

# TEST REPORT ADDENDUM - RADIATED

FROM



Test of: Actiontec Electronics Inc T3200BV, C2300A

To: FCC CFR 47 Part 15 Subpart E 15.407 (Non DFS bands)

Test Report Serial No.: ATEC23-U7 Radiated Rev A

**This report supersedes: NONE**

Note: this report is one of a set of reports that together address the requirements of the standard for certification purposes.

Master Document Number	Addendum Reports
ATEC23-U7_Master	ATEC23-U7_Conducted
	ATEC23-U7_Radiated
	ATEC23-U1 (FCC Part 15B & ICES-003)

Applicant: Actiontec Electronics Inc  
760 N Mary Avenue  
Sunnyvale, California 94085  
USA

Product Function: Bonded VDSL2/G.fast Wireless AC  
Gateway Router

Issue Date: 30th March 2017

## This Test Report is Issued Under the Authority of:

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## **1. DOCUMENT HISTORY**

Document History		
Revision	Date	Comments
Draft		
Rev A	30th March 2017	Initial release.
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In the above table the latest report revision will replace all earlier versions.

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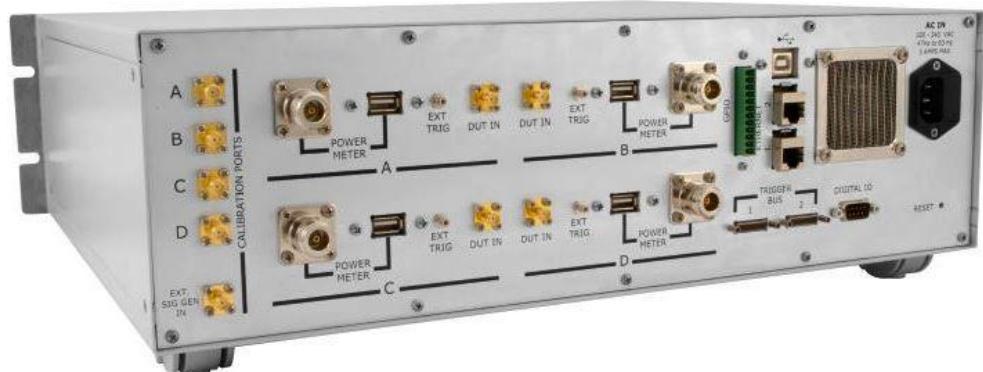
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## **MEASUREMENT AND PRESENTATION OF TEST DATA**

The measurement and graphical data presented in this test report was generated automatically using state-of-the-art technology creating an easy to read report structure. Numerical measurement data is separated from supporting graphical data (plots) through hyperlinks. Numerical measurement data can be reviewed without scrolling through numerous graphical pages to arrive at the next data matrix.

Plots have been relegated into the Appendix 'Graphical Data' Section of this report

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The MiCOM Labs "[MiTest](#)" Automated Test System" (Patent Pending)

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## **2. TEST SUMMARY**

### List of Measurements

Test Header	Result	Data Link
(b)(2) Radiated	Complies	-
i).. Restricted Band Emissions	Complies	-
Galtronics Custom PCB SMT	Complies	<a href="#">View Data</a>
ii).. Restricted Band-Edge Emissions	Complies	-
Galtronics Custom PCB SMT	Complies	<a href="#">View Data</a>

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### 3. TEST RESULTS

#### 3.1. Radiated

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

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**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 (dB $\mu$ V/m);

$$E = 1000000 \times \sqrt{30P} / 3 \mu\text{V/m}$$

where P is the EIRP in Watts

Therefore: -27 dBm/MHz equates to 68.23 dB $\mu$ V/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

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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).



**Title:** Actiontec Electronics Inc T3200BV, C2300A  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** ATEC23-U7 Radiated Rev A (Non-DFS)  
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### **3.1.1. TX Spurious & Restricted Band Emissions**

#### **3.1.1.1. Galtronic 5G**

##### **Equipment Configuration for TX Spurious & Restricted Band Emissions**

<b>Antenna:</b>	Galtronic 5G	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	5.70	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	99
<b>Channel Frequency (MHz):</b>	5180.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	23	<b>Tested By:</b>	JMH

##### **Test Measurement Results**

###### **1000.00 - 18000.00 MHz**

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss dB	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5186.97	74.87	3.68	-11.49	67.06	Fundamental	Vertical	101	0	--	--	
#2	6906.60	55.16	4.11	-7.54	51.73	Peak (NRB)	Horizontal	101	0	--	--	Pass
#3	10364.69	53.76	5.58	-5.25	54.09	Peak (NRB)	Vertical	101	0	--	--	Pass

Test Notes: EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control

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Equipment Configuration for TX Spurious & Restricted Band Emissions

<b>Antenna:</b>	Galtronic 5G	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	5.70	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	99
<b>Channel Frequency (MHz):</b>	5200.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	23	<b>Tested By:</b>	JMH

Test Measurement Results

1000.00 - 18000.00 MHz														
Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss dB	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail		
#1	5206.93	79.96	3.65	-11.44	72.17	Fundamental	Vertical	101	0	--	--			
#2	6933.29	55.41	4.11	-7.49	52.03	Peak (NRB)	Vertical	151	0	--	--	Pass		
#3	10401.45	55.38	5.42	-5.02	55.78	Peak (NRB)	Vertical	151	0	--	--	Pass		

Test Notes: EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control

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#### Equipment Configuration for TX Spurious & Restricted Band Emissions

<b>Antenna:</b>	Galtronic 5G	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	5.70	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	99
<b>Channel Frequency (MHz):</b>	5240.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	23	<b>Tested By:</b>	JMH

#### Test Measurement Results

1000.00 - 18000.00 MHz													
Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss dB	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail	
#1	5246.89	78.89	3.63	-11.35	71.17	Fundamental	Vertical	101	1	--	--		
#2	6986.57	55.24	4.13	-7.45	51.92	Peak (NRB)	Horizontal	151	219	--	--	Pass	
#3	10483.49	53.56	5.41	-4.44	54.53	Peak (NRB)	Vertical	101	1	--	--	Pass	
#4	15720.42	48.49	6.09	0.18	54.77	Max Peak	Horizontal	169	1	74.0	-19.2	Pass	
#5	15720.42	34.73	6.09	0.18	41.00	Max Avg	Horizontal	169	1	54.0	-13.0	Pass	

Test Notes: EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control

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#### Equipment Configuration for TX Spurious & Restricted Band Emissions

<b>Antenna:</b>	Galtronic 5G	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	5.60	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	99
<b>Channel Frequency (MHz):</b>	5745.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	23	<b>Tested By:</b>	JMH

#### Test Measurement Results

1000.00 - 18000.00 MHz													
Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss dB	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail	
#1	5752.51	76.24	3.84	-10.61	69.47	Fundamental	Vertical	101	1	--	--		
#2	6130.95	55.00	3.89	-9.32	49.57	Peak (NRB)	Horizontal	101	68	--	--	Pass	
#3	11491.45	59.49	5.44	-4.84	60.09	Max Peak	Vertical	114	100	74.0	-13.9	Pass	
#4	11491.45	45.66	5.44	-4.84	46.26	Max Avg	Vertical	114	100	54.0	-7.7	Pass	
#5	17233.72	46.66	6.43	0.35	53.44	Peak (NRB)	Vertical	101	1	--	--	Pass	

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Equipment Configuration for TX Spurious & Restricted Band Emissions

<b>Antenna:</b>	Galtronic 5G	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	5.60	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	99
<b>Channel Frequency (MHz):</b>	5785.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	23	<b>Tested By:</b>	JMH

Test Measurement Results

1000.00 - 18000.00 MHz														
Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss dB	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail		
#1	5782.32	77.85	3.80	-10.46	71.19	Fundamental	Horizontal	101	1	--	--			
#2	6133.63	55.57	3.88	-9.30	50.15	Peak (NRB)	Horizontal	101	0	--	--	Pass		
#3	9590.41	50.08	5.30	-6.00	49.38	Peak (NRB)	Horizontal	101	360	--	--	Pass		
#4	11188.86	50.37	5.36	-4.14	51.59	Max Peak	Horizontal	100	151	74.0	-22.4	Pass		
#5	11188.86	38.79	5.36	-4.14	40.01	Max Avg	Horizontal	100	151	54.0	-14.0	Pass		
#6	11556.50	58.18	5.70	-4.68	59.20	Max Peak	Horizontal	196	46	74.0	-14.8	Pass		
#7	11556.50	45.02	5.70	-4.68	46.04	Max Avg	Horizontal	196	46	54.0	-8.0	Pass		
#8	17355.67	45.57	6.27	-0.02	51.82	Peak (NRB)	Vertical	101	124	--	--	Pass		

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Equipment Configuration for TX Spurious & Restricted Band Emissions

<b>Antenna:</b>	Galtronic 5G	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	5.60	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	99
<b>Channel Frequency (MHz):</b>	5825.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	23	<b>Tested By:</b>	JMH

Test Measurement Results

1000.00 - 18000.00 MHz													
Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss dB	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail	
#1	5831.86	76.48	3.84	-10.22	70.10	Fundamental	Vertical	101	24	--	--		
#2	6069.70	56.80	3.88	-9.60	51.08	Peak (NRB)	Horizontal	101	218	--	--	Pass	
#3	11651.50	61.25	5.48	-4.46	62.27	Max Peak	Vertical	107	99	74.0	-11.7	Pass	
#4	11651.50	47.45	5.48	-4.46	48.47	Max Avg	Vertical	107	99	54.0	-5.5	Pass	
#5	17476.10	47.78	6.30	-0.59	53.49	Peak (NRB)	Vertical	101	30	--	--	Pass	

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### **3.1.2. Restricted Edge & Band-Edge Emissions**

#### **3.1.2.2. Galtronic 5G**

#### **RESULTS SUMMARY FOR RADIATED BAND-EDGE EMISSIONS**

5150 - 5250 MHz

Galtronic 5G		Band-Edge Freq	Limit 74.0dB $\mu$ V/m	Limit 54.0dB $\mu$ V/m	Power Setting
Operational Mode	Operating Frequency (MHz)	MHz	dB $\mu$ V/m	dB $\mu$ V/m	
802.11a	5180.00	5150.00	67.03	53.35	22
802.11ac-80	5210.00	5150.00	68.40	52.11	17
802.11n HT-20	5180.00	5150.00	66.50	53.15	22
802.11n HT-40	5190.00	5150.00	65.79	53.15	17

#### **5725 MHz Radiated Lower Band-Edge Emissions**

Galtronic 5G		Band-Edge Freq	Limit 110.8dB $\mu$ V/m	Limit 122.2dB $\mu$ V/m	Power Setting
Operational Mode	Operating Frequency (MHz)	MHz	dB $\mu$ V/m	dB $\mu$ V/m	
802.11a	5745.00	5725.00	57.86	62.05	23
802.11ac-80	5775.00	5725.00	65.82	67.86	23
802.11n HT-20	5745.00	5725.00	59.11	67.54	23
802.11n HT-40	5755.00	5725.00	63.55	67.65	23

#### **5850 MHz Radiated Higher Band-Edge Emissions**

Galtronic 5G		Band-Edge Freq	Limit 122.2dB $\mu$ V/m	Limit 110.8dB $\mu$ V/m	Power Setting
Operational Mode	Operating Frequency (MHz)	MHz	dB $\mu$ V/m	dB $\mu$ V/m	
802.11a	5825.00	5850.00	61.04	58.57	23
802.11ac-80	5775.00	5850.00	64.56	63.56	23
802.11n HT-20	5825.00	5850.00	60.28	56.38	23
802.11n HT-40	5795.00	5850.00	58.54	57.54	23

Click on the links to view the data.

