TEST REPORT ADDENDUM - RADIATED



Test of: Actiontec Electronics Inc Actiontec T3200BV, C2300A

To: FCC CFR 47 Part 15 Subpart C 15.247 (DTS)

Test Report Serial No.: ATEC23-U4_Radiated Rev A

This report supersedes: NONE

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

ATEC23-U4 Master		C23-U4_Conducted			
		223-U1 (FCC Part 15B & ICES-003)			
Applic	ant:	Actiontec Electronics Inc. 760 N Mary Avenue Sunnyvale, California 94085 USA			
Product Funct	tion:	: Bonded VDSL2/G.fast Wireless A Gateway Router			
Issue D	ate:	30th March 2017			
This Test Report is	Issued	d Under the Authority of:			
MiCOM Labs, Inc. 575 Boulder Court Pleasanton California USA Phone: +1 (925) 462 Fax: +1 (925) 462-03 <u>www.micomlabs.com</u>	-0304 306	ACCREDITED TESTING CERT #2381.01			
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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

Testing and report automation was performed by <u>MiTest</u>. <u>MiTest</u> is an automated test system developed by MiCOM Labs. <u>MiTest</u> is the first cloud based modular test system enabling end-to-end automation of regulatory compliance testing for regulatory compliance.



Title:Actiontec Electronics Inc T3200BV, C2300ATo:FCC CFR 47 Part 15 Subpart C 15.247 (DTS)Serial #:ATEC23 – U4 Master Rev AIssue Date:30th March 2017Page:4 of 34

1. DOCUMENT HISTORY

	Document History										
Revision	Date	Comments									
Draft											
Rev A	30 th March 2017	Initial release.									

In the above table the latest report revision will replace all earlier versions.



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2. TEST SUMMARY

List of Measurements

Test Header	Result	Data Link
15.247(d) Emissions	Complies	-
(2) Radiated Emissions	Complies	-
(i) 15.205 Restricted Band Emissions	Complies	View Data
(ii) 15.205 Restricted Band-Edge Emissions	Complies	View Data

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3. TEST RESULTS

3.1. Emissions

3.1.1. Radiated Emissions

3.1.1.1. TX Spurious & Restricted Band Emissions

Standard:	FCC CFR 47 Part 15 Subpart C 15.247 (DTS)	Ambient Temp. (ºC):	20.0 - 24.5
Test Heading:	Radiated Spurious and Band- Edge Emissions	Rel. Humidity (%):	32 - 45
Standard Section(s):	15.205, 15.209	Pressure (mBars):	999 - 1001
Reference Document(s):	See Normative References		
Radiated emissions for restricted n both horizontal and vertical pol 360° with a spectrum analyzer in used to remove the fundamental Measurements on any restricted employing peak and average det	burious and Band-Edge Emissio bands above 1 GHz are measured arities. The emissions are record peak hold mode. Depending on th frequency. The highest emissions band frequency or frequencies abo ectors. All measurements were pe	d in the anechoic chamber at a 3-r ed and maximized as a function of e frequency band spanned a notc relative to the limit are listed for e ove 1 GHz are based on the use o erformed using a resolution bandw	f azimuth by rotation through h filter and waveguide filter was ach frequency spanned. f measurement instrumentatior vidth of 1 MHz.
Test configuration and setup for I document.	Radiated Spurious and Band-Edge	Measurement were per the Radia	ated Test Set-up specified in thi
Limits for Restricted Bands Peak emission: 74 dBuV/m Average emission: 54 dBuV/m			
Field Strength Calculation The field strength is calculated by reading. All factors are included i FS = R + AF + CORR - FO	/ adding the Antenna Factor and C n the reported data.	able Loss, and subtracting Amplif	ier Gain from the measured
where: FS = Field Strength R = Measured Spectrum analyze AF = Antenna Factor CORR = Correction Factor = CL CL = Cable Loss AG = Amplifier Gain FO = Distance Falloff Factor NFL = Notch Filter Loss or Wave	– AG + NFL		
1 0	1.5 dBmV; Antenna Factor of 8.5 d 1 dB. The Field Strength (FS) of		actor of 0 dB, an Amplifier Gair
FS = 51.5 + 8.5 + 1.3 - 26.0 +1 =	36.3 dBmV/m		
Conversion between dBmV/m (or Level (dBmV/m) = 20 * Log (leve	dBmV) and mV/m (or mV) are as (mV/m))	follows:	
40 dBmV/m – 100 mV/m			

40 dBmV/m = 100 mV/m

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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.

