

CTC Laboratories, Inc.

Room 101 Building B, No. 7, Lanqing 1st Road, Luhu Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China Tel: +86-755- 27521059 Fax: +86-755- 27521011 Http://www.sz-ctc.org.cn

	TEST REPORT		
Report No. ······	CTC2024122210		
FCC ID······:	PADWF154		
IC:	10563A-WF154		
FCC Applicant······:	Wahoo Fitness LLC		
IC Applicant······:	Wahoo Fitness		
Address:	90 W. Wieuca Road #110, Atlanta, GA	30342, United States	
FCC Manufacturer······	Wahoo Fitness LLC		
IC Manufacturer······	Wahoo Fitness		
Address······:	90 W. Wieuca Road #110, Atlanta, GA	30342, United States	
Product Name······	KICKR		
Trade Mark······:	/		
Model/Type reference······:	WF154		
Listed Model(s) ······:	/		
Standard·····:	FCC CFR Title 47 Part 15 Subpart C Section 15.247 RSS 247 Issue 3		
Date of receipt of test sample:	May. 23, 2024		
Date of testing	May. 24, 2024 ~ Jun. 16, 2024		
Date of issue:	Jun. 17, 2024		
Result:	PASS		
Compiled by:		-T- C	
(Printed name+signature)	Terry Su	Tenny Su	
Supervised by:		Trac shang	
(Printed name+signature)	Eric Zhang Totti Zhao		
Approved by:		1 Inas	
(Printed name+signature)	Totti Zhao	/ and a second	
Testing Laboratory Name:	CTC Laboratories, Inc.		
Address	Room 101 Building B, No. 7, Lanqing 1st Road, Luhu Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China		
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not be reproduced except in full, without the written approval of our laboratory. The client should not use it to claim product endorsement by CTC. The test results in the report only apply to the tested sample. The test report shall be invalid without all the signatures of testing engineers, reviewer and approver. Any objections must be raised to CTC within 15 days since the date when the report is received. It will not be taken into consideration beyond this limit. The test report merely correspond to the test sample.



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	TEST STANDARDS



1. TEST SUMMARY

1.1. Test Standards

The tests were performed according to following standards:

FCC Rules Part 15.247: Operation within the bands of 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz.

RSS 247 Issue 3: Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices.

ANSI C63.10-2013: American National Standard for Testing Unlicensed Wireless Devices.

1.2. Report version

Revised No.	Report No.	Date of issue	Description
01	CTC2024122210	Jun. 17, 2024	Original



1.3. Test Description

FCC Part 15 Subpart C (15.247) / RSS 247 Issue 3					
Test Item	Standard Section		Result	Test	
rest item	FCC	IC	Result	Engineer	
Antenna Requirement	15.203	/	Pass	Alicia Liu	
Conducted Emission	15.207	RSS-Gen 8.8	Pass	Evan Hu	
Radiated Band Edge and Spurious Emissions	15.205&15.209& 15.247(d)	RSS 247 5.5	Pass	Alicia Liu	
Conducted Band Edge and Spurious Emissions	15.247(d)	RSS 247 5.5	Pass	Alicia Liu	
6dB Bandwidth	15.247(a)(2)	RSS 247 5.2 (a)	Pass	Alicia Liu	
Conducted Max Output Power	15.247(b)(3)	RSS 247 5.4 (d)	Pass	Alicia Liu	
Power Spectral Density	15.247(e)	RSS 247 5.2 (b)	Pass	Alicia Liu	
Transmitter Radiated Spurious	15.209&15.247(d)	RSS 247 5.5& RSS-Gen 8.9	Pass	Alicia Liu	

Note: The measurement uncertainty is not included in the test result.

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1.4. Test Facility

CTC Laboratories, Inc.

Add: Room 101 Building B, Room 107, 108, 207, 208, 303 Building A, No. 7, Lanqing 1st Road, Luhu Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China (Formerly 2/F., Building 1 and 1-2/F., Building 2, Jiaquan Building, High-Tech Park, Guanlan Sub-District, Longhua New District, Shenzhen, Guangdong, China)

Laboratory accreditation

The test facility is recognized, certified, or accredited by the following organizations:

A2LA-Lab Cert. No.: 4340.01

CTC Laboratories, Inc. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

Industry Canada (Registration No.: 9783A, CAB Identifier: CN0029)

CTC Laboratories, Inc. EMC Laboratory has been registered by Certification and Engineer Bureau of Industry Canada for the performance of with Registration NO.: 9783A on Jan, 2016.

FCC (Registration No.: 951311, Designation Number CN1208)

CTC Laboratories, Inc. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained inour files. Registration 951311, Aug 26, 2017.

1.5. Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01" Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties radio equipment characteristics; Part 2" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 2 " and is documented in the CTC Laboratories, Inc. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Below is the best measurement capability for CTC Laboratories, Inc.



EN

Test Items	Measurement Uncertainty	Notes
DTS Bandwidth	±0.0196%	(1)
Maximum Conducted Output Power	±0.686 dB	(1)
Maximum Power Spectral Density Level	±0.743 dB	(1)
Band-edge Compliance	±1.328 dB	(1)
Unwanted Emissions In Non-restricted Freq Bands	9kHz-1GHz: ±0.746dB 1GHz-26GHz: ±1.328dB	(1)
Conducted Emissions 9kHz~30MHz	±3.08 dB	(1)
Radiated Emissions 30~1000MHz	±4.51 dB	(1)
Radiated Emissions 1~18GHz	±5.84 dB	(1)
Radiated Emissions 18~40GHz	±6.12 dB	(1)

Note (1): This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

1.6. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	21°C ~ 27°C
Relative Humidity:	40% ~ 60%
Air Pressure:	101kPa



2. GENERAL INFORMATION

2.1. Client Information

FCC Applicant:	Wahoo Fitness LLC
Address:	90 W. Wieuca Road #110, Atlanta, GA 30342, United States
IC Applicant:	Wahoo Fitness
Address:	90 W. Wieuca Road #110, Atlanta, GA 30342, United States
FCC Manufacturer	Wahoo Fitness LLC
Address:	90 W. Wieuca Road #110, Atlanta, GA 30342, United States
IC Manufacturer	Wahoo Fitness
Address:	90 W. Wieuca Road #110, Atlanta, GA 30342, United States