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**Title:** Actiontec Electronics Inc T3200BV, C2300A  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** ATEC23-U7 Radiated Rev A (Non-DFS)  
**Issue Date:** 30th March 2017  
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**Equipment Configuration for Restricted Lower Band-Edge Emissions**

<b>Antenna:</b>	Galtronic 5G	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	5.70	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	99
<b>Channel Frequency (MHz):</b>	5180.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

**Test Measurement Results**

4500.00 - 5200.00 MHz													
Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss dB	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail	
#1	5148.60	15.57	3.67	34.11	53.35	Max Avg	Horizontal	159	84	54.0	-0.7	Pass	
#2	5148.60	29.25	3.67	34.11	67.03	Max Peak	Horizontal	159	84	74.0	-7.0	Pass	
#3	5150.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--	

Test Notes: EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control. Power reduced to 22 to meet band edge limit.

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**Title:** Actiontec Electronics Inc T3200BV, C2300A  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** ATEC23-U7 Radiated Rev A (Non-DFS)  
**Issue Date:** 30th March 2017  
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**Equipment Configuration for Restricted Lower Band-Edge Emissions**

<b>Antenna:</b>	Galtronic 5G	<b>Variant:</b>	802.11ac-80
<b>Antenna Gain (dBi):</b>	5.70	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	99
<b>Channel Frequency (MHz):</b>	5210.00	<b>Data Rate:</b>	29.30 MBit/s
<b>Power Setting:</b>	17	<b>Tested By:</b>	JMH

**Test Measurement Results**

4500.00 - 5220.00 MHz													
Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss dB	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail	
#1	5150.00	14.33	3.67	34.11	52.11	Max Avg	Horizontal	159	84	54.0	-1.9	Pass	
#2	5150.00	30.62	3.67	34.11	68.40	Max Peak	Horizontal	159	84	74.0	-5.6	Pass	
#3	5150.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--	

Test Notes: EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control. Power reduced to 17 to meet band edge limit.

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**Title:** Actiontec Electronics Inc T3200BV, C2300A  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
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**Issue Date:** 30th March 2017  
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**Equipment Configuration for Restricted Lower Band-Edge Emissions**

<b>Antenna:</b>	Galtronic 5G	<b>Variant:</b>	802.11n HT-20
<b>Antenna Gain (dBi):</b>	5.70	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	99
<b>Channel Frequency (MHz):</b>	5180.00	<b>Data Rate:</b>	6.50 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

**Test Measurement Results**

4500.00 - 5200.00 MHz													
Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss dB	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail	
#1	5147.19	15.36	3.68	34.11	53.15	Max Avg	Horizontal	159	84	54.0	-0.9	Pass	
#2	5148.60	28.72	3.67	34.11	66.50	Max Peak	Horizontal	159	84	74.0	-7.5	Pass	
#3	5150.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--	

Test Notes: EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control. Power reduced to 22 to meet band edge limit.

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**To:** FCC CFR 47 Part 15 Subpart E 15.407  
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**Issue Date:** 30th March 2017  
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#### Equipment Configuration for Restricted Lower Band-Edge Emissions

<b>Antenna:</b>	Galtronic 5G	<b>Variant:</b>	802.11n HT-40
<b>Antenna Gain (dBi):</b>	5.70	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	99
<b>Channel Frequency (MHz):</b>	5190.00	<b>Data Rate:</b>	13.50 MBit/s
<b>Power Setting:</b>	17	<b>Tested By:</b>	JMH

#### Test Measurement Results

4500.00 - 5200.00 MHz													
Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss dB	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail	
#1	5150.00	15.37	3.67	34.11	53.15	Max Avg	Horizontal	159	84	54.0	-0.9	Pass	
#2	5150.00	28.01	3.67	34.11	65.79	Max Peak	Horizontal	159	84	74.0	-8.2	Pass	
#3	5150.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--	

Test Notes: EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control. Power reduced to 17 to meet band edge limit.

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**To:** FCC CFR 47 Part 15 Subpart E 15.407  
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**Issue Date:** 30th March 2017  
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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Galtronic 5G	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	5.60	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	99
<b>Channel Frequency (MHz):</b>	5745.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	23	<b>Tested By:</b>	JMH

Test Measurement Results

5600.00 - 5750.00 MHz													
Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss dB	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail	
#1	5708.69	19.68	3.84	34.34	57.86	Max Avg	Horizontal	189	75	107.7	-49.9	Pass	
#2	5725.00	23.91	3.79	34.35	62.05	Max Avg	Horizontal	189	75	122.2	-60.2	Pass	
#3	5725.00	--	--	--	--	Band-Edge	--	--	--	--	--	--	

Test Notes: EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control.

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**To:** FCC CFR 47 Part 15 Subpart E 15.407  
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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Galtronic 5G	<b>Variant:</b>	802.11ac-80
<b>Antenna Gain (dBi):</b>	5.60	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	99
<b>Channel Frequency (MHz):</b>	5775.00	<b>Data Rate:</b>	29.30 MBit/s
<b>Power Setting:</b>	23	<b>Tested By:</b>	JMH

Test Measurement Results

5600.00 - 5805.00 MHz													
Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss dB	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail	
#1	5710.48	27.64	3.84	34.34	65.82	Max Avg	Horizontal	189	75	108.0	-42.2	Pass	
#2	5724.59	29.72	3.79	34.35	67.86	Max Avg	Horizontal	189	75	122.2	-54.3	Pass	
#3	5725.00	--	--	--	--	Band-Edge	--	--	--	--	--	--	

Test Notes: EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control.

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**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** ATEC23-U7 Radiated Rev A (Non-DFS)  
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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Galtronic 5G	<b>Variant:</b>	802.11n HT-20
<b>Antenna Gain (dBi):</b>	5.60	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	99
<b>Channel Frequency (MHz):</b>	5745.00	<b>Data Rate:</b>	6.50 MBit/s
<b>Power Setting:</b>	23	<b>Tested By:</b>	JMH

Test Measurement Results

5600.00 - 5755.00 MHz													
Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss dB	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail	
#1	5715.00	20.96	3.81	34.34	59.11	Max Avg	Horizontal	189	75	109.4	-50.3	Pass	
#2	5725.00	29.40	3.79	34.35	67.54	Max Avg	Horizontal	189	75	122.2	-54.7	Pass	
#3	5725.00	--	--	--	--	Band-Edge	--	--	--	--	--	--	

Test Notes: EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control.

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**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** ATEC23-U7 Radiated Rev A (Non-DFS)  
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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Galtronic 5G	<b>Variant:</b>	802.11n HT-40
<b>Antenna Gain (dBi):</b>	5.60	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	99
<b>Channel Frequency (MHz):</b>	5755.00	<b>Data Rate:</b>	13.50 MBit/s
<b>Power Setting:</b>	23	<b>Tested By:</b>	JMH

Test Measurement Results

5600.00 - 5765.00 MHz													
Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss dB	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail	
#1	5715.00	25.40	3.81	34.34	63.55	Max Avg	Horizontal	189	75	109.4	-45.9	Pass	
#2	5725.00	29.51	3.79	34.35	67.65	Max Avg	Horizontal	189	75	122.2	-54.6	Pass	
#3	5725.00	--	--	--	--	Band-Edge	--	--	--	--	--	--	

Test Notes: EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control.

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Galtronic 5G	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	5.60	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	99
<b>Channel Frequency (MHz):</b>	5825.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	23	<b>Tested By:</b>	JMH

Test Measurement Results

5815.00 - 6000.00 MHz													
Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss dB	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail	
#1	5850.00	22.60	3.81	34.63	61.04	Max Avg	Horizontal	189	75	122.2	-61.2	Pass	
#3	5860.00	20.06	3.86	34.65	58.57	Max Avg	Horizontal	189	75	109.4	-50.8	Pass	
#2	5850.00	--	--	--	--	Band-Edge	--	--	--	--	--	--	

Test Notes: EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control.

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Galtronic 5G	<b>Variant:</b>	802.11ac-80
<b>Antenna Gain (dBi):</b>	5.60	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	99
<b>Channel Frequency (MHz):</b>	5775.00	<b>Data Rate:</b>	29.30 MBit/s
<b>Power Setting:</b>	23	<b>Tested By:</b>	JMH

Test Measurement Results

5735.00 - 6000.00 MHz													
Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss dB	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail	
#1	5850.00	26.12	3.81	34.63	64.56	Max Avg	Horizontal	189	75	122.2	-57.6	Pass	
#3	5860.00	25.05	3.86	34.65	63.56	Max Avg	Horizontal	189	75	109.4	-45.8	Pass	
#2	5850.00	--	--	--	--	Band-Edge	--	--	--	--	--	--	

Test Notes: EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control.

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**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** ATEC23-U7 Radiated Rev A (Non-DFS)  
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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Galtronic 5G	<b>Variant:</b>	802.11n HT-20
<b>Antenna Gain (dBi):</b>	5.60	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	99
<b>Channel Frequency (MHz):</b>	5825.00	<b>Data Rate:</b>	6.50 MBit/s
<b>Power Setting:</b>	23	<b>Tested By:</b>	JMH

Test Measurement Results

5815.00 - 6000.00 MHz													
Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss dB	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail	
#1	5850.00	21.84	3.81	34.63	60.28	Max Avg	Horizontal	189	75	122.2	-61.9	Pass	
#3	5860.00	17.87	3.86	34.65	56.38	Max Avg	Horizontal	189	75	109.4	-53.0	Pass	
#2	5850.00	--	--	--	--	Band-Edge	--	--	--	--	--	--	

Test Notes: EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control.