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(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).



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Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	Galtronic 2.4G	Variant:	802.11b
Antenna Gain (dBi):	2.70	Modulation:	CCK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	2412.00	Data Rate:	1.00 MBit/s
Power Setting:	24	Tested By:	JMH

Test Measurement Results

	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	2412.87	56.78	2.70	-11.79	47.69	Fundamental	Horizontal	151	360			
#2	3617.97	59.71	3.13	-11.13	51.71	Max Peak	Vertical	129	82	74.0	-22.3	Pass
#3	3617.97	56.53	3.13	-11.13	48.53	Max Avg	Vertical	129	82	54.0	-5.5	Pass
#4	4823.97	59.55	3.54	-11.15	51.94	Max Peak	Vertical	196	123	74.0	-22.1	Pass
#5	4823.97	55.17	3.54	-11.15	47.56	Max Avg	Vertical	196	123	54.0	-6.4	Pass
#6	9647.90	49.39	5.29	-6.08	48.60	Peak (NRB)		200	360			Pass
Test No	tes: EUT on ta	est 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

Antenna:	Galtronic 2.4G	Variant:	802.11b
Antenna Gain (dBi):	2.70	Modulation:	CCK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	2437.00	Data Rate:	1.00 MBit/s
Power Setting:	24	Tested By:	JMH

Test Measurement Results

	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	2438.04	60.51	2.72	-11.73	51.50	Fundamental	Vertical	200	0			
#2	3655.45	59.95	3.16	-11.05	52.06	Max Peak	Vertical	171	89	74.0	-21.9	Pass
#3	3655.45	57.12	3.16	-11.05	49.23	Max Avg	Vertical	171	89	54.0	-4.8	Pass
#4	4873.92	60.72	3.53	-11.24	53.01	Max Peak	Vertical	194	222	74.0	-21.0	Pass
#5	4873.92	56.40	3.53	-11.24	48.69	Max Avg	Vertical	194	222	54.0	-5.3	Pass
#6	7310.90	57.27	4.24	-7.29	54.22	Max Peak	Horizontal	198	90	74.0	-19.8	Pass
#7	7310.90	53.02	4.24	-7.29	49.97	Max Avg	Horizontal	198	90	54.0	-4.0	Pass
#8	9747.83	50.07	5.29	-6.23	49.13	Peak (NRB)		200	57			Pass
Test Not	tes: EUT on ta	able powe	ered by A	C/DC ada	pter conne	ected to laptop o	utside cham	ber for ra	idio contr	ol.		



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Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	Galtronic 2.4G	Variant:	802.11b
Antenna Gain (dBi):	2.70	Modulation:	CCK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	2462.00	Data Rate:	1.00 MBit/s
Power Setting:	23	Tested By:	JMH

Test Measurement Results

	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	2462.97	61.73	2.74	-11.67	52.80	Fundamental	Vertical	200	1			
#2	3692.96	61.15	3.17	-10.96	53.36	Max Peak	Vertical	178	86	74.0	-20.6	Pass
#3	3692.96	58.65	3.17	-10.96	50.86	Max Avg	Vertical	178	86	54.0	-3.1	Pass
#4	4923.94	59.28	3.58	-11.38	51.49	Max Peak	Vertical	119	236	74.0	-22.5	Pass
#5	4923.94	54.72	3.58	-11.38	46.92	Max Avg	Vertical	119	236	54.0	-7.1	Pass
#6	7386.05	56.89	4.29	-7.17	54.01	Max Peak	Vertical	147	93	74.0	-20.0	Pass
#7	7386.05	49.96	4.29	-7.17	47.08	Max Avg	Vertical	147	93	54.0	-6.9	Pass
#8	9847.82	50.09	5.39	-5.94	49.54	Peak (NRB)	Horizontal	148	1			Pass
Test No	tes: EUT on ta	able powe	ered by A	C/DC ada	pter conne	ected to laptop o	utside cham	ber for ra	idio contr	ol.		



