ADDENDUM - RADIATED

Test of: Sonos Inc S23

To: FCC CFR 47 Part 15 Subpart E 15.407

Test Report Serial No.: TUVR116-U6_Radiated Rev B

Generated Reports	Document Number
Master:	☐TUVR116-U6_Master
Conducted:	☐ TUVR116-U6_Conducted_Addendum
Radiated:	☒ TUVR116-U6_Radiated_Addendum
DFS:	☐ TUVR116-U6_DFS_Addendum

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1. TEST SUMMARY

List of Measurements

Test Header	Result	Data Link
Tx Spurious & Restricted Band Emissions	Complies	View Data
Restricted Edge & Band-Edge Emissions	Complies	View Data
Digital Emissions	Complies	View Data
AC Wireline Emissions	Complies	View Data

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2. TEST RESULTS

2.1. Radiated Transmitter Spurious and Band-Edge

Radiated Test Conditions for Radiated Spurious and Band-Edge Emissions			
Standard:	FCC CFR 47:15.407	**Ambient Temp. (ºC):**	20.0 - 24.5
Test Heading:	Radiated Spurious and Band-Edge Emissions	**Rel. Humidity (%):**	32 - 45
Standard Section(s):	15.407 (b), 15.205, 15.209	**Pressure (mBars):**	999 - 1001
Reference Document(s):	See Normative References		

Test Procedure for Radiated Spurious and Band-Edge Emissions
Radiated emissions for restricted bands above 1 GHz are measured in the anechoic chamber at a 3-meter distance on every azimuth in both horizontal and vertical polarities. The emissions are recorded and maximized as a function of azimuth by rotation through 360° with a spectrum analyzer in peak hold mode. Depending on the frequency band spanned a notch filter was used to remove the fundamental frequency. The highest emissions relative to the limit are listed for each frequency spanned.
Measurements on any restricted band frequency or frequencies above 1 GHz are based on the use of measurement instrumentation employing peak and average detectors. All measurements were performed using a resolution bandwidth of 1 MHz.

Test configuration and setup for Undesirable Measurement were per the Radiated Test Set-up specified in this document.

15.407 (b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(4) For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of −17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of −27 dBm/MHz.

(5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

(6) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.

(7) The provisions of §15.205 apply to intentional radiators operating under this section.

(8) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits.

Limits for Restricted Bands (15.205, 15.209)
Peak emission: 74 dBuV/m
Average emission: 54 dBuV/m

Field Strength Calculation
The field strength is calculated by adding the Antenna Factor and Cable Loss, and subtracting Amplifier Gain from the measured reading. All factors are included in the reported data.
FS = R + AF + CORR - FO

where:
FS = Field Strength
R = Measured Spectrum analyzer Input Amplitude
AF = Antenna Factor
CORR = Correction Factor = CL – AG + NFL
CL = Cable Loss
AG = Amplifier Gain
FO = Distance Falloff Factor
NFL = Notch Filter Loss

Example:
The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength (dBµV/m);

$$E = \frac{1000000 \times \sqrt{30P}}{3} \text{ µV/m}$$

where P is the EIRP in Watts

Therefore: -27 dBm/MHz equates to 68.23 dBuV/m

Conversion between dBmV/m (or dBmV) and mV/m (or mV) are as follows:
Level (dBmV/m) = 20 * Log (level (mV/m))

40 dBmV/m = 100 mV/m
48 dBmV/m = 250 mV/m

Restricted Bands of Operation (15.205)
(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

Frequency Band			
MHz	**MHz**	**MHz**	**GHz**
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41			

(b) Except as provided in paragraphs (d) and (e) of this section, the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in §15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in §15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in §15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in §15.35 apply to these measurements.

(c) Except as provided in paragraphs (d) and (e) of this section, regardless of the field strength limits specified elsewhere in this subpart, the provisions of this section apply to emissions from any intentional radiator.

(d) The following devices are exempt from the requirements of this section:

(1) Swept frequency field disturbance sensors operating between 1.705 and 37 MHz provided their emissions only sweep through the bands listed in paragraph (a) of this section, the sweep is never stopped with the fundamental emission within the bands listed in paragraph (a) of this section, and the fundamental emission is outside of the bands listed in paragraph (a) of this section more than 99% of the time the device is actively transmitting, without compensation for duty cycle.

(2) Transmitters used to detect buried electronic markers at 101.4 kHz which are employed by telephone companies.

(3) Cable locating equipment operated pursuant to §15.213.

(4) Any equipment operated under the provisions of §15.253, 15.255, and 15.256 in the frequency band 75-85 GHz, or §15.257 of this part.

(5) Biomedical telemetry devices operating under the provisions of §15.242 of this part are not subject to the restricted band 608-614 MHz but are subject to compliance within the other restricted bands.

(6) Transmitters operating under the provisions of subparts D or F of this part.

(7) Devices operated pursuant to §15.225 are exempt from complying with this section for the 13.36-13.41 MHz band only.

(8) Devices operated in the 24.075-24.175 GHz band under §15.245 are exempt from complying with the requirements of this section for the 48.15-48.35 GHz and 72.225-72.525 GHz bands only, and shall not exceed the limits specified in §15.245(b).

(9) Devices operated in the 24.0-24.25 GHz band under §15.249 are exempt from complying with the requirements of this section for the 48.0-48.5 GHz and 72.0-72.75 GHz bands only, and shall not exceed the limits specified in §15.249(a).

(e) Harmonic emissions appearing in the restricted bands above 17.7 GHz from field disturbance sensors operating under the provisions of §15.245 shall not exceed the limits specified in §15.245(b).

§15.209 Radiated emission limits; general requirements.

(a) Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100**	3
88-216	150**	3
216-960	200**	3
Above 960	500	3

**Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permltted under other sections of this part, e.g., §§15.231 and 15.241.

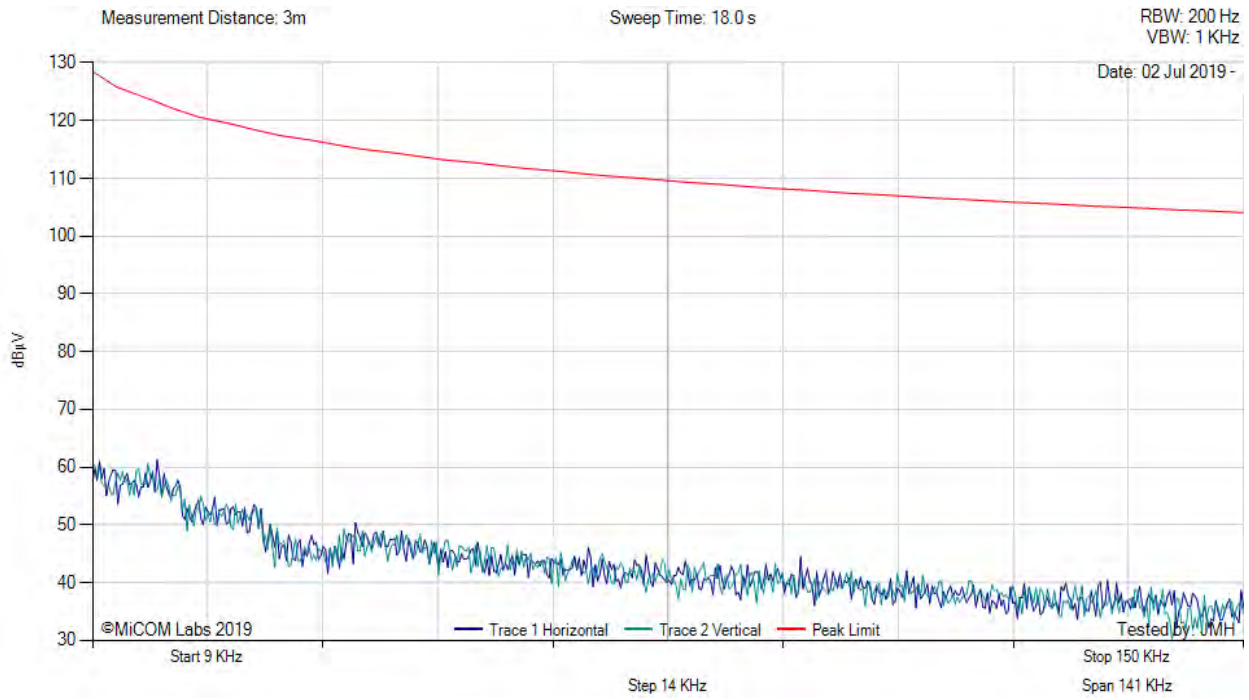
(b) In the emission table above, the tighter limit applies at the band edges.
(c) The level of any unwanted emissions from an intentional radiator operating under these general provisions shall not exceed the level of the fundamental emission. For intentional radiators which operate under the provisions of other sections within this part and which are required to reduce their unwanted emissions to the limits specified in this table, the limits in this table are based on the frequency of the unwanted emission and not the fundamental frequency. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
(d) The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.
(e) The provisions in §§15.31, 15.33, and 15.35 for measuring emissions at distances other than the distances specified in the above table, determining the frequency range over which radiated emissions are to be measured, and limiting peak emissions apply to all devices operated under this part.
(f) In accordance with §15.33(a), in some cases the emissions from an intentional radiator must be measured to beyond the tenth harmonic of the highest fundamental frequency designed to be emitted by the intentional radiator because of the incorporation of a digital device. If measurements above the tenth harmonic are so required, the radiated emissions above the tenth harmonic shall comply with the general radiated emission limits applicable to the incorporated digital device, as shown in §15.109 and as based on the frequency of the emission being measured, or, except for emissions contained in the restricted frequency bands shown in §15.205, the limit on spurious emissions specified for the intentional radiator, whichever is the higher limit. Emissions which must be measured above the tenth harmonic of the highest fundamental frequency designed to be emitted by the intentional radiator and which fall within the restricted bands shall comply with the general radiated emission limits in §15.109 that are applicable to the incorporated digital device.
(g) Perimeter protection systems may operate in the 54-72 MHz and 76-88 MHz bands under the provisions of this section. The use of such perimeter protection systems is limited to industrial, business and commercial applications.

2.1.1. TX Spurious & Restricted Band Emissions

2.1.1.1. Tx Spurious 9 kHz – 30 MHz

TX Spurious Emissions 9 KHz – 30 MHz
No Emissions found within 20 dB of Limit. Per 15.31 (o) The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this part.

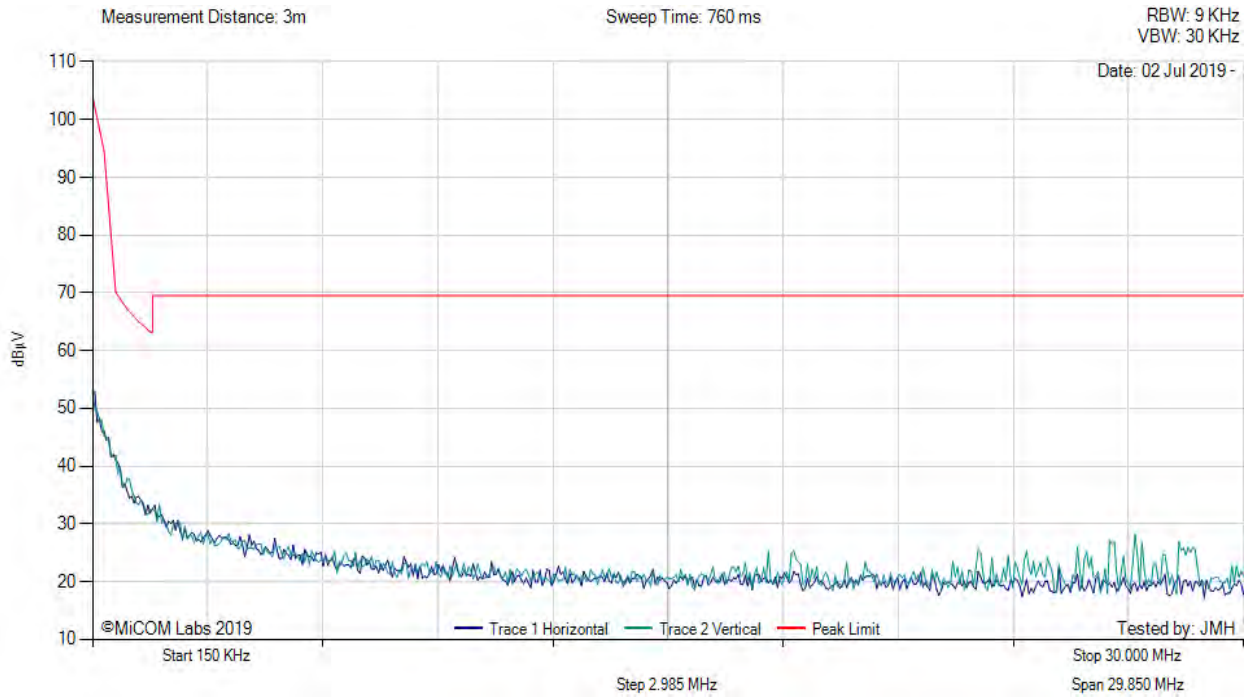
Variant: 802.11a, Test Freq: 5180.00 MHz, Power Setting: 14.5



There are no emissions found within 20dB of the limit line.

Test Notes: Eut powered by AC/DC PS. 5G WiFi. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back. Transmitter power set to maximum

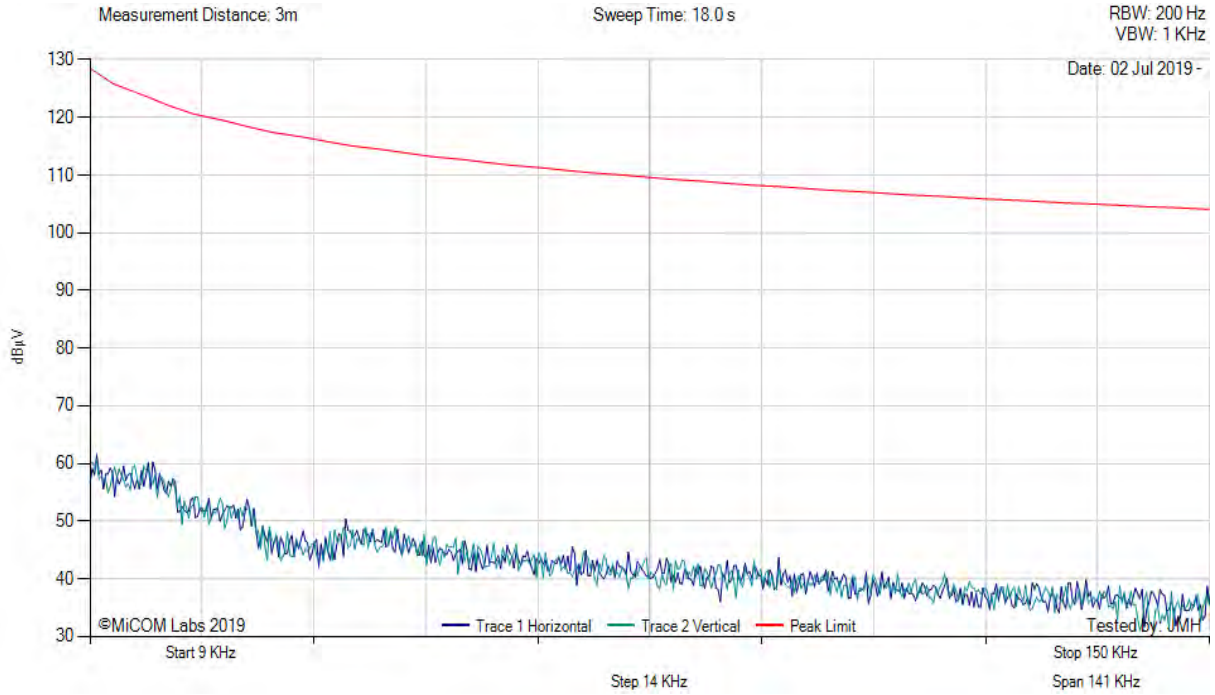
Variant: 802.11a, Test Freq: 5180.00 MHz, Power Setting: 14.5



There are no emissions found within 20dB of the limit line.

Test Notes: Eut powered by AC/DC PS. 5G WiFi. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back. Transmitter power set to maximum

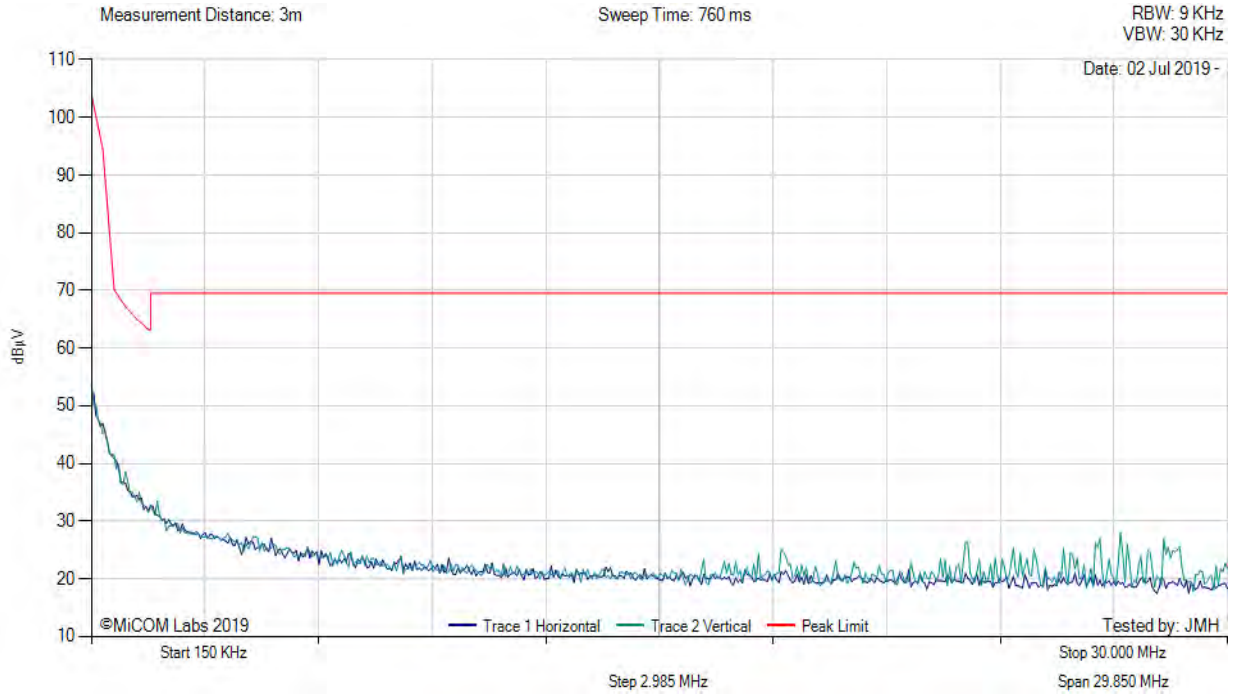
Variant: 802.11a, Test Freq: 5200.00 MHz, Power Setting: 14.5



There are no emissions found within 20dB of the limit line.

Test Notes: Eut powered by AC/DC PS. 5G WiFi. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back. Transmitter power set to maximum

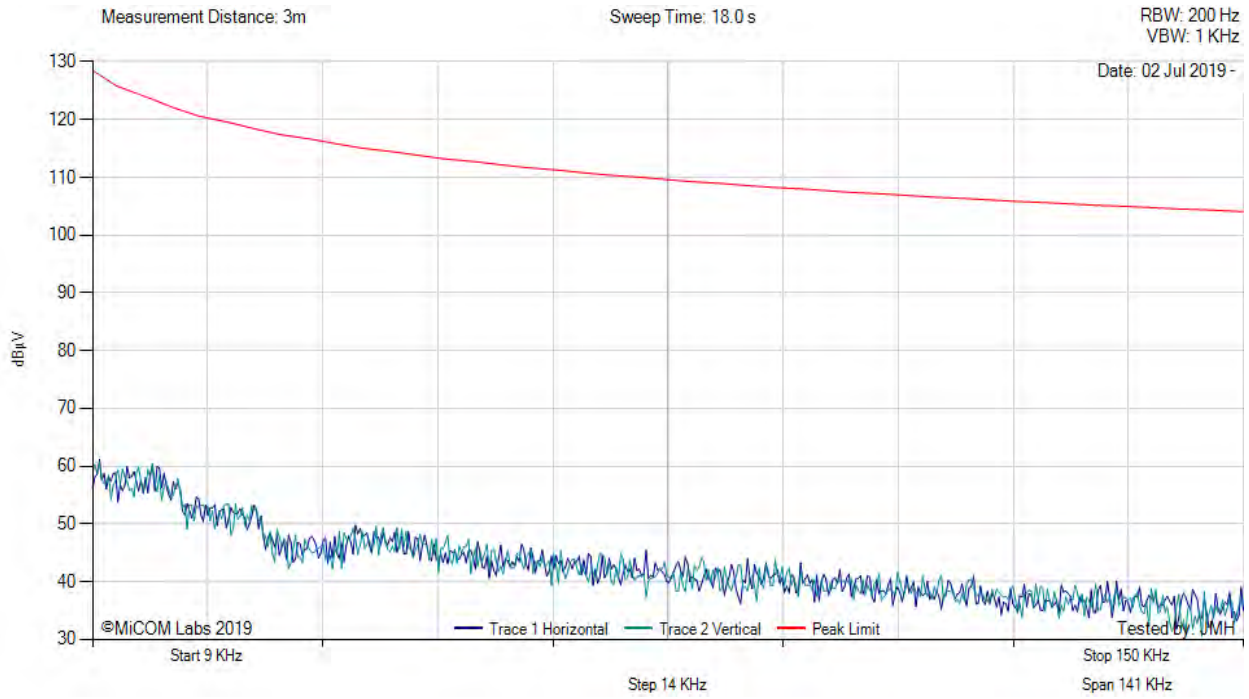
Variant: 802.11a, Test Freq: 5200.00 MHz, Power Setting: 14.5



There are no emissions found within 20dB of the limit line.

Test Notes: Eut powered by AC/DC PS. 5G WiFi. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back. Transmitter power set to maximum

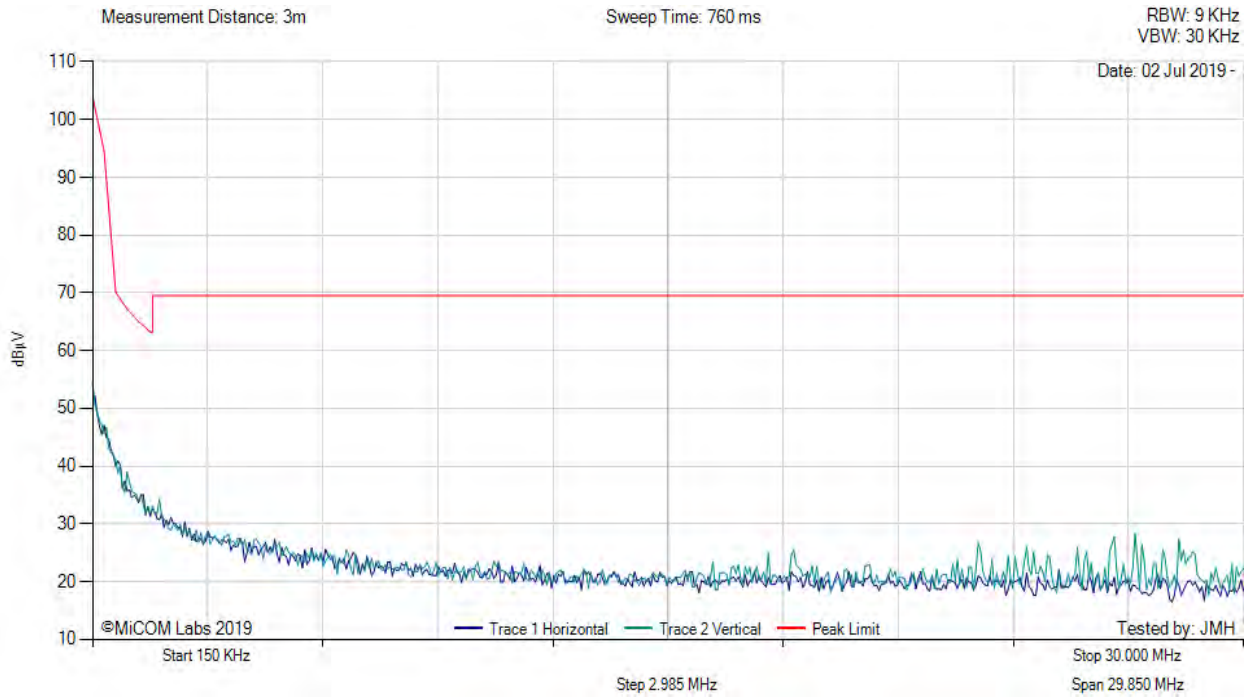
Variant: 802.11a, Test Freq: 5240.00 MHz, Power Setting: 14.5



There are no emissions found within 20dB of the limit line.

Test Notes: Eut powered by AC/DC PS. 5G WiFi. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back. Transmitter power set to maximum

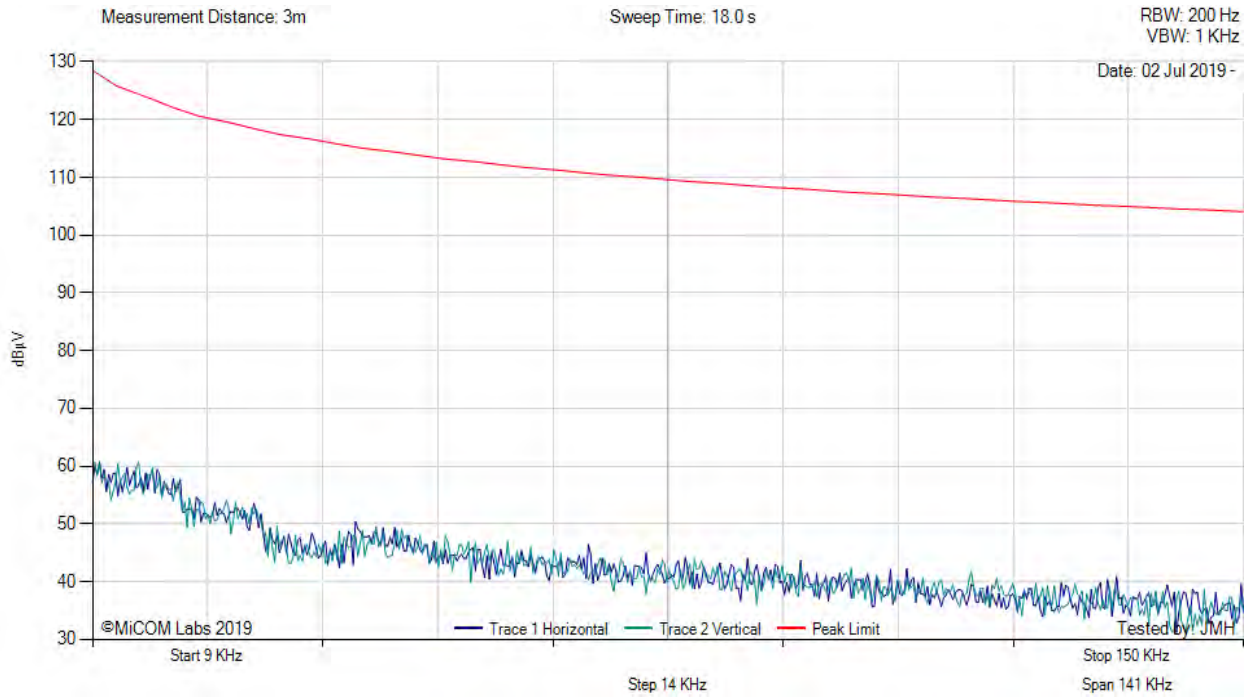
Variant: 802.11a, Test Freq: 5240.00 MHz, Power Setting: 14.5



There are no emissions found within 20dB of the limit line.

Test Notes: Eut powered by AC/DC PS. 5G WiFi. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back. Transmitter power set to maximum

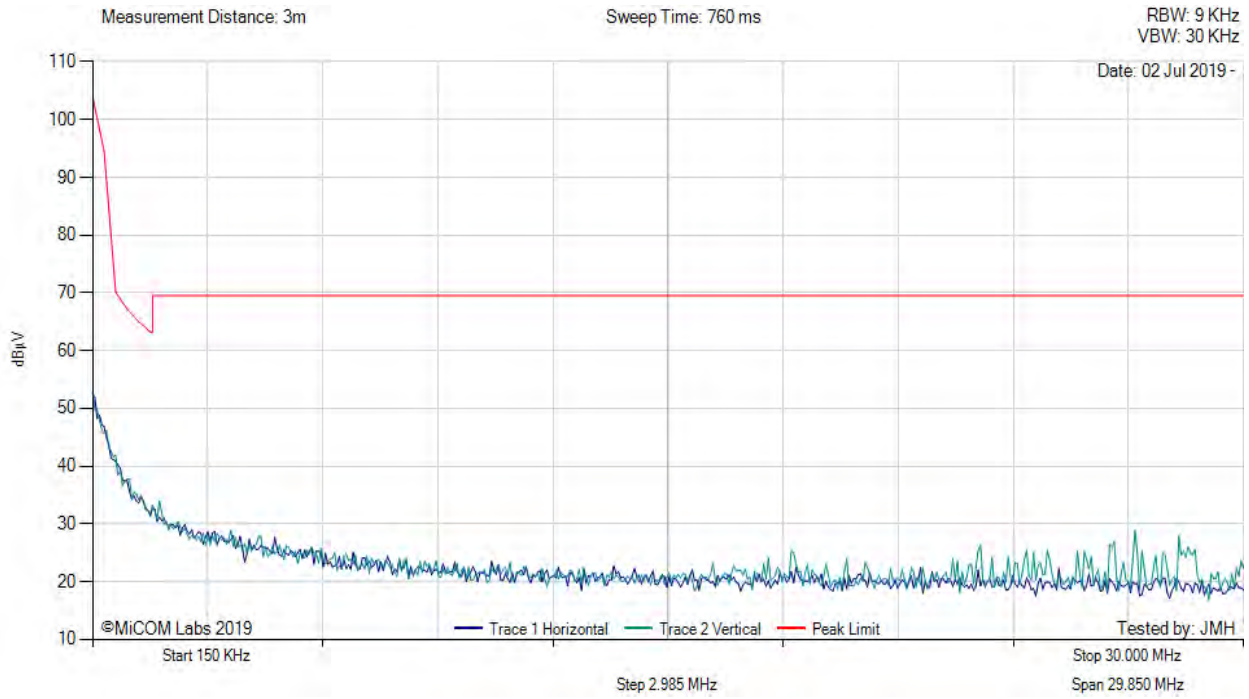
Variant: 802.11a, Test Freq: 5260.00 MHz, Power Setting: 15.5



There are no emissions found within 20dB of the limit line.

Test Notes: : Eut powered by AC/DC PS. 5G WiFi. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back. Transmitter power set to maximum

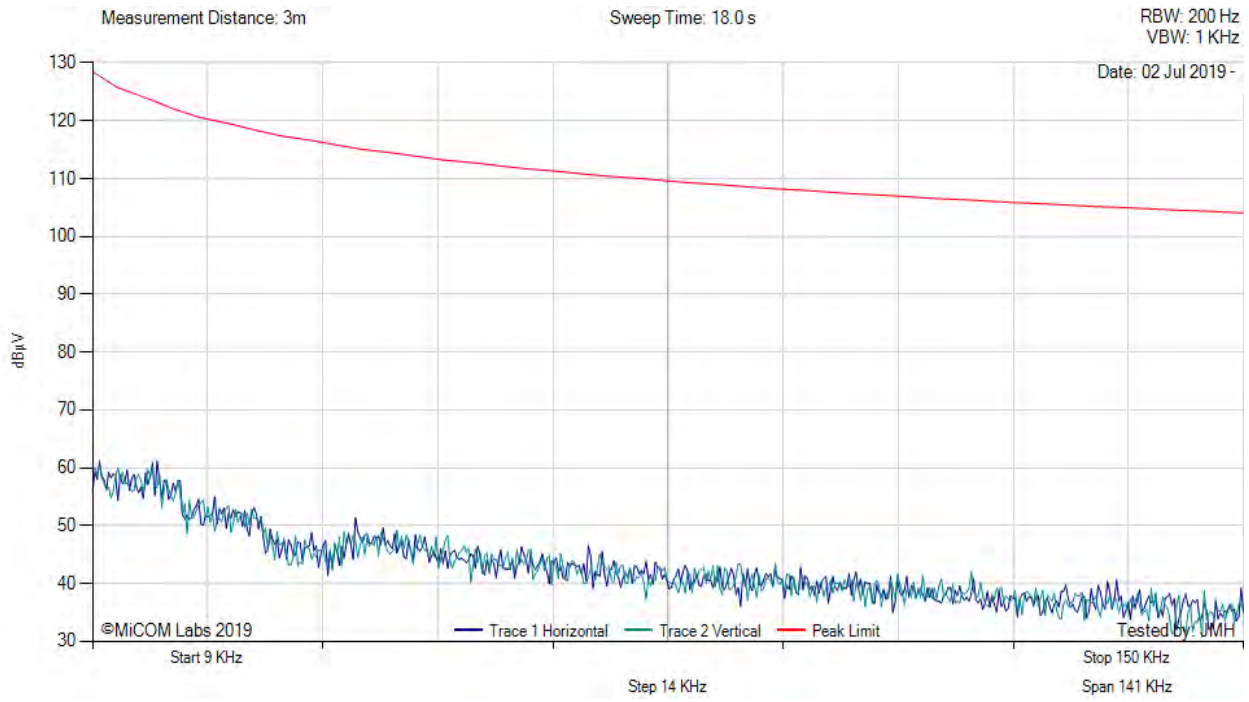
Variant: 802.11a, Test Freq: 5260.00 MHz, Power Setting: 15.5



There are no emissions found within 20dB of the limit line.

Test Notes: : Eut powered by AC/DC PS. 5G WiFi. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back. Transmitter power set to maximum

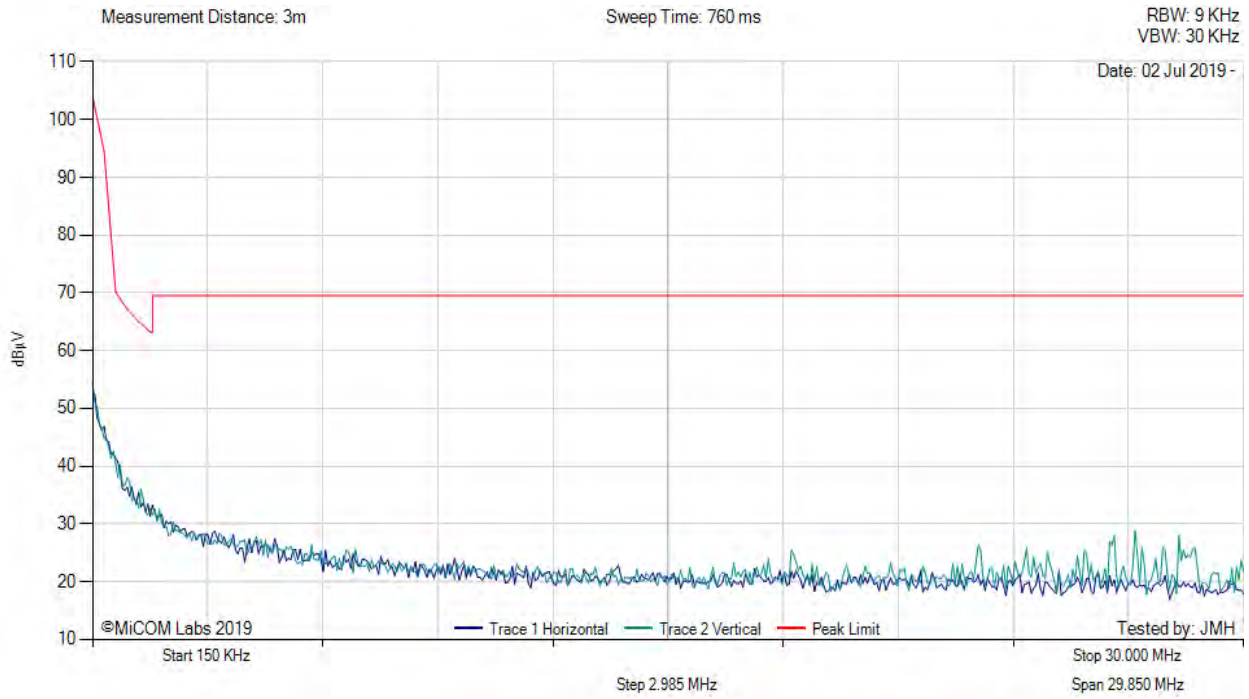
Variant: 802.11a, Test Freq: 5300.00 MHz, Power Setting: 15.0



There are no emissions found within 20dB of the limit line.

Test Notes: : Eut powered by AC/DC PS. 5G WiFi. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back. Transmitter power set to maximum

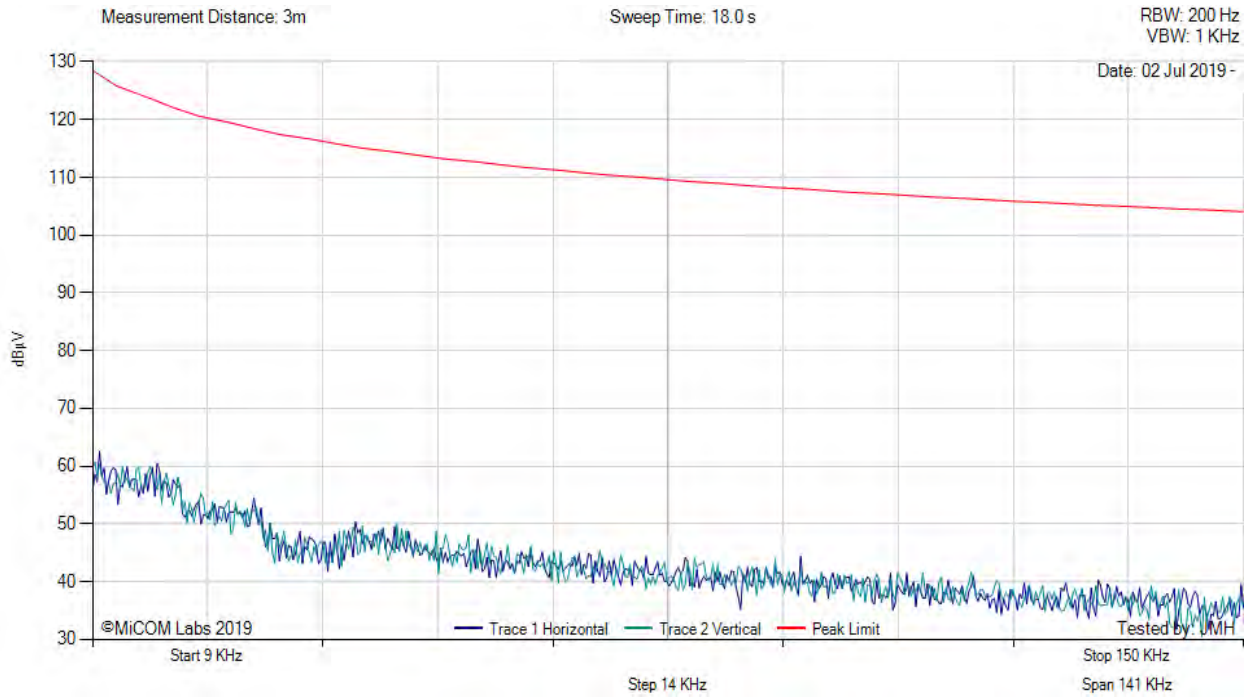
Variant: 802.11a, Test Freq: 5300.00 MHz, Power Setting: 15.0



There are no emissions found within 20dB of the limit line.