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Galtronic 5G	<b>Variant:</b>	802.11n HT-40
<b>Antenna Gain (dBi):</b>	5.60	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	99
<b>Channel Frequency (MHz):</b>	5795.00	<b>Data Rate:</b>	13.50 MBit/s
<b>Power Setting:</b>	23	<b>Tested By:</b>	JMH

Test Measurement Results

5775.00 - 6000.00 MHz													
Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss dB	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail	
#1	5850.00	20.10	3.81	34.63	58.54	Max Avg	Horizontal	189	75	122.2	-63.7	Pass	
#3	5860.00	19.03	3.86	34.65	57.54	Max Avg	Horizontal	189	75	109.4	-51.9	Pass	
#2	5850.00	--	--	--	--	Band-Edge	--	--	--	--	--	--	

Test Notes: EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control.

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## **A. APPENDIX - GRAPHICAL IMAGES**

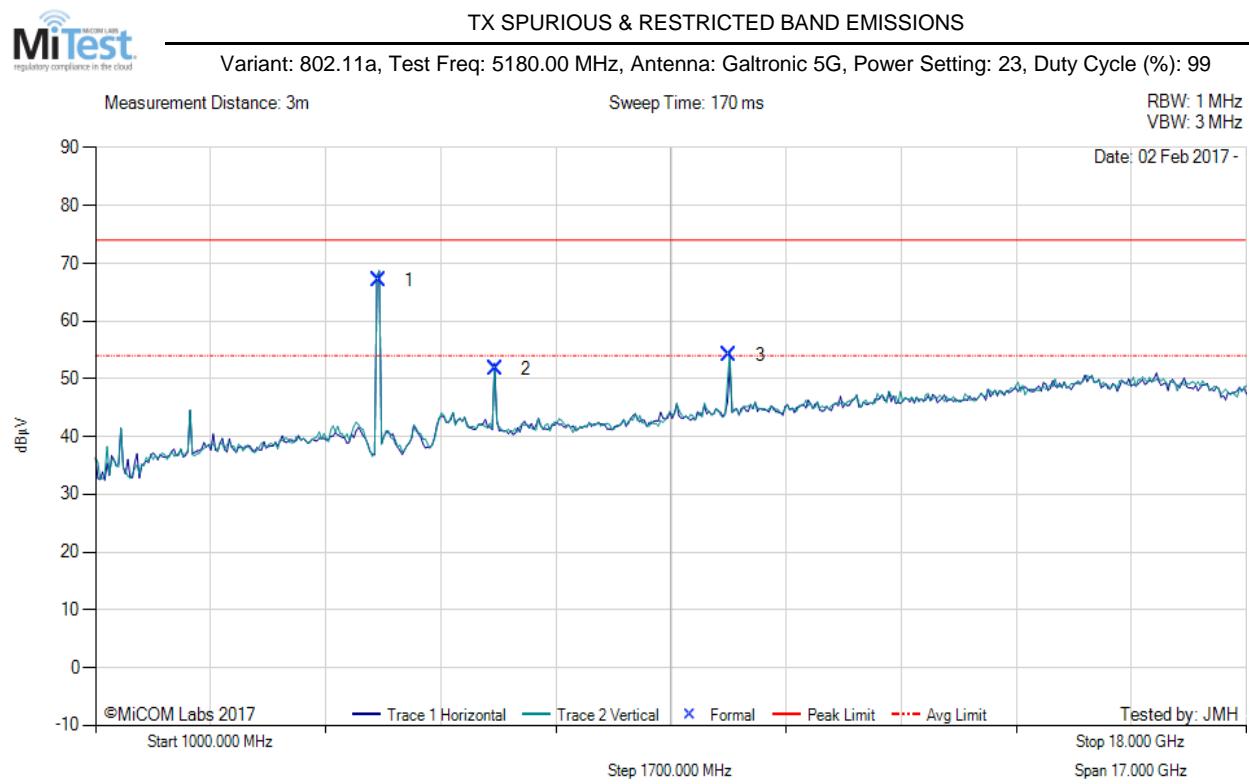
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## A.1. Radiated

### A.1.1. TX Spurious & Restricted Band Emissions

#### A.1.1.1. Galtronic 5G

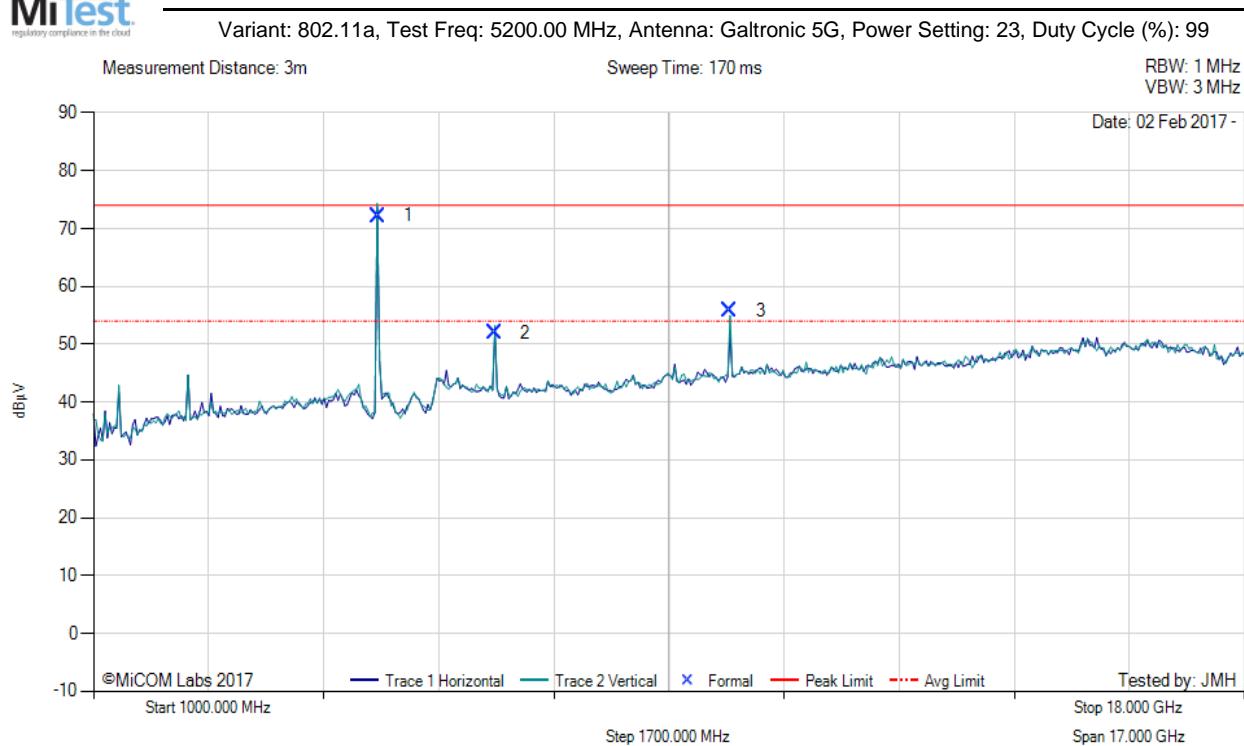


1000.00 - 18000.00 MHz													
Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss dB	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail	
1	5186.97	74.87	3.68	-11.49	67.06	Fundamental	Vertical	101	0	--	--		
2	6906.60	55.16	4.11	-7.54	51.73	Peak (NRB)	Horizontal	101	0	--	--	Pass	
3	10364.69	53.76	5.58	-5.25	54.09	Peak (NRB)	Vertical	101	0	--	--	Pass	

**Test Notes:** EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control

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### TX SPURIOUS & RESTRICTED BAND EMISSIONS



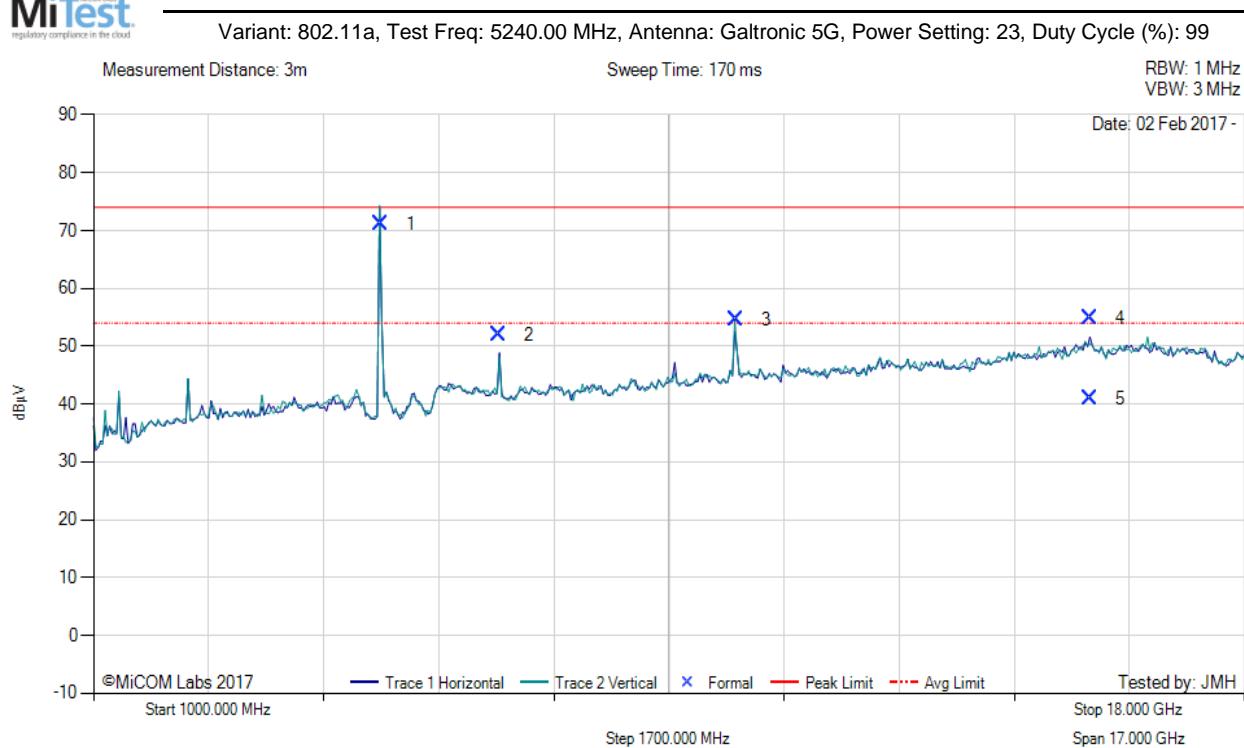
1000.00 - 18000.00 MHz													
Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail	
1	5206.93	79.96	3.65	-11.44	72.17	Fundamental	Vertical	101	0	--	--		
2	6933.29	55.41	4.11	-7.49	52.03	Peak (NRB)	Vertical	151	0	--	--	Pass	
3	10401.45	55.38	5.42	-5.02	55.78	Peak (NRB)	Vertical	151	0	--	--	Pass	

**Test Notes:** EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control

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### TX SPURIOUS & RESTRICTED BAND EMISSIONS