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3.1.1.2. Restricted Edge & Band-Edge Emissions

Lower Band Edge

Galtron	iic 2.4G	Band-Edge Freq	Limit 74.0dBµV/m	Limit 54.0dBµV/m	Power Setting	
Operational Mode	Operating Frequency (MHz)	MHz	dBµV/m	dBµV/m	Fower Setting	
802.11b	2412.00	2390.00	60.73	48.64	24	
802.11g	2412.00	2390.00	71.72	53.38	22	
802.11n HT-20	2412.00	2390.00	69.50	53.39	22	
802.11n HT-40	2422.00	2390.00	68.95	53.72	20	



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Equipmen	Equipment Configuration for Radiated - Lower Restricted Band-Edge Emissions											
Antenna:	Antenna: Galtronic 2.4G Variant: 802.11b											
Antenna Gain (dBi): 2.70 Modulation: CCK												
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99									
Channel Frequency (MHz):	2412.00	Data Rate:	1.00 MBit/s									
Power Setting:	24	Tested By:	JMH									

Test Measurement Results

	2310.00 - 2422.00 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	2387.31	13.94	2.68	32.02	48.64	Max Avg	Horizontal	176	308	54.0	-5.4	Pass			
#2	2389.55	26.00	2.69	32.04	60.73	Max Peak	Horizontal	176	308	74.0	-13.3	Pass			
#3 2390.00 Restricted- Band															
Test No	Fest Notes: EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control.														



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Equipmen	Equipment Configuration for Radiated - Lower Restricted Band-Edge Emissions												
Antenna:	Antenna: Galtronic 2.4G Variant: 802.11g												
Antenna Gain (dBi): 2.70 Modulation: OFDM													
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99										
Channel Frequency (MHz):	2412.00	Data Rate:	6.00 MBit/s										
Power Setting:	22	Tested By:	JMH										

Test Measurement Results

	2310.00 - 2422.00 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	2387.53	37.01	2.68	32.03	71.72	Max Peak	Horizontal	176	308	74.0	-2.3	Pass			
#2	2388.20	18.67	2.68	32.03	53.38	Max Avg	Horizontal	176	308	54.0	-0.6	Pass			
#3	#3 2390.00 Restricted- Band														
	est Notes: EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control. Power reduced to 22 to neet band edge limit.														



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Equipmen	Equipment Configuration for Radiated - Lower Restricted Band-Edge Emissions										
Antenna:	Galtronic 2.4G	Variant:	802.11n HT-20								
Antenna Gain (dBi): 2.70 Modulation: OFDM											
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99								
Channel Frequency (MHz):	2412.00	Data Rate:	6.50 MBit/s								
Power Setting:	22	Tested By:	JMH								

Test Measurement Results

	2310.00 - 2422.00 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	2388.88	34.78	2.68	32.04	69.50	Max Peak	Horizontal	176	308	74.0	-4.5	Pass			
#2	2390.00	18.66	2.69	32.04	53.39	Max Avg	Horizontal	176	308	54.0	-0.6	Pass			
#3	#3 2390.00 Restricted- Band														
	Fest Notes: EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control. Power reduced to 22 to neet band edge limit.														



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Equipmen	Equipment Configuration for Radiated - Lower Restricted Band-Edge Emissions											
Antenna:	Antenna: Galtronic 2.4G Variant: 802.11n HT-40											
Antenna Gain (dBi):		Modulation:										
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99									
Channel Frequency (MHz):	2422.00	Data Rate:	13.50 MBit/s									
Power Setting:	20	Tested By:	JMH									

Test Measurement Results

	2310.00 - 2422.00 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	2381.82	34.29	2.69	31.97	68.95	Max Peak	Horizontal	176	308	74.0	-5.1	Pass			
#2	2384.29	19.05	2.68	31.99	53.72	Max Avg	Horizontal	176	308	54.0	-0.3	Pass			
#3	#3 2390.00 Restricted- Band														
	est Notes: EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control. Power reduced to 20 to neet band edge limit.														