Test Notes: : Eut powered by AC/DC PS. 5G WiFi. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back. Transmitter power set to maximum

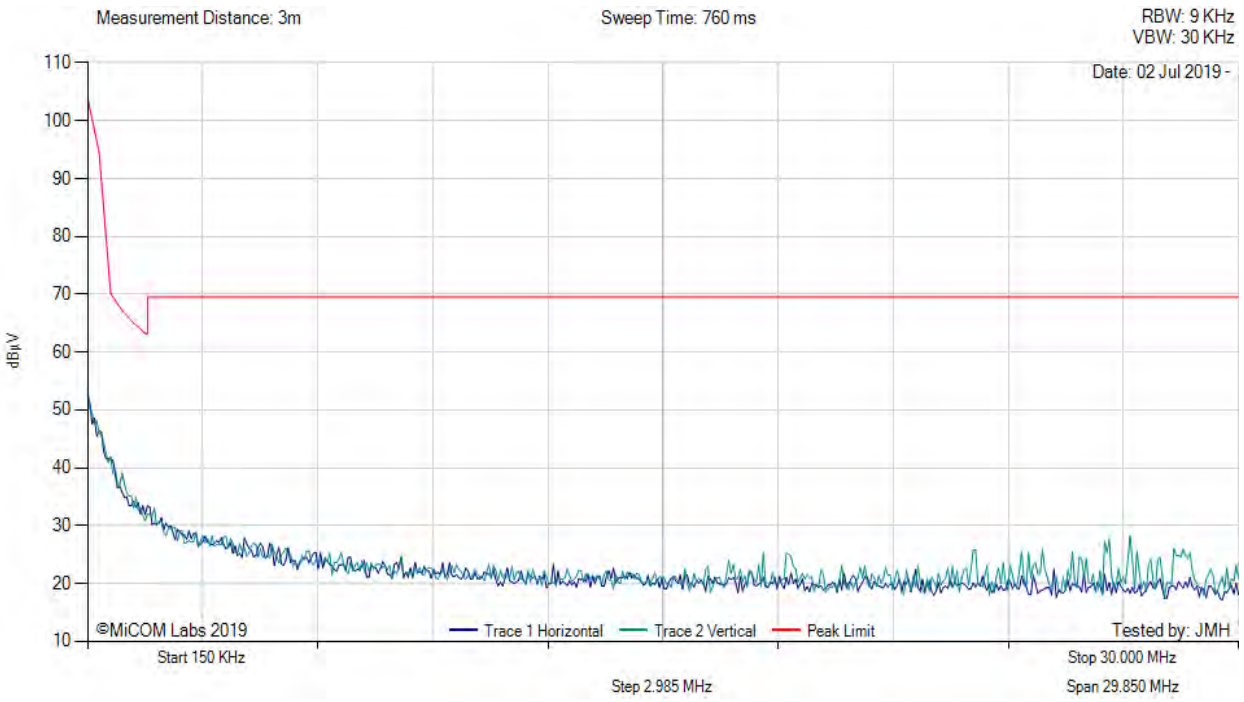
Variant: 802.11a, Test Freq: 5320.00 MHz, Power Setting: 15.0



There are no emissions found within 20dB of the limit line.

Test Notes: : Eut powered by AC/DC PS. 5G WiFi. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back. Transmitter power set to maximum

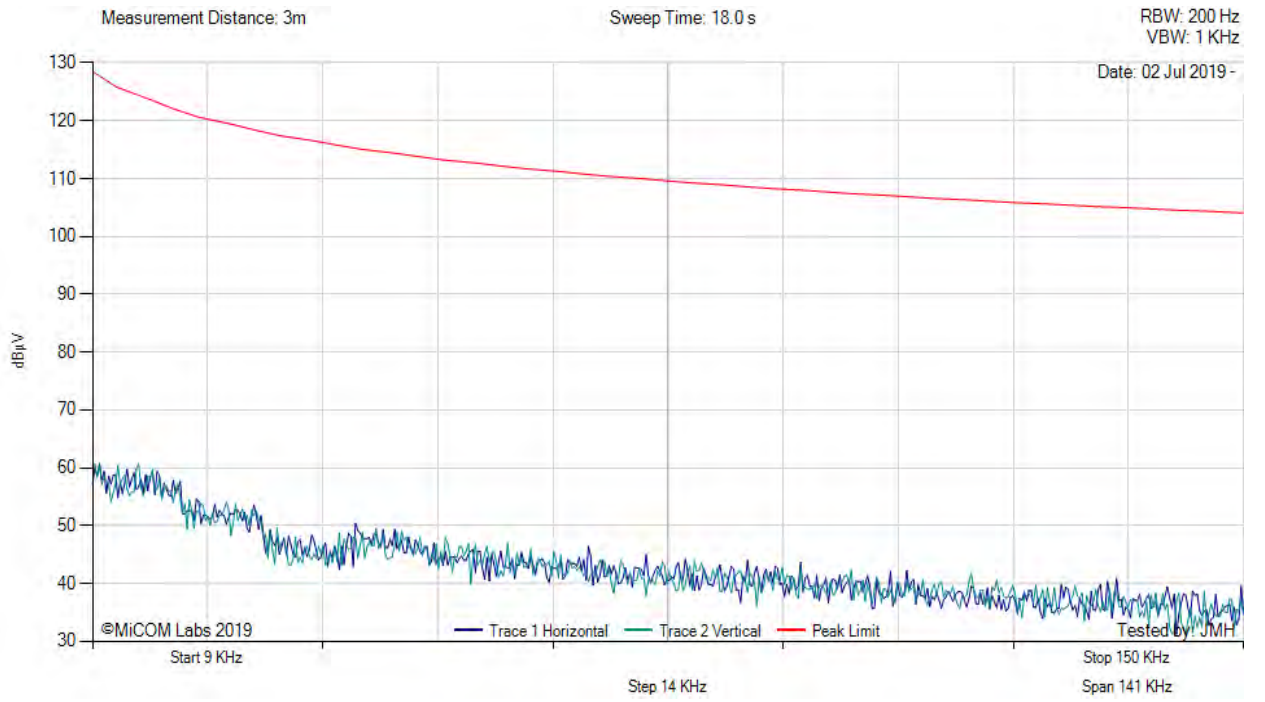
Variant: 802.11a, Test Freq: 5320.00 MHz, Power Setting: 15.0



There are no emissions found within 20dB of the limit line.

Test Notes: : Eut powered by AC/DC PS. 5G WiFi. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back. Transmitter power set to maximum

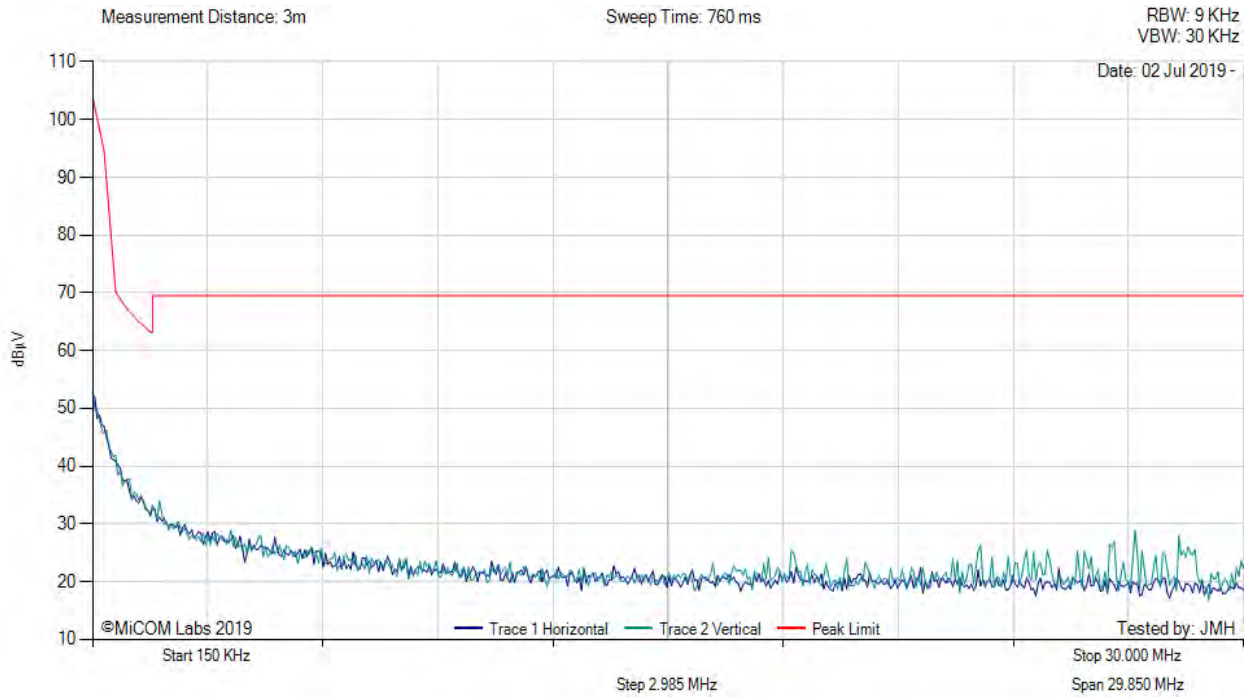
Variant: 802.11a, Test Freq: 5500.00 MHz, Power Setting: 15.5



There are no emissions found within 20dB of the limit line.

Test Notes: : Eut powered by AC/DC PS. 5G WiFi. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back. Transmitter power set to maximum

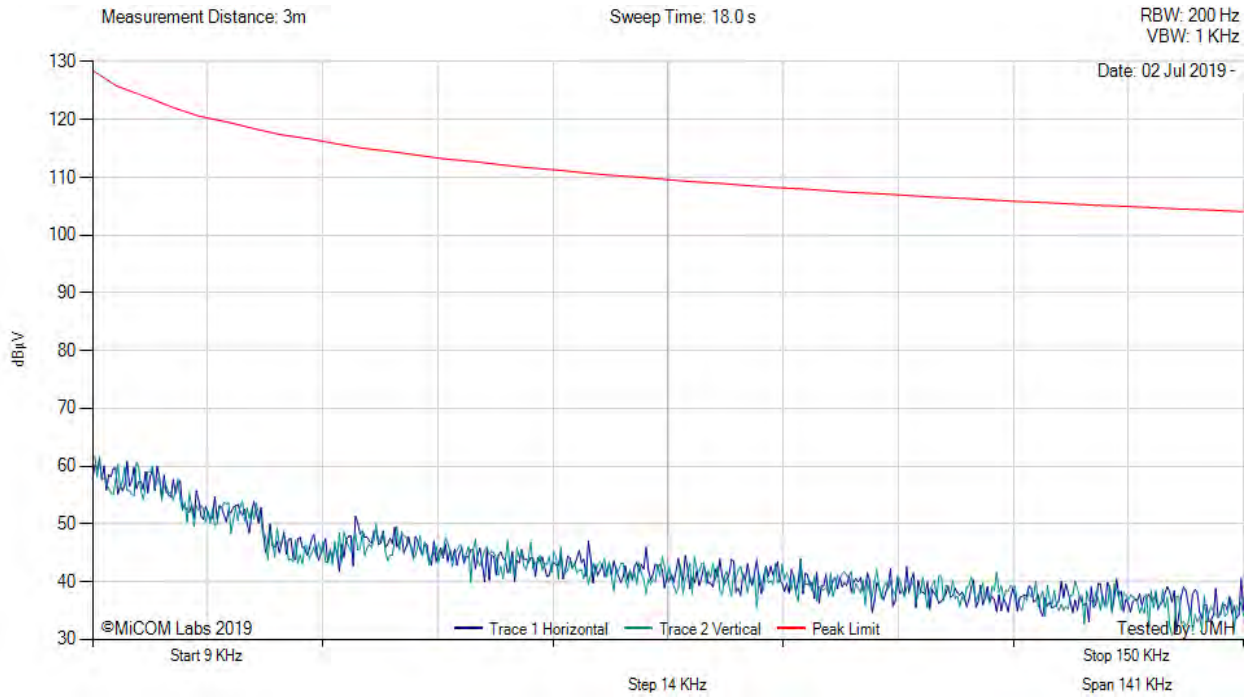
Variant: 802.11a, Test Freq: 5500.00 MHz, Power Setting: 15.5



There are no emissions found within 20dB of the limit line.

Test Notes: : Eut powered by AC/DC PS. 5G WiFi. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back. Transmitter power set to maximum

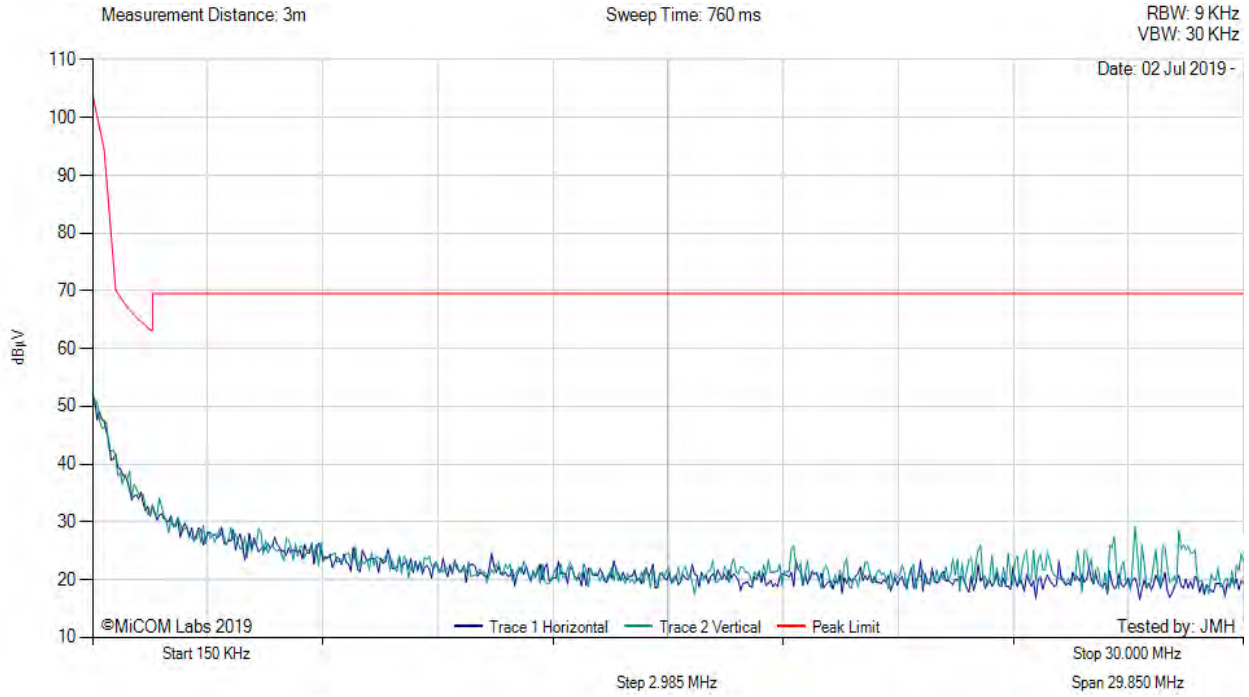
Variant: 802.11a, Test Freq: 5580.00 MHz, Power Setting: 15.5



There are no emissions found within 20dB of the limit line.

Test Notes: : Eut powered by AC/DC PS. 5G WiFi. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back. Transmitter power set to maximum

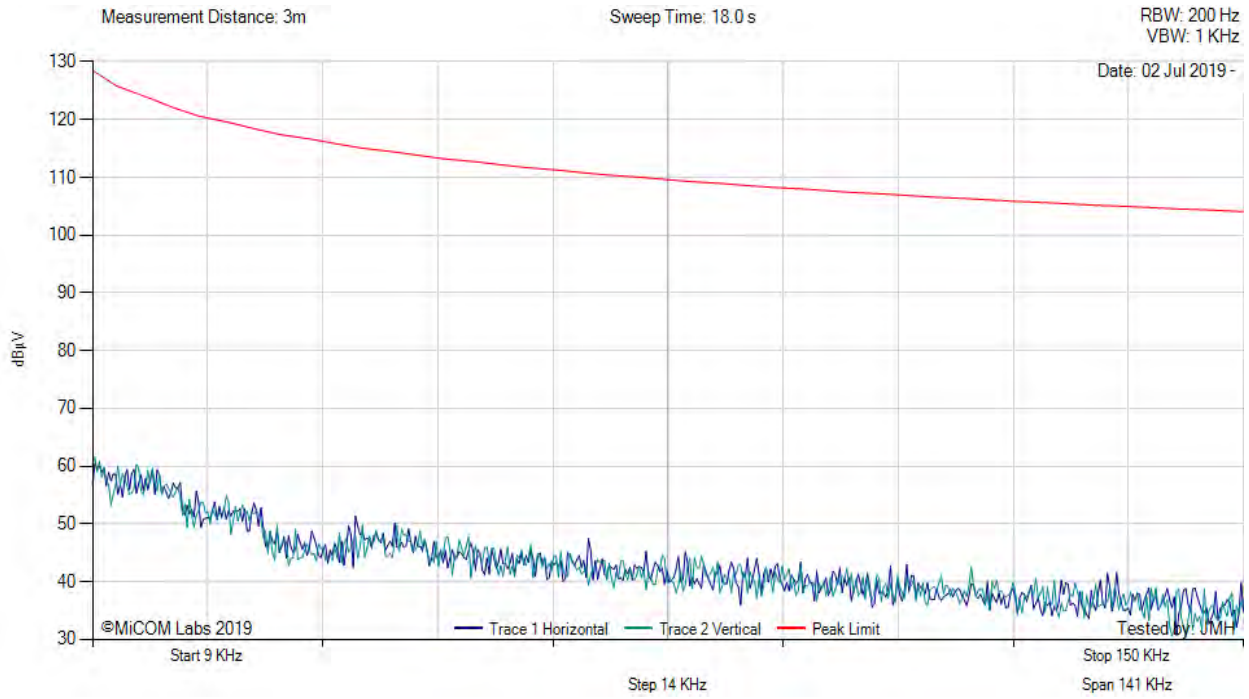
Variant: 802.11a, Test Freq: 5580.00 MHz, Power Setting: 16.0



There are no emissions found within 20dB of the limit line.

Test Notes: : Eut powered by AC/DC PS. 5G WiFi. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back. Transmitter power set to maximum

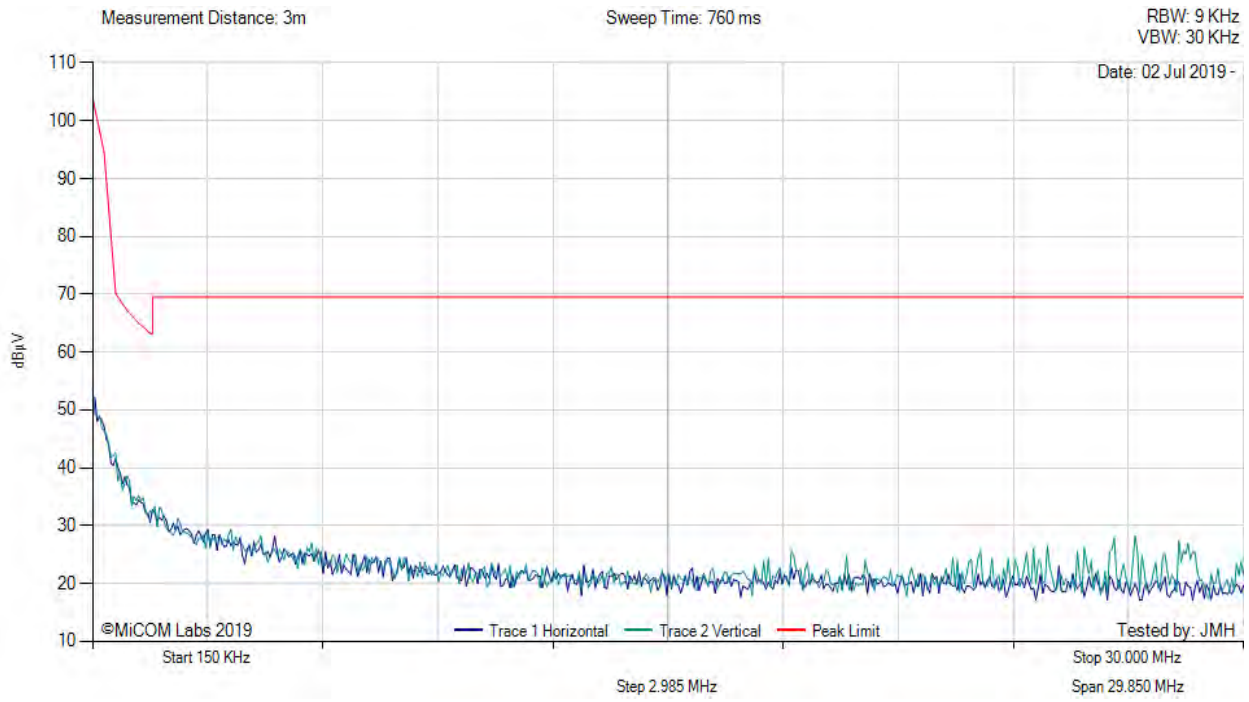
Variant: 802.11a, Test Freq: 5700.00 MHz, Power Setting: 16.0



There are no emissions found within 20dB of the limit line.

Test Notes: : Eut powered by AC/DC PS. 5G WiFi. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back. Transmitter power set to maximum

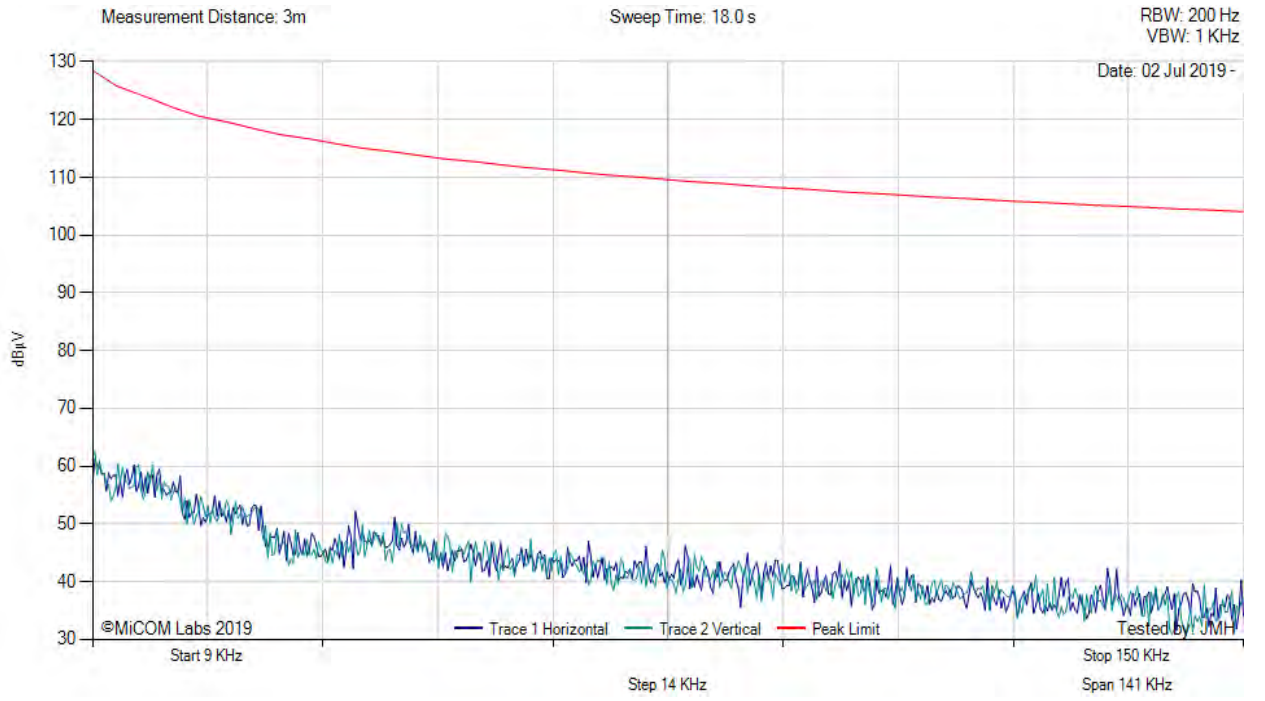
Variant: 802.11a, Test Freq: 5700.00 MHz, Power Setting: 16.0



There are no emissions found within 20dB of the limit line.

Test Notes: : Eut powered by AC/DC PS. 5G WiFi. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back. Transmitter power set to maximum

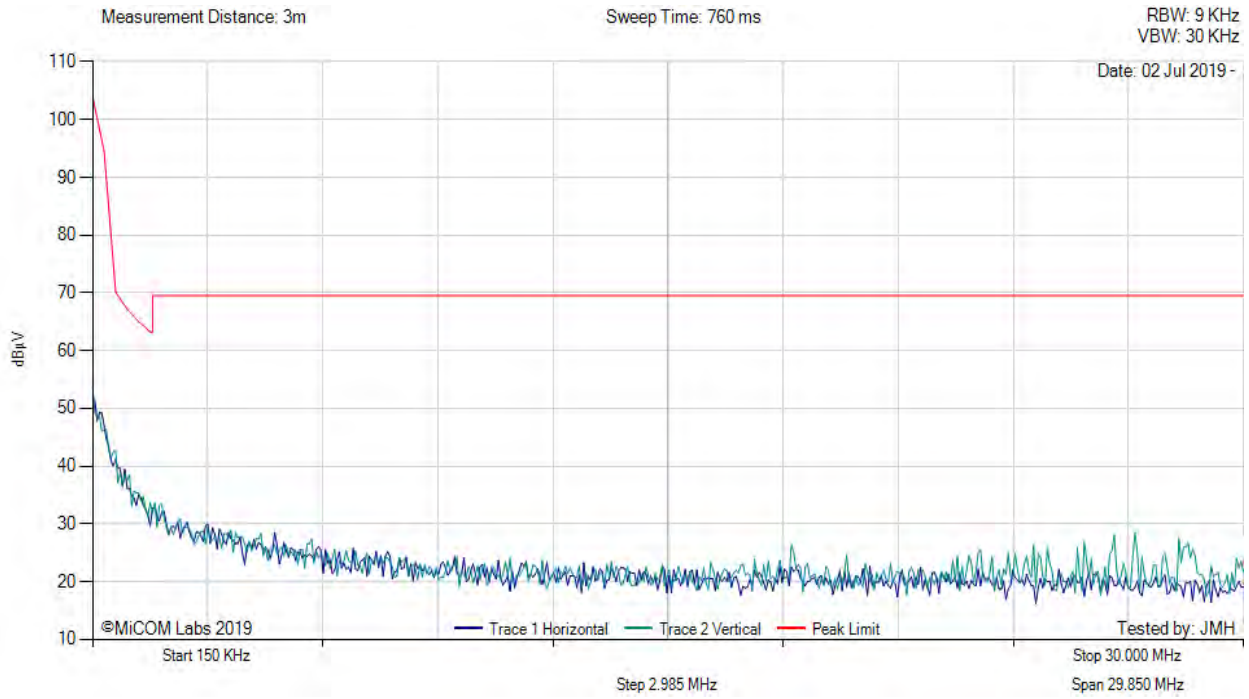
Variant: 802.11a, Test Freq: 5745.00 MHz, Power Setting: 18.0



There are no emissions found within 20dB of the limit line.

Test Notes: : Eut powered by AC/DC PS. 5G WiFi. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back. Transmitter power set to maximum

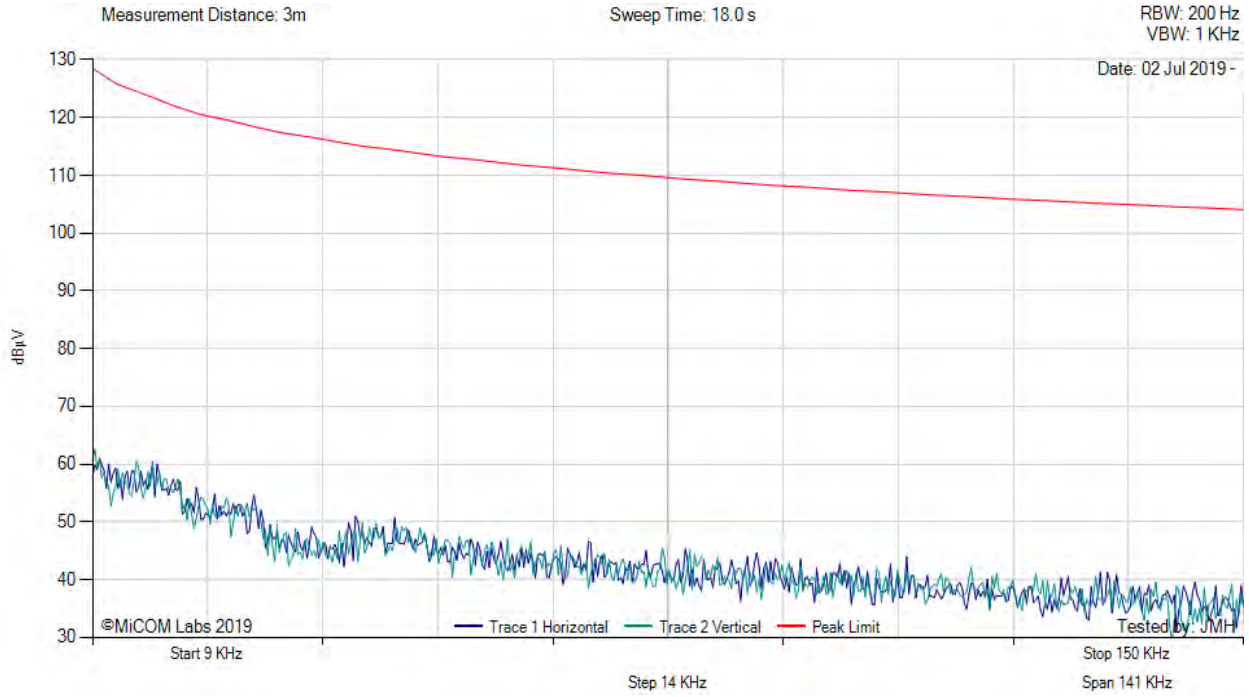
Variant: 802.11a, Test Freq: 5745.00 MHz, Power Setting: 18.0



There are no emissions found within 20dB of the limit line.

Test Notes: : Eut powered by AC/DC PS. 5G WiFi. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back. Transmitter power set to maximum

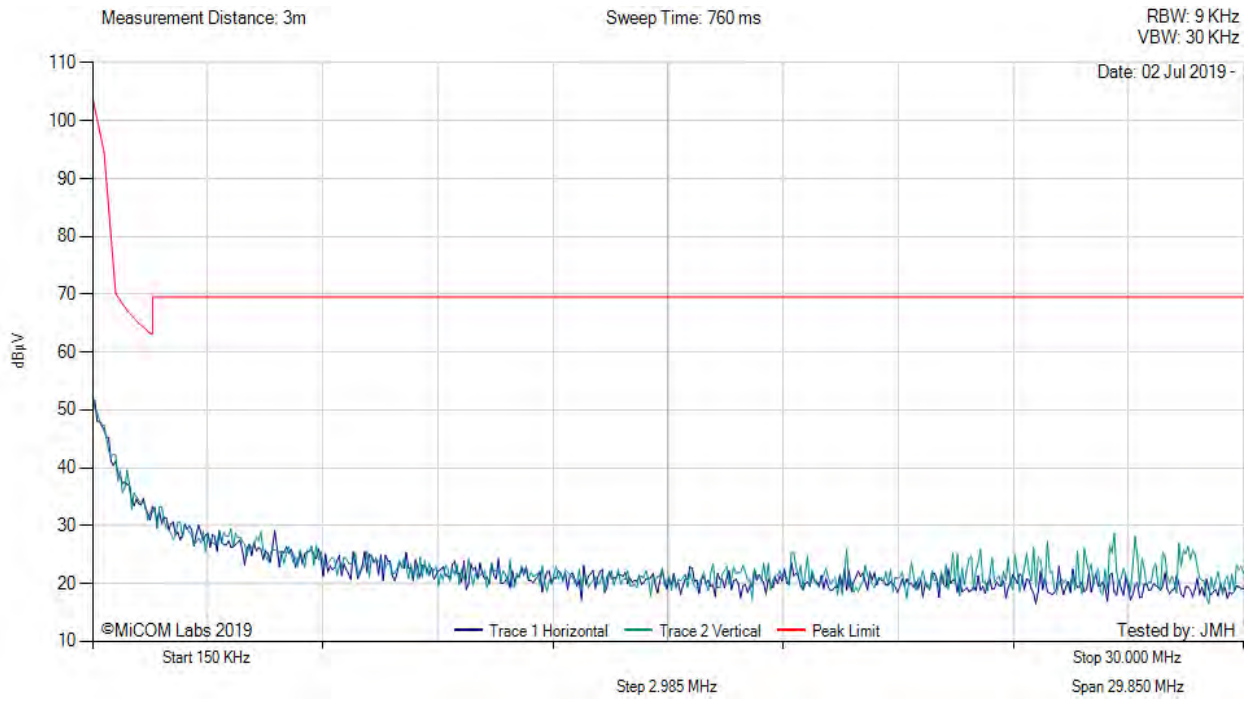
Variant: 802.11a, Test Freq: 5785.00 MHz, Power Setting: 18.0



There are no emissions found within 20dB of the limit line.

Test Notes: : Eut powered by AC/DC PS. 5G WiFi. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back. Transmitter power set to maximum

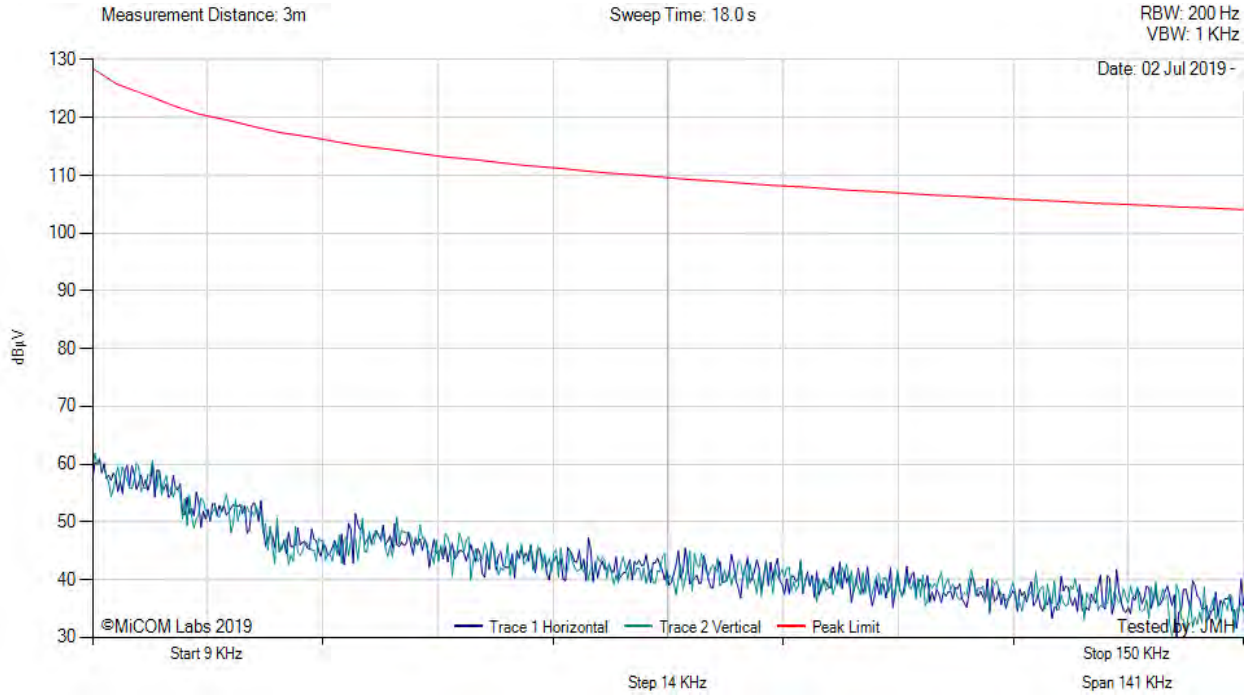
Variant: 802.11a, Test Freq: 5785.00 MHz, Power Setting: 18.0



There are no emissions found within 20dB of the limit line.

Test Notes: : Eut powered by AC/DC PS. 5G WiFi. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back. Transmitter power set to maximum

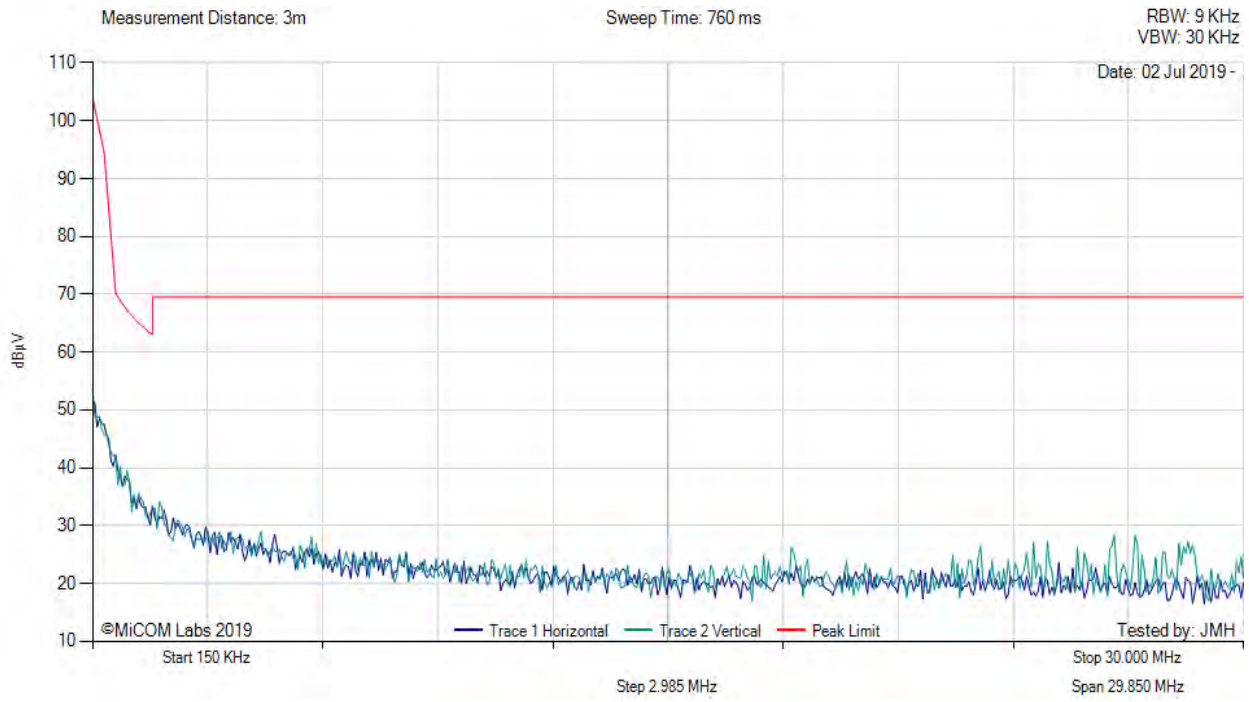
Variant: 802.11a, Test Freq: 5825.00 MHz, Power Setting: 18.0



There are no emissions found within 20dB of the limit line.

Test Notes: : Eut powered by AC/DC PS. 5G WiFi. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back. Transmitter power set to maximum

Variant: 802.11a, Test Freq: 5825.00 MHz, Power Setting: 18.0



There are no emissions found within 20dB of the limit line.

