70
	5 700		6.80		7.09
U-NII 3	5 745		6.59		6.88
	5 785		6.68		6.97
	5 825		6.63		6.92

Band	Frequency (MHz)	Data Rate (Mbps)	Average Power Result (dB m)	Antenna Gain (dB i)	E.I.R.P. (dB m)
U-NII 1	5 180	6	6.70	1.90	8.60
	5 220		6.78		8.68
	5 240		6.61		8.51
U-NII 2A	5 260		6.43	2.92	9.35
	5 300		6.44		9.36
	5 320		6.58		9.50
U-NII 2C	5 500		6.30	3.55	9.85
	5 580		6.70		10.25
	5 700		7.09		10.64
U-NII 3	5 745		6.88	3.32	10.20
	5 785		6.97		10.29
	5 825		6.92		10.24

Band	FCC Limit					
	Frequency (MHz)	Fixed Limit (dB m)	26 dB BW (MHz)	11+10LogB (dB m)	Antenna Gain (dB i)	Limit (dB m)
U-NII 1	5 180	23.98	/		1.90	23.98
	5 220					
	5 240					
U-NII 2A	5 260		21.019	24.23	2.92	
	5 300		21.099	24.24		
	5 320		20.859	24.19		
U-NII 2C	5 500		20.859	24.19	3.55	
	5 580		21.019	24.23		
	5 700		21.099	24.24		
U-NII 3	5 745	30	/		3.32	30
	5 785					
	5 825					

Band	IC Limit					
	Frequency (MHz)	Fixed Limit (dB m)	99 % BW (MHz)	1.76+10LogB (dB m)	Antenna Gain (dB i)	Limit (dB m)
U-NII 1	5 180	14.77	17.019	14.07	1.90	14.07
	5 220		17.019	14.07		14.07
	5 240		17.019	14.07		14.07
U-NII 2A	5 260		17.019	14.07	2.92	14.07
	5 300		17.019	14.07		14.07
	5 320		17.019	14.07		14.07

Band	IC Limit					
	Frequency (MHz)	Fixed Limit (dB m)	99 % BW (MHz)	11+10LogB (dB m)	Antenna Gain (dB i)	Limit (dB m)
U-NII 2C	5 500	23.98	17.019	23.31	3.55	23.31
	5 580		17.019	23.31		23.31
	5 700		17.019	23.31		23.31
U-NII 3	5 745	30	/		3.32	30
	5 785					
	5 825					

Remark;

1. Average Power Result (dB m) = Average Power (dB m) + Duty Cycle Correction Factor (dB)
2. E.I.R.P. (dB m) = Average Power Result (dB m) + Antenna Gain (dB i)

Test mode: 11ac_VHT20

Band	Frequency (MHz)	Data Rate (Mbps)	Average Power (dB m)	Duty Cycle Correction Factor (dB)	Average Power Result (dB m)
U-NII 1	5 180	MCS2	5.73	0.84	6.57
	5 220		5.72		6.56
	5 240		5.63		6.47
U-NII 2A	5 260		5.50		6.34
	5 300		5.48		6.32
	5 320		5.63		6.47
U-NII 2C	5 500		5.47		6.31
	5 580		5.81		6.65
	5 700		6.11		6.95
U-NII 3	5 745		5.96		6.80
	5 785		5.98		6.82
	5 825		5.88		6.72

Band	Frequency (MHz)	Data Rate (Mbps)	Average Power Result (dB m)	Antenna Gain (dB i)	E.I.R.P. (dB m)
U-NII 1	5 180	MCS2	6.57	1.90	8.47
	5 220		6.56		8.46
	5 240		6.47		8.37
U-NII 2A	5 260		6.34	2.92	9.26
	5 300		6.32		9.24
	5 320		6.47		9.39
U-NII 2C	5 500		6.31	3.55	9.86
	5 580		6.65		10.20
	5 700		6.95		10.50
U-NII 3	5 745		6.80	3.32	10.12
	5 785		6.82		10.14
	5 825		6.72		10.04

Band	FCC Limit							
	Frequency (MHz)	Fixed Limit (dB m)	26 dB BW (MHz)	11+10LogB (dB m)	Antenna Gain (dB i)	Limit (dB m)		
U-NII 1	5 180	23.98			1.90	23.98		
	5 220							
	5 240							
U-NII 2A	5 260		21.219	24.27	2.92			
	5 300		21.379	24.30				
	5 320		21.499	24.32				
U-NII 2C	5 500		21.459	24.32	3.55			
	5 580		21.379	24.30				
	5 700		21.299	24.28				
U-NII 3	5 745		30				3.32	30
	5 785							
	5 825							
Band	IC Limit							

	Frequency (MHz)	Fixed Limit (dB m)	99 % BW (MHz)	1.76+10LogB (dB m)	Antenna Gain (dB i)	Limit (dB m)	
U-NII 1	5 180	14.77	18.003	14.31	1.90	14.31	
	5 220		18.003	14.31		14.31	
	5 240		17.945	14.30		14.30	
U-NII 2A	5 260		14.77	17.945	14.30	2.92	14.30
	5 300			17.945	14.30		14.30
	5 320			17.945	14.30		14.30

Band	IC Limit					
	Frequency (MHz)	Fixed Limit (dB m)	99 % BW (MHz)	11+10LogB (dB m)	Antenna Gain (dB i)	Limit (dB m)
U-NII 2C	5 500	23.98	17.945	23.54	3.55	23.54
	5 580		17.945	23.54		23.54
	5 700		18.003	23.55		23.55
U-NII 3	5 745	30	/		3.32	30
	5 785		/			
	5 825		/			

Remark;

1. Average Power Result (dB m) = Average Power (dB m) + Duty Cycle Correction Factor (dB)
2. E.I.R.P. (dB m) = Average Power Result (dB m) + Antenna Gain (dB i)

Test mode: 11n_HT40

Band	Frequency (MHz)	Data Rate (Mbps)	Average Power (dB m)	Duty Cycle Correction Factor (dB)	Average Power Result (dB m)
U-NII 1	5 190	MCS2	4.70	1.50	6.20
	5 230		4.86		6.36
U-NII 2A	5 270		4.60		6.10
	5 310		4.64		6.14
U-NII 2C	5 510		4.53		6.03
	5 550		4.72		6.22
	5 670		5.23		6.73
U-NII 3	5 755		4.95		6.45
	5 795		5.01		6.51

Band	Frequency (MHz)	Data Rate (Mbps)	Average Power Result (dB m)	Antenna Gain (dB i)	E.I.R.P. (dB m)
U-NII 1	5 190	MCS2	6.20	1.90	8.10
	5 230		6.36		8.26
U-NII 2A	5 270		6.10	2.92	9.02
	5 310		6.14		9.06
U-NII 2C	5 510		6.03	3.55	9.58
	5 550		6.22		9.77
	5 670		6.73		10.28
U-NII 3	5 755		6.45	3.32	9.77
	5 795		6.51		9.83

Band	FCC Limit							
	Frequency (MHz)	Fixed Limit (dB m)	26 dB BW (MHz)		Antenna Gain (dB i)	Limit (dB m)		
U-NII 1	5 190	23.98			1.90	23.98		
	5 230							
U-NII 2A	5 270		39.960	27.02	2.92			
	5 310		39.720	26.99				
U-NII 2C	5 510		39.880	27.01	3.55			
	5 550		39.640	26.98				
	5 670		39.800	27.00				
U-NII 3	5 755		30				3.32	30
	5 795							

Band	IC Limit					
	Frequency (MHz)	Fixed Limit (dB m)	99 % BW (MHz)	1.76+10LogB (dB m)	Antenna Gain (dB i)	Limit (dB m)
U-NII 1	5 190	14.77	36.122	17.34	1.90	14.77
	5 230		36.237	17.35		
U-NII 2A	5 270		36.122	17.34	2.92	
	5 310		36.237	17.35		

