

6. Peak 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 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 $11 \text{ dB m} + 10 \log B$, 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.

6.2.2. 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.

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 ≥ 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.
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 : $(23 \pm 1)^\circ\text{C}$

Relative humidity : 47 % R.H.

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	12	-4.57	0.57	-4.00	11
	5 220	44		-4.84		-4.27	
	5 240	48		-4.61		-4.04	
U-NII 2A	5 260	52	12	-4.86	0.57	-4.29	11
	5 300	60		-4.87		-4.30	
	5 320	64		-4.82		-4.25	
U-NII 2C	5 500	100	12	-7.19	0.57	-6.62	11
	5 580	116		-7.24		-6.67	
	5 700	140		-6.95		-6.38	
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	12	-11.98	0.57	-11.41	30
	5 785	157		-12.34		-11.77	
	5 825	165		-11.77		-11.20	

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	12	-4.00	3.49	-0.51	10
	5 220	44		-4.27		-0.78	
	5 240	48		-4.04		-0.55	

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)

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	-4.96	0.84	-4.12	11
	5 220	44		-5.78		-4.94	
	5 240	48		-5.12		-4.28	
U-NII 2A	5 260	52	MCS2	-5.35	0.84	-4.51	11
	5 300	60		-5.31		-4.47	
	5 320	64		-5.21		-4.37	
U-NII 2C	5 500	100	MCS2	-7.97	0.84	-7.13	11
	5 580	116		-7.73		-6.89	
	5 700	140		-7.31		-6.47	
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	-13.07	0.84	-12.23	30
	5 785	157		-12.68		-11.84	
	5 825	165		-12.66		-11.82	

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	-4.12	3.49	-0.63	10
	5 220	44		-4.94		-1.45	
	5 240	48		-4.28		-0.79	

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)

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	MCS2	-9.86	0.85	-9.01	11
	5 230	46		-10.01		-9.16	
U-NII 2A	5 270	54	MCS2	-10.31	0.85	-9.46	11
	5 310	62		-10.28		-9.43	
U-NII 2C	5 510	102	MCS2	-10.91	0.85	-10.06	11
	5 550	110		-11.41		-10.56	
	5 670	134		-11.16		-10.31	
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	MCS2	-16.98	0.85	-16.13	30
	5 795	159		-17.24		-16.39	

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	MCS2	-9.01	3.49	-5.52	10
	5 230	46		-9.16		-5.67	

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)

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	MCS5	-15.60	3.52	-12.08	11
U-NII 2A	5 290	58		-14.98		-11.46	
U-NII 2C	5 530	106		-16.88		-13.36	
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	MCS5	-21.74	3.52	-18.22	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	MCS5	-12.08	3.49	-8.59	10

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	12	-6.79	0.57	-6.22	11
	U-NII 3				-11.78		-11.21	30
11ac_VHT20	U-NII 2C	5 720	144	MCS2	-7.42	0.84	-6.58	11
	U-NII 3				-12.42		-11.58	30
11n_HT40	U-NII 2C	5 710	142	MCS2	-10.80	0.85	-9.95	11
	U-NII 3				-16.35		-15.50	30
11ac_VHT80	U-NII 2C	5 690	138	MCS5	-16.61	3.52	-13.09	11
	U-NII 3				-20.50		-16.98	30

Remark:

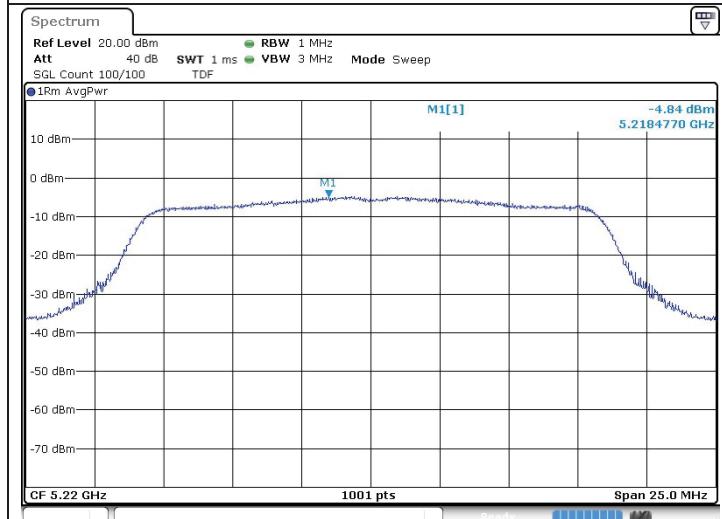
1. Final PPSD (dB m) = Measured PPSD (dB m) + Duty Cycle Correction Factor (dB)

- Test plots**802.11a (Band 1)**

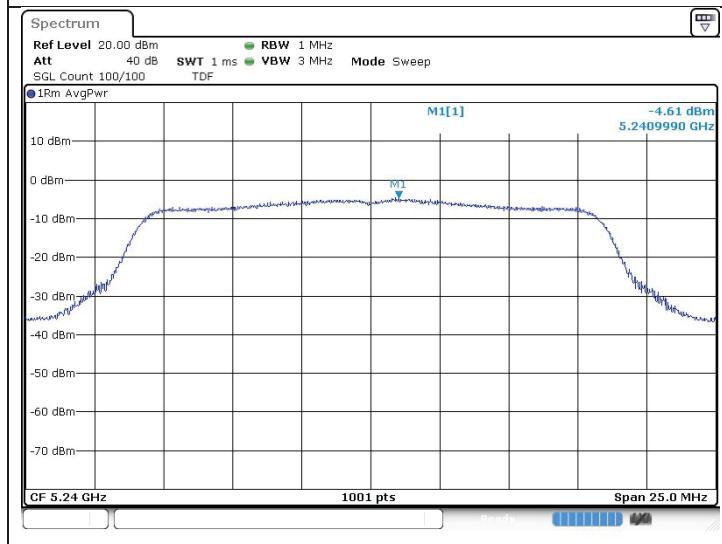
Low Channel
(5 180 MHz)



Middle Channel
(5 220 MHz)

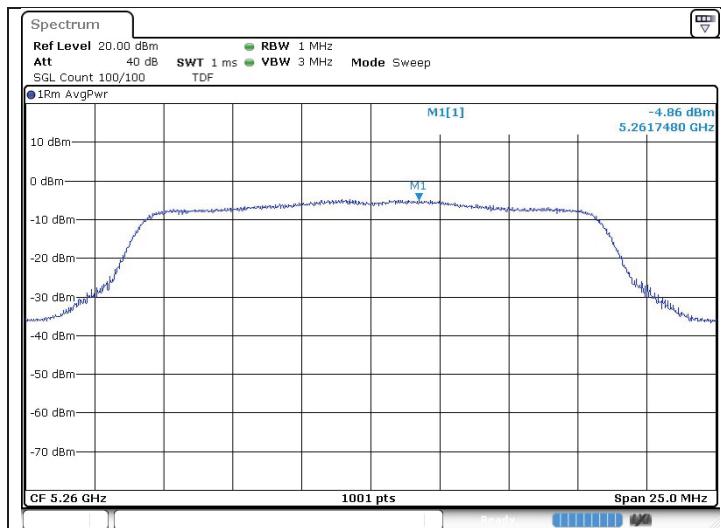


High Channel
(5 240 MHz)



802.11a (Band 2A)

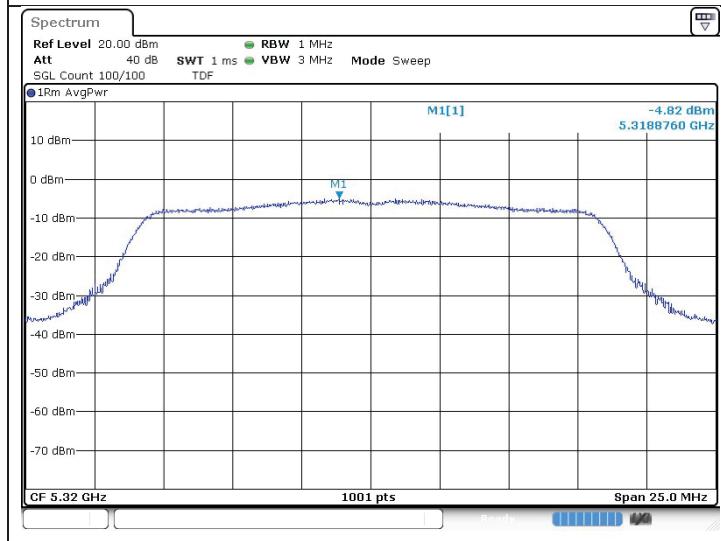
Low Channel
(5 260 MHz)