2.2. General Description of EUT

Product Name:	KICKR
Trade Mark:	1
Model/Type reference:	WF154
Listed Model(s):	1
Power supply:	12Vdc/5A from AC/DC adapter
Adapter Model:	SUN-1200500 Input: 100-240V~ 50/60Hz 1.7A Max Output: 12Vdc/5A
Hardware version:	1
Software version:	1
WIFI 802.11b/ g/ n(HT20) /	n(HT40)
Modulation:	802.11b: DSSS(CCK, DQPSK, DBPSK) 802.11g/n: OFDM(BPSK, QPSK, 16QAM, 64QAM)
Operation frequency:	802.11b/g/n(HT20): 2412MHz~2462MHz 802.11n(HT40): 2422MHz~2452MHz
Channel number:	802.11b/g/n(HT20):11channels 802.11n(HT40): 7channels
Channel separation:	5MHz
Antenna type:	FPC Antenna
Antenna gain:	4.16dBi Max

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2.3. Accessory Equipment information

Equipment Information				
Name	Model	S/N	Manufacturer	
Notebook	ThinkBook 14G3 ACL	MP246QDR	Lenovo	
Cable Information				
Name	Shielded Type	Ferrite Core	Length	
1	1	1	1	
Test Software Information				
Name	Versions	1	1	
EspRFTestTool_v2.8_Manual	v2.8	1	1	



2.4. Operation state

Operation Frequency List: The EUT has been tested under typical operating condition. The Applicant provides communication tools software to control the EUT for staying in continuous transmitting and receiving mode for testing.

Operation Frequency List:

Channel	Frequency (MHz)
01	2412
02	2417
03	2422
04	2427
05	2432
06	2437
07	2442
08	2447
09	2452
10	2457
11	2462

Note: CH 01~CH 11 for 802.11b/g/n(HT20), CH 03~CH 09 for 802.11n(HT40).

Data Rated

Preliminary tests were performed in different data rate, and found which the below bit rate is worst case mode, so only show data which it is a worst case mode.

Mode	Data rate (worst mode)
802.11b	1Mbps
802.11g	6Mbps
802.11n(HT20)	HT-MCS0
802.11n(HT40)	HT-MCS0

Test mode

For RF test items: The engineering test program was provided and enabled to make EUT continuous transmit. For AC power line conducted emissions:

The EUT was set to connect with the WLAN AP under large package sizes transmission.

For Radiated spurious emissions test item:

The engineering test program was provided and enabled to make EUT continuous transmit. The EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data Recorded in the report.



Measurement Instruments List 2.5.

RF Test System					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated Until
1	Spectrum Analyzer	R&S	FSV40-N	101331	Mar. 21, 2025
2	Spectrum Analyzer	R&S	FSV40-N	101654	Aug. 07, 2024
3	Spectrum Analyzer	R&S	FSU26	100105	Dec. 12, 2024
4	MXA Signal Analyzer	Keysight	N9020A	MY46471737	Dec. 12, 2024
5	MXA Signal Analyzer	Keysight	N9020A	MY52091402	Aug. 22, 2024
6	MXG Vector Signal Generator	Agilent	N5182A	MY47420864	Dec. 12, 2024
7	PSG Analog Signal Generator	Agilent	E8257D	MY46521908	Dec. 12, 2024
8	EXG Analog Signal Generator	Keysight	N5173B	MY59100842	Dec. 12, 2024
9	MXG Vector Signal Generator	Keysight	N5182B	MY59100212	Dec. 12, 2024
10	USB Wideband Power Sensor	Keysight	U2021XA	MY55130004	Mar. 21, 2025
11	USB Wideband Power Sensor	Keysight	U2021XA	MY55130006	Mar. 21, 2025
12	Wideband Radio Communication Tester	R&S	CMW500	102414	Dec. 12, 2024
13	RF Control Unit	Tonscend	JS0806-2	/	Aug. 22, 2024
14	High and low temperature test chamber	ESPEC	MT3035	/	Mar. 21, 2025
15	Test Software	Tonscend	JS1120-3	V2.6.88.0346	/
16	Test Software	Tonscend	JS1120-3	V3.3.38	/
17	Test Software	WCS	WCS-WCN	2023.08.04	/

Radia	ted Emission (3m chamber 2)			
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated Until
1	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	9168-1013	Dec. 07, 2024
2	Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-648	Dec. 07, 2024
3	Spectrum Analyzer	R&S	FSU26	100105	Dec. 12, 2024
4	Spectrum Analyzer	R&S	FSV40-N	101331	Mar. 15, 2025
5	Pre-Amplifier	SONOMA	310	186194	Dec. 12, 2024
6	Low Noise Pre-Amplifier	EMCI	EMC051835	980075	Dec. 12, 2024
7	Test Receiver	R&S	ESCI7	100967	Dec. 12, 2024
8	3m chamber 2	Frankonia	EE025	/	Oct. 23, 2024
9	Test Software	FARA	EZ-EMC	FA-03A2	/

Radia	Radiated Emission (3m chamber 3)										
Item	Test Equipment Manufacturer Model No. Serial No. Calibrated Until										
1	Trilog-Broadband Antenna	Schwarzbeck	VULB 9163	01026	Dec. 18, 2024						
2	Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-647	Dec. 01, 2024						

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3	Test Receiver	Keysight	N9038A	MY56400071	Dec. 12, 2024
4	Broadband Amplifier	SCHWARZBECK	BBV9743B	259	Dec. 12, 2024
5	Mirowave Broadband Amplifier	SCHWARZBECK	BBV9718C	111	Dec. 12, 2024
6	3m chamber 3	YIHENG	EE106	/	Aug. 28, 2026
7	Test Software	FARA	EZ-EMC	FA-03A2	/

Condu	ucted Emission				
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated Until
1	LISN	R&S	ENV216	101112	Dec. 12, 2024
2	LISN	R&S	ENV216	101113	Dec. 12, 2024
3	EMI Test Receiver	R&S	ESCS30	100353	Dec. 12, 2024
4	ISN CAT6	Schwarzbeck	NTFM 8158	CAT6-8158-0046	Dec. 12, 2024
5	ISN CAT5	Schwarzbeck	NTFM 8158	CAT5-8158-0046	Dec. 12, 2024
6	Test Software	R&S	EMC32	6.10.10	/

Note: 1. The Cal. Interval was one year.