Band	IC Limit					
	Frequency (MHz)	Fixed Limit (dB m)	99 % BW (MHz)	11+10LogB (dB m)	Antenna Gain (dB i)	Limit (dB m)
U-NII 2C	5 510	23.98	36.237	26.59	3.55	23.98
	5 550		36.122	26.58		
	5 670		36.237	26.59		
U-NII 3	5 755	30			3.32	30
	5 795					

Remark;

1. Average Power Result (dB m) = Average Power (dB m) + Duty Cycle Correction Factor (dB)
2. E.I.R.P. (dB m) = Average Power Result (dB m) + Antenna Gain (dB i)

Test mode: 11ac_VHT80

Band	Frequency (MHz)	Data Rate (Mbps)	Average Power (dB m)	Duty Cycle Correction Factor (dB)	Average Power Result (dB m)
U-NII 1	5 210	MCS1	4.21	1.88	6.09
U-NII 2A	5 290		3.89		5.77
U-NII 2C	5 530		3.98		5.86
U-NII 3	5 775		4.38		6.26

Band	Frequency (MHz)	Data Rate (Mbps)	Average Power Result (dB m)	Antenna Gain (dB i)	E.I.R.P. (dB m)
U-NII 1	5 210	MCS1	6.09	1.90	7.99
U-NII 2A	5 290		5.77	2.92	8.69
U-NII 2C	5 530		5.86	3.55	9.41
U-NII 3	5 775		6.26	3.32	9.58

Band	FCC Limit					
	Frequency (MHz)	Fixed Limit (dB m)	26 dB BW (MHz)	11+10LogB (dB m)	Antenna Gain (dB i)	Limit (dB m)
U-NII 1	5 210	23.98	/		1.90	23.98
U-NII 2A	5 290		81.838	30.13	2.92	
U-NII 2C	5 530		81.838	30.13	3.55	
U-NII 3	5 775	30	/		3.32	30

Band	IC Limit					
	Frequency (MHz)	Fixed Limit (dB m)	99 % BW (MHz)	1.76+10LogB (dB m)	Antenna Gain (dB i)	Limit (dB m)
U-NII 1	5 210	14.77	75.716	20.55	1.90	14.77
U-NII 2A	5 290		75.716	20.55	2.92	

Band	IC Limit					
	Frequency (MHz)	Fixed Limit (dB m)	99 % BW (MHz)	11+10LogB (dB m)	Antenna Gain (dB i)	Limit (dB m)
U-NII 2C	5 530	23.98	75.716	29.79	3.55	23.98
U-NII 3	5 775	30	/		3.32	30

Remark;

1. Average Power Result (dB m) = Average Power (dB m) + Duty Cycle Correction Factor (dB)
2. E.I.R.P. (dB m) = Average Power Result (dB m) + Antenna Gain (dB i)

- Band-crossing channels

Mode	Band	Frequency (MHz)	Data Rate (Mbps)	Average Power (dB m)	Duty Cycle Correction Factor (dB)	Average Power Result (dB m)
11a	U-NII 2C	5 720	6	6.22	0.29	6.51
	U-NII 3			-1.12		-0.83
11ac_VHT20	U-NII 2C	5 720	MCS2	5.57	0.84	6.41
	U-NII 3			-1.22		-0.38
11n_HT40	U-NII 2C	5 710	MCS2	5.19	1.50	6.69
	U-NII 3			-6.88		-5.38
11ac_VHT80	U-NII 2C	5 690	MCS1	4.55	1.88	6.43
	U-NII 3			-9.64		-7.76

Mode	Band	Limit					
		Frequency (MHz)	Fixed Limit (dB m)	26 dB BW (MHz)	11+10LogB (dB m)	Antenna Gain (dB i)	Limit (dB m)
11a	U-NII 2C	5 720	23.98	15.470	22.89	3.55	22.89
	U-NII 3		30			3.32	30
11ac_VHT20	U-NII 2C	5 720	23.98	15.709	22.96	3.55	22.96
	U-NII 3		30			3.32	30
11n_HT40	U-NII 2C	5 710	23.98	34.820	26.42	3.55	23.98
	U-NII 3		30			3.32	30
11ac_VHT80	U-NII 2C	5 690	23.98	76.079	29.81	3.55	23.98
	U-NII 3		30			3.32	30

Remark;

1. Average Power Result (dB m) = Average Power (dB m) + Duty Cycle Correction Factor (dB)

- MIMO

Test mode: 11n_HT20

Band	Frequency (MHz)	Data Rate (Mbps)	Core 0 Average Power (dB m)	Core 1 Average Power (dB m)	Core 0+Core 1 Average Power (dB m)
U-NII 1	5 180	MCS13	-0.13	-0.55	2.68
	5 220		-0.06	-0.68	2.65
	5 240		-0.25	-0.64	2.57
U-NII 2A	5 260		-0.10	-0.30	2.81
	5 300		-0.22	-0.43	2.69
	5 320		-0.31	-0.28	2.72
U-NII 2C	5 500		-0.43	-0.60	2.50
	5 580		-0.10	-0.45	2.74
	5 700		-0.09	-0.24	2.85
U-NII 3	5 745		-1.03	-0.58	2.21
	5 785		-0.91	-0.94	2.09
	5 825		-0.60	-0.87	2.28

Band	Frequency (MHz)	Data Rate (Mbps)	Core 0+Core 1 Average Power (dB m)	Duty Cycle Correction Factor (dB)	Core 0 + Core 1 Average Power Result (dB m)
U-NII 1	5 180	MCS13	2.68	2.61	5.29
	5 220		2.65		5.26
	5 240		2.57		5.18
U-NII 2A	5 260		2.81		5.42
	5 300		2.69		5.30
	5 320		2.72		5.33
U-NII 2C	5 500		2.50		5.11
	5 580		2.74		5.35
	5 700		2.85		5.46
U-NII 3	5 745		2.21		4.82
	5 785		2.09		4.70
	5 825		2.28		4.89

Band	Frequency (MHz)	Data Rate (Mbps)	Core 0 + Core 1 Average Power Result (dB m)	Antenna Gain (dB i)	Core 0 + Core 1 E.I.R.P. (dB m)
U-NII 1	5 180	MCS13	5.29	4.80	10.09
	5 220		5.26		10.06
	5 240		5.18		9.98
U-NII 2A	5 260		5.42	5.33	10.75
	5 300		5.30		10.63
	5 320		5.33		10.66
U-NII 2C	5 500		5.11	5.99	11.10
	5 580		5.35		11.34
	5 700		5.46		11.45
U-NII 3	5 745		4.82	6.19	11.01
	5 785		4.70		10.89
	5 825		4.89		11.08

Band	FCC Limit							
	Frequency (MHz)	Fixed Limit (dB m)	26 dB BW (MHz)	11+10LogB (dB m)	Antenna Gain (dB i)	Limit (dB m)		
U-NII 1	5 180	23.98			4.80	23.98		
	5 220							
	5 240							
U-NII 2A	5 260		20.579	24.13	5.33			
	5 300		20.420	24.10				
	5 320		20.500	24.12				
U-NII 2C	5 500		21.179	24.26	5.99			
	5 580		21.219	24.27				
	5 700		21.259	24.28				
U-NII 3	5 745		30				6.19	29.81
	5 785							
	5 825							

Band	IC Limit					
	Frequency (MHz)	Fixed Limit (dB m)	99 % BW (MHz)	1.76+10LogB (dB m)	Antenna Gain (dB i)	Limit (dB m)
U-NII 1	5 180	14.77	18.003	14.31	4.80	14.31
	5 220		18.061	14.33		14.33
	5 240		18.003	14.31		14.31
U-NII 2A	5 260		18.003	14.31	5.33	14.31
	5 300		18.003	14.31		14.31
	5 320		18.003	14.31		14.31

Band	IC Limit					
	Frequency (MHz)	Fixed Limit (dB m)	99 % BW (MHz)	11+10LogB (dB m)	Antenna Gain (dB i)	Limit (dB m)
U-NII 2C	5 500	23.98	18.003	23.55	5.99	23.55
	5 580		18.003	23.55		23.55
	5 700		18.061	23.57		23.57
U-NII 3	5 745	30			6.19	29.81
	5 785					
	5 825					

Remark;

1. According to KDB 662911, Average power of each port and antenna gain was combined by using below calculation.

- Average power: $10 \log \{10^{G_1/10} + 10^{G_2/10} + \dots + 10^{G_N/10}\}$

- Unequal antenna gains, with equal transmit powers. For antenna gains given by G_1, G_2, \dots, G_N dB i

(i) If transmit signals are correlated, then

Directional gain = $10 \log \left[\frac{(10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_N/20})^2}{N_{ANT}} \right]$ dB i [Note the "20"s in the denominator of each exponent and the square of the sum of terms; the object is to combine the signal levels coherently.]