Middle Channel
(5 300 MHz)

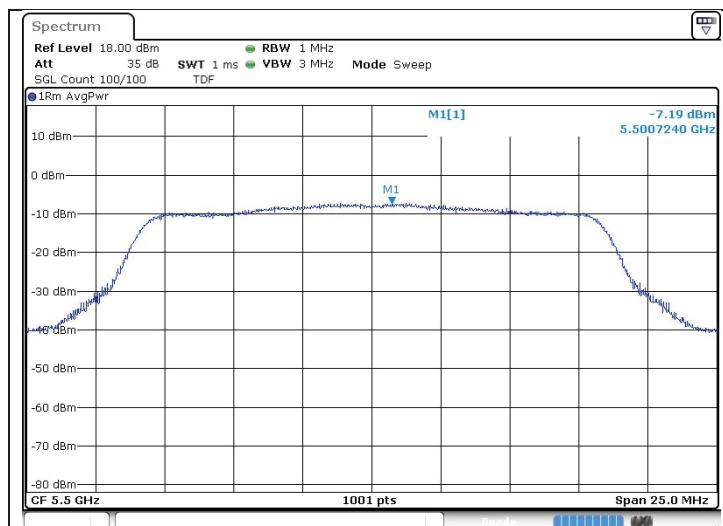


High Channel
(5 320 MHz)

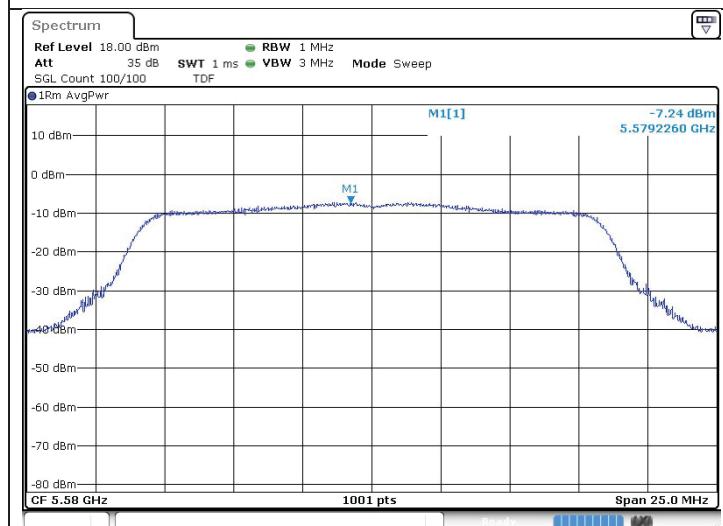


802.11a (Band 2C)

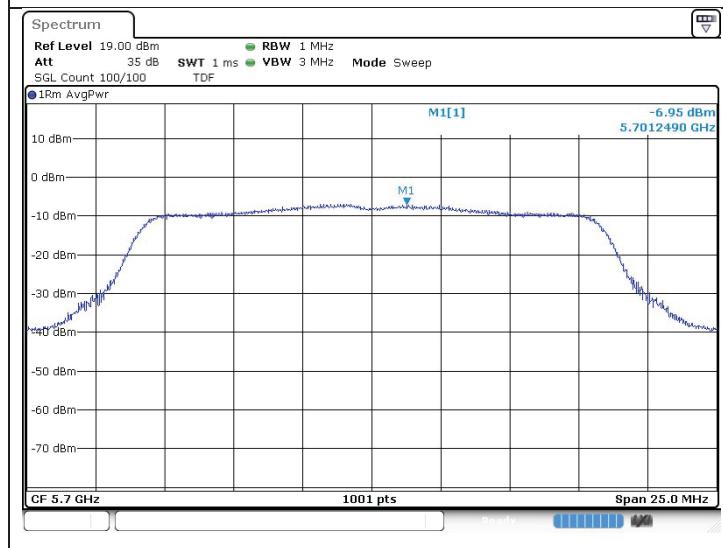
Low Channel
(5 500 MHz)



Middle Channel
(5 580 MHz)

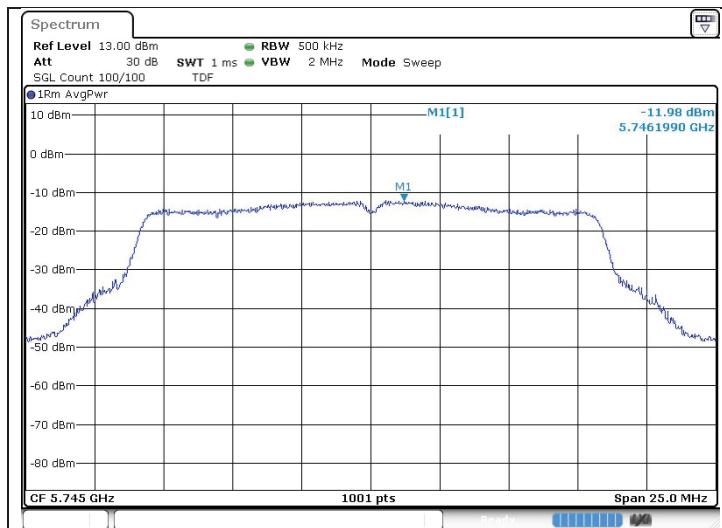


High Channel
(5 700 MHz)



802.11a (Band 3)

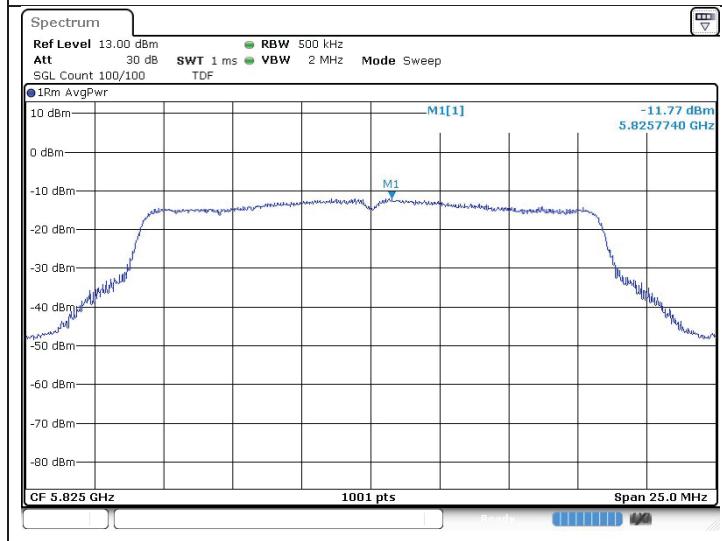
Low Channel
(5 745 MHz)



Middle Channel
(5 785 MHz)

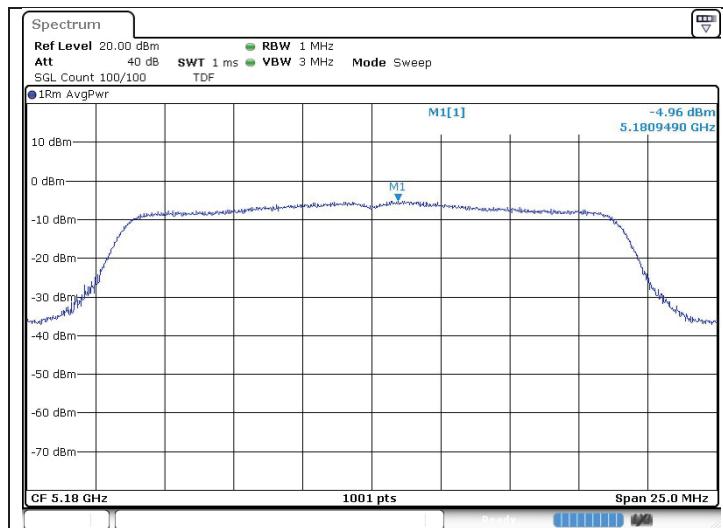


High Channel
(5 825 MHz)



802.11ac_VHT20 (Band 1)