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Upper Band Edge

Galtron	iic 2.4G	Band-Edge Freq	Limit 74.0dBµV/m	Limit 54.0dBµV/m	Power Setting	
Operational Mode	Operating Frequency (MHz)	MHz	dBµV/m	dBµV/m	I ower octaing	
802.11b	2462.00	2483.50	62.53	51.15	23	
802.11g	2462.00	2483.50	71.83	53.39	20	
802.11n HT-20	2462.00	2483.50	71.35	53.77	20	
802.11n HT-40	2452.00	2483.50	68.27	52.56	16	

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Equipmen	Equipment Configuration for Radiated - Upper Restricted Band-Edge Emissions												
Antenna:	Antenna: Galtronic 2.4G Variant: 802.11b												
Antenna Gain (dBi): 2.70 Modulation: CCK													
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99										
Channel Frequency (MHz):	2462.00	Data Rate:	1.00 MBit/s										
Power Setting:	23	Tested By:	JMH										

Test Measurement Results

	2452.00 - 2500.00 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			
#2	2483.60	16.05	2.73	32.37	51.15	Max Avg	Horizontal	176	308	54.0	-2.9	Pass			
#3	2483.79	27.43	2.73	32.37	62.53	Max Peak	Horizontal	176	308	74.0	-11.5	Pass			
#1	#1 2483.50 Restricted- Band														
	Fest Notes: EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control. Power reduced to 23 to neet band edge limit.														



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Equipmen	t Configuration for Radiated - L	Ipper Restricted Band-Edge Emission	าร
Antenna:	Galtronic 2.4G	Variant:	802.11g
Antenna Gain (dBi):	2.70	Modulation:	OFDM
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	2462.00	Data Rate:	6.00 MBit/s
Power Setting:	20	Tested By:	JMH

Test Measurement Results

	2452.00 - 2500.00 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	2483.50	18.29	2.73	32.37	53.39	Max Avg	Horizontal	176	308	54.0	-0.6	Pass	
#2	2483.50	36.73	2.73	32.37	71.83	Max Peak	Horizontal	176	308	74.0	-2.2	Pass	
#3	2483.50					Restricted- Band							
	otes: EUT on ta and edge limit.		ered by A	C/DC ada	pter conne	ected to laptop o	utside cham	ber for ra	idio contr	ol. Power	reduced to	o 20 to	



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Equipmen	t Configuration for Radiated - L	Ipper Restricted Band-Edge Emission	าร
	1		
Antenna:	Galtronic 2.4G	Variant:	802.11n HT-20
Antenna Gain (dBi):	2.70	Modulation:	OFDM
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	2462.00	Data Rate:	6.50 MBit/s
Power Setting:	20	Tested By:	JMH

Test Measurement Results

	2452.00 - 2500.00 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	2483.50	18.67	2.73	32.37	53.77	Max Avg	Horizontal	176	308	54.0	-0.2	Pass	
#3	2484.17	36.25	2.73	32.37	71.35	Max Peak	Horizontal	176	308	74.0	-2.7	Pass	
#2	2483.50					Restricted- Band							
	tes: EUT on ta and edge limit.		ered by A	C/DC ada	pter conne	ected to laptop o	utside cham	ber for ra	adio contr	ol. Power	reduced to	o 20 to	



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Equipmen	t Configuration for Radiated - L	Ipper Restricted Band-Edge Emission	าร
Antenna:	Galtronic 2.4G	Variant:	802.11n HT-40
Antenna Gain (dBi):		Modulation:	
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	2452.00	Data Rate:	13.50 MBit/s
Power Setting:	16	Tested By:	JMH

Test Measurement Results

	2452.00 - 2500.00 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	2483.50	17.46	2.73	32.37	52.56	Max Avg	Horizontal	176	308	54.0	-1.4	Pass	
#3	2487.35	33.17	2.73	32.37	68.27	Max Peak	Horizontal	176	308	74.0	-5.7	Pass	
#2	2483.50					Restricted- Band							
	tes: EUT on ta and edge limit.		ered by A	C/DC ada	pter conne	ected to laptop o	utside cham	ber for ra	idio contr	ol. Power i	reduced to	o 16* to	



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4. APPENDIX - GRAPHICAL IMAGES