2. The Cal. Interval was three year of the chamber

3. The cable loss has calculated in test result which connection between each test instruments.



3.TEST ITEM AND RESULTS

3.1. Conducted Emission

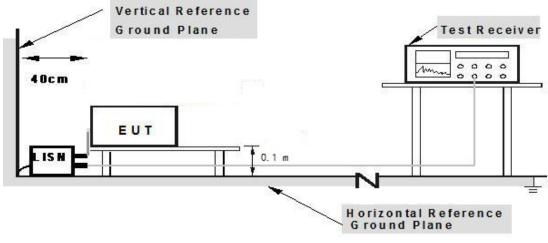
<u>Limit</u>

FCC CFR Title 47 Part 15 Subpart C Section 15.207/ RSS - Gen 8.8:

	Limit (dBuV)				
Frequency range (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.

Test Configuration



Note: 1.Support units were connected to second LISN. 2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

Test Procedure

1. The EUT was setup according to ANSI C63.10:2013 requirements.

2. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface.

3. The EUT and simulators are connected to the main power through a line impedances stabilization network (LISN). The LISN provides a 500hm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs)

4. Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.

5. The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.

6. Conducted Emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.

7. During the above scans, the emissions were maximized by cable manipulation.

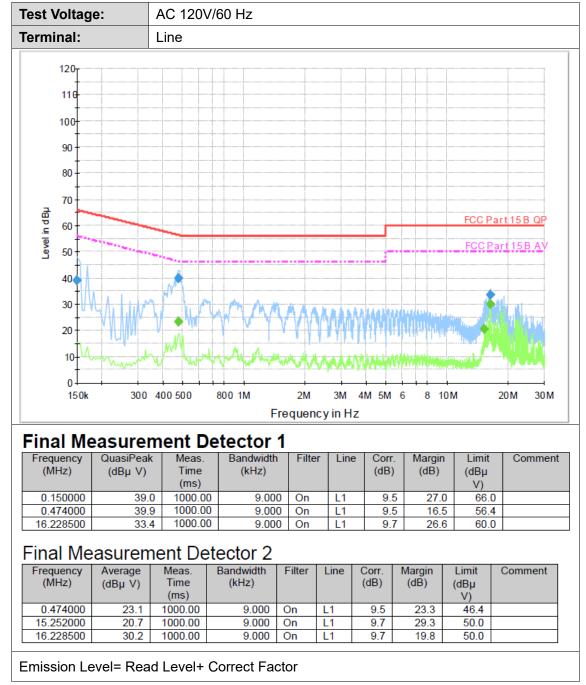
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Test Mode:

Please refer to the clause 2.4.

Test Results



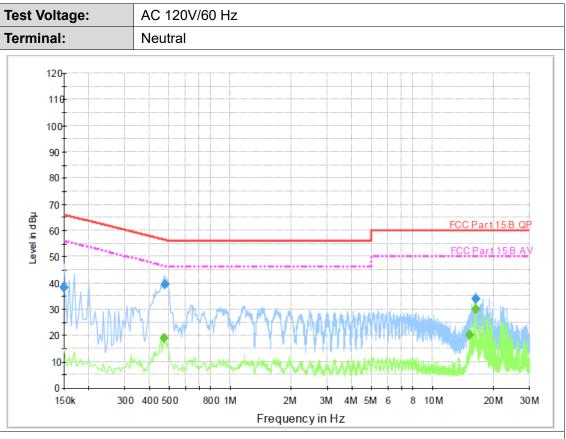
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Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµ V)	Comment
0.150000	38.1	1000.00	9.000	On	Ν	9.5	27.9	66.0	
0.474000	39.4	1000.00	9.000	On	Ν	9.4	17.0	56.4	
16.228500	34.0	1000.00	9.000	On	Ν	9.6	26.0	60.0	

Final Measurement Detector 2

Frequency (MHz)	Average (dBµ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµ V)	Comment
0.469500	18.8	1000.00	9.000	On	N	9.4	27.7	46.5	
15.252000	20.3	1000.00	9.000	On	N	9.6	29.7	50.0	
16.228500	30.1	1000.00	9.000	On	N	9.6	19.9	50.0	

Emission Level= Read Level+ Correct Factor

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3.2. Radiated Emission

<u>Limit</u>

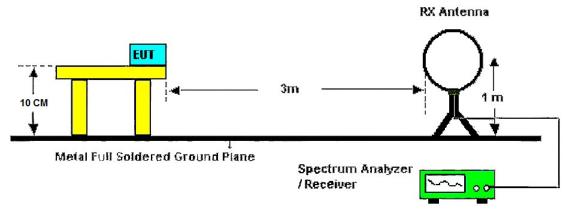
FCC CFR Title 47 Part 15 Subpart C Section 15.209/ RSS – Gen 8.9:

Frequency	Limit (dBuV/m @3m)	Value		
30 MHz ~ 88 MHz	40.00	Quasi-peak		
88 MHz ~ 216 MHz	43.50	Quasi-peak		
216 MHz ~ 960 MHz	46.00	Quasi-peak		
960 MHz ~ 1 GHz	54.00	Quasi-peak		
Above 1 CUIT	54.00	Average		
Above 1 GHz	74.00	Peak		

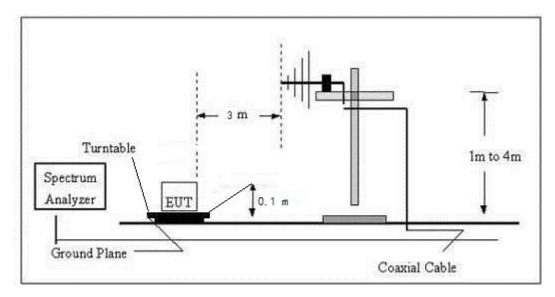
Note:

- (1) The tighter limit applies at the band edges.
- (2) Emission Level (dBuV/m)=20log Emission Level (uV/m).

Test Configuration

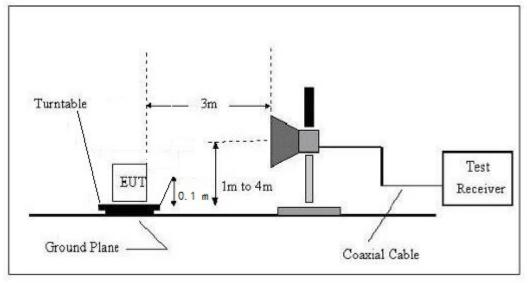


Below 30MHz Test Setup



Below 1000MHz Test Setup





Above 1GHz Test Setup

Test Procedure

1. The EUT was setup and tested according to ANSI C63.10:2013

2. The EUT is placed on a turn table which is 0.8 meter above ground for below 1 GHz, and 1.5 m for above 1 GHz. The turn table is rotated 360 degrees to determine the position of the maximum emission level.