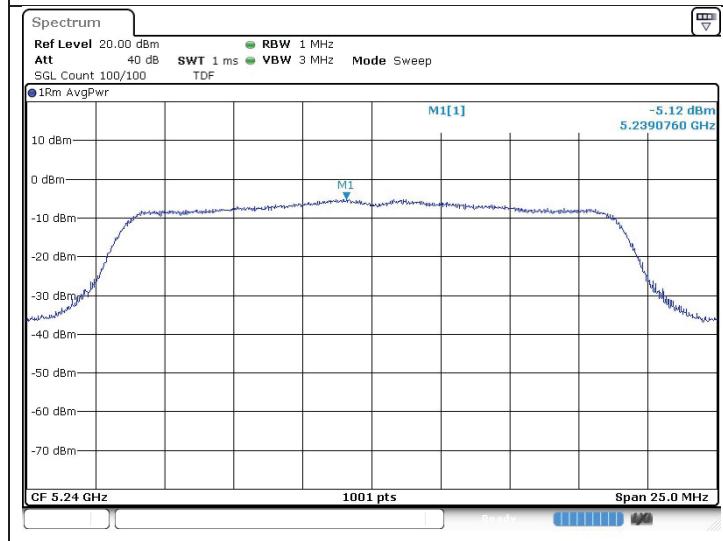
Low Channel
(5 180 MHz)



Middle Channel
(5 220 MHz)



High Channel
(5 240 MHz)



802.11ac_VHT20 (Band 2A)

Low Channel
(5 260 MHz)



Middle Channel
(5 300 MHz)

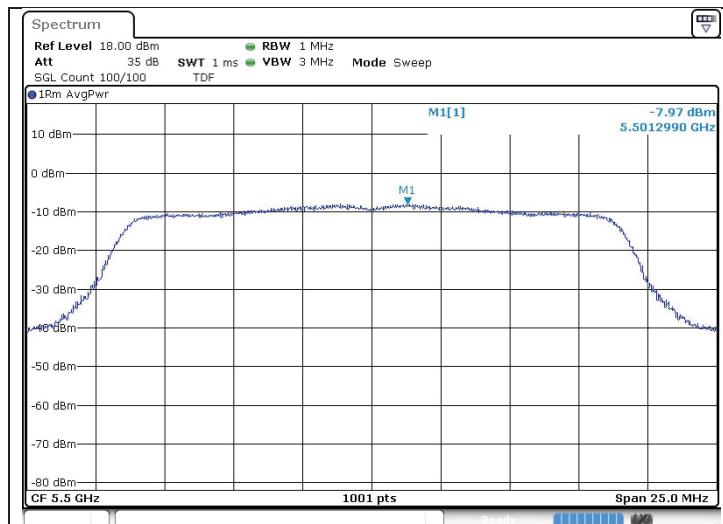


High Channel
(5 320 MHz)

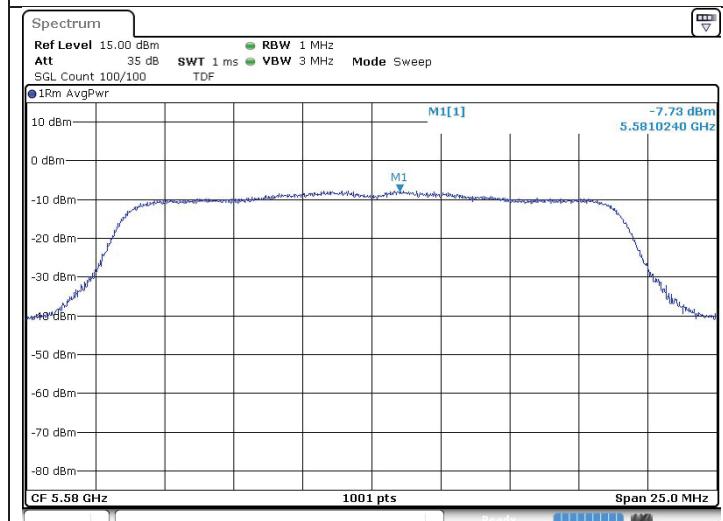


802.11ac_VHT20 (Band 2C)

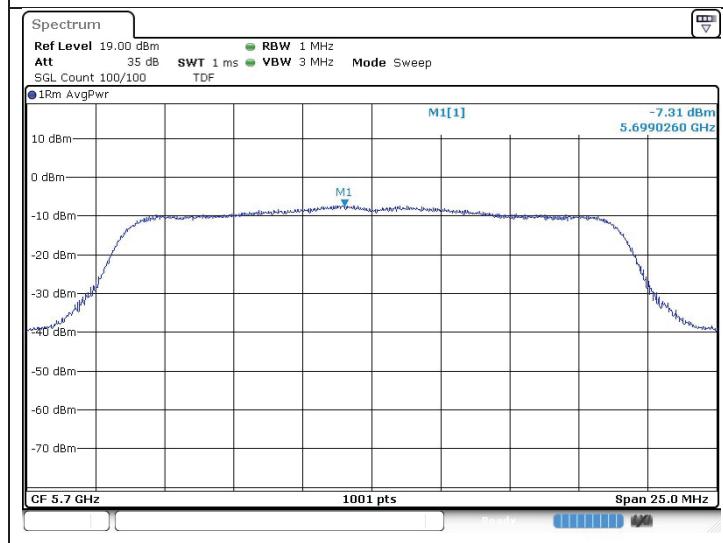
Low Channel
(5 500 MHz)



Middle Channel
(5 580 MHz)

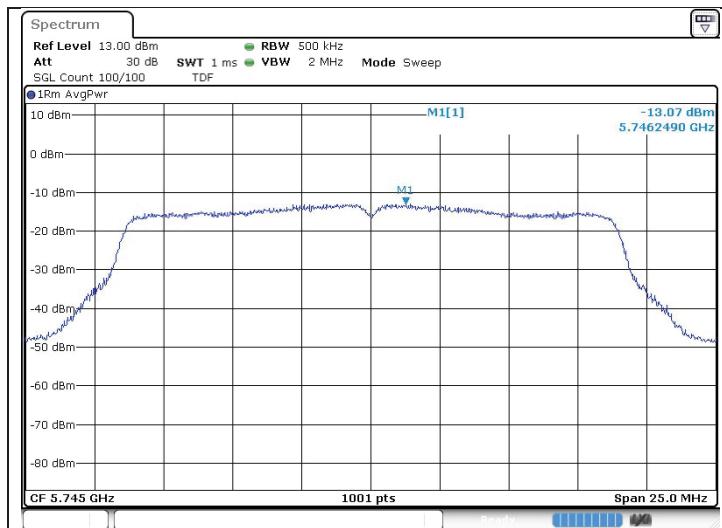


High Channel
(5 700 MHz)

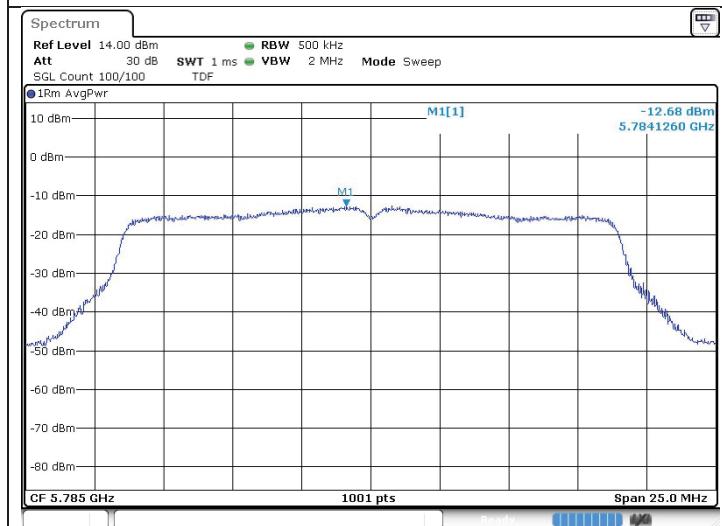


802.11ac_VHT20 (Band 3)