2. Average Power Result (dB m) = Average Power (dB m) + Duty Cycle Correction Factor (dB)

3. E.I.R.P. (dB m) = Average Power Result (dB m) + Antenna Gain (dB i)

Test mode: 11ac_VHT40

Band	Frequency (MHz)	Data Rate (Mbps)	Core 0 Average Power (dB m)	Core 1 Average Power (dB m)	Core 0+Core 1 Average Power (dB m)
U-NII 1	5 190	MCS3	-0.17	-0.35	2.75
	5 230		0.09	-0.44	2.84
U-NII 2A	5 270		-0.30	-0.54	2.59
	5 310		-0.22	-0.10	2.85
U-NII 2C	5 510		-0.27	-0.35	2.70
	5 550		-0.35	-0.59	2.54
	5 670		0.14	-0.27	2.95
U-NII 3	5 755		-0.50	-0.42	2.55
	5 795		-0.77	-0.50	2.38

Band	Frequency (MHz)	Data Rate (Mbps)	Core 0+Core 1 Average Power (dB m)	Duty Cycle Correction Factor (dB)	Core 0 + Core 1 Average Power Result (dB m)
U-NII 1	5 190	MCS3	2.75	2.57	5.32
	5 230		2.84		5.41
U-NII 2A	5 270		2.59		5.16
	5 310		2.85		5.42
U-NII 2C	5 510		2.70		5.27
	5 550		2.54		5.11
	5 670		2.95		5.52
U-NII 3	5 755		2.55		5.12
	5 795		2.38		4.95

Band	Frequency (MHz)	Data Rate (Mbps)	Core 0 + Core 1 Average Power Result (dB m)	Antenna Gain (dB i)	Core 0 + Core 1 E.I.R.P. (dB m)
U-NII 1	5 190	MCS3	5.32	4.80	10.12
	5 230		5.41		10.21
U-NII 2A	5 270		5.16	5.33	10.49
	5 310		5.42		10.75
U-NII 2C	5 510		5.27	5.99	11.26
	5 550		5.11		11.10
	5 670		5.52		11.51
U-NII 3	5 755		5.12	6.19	11.31
	5 795		4.95		11.14

Band	FCC Limit					
	Frequency (MHz)	Fixed Limit (dB m)	26 dB BW (MHz)	11+10LogB (dB m)	Antenna Gain (dB i)	Limit (dB m)
U-NII 1	5 190	23.98			4.80	23.98
	5 230					
U-NII 2A	5 270		39.800	27.00	5.33	
	5 310		39.800	27.00		
U-NII 2C	5 510		39.960	27.02	5.99	
	5 550		40.120	27.03		
	5 670	39.880	27.01			
U-NII 3	5 755	30			6.19	29.81
	5 795					

Band	IC Limit					
	Frequency (MHz)	Fixed Limit (dB m)	99 % BW (MHz)	1.76+10LogB (dB m)	Antenna Gain (dB i)	Limit (dB m)
U-NII 1	5 190	14.77	36.469	17.38	4.80	14.77
	5 230		36.353	17.37		
U-NII 2A	5 270		36.353	17.37	5.33	
	5 310		36.353	17.37		

Band	IC Limit					
	Frequency (MHz)	Fixed Limit (dB m)	99 % BW (MHz)	11+10LogB (dB m)	Antenna Gain (dB i)	Limit (dB m)
U-NII 2C	5 510	23.98	36.469	26.62	5.99	23.98
	5 550		36.469	26.62		
	5 670		36.469	26.62		
U-NII 3	5 755	30			6.19	29.81
	5 795					

Remark;

1. According to KDB 662911, Average power of each port and antenna gain was combined by using below calculation.

- Average power: $10 \log \{10^{(Core\ 0\ power / 10)} + 10^{(Core\ 1\ power / 10)}\}$

- Unequal antenna gains, with equal transmit powers. For antenna gains given by G_1, G_2, \dots, G_N dB i

(i) If transmit signals are correlated, then

Directional gain = $10 \log \left[\frac{10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_N/20}}{2/N_{ANT}} \right]$ dB i [Note the "20"s in the denominator of each exponent and the square of the sum of terms; the object is to combine the signal levels coherently.]

2. Average Power Result (dB m) = Average Power (dB m) + Duty Cycle Correction Factor (dB)

3. E.I.R.P. (dB m) = Average Power Result (dB m) + Antenna Gain (dB i)

Test mode: 11ac_VHT80

Band	Frequency (MHz)	Data Rate (Mbps)	Core 0 Average Power (dB m)	Core 1 Average Power (dB m)	Core 0+Core 1 Average Power (dB m)
U-NII 1	5 210	MCS6	-0.78	-2.41	1.49
U-NII 2A	5 290		-1.96	-2.12	0.97
U-NII 2C	5 530		-2.30	-2.35	0.69
U-NII 3	5 775		-2.38	-2.29	0.68

Band	Frequency (MHz)	Data Rate (Mbps)	Core 0+Core 1 Average Power (dB m)	Duty Cycle Correction Factor (dB)	Core 0 + Core 1 Average Power Result (dB m)
U-NII 1	5 210	MCS6	1.49	4.09	5.58
U-NII 2A	5 290		0.97		5.06
U-NII 2C	5 530		0.69		4.78
U-NII 3	5 775		0.68		4.77

Band	Frequency (MHz)	Data Rate (Mbps)	Core 0 + Core 1 Average Power Result (dB m)	Antenna Gain (dB i)	Core 0 + Core 1 E.I.R.P. (dB m)
U-NII 1	5 210	MCS6	5.58	4.80	10.38
U-NII 2A	5 290		5.06	5.33	10.39
U-NII 2C	5 530		4.78	5.99	10.77
U-NII 3	5 775		4.77	6.19	10.96

Band	FCC Limit					
	Frequency (MHz)	Fixed Limit (dB m)	26 dB BW (MHz)	11+10LogB (dB m)	Antenna Gain (dB i)	Limit (dB m)
U-NII 1	5 210	23.98			4.80	23.98
U-NII 2A	5 290		81.518	30.11	5.33	
U-NII 2C	5 530		81.359	30.10	5.99	
U-NII 3	5 775	30			6.19	29.81

Band	IC Limit					
	Frequency (MHz)	Fixed Limit (dB m)	99 % BW (MHz)	1.76+10LogB (dB m)	Antenna Gain (dB i)	Limit (dB m)
U-NII 1	5 210	14.77	75.948	20.57	4.80	14.77
U-NII 2A	5 290		75.716	20.55	5.33	

Band	IC Limit					
	Frequency (MHz)	Fixed Limit (dB m)	99 % BW (MHz)	11+10LogB (dB m)	Antenna Gain (dB i)	Limit (dB m)
U-NII 2C	5 530	23.98	75.716	29.79	5.99	23.98
U-NII 3	5 775	30			6.19	29.81

Remark;

1. According to KDB 662911, Average power of each port and antenna gain was combined by using below calculation.

- Average power: $10 \log \{10^{(\text{Core 0 power} / 10)} + 10^{(\text{Core 1 power} / 10)}\}$

- Unequal antenna gains, with equal transmit powers. For antenna gains given by G_1, G_2, \dots, G_N dBi

(i) If transmit signals are correlated, then

Directional gain = $10 \log \left[\frac{(10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_N/20})^2}{N_{\text{ANT}}} \right]$ dBi [Note the "20"s in the denominator of each exponent and the square of the sum of terms; the object is to combine the signal levels coherently.]