3. The EUT was set 3 meters from the receiving antenna, which was mounted on the top of a variable height antenna tower.

4. For each suspected emission, the EUT was arranged to its worst case and then tune the Antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines.

- 5. Set to the maximum power setting and enable the EUT transmit continuously.
- 6. Use the following spectrum analyzer settings
- (1) Span shall wide enough to fully capture the emission being measured
- (2) Below 30 MHz:

9kHz – 150kHz, RBW=200Hz, VBW≥RBW, Sweep=auto, Detector function=peak, Trace=max hold; 150kHz – 30MHz, RBW=9kHz, VBW≥RBW, Sweep=auto, Detector function=peak, Trace=max hold; If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

(3) 30 MHz - 1 GHz:

RBW=120 kHz, VBW=300 kHz, Sweep=auto, Detector function=peak, Trace=max hold;

If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

(4) From 1 GHz to 10th harmonic:

RBW=1MHz, VBW=3MHz Peak detector for Peak value.

RBW=1MHz, VBW \ge 1/T Peak detector for Average value.

Note 1: For the 1/T& Duty Cycle please refer to clause 3.8 Duty Cycle.

<u>Test Mode</u>

Please refer to the clause 2.4.

<u>Test Result</u>

9 KHz~30 MHz

From 9 KHz to 30 MHz: Conclusion: PASS

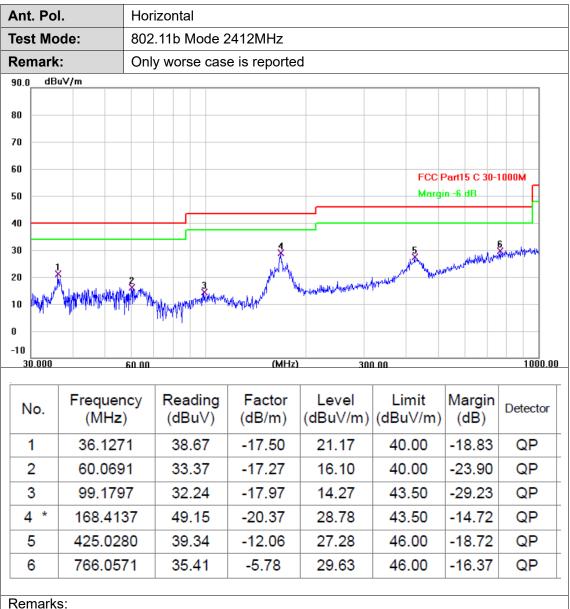


Note: The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

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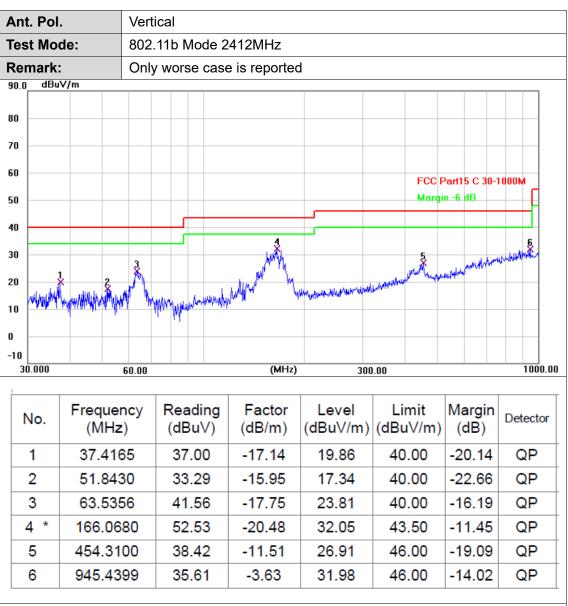




1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value

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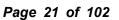
1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value



nt. Pol			zontal						
est Mo	de:	TX 8	302.11b Mod	le 2412MH	Z				
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	3500.00 6	000.00	8500.00 11	000.00 (MHz)	16000.00	18500.00 2100	0.00 23500	.00 26000	
No.	Freque (MHz		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	
1 *	4824.4	89	27.72	2.02	29.74	54.00	-24.26	AVG	
2	4824.6	39	40.86	2.02	42.88	74.00	-31.12	peak	

EN

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value





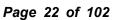
nt. Po	Ι.	Vertic	cal								
est Mo	de:	TX 802.11b Mode 2412MHz									
emark			port for the port for the	port for the emission which more than 10 dB below the ribed limit.							
0.0 dBu	V/m										
0											
						FCC Part15 (C-Above 10	3 PK			
						FCC Part15 (C About 10				
						FCC Partis		3 44			
	×										
	z										
	×										
.0 1000.000	3500.00 6	00.00	8500.00 11	000.00 (MHz)	16000.00 1	8500.00 21000	0.00 23500.	00 26000.			
No.	Freque (MHz		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector			
1	4823.0	03	41.31	2.01	43.32	74.00	-30.68	peak			
2 *	4824.7		27.37	2.02	29.39	54.00	-24.61	AVG			
		I					1				

EN

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value

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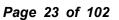




nt. Po	l.	Hori	zontal						Horizontal									
est Mo	ode:	TX 8	TX 802.11b Mode 2437MHz															
emark	prescribed limit.										Э							
10.0 dB	luV/m																	
00																		
						_			FCC Part1	5 C - Above 1	IG PK							
)																		
									FCC Part1	5 C - Above 1	IG AV							
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).0 1000.00	0 3500.00 6	000.00	8500.0	0 11	000.00 (M	Hz)	160	00.00	8500.00 210	100.00 2350	0.00 26000							
No.	Frequer		Read		Facto			vel	Limit	Margin	Detector							
	(MHz	·	(dBu		(dB/m)	•		(dBuV/m									
1 *	4873.0		27.4		2.09		29		54.00	-24.48								
2	4874.9	38	40.	68	2.09		42	.77	74.00	-31.23	peak							