Test Notes: : Eut powered by AC/DC PS. 5G WiFi. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back. Transmitter power set to maximum

2.1.1.2. Tx Spurious 1 - 18 GHz

Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	ICT Custom A1	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	51.1
Channel Frequency (MHz):	5180.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	5178.75	79.13	-2.66	-11.97	64.50	Fundamental	Vertical	100	0	--	--	
#2	10358.32	60.35	-3.85	-5.59	50.91	Peak (NRB)	Vertical	150	91	--	--	Pass
#3	15545.80	63.64	-4.77	-2.04	56.83	Max Peak	Vertical	191	85	68.2	-11.4	Pass
#4	15545.80	52.11	-4.77	-2.04	45.30	Max Avg	Vertical	191	85	54.0	-8.7	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet.5 GHz notch in front of amp to prevent overload. Duty Cycle correction factor 2.91 dB included

Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	ICT Custom A1	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	51.1
Channel Frequency (MHz):	5200.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	5199.38	85.08	-2.63	-11.95	70.50	Fundamental	Vertical	100	0	--	--	
#2	10402.81	57.94	-3.87	-5.87	48.20	Peak (NRB)	Vertical	101	0	--	--	Pass
#3	15609.20	69.30	-4.72	-1.71	62.87	Max Peak	Vertical	194	108	68.2	-5.4	Pass
#4	15609.20	54.59	-4.72	-1.71	48.18	Max Avg	Vertical	194	108	54.0	-5.8	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet. 5 GHz notch in front of amp to prevent overload. DC correction factor 3 dB

Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	ICT Custom A1	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	51.1
Channel Frequency (MHz):	5240.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	5240.05	88.26	-2.62	-12.24	73.40	Fundamental	Vertical	100	0	--	--	
#2	10474.41	61.89	-3.80	-6.26	51.83	Peak (NRB)	Vertical	200	0	--	--	Pass
#3	15721.66	67.30	-4.83	-1.94	60.53	Max Peak	Horizontal	194	41	68.2	-7.7	Pass
#4	15721.66	53.77	-4.83	-1.94	47.00	Max Avg	Horizontal	194	41	54.0	-7.0	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet. 5 GHz notch in front of amp to prevent overload. DC correction factor 3 dB

Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	ICT Custom A2	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	51.1
Channel Frequency (MHz):	5260.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	5258.90	86.36	-2.62	-12.14	71.60	Fundamental	Vertical	100	0	--	--	
#2	10513.25	61.81	-4.01	-6.19	51.61	Peak (NRB)	Vertical	200	57	--	--	Pass
#3	15780.58	66.14	-4.86	-2.11	59.17	Max Peak	Vertical	195	279	68.2	-9.1	Pass
#4	15780.58	52.92	-4.86	-2.11	45.95	Max Avg	Vertical	195	279	54.0	-11.1	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet. 5 GHz notch in front of amp to prevent overload. DC correction factor 3 dB

Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	ICT Custom A2	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	51.1
Channel Frequency (MHz):	5300.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	5302.59	86.54	-2.66	-12.09	71.79	Fundamental	Vertical	100	0	--	--	
#2	10607.85	66.74	-3.85	-5.24	57.65	Max Peak	Vertical	198	255	68.2	-10.6	Pass
#3	10607.85	52.76	-3.85	-5.24	43.67	Max Avg	Vertical	198	255	54.0	-10.3	Pass
#4	15899.46	66.49	-4.96	-2.23	59.30	Max Peak	Vertical	193	277	68.2	-8.9	Pass
#5	15899.46	53.48	-4.96	-2.23	46.29	Max Avg	Vertical	193	277	54.0	-7.7	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet. 5 GHz notch in front of amp to prevent overload. DC correction factor 3 dB

Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	ICT Custom A2	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	51.1
Channel Frequency (MHz):	5320.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	5318.16	82.59	-2.67	-12.18	67.74	Fundamental	Vertical	100	0	--	--	
#2	10638.60	67.69	-4.16	-5.04	58.49	Max Peak	Vertical	193	237	68.2	-9.7	Pass
#3	10638.60	52.08	-4.16	-5.04	42.88	Max Avg	Vertical	193	237	54.0	-11.1	Pass
#4	15959.88	63.76	-4.94	-1.44	57.38	Max Peak	Vertical	197	274	68.2	-10.9	Pass
#5	15959.88	51.79	-4.94	-1.44	45.41	Max Avg	Vertical	197	274	54.0	-8.6	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet. 5 GHz notch in front of amp to prevent overload. DC correction factor 3 dB

Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	ICT Custom A3	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	51.1
Channel Frequency (MHz):	5500.00	**Data Rate:**	6.00 MBit/s
Power Setting:	16	**Tested By:**	JMH

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	5496.99	71.94	-2.72	-11.62	57.60	Fundamental	Vertical	100	0	--	--	
#2	11000.26	70.62	-3.94	-6.28	60.40	Max Peak	Vertical	193	262	68.2	-7.8	Pass
#3	11000.26	56.35	-3.94	-6.28	46.13	Max Avg	Vertical	193	262	54.0	-7.9	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet. 5 GHz notch in front of amp to prevent overload. DC correction factor 3 dB

Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	ICT Custom A3	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	51.1
Channel Frequency (MHz):	5580.00	**Data Rate:**	6.00 MBit/s
Power Setting:	16	**Tested By:**	JMH

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	5578.96	78.28	-2.76	-11.46	64.06	Fundamental	Vertical	100	0	--	--	
#2	11156.46	66.73	-4.05	-4.59	58.09	Max Peak	Vertical	198	276	68.2	-10.1	Pass
#3	11156.46	52.78	-4.05	-4.59	44.14	Max Avg	Vertical	198	276	54.0	-9.9	Pass
Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet. 5 GHz notch in front of amp to prevent overload. DC correction factor 3 dB												

Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	ICT Custom A3	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	51.1
Channel Frequency (MHz):	5700.00	**Data Rate:**	6.00 MBit/s
Power Setting:	16	**Tested By:**	JMH

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	5698.15	72.52	-2.76	-10.99	58.77	Fundamental	Vertical	100	0	--	--	
#2	11410.22	65.58	-4.09	-5.85	55.64	Max Peak	Vertical	109	86	68.2	-12.6	Pass
#3	11410.22	52.20	-4.09	-5.85	42.26	Max Avg	Vertical	109	86	54.0	-11.7	Pass
Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet. 5 GHz notch in front of amp to prevent overload. DC correction factor 3 dB												

Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	ICT Custom A4	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	51.1
Channel Frequency (MHz):	5745.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	5742.47	59.69	-2.75	-11.03	45.91	Fundamental	Vertical	151	0	--	--	
#2	11493.07	64.45	-4.09	-6.64	53.72	Max Peak	Vertical	187	291	68.2	-14.5	Pass
#3	11493.07	51.92	-4.09	-6.64	41.19	Max Avg	Vertical	187	291	54.0	-12.8	Pass
Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet.5 GHz notch n front of amp to prevent overload. DC correction 3 dB												

Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	ICT Custom A4	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	51.1
Channel Frequency (MHz):	5785.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	3856.74	62.52	-2.21	-11.61	48.70	Max Peak	Vertical	190	299	68.2	-19.5	Pass
#2	3856.74	57.11	-2.21	-11.61	43.29	Max Avg	Vertical	190	299	54.0	-10.7	Pass
#3	5790.09	65.00	-2.75	-10.79	51.46	Fundamental	Vertical	151	41	--	--	
#4	11575.44	65.88	-4.04	-6.13	55.71	Max Peak	Vertical	195	241	68.2	-12.5	Pass
#5	11575.44	52.47	-4.04	-3.13	39.30	Max Avg	Vertical	195	241	54.0	-11.7	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet.5 GHz notch n front of amp to prevent overload. DC correction 3 dB

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Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	ICT Custom A4	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	51.1
Channel Frequency (MHz):	5825.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	3883.34	64.72	-2.24	-11.75	50.73	Max Peak	Vertical	154	241	68.2	-17.5	Pass
#2	3883.34	59.07	-2.24	-11.75	45.08	Max Avg	Vertical	154	241	54.0	-8.9	Pass
#3	5822.62	67.16	-2.80	-10.75	53.61	Fundamental	Vertical	151	0	--	--	
#4	11646.38	66.62	-4.16	-4.45	58.01	Max Peak	Vertical	198	286	68.2	-10.2	Pass
#5	11646.38	52.51	-4.16	-4.45	43.90	Max Avg	Vertical	198	286	54.0	-10.1	Pass
Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet. 5 GHz notch in front of amp to prevent overload. DC correction factor 3 dB												

2.1.1.3. Tx Spurious 18 – 26.5 GHz

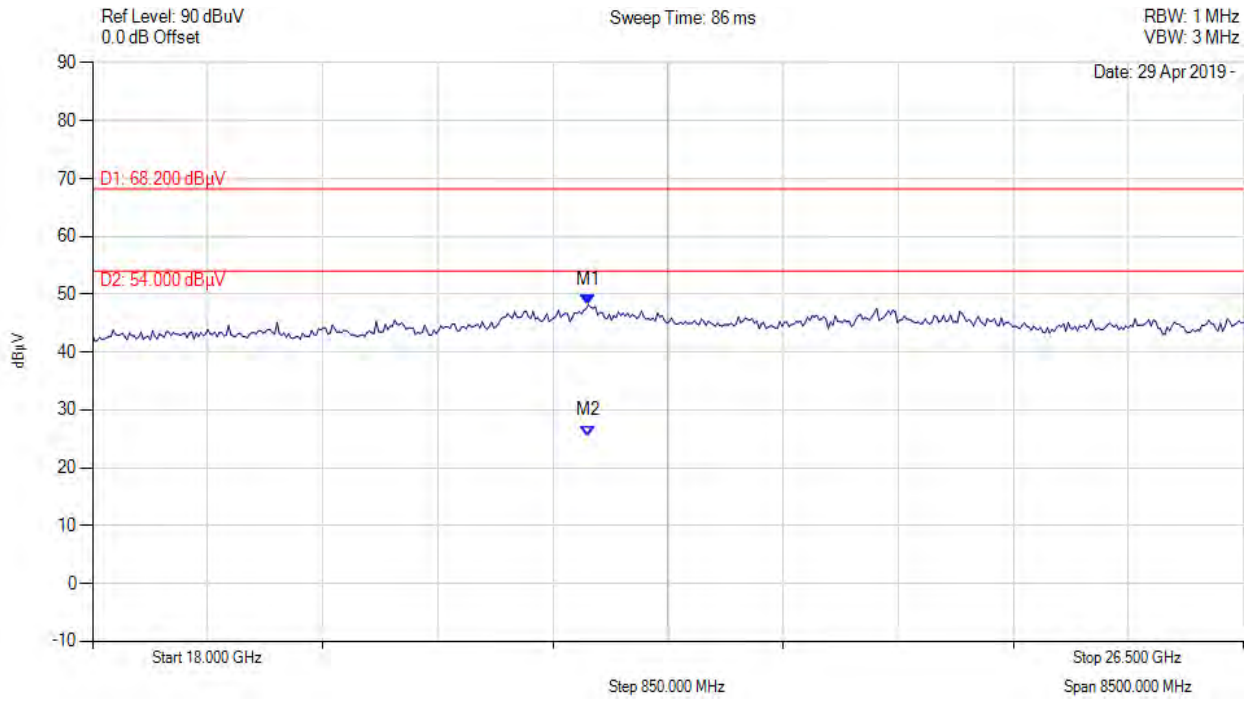
Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	ICT	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	51.1
Channel Frequency (MHz):	5180.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results
Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet.5 GHz notch in front of amp to prevent overload. Duty Cycle correction factor 2.91 dB included

TX SPURIOUS & RESTRICTED BAND EMISSIONS 18.0 - 26.5 GHz

Variant: 802.11a, Channel: 5180.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 51.1



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = MAX HOLD	M1 : 21.662 GHz : 48.241 dBµV M2 : 21.662 GHz : 25.510 dBµV	Channel Frequency: 5180.00 MHz

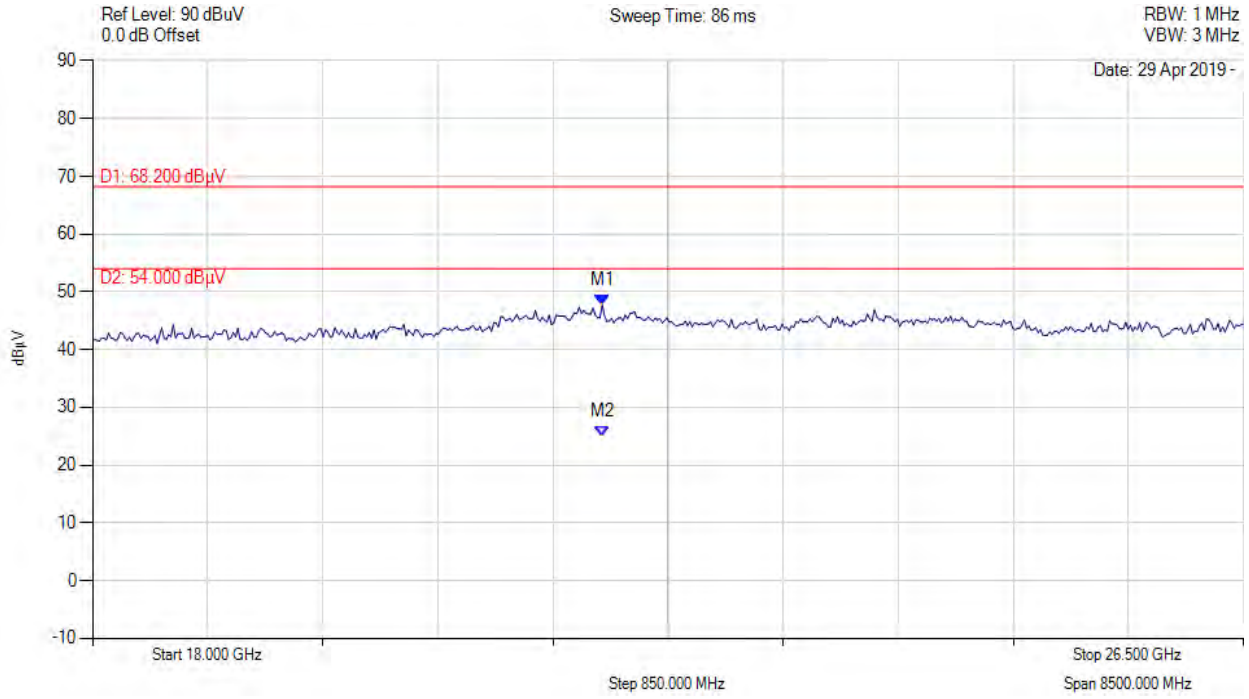
Equipment Configuration for TX Spurious & Restricted Band Emissions			
Antenna:	ICT	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	51.1
Channel Frequency (MHz):	5200.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet.5 GHz notch in front of amp to prevent overload. Duty Cycle correction factor 2.91 dB included

TX SPURIOUS & RESTRICTED BAND EMISSIONS 18.0 - 26.5 GHz

Variant: 802.11a, Channel: 5200.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 51.1



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 21.765 GHz : 47.684 dBµV M2 : 21.765 GHz : 24.941 dBµV	Channel Frequency: 5200.00 MHz

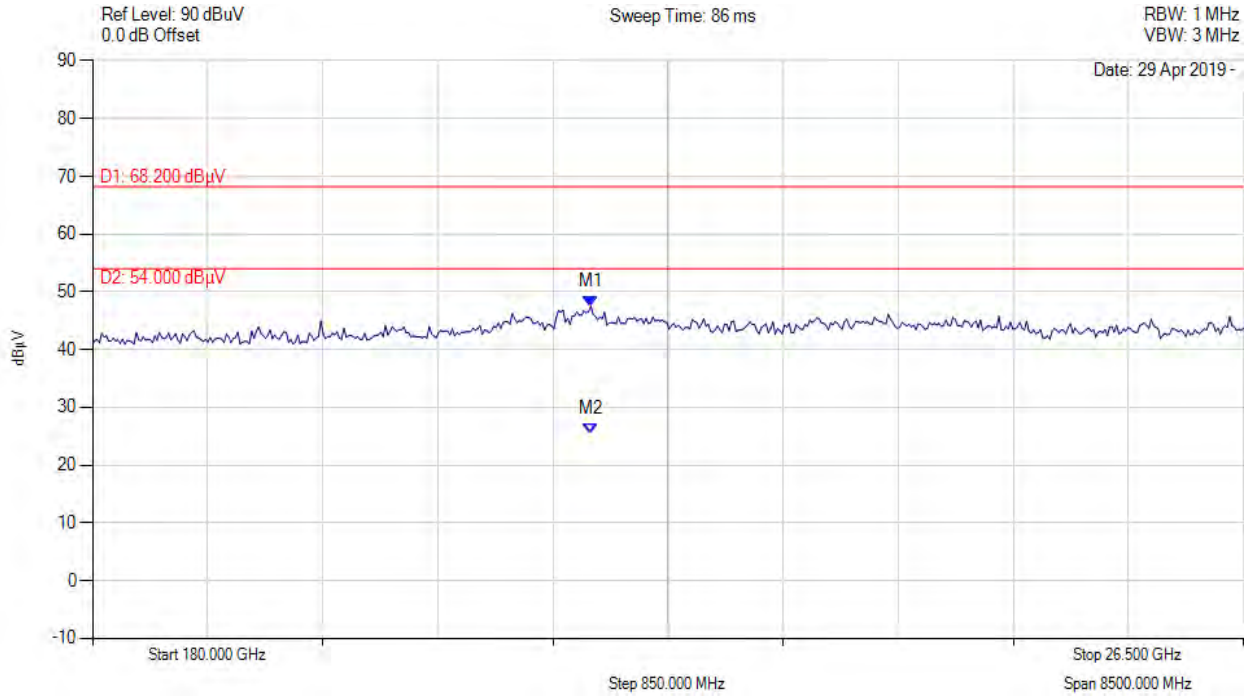
Equipment Configuration for TX Spurious & Restricted Band Emissions			
Antenna:	ICT	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	51.1
Channel Frequency (MHz):	5240.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet.5 GHz notch in front of amp to prevent overload. Duty Cycle correction factor 2.91 dB included

TX SPURIOUS & RESTRICTED BAND EMISSIONS 18.0 - 26.5 GHz

Variant: 802.11a, Channel: 5240.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 51.1



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 21.679 GHz : 47.506 dBµV M2 : 21.679 GHz : 25.460 dBµV	Channel Frequency: 5240.00 MHz

Equipment Configuration for TX Spurious & Restricted Band Emissions

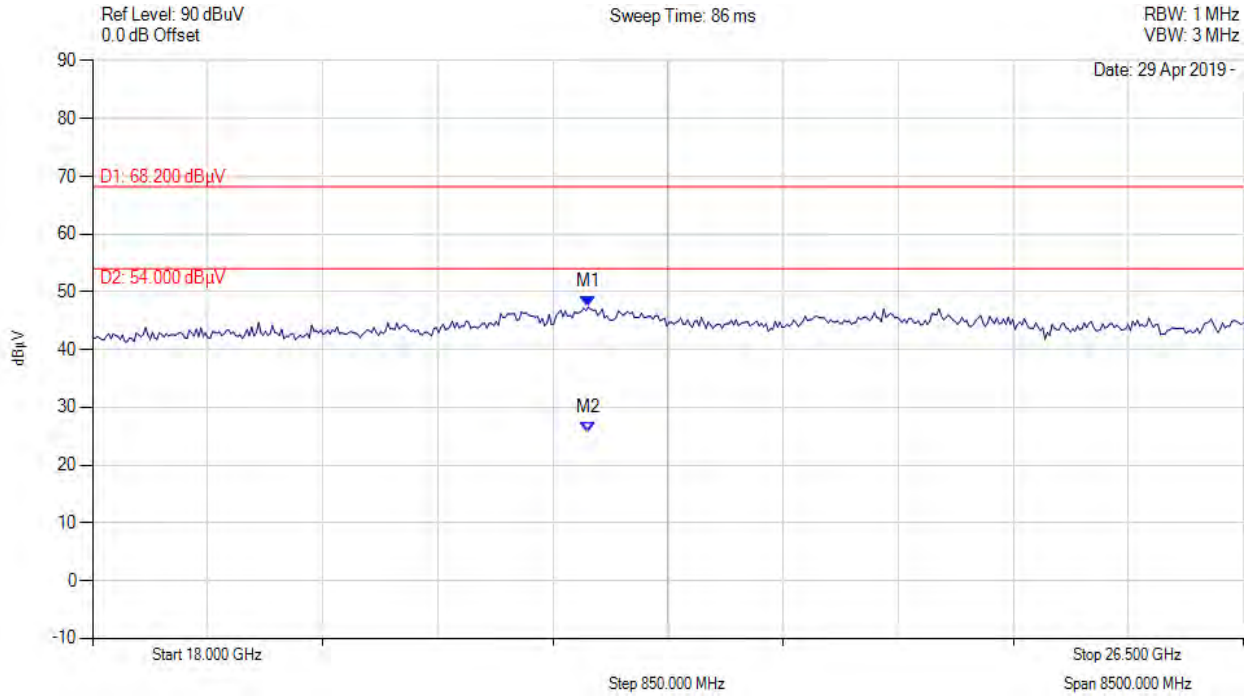
Antenna:	ICT	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	51.1
Channel Frequency (MHz):	5260.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet.5 GHz notch in front of amp to prevent overload. Duty Cycle correction factor 2.91 dB included

TX SPURIOUS & RESTRICTED BAND EMISSIONS 18.0 - 26.5 GHz

Variant: 802.11a, Channel: 5260.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 51.1



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 21.662 GHz : 47.352 dBµV M2 : 21.662 GHz : 25.622 dBµV	Channel Frequency: 5260.00 MHz

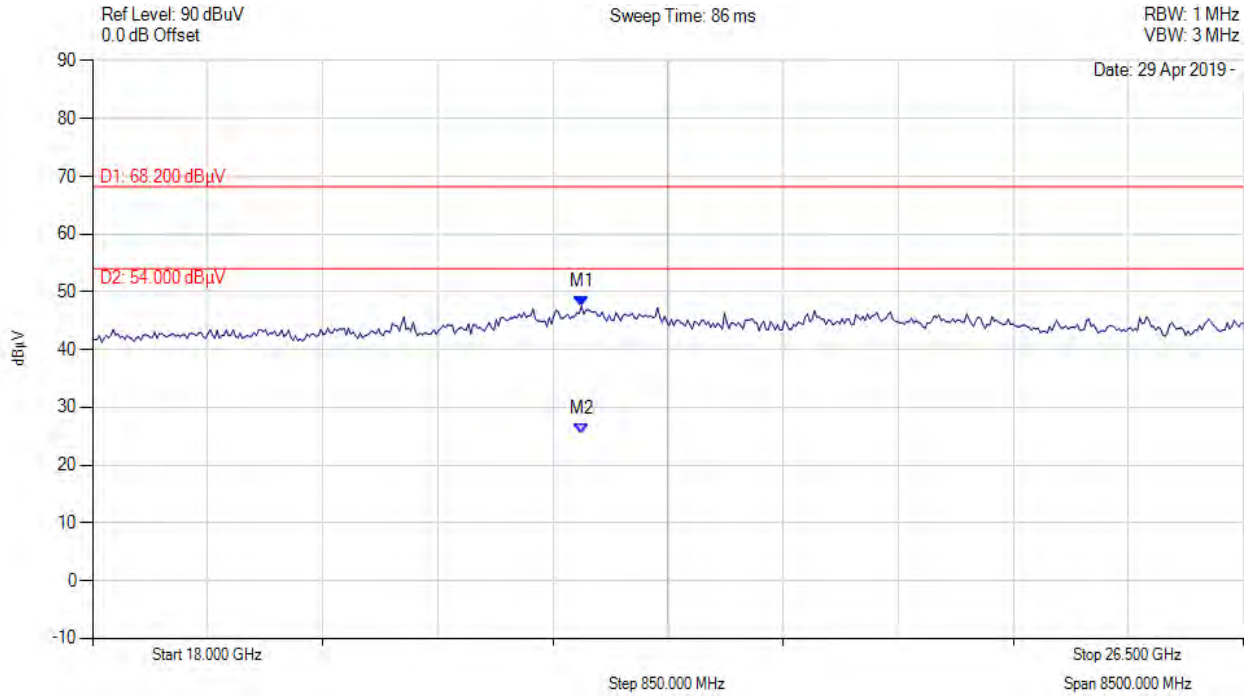
Equipment Configuration for TX Spurious & Restricted Band Emissions			
Antenna:	ICT	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	51.1
Channel Frequency (MHz):	5300.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet.5 GHz notch in front of amp to prevent overload. Duty Cycle correction factor 2.91 dB included

TX SPURIOUS & RESTRICTED BAND EMISSIONS 18.0 - 26.5 GHz

Variant: 802.11a, Channel: 5300.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 51.1



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 21.611 GHz : 47.508 dBµV M2 : 21.611 GHz : 25.308 dBµV	Channel Frequency: 5300.00 MHz

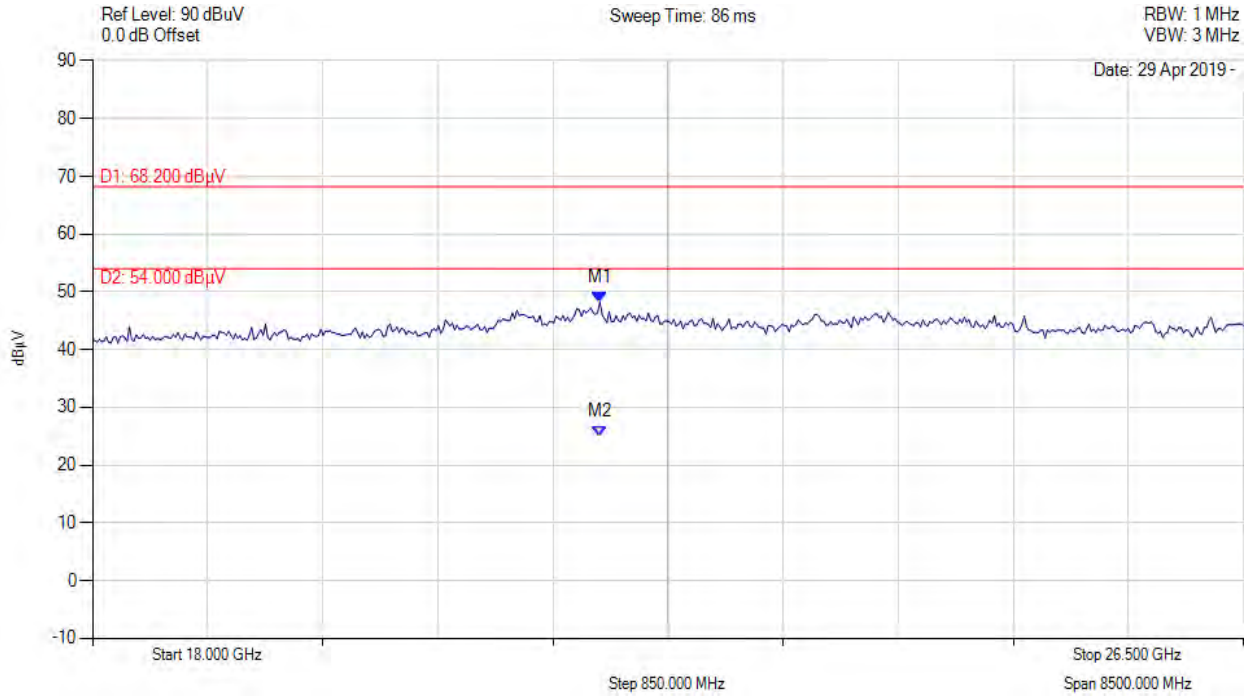
Equipment Configuration for TX Spurious & Restricted Band Emissions			
Antenna:	ICT	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	51.1
Channel Frequency (MHz):	5320.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet.5 GHz notch in front of amp to prevent overload. Duty Cycle correction factor 2.91 dB included

TX SPURIOUS & RESTRICTED BAND EMISSIONS 18.0 - 26.5 GHz

Variant: 802.11a, Channel: 5320.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 51.1



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 21.747 GHz : 48.212 dBµV M2 : 21.747 GHz : 24.902 dBµV	Channel Frequency: 5320.00 MHz

Equipment Configuration for TX Spurious & Restricted Band Emissions

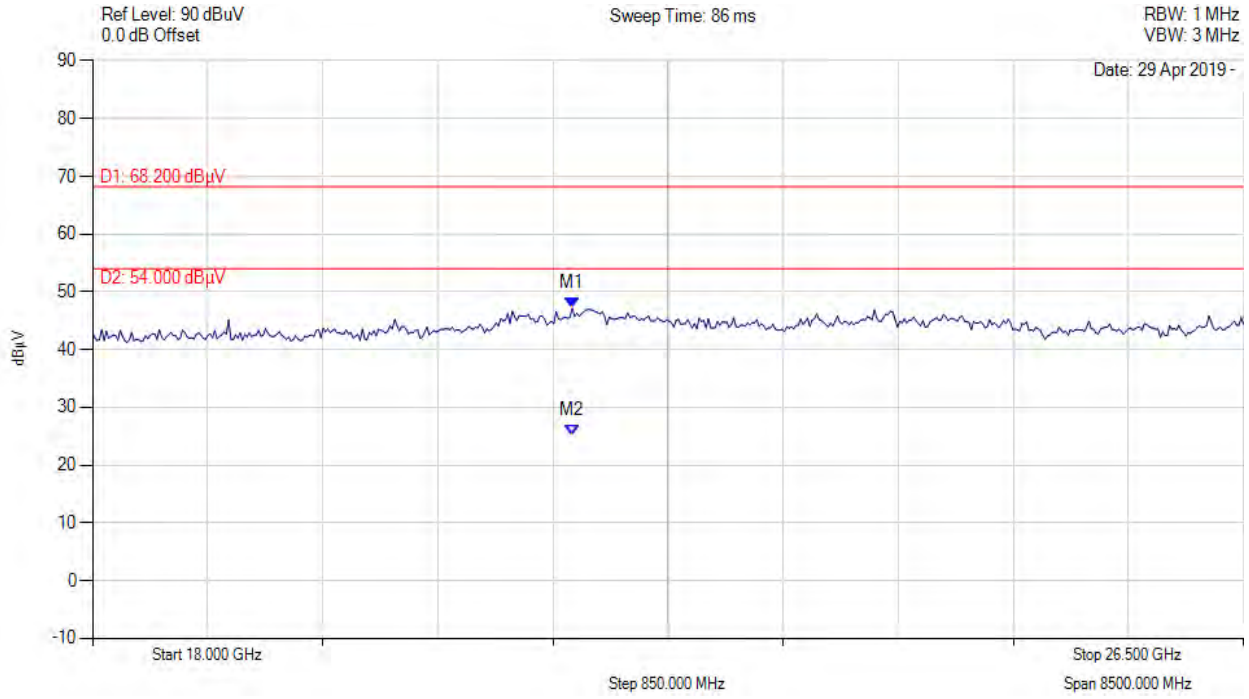
Antenna:	ICT	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	51.1
Channel Frequency (MHz):	5500.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet.5 GHz notch in front of amp to prevent overload. Duty Cycle correction factor 2.91 dB included

TX SPURIOUS & RESTRICTED BAND EMISSIONS 18.0 - 26.5 GHz

Variant: 802.11a, Channel: 5500.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 51.1



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 21.543 GHz : 47.146 dBµV M2 : 21.543 GHz : 25.260 dBµV	Channel Frequency: 5500.00 MHz

Equipment Configuration for TX Spurious & Restricted Band Emissions

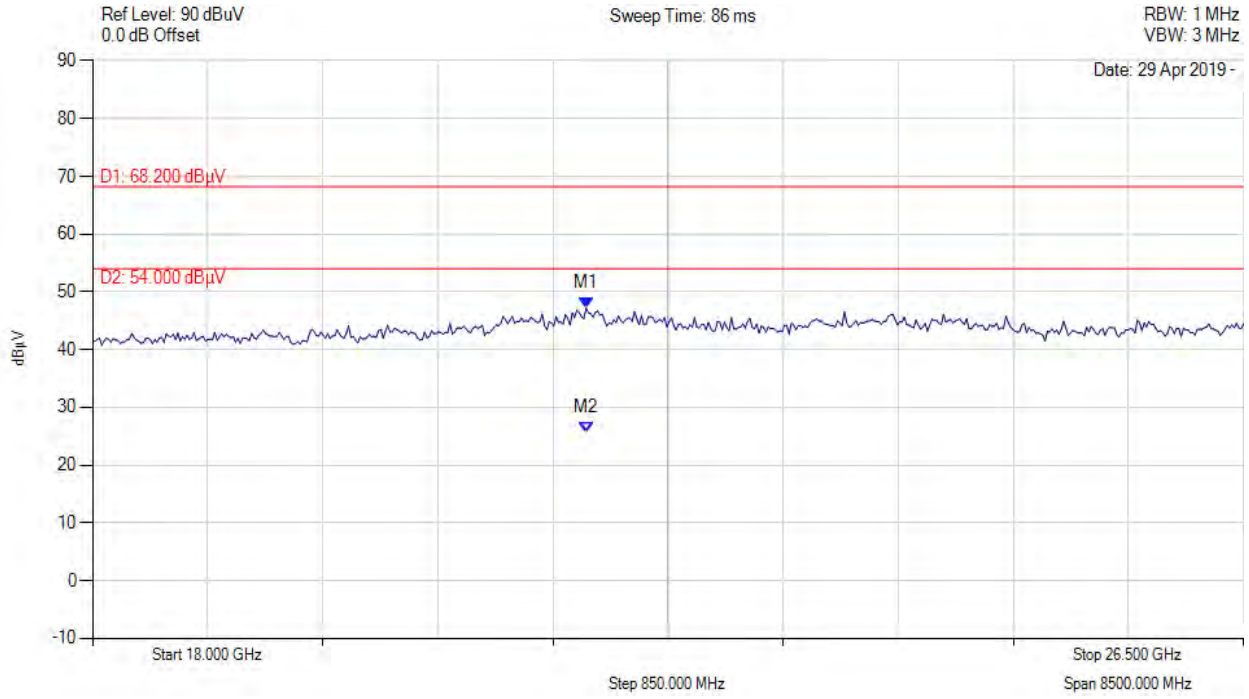
Antenna:	ICT	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	51.1
Channel Frequency (MHz):	5580.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet.5 GHz notch in front of amp to prevent overload. Duty Cycle correction factor 2.91 dB included

TX SPURIOUS & RESTRICTED BAND EMISSIONS 18.0 - 26.5 GHz

Variant: 802.11a, Channel: 5580.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 51.1



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 21.645 GHz : 47.193 dBµV M2 : 21.645 GHz : 25.632 dBµV	Channel Frequency: 5580.00 MHz

Equipment Configuration for TX Spurious & Restricted Band Emissions

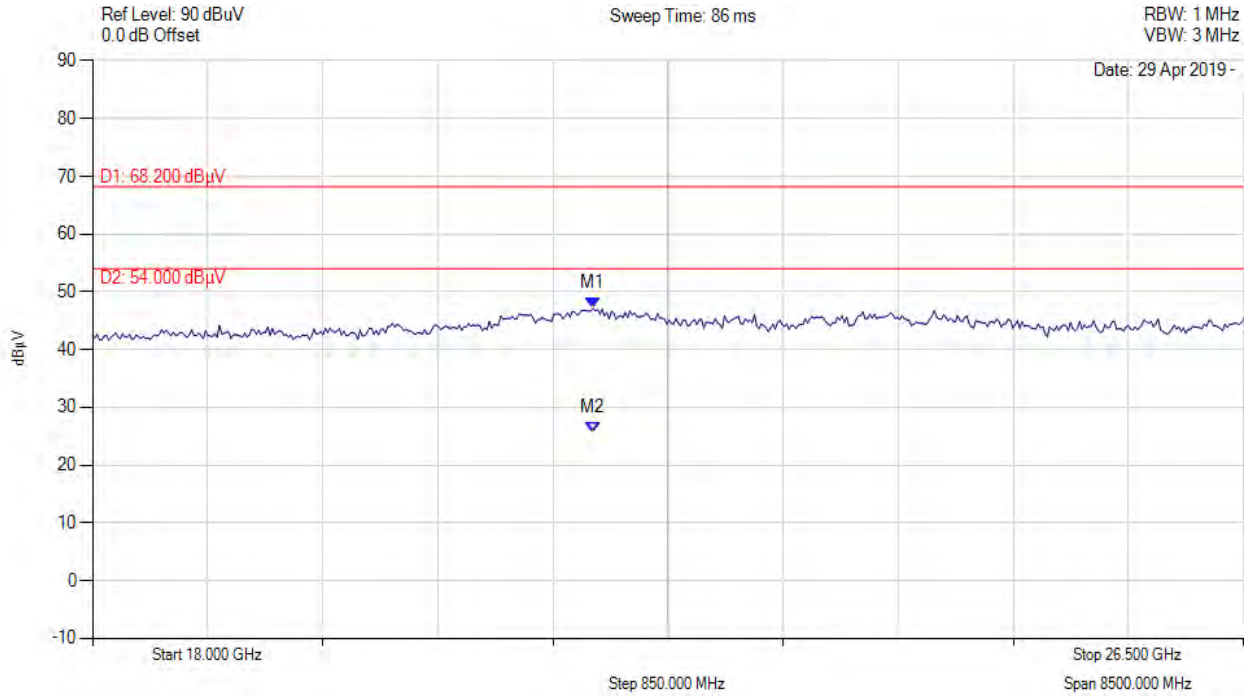
Antenna:	ICT	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	51.1
Channel Frequency (MHz):	5700.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet.5 GHz notch in front of amp to prevent overload. Duty Cycle correction factor 2.91 dB included

TX SPURIOUS & RESTRICTED BAND EMISSIONS 18.0 - 26.5 GHz

Variant: 802.11a, Channel: 5700.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 51.1



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 21.696 GHz : 47.126 dBµV M2 : 21.696 GHz : 25.546 dBµV	Channel Frequency: 5700.00 MHz

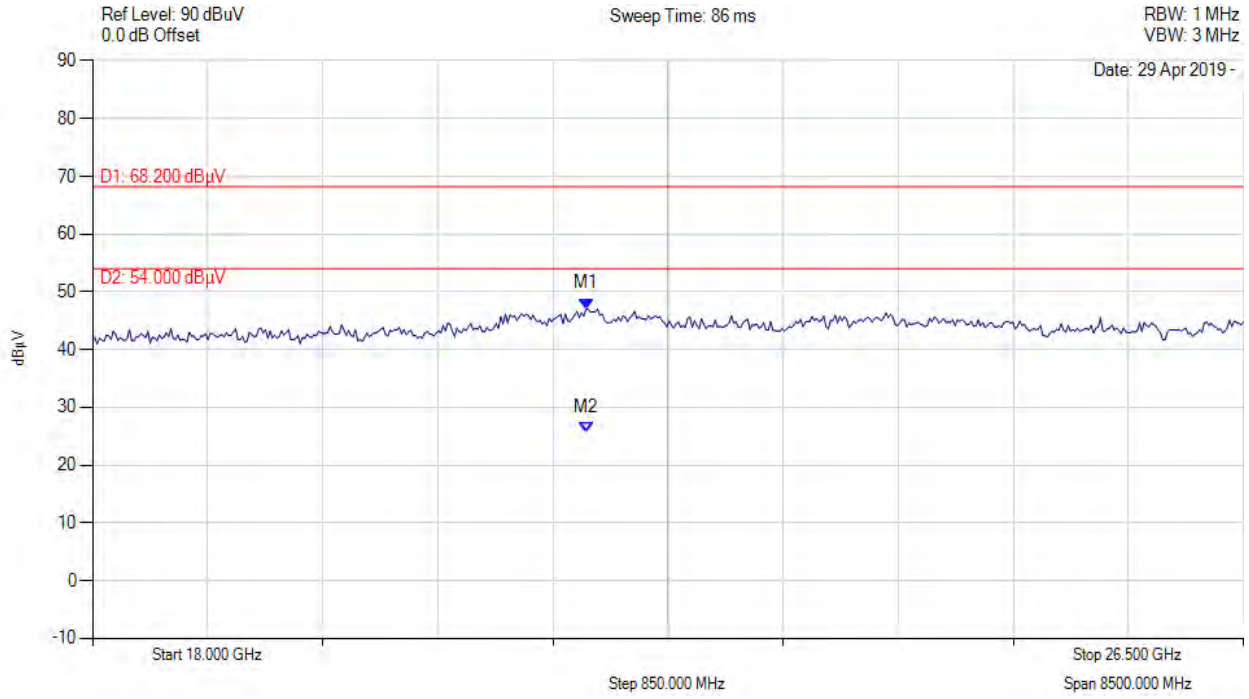
Equipment Configuration for TX Spurious & Restricted Band Emissions			
Antenna:	ICT	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	51.1
Channel Frequency (MHz):	5745.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet.5 GHz notch in front of amp to prevent overload. Duty Cycle correction factor 2.91 dB included