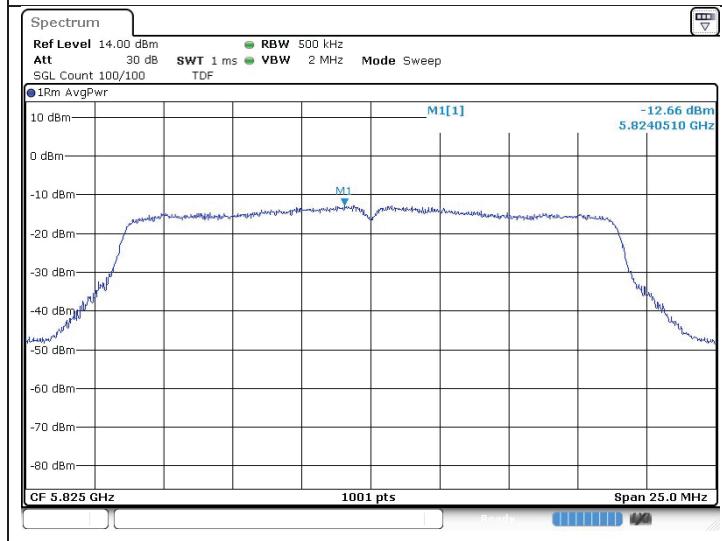
Low Channel
(5 745 MHz)



Middle Channel
(5 785 MHz)

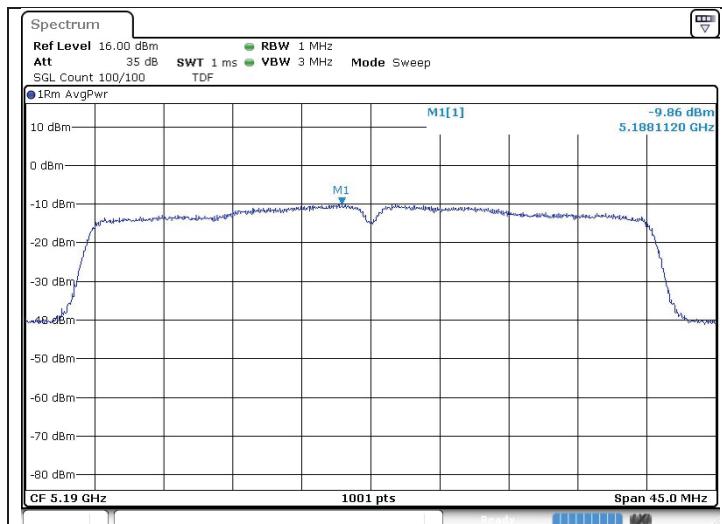


High Channel
(5 825 MHz)

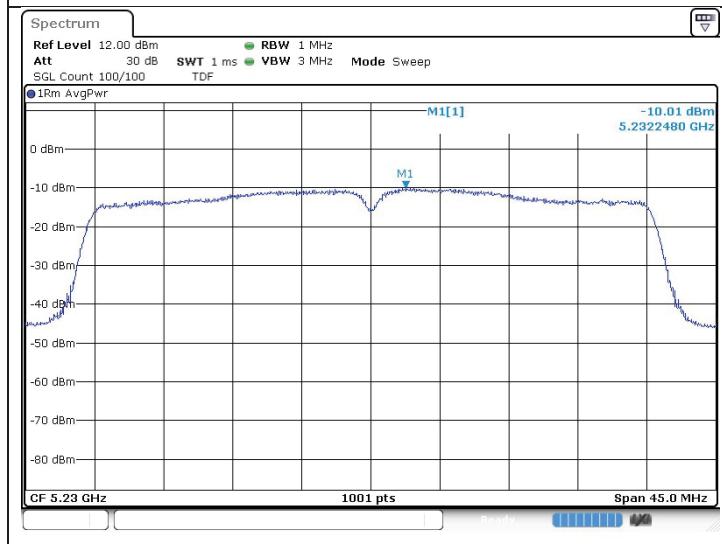


802.11n_HT40 (Band 1)

Low Channel
(5 190 MHz)

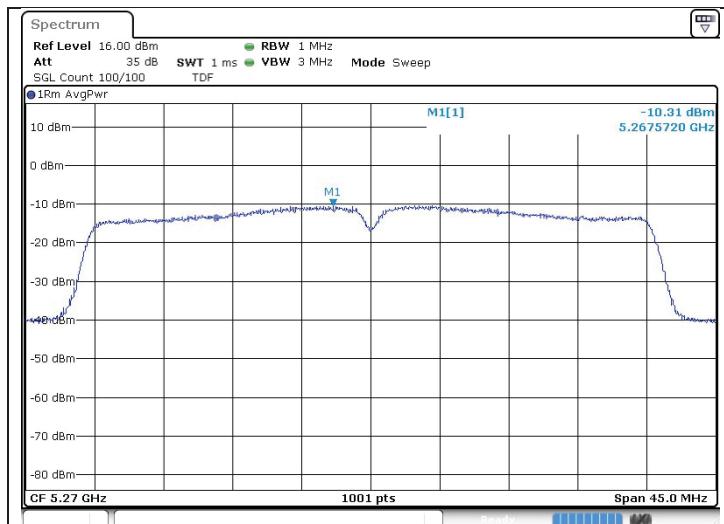


High Channel
(5 230 MHz)

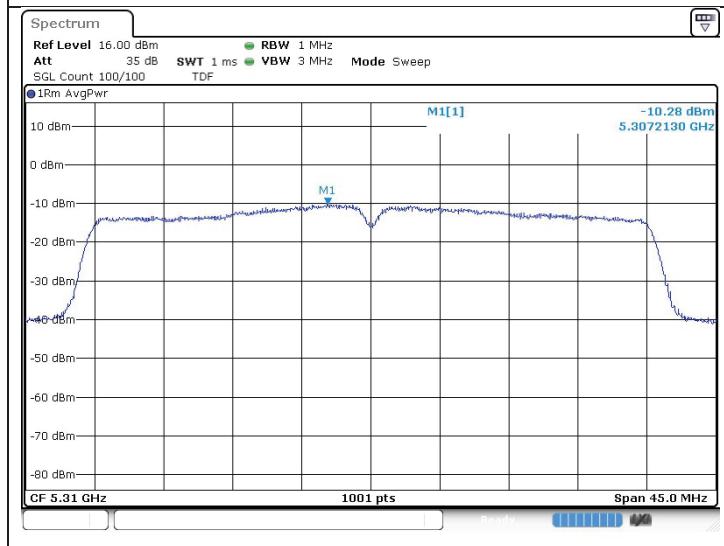


802.11n_HT40 (Band 2A)

Low Channel
(5 270 MHz)

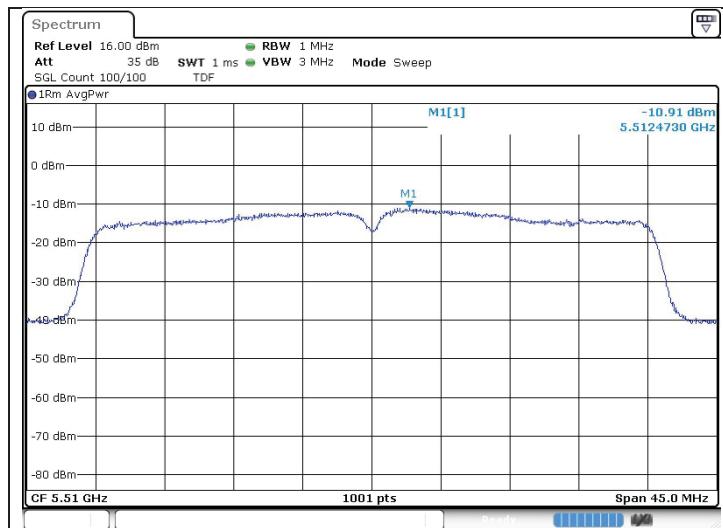


High Channel
(5 310 MHz)

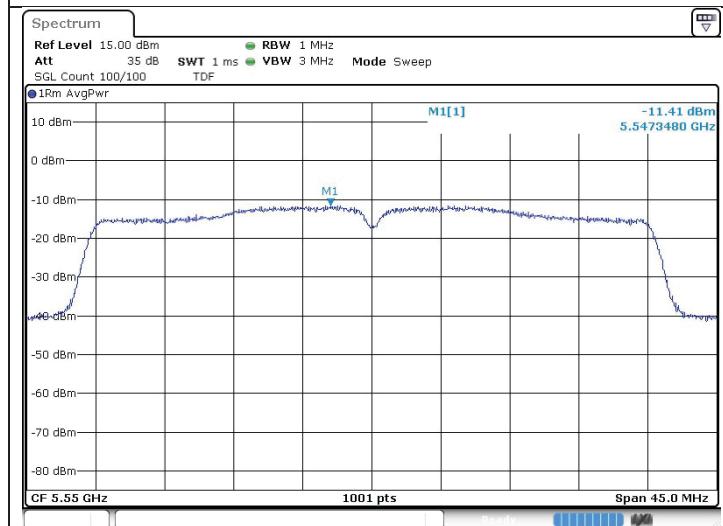


802.11n_HT40 (Band 2C)