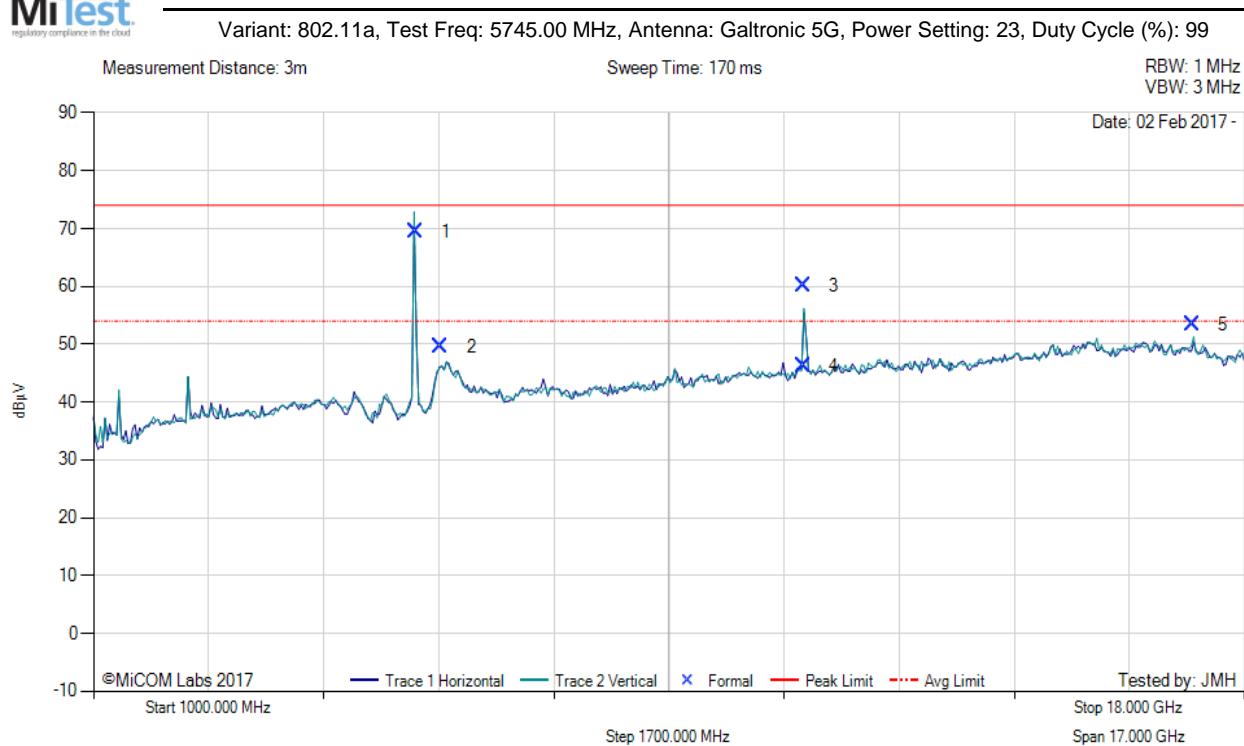
1000.00 - 18000.00 MHz														
Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss dB	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail		
1	5246.89	78.89	3.63	-11.35	71.17	Fundamental	Vertical	101	1	--	--			
2	6986.57	55.24	4.13	-7.45	51.92	Peak (NRB)	Horizontal	151	219	--	--	Pass		
3	10483.49	53.56	5.41	-4.44	54.53	Peak (NRB)	Vertical	101	1	--	--	Pass		
4	15720.42	48.49	6.09	0.18	54.77	Max Peak	Horizontal	169	1	74.0	-19.2	Pass		
5	15720.42	34.73	6.09	0.18	41.00	Max Avg	Horizontal	169	1	54.0	-13.0	Pass		

**Test Notes:** EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control

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### TX SPURIOUS & RESTRICTED BAND EMISSIONS



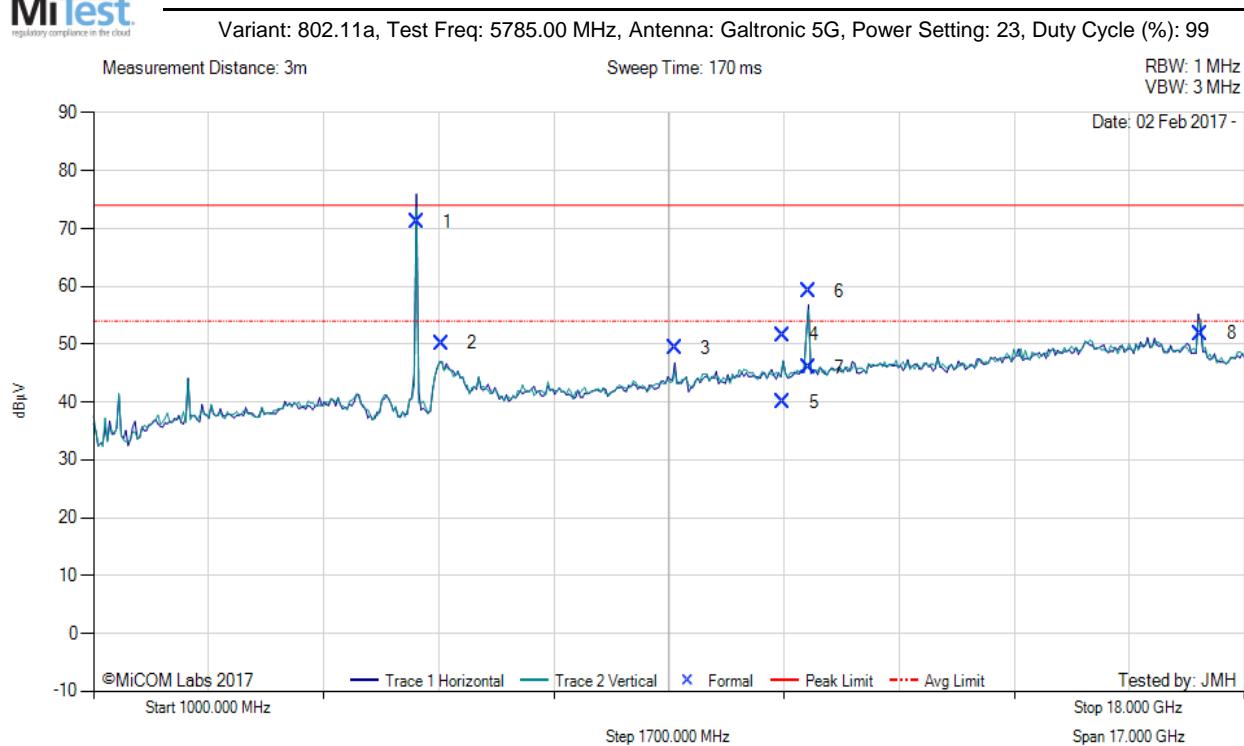
1000.00 - 18000.00 MHz													
Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss dB	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail	
1	5752.51	76.24	3.84	-10.61	69.47	Fundamental	Vertical	101	1	--	--		
2	6130.95	55.00	3.89	-9.32	49.57	Peak (NRB)	Horizontal	101	68	--	--	Pass	
3	11491.45	59.49	5.44	-4.84	60.09	Max Peak	Vertical	114	100	74.0	-13.9	Pass	
4	11491.45	45.66	5.44	-4.84	46.26	Max Avg	Vertical	114	100	54.0	-7.7	Pass	
5	17233.72	46.66	6.43	0.35	53.44	Peak (NRB)	Vertical	101	1	--	--	Pass	

**Test Notes:** EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control

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### TX SPURIOUS & RESTRICTED BAND EMISSIONS

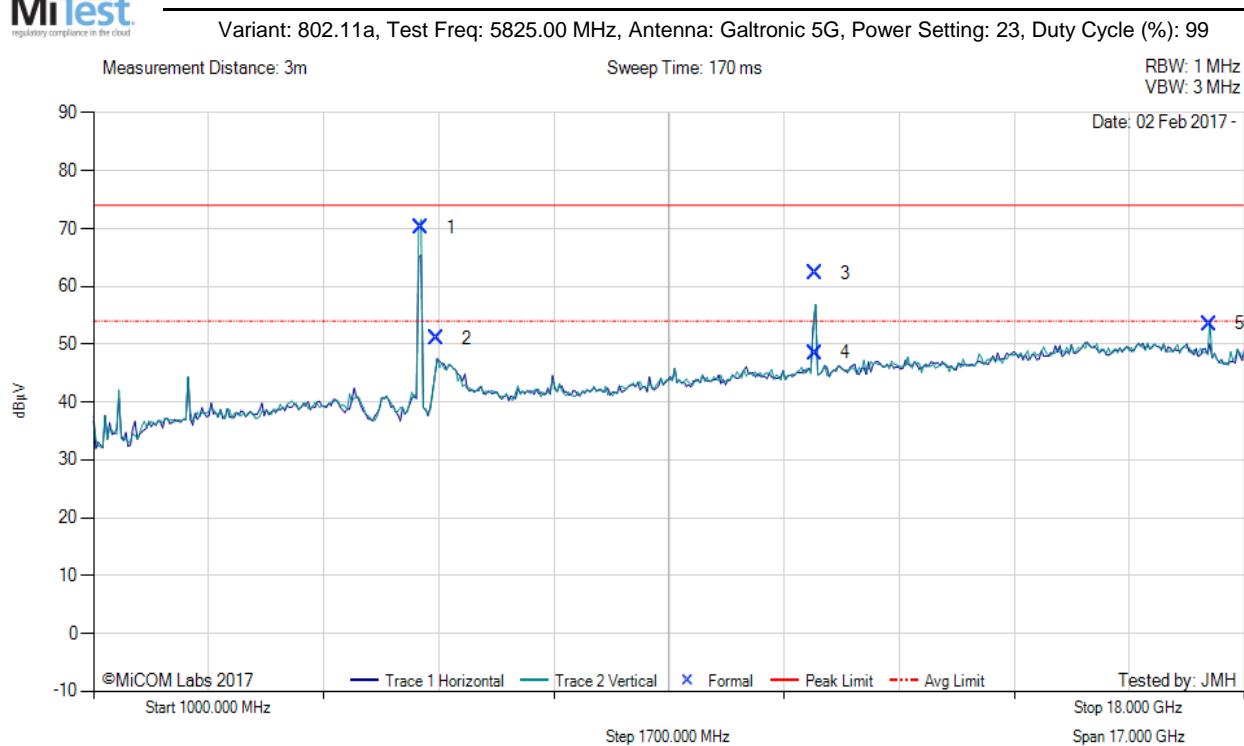


1000.00 - 18000.00 MHz														
Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss dB	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail		
1	5782.32	77.85	3.80	-10.46	71.19	Fundamental	Horizontal	101	1	--	--			
2	6133.63	55.57	3.88	-9.30	50.15	Peak (NRB)	Horizontal	101	0	--	--	Pass		
3	9590.41	50.08	5.30	-6.00	49.38	Peak (NRB)	Horizontal	101	360	--	--	Pass		
4	11188.86	50.37	5.36	-4.14	51.59	Max Peak	Horizontal	100	151	74.0	-22.4	Pass		
5	11188.86	38.79	5.36	-4.14	40.01	Max Avg	Horizontal	100	151	54.0	-14.0	Pass		
6	11556.50	58.18	5.70	-4.68	59.20	Max Peak	Horizontal	196	46	74.0	-14.8	Pass		
7	11556.50	45.02	5.70	-4.68	46.04	Max Avg	Horizontal	196	46	54.0	-8.0	Pass		
8	17355.67	45.57	6.27	-0.02	51.82	Peak (NRB)	Vertical	101	124	--	--	Pass		