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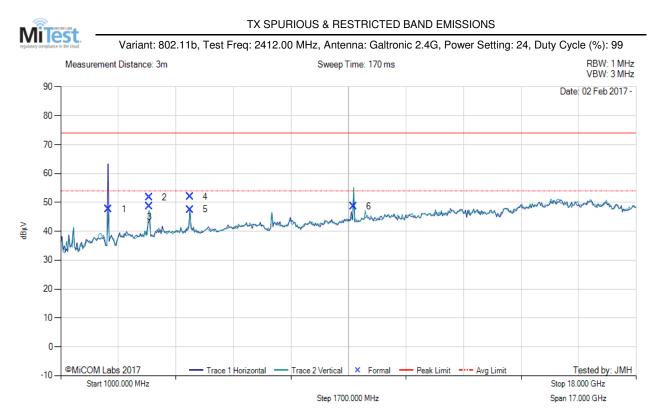


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A.1. Emissions

A.1.1. Radiated Emissions

A.1.1.1. 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	2412.87	56.78	2.70	-11.79	47.69	Fundamental	Horizontal	151	360				
2	3617.97	59.71	3.13	-11.13	51.71	Max Peak	Vertical	129	82	74.0	-22.3	Pass	
3	3617.97	56.53	3.13	-11.13	48.53	Max Avg	Vertical	129	82	54.0	-5.5	Pass	
4	4823.97	59.55	3.54	-11.15	51.94	Max Peak	Vertical	196	123	74.0	-22.1	Pass	
5	4823.97	55.17	3.54	-11.15	47.56	Max Avg	Vertical	196	123	54.0	-6.4	Pass	
6	9647.90	49.39	5.29	-6.08	48.60	Peak (NRB)		200	360			Pass	

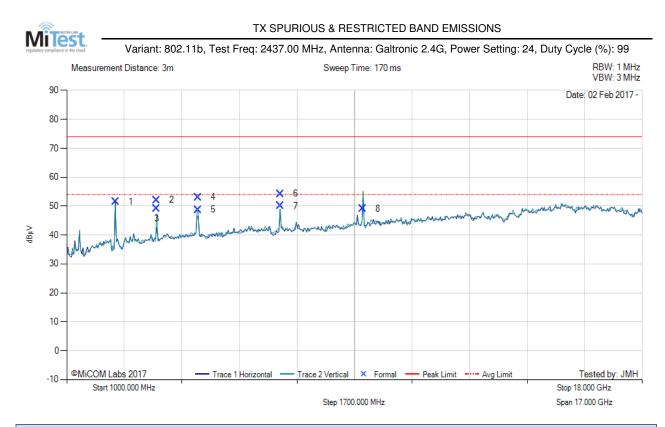
Test Notes: EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control.

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					1000	.00 - 18000.00 N	11 12					
Num F	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	2438.04	60.51	2.72	-11.73	51.50	Fundamental	Vertical	200	0			
2	3655.45	59.95	3.16	-11.05	52.06	Max Peak	Vertical	171	89	74.0	-21.9	Pass
3	3655.45	57.12	3.16	-11.05	49.23	Max Avg	Vertical	171	89	54.0	-4.8	Pass
4	4873.92	60.72	3.53	-11.24	53.01	Max Peak	Vertical	194	222	74.0	-21.0	Pass
5	4873.92	56.40	3.53	-11.24	48.69	Max Avg	Vertical	194	222	54.0	-5.3	Pass
6	7310.90	57.27	4.24	-7.29	54.22	Max Peak	Horizontal	198	90	74.0	-19.8	Pass
7	7310.90	53.02	4.24	-7.29	49.97	Max Avg	Horizontal	198	90	54.0	-4.0	Pass
8	9747.83	50.07	5.29	-6.23	49.13	Peak (NRB)		200	57			Pass

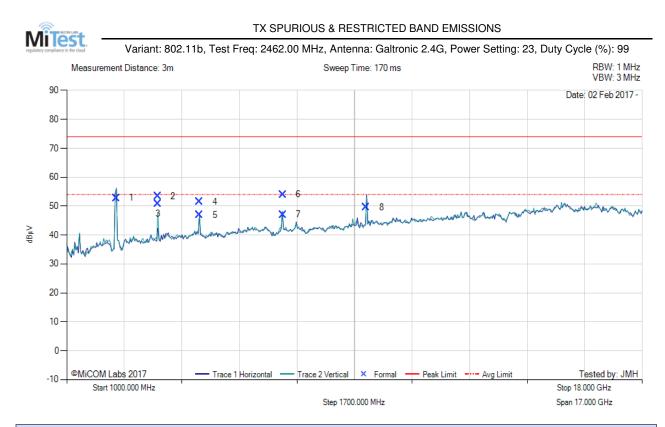
Test Notes: EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control.