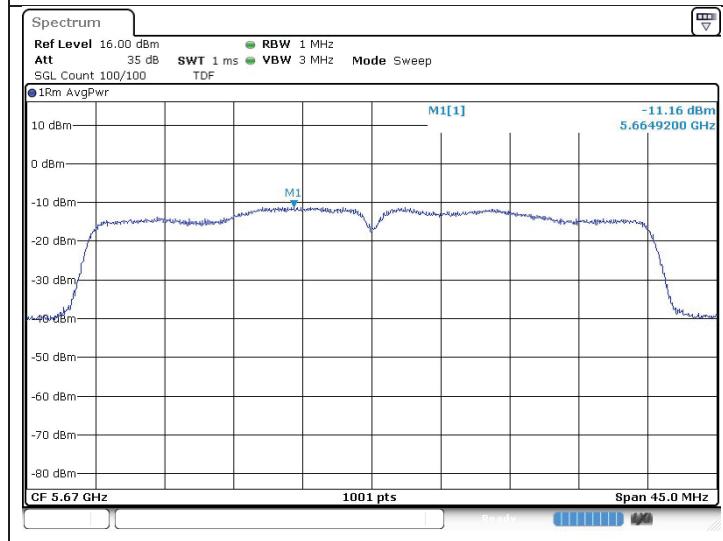
Low Channel
(5 510 MHz)



Middle Channel
(5 550 MHz)

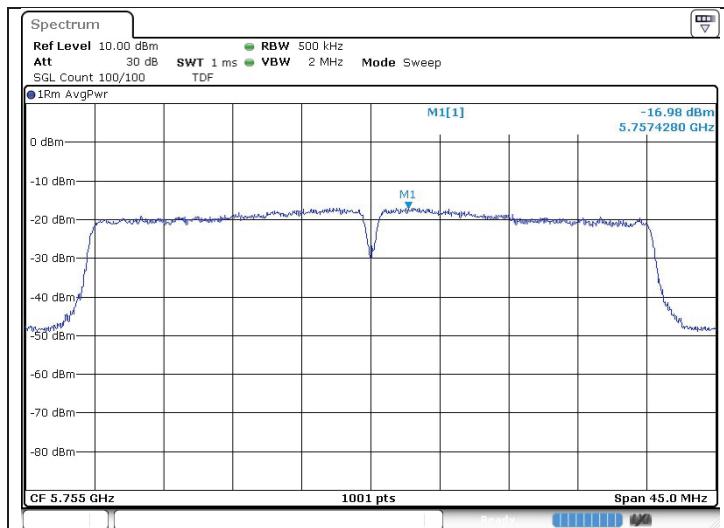


High Channel
(5 670 MHz)

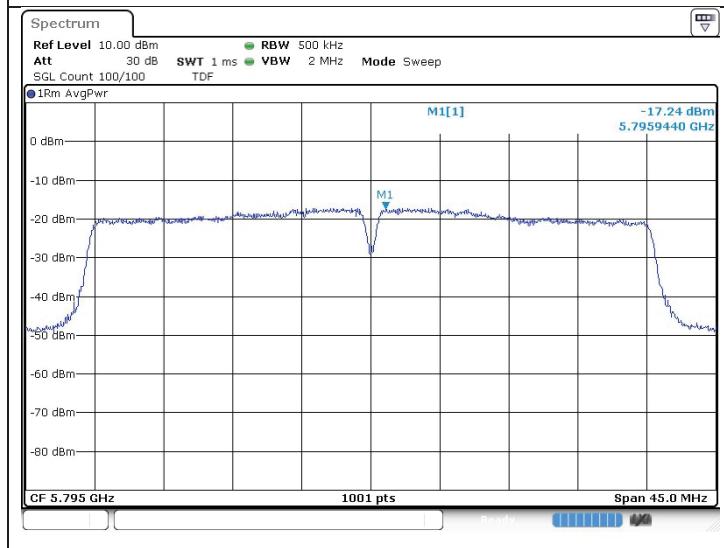


802.11n_HT40 (Band 3)

Low Channel
(5 755 MHz)

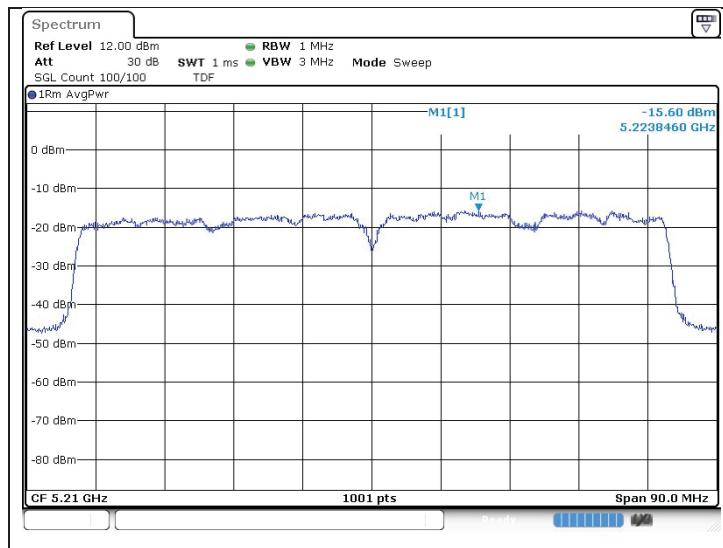


High Channel
(5 795 MHz)

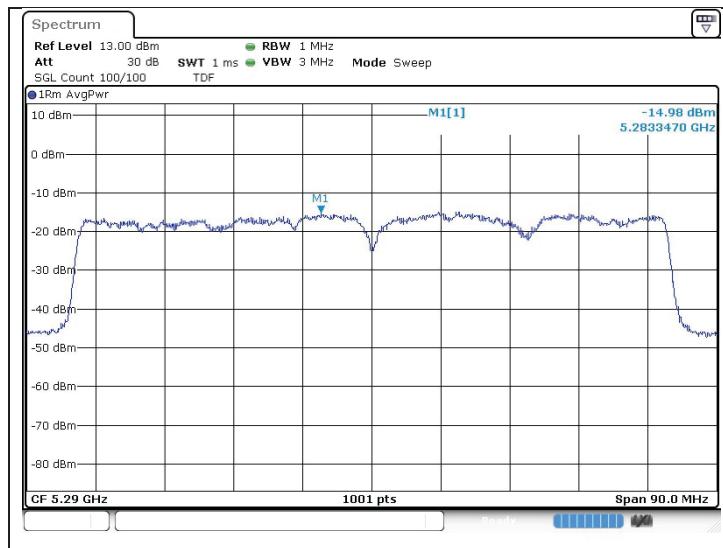


802.11ac_VHT80 (Band 1)

Middle Channel
(5 210 MHz)

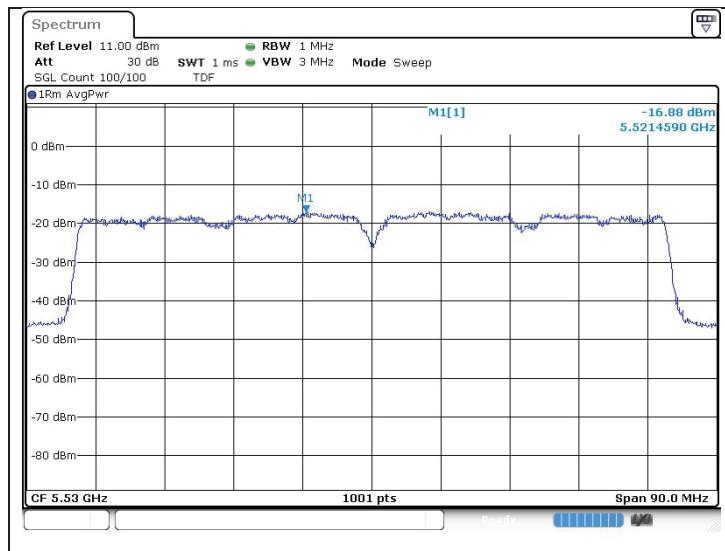
**802.11ac_VHT80 (Band 2A)**

Middle Channel
(5 290 MHz)