EN

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value





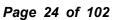
Ant. Po	I.	Vertica						
lest Mc	ode:	TX 802	.11b Mo	de 2437MH	Z			
Remark			ort for the		which more	than 10 dB l	below the	9
10.0 dBu	ıV/m							
00								
)						FCC Part15	C - Above 1	G PK
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)						FCC Part15	C - Above 1	GAV
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,	1							
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1000.000	0 3500.00 6	000.00 8	500.00 11	000.00 (MHz)	16000.00	18500.00 2100	0.00 23500	.00 26000.
No.	Frequer (MHz		eading dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
	4873.1	53 2	27.02	2.09	29.11	54.00	-24.89	AVG
1 *		11 4	10.88	2.09	42.97	74.00	-31.03	peak

EN

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value

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nt. Po	ol.	Horiz	ontal					
est Mo	ode:	TX 80	02.11b Mod	le 2462MHz	2			
emar	k:		port for the ribed limit.	emission v	vhich more t	han 10 dB t	pelow the	;
0.0 dE	3uV/m	p						
0								
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-								
						FCC Part15	C - Above 1	G PK
							C ABOVE I	
						FCC Part15	C - Above 1	G AV
	1							
	×							
	2							
.0								
	00 3500.00 6	000.00	8500.00 11	000.00 (MHz)	16000.00	18500.00 21000	0.00 23500	.00 26000
No.	Frequer (MHz	-	Reading (dBu∀)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4924.0	34	40.65	2.16	42.81	74.00	-31.19	peak
2 *	4924.5	43	26.32	2.16	28.48	54.00	-25.52	AVG

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value



Ant	. Pol		Vert	ical										
Tes	t Mo	de:	TX 8	302. ⁻	11b Moo	le 2462	ИH	z						
Rer	nark:				rt for the ed limit.	e emissio	on v	which	more t	than 1	0 dB l	below th	ne	
110.) dBu'	√/m												1
100														
90							-							
80										FCC	Part15	C - Above	1G PK	
70							-							
60							-			FCC	Part15	C - Above	1G AV	
50		ž					-							
40		X					-							
30		X												
20							_							
10.0	00.000	3500.00 6	000.00	850	0.00 11	000.00 (N	(Hz)	160	00.00 1	18500.00	2100	0.00 235	00.00 26	 000.a
N	lo.	Frequer (MHz			ading BuV)	Facto (dB/m			vel V/m)	Lin (dBu)		Margir (dB)	Detec	tor
1	*	4923.0	32	2	6.06	2.15		28	.21	54.	00	-25.79	AV(G
	2	4924.3	45	4	2.03	2.16		44	.19	74.	00	-29.81	pea	k
	narks actor	: (dB/m) = .	Anten	na F	actor (lB/m)+C	abl	e Fac	tor (dE	3)-Pre-	ampli	fier Fac	tor	

Page 25 of 102

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value

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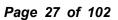




nt. Po	I.	Horiz	zontal					
est Mo	ode:	TX 8	02.11g Mod	de 2412MHz	<u> </u>			
emark			eport for the cribed limit.	emission v	vhich more t	han 10 dB t	pelow the	9
0.0 dBu	uV/m							
0								
						FCC Part15	C - Above 1	G PK
						FCC Part15	C - Above 1	GAV
							C-ADOVE I	
	ş							
	1							
	~							
.0								
	0 3500.00 6	000.00	8500.00 11	000.00 (MHz)	16000.00	8500.00 2100	0.00 23500	.00 26000
No.	Freque (MHz		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	4824.2	35	27.44	2.02	29.46	54.00	-24.54	AVG
2	4824.6	675	41.30	2.02	43.32	74.00	-30.68	peak

EN

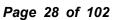
1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value





Ant. Po	Ι.	Vertica	I					
lest Mo	de:	TX 802	2.11g Mod	de 2412MH	Z			
Remark			ort for the bed limit.	emission \	which more t	han 10 dB l	below the	•
110.0 dB	uV/m							
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0						500 D	0.11.1	
/0						FCC Part15	C-Above I	G PK
50								
50						FCC Part15	C - Above 1	GAV
0	*							
	2							
20								
10.0								
1000.00	0 3500.00 6	000.00	3500.00 11	000.00 (MHz)	16000.00	18500.00 2100	0.00 23500	.00 26000.0
No.	Frequer	ncy R	eading	Factor	Level	Limit	Margin	Detector
INO.	(MHz) (dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Delector
1	4824.1	71	41.95	2.02	43.97	74.00	-30.03	peak
2 *	4824.8	65	27.63	2.02	29.65	54.00	-24.35	AVG

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value





nt. Po	l.	Hori	zont	al							
est Mo	ode:	TX 8	302.1	11g Moo	le 2437N	1H2	Z				
emark	(:			t for the ed limit.	e emissio	n v	vhich	more t	han 10 dB	below th	e
10.0 dB	luV/m					_					
00											
)									FCC Part1	i C - Above	1G PK
<u>ا</u>											
·									ECC Part1	i C - Above	
·	1×										
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)											
1000.00	00 3500.00 6	600.00	850	10.00 11	000.00 (M	Hz)	160	00.00 1	8500.00 210	00.00 2350	0.00 26000
No.	Frequer (MHz			ading BuV)	Facto (dB/m			vel IV/m)	Limit (dBuV/m	Margin (dB)	Detector
1	4874.4	32	4	1.24	2.09		43	.33	74.00	-30.67	peak
2 *	4874.8	74	2	7.19	2.09		29	.28	54.00	-24.72	AVG
emark											

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value

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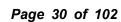




nt. Po	ol.	Verti	cal					
est Mo	ode:	TX 8	02.11g Mod	de 2437MH	Z			
emarl	k:		eport for the cribed limit.	emission v	which more	than 10 dB	below the	9
0.0 dB	uV/m							
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						FCC Part15	C-Above 1	G PK
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	×							
.0 1000.00	0 3500.00 6	000.00	8500.00 11	000.00 (MHz)	16000.00 1	8500.00 2100	0.00 23500	.00 26000
No.	Frequer (MHz		Reading (dBu∀)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4874.1	35	40.76	2.09	42.85	74.00	-31.15	peak
2 *	4874.1		26.79	2.09	28.88	54.00	-25.12	AVG
2 *	4874.1	64	26.79	2.09	28.88	54.00	-25.12	AVG