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					1000	.00 - 18000.00 N	/Hz					
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	2462.97	61.73	2.74	-11.67	52.80	Fundamental	Vertical	200	1			
2	3692.96	61.15	3.17	-10.96	53.36	Max Peak	Vertical	178	86	74.0	-20.6	Pass
3	3692.96	58.65	3.17	-10.96	50.86	Max Avg	Vertical	178	86	54.0	-3.1	Pass
4	4923.94	59.28	3.58	-11.38	51.49	Max Peak	Vertical	119	236	74.0	-22.5	Pass
5	4923.94	54.72	3.58	-11.38	46.92	Max Avg	Vertical	119	236	54.0	-7.1	Pass
6	7386.05	56.89	4.29	-7.17	54.01	Max Peak	Vertical	147	93	74.0	-20.0	Pass
7	7386.05	49.96	4.29	-7.17	47.08	Max Avg	Vertical	147	93	54.0	-6.9	Pass
8	9847.82	50.09	5.39	-5.94	49.54	Peak (NRB)	Horizontal	148	1			Pass

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

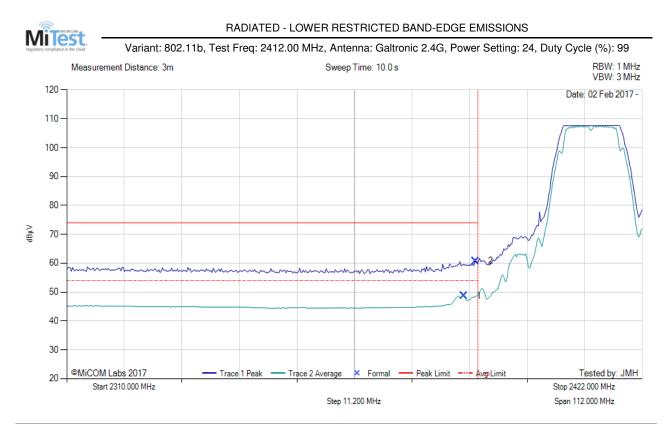
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A.1.1.2. Restricted Edge & Band-Edge Emissions



	2310.00 - 2422.00 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	2387.31	13.94	2.68	32.02	48.64	Max Avg	Horizontal	176	308	54.0	-5.4	Pass		
2	2389.55	26.00	2.69	32.04	60.73	Max Peak	Horizontal	176	308	74.0	-13.3	Pass		
3	2390.00					Restricted- Band								

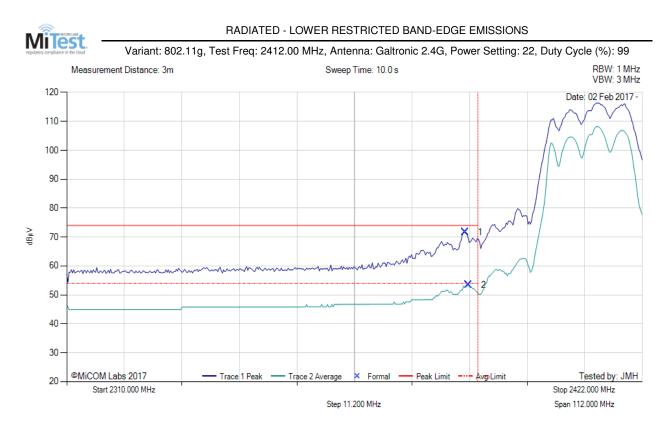
Test Notes: EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control.