**Test Notes:** EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control

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### TX SPURIOUS & RESTRICTED BAND EMISSIONS



1000.00 - 18000.00 MHz														
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail		
1	5831.86	76.48	3.84	-10.22	70.10	Fundamental	Vertical	101	24	--	--			
2	6069.70	56.80	3.88	-9.60	51.08	Peak (NRB)	Horizontal	101	218	--	--	Pass		
3	11651.50	61.25	5.48	-4.46	62.27	Max Peak	Vertical	107	99	74.0	-11.7	Pass		
4	11651.50	47.45	5.48	-4.46	48.47	Max Avg	Vertical	107	99	54.0	-5.5	Pass		
5	17476.10	47.78	6.30	-0.59	53.49	Peak (NRB)	Vertical	101	30	--	--	Pass		

**Test Notes:** EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control

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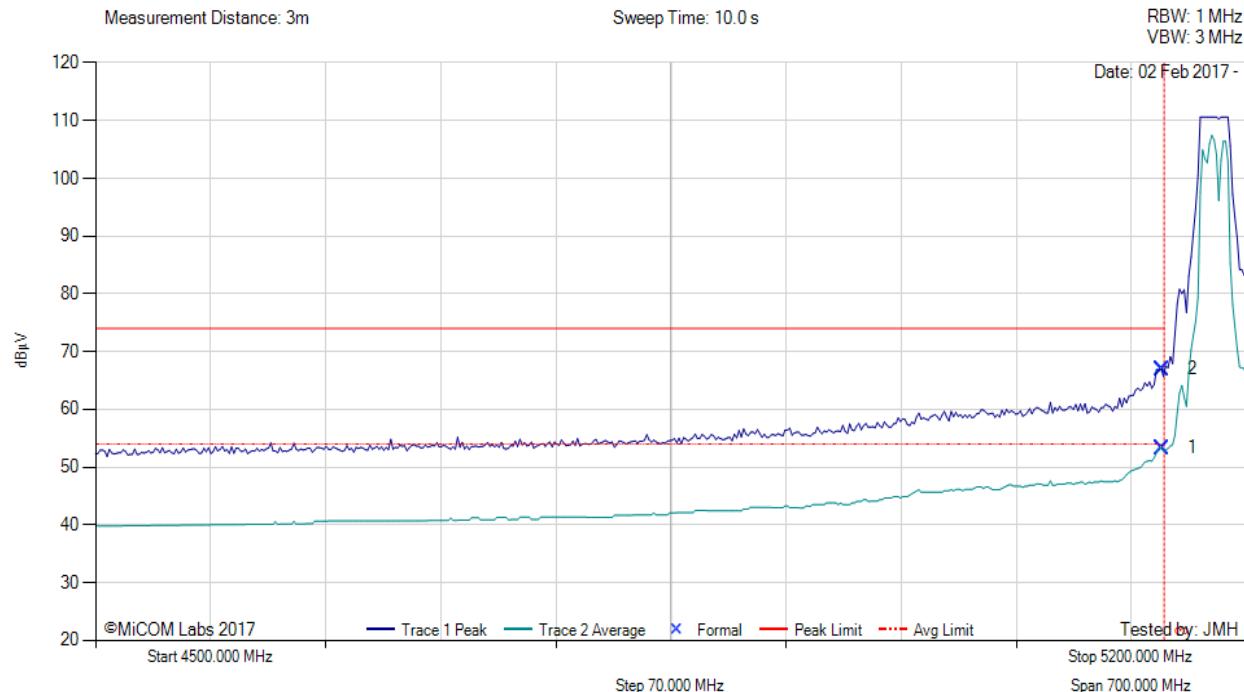
### A.1.2. Restricted Edge & Band-Edge Emissions

#### A.1.2.2. Galtronic 5G



#### RESTRICTED LOWER BAND-EDGE EMISSIONS

Variant: 802.11a, Test Freq: 5180.00 MHz, Antenna: Galtronic 5G, Power Setting: 22, Duty Cycle (%): 99



4500.00 - 5200.00 MHz													
Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail	
1	5148.60	15.57	3.67	34.11	53.35	Max Avg	Horizontal	159	84	54.0	-0.7	Pass	
2	5148.60	29.25	3.67	34.11	67.03	Max Peak	Horizontal	159	84	74.0	-7.0	Pass	
3	5150.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--	

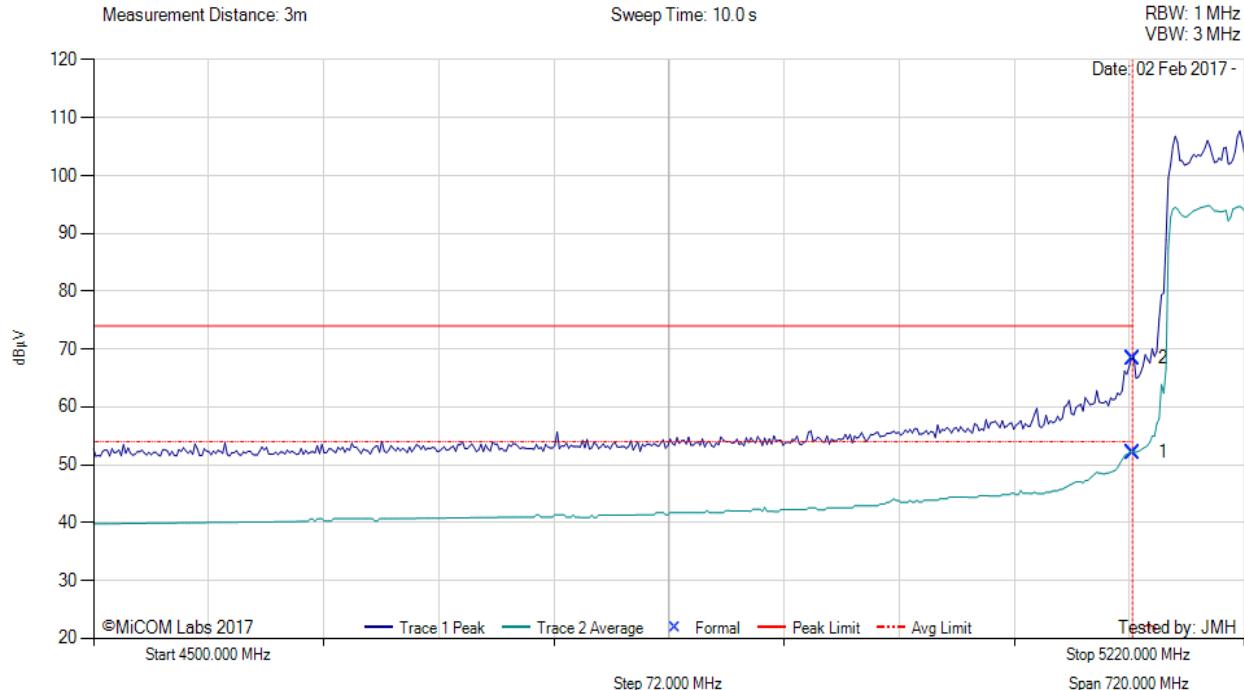
**Test Notes:** EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control. Power reduced to 22 to meet band edge limit.

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RESTRICTED LOWER BAND-EDGE EMISSIONS

Variant: 802.11ac-80, Test Freq: 5210.00 MHz, Antenna: Galtronic 5G, Power Setting: 17, Duty Cycle (%): 99



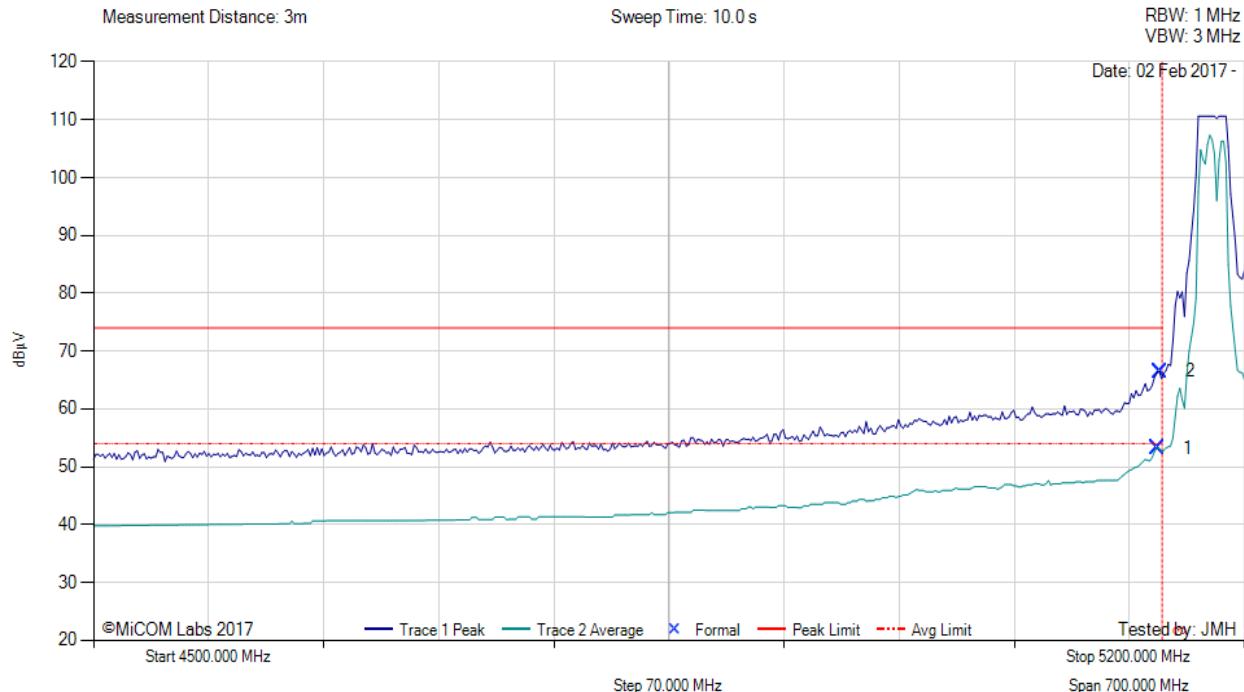
4500.00 - 5220.00 MHz													
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail	
1	5150.00	14.33	3.67	34.11	52.11	Max Avg	Horizontal	159	84	54.0	-1.9	Pass	
2	5150.00	30.62	3.67	34.11	68.40	Max Peak	Horizontal	159	84	74.0	-5.6	Pass	
3	5150.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--	

**Test Notes:** EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control. Power reduced to 17 to meet band edge limit.