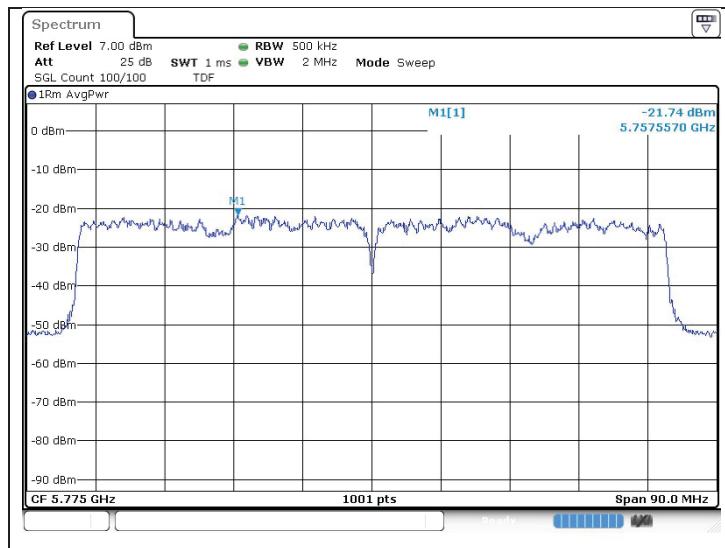


802.11ac_VHT80 (Band 2C)

Low Channel
(5 530 MHz)

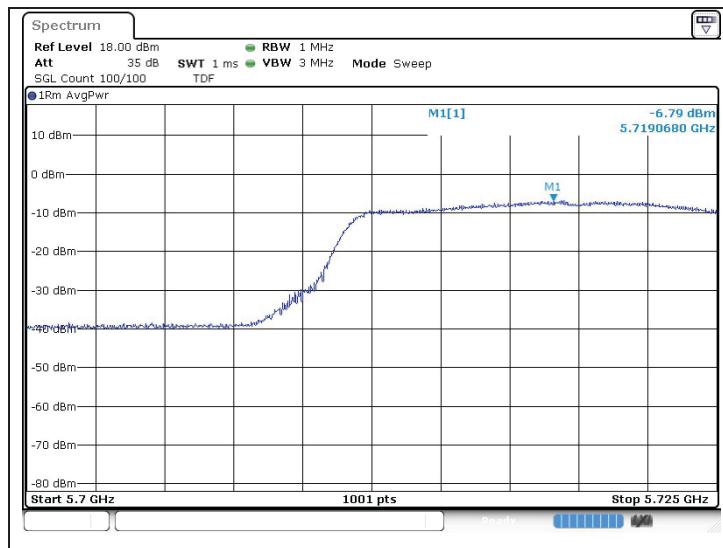
**802.11ac_VHT80 (Band 3)**

Middle Channel
(5 775 MHz)

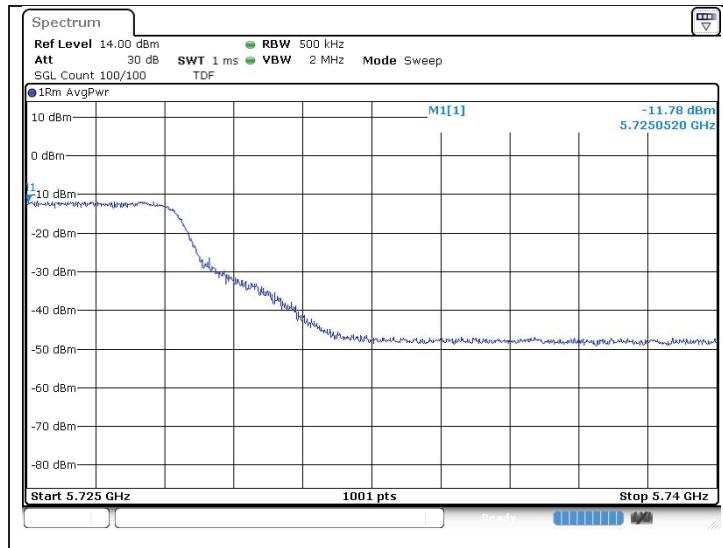


Band-crossing channels**802.11a (Band 2C)**

High Channel
(5 720 MHz)

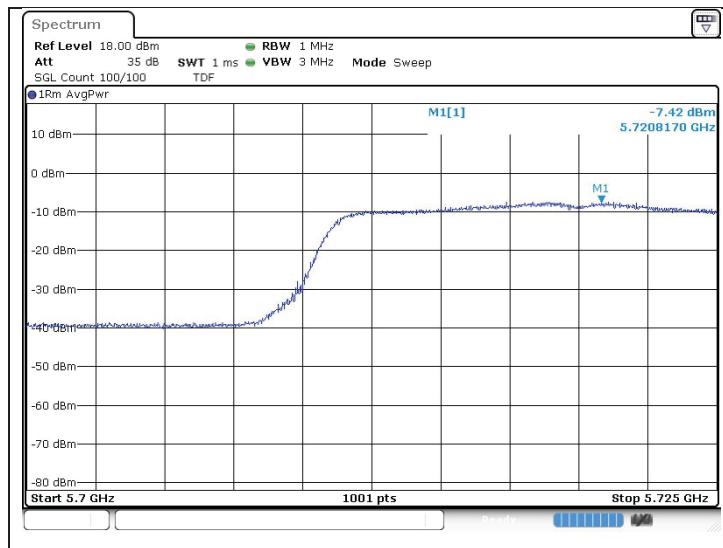
**802.11a (Band 3)**

High Channel
(5 720 MHz)

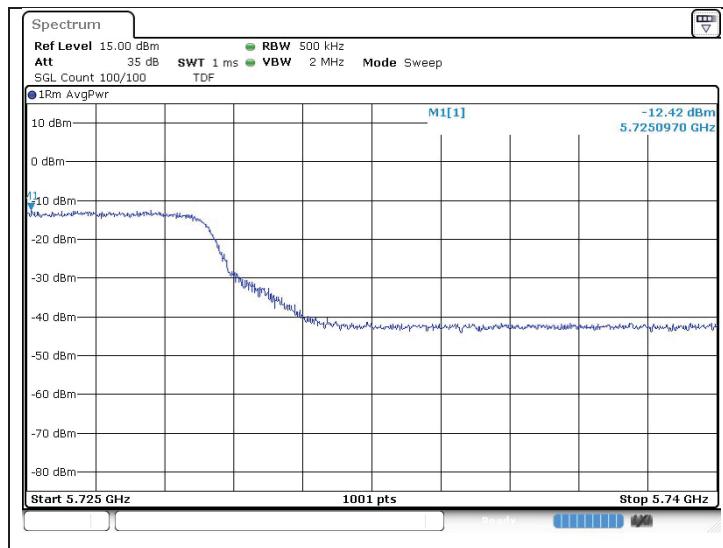


802.11ac_VHT20 (Band 2C)

High Channel
(5 720 MHz)

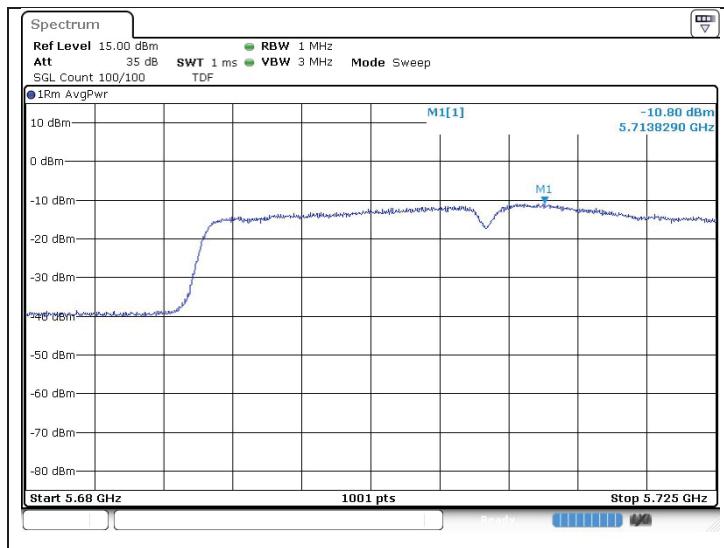
**802.11ac_VHT20 (Band 3)**

High Channel
(5 720 MHz)