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	2310.00 - 2422.00 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	2387.53	37.01	2.68	32.03	71.72	Max Peak	Horizontal	176	308	74.0	-2.3	Pass		
2	2388.20	18.67	2.68	32.03	53.38	Max Avg	Horizontal	176	308	54.0	-0.6	Pass		
3	2390.00					Restricted- Band								

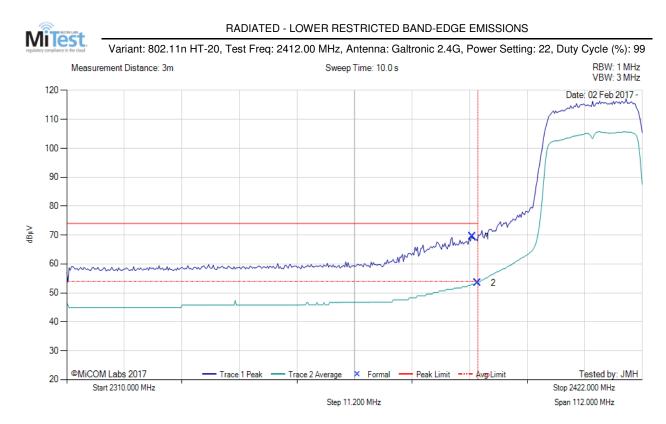
Test Notes: EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control. Power reduced to 22 to meet band edge limit.

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	2310.00 - 2422.00 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	2388.88	34.78	2.68	32.04	69.50	Max Peak	Horizontal	176	308	74.0	-4.5	Pass		
2	2390.00	18.66	2.69	32.04	53.39	Max Avg	Horizontal	176	308	54.0	-0.6	Pass		
3	2390.00					Restricted- Band								

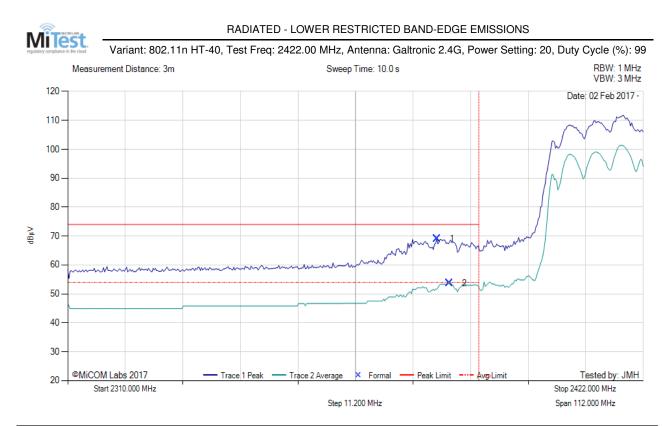
Test Notes: EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control. Power reduced to 22 to meet band edge limit.

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2310.00 - 2422.00 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	2381.82	34.29	2.69	31.97	68.95	Max Peak	Horizontal	176	308	74.0	-5.1	Pass
2	2384.29	19.05	2.68	31.99	53.72	Max Avg	Horizontal	176	308	54.0	-0.3	Pass
3	2390.00					Restricted- Band						

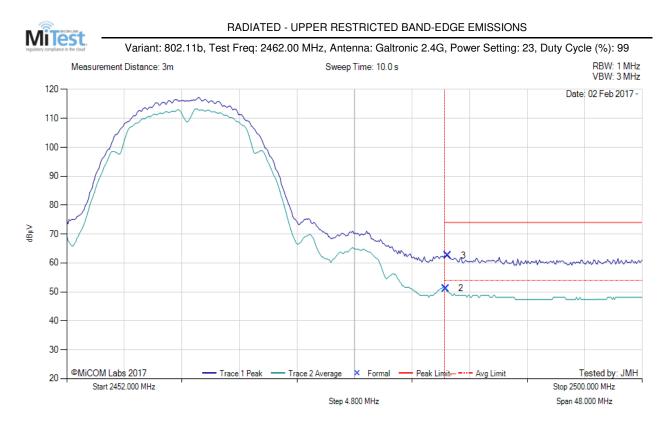
Test Notes: EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control. Power reduced to 20 to meet band edge limit.