TX SPURIOUS & RESTRICTED BAND EMISSIONS 18.0 - 26.5 GHz

Variant: 802.11a, Channel: 5745.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 51.1



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 21.645 GHz : 47.096 dBµV M2 : 21.645 GHz : 25.616 dBµV	Channel Frequency: 5745.00 MHz

Equipment Configuration for TX Spurious & Restricted Band Emissions

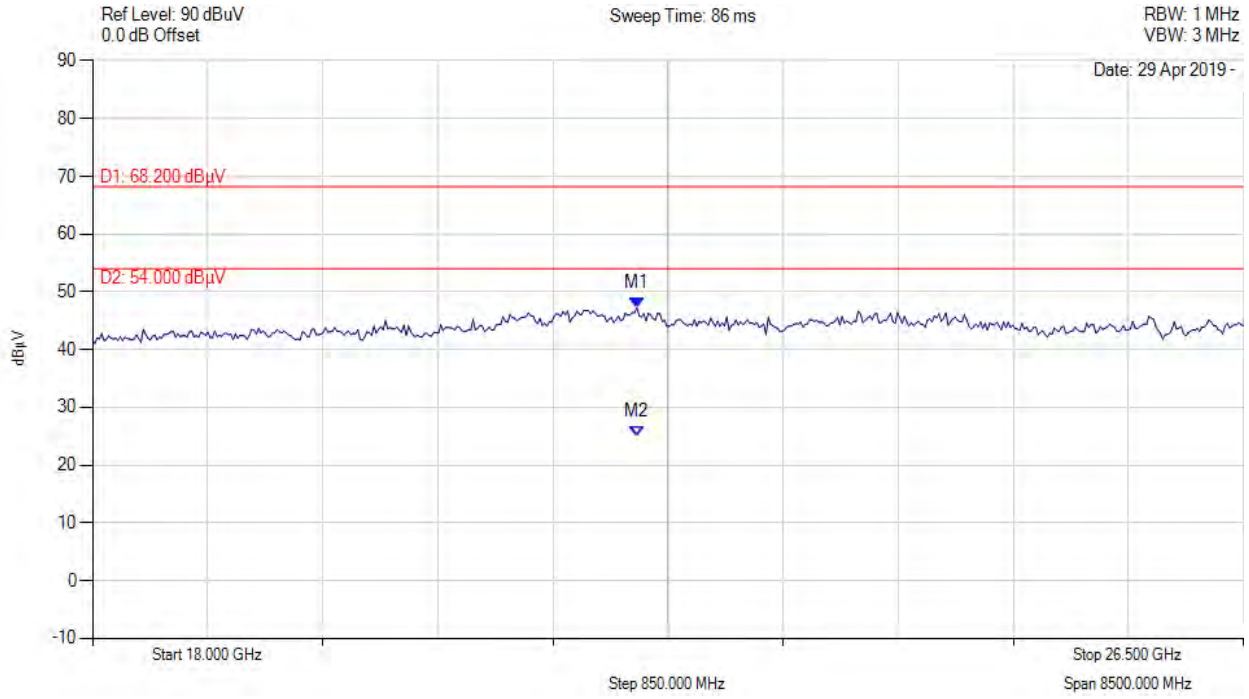
Antenna:	ICT	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	51.1
Channel Frequency (MHz):	5785.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet.5 GHz notch in front of amp to prevent overload. Duty Cycle correction factor 2.91 dB included

TX SPURIOUS & RESTRICTED BAND EMISSIONS 18.0 - 26.5 GHz

Variant: 802.11a, Channel: 5785.00 MHz Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 51.1



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 22.020 GHz : 47.205 dBµV M2 : 22.020 GHz : 24.905 dBµV	Channel Frequency: 5785.00 MHz

Equipment Configuration for TX Spurious & Restricted Band Emissions

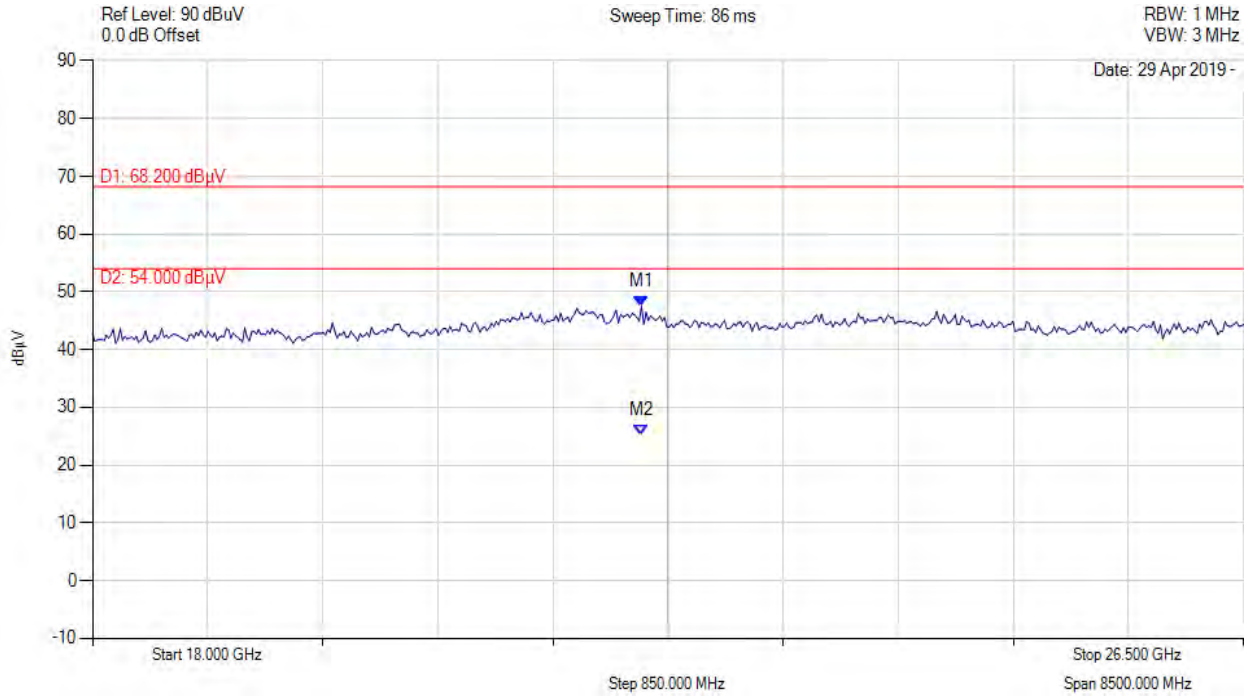
Antenna:	ICT	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	51.1
Channel Frequency (MHz):	5825.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet.5 GHz notch in front of amp to prevent overload. Duty Cycle correction factor 2.91 dB included

TX SPURIOUS & RESTRICTED BAND EMISSIONS 18.0 - 26.5 GHz

Variant: 802.11a, Channel: 5825.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 51.1



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 22.054 GHz : 47.456 dBµV M2 : 22.054 GHz : 25.163 dBµV	Channel Frequency: 5825.00 MHz

2.1.1.4. Tx Spurious 26.5 – 40.0 GHz

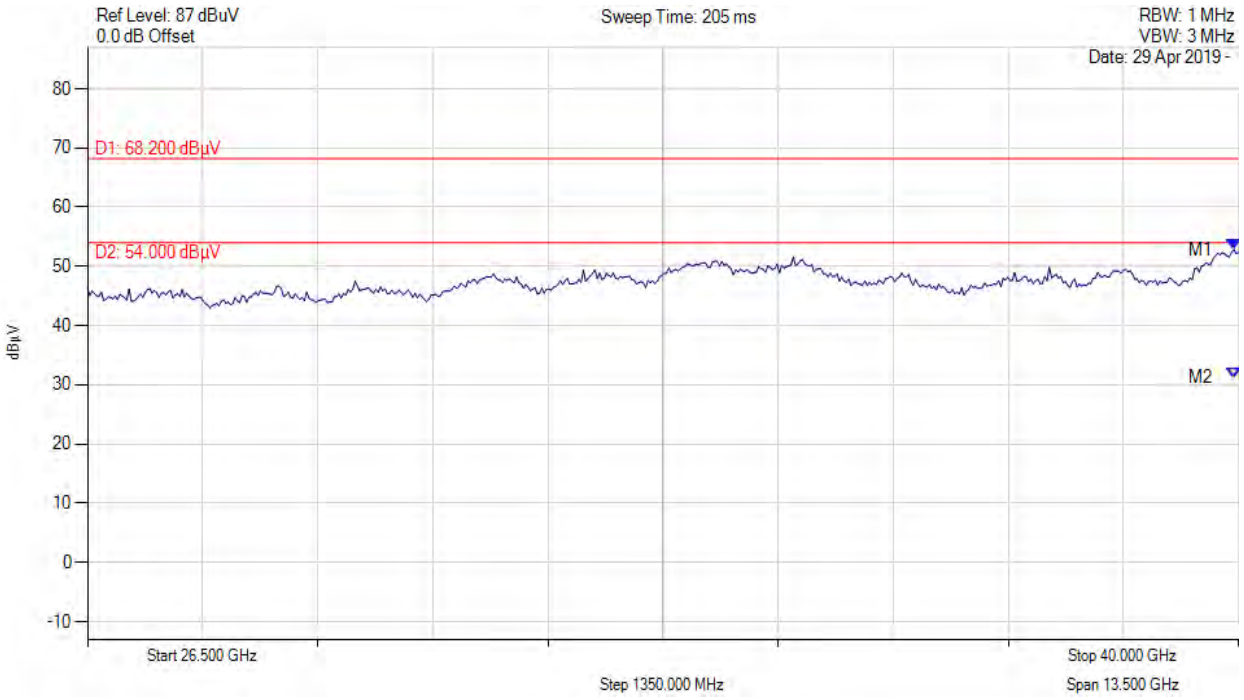
Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	ICT	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	51.1
Channel Frequency (MHz):	5180.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results
Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet.5 GHz notch in front of amp to prevent overload. Duty Cycle correction factor 2.91 dB included

TX SPURIOUS & RESTRICTED BAND EMISSIONS 26.5 - 40.0 GHz

Variant: 802.11a, Test Freq: 5180.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 51.1



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 39.946 GHz : 52.860 dBµV M2 : 39.946 GHz : 31.230 dBµV	Channel Frequency: 5180.00 MHz

*Trace is max hold composite of vertical and horizontal orientations

Equipment Configuration for TX Spurious & Restricted Band Emissions

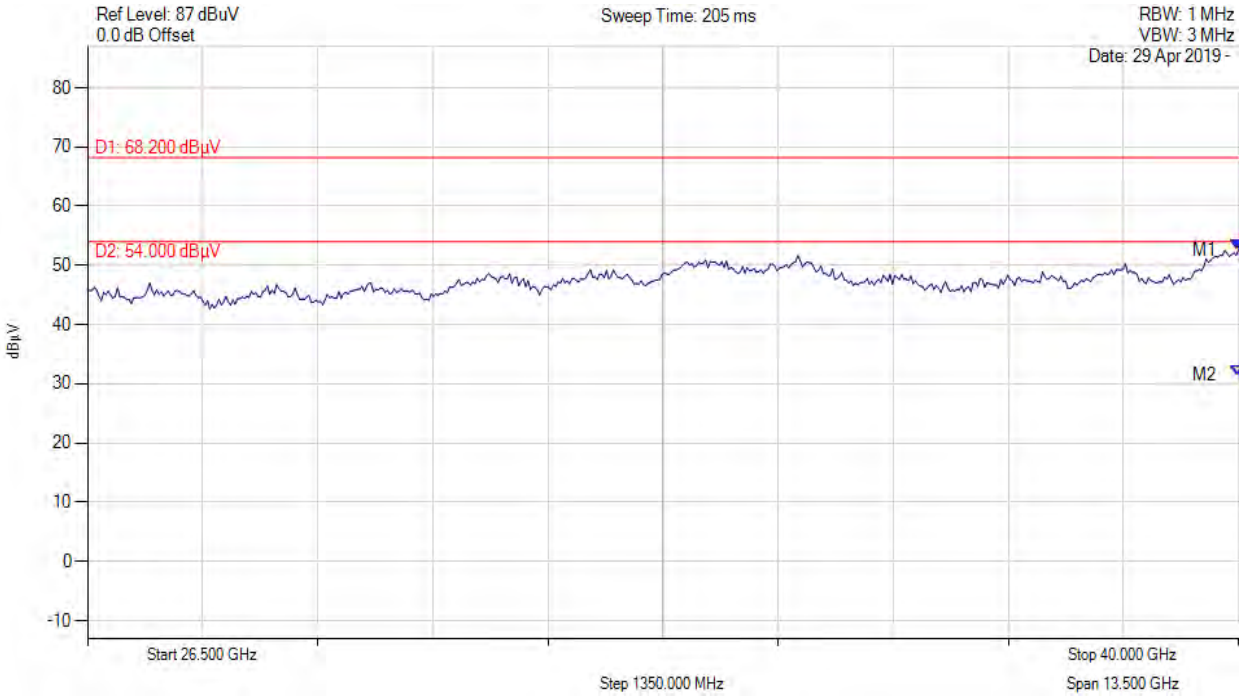
Antenna:	ICT	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	51.1
Channel Frequency (MHz):	5200.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet.5 GHz notch in front of amp to prevent overload. Duty Cycle correction factor 2.91 dB included

TX SPURIOUS & RESTRICTED BAND EMISSIONS 26.5 - 40.0 GHz

Variant: 80211a, Channel: 5200.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 51.1



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 40.000 GHz : 52.634 dBµV M2 : 40.000 GHz : 31.444 dBµV	Channel Frequency: 5200.00 MHz

Equipment Configuration for TX Spurious & Restricted Band Emissions

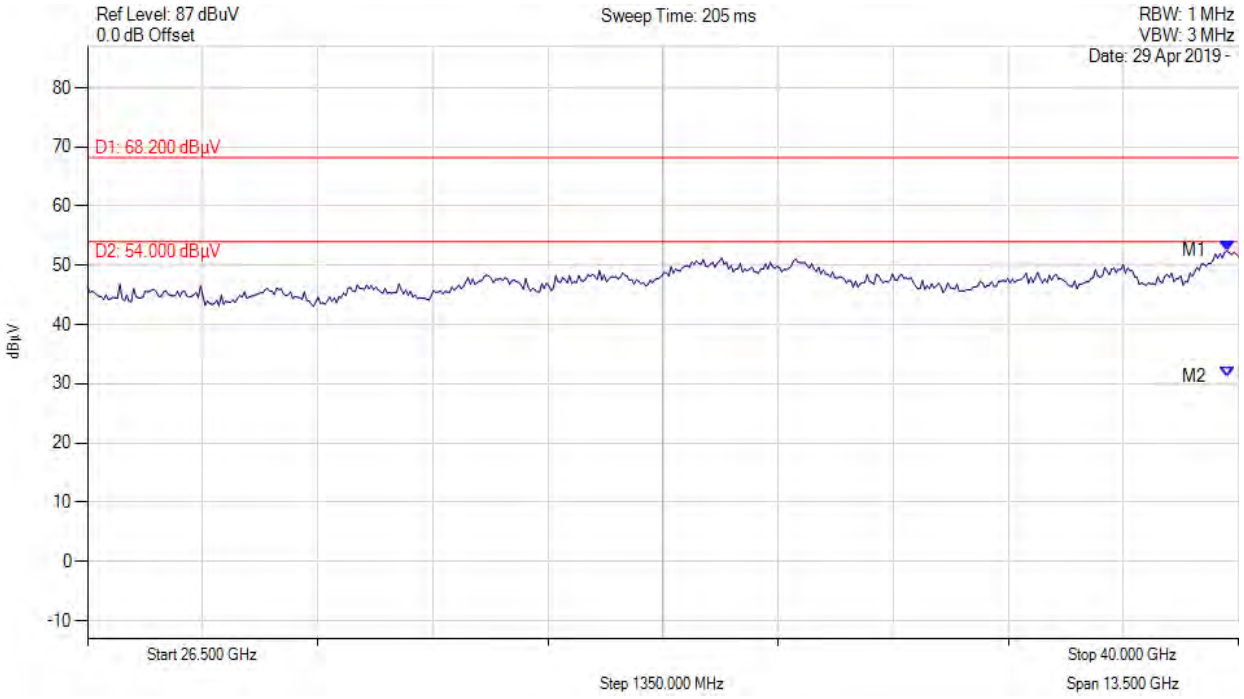
Antenna:	ICT	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	51.1
Channel Frequency (MHz):	5240.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet.5 GHz notch in front of amp to prevent overload. Duty Cycle correction factor 2.91 dB included

TX SPURIOUS & RESTRICTED BAND EMISSIONS 26.5 - 40.0 GHz

Variant: 802.11a, Channel: 5240.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 51.1



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 39.865 GHz : 52.481 dBµV M2 : 39.865 GHz : 31.234 dBµV	Channel Frequency: 5240.00 MHz

Equipment Configuration for TX Spurious & Restricted Band Emissions

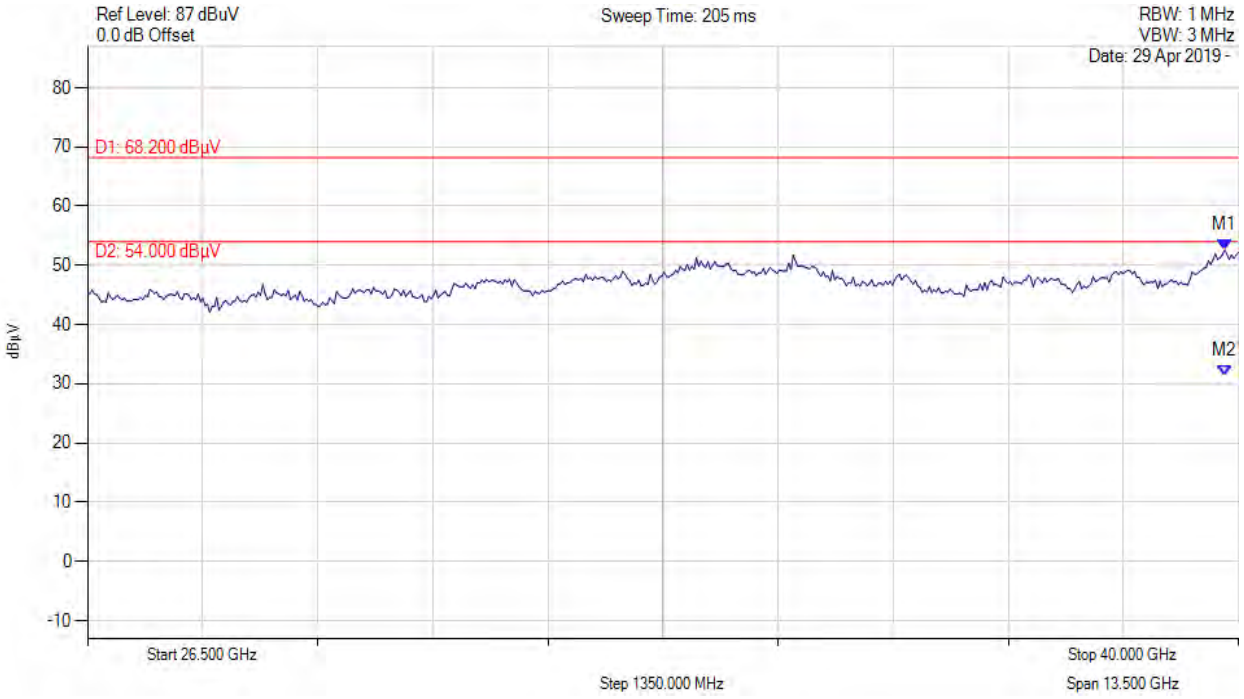
Antenna:	ICT	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	51.1
Channel Frequency (MHz):	5260.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet.5 GHz notch in front of amp to prevent overload. Duty Cycle correction factor 2.91 dB included

TX SPURIOUS & RESTRICTED BAND EMISSIONS 26.5 - 40.0 GHz

Variant: 802.11a, Channel: 5260.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 51.1



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 39.838 GHz : 52.592 dBµV M2 : 39.838 GHz : 31.261 dBµV	Channel Frequency: 5260.00 MHz

Equipment Configuration for TX Spurious & Restricted Band Emissions

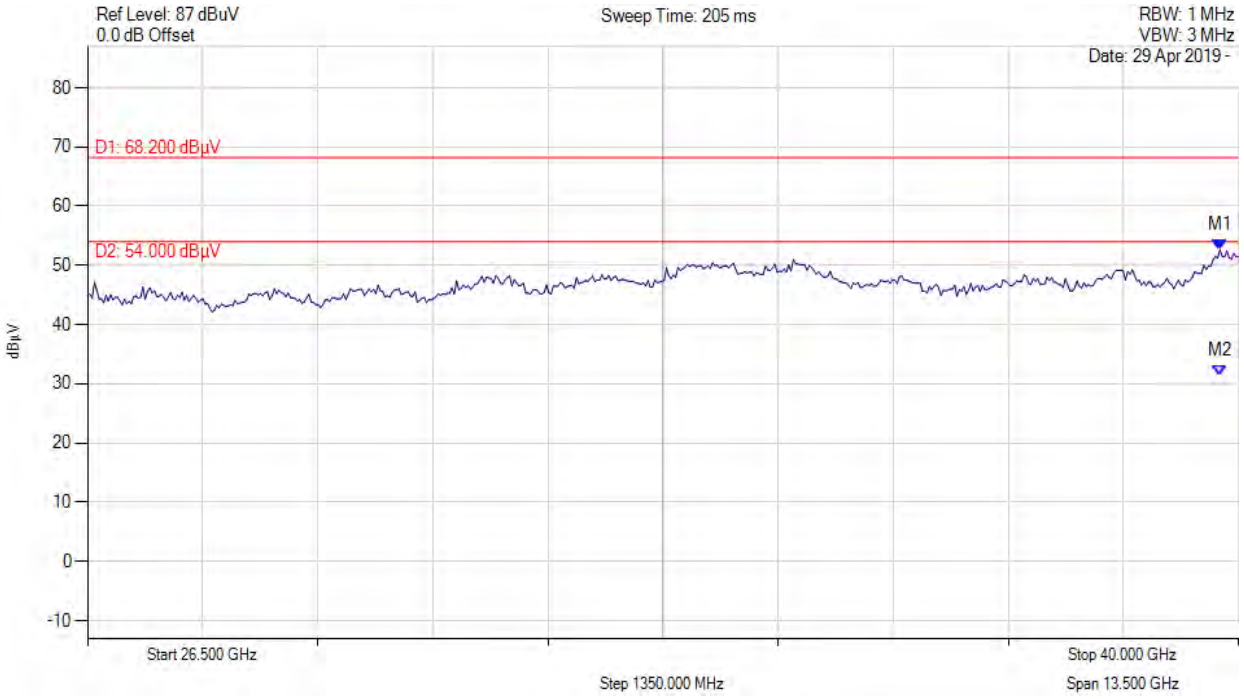
Antenna:	ICT	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	51.1
Channel Frequency (MHz):	5300.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet.5 GHz notch in front of amp to prevent overload. Duty Cycle correction factor 2.91 dB included

TX SPURIOUS & RESTRICTED BAND EMISSIONS 26.5 - 40.0 GHz

Variant: 802.11a, Channel: 5300.00 MHz Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 51.1



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 39.784 GHz : 52.606 dBµV M2 : 39.784 GHz : 31.346 dBµV	Channel Frequency: 5300.00 MHz

Equipment Configuration for TX Spurious & Restricted Band Emissions

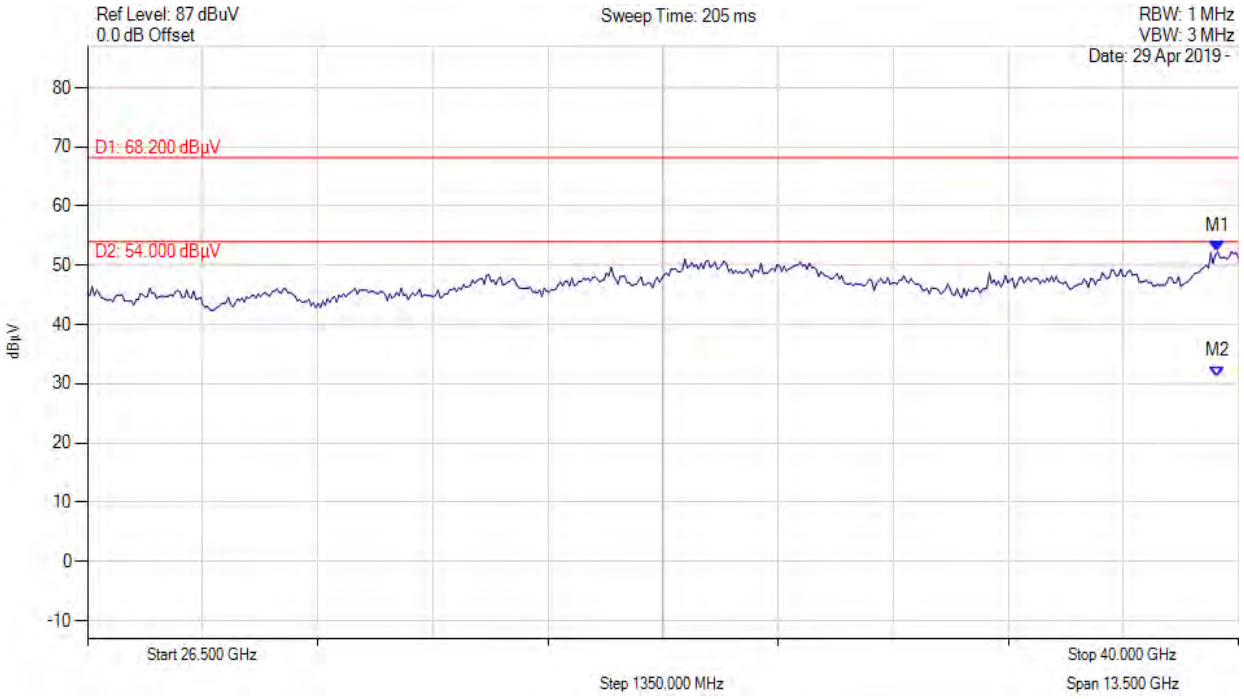
Antenna:	ICT	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	51.1
Channel Frequency (MHz):	5320.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet.5 GHz notch in front of amp to prevent overload. Duty Cycle correction factor 2.91 dB included

TX SPURIOUS & RESTRICTED BAND EMISSIONS 26.5 - 40.0 GHz

Variant: 802.11a, Channel: 5320.00 MHz: Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 51.1



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 39.757 GHz : 52.351 dBµV M2 : 39.757 GHz : 31.240 dBµV	Channel Frequency: 5320.00 MHz

Equipment Configuration for TX Spurious & Restricted Band Emissions

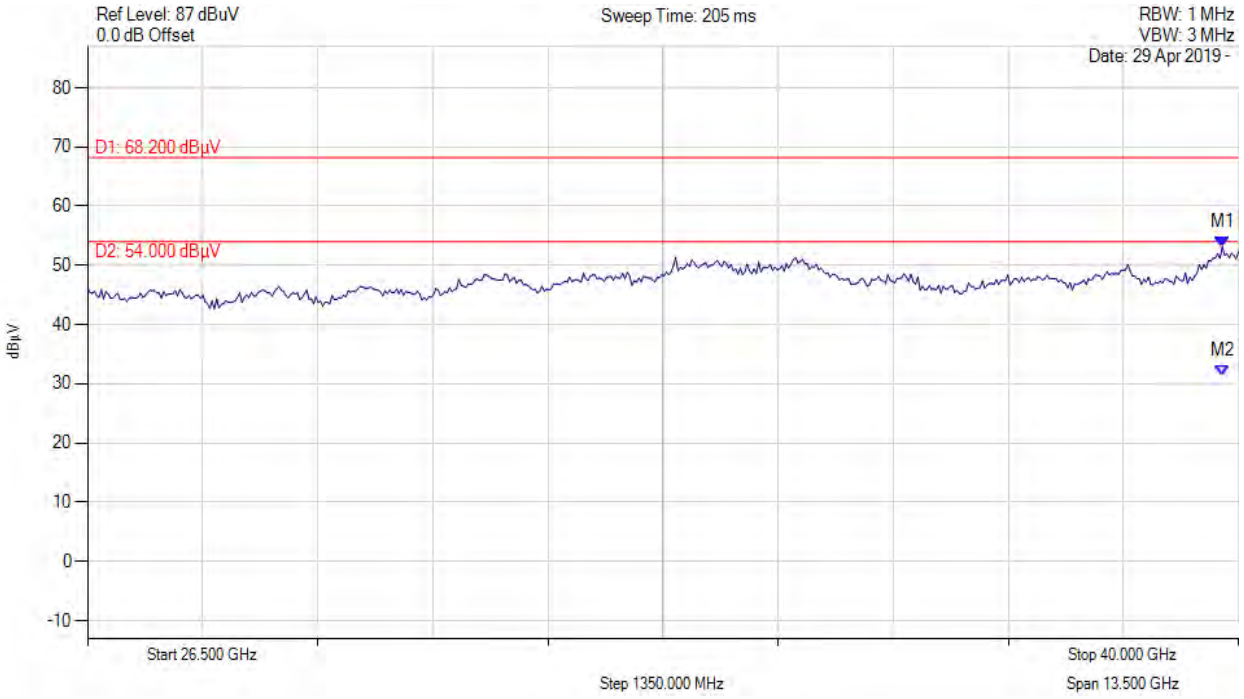
Antenna:	ICT	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	51.1
Channel Frequency (MHz):	551.10.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet.5 GHz notch in front of amp to prevent overload. Duty Cycle correction factor 2.91 dB included

TX SPURIOUS & RESTRICTED BAND EMISSIONS 26.5 - 40.0 GHz

Variant: 802.11a, Channel: 5500.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 51.1



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 39.811 GHz : 53.170 dBµV M2 : 39.811 GHz : 31.328 dBµV	Channel Frequency: 5500.00 MHz

Equipment Configuration for TX Spurious & Restricted Band Emissions

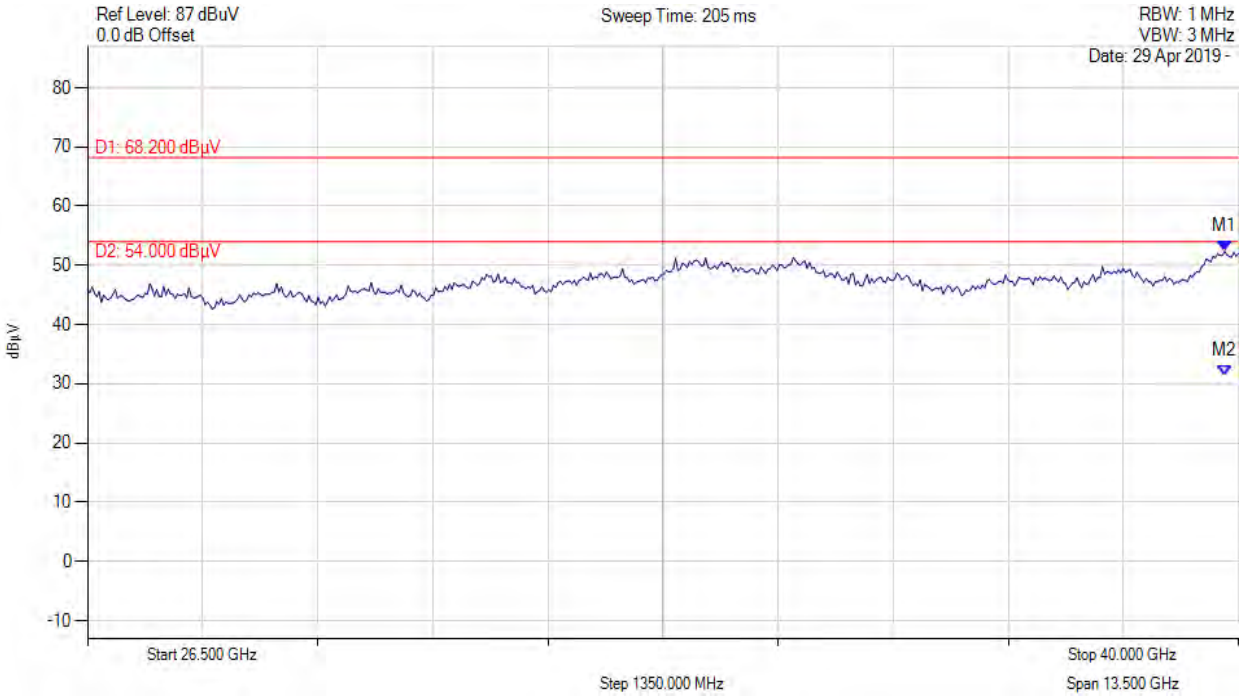
Antenna:	ICT	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	51.1
Channel Frequency (MHz):	5580.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet.5 GHz notch in front of amp to prevent overload. Duty Cycle correction factor 2.91 dB included

TX SPURIOUS & RESTRICTED BAND EMISSIONS 26.5 - 40.0 GHz

Variant: 802.11a, Channel: 5580.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 51.1



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 39.838 GHz : 52.382 dBµV M2 : 39.838 GHz : 31.366 dBµV	Channel Frequency: 5580.00 MHz

Equipment Configuration for TX Spurious & Restricted Band Emissions

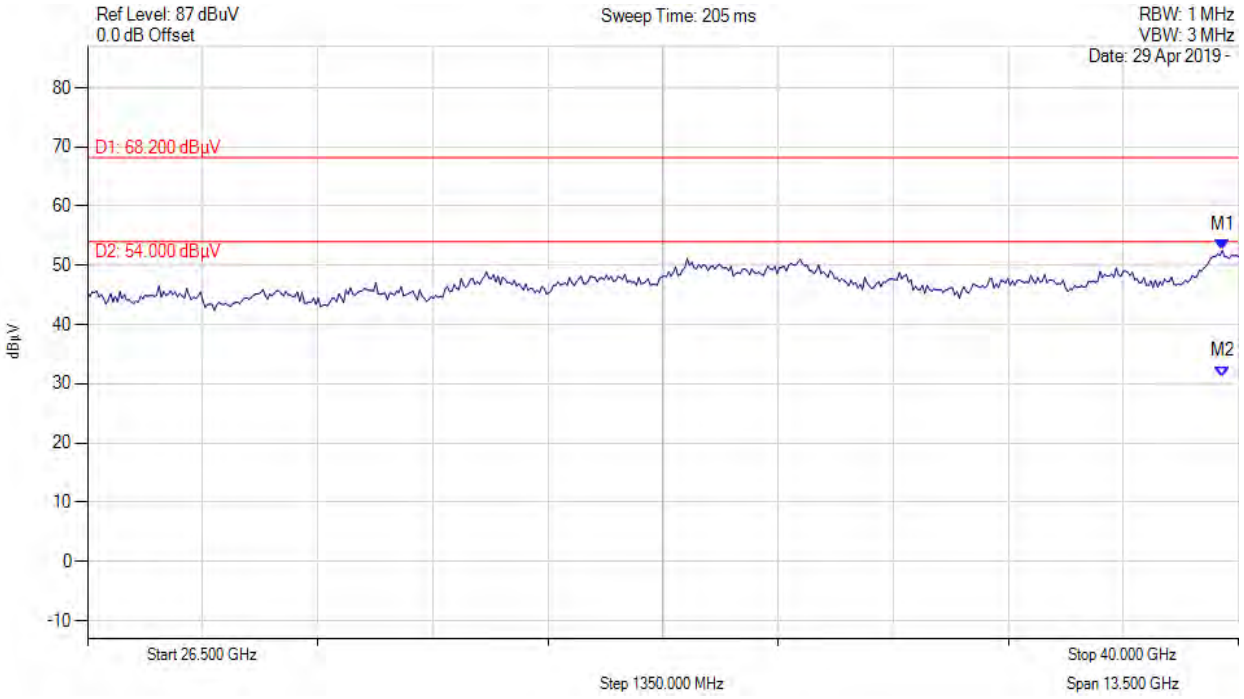
Antenna:	ICT	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	51.1
Channel Frequency (MHz):	5700.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet.5 GHz notch in front of amp to prevent overload. Duty Cycle correction factor 2.91 dB included

TX SPURIOUS & RESTRICTED BAND EMISSIONS 26.5 - 40.0 GHz

Variant: 802.11a, Channel: 5700.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 51.1



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 39.811 GHz : 52.524 dBµV M2 : 39.811 GHz : 31.226 dBµV	Channel Frequency: 5700.00 MHz

Equipment Configuration for TX Spurious & Restricted Band Emissions

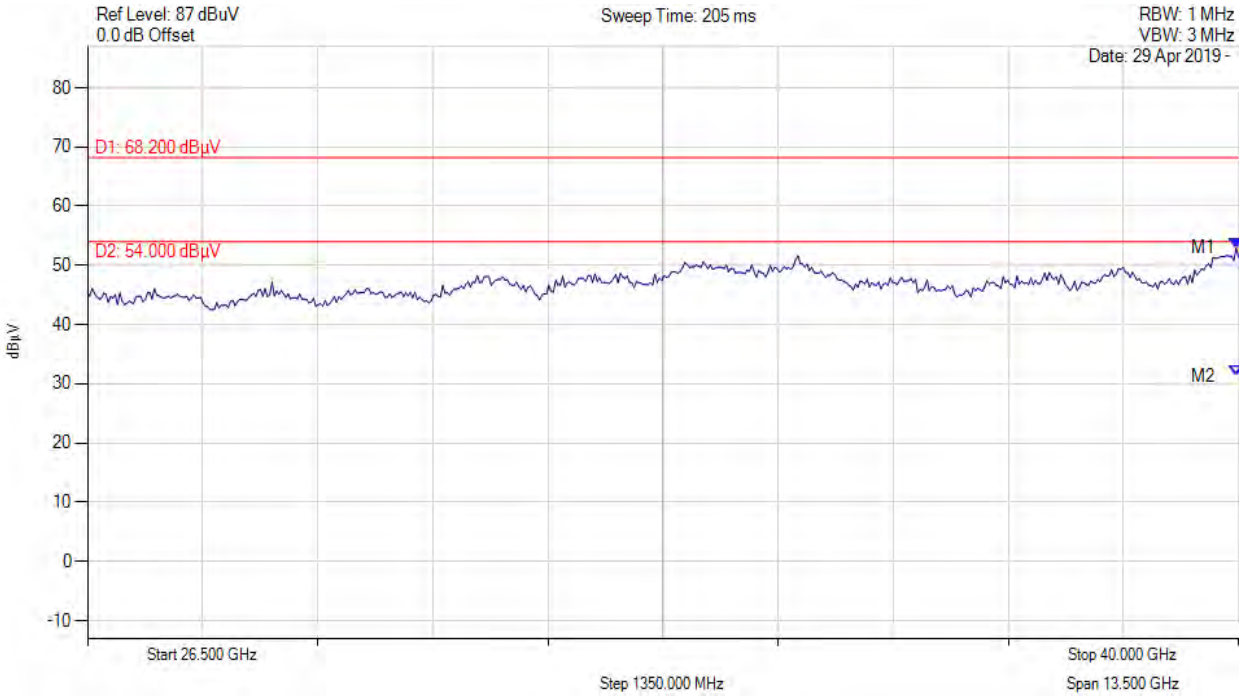
Antenna:	ICT	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	51.1
Channel Frequency (MHz):	5745.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet.5 GHz notch in front of amp to prevent overload. Duty Cycle correction factor 2.91 dB included