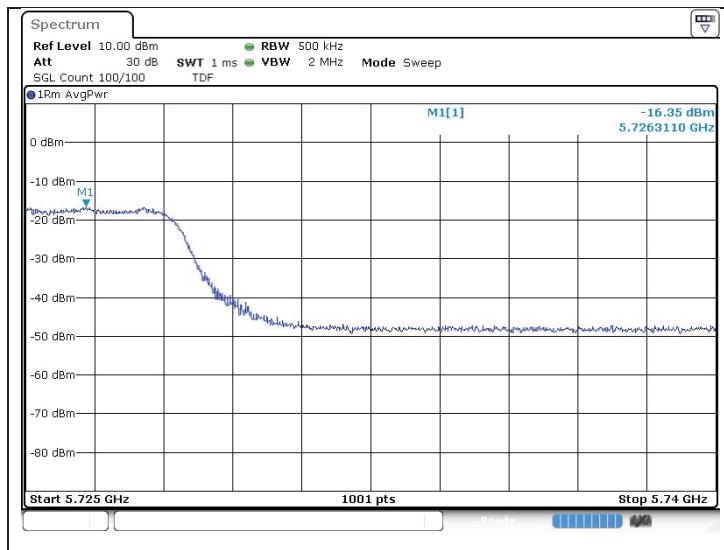


802.11n_HT40 (Band 2C)

High Channel
(5 710 MHz)

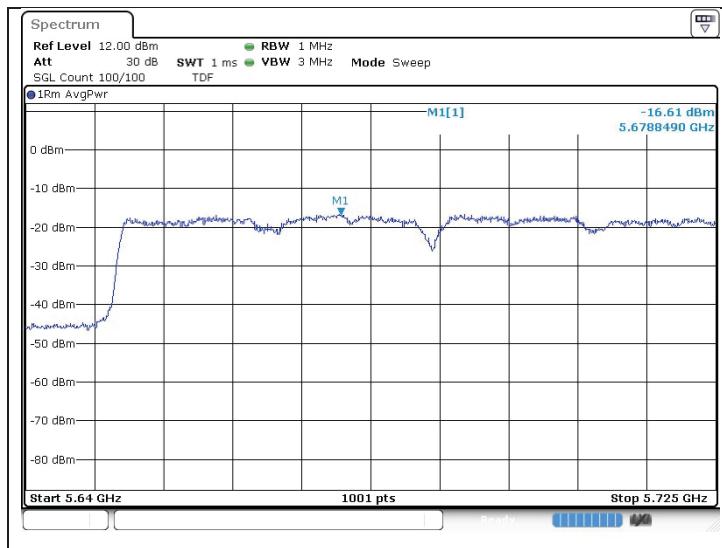
**802.11n_HT40 (Band 3)**

High Channel
(5 710 MHz)

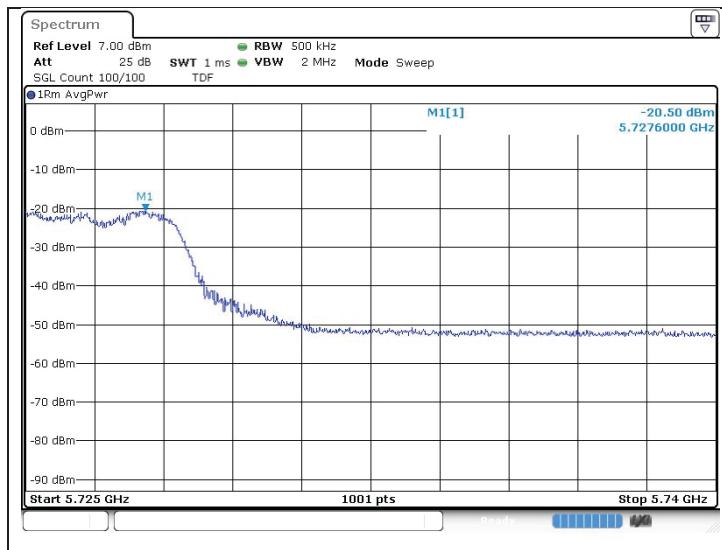


802.11ac_VHT80 (Band 2C)

Middle Channel
(5 690 MHz)

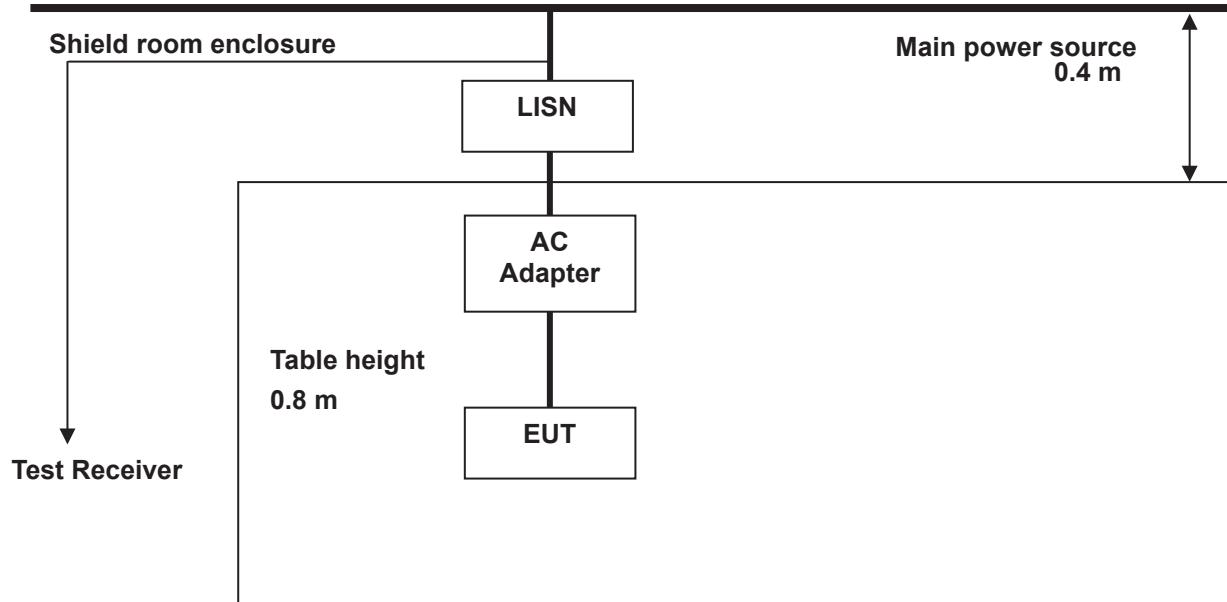
**802.11ac_VHT80 (Band 3)**

Middle Channel
(5 690 MHz)



7. AC Power Line Conducted Emission

7.1. Test Setup



7.2. Limit

7.2.1 FCC

According to §15.207(a), for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H /50 ohms line impedance stabilization network (LISN).

Compliance with the provision of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency of emission (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

7.2.2 IC

RSS-Gen Issue 5, 8.8, Unless stated otherwise in the applicable RSS, for radio apparatus that are designed to be connected to the public utility AC power network, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the range 150 kHz to 30 MHz shall not exceed the limits in table 4, as measured using a 50 μ H / 50 Ω line impedance stabilization network. This requirement applies for the radio frequency voltage measured between each power line and the ground terminal of each AC power-line mains cable of the EUT.

For an EUT that connects to the AC power lines indirectly, through another device, the requirement for compliance with the limits in table 4 shall apply at the terminals of the AC power-line mains cable of a representative support device, while it provides power to the EUT. The lower limit applies at the boundary between the frequency ranges. The device used to power the EUT shall be representative of typical applications.

Table 4 - AC power-line conducted emissions limits

Frequency (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average**
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

Note 1: The level decreases linearly with the logarithm of the frequency.

For an EUT with a permanent or detachable antenna operating between 150 kHz and 30 MHz, the AC power-line conducted emissions must be measured using the following configurations:

- Perform the AC power-line conducted emissions test with the antenna connected to determine compliance with the limits of table 4 outside the transmitter's fundamental emission band.
- Retest with a dummy load instead of the antenna to determine compliance with the limits of table 4 within the transmitter's fundamental emission band. For a detachable antenna, remove the antenna and connect a suitable dummy load to the antenna connector. For a permanent antenna, remove the antenna and terminate the RF output with a dummy load or network that simulates the antenna in the fundamental frequency band.