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RESTRICTED LOWER BAND-EDGE EMISSIONS

Variant: 802.11n HT-20, Test Freq: 5180.00 MHz, Antenna: Galtronic 5G, Power Setting: 22, Duty Cycle (%): 99



4500.00 - 5200.00 MHz													
Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss dB	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail	
1	5147.19	15.36	3.68	34.11	53.15	Max Avg	Horizontal	159	84	54.0	-0.9	Pass	
2	5148.60	28.72	3.67	34.11	66.50	Max Peak	Horizontal	159	84	74.0	-7.5	Pass	
3	5150.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--	

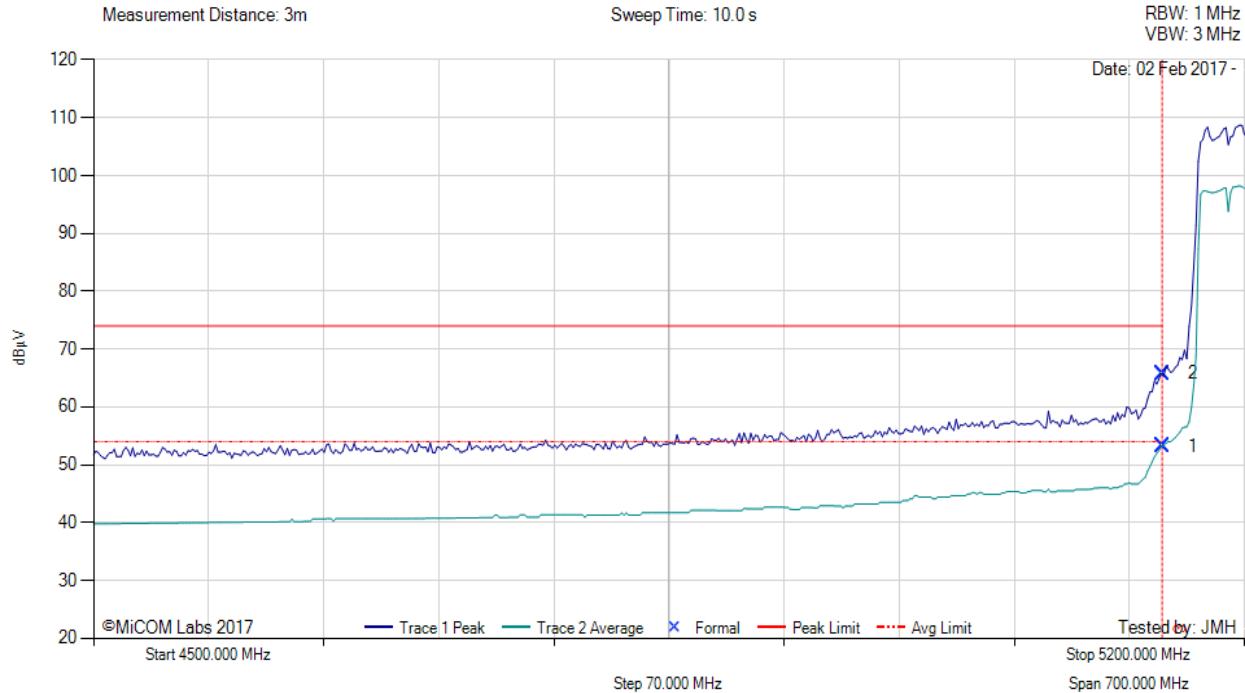
**Test Notes:** EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control. Power reduced to 22 to meet band edge limit.

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RESTRICTED LOWER BAND-EDGE EMISSIONS

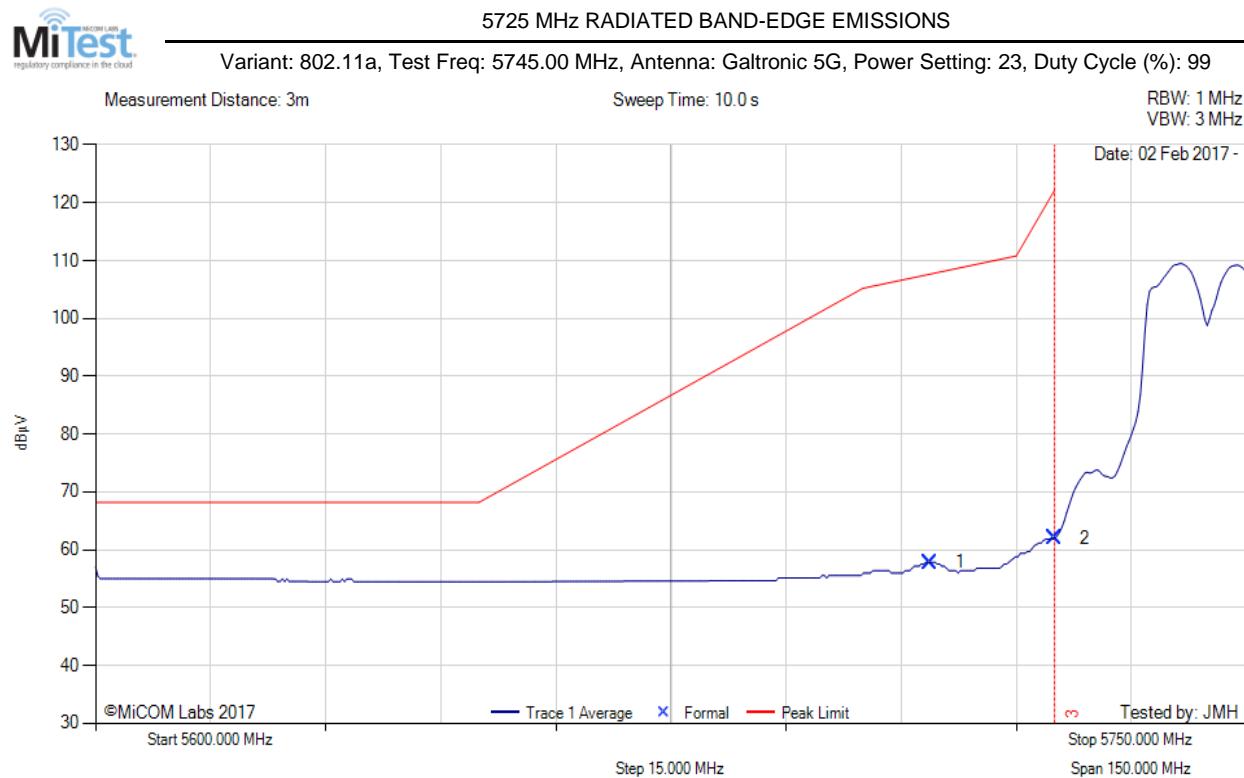
Variant: 802.11n HT-40, Test Freq: 5190.00 MHz, Antenna: Galtronic 5G, Power Setting: 17, Duty Cycle (%): 99



4500.00 - 5200.00 MHz													
Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss dB	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail	
1	5150.00	15.37	3.67	34.11	53.15	Max Avg	Horizontal	159	84	54.0	-0.9	Pass	
2	5150.00	28.01	3.67	34.11	65.79	Max Peak	Horizontal	159	84	74.0	-8.2	Pass	
3	5150.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--	

**Test Notes:** EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control. Power reduced to 17 to meet band edge limit.

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5600.00 - 5750.00 MHz												
Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss dB	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
1	5708.69	19.68	3.84	34.34	57.86	Max Avg	Horizontal	189	75	107.7	-49.9	Pass
2	5725.00	23.91	3.79	34.35	62.05	Max Avg	Horizontal	189	75	122.2	-60.2	Pass
3	5725.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

**Test Notes:** EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control.

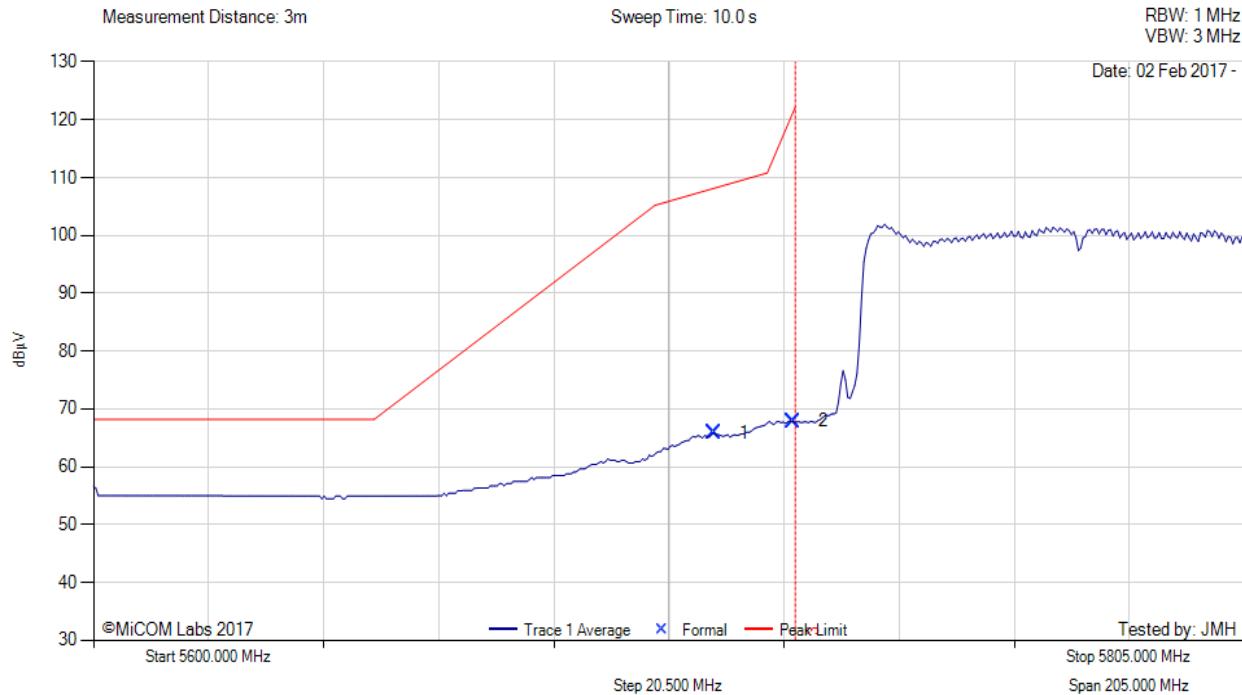
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### 5725 MHz RADIATED BAND-EDGE EMISSIONS