TX SPURIOUS & RESTRICTED BAND EMISSIONS 26.5 - 40.0 GHz

Variant: 802.11a, Channel: 5745.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 51.1



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 39.973 GHz : 52.910 dBµV M2 : 39.973 GHz : 31.339 dBµV	Channel Frequency: 5745.00 MHz

Equipment Configuration for TX Spurious & Restricted Band Emissions

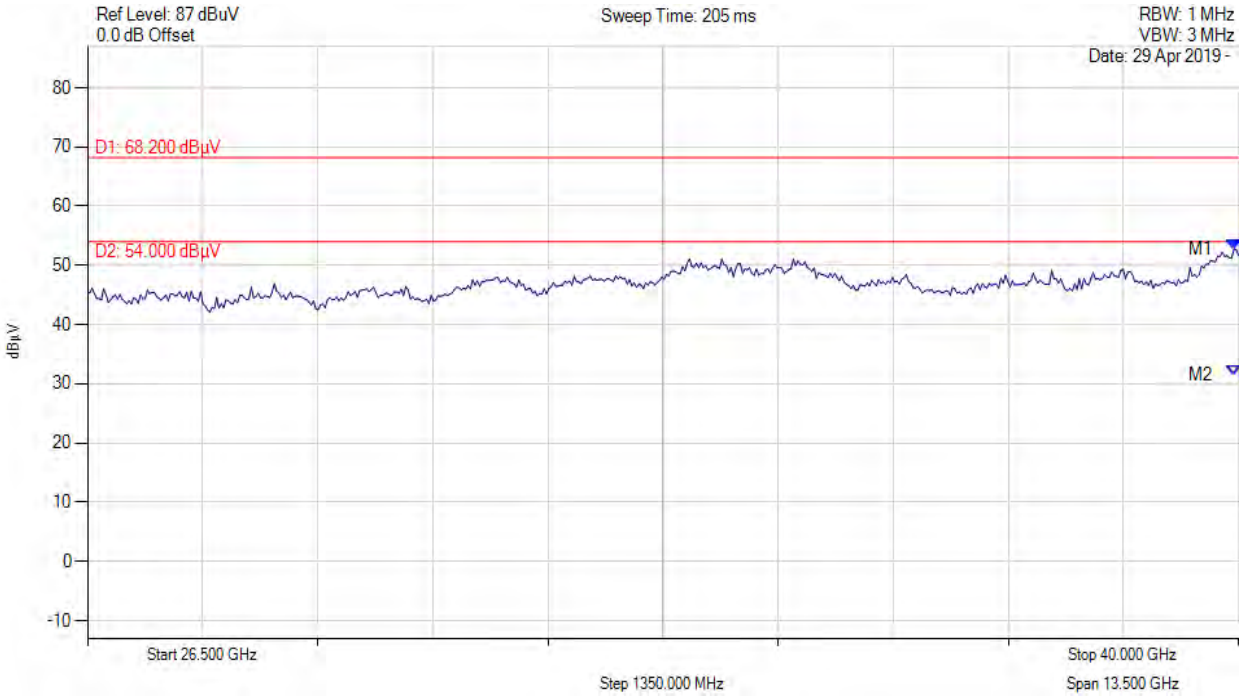
Antenna:	ICT	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	51.1
Channel Frequency (MHz):	5785.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet.5 GHz notch in front of amp to prevent overload. Duty Cycle correction factor 2.91 dB included

TX SPURIOUS & RESTRICTED BAND EMISSIONS 26.5 - 40.0 GHz

Variant: 802.11a, Channel: 5785.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 51.1



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 39.946 GHz : 52.728 dBµV M2 : 39.946 GHz : 31.421 dBµV	Channel Frequency: 5785.00 MHz

Equipment Configuration for TX Spurious & Restricted Band Emissions

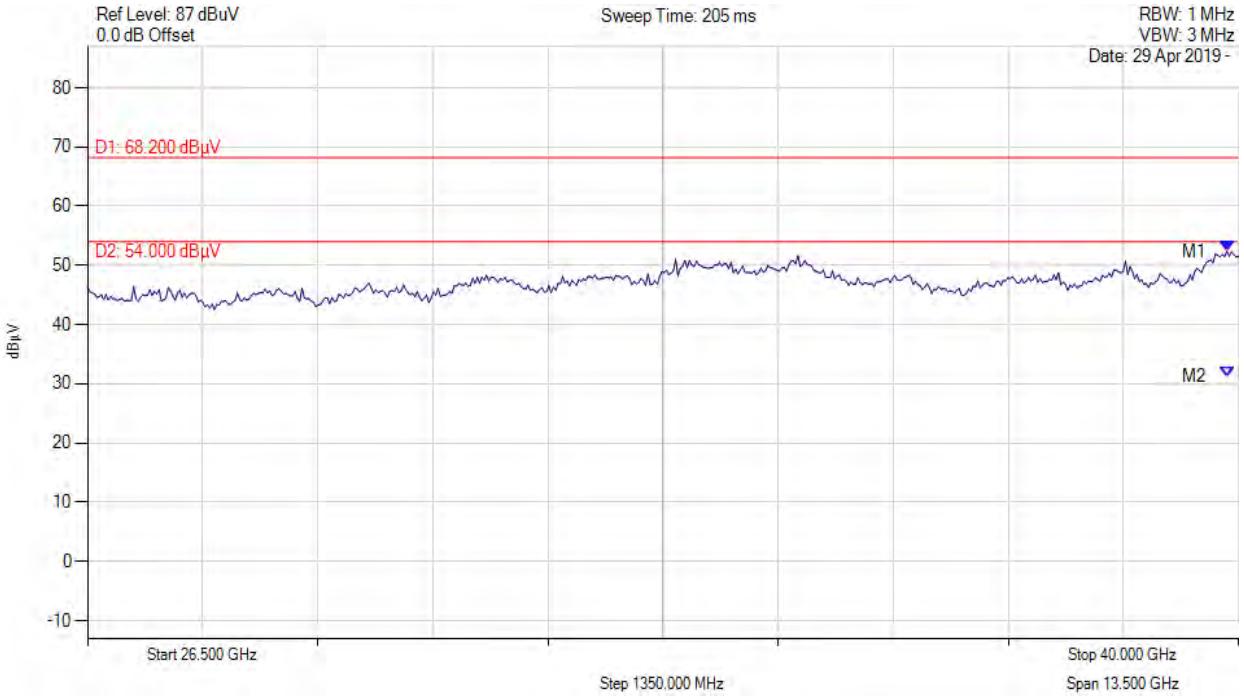
Antenna:	ICT	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	51.1
Channel Frequency (MHz):	5825.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet.5 GHz notch in front of amp to prevent overload. Duty Cycle correction factor 2.91 dB included

TX SPURIOUS & RESTRICTED BAND EMISSIONS 26.5 - 40.0 GHz

Variant: 802.11a, Channel: 5825.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 51.1



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 39.865 GHz : 52.426 dBµV M2 : 39.865 GHz : 31.216 dBµV	Channel Frequency: 5825.00 MHz

2.1.2. Restricted Edge & Band-Edge Emissions

2.1.2.5. ICT Custom Antenna Gains

RESULTS SUMMARY FOR RADIATED BAND-EDGE EMISSIONS

5150 - 5250 MHz

ICT Custom A1		Band-Edge Freq	Limit 68.2dBµV/m	Limit 54.0dBµV/m	Power Setting
Operational Mode	Operating Frequency (MHz)	MHz	dBµV/m	dBµV/m	
802.11a	5180.00	5150.00	62.63	47.36	15
802.11n HT-20	5180.00	5150.00	65.19	46.80	15

5250 - 5350 MHz

ICT Custom A1		Band-Edge Freq	Limit 68.2dBµV/m	Limit 54.0dBµV/m	Power Setting
Operational Mode	Operating Frequency (MHz)	MHz	dBµV/m	dBµV/m	
802.11a	5320.00	5350.00	67.56	50.26	15
802.11n HT-20	5320.00	5350.00	67.02	48.96	13.5

5470 - 5725 MHz

ICT Custom A1		Restricted-Edge Freq	Limit 68.2dBµV/m	Limit 54.0dBµV/m	Power Setting
Operational Mode	Operating Frequency (MHz)	MHz	dBµV/m	dBµV/m	
802.11a	5500.00	5460.00	62.07	48.62	16
802.11n HT-20	5500.00	5460.00	64.13	45.86	16

ICT Custom A1		Band-Edge Freq	Limit 68.23dBµV/m	Power Setting
Operational Mode	Operating Frequency (MHz)	MHz	dBµV/m	
802.11a	5500.00	5470.00	67.46	16
802.11n HT-20	5500.00	5470.00	67.48	16

5725 MHz Radiated Lower Band-Edge Emissions

ICT Custom A1		Band-Edge Freq			Power Setting
Operational Mode	Operating Frequency (MHz)	MHz	dBµV/m	dBµV/m	
802.11a	5745.00	5725.00	65.58	81.36	18
802.11n HT-20	5745.00	5725.00	59.94	67.30	18

5850 MHz Radiated Higher Band-Edge Emissions

ICT Custom A1		Band-Edge Freq			Power Setting
Operational Mode	Operating Frequency (MHz)	MHz	dBµV/m	dBµV/m	
802.11a	5825.00	5850.00	68.60	59.01	18
802.11n HT-20	5825.00	5850.00	72.56	58.86	18

Click on the links to view the data.

Equipment Configuration for Restricted Lower Band-Edge Emissions

Antenna:	ICT Custom A1	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	50
Channel Frequency (MHz):	5180.00	**Data Rate:**	6.00 MBit/s
Power Setting:	15	**Tested By:**	JMH

Test Measurement Results

4500.00 - 5250.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	5146.29	15.77	-2.62	34.21	47.36	Max Avg	Vertical	122	59	54.0	-6.6	Pass
#2	5147.80	31.11	-2.69	34.21	62.63	Max Peak	Vertical	122	59	68.2	-5.6	Pass
#3	5150.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--
Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber.												

Equipment Configuration for Restricted Lower Band-Edge Emissions

Antenna:	ICT Custom A1	**Variant:**	802.11n HT-20
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	50
Channel Frequency (MHz):	5180.00	**Data Rate:**	6.50 MBit/s
Power Setting:	15	**Tested By:**	JMH

Test Measurement Results

4500.00 - 5250.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	5143.29	15.23	-2.63	34.20	46.80	Max Avg	Vertical	122	60	54.0	-7.2	Pass
#2	5147.80	30.98	0.00	34.21	65.19	Max Peak	Vertical	122	60	68.2	-3.0	Pass
#3	5150.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--
Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet. DC correction 3 dB												

Equipment Configuration for Restricted Lower Band-Edge Emissions

Antenna:	ICT Custom A3	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	50
Channel Frequency (MHz):	5500.00	**Data Rate:**	6.00 MBit/s
Power Setting:	16	**Tested By:**	JMH

Test Measurement Results

5350.00 - 5500.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	5416.11	16.79	-2.69	34.52	48.62	Max Avg	Vertical	130	61	54.0	-5.4	Pass
#2	5456.99	30.24	-2.69	34.52	62.07	Max Peak	Vertical	130	61	68.2	-6.2	Pass
#4	5469.70	35.60	-2.69	34.55	67.46	Max Avg	Vertical	130	61	68.2	-0.7	Pass
#3	5460.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--
#5	5470.00	--	--	--	--	Band-Edge	--	--	--	--	--	--
Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber. DC correction 3 dB.												

Equipment Configuration for Restricted Lower Band-Edge Emissions

Antenna:	ICT Custom A3	**Variant:**	802.11n HT-20
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	50
Channel Frequency (MHz):	5500.00	**Data Rate:**	6.50 MBit/s
Power Setting:	16	**Tested By:**	JMH

Test Measurement Results

5350.00 - 5500.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	5427.23	17.04	-2.69	34.51	45.86	Max Avg	Vertical	130	61	54.0	-5.1	Pass
#2	5459.40	32.30	-2.69	34.52	64.13	Max Peak	Vertical	130	61	68.2	-4.1	Pass
#4	5468.50	35.61	-2.68	34.55	67.48	Max Avg	Vertical	130	61	68.2	-0.7	Pass
#3	5460.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--
#5	5470.00	--	--	--	--	Band-Edge	--	--	--	--	--	--
Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber. DC correction 3 dB.												

Equipment Configuration for Restricted Upper Band-Edge Emissions

Antenna:	ICT Custom A2	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	50
Channel Frequency (MHz):	5320.00	**Data Rate:**	6.00 MBit/s
Power Setting:	15	**Tested By:**	JMH

Test Measurement Results

5300.00 - 5460.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#2	5353.23	35.78	-2.69	34.47	67.56	Max Peak	Vertical	129	62	68.2	-0.7	Pass
#3	5355.15	18.48	-2.69	34.47	50.26	Max Avg	Vertical	129	62	54.0	-3.7	Pass
#1	5350.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--
Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber. DC correction 3 dB. Power reduced to meet band edge limit.												

Equipment Configuration for Restricted Upper Band-Edge Emissions

Antenna:	ICT Custom A2	**Variant:**	802.11n HT-20
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	50
Channel Frequency (MHz):	5320.00	**Data Rate:**	6.50 MBit/s
Power Setting:	13.5	**Tested By:**	JMH

Test Measurement Results

5300.00 - 5460.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#2	5351.94	17.19	-2.69	34.46	48.96	Max Avg	Vertical	129	62	54.0	-5.0	Pass
#3	5351.94	35.25	-2.69	34.46	67.02	Max Peak	Vertical	129	62	68.2	-1.2	Pass
#1	5350.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--
Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber. DC correction 3 dB. Power reduced to meet band edge limit.												

Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

Antenna:	ICT Custom A4	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	50
Channel Frequency (MHz):	5745.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

5600.00 - 5780.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	5700.83	30.90	0.00	34.68	65.58	Max Avg	Vertical	131	58	105.5	-39.9	Pass
#2	5722.21	49.39	-2.75	34.72	81.36	Max Avg	Vertical	131	58	115.4	-34.0	Pass
#3	5725.00	--	--	--	--	Band-Edge	--	--	--	--	--	--
Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber.												

Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

Antenna:	ICT Custom A4	**Variant:**	802.11n HT-20
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	50
Channel Frequency (MHz):	5745.00	**Data Rate:**	6.50 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

5600.00 - 5780.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	5626.52	28.02	-2.72	34.64	59.94	Max Avg	Vertical	131	58	68.2	-8.3	Pass
#2	5702.01	35.37	-2.75	34.68	67.30	Max Avg	Vertical	131	58	105.8	-38.5	Pass
#3	5725.00	--	--	--	--	Band-Edge	--	--	--	--	--	--
Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber.												

Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

Antenna:	ICT Custom A4	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	50
Channel Frequency (MHz):	5825.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

5770.00 - 6000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#2	5862.91	36.38	-2.77	34.99	68.60	Max Avg	Vertical	131	58	108.7	-40.1	Pass
#3	5944.81	26.65	-2.76	35.12	59.01	Max Avg	Vertical	131	58	68.2	-9.2	Pass
#1	5850.00	--	--	--	--	Band-Edge	--	--	--	--	--	--
Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber.												

Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

Antenna:	ICT Custom A4	**Variant:**	802.11n HT-20
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	50
Channel Frequency (MHz):	5825.00	**Data Rate:**	6.50 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

5770.00 - 6000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#2	5861.98	40.34	-2.77	34.99	72.56	Max Avg	Vertical	131	58	108.9	-36.3	Pass
#3	5932.83	26.52	-2.77	35.11	58.86	Max Avg	Vertical	131	58	68.2	-9.3	Pass
#1	5850.00	--	--	--	--	Band-Edge	--	--	--	--	--	--
Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber.												

2.1.3. Digital Emissions / Radiated Spurious Emissions (30 – 1000 MHz)

Radiated Test Conditions for Radiated Digital Emissions (30 – 1,000 MHz)			
Standard:	FCC CFR 47:15.247	**Ambient Temp. (ºC):**	20.0 - 24.5
Test Heading:	Digital Emissions	**Rel. Humidity (%):**	32 - 45
Standard Section(s):	15.209	**Pressure (mBars):**	999 - 1001
Reference Document(s):	See Normative References		

Test Procedure for Radiated Digital Emissions (0.03 – 1 GHz)
Testing 30M-1 GHz was performed in a 3-meter anechoic chamber using a CISPR compliant receiver. Preliminary radiated emissions were measured on every azimuth and with the receiving antenna in both horizontal and vertical polarizations. To further maximize emissions the receive antenna was varied between 1 and 4 meters. The emissions are recorded with receiver in peak hold mode. Emissions closest to the limits are measured in the quasi-peak mode with the tuned receiver using a bandwidth of 120 kHz. Only the highest emissions relative to the limit are listed.

Test configuration and setup for Radiated Spurious and Band-Edge Measurement were per the Radiated Test Set-up specified in this document.

Field Strength Calculation
The field strength is calculated by adding the Antenna Factor and Cable Loss, and subtracting Amplifier Gain from the measured reading. In this test facility, the Antenna Factor, Cable Loss, and Amplifier Gains are loaded into the Rohde & Schwarz Receiver and the corrected field strength can be read directly on the receiver.

FS = R + AF + CORR

where:
FS = Field Strength
R = Measured Receiver Input Amplitude
AF = Antenna Factor
CORR = Correction Factor = CL – AG + NFL
CL = Cable Loss
AG = Amplifier Gain

For example:
Given a Receiver input reading of 51.5dBmV; Antenna Factor of 8.5dB; Cable Loss of 1.3dB; Falloff Factor of 0dB, an Amplifier Gain of 26dB and Notch Filter Loss of 1dB. The Field Strength of the measured emission is:

FS = 51.5 + 8.5 + 1.3 - 26.0 +1 = 36.3dBmV/m

Conversion between dBmV/m (or dBmV) and mV/m (or mV) are done as:

Level (dBmV/m) = 20 * Log (level (mV/m))

40 dBmV/m = 100mV/m
48 dBmV/m = 250mV/m

Limits for Radiated Digital Emissions (0.03 – 1 GHz) (15.209)

(a) Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength		Measurement Distance (m)
	µV/m (microvolts/meter)	dBµV/m (dB microvolts/meter)	
0.009-0.490	2400/F(kHz)	--	300
0.490-1.705	24000/F(kHz)	--	30

1.705-30.0	30	29.5	30
30-88	100**	40	3
88-216	150**	43.5	3
216-960	200**	46.0	3
Above 960	500	54.0	3

**Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§15.231 and 15.241.

(b) In the emission table above, the tighter limit applies at the band edges. (c) The level of any unwanted emissions from an intentional radiator operating under these general provisions shall not exceed the level of the fundamental emission. For intentional radiators which operate under the provisions of other sections within this part and which are required to reduce their unwanted emissions to the limits specified in this table, the limits in this table are based on the frequency of the unwanted emission and not the fundamental frequency. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency. (d) The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector. (e) The provisions in §§15.31, 15.33, and 15.35 for measuring emissions at distances other than the distances specified in the above table, determining the frequency range over which radiated emissions are to be measured, and limiting peak emissions apply to all devices operated under this part. (f) In accordance with §15.33(a), in some cases the emissions from an intentional radiator must be measured to beyond the tenth harmonic of the highest fundamental frequency designed to be emitted by the intentional radiator because of the incorporation of a digital device. If measurements above the tenth harmonic are so required, the radiated emissions above the tenth harmonic shall comply with the general radiated emission limits applicable to the incorporated digital device, as shown in §15.109 and as based on the frequency of the emission being measured, or, except for emissions contained in the restricted frequency bands shown in §15.205, the limit on spurious emissions specified for the intentional radiator, whichever is the higher limit. Emissions which must be measured above the tenth harmonic of the highest fundamental frequency designed to be emitted by the intentional radiator and which fall within the restricted bands shall comply with the general radiated emission limits in §15.109 that are applicable to the incorporated digital device. (g) Perimeter protection systems may operate in the 54-72 MHz and 76-88 MHz bands under the provisions of this section. The use of such perimeter protection systems is limited to industrial, business and commercial applications.

Equipment Configuration for Digital Emissions / Radiated Spurious Emissions (30 – 1000 MHz)

Antenna:	ICT Custom A1	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	50
Channel Frequency (MHz):	5180.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

30.00 - 1000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	31.78	28.69	3.53	-8.70	23.52	MaxQP	Vertical	122	352	40.0	-16.5	Pass
#2	98.06	46.15	4.00	-18.60	31.55	MaxQP	Vertical	101	1	43.0	-11.5	Pass
#3	124.18	39.62	4.12	-14.60	29.14	MaxQP	Vertical	100	73	43.0	-13.9	Pass
#4	146.74	46.88	4.23	-15.90	35.21	MaxQP	Vertical	99	171	43.0	-7.8	Pass
#5	338.68	41.57	4.98	-13.70	32.85	MaxQP	Horizontal	101	257	46.0	-13.2	Pass
#6	361.26	40.26	5.06	-12.70	32.62	MaxQP	Horizontal	100	270	46.0	-13.4	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back.

Note: Click on the Links above to view the Graphical Images (Plots)

Equipment Configuration for Digital Emissions / Radiated Spurious Emissions (30 – 1000 MHz)			
Antenna:	ICT Custom A1	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	50
Channel Frequency (MHz):	5200.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

30.00 - 1000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	32.09	29.47	3.53	-8.70	24.30	MaxQP	Vertical	118	348	40.0	-15.7	Pass
#2	98.11	46.44	4.00	-18.60	31.86	MaxQP	Vertical	105	6	43.0	-11.1	Pass
#3	124.22	39.71	4.12	-14.60	29.23	MaxQP	Vertical	101	68	43.0	-13.8	Pass
#4	146.44	47.37	4.23	-15.90	34.70	MaxQP	Vertical	101	175	43.0	-8.3	Pass
#5	338.48	41.88	4.98	-13.70	33.16	MaxQP	Horizontal	105	253	46.0	-12.8	Pass
#6	361.34	40.05	5.06	-12.70	32.41	MaxQP	Horizontal	102	276	46.0	-13.6	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back.

Note: Click on the Links above to view the Graphical Images (Plots)

Equipment Configuration for Digital Emissions / Radiated Spurious Emissions (30 – 1000 MHz)			
Antenna:	ICT Custom A1	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	50
Channel Frequency (MHz):	5240.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

30.00 - 1000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	31.78	29.57	3.53	-8.70	24.40	MaxQP	Vertical	122	352	40.0	-15.6	Pass
#2	98.06	47.03	4.00	-18.60	32.43	MaxQP	Vertical	101	1	43.0	-10.6	Pass
#3	124.18	40.43	4.12	-14.60	29.95	MaxQP	Vertical	100	73	43.0	-13.1	Pass
#4	146.67	46.99	4.23	-15.90	35.32	MaxQP	Vertical	99	171	43.0	-7.7	Pass
#5	338.68	40.84	4.98	-13.70	32.12	MaxQP	Horizontal	101	257	46.0	-13.9	Pass
#6	361.26	39.97	5.06	-12.70	32.93	MaxQP	Horizontal	100	270	46.0	-13.1	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back.

Note: Click on the Links above to view the Graphical Images (Plots)

Equipment Configuration for Digital Emissions / Radiated Spurious Emissions (30 – 1000 MHz)

Antenna:	ICT Custom A1	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	50
Channel Frequency (MHz):	5260.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

30.00 - 1000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	32.09	27.83	3.53	-8.70	22.66	MaxQP	Vertical	122	352	40.0	-17.3	Pass
#2	98.11	46.29	4.00	-18.60	31.69	MaxQP	Vertical	101	1	43.0	-11.3	Pass
#3	124.24	40.65	4.12	-14.60	30.17	MaxQP	Vertical	100	73	43.0	-12.8	Pass
#4	146.54	47.53	4.23	-15.90	35.86	MaxQP	Vertical	102	176	43.0	-7.1	Pass
#5	338.57	41.29	4.98	-13.70	32.57	MaxQP	Horizontal	101	257	46.0	-13.4	Pass
#6	361.34	41.06	5.06	-12.70	33.42	MaxQP	Horizontal	100	270	46.0	-12.6	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back.

Note: Click on the Links above to view the Graphical Images (Plots)

Equipment Configuration for Digital Emissions / Radiated Spurious Emissions (30 – 1000 MHz)			
Antenna:	ICT Custom A1	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	50
Channel Frequency (MHz):	5300.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

30.00 - 1000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	32.18	28.74	3.53	-8.70	23.57	MaxQP	Vertical	125	344	40.0	-16.4	Pass
#2	98.05	45.38	4.00	-18.60	30.78	MaxQP	Vertical	108	4	43.0	-12.2	Pass
#3	124.19	38.68	4.12	-14.60	28.20	MaxQP	Vertical	102	76	43.0	-14.8	Pass
#4	146.69	46.54	4.23	-15.90	34.87	MaxQP	Vertical	100	174	43.0	-8.1	Pass
#5	338.59	42.48	4.98	-13.70	33.76	MaxQP	Horizontal	105	263	46.0	-12.2	Pass
#6	361.35	39.66	5.06	-12.70	32.02	MaxQP	Horizontal	104	268	46.0	-14.0	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back.

Note: Click on the Links above to view the Graphical Images (Plots)

Equipment Configuration for Digital Emissions / Radiated Spurious Emissions (30 – 1000 MHz)			
Antenna:	ICT Custom A1	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	50
Channel Frequency (MHz):	5320.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

30.00 - 1000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	32.18	28.38	3.53	-8.70	23.21	MaxQP	Vertical	125	344	40.0	-16.8	Pass
#2	98.05	45.32	4.00	-18.60	30.72	MaxQP	Vertical	108	4	43.0	-12.3	Pass
#3	124.19	39.66	4.12	-14.60	29.18	MaxQP	Vertical	102	76	43.0	-13.8	Pass
#4	146.69	46.62	4.23	-15.90	34.95	MaxQP	Vertical	100	174	43.0	-8.1	Pass
#5	338.59	41.34	4.98	-13.70	32.62	MaxQP	Horizontal	105	263	46.0	-13.4	Pass
#6	361.35	40.01	5.06	-12.70	32.37	MaxQP	Horizontal	104	268	46.0	-13.6	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back.

Note: Click on the Links above to view the Graphical Images (Plots)

Equipment Configuration for Digital Emissions / Radiated Spurious Emissions (30 – 1000 MHz)

Antenna:	ICT Custom A1	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	50
Channel Frequency (MHz):	5500.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

30.00 - 1000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	31.66	29.53	3.53	-8.70	24.36	MaxQP	Vertical	119	348	40.0	-15.6	Pass
#2	98.11	46.35	4.00	-18.60	31.75	MaxQP	Vertical	106	5	43.0	-11.3	Pass
#3	124.17	40.42	4.12	-14.60	29.94	MaxQP	Vertical	101	69	43.0	-13.1	Pass
#4	146.78	46.51	4.23	-15.90	34.84	MaxQP	Vertical	102	168	43.0	-8.2	Pass
#5	338.72	41.18	4.98	-13.70	32.46	MaxQP	Horizontal	100	255	46.0	-13.5	Pass
#6	361.25	40.69	5.06	-12.70	33.05	MaxQP	Horizontal	103	273	46.0	-13.0	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back.

Note: Click on the Links above to view the Graphical Images (Plots)

Equipment Configuration for Digital Emissions / Radiated Spurious Emissions (30 – 1000 MHz)			
Antenna:	ICT Custom A1	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	50
Channel Frequency (MHz):	5580.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

30.00 - 1000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	32.32	29.42	3.53	-8.70	24.25	MaxQP	Vertical	123	355	40.0	-15.8	Pass
#2	98.04	45.60	4.00	-18.60	31.00	MaxQP	Vertical	103	0	43.0	-12.0	Pass
#3	124.17	40.56	4.12	-14.60	30.08	MaxQP	Vertical	101	70	43.0	-12.9	Pass
#4	146.70	47.18	4.23	-15.90	35.51	MaxQP	Vertical	100	176	43.0	-7.5	Pass
#5	338.66	41.38	4.98	-13.70	32.66	MaxQP	Horizontal	103	249	46.0	-13.3	Pass
#6	361.26	40.04	5.06	-12.70	32.40	MaxQP	Horizontal	102	275	46.0	-13.6	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back.

Note: Click on the Links above to view the Graphical Images (Plots)

Equipment Configuration for Digital Emissions / Radiated Spurious Emissions (30 – 1000 MHz)			
Antenna:	ICT Custom A1	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	50
Channel Frequency (MHz):	5700.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

30.00 - 1000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	31.56	29.09	3.53	-8.70	23.92	MaxQP	Vertical	119	349	40.0	-16.1	Pass
#2	98.09	46.08	4.00	-18.60	31.48	MaxQP	Vertical	105	4	43.0	-11.5	Pass
#3	124.18	39.54	4.12	-14.60	29.06	MaxQP	Vertical	100	76	43.0	-13.9	Pass
#4	146.69	46.95	4.23	-15.90	35.28	MaxQP	Vertical	102	170	43.0	-7.7	Pass
#5	338.68	41.59	4.98	-13.70	32.87	MaxQP	Horizontal	101	253	46.0	-13.1	Pass
#6	361.24	40.06	5.06	-12.70	32.42	MaxQP	Horizontal	102	273	46.0	-13.6	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back.

Note: Click on the Links above to view the Graphical Images (Plots)

Equipment Configuration for Digital Emissions / Radiated Spurious Emissions (30 – 1000 MHz)			
Antenna:	ICT Custom A1	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	50
Channel Frequency (MHz):	5745.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

30.00 - 1000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	32.06	29.29	3.53	-8.70	24.12	MaxQP	Vertical	121	355	40.0	-15.9	Pass
#2	98.03	45.27	4.00	-18.60	30.67	MaxQP	Vertical	103	5	43.0	-12.3	Pass
#3	124.22	39.94	4.12	-14.60	29.46	MaxQP	Vertical	101	76	43.0	-13.6	Pass
#4	146.76	47.62	4.23	-15.90	35.95	MaxQP	Vertical	100	175	43.0	-7.1	Pass
#5	338.71	41.38	4.98	-13.70	32.66	MaxQP	Horizontal	103	259	46.0	-13.3	Pass
#6	361.27	39.79	5.06	-12.70	32.15	MaxQP	Horizontal	100	268	46.0	-13.9	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back.

Note: Click on the Links above to view the Graphical Images (Plots)

Equipment Configuration for Digital Emissions / Radiated Spurious Emissions (30 – 1000 MHz)			
Antenna:	ICT Custom A1	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	50
Channel Frequency (MHz):	5785.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

30.00 - 1000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	31.56	28.73	3.53	-8.70	23.56	MaxQP	Vertical	119	348	40.0	-16.4	Pass
#2	98.03	45.44	4.00	-18.60	30.84	MaxQP	Vertical	100	2	43.0	-12.2	Pass
#3	124.17	40.60	4.12	-14.60	30.12	MaxQP	Vertical	102	71	43.0	-12.9	Pass
#4	146.69	46.30	4.23	-15.90	34.63	MaxQP	Vertical	102	169	43.0	-8.4	Pass
#5	338.78	41.51	4.98	-13.70	32.79	MaxQP	Horizontal	106	251	46.0	-13.2	Pass
#6	361.25	40.96	5.06	-12.70	33.32	MaxQP	Horizontal	100	274	46.0	-12.7	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back.

Note: Click on the Links above to view the Graphical Images (Plots)

Equipment Configuration for Digital Emissions / Radiated Spurious Emissions (30 – 1000 MHz)

Antenna:	ICT Custom A1	**Variant:**	802.11a
Antenna Gain (dBi):	See Antenna Gains (Master)	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	50
Channel Frequency (MHz):	5825.00	**Data Rate:**	6.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

30.00 - 1000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	31.99	28.70	3.53	-8.70	23.53	MaxQP	Vertical	125	356	40.0	-16.5	Pass
#2	98.08	46.47	4.00	-18.60	31.87	MaxQP	Vertical	105	5	43.0	-11.1	Pass
#3	124.20	39.74	4.12	-14.60	29.26	MaxQP	Vertical	102	76	43.0	-13.8	Pass
#4	146.77	47.87	4.23	-15.90	36.20	MaxQP	Vertical	104	173	43.0	-6.8	Pass
#5	338.65	41.23	4.98	-13.70	32.51	MaxQP	Horizontal	104	261	46.0	-13.5	Pass
#6	361.26	39.94	5.06	-12.70	32.30	MaxQP	Horizontal	103	267	46.0	-13.7	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back.

Note: Click on the Links above to view the Graphical Images (Plots)

2.3 AC Wireline Emissions

Test Conditions for AC Mains Conducted Emissions			
Standard:	FCC CFR 47, 15.107	**Ambient Temp. (ºC):**	24.0 - 27.5
Test Heading:	AC Mains Conducted Limits	**Rel. Humidity (%):**	32 - 45
Standard Section(s):	15.107 (a)	**Pressure (mBars):**	999 - 1001
Reference Document(s):	See Normative References		

Test Method

The test method shall be in accordance with ANSI C63.4 and the Artificial Mains Networks (AMNs) shall be connected to the AC mains power source.

The measurement frequency range extends from 150 kHz to 30 MHz. When the EUT is a transmitter operating at frequencies below 30 MHz, then the exclusion band for transmitters applies for measurements in the transmit mode of operation.

Test Procedure for AC Mains Conducted Emissions Measurement
The conducted emissions are measured in a shielded room with a spectrum analyzer in peak hold in the first instance. Emissions closest to the limit are measured in the quasi-peak mode (QP) with the tuned receiver using a bandwidth of 9 kHz. The emissions are maximized further by cable manipulation. The highest emissions relative to the limit are listed.

15.107 Conducted limits.
(a) Except for Class A digital devices, for equipment 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 µH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions 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 band edges.

	Conducted limit (dBµV)	
Frequency of emission (MHz)	**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.

(b) For a Class A digital device 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 µH/50 ohms LISN. Compliance with the provisions 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.

	Conducted limit (dBµV)	
Frequency of emission (MHz)	**Quasi-peak**	**Average**
0.15-0.5	79	66
0.5-30	73	60

Traceability
All conducted emission measurements are traceable to national standards. The uncertainty of measurement at a confidence level of not less than 95 %, with a coverage factor of k=2, in the range 9 kHz – 30 MHz (Average & Quasi-peak) is ±2.64 dB.