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	2452.00 - 2500.00 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	
2	2483.60	16.05	2.73	32.37	51.15	Max Avg	Horizontal	176	308	54.0	-2.9	Pass	
3	2483.79	27.43	2.73	32.37	62.53	Max Peak	Horizontal	176	308	74.0	-11.5	Pass	
1	2483.50					Restricted- Band							

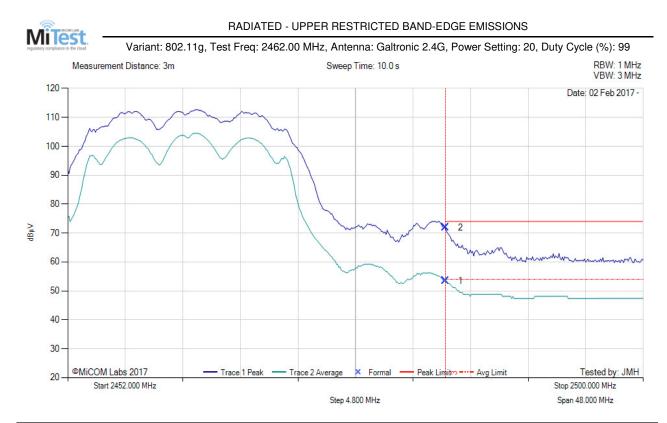
Test Notes: EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control. Power reduced to 23 to meet band edge limit.

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2452.00 - 2500.00 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	2483.50	18.29	2.73	32.37	53.39	Max Avg	Horizontal	176	308	54.0	-0.6	Pass
2	2483.50	36.73	2.73	32.37	71.83	Max Peak	Horizontal	176	308	74.0	-2.2	Pass
3	2483.50					Restricted- Band						

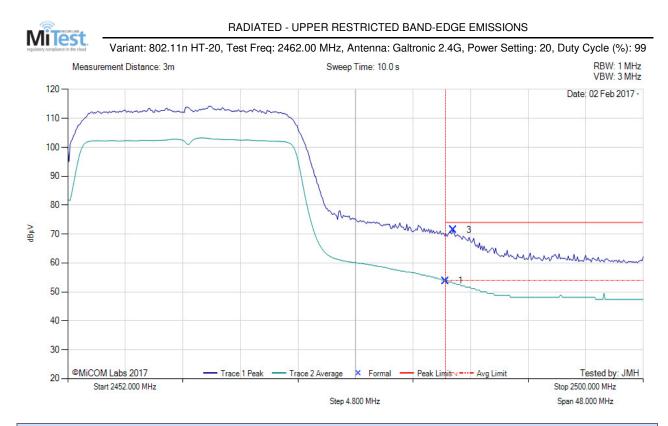
Test Notes: EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control. Power reduced to 20 to meet band edge limit.

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	2452.00 - 2500.00 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	2483.50	18.67	2.73	32.37	53.77	Max Avg	Horizontal	176	308	54.0	-0.2	Pass		
3	2484.17	36.25	2.73	32.37	71.35	Max Peak	Horizontal	176	308	74.0	-2.7	Pass		
2	2483.50					Restricted- Band								

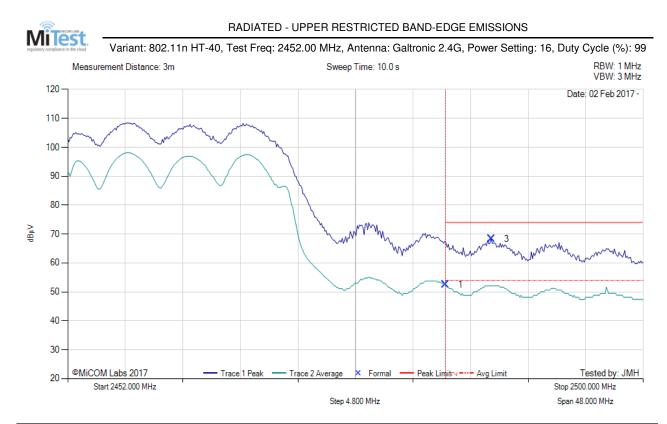
Test Notes: EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control. Power reduced to 20 to meet band edge limit.

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	2452.00 - 2500.00 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	2483.50	17.46	2.73	32.37	52.56	Max Avg	Horizontal	176	308	54.0	-1.4	Pass		
3	2487.35	33.17	2.73	32.37	68.27	Max Peak	Horizontal	176	308	74.0	-5.7	Pass		
2	2483.50					Restricted- Band								

Test Notes: EUT on table powered by AC/DC adapter connected to laptop outside chamber for radio control. Power reduced to 16* to meet band edge limit.

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