2. Average Power Result (dB m) = Average Power (dB m) + Duty Cycle Correction Factor (dB)

3. E.I.R.P. (dB m) = Average Power Result (dB m) + Antenna Gain (dBi)

- Band-crossing channels

Mode	Band	Frequency (MHz)	Data Rate (Mbps)	Average Power (dB m)		
				Core 0	Core 1	Core 0 + Core 1
11n_HT20	U-NII 2C	5 720	MCS13	-0.92	-1.39	1.86
	U-NII 3			-6.23	-7.52	-3.82
11ac_VHT40	U-NII 2C	5 710	MCS3	-0.35	-0.21	2.73
	U-NII 3			-10.12	-9.88	-6.99
11ac_VHT80	U-NII 2C	5 690	MCS6	-1.95	-1.83	1.12
	U-NII 3			-15.01	-14.68	-11.83

Mode	Band	Limit					
		Frequency (MHz)	Fixed Limit (dB m)	26 dB BW (MHz)	11+10LogB (dB m)	Antenna Gain (dB i)	Limit (dB m)
11n_HT20	U-NII 2C	5 720	23.98	15.589	22.93	5.99	22.93
	U-NII 3		30				29.81
11ac_VHT40	U-NII 2C	5 710	23.98	34.900	26.43	5.99	23.98
	U-NII 3		30				29.81
11ac_VHT80	U-NII 2C	5 690	23.98	75.919	29.80	5.99	23.98
	U-NII 3		30				29.81

Remark;

1. According to KDB 662911, average power of each port and antenna gain was combined by using below calculation.

- Average power: $10 \log \{10^{(Core\ 0\ power / 10)} + 10^{(Core\ 1\ power / 10)}\}$

- Unequal antenna gains, with equal transmit powers. For antenna gains given by G_1, G_2, \dots, G_N dB i

(i) If transmit signals are correlated, then

Directional gain = $10 \log \left[\frac{(10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_N/20})^2}{N_{ANT}} \right]$ dB i [Note the "20"s in the denominator of each exponent and the square of the sum of terms; the object is to combine the signal levels coherently.]

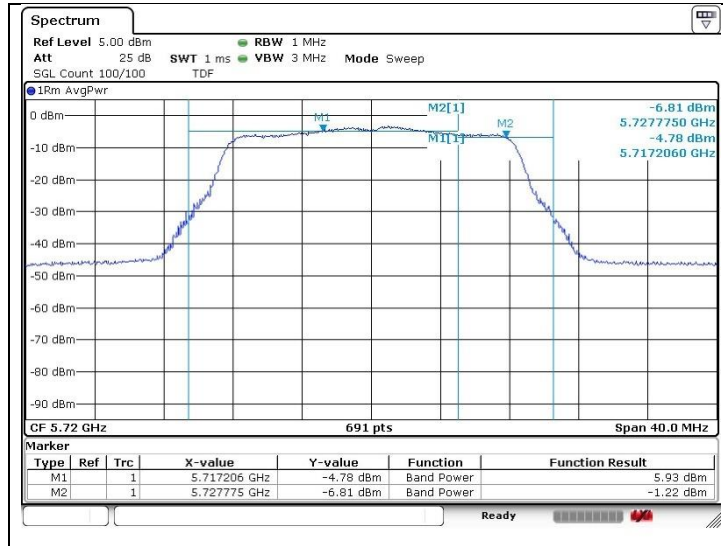
- Test plots

- SISO_Core 0

Band-crossing channels

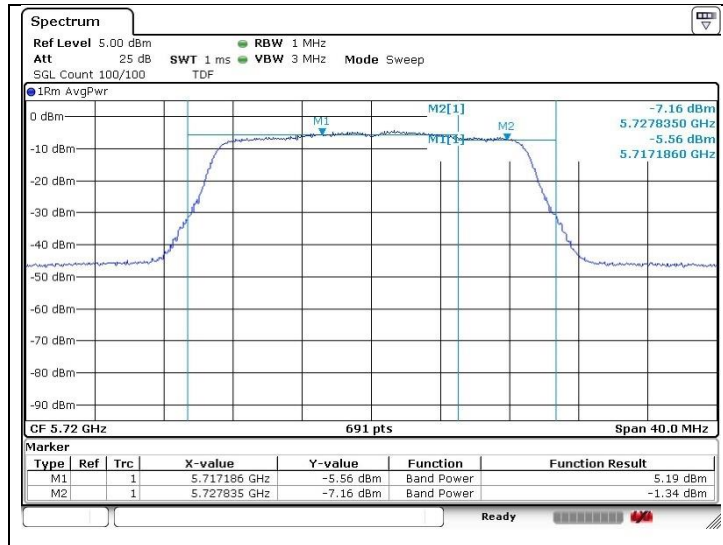
802.11a (Band 2C&3)

High Channel
(5 720 MHz)



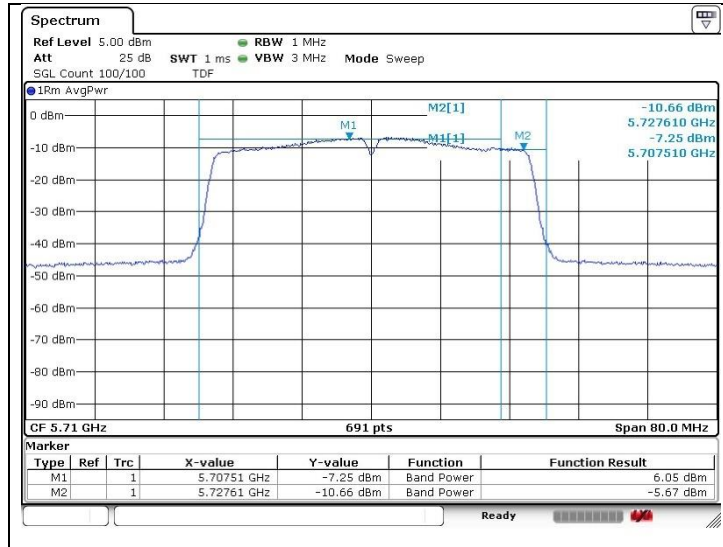
802.11n_HT20 (Band 2C&3)

High Channel
(5 720 MHz)



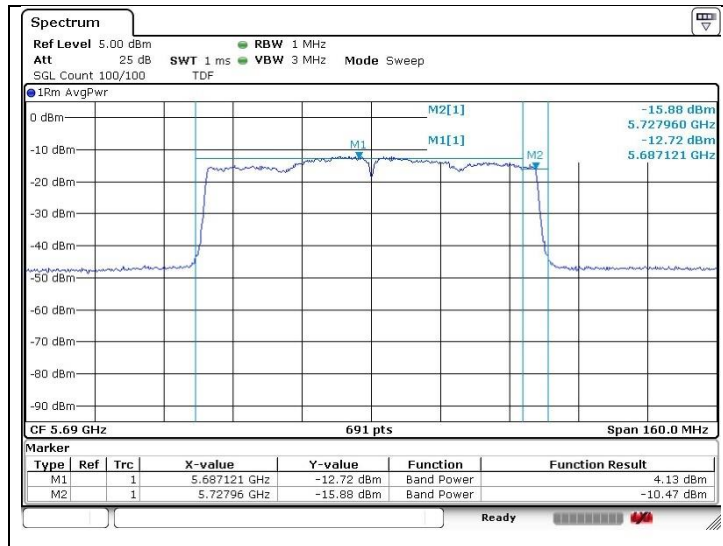
802.11n_HT40 (Band 2C&3)