Variant: 802.11ac-80, Test Freq: 5775.00 MHz, Antenna: Galtronic 5G, Power Setting: 23, Duty Cycle (%): 99



5600.00 - 5805.00 MHz													
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail	
1	5710.48	27.64	3.84	34.34	65.82	Max Avg	Horizontal	189	75	108.0	-42.2	Pass	
2	5724.59	29.72	3.79	34.35	67.86	Max Avg	Horizontal	189	75	122.2	-54.3	Pass	
3	5725.00	--	--	--	--	Band-Edge	--	--	--	--	--	--	

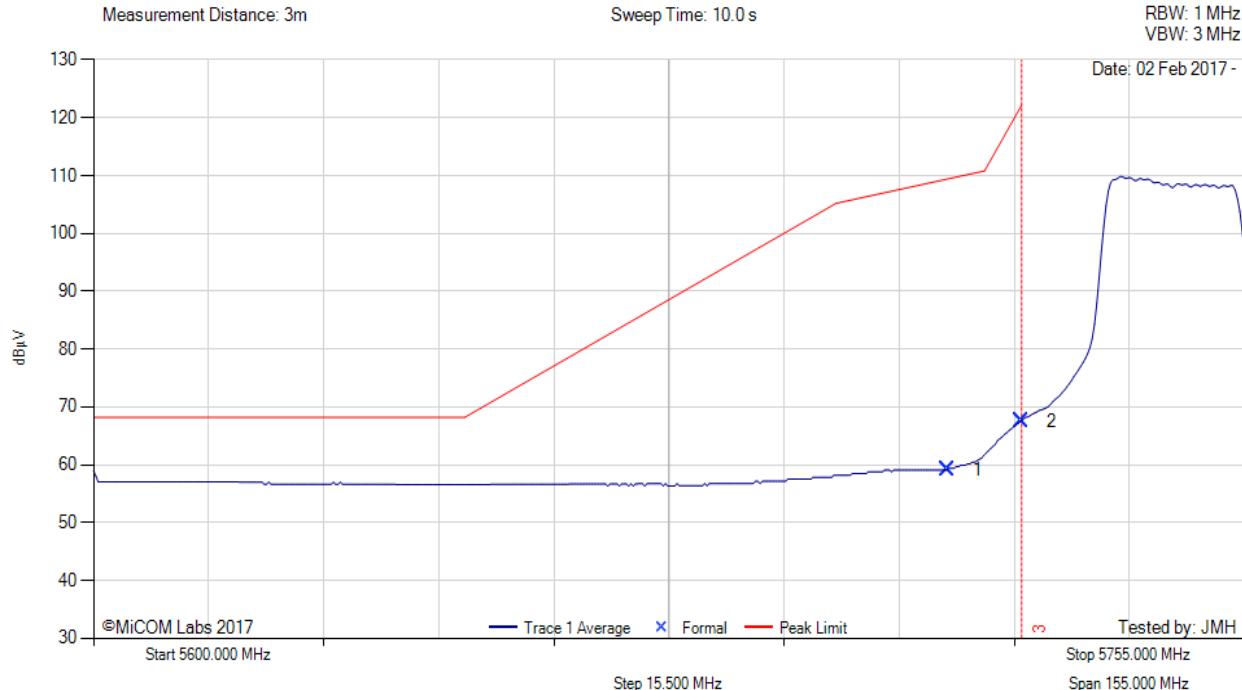
**Test Notes:** EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control.

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### 5725 MHz RADIATED BAND-EDGE EMISSIONS

Variant: 802.11n HT-20, Test Freq: 5745.00 MHz, Antenna: Galtronic 5G, Power Setting: 23, Duty Cycle (%): 99



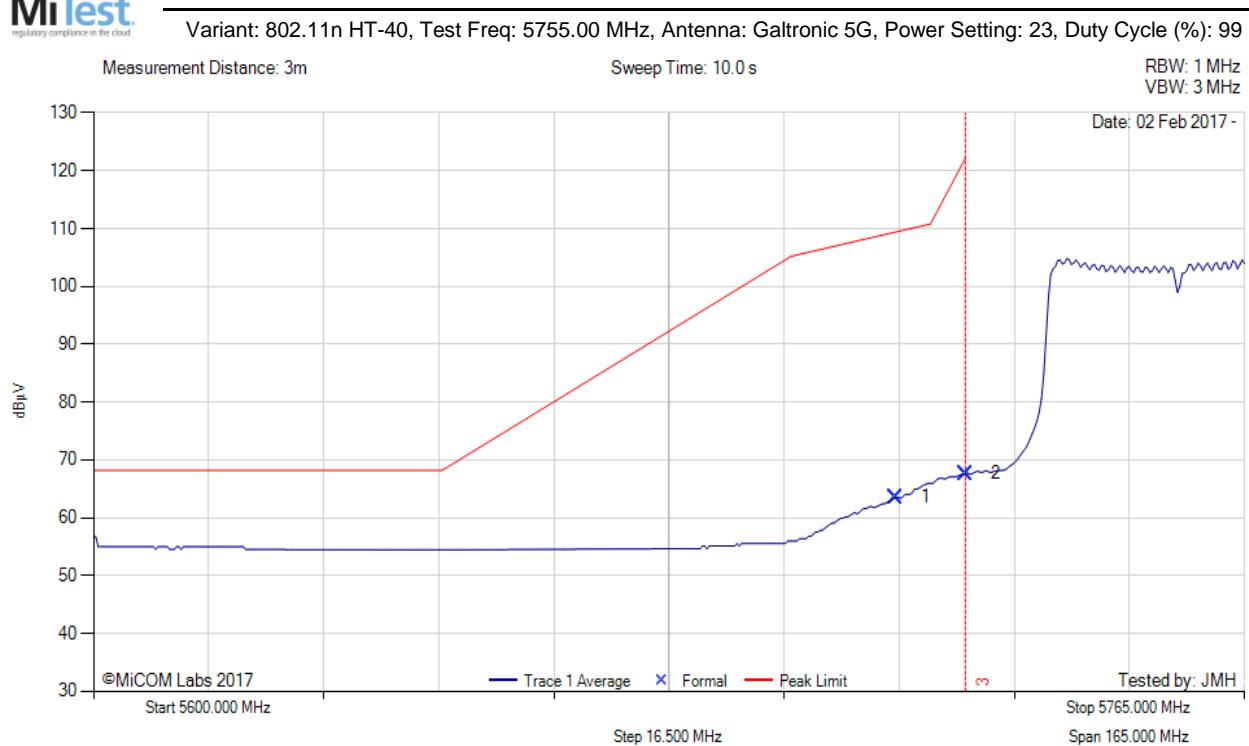
5600.00 - 5755.00 MHz													
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail	
1	5715.00	20.96	3.81	34.34	59.11	Max Avg	Horizontal	189	75	109.4	-50.3	Pass	
2	5725.00	29.40	3.79	34.35	67.54	Max Avg	Horizontal	189	75	122.2	-54.7	Pass	
3	5725.00	--	--	--	--	Band-Edge	--	--	--	--	--	--	

**Test Notes:** EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control.

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### 5725 MHz RADIATED BAND-EDGE EMISSIONS



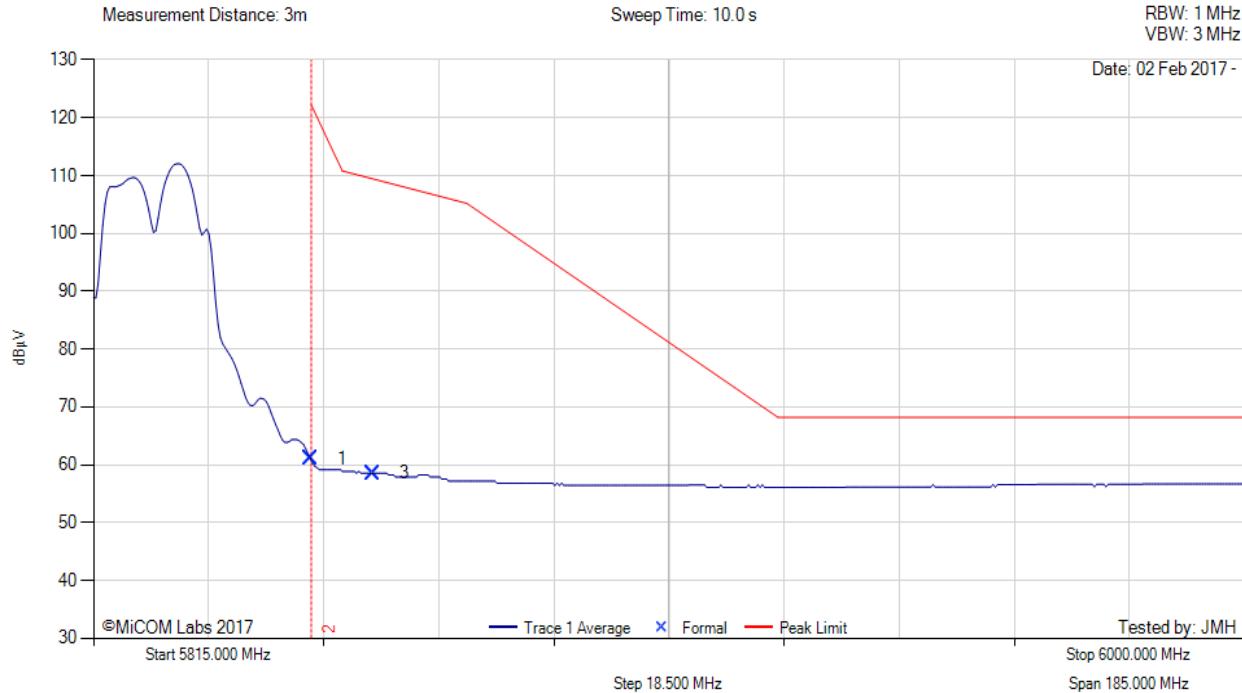
5600.00 - 5765.00 MHz													
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail	
1	5715.00	25.40	3.81	34.34	63.55	Max Avg	Horizontal	189	75	109.4	-45.9	Pass	
2	5725.00	29.51	3.79	34.35	67.65	Max Avg	Horizontal	189	75	122.2	-54.6	Pass	
3	5725.00	--	--	--	--	Band-Edge	--	--	--	--	--	--	

**Test Notes:** EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control.

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### 5850 MHz RADIATED BAND-EDGE EMISSIONS

Variant: 802.11a, Test Freq: 5825.00 MHz, Antenna: Galtronic 5G, Power Setting: 23, Duty Cycle (%): 99