Model:	S23	Configuration tested:	AC/DC PS
Input power:	120VAC/60Hz	Standard:	FCC

Num	Frequency MHz	Raw dBµV	Cable Loss dB	Factor dB	Total Correction dBµV	Corrected Value dBµV	Measurement Type	Line	Limit dBµV/m	Margin dB	Pass /Fail
1	0.570	28.56	0.10	9.92	10.02	38.58	Max Avg	Live	46.0	-7.4	Pass
2	0.570	35.69	0.10	9.92	10.02	45.71	Max Qp	Live	56.0	-10.3	Pass
3	0.833	26.28	0.10	9.94	10.04	36.32	Max Avg	Neutral	46.0	-9.7	Pass
4	0.833	32.28	0.10	9.94	10.04	42.32	Max Qp	Neutral	56.0	-13.7	Pass
5	0.960	25.79	0.08	9.93	10.01	35.80	Max Avg	Neutral	46.0	-10.2	Pass
6	0.960	31.85	0.08	9.93	10.01	41.86	Max Qp	Neutral	56.0	-14.1	Pass
7	0.959	25.73	0.08	9.93	10.01	35.74	Max Avg	Live	46.0	-10.3	Pass
8	0.959	31.83	0.08	9.93	10.01	41.84	Max Qp	Live	56.0	-14.2	Pass
9	0.825	25.96	0.10	9.94	10.04	36.00	Max Avg	Live	46.0	-10.0	Pass
10	0.825	31.77	0.10	9.94	10.04	41.81	Max Qp	Live	56.0	-14.2	Pass
11	0.569	28.86	0.10	9.92	10.02	38.88	Max Avg	Live	46.0	-7.1	Pass
12	0.569	35.05	0.10	9.92	10.02	45.07	Max Qp	Live	56.0	-10.9	Pass

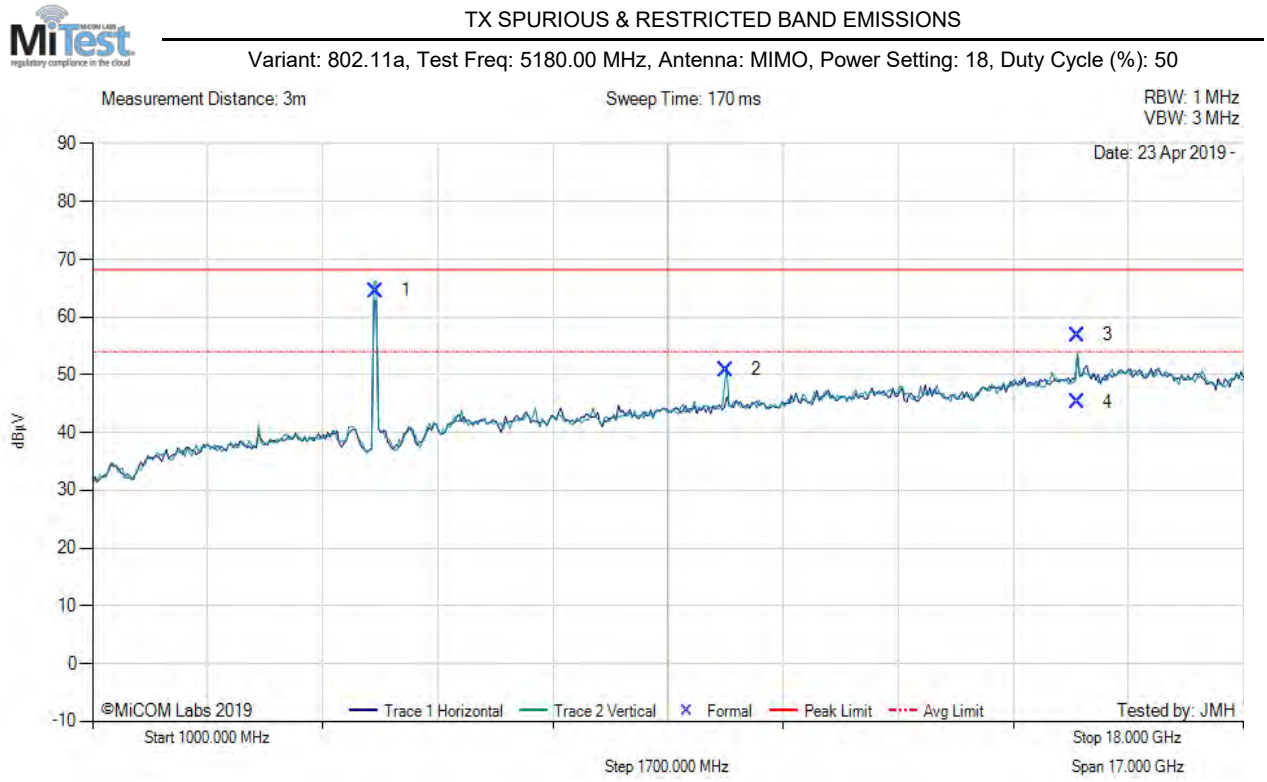
Test Notes: EUT powered by AC/DC PS 120V 60 Hz, connected to laptop via ethernet. 2nd ethernet cable connected to hub with traffic. Transmitting 2412b WiFi and BLE for maximum load. Audio ports looped back

Click to view ac Wireline graphic

A. APPENDIX - GRAPHICAL IMAGES

A.1. Radiated

A.1.1. TX Spurious & Restricted Band Emissions



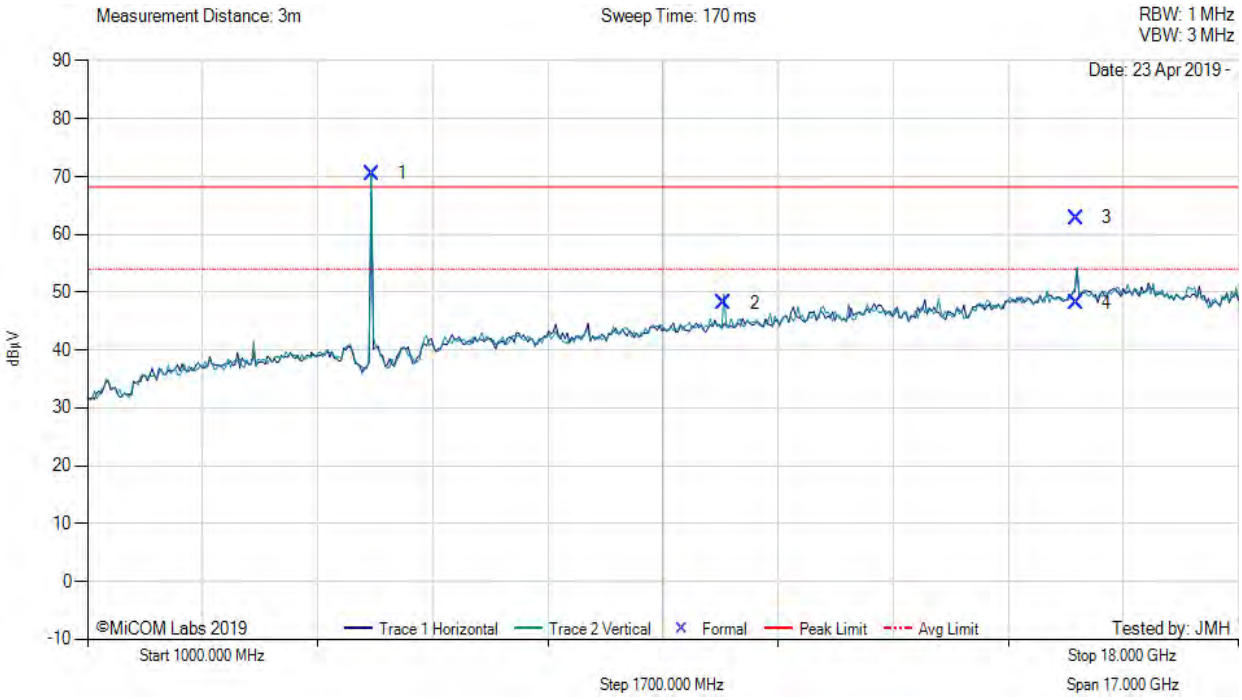
1000.00 - 18000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	5178.75	79.13	-2.66	-11.97	64.50	Fundamental	Vertical	100	0	--	--	
2	10358.32	60.35	-3.85	-5.59	50.91	Peak (NRB)	Vertical	150	91	--	--	Pass
3	15545.80	63.64	-4.77	-2.04	56.83	Max Peak	Vertical	191	85	68.2	-11.4	Pass
4	15545.80	52.11	-4.77	-2.04	45.30	Max Avg	Vertical	191	85	54.0	-8.7	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet.5 GHz notch in front of amp to prevent overload. Duty Cycle correction factor 2.91 dB included

back to matrix

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 802.11a, Test Freq: 5200.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 50



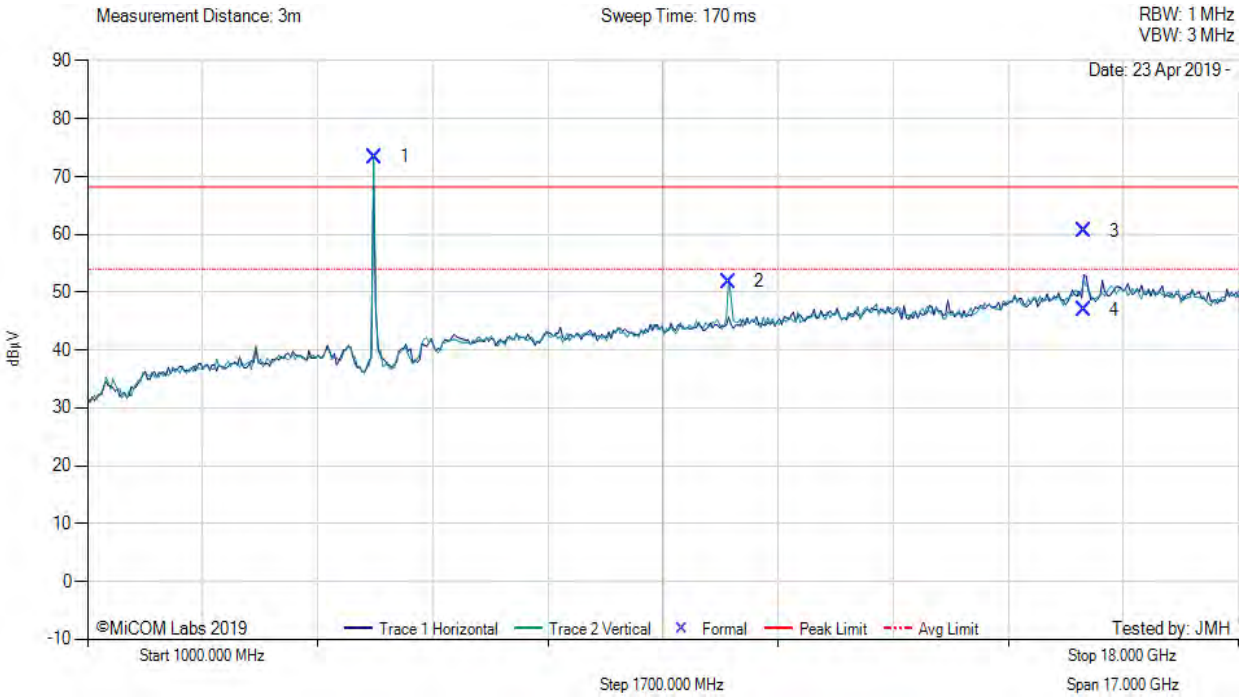
1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	5199.38	85.08	-2.63	-11.95	70.50	Fundamental	Vertical	100	0	--	--	
2	10402.81	57.94	-3.87	-5.87	48.20	Peak (NRB)	Vertical	101	0	--	--	Pass
3	15609.20	69.30	-4.72	-1.71	62.87	Max Peak	Vertical	194	108	68.2	-5.4	Pass
4	15609.20	54.59	-4.72	-1.71	48.18	Max Avg	Vertical	194	108	54.0	-5.8	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet. 5 GHz notch in front of amp to prevent overload. Duty Cycle correction factor 2.91 dB included

back to matrix

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 802.11a, Test Freq: 5240.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 50



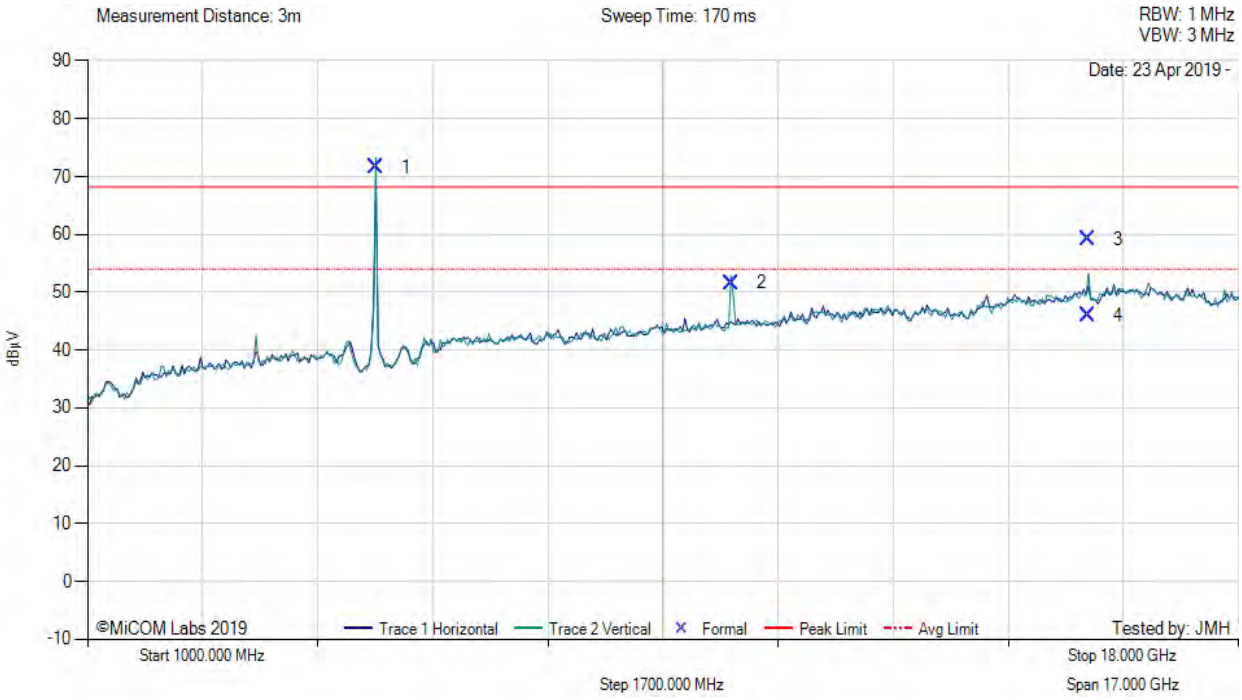
1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	5240.05	88.26	-2.62	-12.24	73.40	Fundamental	Vertical	100	0	--	--	
2	10474.41	61.89	-3.80	-6.26	51.83	Peak (NRB)	Vertical	200	0	--	--	Pass
3	15721.66	67.30	-4.83	-1.94	60.53	Max Peak	Horizontal	194	41	68.2	-7.7	Pass
4	15721.66	53.77	-4.83	-1.94	47.00	Max Avg	Horizontal	194	41	54.0	-7.0	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet. 5 GHz notch in front of amp to prevent overload. Duty Cycle correction factor 2.91 dB included

back to matrix

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 802.11a, Test Freq: 5260.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 50



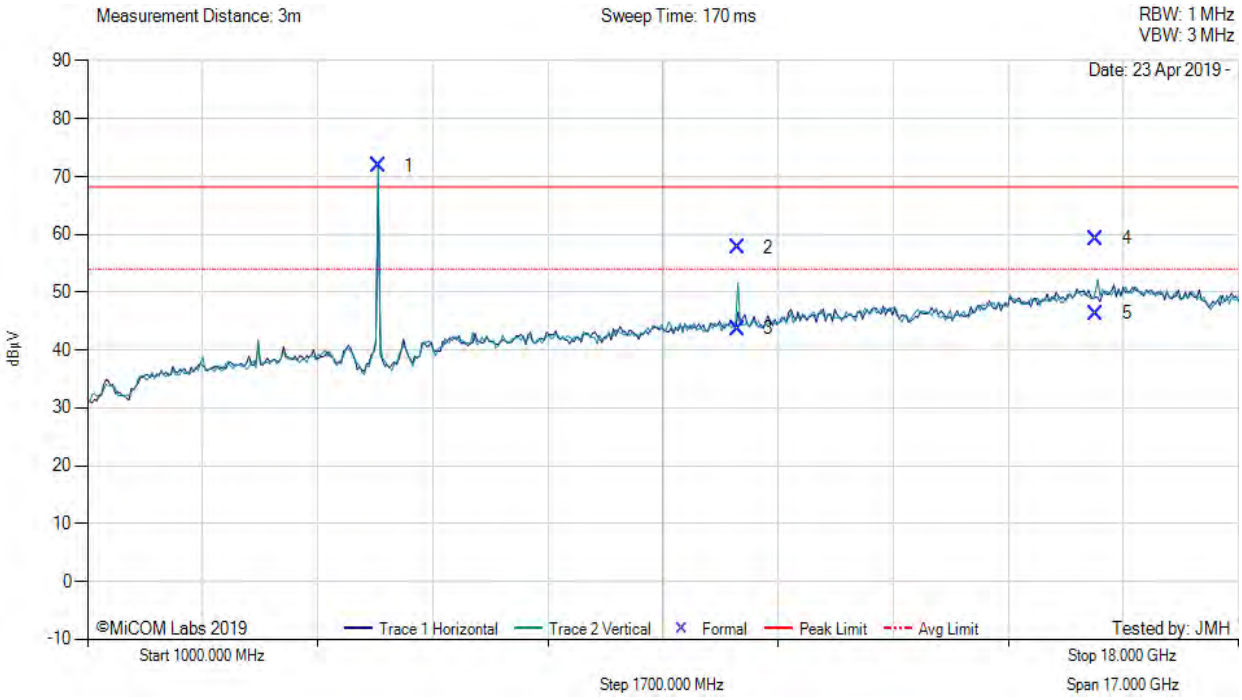
1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	5258.90	86.36	-2.62	-12.14	71.60	Fundamental	Vertical	100	0	--	--	
2	10513.25	61.81	-4.01	-6.19	51.61	Peak (NRB)	Vertical	200	57	--	--	Pass
3	15780.58	66.14	-4.86	-2.11	59.17	Max Peak	Vertical	195	279	68.2	-9.1	Pass
4	15780.58	52.92	-4.86	-2.11	45.95	Max Avg	Vertical	195	279	54.0	-11.1	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet. 5 GHz notch in front of amp to prevent overload. Duty Cycle correction factor 2.91 dB included

back to matrix

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 802.11a, Test Freq: 5300.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 50



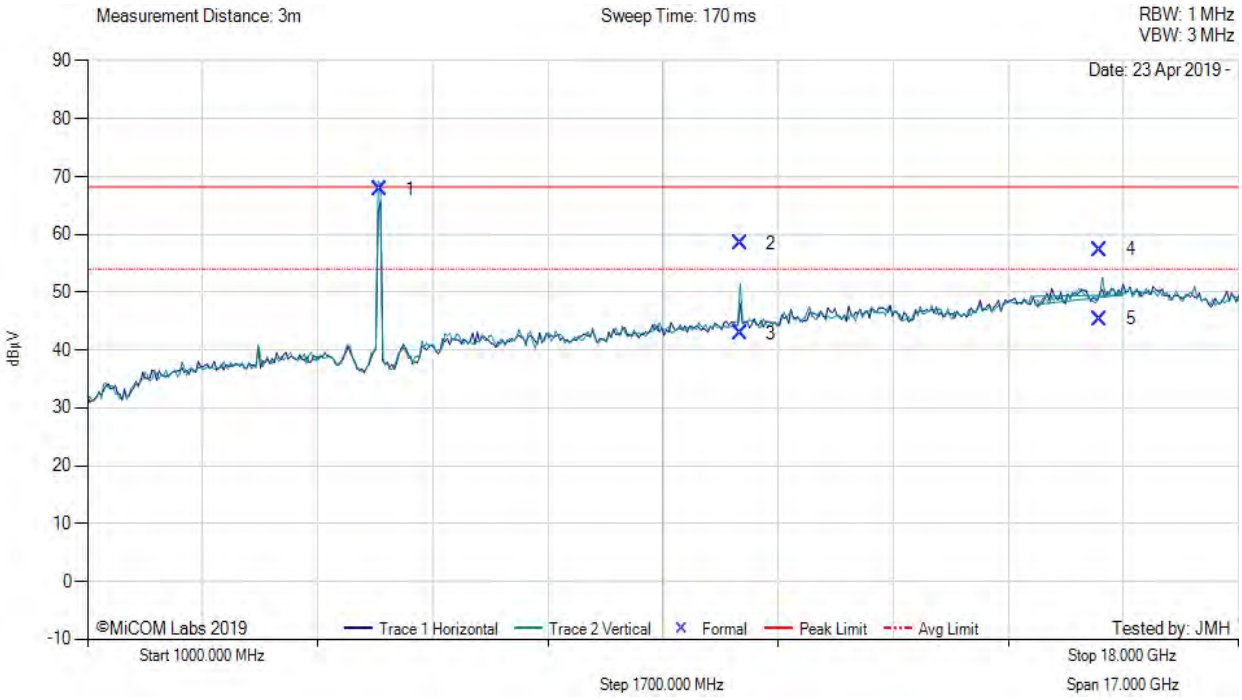
1000.00 - 18000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	5302.59	86.54	-2.66	-12.09	71.79	Fundamental	Vertical	100	0	--	--	
2	10607.85	66.74	-3.85	-5.24	57.65	Max Peak	Vertical	198	255	68.2	-10.6	Pass
3	10607.85	52.76	-3.85	-5.24	43.67	Max Avg	Vertical	198	255	54.0	-10.3	Pass
4	15899.46	66.49	-4.96	-2.23	59.30	Max Peak	Vertical	193	277	68.2	-8.9	Pass
5	15899.46	53.48	-4.96	-2.23	46.29	Max Avg	Vertical	193	277	54.0	-7.7	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet. 5 GHz notch in front of amp to prevent overload. Duty Cycle correction factor 2.91 dB included

back to matrix

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 802.11a, Test Freq: 5320.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 50



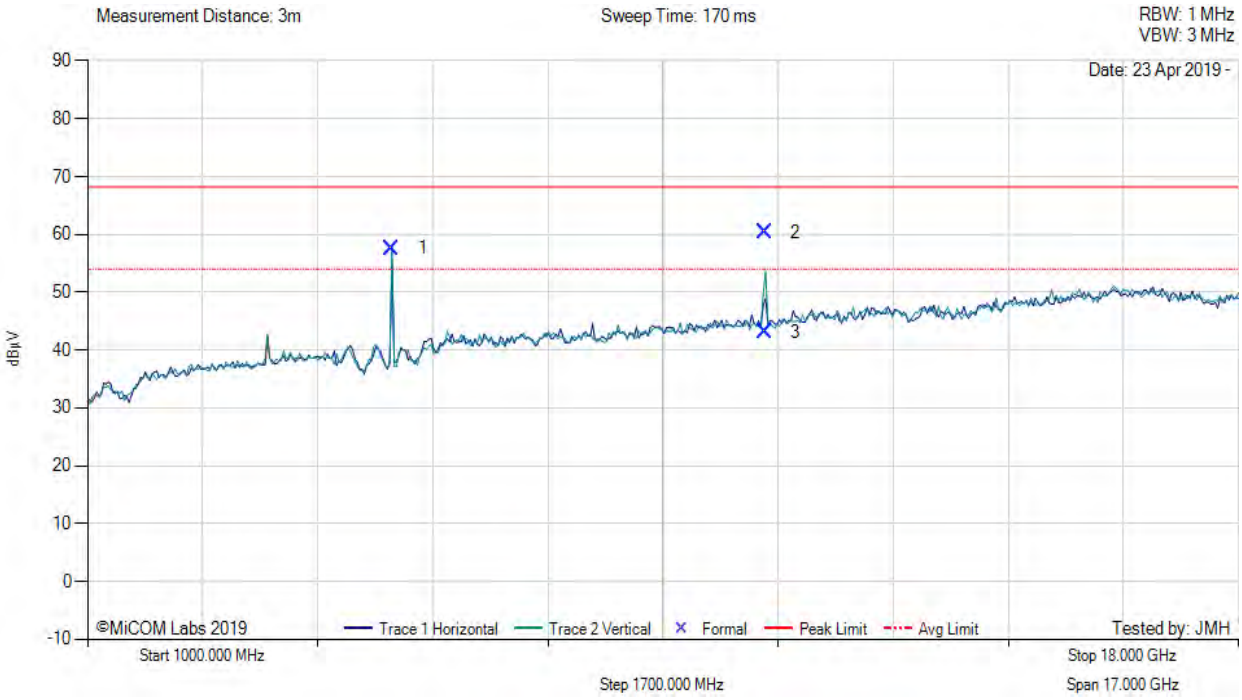
1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	5318.16	82.59	-2.67	-12.18	67.74	Fundamental	Vertical	100	0	--	--	
2	10638.60	67.69	-4.16	-5.04	58.49	Max Peak	Vertical	193	237	68.2	-9.7	Pass
3	10638.60	52.08	-4.16	-5.04	42.88	Max Avg	Vertical	193	237	54.0	-11.1	Pass
4	15959.88	63.76	-4.94	-1.44	57.38	Max Peak	Vertical	197	274	68.2	-10.9	Pass
5	15959.88	51.79	-4.94	-1.44	45.41	Max Avg	Vertical	197	274	54.0	-8.6	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet. 5 GHz notch in front of amp to prevent overload. Duty Cycle correction factor 2.91 dB included

back to matrix

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 802.11a, Test Freq: 5500.00 MHz, Antenna: MIMO, Power Setting: 16, Duty Cycle (%): 50



1000.00 - 18000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	5496.99	71.94	-2.72	-11.62	57.60	Fundamental	Vertical	100	0	--	--	
2	11000.26	70.62	-3.94	-6.28	60.40	Max Peak	Vertical	193	262	68.2	-7.8	Pass
3	11000.26	53.35	-3.94	-6.28	43.13	Max Avg	Vertical	193	262	54.0	-7.9	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet. 5 GHz notch in front of amp to prevent overload. Duty Cycle correction factor 2.91 dB included

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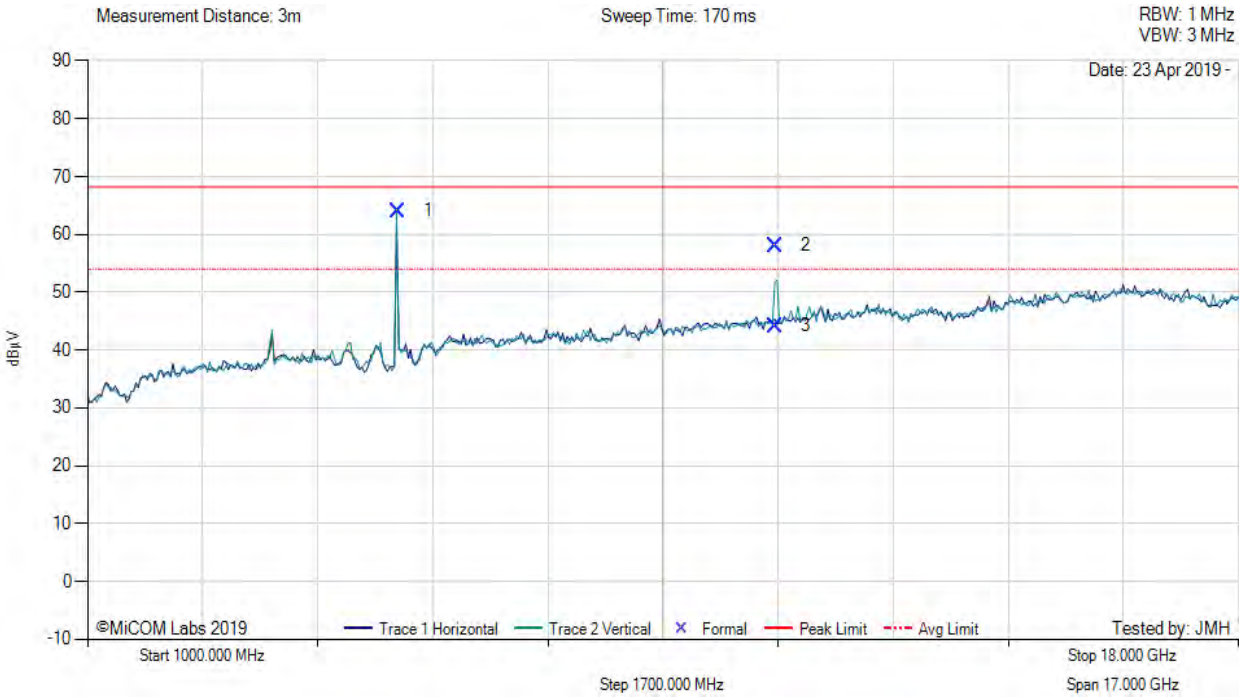
TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 802.11a, Test Freq: 5580.00 MHz, Antenna: MIMO, Power Setting: 16, Duty Cycle (%): 50



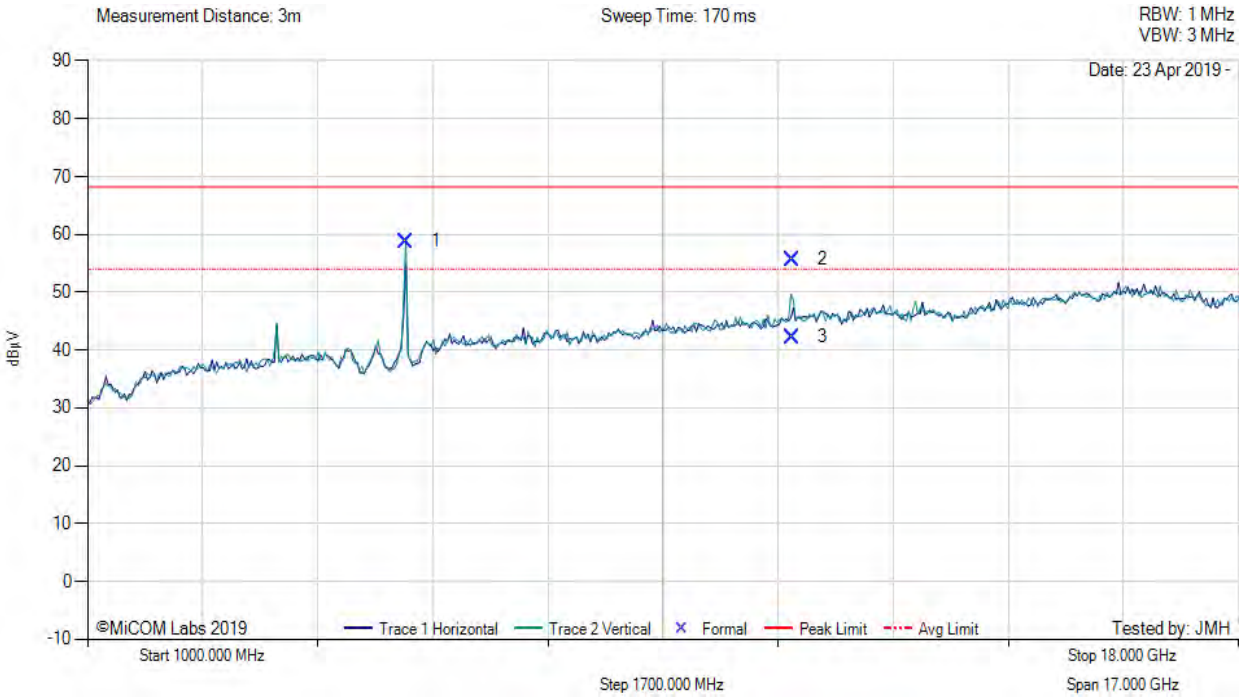
1000.00 - 18000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	5578.96	78.28	-2.76	-11.46	64.06	Fundamental	Vertical	100	0	--	--	
2	11156.46	66.73	-4.05	-4.59	58.09	Max Peak	Vertical	198	276	68.2	-10.1	Pass
3	11156.46	52.78	-4.05	-4.59	44.14	Max Avg	Vertical	198	276	54.0	-9.9	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet. 5 GHz notch in front of amp to prevent overload. Duty Cycle correction factor 2.91 dB included

back to matrix

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 802.11a, Test Freq: 5700.00 MHz, Antenna: MIMO, Power Setting: 16, Duty Cycle (%): 50



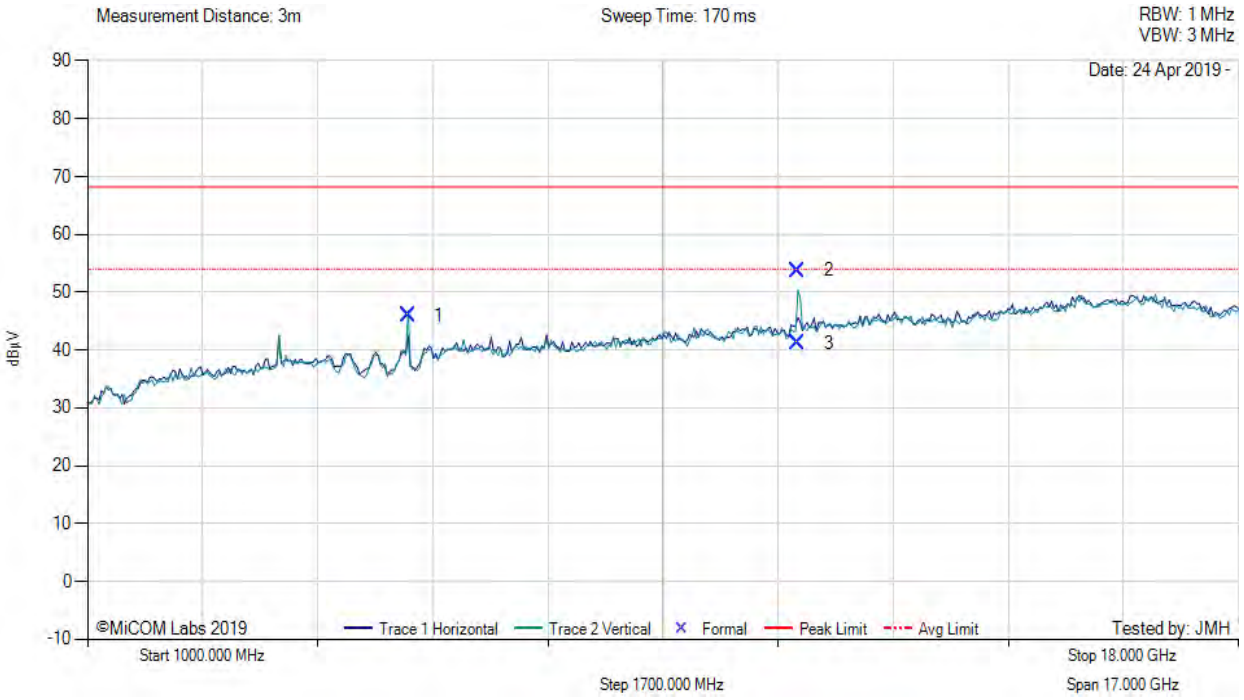
1000.00 - 18000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	5698.15	72.52	-2.76	-10.99	58.77	Fundamental	Vertical	100	0	--	--	
2	11410.22	65.58	-4.09	-5.85	55.64	Max Peak	Vertical	109	86	68.2	-12.6	Pass
3	11410.22	52.20	-4.09	-5.85	42.26	Max Avg	Vertical	109	86	54.0	-11.7	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet. 5 GHz notch in front of amp to prevent overload. Duty Cycle correction factor 2.91 dB included

back to matrix

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 802.11a, Test Freq: 5745.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 50



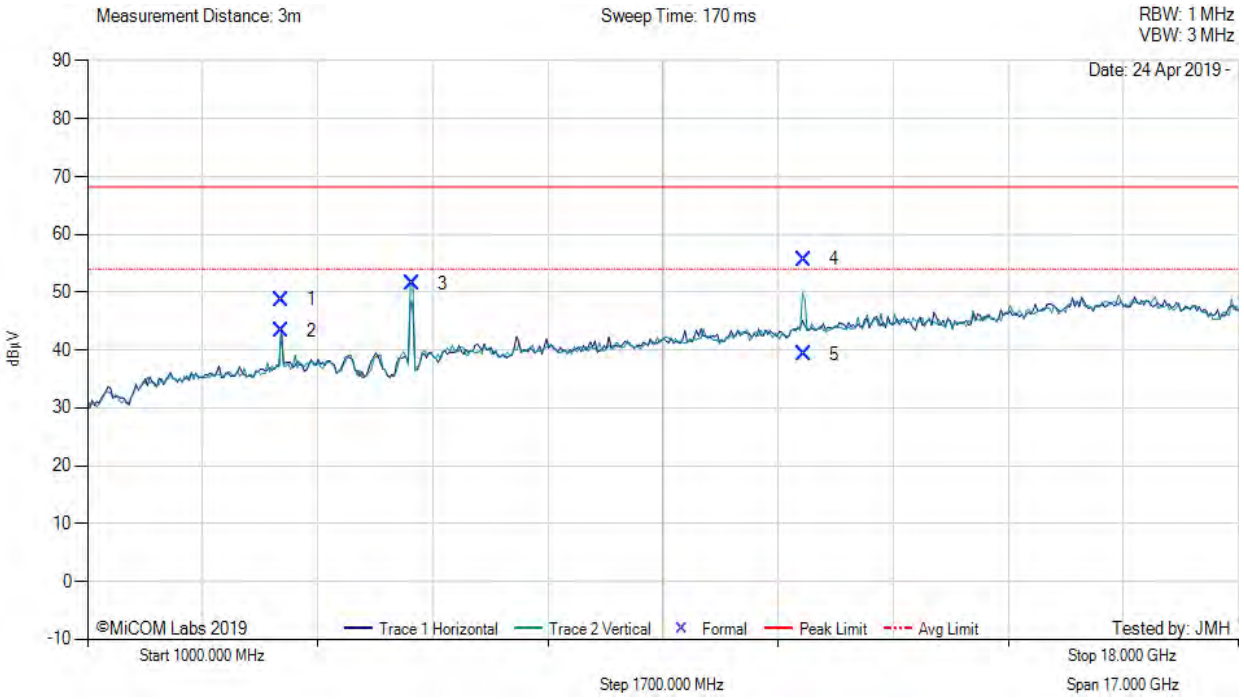
1000.00 - 18000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	5742.47	59.69	-2.75	-11.03	45.91	Fundamental	Vertical	151	0	--	--	
2	11493.07	64.45	-4.09	-6.64	53.72	Max Peak	Vertical	187	291	68.2	-14.5	Pass
3	11493.07	51.92	-4.09	-6.64	41.19	Max Avg	Vertical	187	291	54.0	-12.8	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet.5 GHz notch n front of amp to prevent overload. DC correction 3 dB

back to matrix

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 802.11a, Test Freq: 5785.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 50



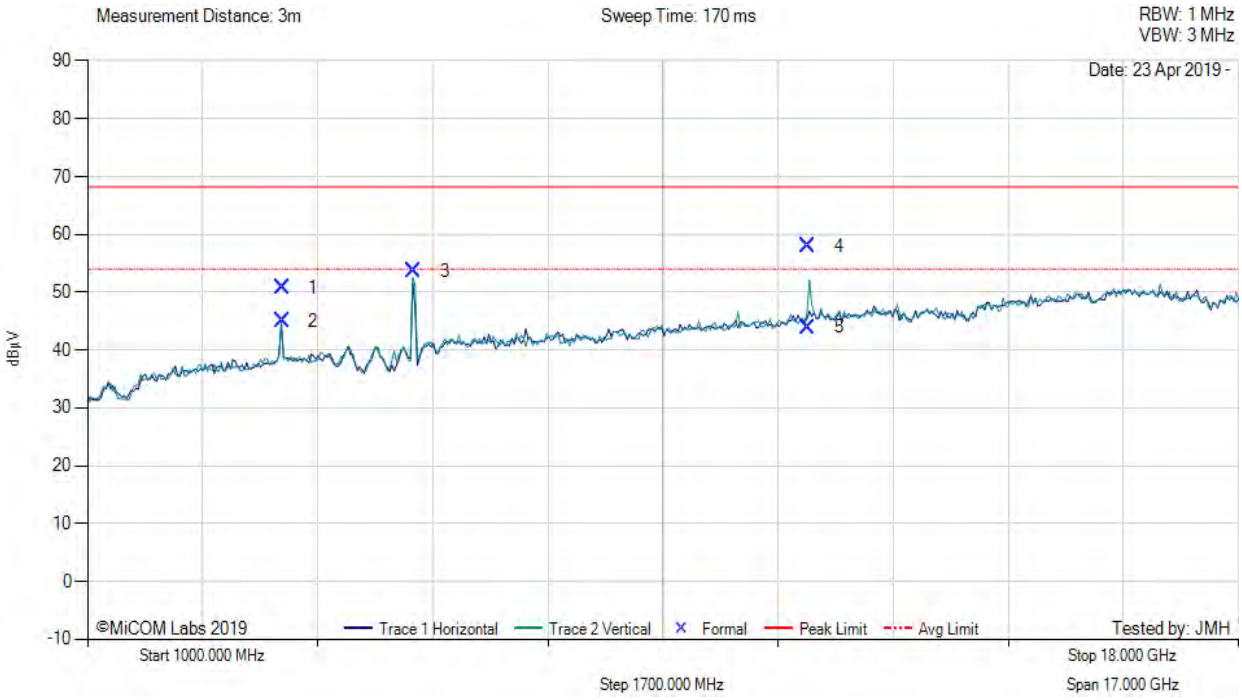
1000.00 - 18000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	3856.74	62.52	-2.21	-11.61	48.70	Max Peak	Vertical	190	299	68.2	-19.5	Pass
2	3856.74	57.11	-2.21	-11.61	43.29	Max Avg	Vertical	190	299	54.0	-10.7	Pass
3	5790.09	65.00	-2.75	-10.79	51.46	Fundamental	Vertical	151	41	--	--	
4	11575.44	65.88	-4.04	-6.13	55.71	Max Peak	Vertical	195	241	68.2	-12.5	Pass
5	11575.44	52.47	-4.04	-3.13	39.30	Max Avg	Vertical	195	241	54.0	-11.7	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet.5 GHz notch n front of amp to prevent overload. DC correction 3 dB

back to matrix

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 802.11a, Test Freq: 5825.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 50