High Channel
(5 710 MHz)



802.11ac_VHT80 (Band 2C&3)

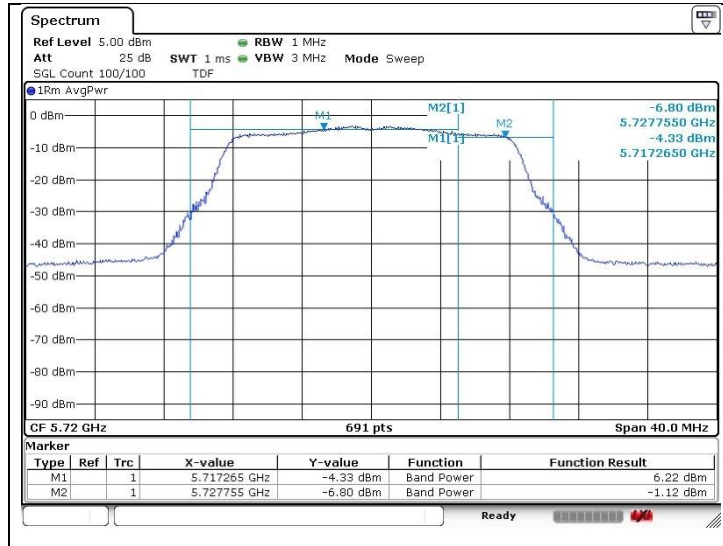
Middle Channel
(5 690 MHz)



- SISO_Core 1

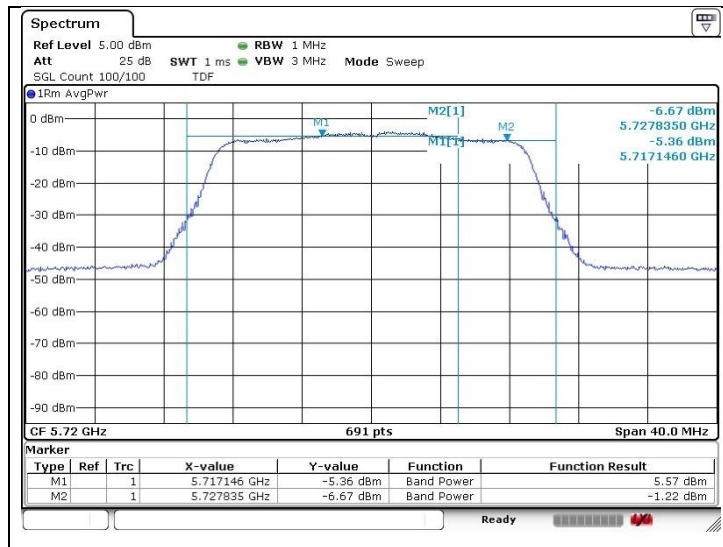
**Band-crossing channels
 802.11a (Band 2C&3)**

High Channel
 (5 720 MHz)



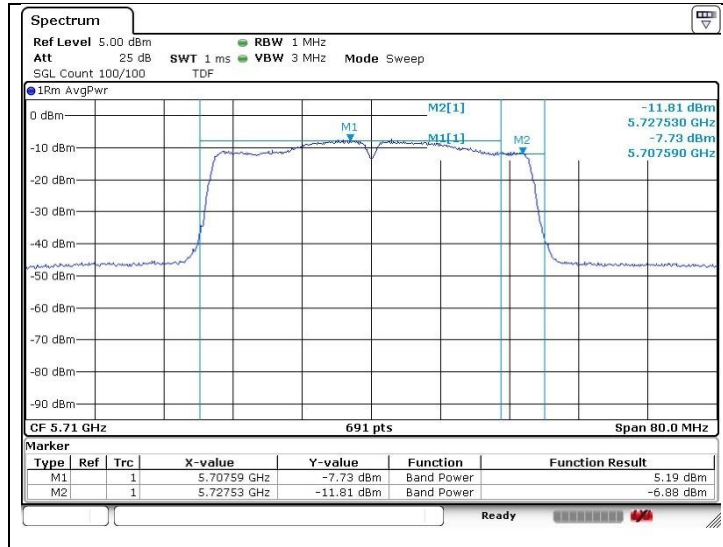
802.11ac_VHT20 (Band 2C&3)

High Channel
 (5 720 MHz)



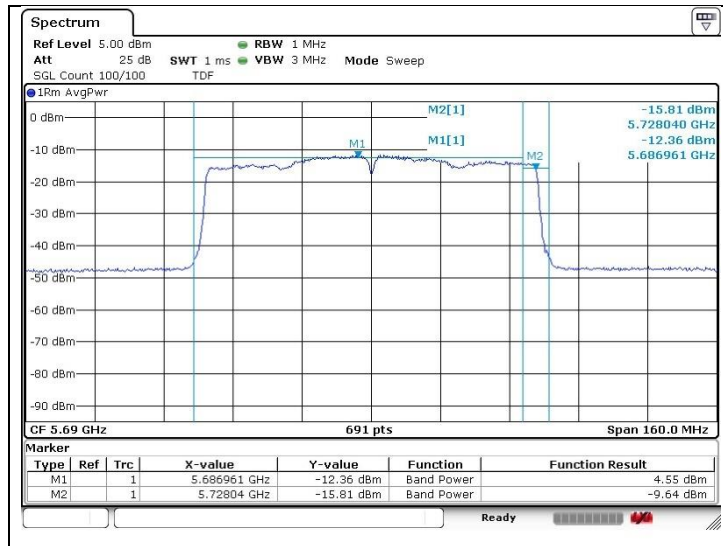
802.11n_HT40 (Band 2C&3)

High Channel
(5 710 MHz)



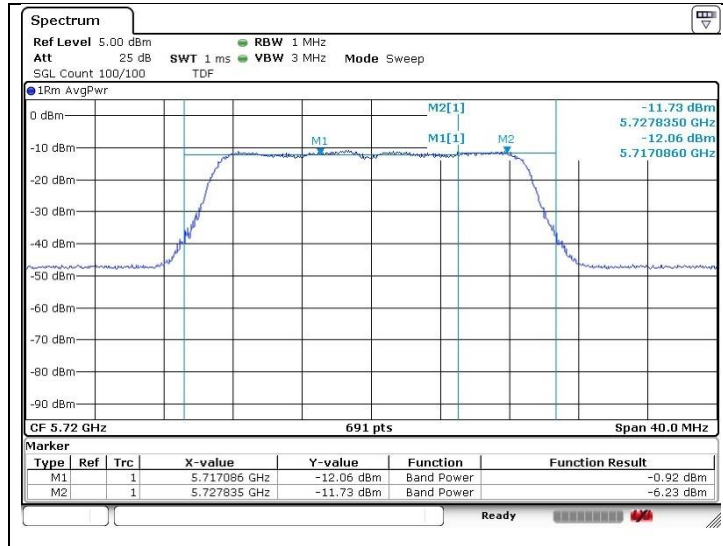
802.11ac_VHT80 (Band 2C&3)

Middle Channel
(5 690 MHz)

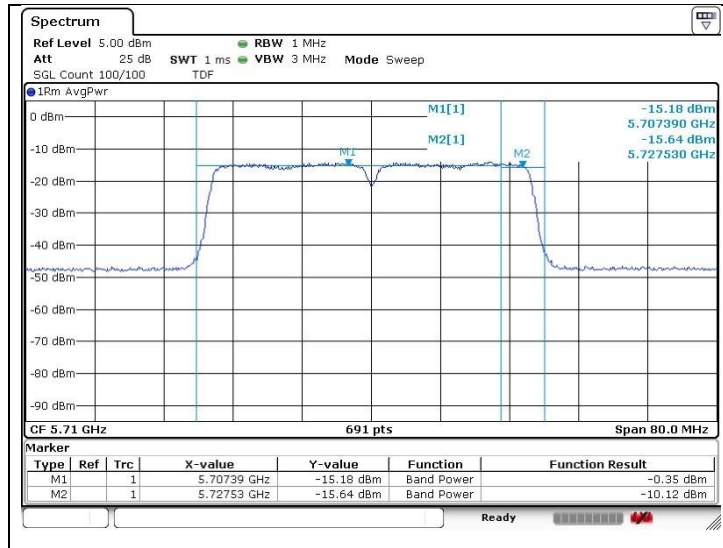


- MIMO_Core 0

Band-crossing channels
802.11n_HT20 (Band 2C&3)
 High Channel
 (5 720 MHz)