EN

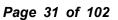
1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value





nt. Po	ol.	Horiz	zontal					
est Mo	ode:	TX 8	02.11g Mod	de 2462MH	z			
emarl	K :		eport for the cribed limit.	emission v	which more	than 10 dB	below the	Э
0.0 dB	uV/m	-						
00								
						FCC Part15	C - Above 1	IG PK
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).0 1000.00	0 3500.00 6	000.00	8500.00 11	000.00 (MHz)	16000.00	18500.00 2100	0.00 2350	0.00 2600
No.	Frequer		Reading	Factor		Limit	Margin	Detector
	(MHz	<u> </u>	(dBuV)	(dB/m)	. ,	(dBuV/m)	(dB)	
1	4923.7		40.90	2.16	43.06	74.00	-30.94	peak
2 *	4924.2	57	26.70	2.16	28.86	54.00	-25.14	AVG

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value





nt. Po	ol.	Verti	cal					
est Mo	ode:	TX 8	02.11g Mod	le 2462MHz	<u>z</u>			
emarl	k:		eport for the cribed limit.	emission v	vhich more t	han 10 dB t	pelow the	;
0.0 dB	luV/m							
0								
						FCC Part15	C About 1	C DK
						FUC Partis	C-ADOVE I	GPK
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	2							
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	1							
	×							
.0 1000.00	0 3500.00 6	000.00	8500.00 11	000.00 (MHz)	16000.00 1	8500.00 2100	0.00 23500	0.00 26000
No.	Frequer (MHz		Reading (dBu∀)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	4923.0	56	25.87	2.15	28.02	54.00	-25.98	AVG
2	4923.8	81	41.59	2.16	43.75	74.00	-30.25	peak

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value

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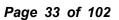
EN



nt. Pol	I.	Horiz	zontal					
est Mo	de:		02.11n(HT2	•				
Remark			eport for the cribed limit.	emission v	which more t	han 10 dB l	pelow the	;
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	0 3500.00 6	000.00	8500.00 11	000.00 (MHz)	16000.00	18500.00 2100	0.00 23500	.00 26000.
No.	Frequer (MHz		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	4823.7	18	27.57	2.02	29.59	54.00	-24.41	AVG
-	4823.8	12	41.54	2.02	43.56	74.00	-30.44	peak

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value

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Ant.	Pol.	Vertical						
	Mode:		•	20) Mode 24				
Rem	ark:	No report prescribe		emission v	vhich more t	han 10 dB t	pelow the	•
10.0	dBu∀/m							
00								
0								
0						FCC Part15	C - Above 1	G PK
0 -								
0						FCC Part15	0.451	0.01
0							C - Above T	GAV
0	×							
0	8							
20 -								
0.0	10.000 3500.00 6	000.00 850	0.00 11	000.00 (MHz)	16000.00	18500.00 2100	0.00 23500	.00 26000.
	Frequer	ncy Rea	ading	Factor	Level	Limit	Margin	Detector
No	. (MHz) (dE	BuV)	(dB/m)	(dBuV/m)	. ,	(dB)	Detector
1	4823.6	37 41	1.76	2.02	43.78	74.00	-30.22	peak
	* 4824.6	70 27	7.10	2.02	29.12	54.00	-24.88	AVG

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value



nt. Pol	•	Horiz	zontal					
est Mo	de:	TX 8	302.11n(HT	20) Mode 24	37MHz			
emark:			eport for the cribed limit	e emission v	vhich more t	han 10 dB t	pelow the	•
10. <u>0</u> dBu'	√/m	p						
00								
0								
0						FCC Part15	C - Above 1	G PK
0								
0						FCC Part15	C - Above 1	GAV
0	ş							
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0	×							
0								
0.0 1000.000	3500.00 6	000.00	8500.00 1	1000.00 (MHz)	16000.00 1	8500.00 2100	0.00 23500	0.00 2600
No.	Freque (MHz		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
No.		:)						Detector AVG

EN

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value

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Ant. Pol.		Vertical								
est Mode: Remark:		TX 802.11n(HT20) Mode 2437MHz								
		No report for the emission which more than 10 dB below the prescribed limit.								
10. <u>0</u> dBu	V/m	p								
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)										
ı						ECC Dest1E	C. About 1			
						FCC Part15	C - Above T	GPK		
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ı	8									
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)).0										
	3500.00 6	000.00	8500.00 11	000.00 (MHz)	16000.00	18500.00 2100	0.00 23500	.00 26000		
Ne	Freque (MHz		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector		
No.		·								
1 *	4873.5	83	26.74	2.09	28.83	54.00	-25.17	AVG		

EN

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value

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Ant. Pol.		Horizontal									
Fest Mode: Remark:		TX 802.11n(HT20) Mode 2462MHz No report for the emission which more than 10 dB below the prescribed limit.									
00											
)						FCC Part15	C - Above 1	G PK			
)											
D											
, ⊨						FCC Part15	C - Above 1	GAV			
	1×										
)											
)	Š										
D											
).0 1000 0	00 3500.00 6	000.00	8500.00 11	000.00 (MHz)	16000.00	18500.00 2100	0.00 23500).00 26000			
					1						
No.	Frequer (MHz	-	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector			
1	4923.6	88	40.82	2.16	42.98	74.00	-31.02	peak			
	4924.5	77	26.68	2.16	28.84	54.00	-25.16	AVG			

EN

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value

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Test Moo Remark:	:	No rep		20) Mode 24	62MHz			
110.0 dBu\			ort for the					
		prescri	bed limit.	emission v	vhich more t	han 10 dB b	elow the	
100	√/m							
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-								
0						FCC Part15 (C-Above 10	3 PK
0								
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0.0	3500.00 60	00.00 8	500.00 11	000.00 (MHz)	16000.00 1	8500.00 21000	.00 23500.	00 26000.0
No.	Frequer	ncy R	eading	Factor	Level	Limit	Margin	Detector
	(MHz	· ·	dBuV)	(dB/m)		(dBuV/m)	(dB)	
1 *	4924.12		26.48	2.16	28.64	54.00	-25.36	AVG
2	4924.5	51	41.36	2.16	43.52	74.00	-30.48	peak

EN

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value

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C	Э

nt. Po	l.	Hori	zontal					
est Mo	ode:	TX 8	302.11n(HT4	0) Mode 24	22MHz			
emark			eport for the cribed limit.	emission v	vhich more t	han 10 dB k	elow the	;
10.0 dB	uV/m							
0								
						FCC Part15	C - Above 1	G PK
·								
						Eco D. HE		
						FCC Part15	C - Above 1	GAV
	1×							
	2							
	Š							
·								
).0 1000.00	0 3500.00 6	000.00	8500.00 11	000.00 (MHz)	16000.00 1	8500.00 21000	0.00 23500	.00 26000
No.	Frequer	псу	Reading	Factor	Level	Limit	Margin	Detector
INO.	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Delector
1	4844.1	42	41.54	2.05	43.59	74.00	-30.41	peak
2 *	4844.9	27	27.53	2.05	29.58	54.00	-24.42	AVG