5815.00 - 6000.00 MHz													
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail	
1	5815.00	22.60	3.81	34.63	61.04	Max Avg	Horizontal	189	75	122.2	-61.2	Pass	
3	5860.00	20.06	3.86	34.65	58.57	Max Avg	Horizontal	189	75	109.4	-50.8	Pass	
2	5850.00	--	--	--	--	Band-Edge	--	--	--	--	--	--	

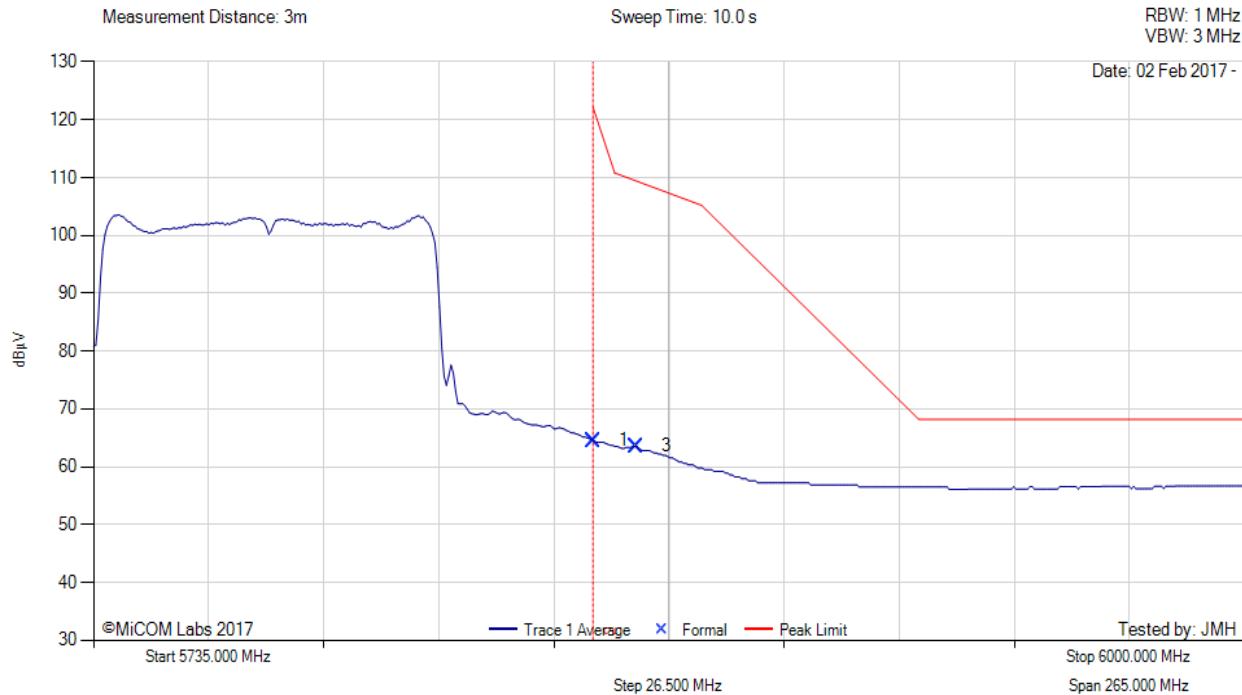
**Test Notes:** EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control.

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### 5850 MHz RADIATED BAND-EDGE EMISSIONS

Variant: 802.11ac-80, Test Freq: 5775.00 MHz, Antenna: Galtronic 5G, Power Setting: 23, Duty Cycle (%): 99

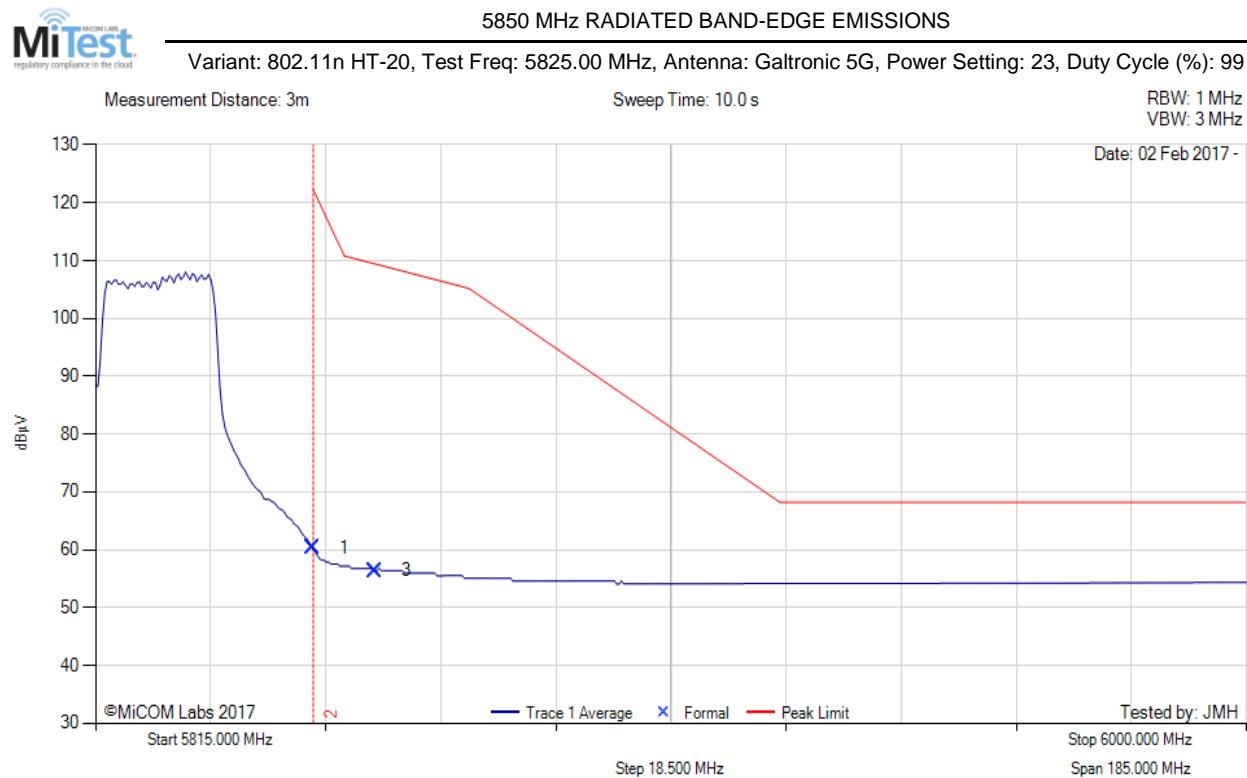


5735.00 - 6000.00 MHz													
Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss dB	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail	
1	5850.00	26.12	3.81	34.63	64.56	Max Avg	Horizontal	189	75	122.2	-57.6	Pass	
3	5860.00	25.05	3.86	34.65	63.56	Max Avg	Horizontal	189	75	109.4	-45.8	Pass	
2	5850.00	--	--	--	--	Band-Edge	--	--	--	--	--	--	

**Test Notes:** EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control.

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5815.00 - 6000.00 MHz												
Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss dB	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
1	5850.00	21.84	3.81	34.63	60.28	Max Avg	Horizontal	189	75	122.2	-61.9	Pass
3	5860.00	17.87	3.86	34.65	56.38	Max Avg	Horizontal	189	75	109.4	-53.0	Pass
2	5850.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

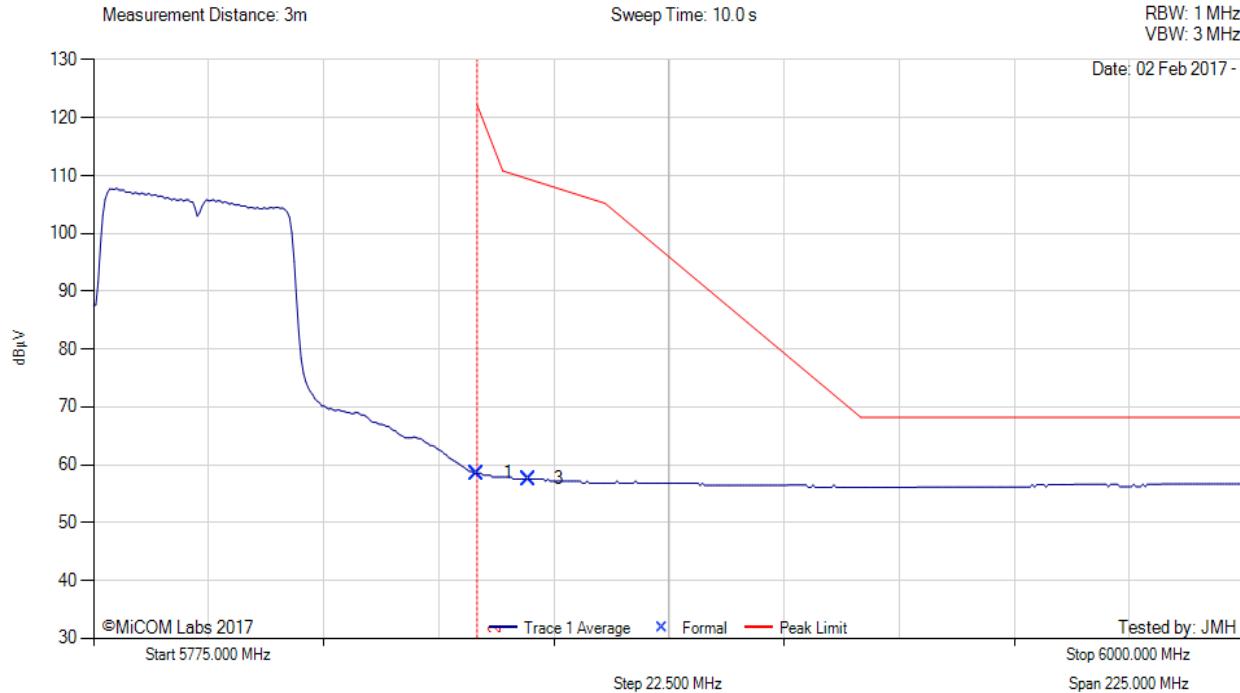
**Test Notes:** EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control.

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### 5850 MHz RADIATED BAND-EDGE EMISSIONS

Variant: 802.11n HT-40, Test Freq: 5795.00 MHz, Antenna: Galtronic 5G, Power Setting: 23, Duty Cycle (%): 99



5775.00 - 6000.00 MHz													
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail	
1	5850.00	20.10	3.81	34.63	58.54	Max Avg	Horizontal	189	75	122.2	-63.7	Pass	
3	5860.00	19.03	3.86	34.65	57.54	Max Avg	Horizontal	189	75	109.4	-51.9	Pass	
2	5850.00	--	--	--	--	Band-Edge	--	--	--	--	--	--	

**Test Notes:** EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control.

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