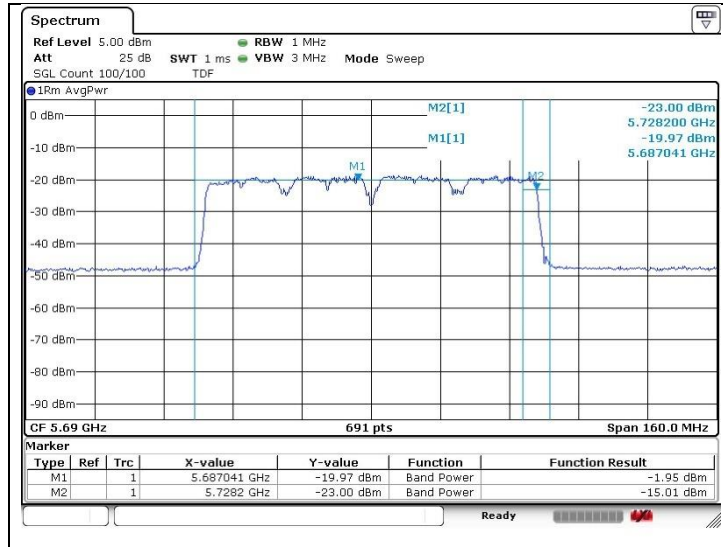


802.11ac_VHT40 (Band 2C&3)
 High Channel
 (5 710 MHz)



802.11ac_VHT80 (Band 2C&3)

High Channel
(5 690 MHz)

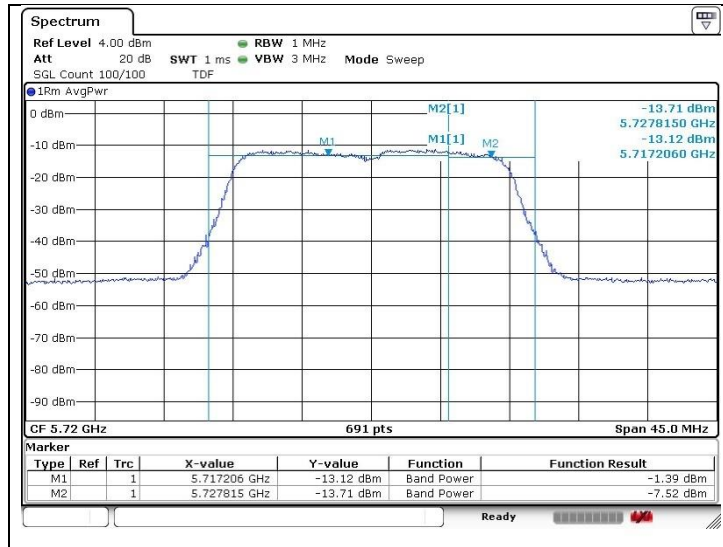


- MIMO_Core 1

Band-crossing channels

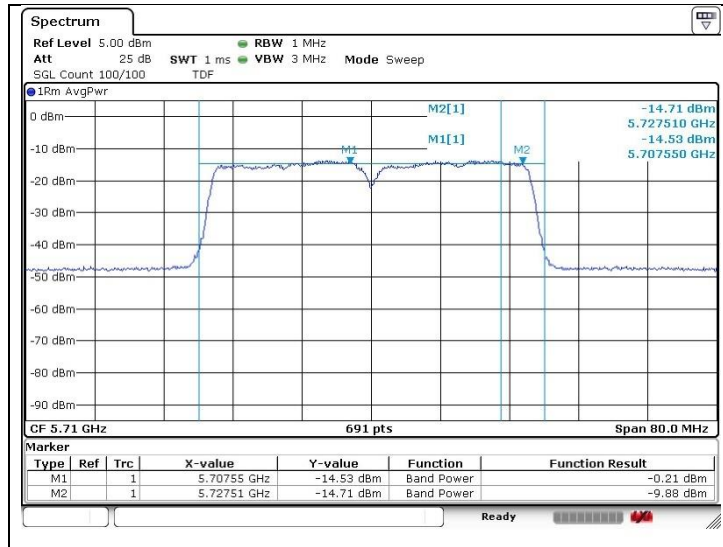
802.11n_HT20 (Band 2C&3)

High Channel
(5 720 MHz)



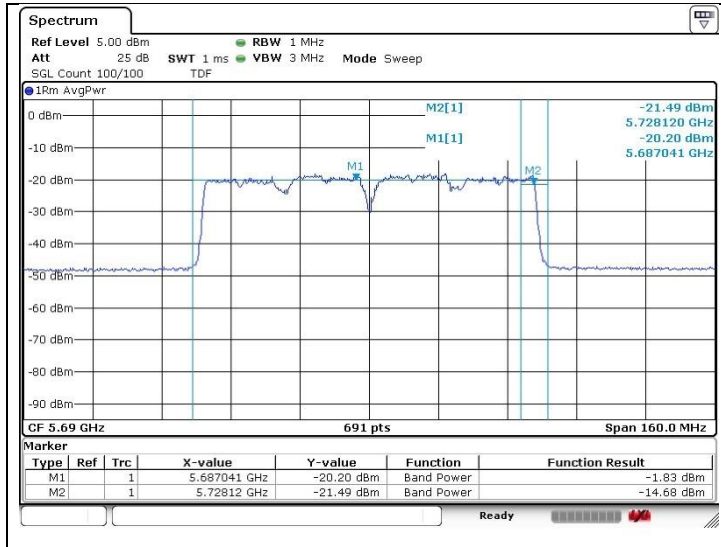
802.11ac_VHT40 (Band 2C&3)

High Channel
(5 710 MHz)



802.11ac_VHT80 (Band 2C&3)

High Channel
(5 690 MHz)



6. Maximum Power Spectral Density

6.1. Test Setup



6.2. Limit

6.2.1. FCC

According to 15.407(a)(1)(iv)

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

According to 15.407(a)(2)

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

According to 15.407(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.

6.2.2. IC

According to RSS-247 Issue 2,

6.2.2.1 Frequency band 5 150-5 250 MHz

For OEM devices installed in vehicles, the maximum e.i.r.p. shall not exceed 30 mW or $1.76 + 10 \log_{10}B$, dB m, whichever is less. Devices shall implement transmitter power control (TPC) in order to have the capability to operate at least 3 dB below the maximum permitted e.i.r.p. of 30 mW.

For other devices, the maximum e.i.r.p. shall not exceed 200 mW or $10 + 10 \log_{10}B$, dB m, whichever power is less. B is the 99 % emission bandwidth in megahertz. The e.i.r.p. spectral density shall not exceed 10 dB m in any 1.0 MHz band.

6.2.2.1 Frequency band 5 250-5 350 MHz

For OEM devices installed in vehicles, the maximum e.i.r.p. shall not exceed 30 mW or $1.76 + 10 \log_{10}B$, dB m, whichever is less. Devices shall implement TPC in order to have the capability to operate at least 3 dB below the maximum permitted e.i.r.p. of 30 mW.

Devices, other than devices installed in vehicles, shall comply with the following:

a) The maximum conducted output power shall not exceed 250 mW or $11 + 10 \log_{10}B$, dB m, whichever is less. The power spectral density shall not exceed 11 dB m in any 1.0 MHz band;

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

6.2.3.1 Frequency band 5 470-5 600 MHz and 5 650-5 725 MHz

The maximum conducted output power shall not exceed 250 mW or $11 + 10 \log_{10}B$, dB m, whichever is less. The power spectral density shall not exceed 11 dB m in any 1.0 MHz band.