EN

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value

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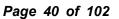


	No re		10) Mode 24 e emission v	22MHz vhich more t		pelow the	
			emission v	vhich more t		pelow the	
					FCC Part15 (C - Above 10	G PK
					FCC Part15 (C - Above 10	G AV
1							
×							
2							
×							
00.00 6	000.00	8500.00 11	000.00 (MHz)	16000.00 1	8500.00 21000	0.00 23500	.00 26000
		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detecto
4844.3	13	41.20	2.05	43.25	74.00	-30.75	peak
4844.9	97	27.26	2.05	29.31	54.00	-24.69	AVG
	requer (MHz 4844.3		Trequency (MHz) Reading (dBuV) 4844.313 41.20	Trequency (MHz) Reading (dBuV) Factor (dB/m) 4844.313 41.20 2.05	Trequency (MHz) Reading (dBuV) Factor (dB/m) Level (dBuV/m) 4844.313 41.20 2.05 43.25	Trequency (MHz) Reading (dBuV) Factor (dB/m) Level (dBuV/m) Limit (dBuV/m) 4844.313 41.20 2.05 43.25 74.00	Trequency (MHz) Reading (dBuV) Factor (dB/m) Level (dBuV/m) Limit (dBuV/m) Margin (dB) 4844.313 41.20 2.05 43.25 74.00 -30.75

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1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value

CTC Laboratories, Inc.





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500.00 6	000.00	8500.00 11	000.00 (MHz)	16000.00 1	8500.00 21000	.00 23500.	00 26000.0
		-	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
4874.4	56	27.32	2.09	29.41	54.00	-24.59	AVG
4874.52	29	40.90	2.09	42.99	74.00	-31.01	peak
	Frequer (MHz) 4874.4	1 500.00 6000.00 F	1 500.00 6000.00 8500.00 11 500.00 6000.00 8500.00 11 Frequency (MHz) Reading (dBuV) 4874.456 27.32	1 1 500.00 6000.00 8500.00 11000.00 (MHz) Frequency (MHz) Reading (dBuV) Factor (dB/m) 4874.456 27.32 2.09	1 1 500.00 6000.00 8500.00 11000.00 (MHz) 16000.00 1 Frequency (MHz) Reading (dBuV) Factor (dB/m) Level (dBuV/m) 4874.456 27.32 2.09 29.41	& Image: Constraint of the second	1 1 1 1 1 500.00 6000.00 8500.00 11000.00 (MHz) 16000.00 18500.00 21000.00 23500.00 Frequency (MHz) Reading (dBuV) Factor (dB/m) Level (dBuV/m) Limit (dBuV/m) Margin (dB) 4874.456 27.32 2.09 29.41 54.00 -24.59

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value

CTC Laboratories, Inc.



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est Mo	de:	TX 8	02.1 1	n(HT4	0) Mode	e 24	37MI	Ηz			
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	3500.00 8	000.00	8500	.00 11	000.00 (N	/Hz)	160	00.00	8500.00 210	00.00 23500	0.00 26000
	Freque	-		ading 3uV)	Facto (dB/n			evel iV/m)	Limit (dBuV/m)	Margin (dB)	Detector
No.	(MHz	:)		,	`	1	(· '		
No. 1	(MHz 4874.2	·		.98	2.09	·		.07	74.00	-30.93	peak

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value

CTC Laboratories, Inc.



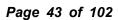
Ant	. Pol	•	Horiz	zont	al								
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<u>.</u>													
N	lo.	Frequer (MHz	-		ading BuV)	Facto (dB/m			vel IV/m)	Limit (dBuV/m)	Margin (dB)	Detecto	or
1	1 *	4903.5	93	2	6.59	2.13		28	.72	54.00	-25.28	AVG	;
	2	4904.9	33	4	0.39	2.13		42	.52	74.00	-31.48	peak	(
	narks	5:			-								

Page 42 of 102

EN

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value

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	17.0	02.11n(HT4	40) Mode 24	52MHz			
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3500.00 6	000 00	8500.00 11	000.00 (MHz)	16000.00 1	8500.00 2100	1 00 23500	.00 26000
		Reading	Factor	Level (dBu\//m)	Limit (dBu\//m)	Margin	Detector
`	, 	41.33	2.13	43.46	74.00	-30.54	peak
	73	26.43	2.13	28.56	54.00	-25.44	AVG
	1 1 2 3500.00 6 Frequer (MHz		/m /m 1 1 2 2 3500.00 6000.00 8500.00 11 3500.00 6000.00 8500.00 11 Frequency (MHz) Reading (dBuV)	/m /m /m /m	/m /m /m /m	/m FCC Part15 Image: Second Sec	/m FCC Part15 C - Above 11 FCC Part15 C - Above 11 FCC Part15 C - Above 11 k FCC Part15 C - Above 11 g FCC Part15 C - Above 11 g FCC Pa

EN

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value

CTC Laboratories, Inc.



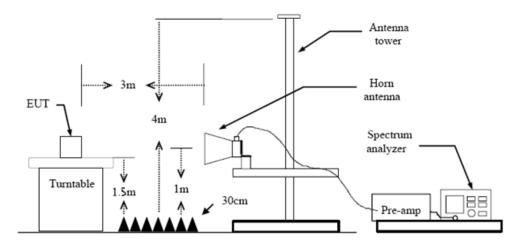
3.3. Band Edge Emissions (Radiated)

Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (d)/ RSS 247 5.5:

Restricted Frequency Band	(dBuV/m	n)(at 3m)
(MHz)	Peak	Average
2310 ~2390	74	54
2483.5 ~2500	74	54

Test Configuration



Test Procedure

- 1. The EUT was setup and tested according to ANSI C63.10:2013 requirements.
- 2. The EUT is placed on a turn table which is 1.5 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
- 3. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
- 4. The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10:2013 on radiated measurement.
- The receiver set as follow: 5.
 - RBW=1MHz, VBW=3MHz Peak detector for Peak value.

RBW=1MHz, VBW see note 1 with Peak Detector for Average Value.