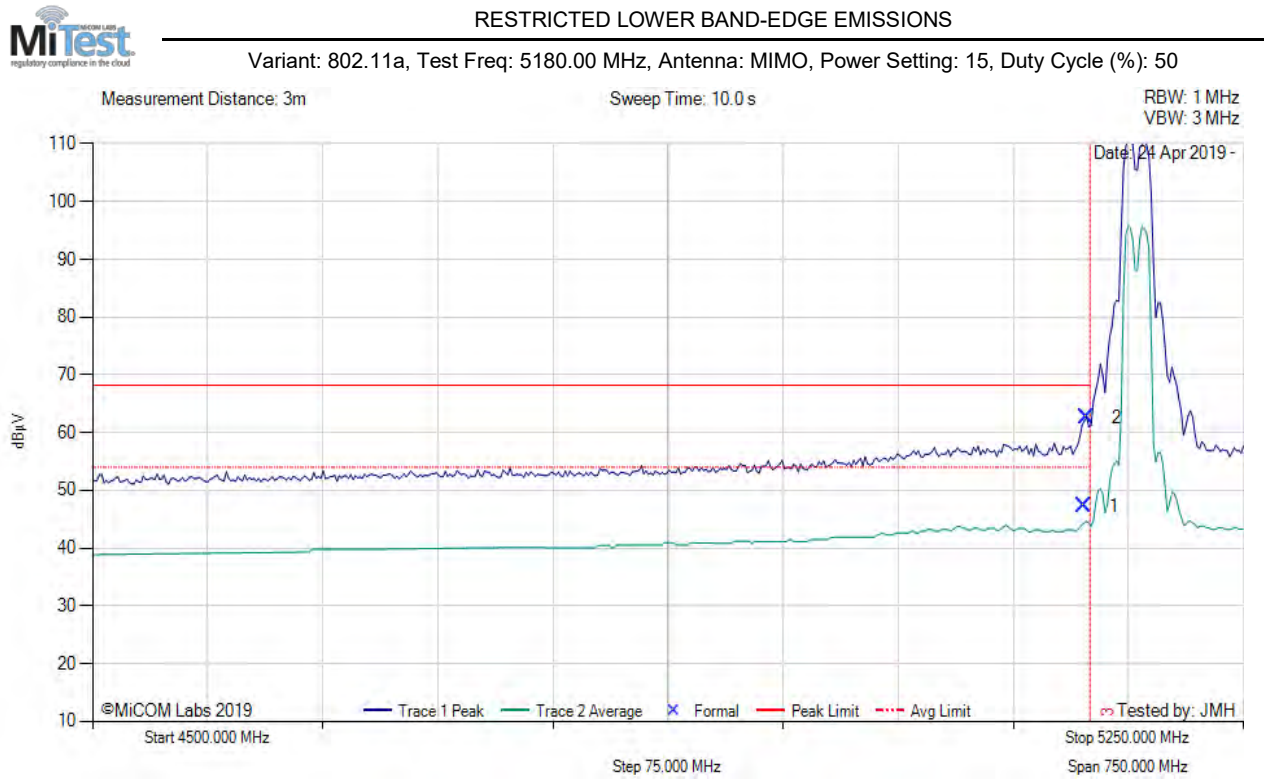


1000.00 - 18000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	3883.34	64.72	-2.24	-11.75	50.73	Max Peak	Vertical	154	241	68.2	-17.5	Pass
2	3883.34	59.07	-2.24	-11.75	45.08	Max Avg	Vertical	154	241	54.0	-8.9	Pass
3	5822.62	67.16	-2.80	-10.75	53.61	Fundamental	Vertical	151	0	--	--	
4	11646.38	66.62	-4.16	-4.45	58.01	Max Peak	Vertical	198	286	68.2	-10.2	Pass
5	11646.38	52.51	-4.16	-4.45	43.90	Max Avg	Vertical	198	286	54.0	-10.1	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet. 5 GHz notch in front of amp to prevent overload. Duty Cycle correction factor 2.91 dB included

back to matrix

A.1.2. Restricted Edge & Band-Edge Emissions



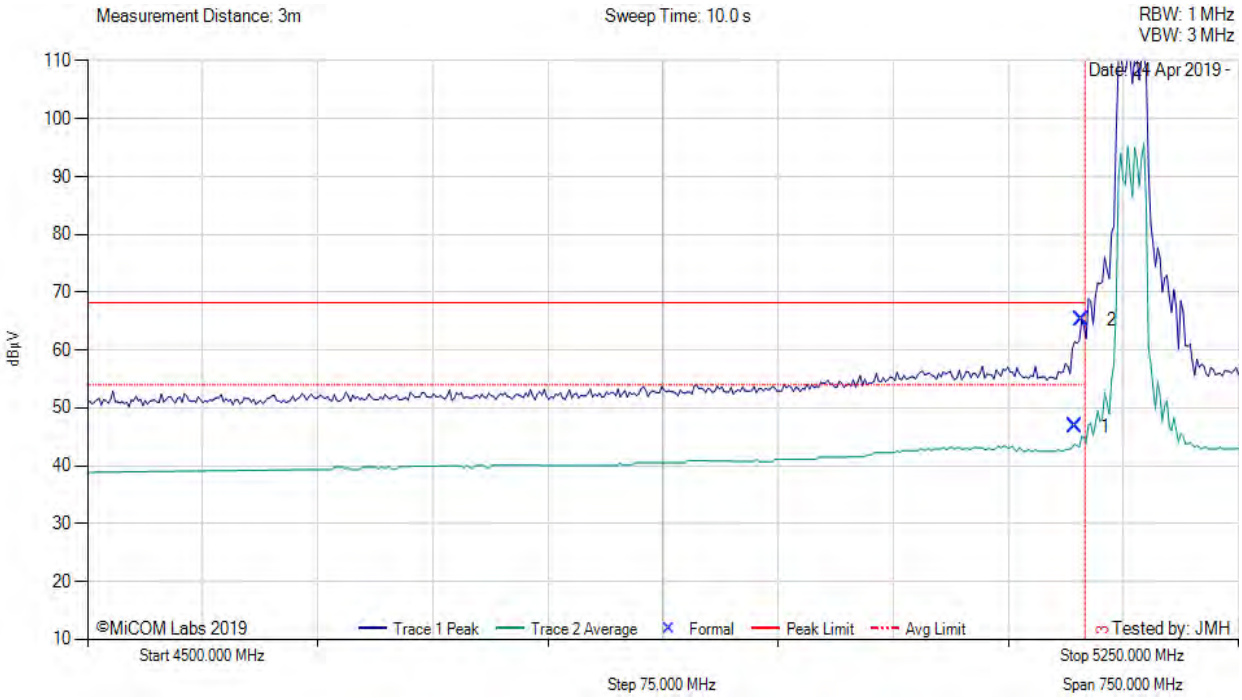
4500.00 - 5250.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	5146.29	15.77	-2.62	34.21	47.36	Max Avg	Vertical	122	59	54.0	-6.6	Pass
2	5147.80	31.11	-2.69	34.21	62.63	Max Peak	Vertical	122	59	68.2	-5.6	Pass
3	5150.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber.

back to matrix

RESTRICTED LOWER BAND-EDGE EMISSIONS

Variant: 802.11n HT-20, Test Freq: 5180.00 MHz, Antenna: MIMO, Power Setting: 15, Duty Cycle (%): 50



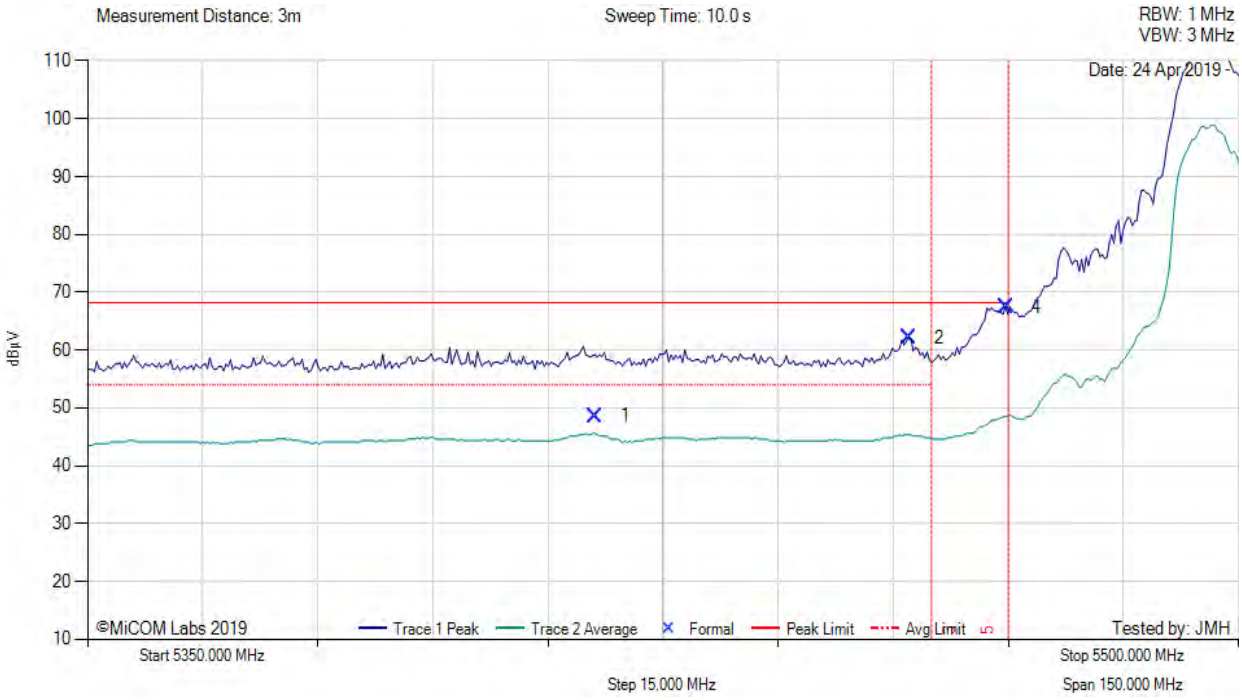
4500.00 - 5250.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	5143.29	15.23	-2.63	34.20	46.80	Max Avg	Vertical	122	60	54.0	-7.2	Pass
2	5147.80	30.98	0.00	34.21	65.19	Max Peak	Vertical	122	60	68.2	-3.0	Pass
3	5150.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ethernet. DC correction 3 dB

back to matrix

RESTRICTED LOWER BAND-EDGE EMISSIONS

Variant: 802.11a, Test Freq: 5500.00 MHz, Antenna: MIMO, Power Setting: 16, Duty Cycle (%): 50



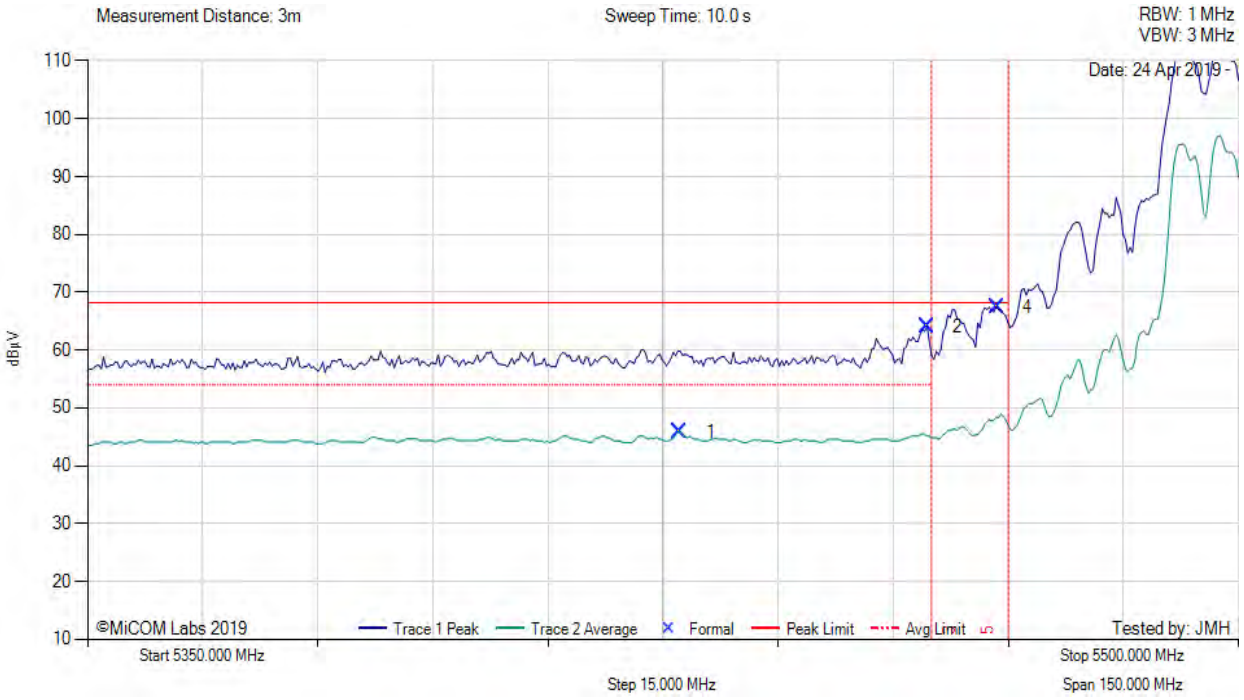
5350.00 - 5500.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	5416.11	16.79	-2.69	34.52	48.62	Max Avg	Vertical	130	61	54.0	-5.4	Pass
2	5456.99	30.24	-2.69	34.52	62.07	Max Peak	Vertical	130	61	68.2	-6.2	Pass
4	5469.70	35.60	-2.69	34.55	67.46	Max Avg	Vertical	130	61	68.2	-0.7	Pass
3	5460.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--
5	5470.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber. DC correction 3 dB.

back to matrix

RESTRICTED LOWER BAND-EDGE EMISSIONS

Variant: 802.11n HT-20, Test Freq: 5500.00 MHz, Antenna: MIMO, Power Setting: 16, Duty Cycle (%): 50



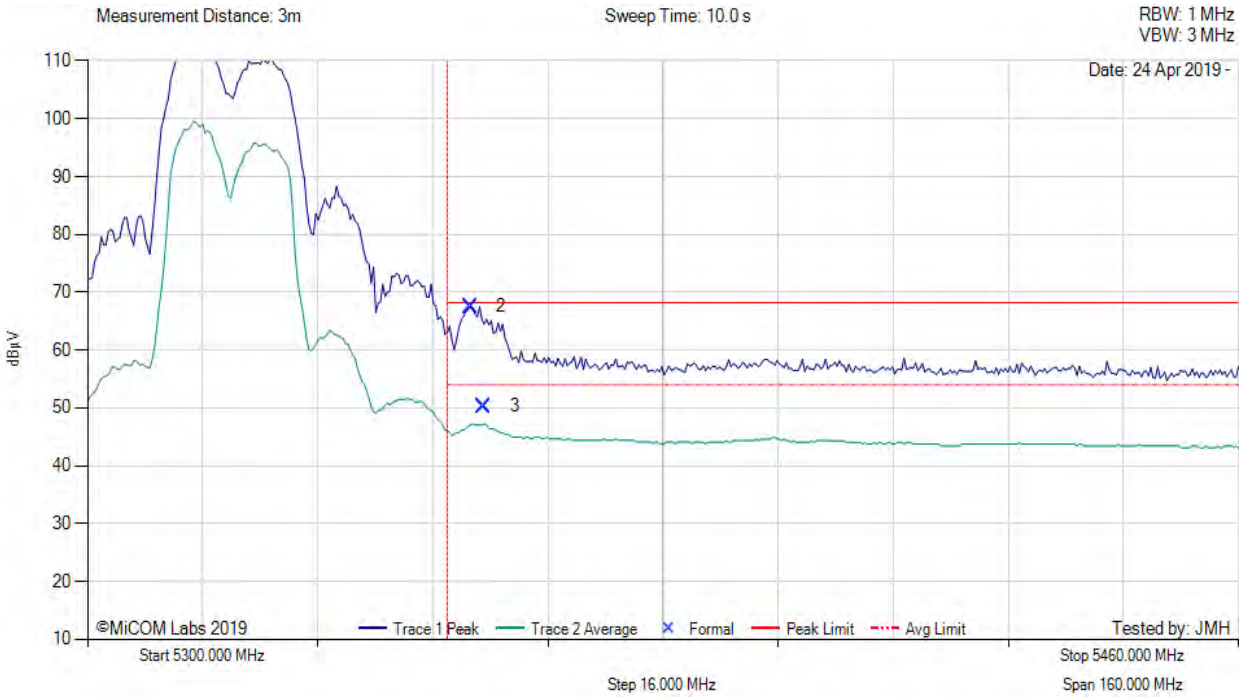
5350.00 - 5500.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	5427.23	17.04	-2.69	34.51	45.86	Max Avg	Vertical	130	61	54.0	-5.1	Pass
2	5459.40	32.30	-2.69	34.52	64.13	Max Peak	Vertical	130	61	68.2	-4.1	Pass
4	5468.50	35.61	-2.68	34.55	67.48	Max Avg	Vertical	130	61	68.2	-0.7	Pass
3	5460.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--
5	5470.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber. DC correction 3 dB.

back to matrix

RESTRICTED UPPER BAND-EDGE EMISSIONS

Variant: 802.11a, Test Freq: 5320.00 MHz, Antenna: MIMO, Power Setting: 15, Duty Cycle (%): 50



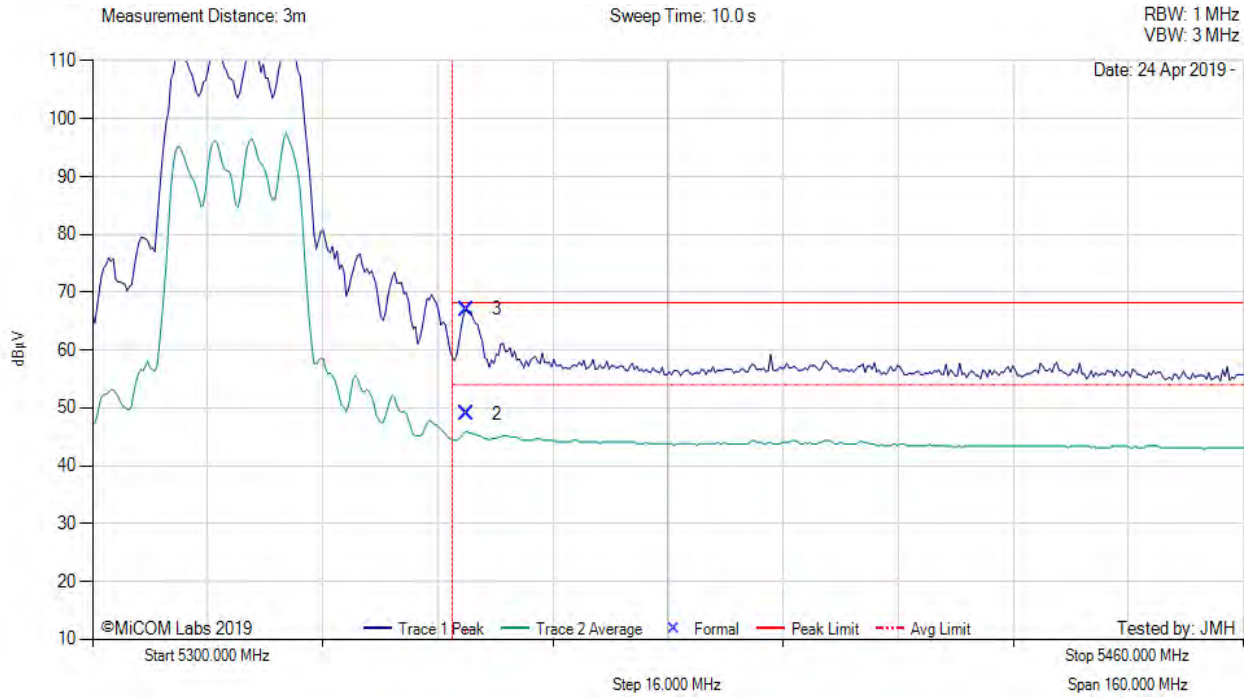
5300.00 - 5460.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
2	5353.23	35.78	-2.69	34.47	67.56	Max Peak	Vertical	129	62	68.2	-0.7	Pass
3	5355.15	18.48	-2.69	34.47	50.26	Max Avg	Vertical	129	62	54.0	-3.7	Pass
1	5350.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber. DC correction 3 dB. Power reduced to meet band edge limit.

back to matrix

RESTRICTED UPPER BAND-EDGE EMISSIONS

Variant: 802.11n HT-20, Test Freq: 5320.00 MHz, Antenna: MIMO, Power Setting: 13.5, Duty Cycle (%): 50



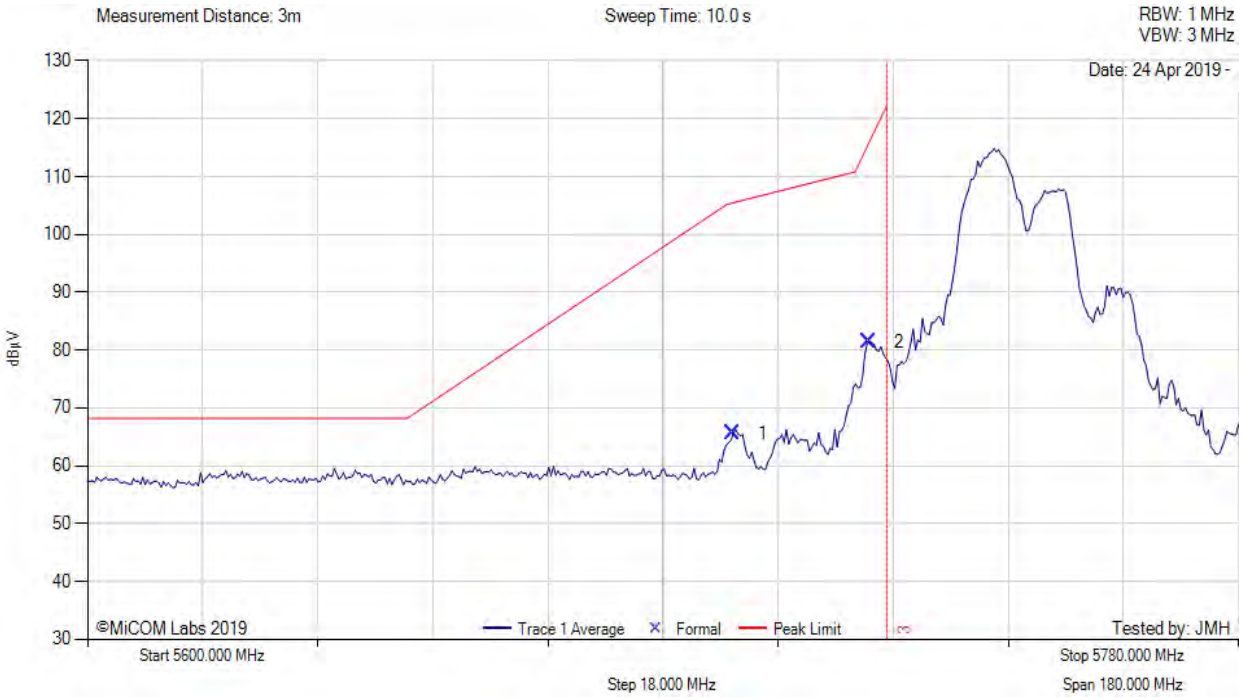
5300.00 - 5460.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
2	5351.94	17.19	-2.69	34.46	48.96	Max Avg	Vertical	129	62	54.0	-5.0	Pass
3	5351.94	35.25	-2.69	34.46	67.02	Max Peak	Vertical	129	62	68.2	-1.2	Pass
1	5350.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber. DC correction 3 dB. Power reduced to meet band edge limit.

back to matrix

5725 MHz RADIATED BAND-EDGE EMISSIONS

Variant: 802.11a, Test Freq: 5745.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 50



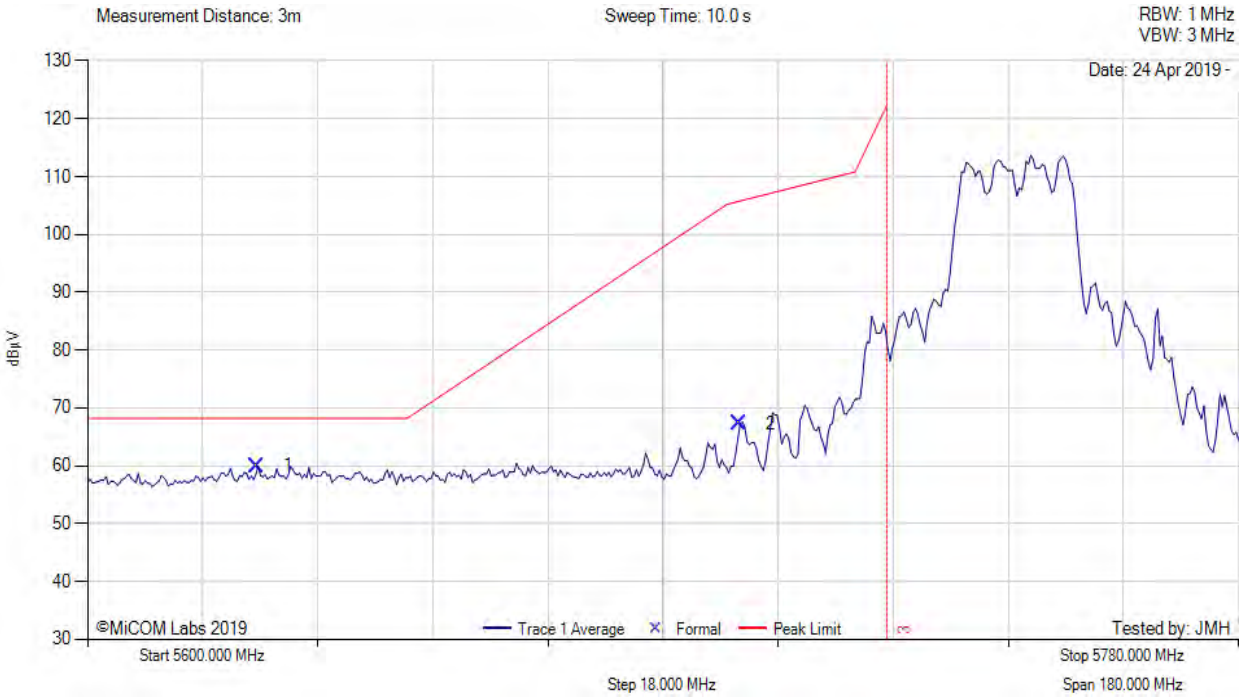
5600.00 - 5780.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	5700.83	30.90	0.00	34.68	65.58	Max Avg	Vertical	131	58	105.5	-39.9	Pass
2	5722.21	49.39	-2.75	34.72	81.36	Max Avg	Vertical	131	58	115.4	-34.0	Pass
3	5725.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber.

back to matrix

5725 MHz RADIATED BAND-EDGE EMISSIONS

Variant: 802.11n HT-20, Test Freq: 5745.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 50



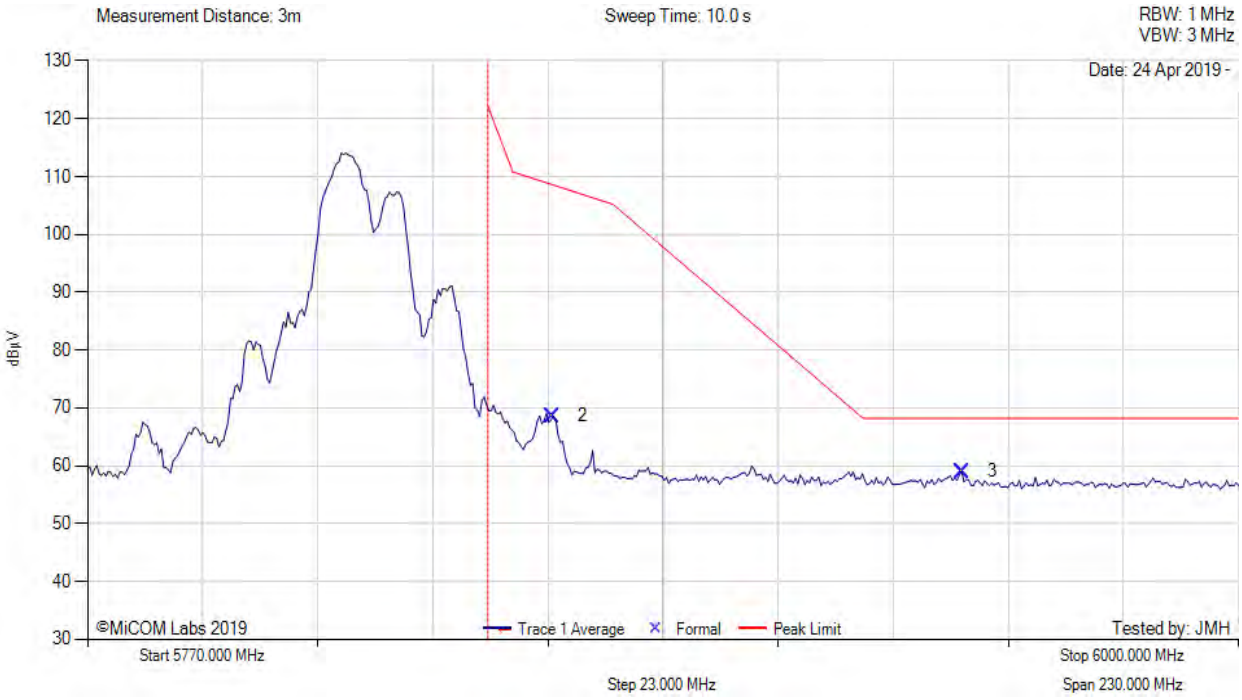
5600.00 - 5780.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	5626.52	28.02	-2.72	34.64	59.94	Max Avg	Vertical	131	58	68.2	-8.3	Pass
2	5702.01	35.37	-2.75	34.68	67.30	Max Avg	Vertical	131	58	105.8	-38.5	Pass
3	5725.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber.

back to matrix

5850 MHz RADIATED BAND-EDGE EMISSIONS

Variant: 802.11a, Test Freq: 5825.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 50



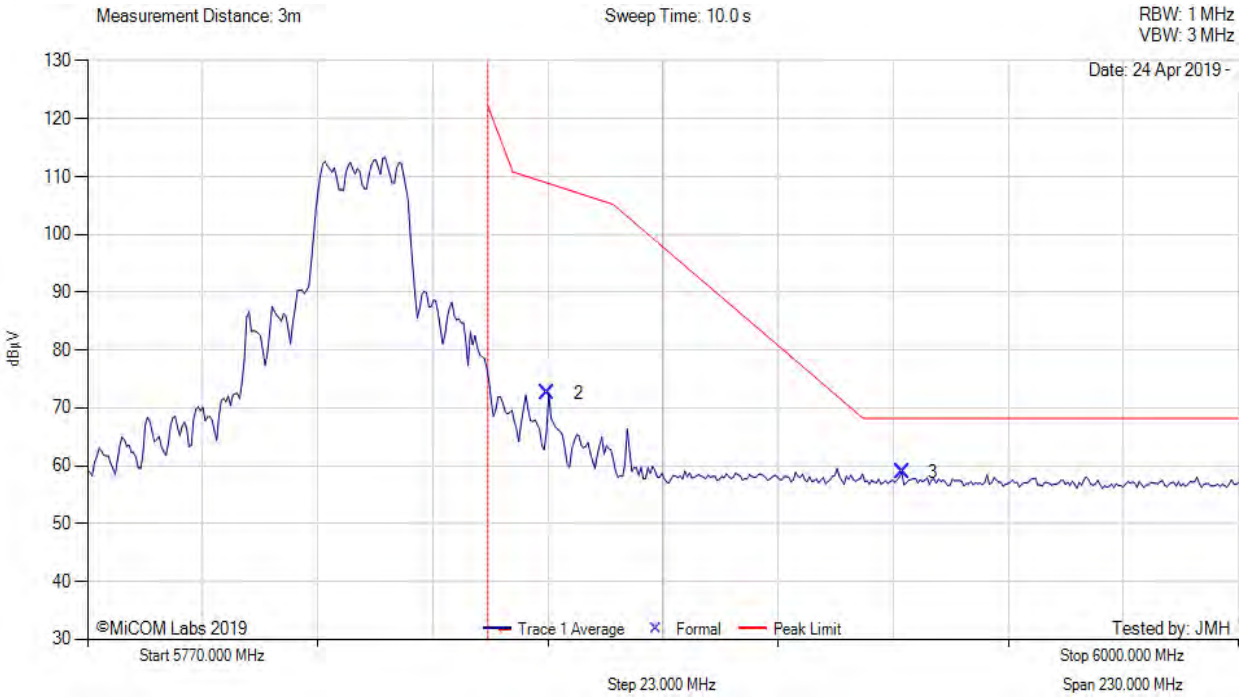
5770.00 - 6000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
2	5862.91	36.38	-2.77	34.99	68.60	Max Avg	Vertical	131	58	108.7	-40.1	Pass
3	5944.81	26.65	-2.76	35.12	59.01	Max Avg	Vertical	131	58	68.2	-9.2	Pass
1	5850.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber.

back to matrix

5850 MHz RADIATED BAND-EDGE EMISSIONS

Variant: 802.11n HT-20, Test Freq: 5825.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 50

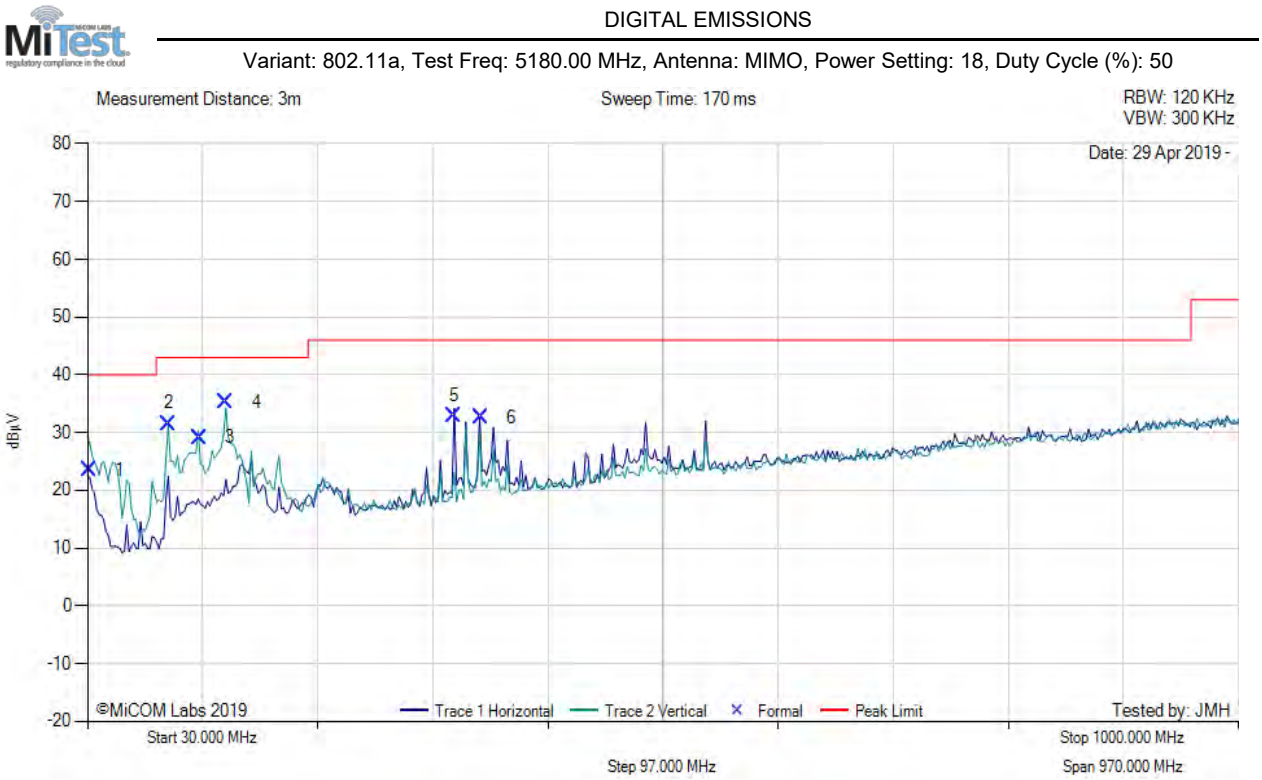


5770.00 - 6000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
2	5861.98	40.34	-2.77	34.99	72.56	Max Avg	Vertical	131	58	108.9	-36.3	Pass
3	5932.83	26.52	-2.77	35.11	58.86	Max Avg	Vertical	131	58	68.2	-9.3	Pass
1	5850.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber.

back to matrix

A.1.3. Digital Emissions



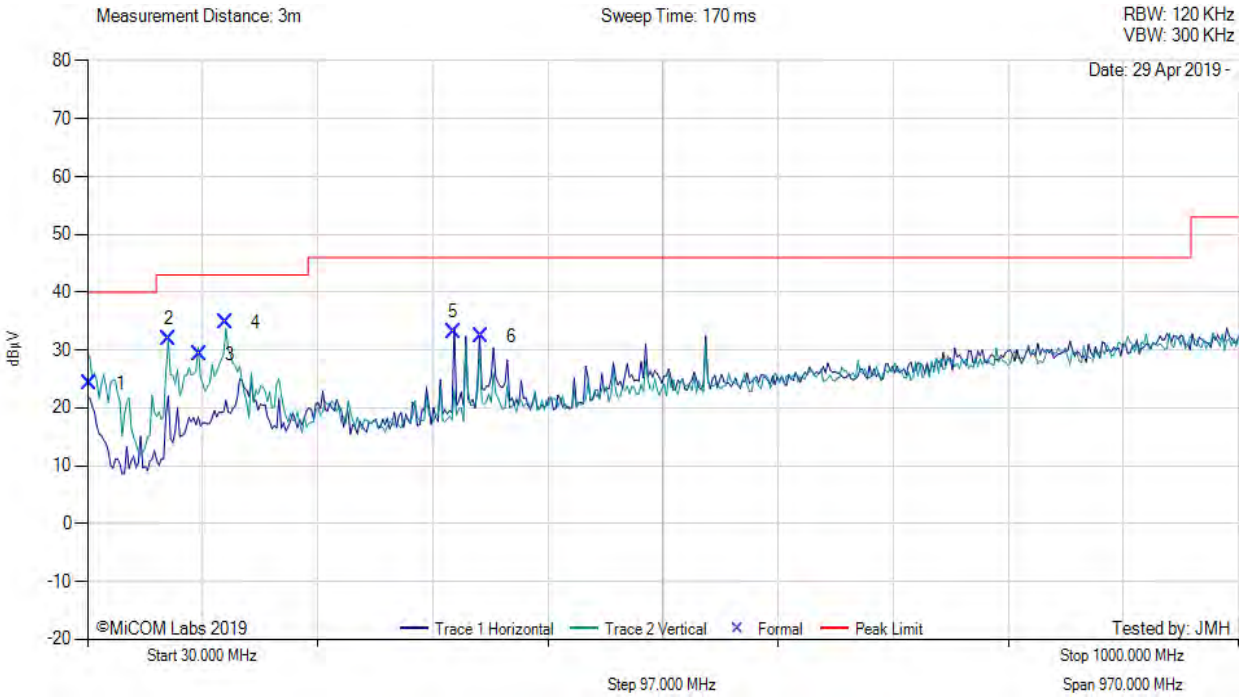
30.00 - 1000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	31.78	28.69	3.53	-8.70	23.52	MaxQP	Vertical	122	352	40.0	-16.5	Pass
2	98.06	46.15	4.00	-18.60	31.55	MaxQP	Vertical	101	1	43.0	-11.5	Pass
3	124.18	39.62	4.12	-14.60	29.14	MaxQP	Vertical	100	73	43.0	-13.9	Pass
4	146.74	46.88	4.23	-15.90	35.21	MaxQP	Vertical	99	171	43.0	-7.8	Pass
5	338.68	41.57	4.98	-13.70	32.85	MaxQP	Horizontal	101	257	46.0	-13.2	Pass
6	361.26	40.26	5.06	-12.70	32.62	MaxQP	Horizontal	100	270	46.0	-13.4	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back.

back to matrix

DIGITAL EMISSIONS

Variant: 802.11a, Test Freq: 5200.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 50



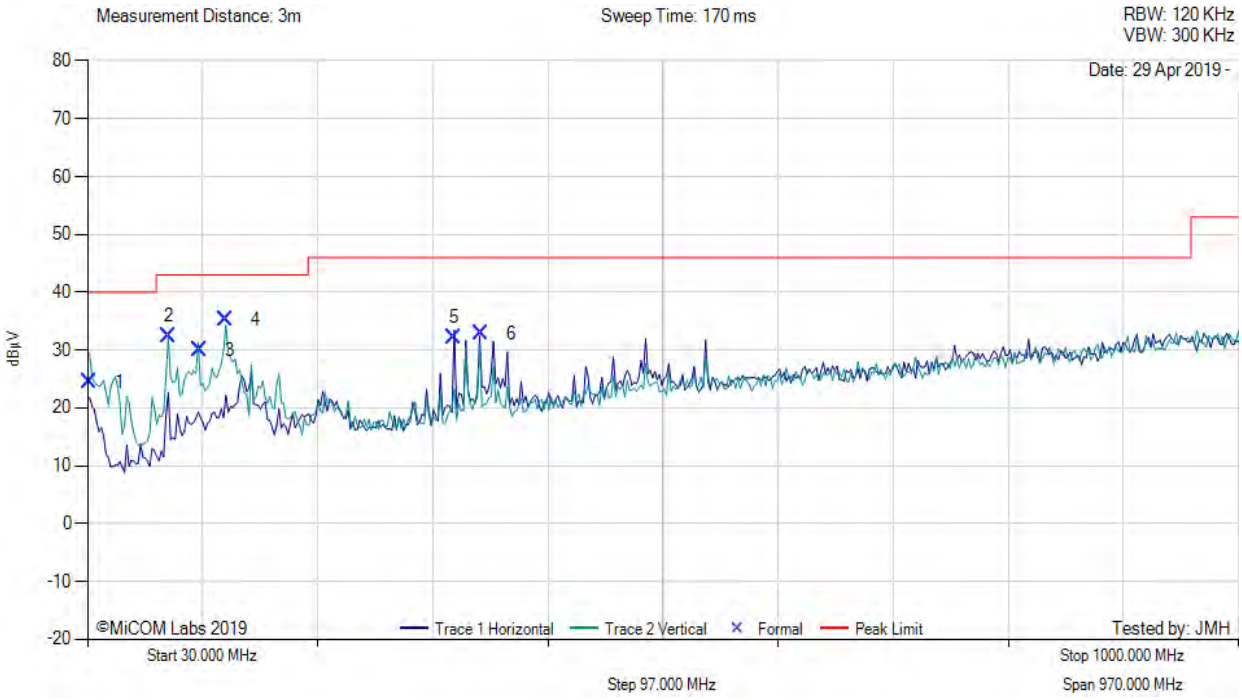
30.00 - 1000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	32.09	29.47	3.53	-8.70	24.30	MaxQP	Vertical	118	348	40.0	-15.7	Pass
2	98.11	46.44	4.00	-18.60	31.86	MaxQP	Vertical	105	6	43.0	-11.1	Pass
3	124.22	39.71	4.12	-14.60	29.23	MaxQP	Vertical	101	68	43.0	-13.8	Pass
4	146.44	47.37	4.23	-15.90	34.70	MaxQP	Vertical	101	175	43.0	-8.3	Pass
5	338.48	41.88	4.98	-13.70	33.16	MaxQP	Horizontal	105	253	46.0	-12.8	Pass
6	361.34	40.05	5.06	-12.70	32.41	MaxQP	Horizontal	102	276	46.0	-13.6	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back.