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

6.2.4.1 Frequency band 5 725-5 850 MHz

For equipment operating in the band 5 725-5 850 MHz, the minimum 6 dB bandwidth shall be at least 500 kHz. The maximum conducted output power shall not exceed 1 W. The output power spectral density shall not exceed 30 dB m in any 500 kHz band. If transmitting antennas of directional gain greater than 6 dB i are used, both the maximum conducted output power and the output power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dB i. However, fixed point-to-point devices operating in this band may employ transmitting antennas with directional gain greater than 6 dB i without any corresponding reduction in transmitter conducted power. Fixed point-to-point operations exclude the use of point-to-multipoint³ systems, omnidirectional applications and multiple collocated transmitters transmitting the same information.

6.3. Test Procedure

1. This measurement settings are specified in section II.F of KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
2. Create an average power spectrum for the EUT operating mode being tested by following the instructions in section II.E.2. for measuring maximum conducted output power using a spectrum analyzer or EMI receiver: select the appropriate test method (SA-1, SA-2, SA-3, or alternatives to each) and apply it up to, but not including, the step labeled, "Compute power...". (This procedure is required even if the maximum conducted output power measurement was performed using a power meter, method PM.)
3. Use the peak search function on the instrument to find the peak of the spectrum and record its value.
4. Make the following adjustments to the peak value of the spectrum, if applicable:
 - a) **If Method SA-2 or SA-2 Alternative was used, add $10 \log(1/x)$, where x is the duty cycle, to the peak of the spectrum.**
 - b) If Method SA-3 Alternative was used and the linear mode was used in step II.E.2.g)(viii), add 1 dB to the final result to compensate for the difference between linear averaging and power averaging.
5. The result is the Maximum PSD over 1 MHz reference bandwidth.
6. 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.1.a).
 - b) Set $VBW \geq 3 RBW$.
 - c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add $10 \log(500 \text{ kHz}/RBW)$ 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 $10 \log(1 \text{ MHz}/RBW)$ 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.
7. In case of band crossing channels 138, 142 and 144, the measurement is complied with section III.A of KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

6.4. Test Result

Ambient temperature : (23 ± 1) °C
 Relative humidity : 47 % R.H.

- SISO_Core 0

Test mode: 11a

Band	Frequency (MHz)	Ch.	Data Rate (Mbps)	Measured PPSD (dB m)	Duty Cycle Correction Factor (dB)	Final PPSD (dB m)	Limit (dB m/1 MHz)
U-NII 1	5 180	36	9	-3.92	0.43	-3.49	11
	5 220	44		-3.41		-2.98	
	5 240	48		-3.65		-3.22	
U-NII 2A	5 260	52		-4.05		-3.62	
	5 300	60		-3.90		-3.47	
	5 320	64		-4.20		-3.77	
U-NII 2C	5 500	100		-4.22		-3.79	
	5 580	116		-3.72		-3.29	
	5 700	140		-3.32		-2.89	
Band	Frequency (MHz)	Ch.	Data Rate (Mbps)	Measured PPSD (dB m)	Duty Cycle Correction Factor (dB)	Final PPSD (dB m)	Limit (dB m/500 kHz)
U-NII 3	5 745	149	9	-6.32	0.43	-5.89	30
	5 785	157		-6.04		-5.61	
	5 825	165		-6.35		-5.92	

Band	Frequency (MHz)	Ch.	Data Rate (Mbps)	Final PPSD (dB m)	Antenna Gain (dB i)	E.I.R.P. PPSD (dB m)	IC Limit (dB m/1 MHz)
U-NII 1	5 180	36	9	-3.49	1.68	-1.81	10
	5 220	44		-2.98		-1.30	
	5 240	48		-3.22		-1.54	
U-NII 2A	5 260	52		-3.62	1.68	-1.94	N/A
	5 300	60		-3.47		-1.79	
	5 320	64		-3.77		-2.09	
U-NII 2C	5 500	100		-3.79	2.38	-1.41	
	5 580	116		-3.29		-0.91	
	5 700	140		-2.89		-0.51	
U-NII 3	5 745	149	-5.89	3.04	-2.85		
	5 785	157	-5.61		-2.57		
	5 825	165	-5.92		-2.88		

Remark;

- Final PPSD (dB m) = Measured PPSD (dB m) + Duty Cycle Correction Factor (dB)
- E.I.R.P. PPSD (dB m) = Final PPSD (dB m) + Antenna Gain (dB i)

Test mode: 11n_HT20

Band	Frequency (MHz)	Ch.	Data Rate (Mbps)	Measured PPSD (dB m)	Duty Cycle Correction Factor (dB)	Final PPSD (dB m)	Limit (dB m/1 MHz)
U-NII 1	5 180	36	MCS2	-4.63	0.84	-3.79	11
	5 220	44		-4.38		-3.54	
	5 240	48		-4.53		-3.69	
U-NII 2A	5 260	52		-4.70		-3.86	
	5 300	60		-4.77		-3.93	
	5 320	64		-4.75		-3.91	
U-NII 2C	5 500	100		-4.73		-3.89	
	5 580	116		-4.60		-3.76	
	5 700	140		-4.48		-3.64	
Band	Frequency (MHz)	Ch.	Data Rate (Mbps)	Measured PPSD (dB m)	Duty Cycle Correction Factor (dB)	Final PPSD (dB m)	Limit (dB m/500 kHz)
U-NII 3	5 745	149	MCS2	-7.11	0.84	-6.27	30
	5 785	157		-7.07		-6.23	
	5 825	165		-6.99		-6.15	

Band	Frequency (MHz)	Ch.	Data Rate (Mbps)	Final PPSD (dB m)	Antenna Gain (dB i)	E.I.R.P. PPSD (dB m)	IC Limit (dB m/1 MHz)
U-NII 1	5 180	36	MCS2	-3.79	1.68	-2.11	10
	5 220	44		-3.54		-1.86	
	5 240	48		-3.69		-2.01	
U-NII 2A	5 260	52		-3.86	1.68	-2.18	N/A
	5 300	60		-3.93		-2.25	
	5 320	64		-3.91		-2.23	
U-NII 2C	5 500	100		-3.89	2.38	-1.51	
	5 580	116		-3.76		-1.38	
	5 700	140		-3.64		-1.26	
U-NII 3	5 745	149	-6.27	3.04	-3.23		
	5 785	157	-6.23		-3.19		
	5 825	165	-6.15		-3.11		

Remark;

- Final PPSD (dB m) = Measured PPSD (dB m) + Duty Cycle Correction Factor (dB)
- E.I.R.P. PPSD (dB m) = Final PPSD (dB m) + Antenna Gain (dB i)

Test mode: 11n_HT40

Band	Frequency (MHz)	Ch.	Data Rate (Mbps)	Measured PPSD (dB m)	Duty Cycle Correction Factor (dB)	Final PPSD (dB m)	Limit (dB m/1 MHz)			
U-NII 1	5 190	38	MCS0	-7.30	0.62	-6.68	11			
	5 230	46		-7.03		-6.41				
U-NII 2A	5 270	54		-7.67		-7.05				
	5 310	62		-7.52		-6.90				
U-NII 2C	5 510	102		-7.43		-6.81				
	5 550	110		-7.83		-7.21				
	5 670	134		-7.03		-6.41				
Band	Frequency (MHz)	Ch.		Data Rate (Mbps)		Measured PPSD (dB m)		Duty Cycle Correction Factor (dB)	Final PPSD (dB m)	Limit (dB m/500 kHz)
U-NII 3	5 755	151		MCS0		-9.69		0.62	-9.07	30
	5 795	159	-9.60		-8.98					