7.3. Test Procedures

AC conducted emissions from the EUT were measured according to the dictates of ANSI C63.10-2013

1. The test procedure is performed in a 6.5 m × 3.5 m × 3.5 m (L × W × H) shielded room. The EUT along with its peripherals were placed on a 1.0 m (W) × 1.5 m (L) and 0.8 m in height wooden table and the EUT was adjusted to maintain a 0.4 meter space from a vertical reference plane.
2. The EUT was connected to power mains through a line impedance stabilization network (LISN) which provides 50 ohm coupling impedance for measuring instrument and the chassis ground was bounded to the horizontal ground plane of shielded room.
3. All peripherals were connected to the second LISN and the chassis ground also bounded to the horizontal ground plane of shielded room.
4. The excess power cable between the EUT and the LISN was bundled. The power cables of peripherals were unbundled. All connecting cables of EUT and peripherals were moved to find the maximum emission.

7.4. Test Results

The following table shows the highest levels of conducted emissions on both phase of Hot and Neutral line.

Ambient temperature : $(23 \pm 1)^\circ\text{C}$

Relative humidity : 47 % R.H.

Frequency range : 0.15 MHz - 30 MHz

Measured Bandwidth : 9 kHz

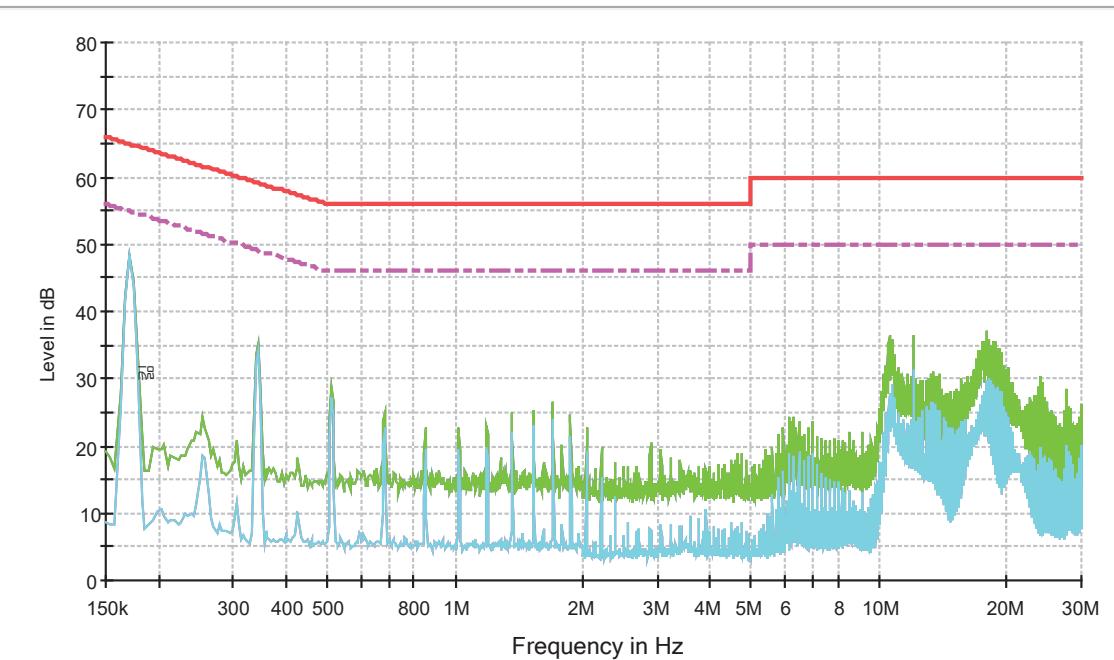
FREQ. (MHz)	LEVEL (dB μ V)		LINE	LIMIT (dB μ V)		MARGIN (dB)	
	Q-Peak	Average		Q-Peak	Average	Q-Peak	Average
0.17	48.10	48.40	N	64.96	54.96	16.86	6.56
0.34	33.40	33.70	N	59.20	49.20	25.80	15.50
0.51	27.20	27.30	N	56.00	46.00	28.80	18.70
1.70	24.20	24.00	N	56.00	46.00	31.80	22.00
10.56	31.50	28.70	N	60.00	50.00	28.50	21.30
18.03	30.80	26.70	N	60.00	50.00	29.20	23.30
0.17	47.50	47.80	H	64.96	54.96	17.46	7.16
0.34	32.90	33.10	H	59.20	49.20	26.30	16.10
1.53	25.20	25.20	H	56.00	46.00	30.80	20.80
6.29	22.30	21.10	H	60.00	50.00	37.70	28.90
10.65	27.40	24.00	H	60.00	50.00	32.60	26.00
17.86	29.90	26.70	H	60.00	50.00	30.10	23.30

Remark;

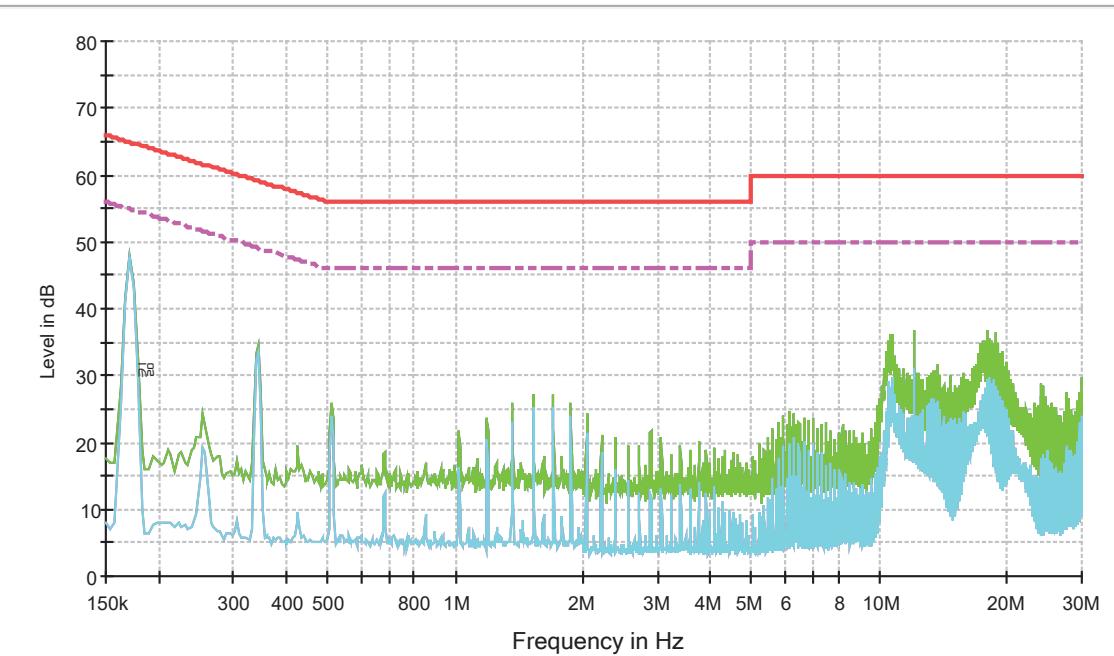
1. Line (H): Hot, Line (N): Neutral.
2. All data rates and modes of operation were investigated and the worst-case emissions were reported using **11a (Band 1) / 12 Mbps / Low channel**.
3. The limit for Class B device(s) from 150 kHz to 30 MHz are specified in Section of the Title 47 CFR.
4. Traces shown in plot were made by using a Quasi peak detector and average detector.
5. Deviations to the Specifications: None.

- Test plots

Test mode: (Neutral)



Test mode: (Hot)



8. Antenna Requirement

8.1. Standard Applicable

For intentional device, according to FCC 47 CFR Section §15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. And according to FCC 47 CFR Section §15.247(b) if transmitting antennas of directional gain greater than 6 dB i are used, the power shall be reduced by the amount in dB that the gain of the antenna exceeds 6 dB i.

8.2. Antenna Connected Construction

Antenna used in this product is Pattern antenna and peak max gain of antenna as below.

Band	5 150 MHz ~ 5 250 MHz	5 250 MHz ~ 5 350 MHz	5 470 MHz ~ 5 725 MHz	5 725 MHz ~ 5 850 MHz
Mode	11a/n_HT20, HT40, 11ac_VHT20, VHT40, VHT80			
Gain	3.49 dB i	3.98 dB i	4.83 dB i	2.30 dB i

- End of the Test Report -