back to matrix

DIGITAL EMISSIONS

Variant: 802.11a, Test Freq: 5240.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 50



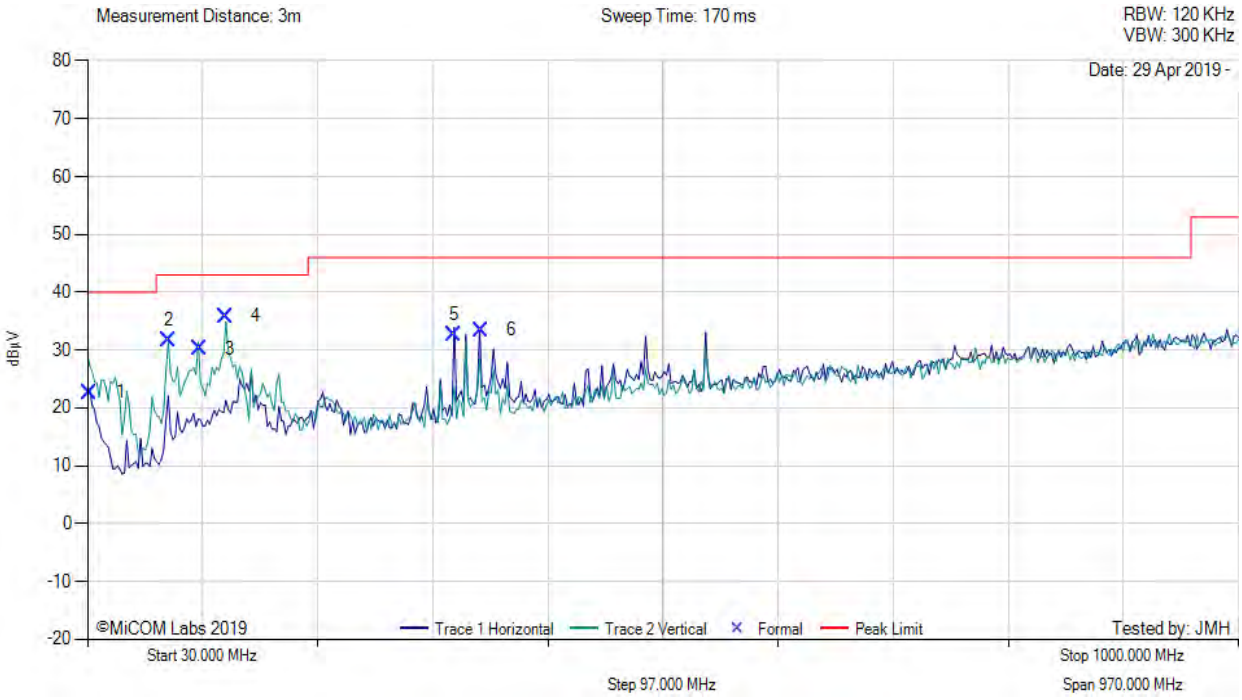
30.00 - 1000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	31.78	29.57	3.53	-8.70	24.40	MaxQP	Vertical	122	352	40.0	-15.6	Pass
2	98.06	47.03	4.00	-18.60	32.43	MaxQP	Vertical	101	1	43.0	-10.6	Pass
3	124.18	40.43	4.12	-14.60	29.95	MaxQP	Vertical	100	73	43.0	-13.1	Pass
4	146.67	46.99	4.23	-15.90	35.32	MaxQP	Vertical	99	171	43.0	-7.7	Pass
5	338.68	40.84	4.98	-13.70	32.12	MaxQP	Horizontal	101	257	46.0	-13.9	Pass
6	361.26	39.97	5.06	-12.70	32.93	MaxQP	Horizontal	100	270	46.0	-13.1	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back.

back to matrix

DIGITAL EMISSIONS

Variant: 802.11a, Test Freq: 5260.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 50



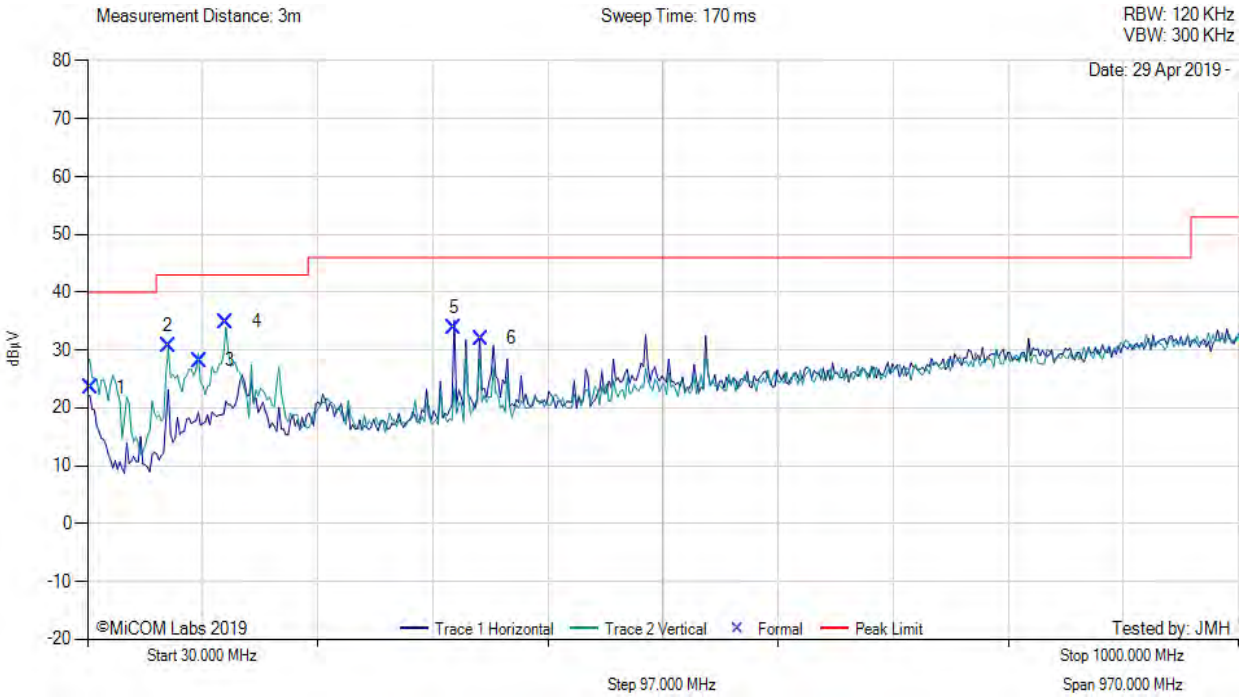
30.00 - 1000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	32.09	27.83	3.53	-8.70	22.66	MaxQP	Vertical	122	352	40.0	-17.3	Pass
2	98.11	46.29	4.00	-18.60	31.69	MaxQP	Vertical	101	1	43.0	-11.3	Pass
3	124.24	40.65	4.12	-14.60	30.17	MaxQP	Vertical	100	73	43.0	-12.8	Pass
4	146.54	47.53	4.23	-15.90	35.86	MaxQP	Vertical	102	176	43.0	-7.1	Pass
5	338.57	41.29	4.98	-13.70	32.57	MaxQP	Horizontal	101	257	46.0	-13.4	Pass
6	361.34	41.06	5.06	-12.70	33.42	MaxQP	Horizontal	100	270	46.0	-12.6	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back.

back to matrix

DIGITAL EMISSIONS

Variant: 802.11a, Test Freq: 5300.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 50



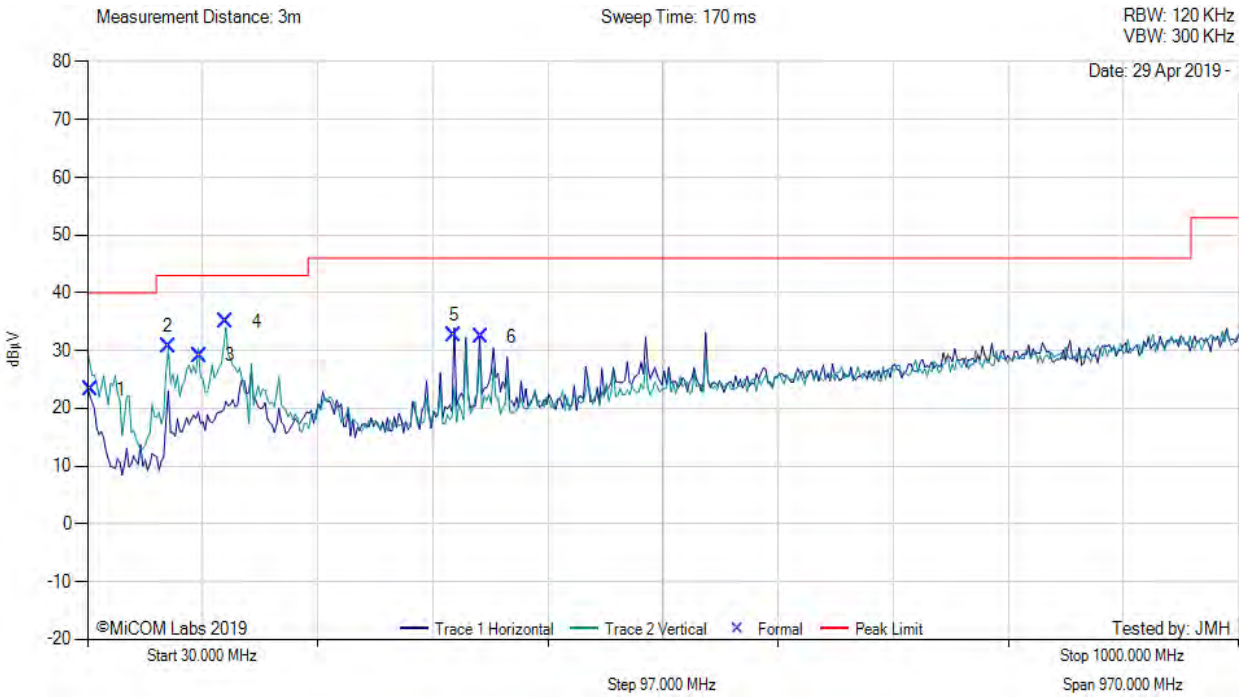
30.00 - 1000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	32.18	28.74	3.53	-8.70	23.57	MaxQP	Vertical	125	344	40.0	-16.4	Pass
2	98.05	45.38	4.00	-18.60	30.78	MaxQP	Vertical	108	4	43.0	-12.2	Pass
3	124.19	38.68	4.12	-14.60	28.20	MaxQP	Vertical	102	76	43.0	-14.8	Pass
4	146.69	46.54	4.23	-15.90	34.87	MaxQP	Vertical	100	174	43.0	-8.1	Pass
5	338.59	42.48	4.98	-13.70	33.76	MaxQP	Horizontal	105	263	46.0	-12.2	Pass
6	361.35	39.66	5.06	-12.70	32.02	MaxQP	Horizontal	104	268	46.0	-14.0	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back.

back to matrix

DIGITAL EMISSIONS

Variant: 802.11a, Test Freq: 5320.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 50



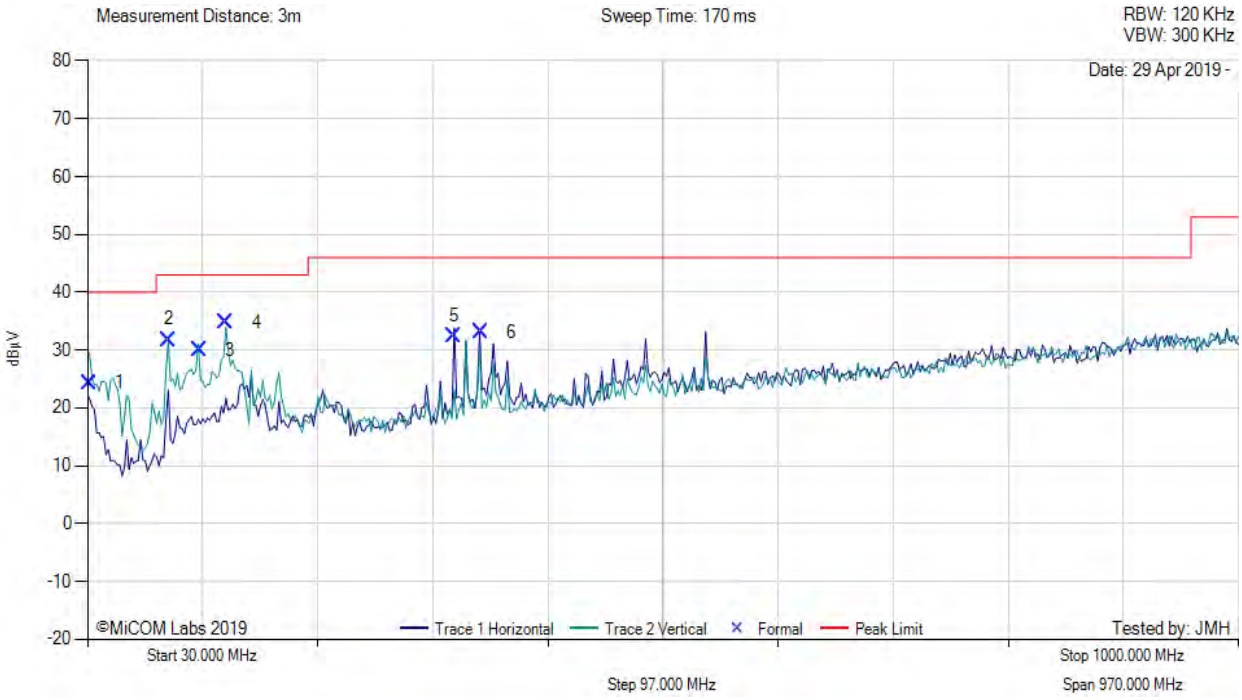
30.00 - 1000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	32.18	28.38	3.53	-8.70	23.21	MaxQP	Vertical	125	344	40.0	-16.8	Pass
2	98.05	45.32	4.00	-18.60	30.72	MaxQP	Vertical	108	4	43.0	-12.3	Pass
3	124.19	39.66	4.12	-14.60	29.18	MaxQP	Vertical	102	76	43.0	-13.8	Pass
4	146.69	46.62	4.23	-15.90	34.95	MaxQP	Vertical	100	174	43.0	-8.1	Pass
5	338.59	41.34	4.98	-13.70	32.62	MaxQP	Horizontal	105	263	46.0	-13.4	Pass
6	361.35	40.01	5.06	-12.70	32.37	MaxQP	Horizontal	104	268	46.0	-13.6	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back.

back to matrix

DIGITAL EMISSIONS

Variant: 802.11a, Test Freq: 5500.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 50



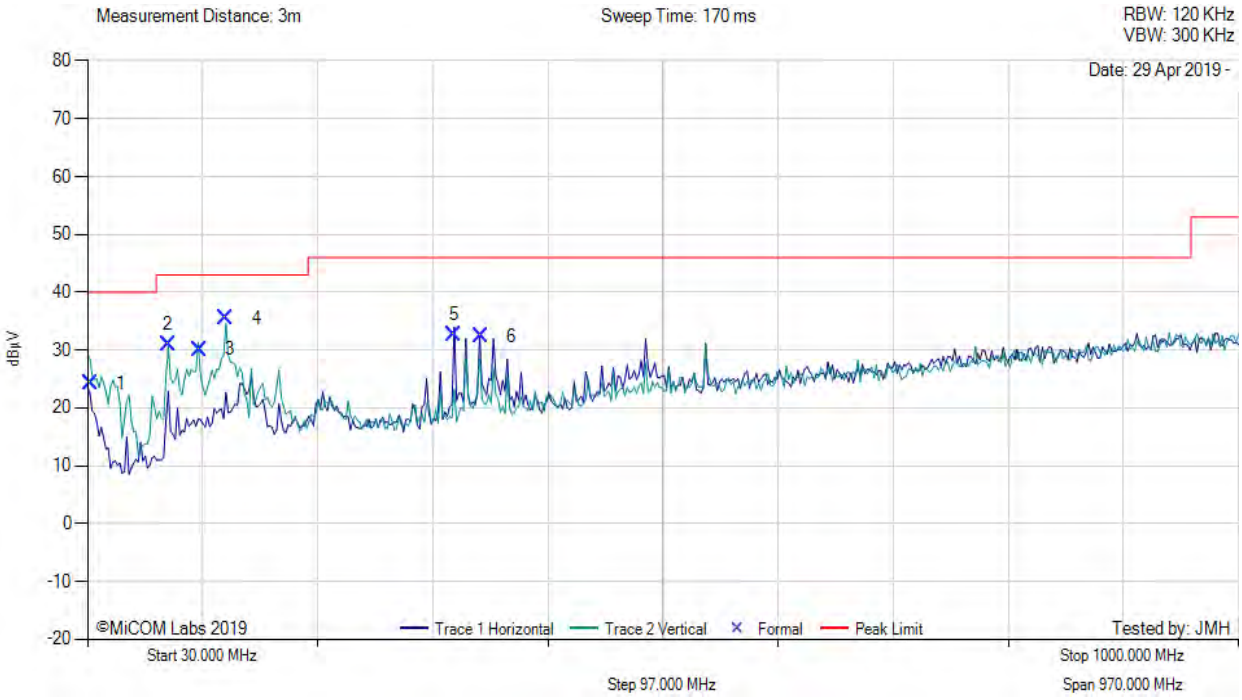
30.00 - 1000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	31.66	29.53	3.53	-8.70	24.36	MaxQP	Vertical	119	348	40.0	-15.6	Pass
2	98.11	46.35	4.00	-18.60	31.75	MaxQP	Vertical	106	5	43.0	-11.3	Pass
3	124.17	40.42	4.12	-14.60	29.94	MaxQP	Vertical	101	69	43.0	-13.1	Pass
4	146.78	46.51	4.23	-15.90	34.84	MaxQP	Vertical	102	168	43.0	-8.2	Pass
5	338.72	41.18	4.98	-13.70	32.46	MaxQP	Horizontal	100	255	46.0	-13.5	Pass
6	361.25	40.69	5.06	-12.70	33.05	MaxQP	Horizontal	103	273	46.0	-13.0	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back.

back to matrix

DIGITAL EMISSIONS

Variant: 802.11a, Test Freq: 5580.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 50



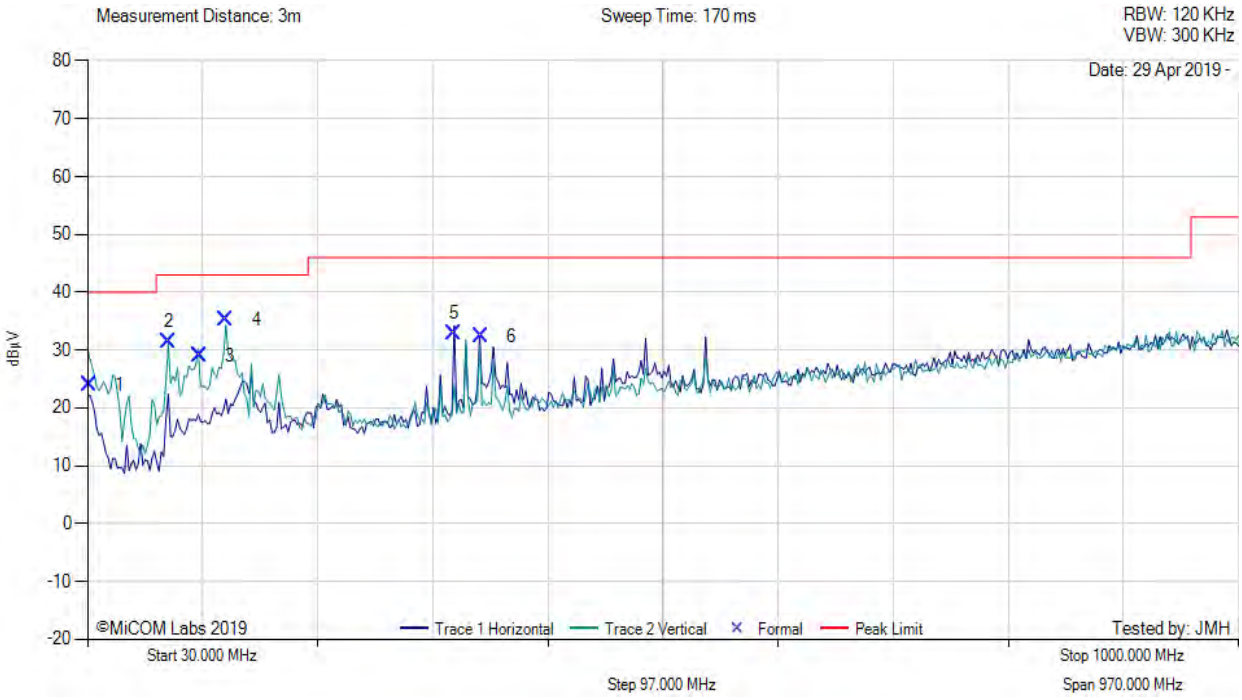
30.00 - 1000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	32.32	29.42	3.53	-8.70	24.25	MaxQP	Vertical	123	355	40.0	-15.8	Pass
2	98.04	45.60	4.00	-18.60	31.00	MaxQP	Vertical	103	0	43.0	-12.0	Pass
3	124.17	40.56	4.12	-14.60	30.08	MaxQP	Vertical	101	70	43.0	-12.9	Pass
4	146.70	47.18	4.23	-15.90	35.51	MaxQP	Vertical	100	176	43.0	-7.5	Pass
5	338.66	41.38	4.98	-13.70	32.66	MaxQP	Horizontal	103	249	46.0	-13.3	Pass
6	361.26	40.04	5.06	-12.70	32.40	MaxQP	Horizontal	102	275	46.0	-13.6	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back.

back to matrix

DIGITAL EMISSIONS

Variant: 802.11a, Test Freq: 5700.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 50



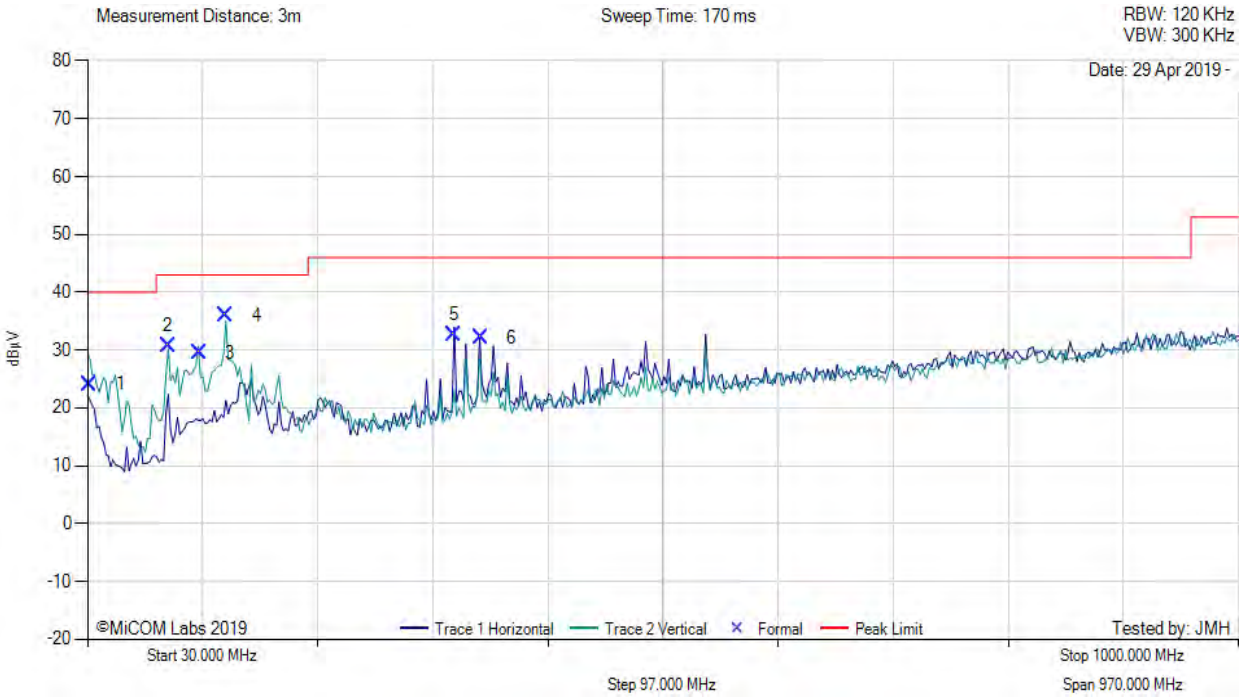
30.00 - 1000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	31.56	29.09	3.53	-8.70	23.92	MaxQP	Vertical	119	349	40.0	-16.1	Pass
2	98.09	46.08	4.00	-18.60	31.48	MaxQP	Vertical	105	4	43.0	-11.5	Pass
3	124.18	39.54	4.12	-14.60	29.06	MaxQP	Vertical	100	76	43.0	-13.9	Pass
4	146.69	46.95	4.23	-15.90	35.28	MaxQP	Vertical	102	170	43.0	-7.7	Pass
5	338.68	41.59	4.98	-13.70	32.87	MaxQP	Horizontal	101	253	46.0	-13.1	Pass
6	361.24	40.06	5.06	-12.70	32.42	MaxQP	Horizontal	102	273	46.0	-13.6	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back.

back to matrix

DIGITAL EMISSIONS

Variant: 802.11a, Test Freq: 5745.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 50



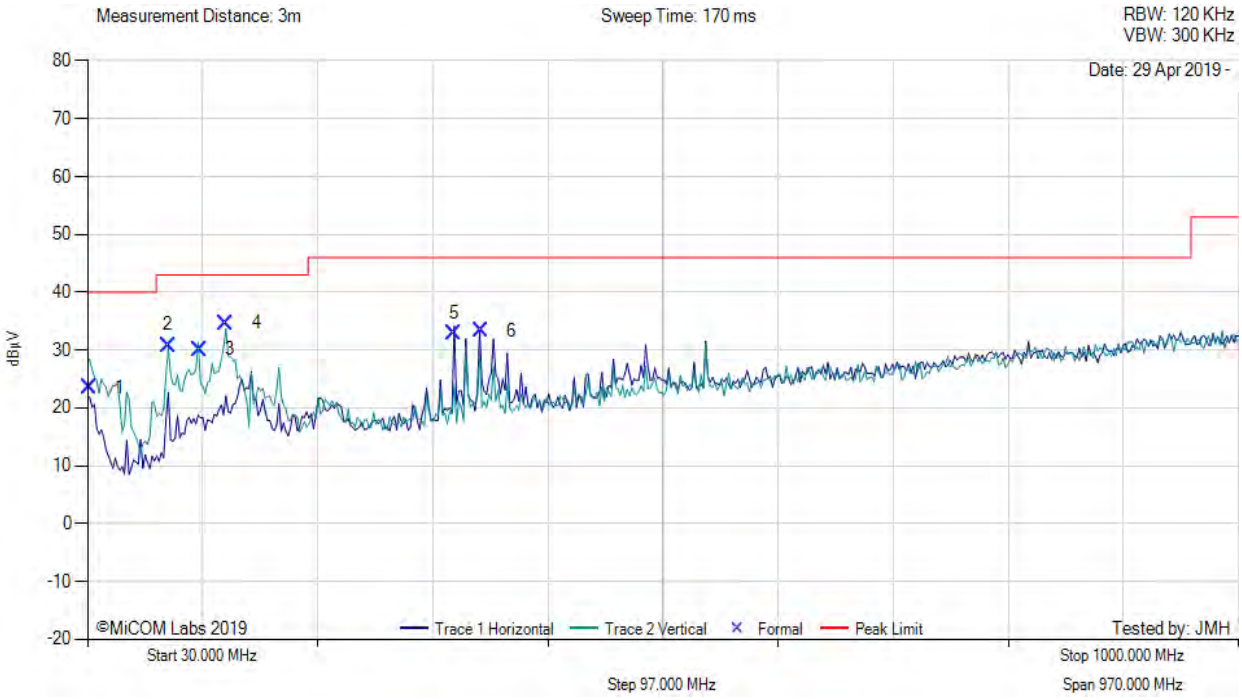
30.00 - 1000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	32.06	29.29	3.53	-8.70	24.12	MaxQP	Vertical	121	355	40.0	-15.9	Pass
2	98.03	45.27	4.00	-18.60	30.67	MaxQP	Vertical	103	5	43.0	-12.3	Pass
3	124.22	39.94	4.12	-14.60	29.46	MaxQP	Vertical	101	76	43.0	-13.6	Pass
4	146.76	47.62	4.23	-15.90	35.95	MaxQP	Vertical	100	175	43.0	-7.1	Pass
5	338.71	41.38	4.98	-13.70	32.66	MaxQP	Horizontal	103	259	46.0	-13.3	Pass
6	361.27	39.79	5.06	-12.70	32.15	MaxQP	Horizontal	100	268	46.0	-13.9	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back.

back to matrix

DIGITAL EMISSIONS

Variant: 802.11a, Test Freq: 5785.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 50



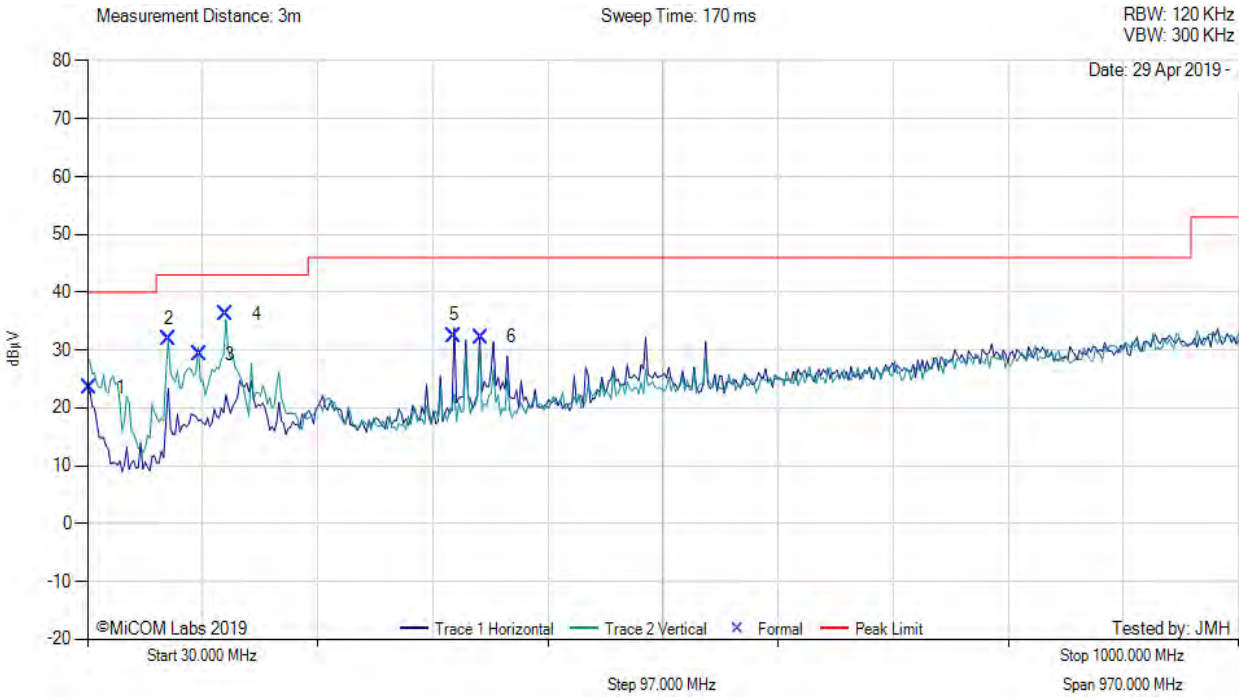
30.00 - 1000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	31.56	28.73	3.53	-8.70	23.56	MaxQP	Vertical	119	348	40.0	-16.4	Pass
2	98.03	45.44	4.00	-18.60	30.84	MaxQP	Vertical	100	2	43.0	-12.2	Pass
3	124.17	40.60	4.12	-14.60	30.12	MaxQP	Vertical	102	71	43.0	-12.9	Pass
4	146.69	46.30	4.23	-15.90	34.63	MaxQP	Vertical	102	169	43.0	-8.4	Pass
5	338.78	41.51	4.98	-13.70	32.79	MaxQP	Horizontal	106	251	46.0	-13.2	Pass
6	361.25	40.96	5.06	-12.70	33.32	MaxQP	Horizontal	100	274	46.0	-12.7	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back.

back to matrix

DIGITAL EMISSIONS

Variant: 802.11a, Test Freq: 5825.00 MHz, Antenna: MIMO, Power Setting: 18, Duty Cycle (%): 50



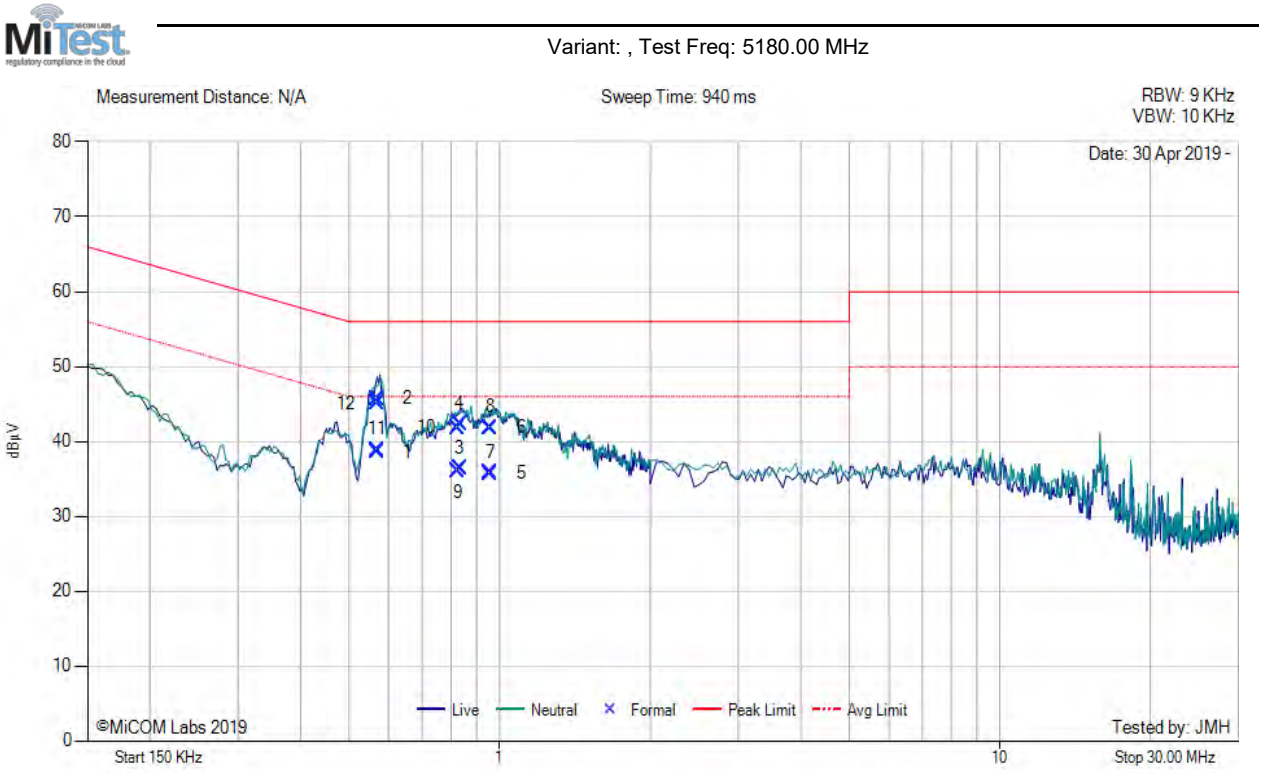
30.00 - 1000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	31.99	28.70	3.53	-8.70	23.53	MaxQP	Vertical	125	356	40.0	-16.5	Pass
2	98.08	46.47	4.00	-18.60	31.87	MaxQP	Vertical	105	5	43.0	-11.1	Pass
3	124.20	39.74	4.12	-14.60	29.26	MaxQP	Vertical	102	76	43.0	-13.8	Pass
4	146.77	47.87	4.23	-15.90	36.20	MaxQP	Vertical	104	173	43.0	-6.8	Pass
5	338.65	41.23	4.98	-13.70	32.51	MaxQP	Horizontal	104	261	46.0	-13.5	Pass
6	361.26	39.94	5.06	-12.70	32.30	MaxQP	Horizontal	103	267	46.0	-13.7	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back.

back to matrix

A.2. ac Wireline Emissions

Model:	S23	Configuration tested:	AC/DC PS
Input power:	120V_{AC}/60Hz	Standard:	FCC



Num	Frequency MHz	Raw dBµV	Cable Loss dB	Factor dB	Total Correction dBµV	Corrected Value dBµV	Measurement Type	Line	Limit dBµV/m	Margin dB	Pass /Fail
1	0.570	28.56	0.10	9.92	10.02	38.58	Max Avg	Live	46.0	-7.4	Pass
2	0.570	35.69	0.10	9.92	10.02	45.71	Max Qp	Live	56.0	-10.3	Pass
3	0.833	26.28	0.10	9.94	10.04	36.32	Max Avg	Neutral	46.0	-9.7	Pass
4	0.833	32.28	0.10	9.94	10.04	42.32	Max Qp	Neutral	56.0	-13.7	Pass
5	0.960	25.79	0.08	9.93	10.01	35.80	Max Avg	Neutral	46.0	-10.2	Pass
6	0.960	31.85	0.08	9.93	10.01	41.86	Max Qp	Neutral	56.0	-14.1	Pass
7	0.959	25.73	0.08	9.93	10.01	35.74	Max Avg	Live	46.0	-10.3	Pass
8	0.959	31.83	0.08	9.93	10.01	41.84	Max Qp	Live	56.0	-14.2	Pass
9	0.825	25.96	0.10	9.94	10.04	36.00	Max Avg	Live	46.0	-10.0	Pass
10	0.825	31.77	0.10	9.94	10.04	41.81	Max Qp	Live	56.0	-14.2	Pass
11	0.569	28.86	0.10	9.92	10.02	38.88	Max Avg	Live	46.0	-7.1	Pass
12	0.569	35.05	0.10	9.92	10.02	45.07	Max Qp	Live	56.0	-10.9	Pass

Test Notes: EUT powered by AC/DC PS 120V 60 Hz, connected to laptop via ethernet. 2nd ethernet cable connected to hub with traffic. Transmitting 2412b WiFi and BLE for maximum load. Audio ports looped back

back to matrix

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