Band	Frequency (MHz)	Ch.	Data Rate (Mbps)	Final PPSD (dB m)	Antenna Gain (dB i)	E.I.R.P. PPSD (dB m)	IC Limit (dB m/1 MHz)
U-NII 1	5 190	38	MCS0	-6.68	1.68	-5.00	10
	5 230	46		-6.41		-4.73	
U-NII 2A	5 270	54		-7.05	1.68	-5.37	N/A
	5 310	62		-6.90		-5.22	
U-NII 2C	5 510	102		-6.81	2.38	-4.43	
	5 550	110		-7.21		-4.83	
	5 670	134		-6.41		-4.03	
U-NII 3	5 755	151		-9.07	3.04	-6.03	
	5 795	159		-8.98		-5.94	

Remark;

- Final PPSD (dB m) = Measured PPSD (dB m) + Duty Cycle Correction Factor (dB)
- E.I.R.P. PPSD (dB m) = Final PPSD (dB m) + Antenna Gain (dB i)

Test mode: 11ac_VHT80

Band	Frequency (MHz)	Ch.	Data Rate (Mbps)	Measured PPSD (dB m)	Duty Cycle Correction Factor (dB)	Final PPSD (dB m)	Limit (dB m/1 MHz)
U-NII 1	5 210	42	MCS2	-11.69	2.32	-9.37	11
U-NII 2A	5 290	58		-12.25		-9.93	
U-NII 2C	5 530	106		-12.24		-9.92	
Band	Frequency (MHz)	Ch.	Data Rate (Mbps)	Measured PPSD (dB m)	Duty Cycle Correction Factor (dB)	Final PPSD (dB m)	Limit (dB m/500 kHz)
U-NII 3	5 775	155	MCS2	-14.30	2.32	-11.98	30

Band	Frequency (MHz)	Ch.	Data Rate (Mbps)	Final PPSD (dB m)	Antenna Gain (dB i)	E.I.R.P. PPSD (dB m)	IC Limit (dB m/1 MHz)
U-NII 1	5 210	42	MCS2	-9.37	1.68	-7.69	10
U-NII 2A	5 290	58	MCS2	-9.93	1.68	-8.25	N/A
U-NII 2C	5 530	106	MCS2	-9.92	2.38	-7.54	
U-NII 3	5 775	155	MCS2	-11.98	3.04	-8.94	

Remark;

1. Final PPSD (dB m) = Measured PPSD (dB m) + Duty Cycle Correction Factor (dB)
2. E.I.R.P. PPSD (dB m) = Final PPSD (dB m) + Antenna Gain (dB i)

Band-crossing channels

Mode	Band	Frequency (MHz)	Ch.	Data Rate (Mbps)	Measured PPSD (dB m)	Duty Cycle Correction Factor (dB)	Final PPSD (dB m)	Limit (dB m/1 MHz or dB m/500 kHz)
11a	U-NII 2C	5 720	144	9	-3.38	0.43	-2.95	11
	U-NII 3				-8.11		-7.68	30
11n_HT20	U-NII 2C	5 720	144	MCS2	-3.84	0.84	-3.00	11
	U-NII 3				-8.91		-8.07	30
11n_HT40	U-NII 2C	5 710	142	MCS0	-7.06	0.62	-6.44	11
	U-NII 3				-12.87		-12.25	30
11ac_VHT80	U-NII 2C	5 690	138	MCS2	-11.44	2.32	-9.12	11
	U-NII 3				-16.57		-14.25	30

Remark;

1. Final PPSD (dB m) = Measured PPSD (dB m) + Duty Cycle Correction Factor (dB)

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Test mode: 11a

Band	Frequency (MHz)	Ch.	Data Rate (Mbps)	Measured PPSD (dB m)	Duty Cycle Correction Factor (dB)	Final PPSD (dB m)	Limit (dB m/1 MHz)
U-NII 1	5 180	36	6	-3.53	0.29	-3.24	11
	5 220	44		-3.79		-3.50	
	5 240	48		-3.83		-3.54	
U-NII 2A	5 260	52		-3.98		-3.69	
	5 300	60		-3.58		-3.29	
	5 320	64		-4.02		-3.73	
U-NII 2C	5 500	100		-4.35		-4.06	
	5 580	116		-4.17		-3.88	
	5 700	140		-3.45		-3.16	
Band	Frequency (MHz)	Ch.	Data Rate (Mbps)	Measured PPSD (dB m)	Duty Cycle Correction Factor (dB)	Final PPSD (dB m)	Limit (dB m/500 kHz)
U-NII 3	5 745	149	6	-6.25	0.29	-5.96	30
	5 785	157		-6.33		-6.04	
	5 825	165		-6.43		-6.14	

Band	Frequency (MHz)	Ch.	Data Rate (Mbps)	Final PPSD (dB m)	Antenna Gain (dB i)	E.I.R.P. PPSD (dB m)	IC Limit (dB m/1 MHz)
U-NII 1	5 180	36	6	-3.24	1.90	-1.34	10
	5 220	44		-3.50		-1.60	
	5 240	48		-3.54		-1.64	
U-NII 2A	5 260	52		-3.69	2.92	-0.77	N/A
	5 300	60		-3.29		-0.37	
	5 320	64		-3.73		-0.81	
U-NII 2C	5 500	100		-4.06	3.55	-0.51	
	5 580	116		-3.88		-0.33	
	5 700	140		-3.16		0.39	
U-NII 3	5 745	149	-5.96	3.32	-2.64		
	5 785	157	-6.04		-2.72		
	5 825	165	-6.14		-2.82		

Remark;

- Final PPSD (dB m) = Measured PPSD (dB m) + Duty Cycle Correction Factor (dB)
- E.I.R.P. PPSD (dB m) = Final PPSD (dB m) + Antenna Gain (dB i)

Test mode: 11ac_VHT20

Band	Frequency (MHz)	Ch.	Data Rate (Mbps)	Measured PPSD (dB m)	Duty Cycle Correction Factor (dB)	Final PPSD (dB m)	Limit (dB m/1 MHz)
U-NII 1	5 180	36	MCS2	-4.86	0.84	-4.02	11
	5 220	44		-4.55		-3.71	
	5 240	48		-4.60		-3.76	
U-NII 2A	5 260	52		-4.72		-3.88	
	5 300	60		-4.55		-3.71	
	5 320	64		-4.90		-4.06	
U-NII 2C	5 500	100		-4.97		-4.13	
	5 580	116		-5.20		-4.36	
	5 700	140		-4.28		-3.44	
Band	Frequency (MHz)	Ch.	Data Rate (Mbps)	Measured PPSD (dB m)	Duty Cycle Correction Factor (dB)	Final PPSD (dB m)	Limit (dB m/500 kHz)
U-NII 3	5 745	149	MCS2	-6.48	0.84	-5.64	30
	5 785	157		-6.73		-5.89	
	5 825	165		-7.27		-6.43	

Band	Frequency (MHz)	Ch.	Data Rate (Mbps)	Final PPSD (dB m)	Antenna Gain (dB i)	E.I.R.P. PPSD (dB m)	IC Limit (dB m/1 MHz)
U-NII 1	5 180	36	MCS2	-4.02	1.90	-2.12	10
	5 220	44		-3.71		-1.81	
	5 240	48		-3.76		-1.86	
U-NII 2A	5 260	52		-3.88	2.92	-0.96	N/A
	5 300	60		-3.71		-0.79	
	5 320	64		-4.06		-1.14	
U-NII 2C	5 500	100		-4.13	3.55	-0.58	
	5 580	116		-4.36		-0.81	
	5 700	140		-3.44		0.11	
U-NII 3	5 745	149	-5.64	3.32	-2.32		
	5 785	157	-5.89		-2.57		
	5 825	165	-6.43		-3.11		

Remark;

1. Final PPSD (dB m) = Measured PPSD (dB m) + Duty Cycle Correction Factor (dB)
2. E.I.R.P. PPSD (dB m) = Final PPSD (dB m) + Antenna Gain (dB i)