Note 1: For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements. For the Duty Cycle please refer to clause 3.8 Duty Cycle.

Test Mode

Please refer to the clause 2.4.

Test Results

CTC Laboratories, Inc.



nt. Po	l .	Hori	zontal					
est Mo	de:	802.	11b Mode 2	2412MHz				
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).0 2303.400	2315.40	2327.40	2339.40 23	51.40 (MHz)	2375.40 2	387.40 2399.	40 2411.4	0 2423.4
	2315.40 Frequ (MH	lency	2339.40 23 Reading (dBuV)	Factor (dB/m)	Level	387.40 2399. Limit (dBuV/m)	Margin	0 2423.4
2303.400	Frequ	lency Iz)	Reading	Factor	Level	Limit	Margin	

kemarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value

CTC Laboratories, Inc.



nt. Po	Ι.	Vert	ical					
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0.0 2302 30	0 2314.30	2326.30	2338.30 23	50.30 (MHz)	2374.30	2386.30 2398	.30 2410.	30 2422.3
No.	Freque (MH	-	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2390.	000	22.19	31.31	53.50	74.00	-20.50	peak
2 *	2390.	000	8.81	31.31	40.12	54.00	-13.88	AVG
Remark	s:		na Factor (o					

2.Margin value = Level -Limit value

CTC Laboratories, Inc.





nt. Pol		Horiz	ontal					
est Mo	de:	802.1	1b Mode 2	462 MHz				
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.0 2450.650	246266 2	474.65	2486.65 24	98.65 (MHz)	2522.65 2	534.65 2546.0	65 2558.6	5 2570.
No.	Freque (MHz		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detecto
1	2483.5	500	22.64	31.48	54.12	74.00	-19.88	peak
2 *	2483.5	500	9.66	31.48	41.14	54.00	-12.86	AVG

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value

CTC Laboratories, Inc.



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0.0	50 2462.65	2474.65	2486.6		98.65 (N	(Hz)		22.65 2	534.65 254	6.65 2558.	65 2570.6
No.	Freque (MH		Read (dBu		Facto (dB/m			evel uV/m)	Limit (dBuV/m	Margin	Detector
1	2483.	500	22.		31.48	<u> </u>	•	3.77	74.00	-20.23	peak
2 *			8.9		31.48).47	54.00	-13.53	<u> </u>
lemar	ks: pr (dB/m) =									1	1

2.Margin value = Level -Limit value

CTC Laboratories, Inc.



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					FCC Parti 5	C - Above 1	GAV
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2314.20	2326.20	2338.20 23	50.20 (MHz)	2374.20	2386.20 2398	.20 2410.3	20 2422.2
		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
2390.0	00	33.88	31.31	65.19	74.00	-8.81	peak
		19.21	31.31	50.52	54.00	-3.48	AVG
	de: ///m ////////////////////////////////	de: 802.	de: 802.11g Mode 2	de: 802.11g Mode 2412MHz IV/m IIII IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	de: 802.11g Mode 2412MHz iv/m Image: State of the sta	de: 802.11g Mode 2412MHz IV/m Image: Stress of the second sec	de: 802.11g Mode 2412MHz V/m FCC Part15 C Above 1 Above 1

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value

CTC Laboratories, Inc.



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0.0	00 2314.30	2326.30	2338.30 23	50.30 (MHz)	2374.30 2	386.30 2398.	30 2410.3	30 2422.3
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No.	Frequ (Mł		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2390	.000	22.49	31.31	53.80	74.00	-20.20	peak
2 *	2390	.000	9.12	31.31	40.43	54.00	-13.57	AVG

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value

CTC Laboratories, Inc.



nt. Po	Ι.	Horiz	zontal					
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	2462.65	2474.65	2486.65 24	98.65 (MHz)	2522.65 2	534.65 2546.	65 2558.6	5 2570.6
No.	Freque (MH		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.	500	34.72	31.48	66.20	74.00	-7.80	peak
2 *	2483.	500	19.90	31.48	51.38	54.00	-2.62	AVG
	·		-	-	·	-	-	

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value

CTC Laboratories, Inc.



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2450	660.2	462.65	247	74.65	240	6.65	24	98.65	(MF	1-)	254	22.65	2534.6	E 9E	46.65	2558	<u>ee (</u>	2570.6
		Frog			Po	adin		E	actor	-		evel	1	.imit	N	largin		
No.	•	requ (MI	Hz)	-у		adin BuV			3/m)			uV/m)				largir (dB)	Det	ector
1		2483	.50	0	2	2.90		31	.48		54	.38	7	4.00	-	19.62	pe	eak
2 '	*	2483	.50	0	9	.02		31	.48		40	.50	5	4.00	-'	13.50	A	٧G
2		2483	.50	U	9	1.02		31	.48		40	0.50	5	4.00	-	13.50	A	V

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value

CTC Laboratories, Inc.



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0.0	0 2315.40	2327.40	2339.40 23	51.40 (MHz)	2375.40 2	387.40 2399.	40 2411.4	0 2423.4
No.	Frequ (MF		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2390.	000	26.35	31.31	57.66	74.00	-16.34	peak
2 *	2390.	000	13.85	31.31	45.16	54.00	-8.84	AVG

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value

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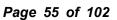




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	0 2314.30 2	326.30	2338.30 23	50.30 (MHz)	2374.30	2386.30 2398.	30 2410.3	30 2422.3
No.	Frequer (MHz		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2390.0	00	22.64	31.31	53.95	74.00	-20.05	peak
2 *	2390.0	00	9.80	31.31	41.11	54.00	-12.89	AVG
				·		*		

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value

CTC Laboratories, Inc.





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est Mo	de:	802	.11n(HT20) Mode 2462	MHz			
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	2462.65	2474.65	2486.65	2498.65 (MHz)	2522.65	2534.65 2546	6.65 2558	.65 2570
No.	Freque (MH		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.	500	24.45	31.48	55.93	74.00	-18.07	peak
2 *	2483.	500	13.20	31.48	44.68	54.00	-9.32	AVG

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value

CTC Laboratories, Inc.





nt. Po	Ι.	Vert	cal							
est Mo	de:	802.	11n(HT2	0) Mo	ode 246	2MHz				
0.0 dBu	ıV/m									
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	2462.65	2474.65	2486.65	2498.	65 (MH:	z) 252	2.65 2	2534.65 254	6.65 2558.	65 2570.0
No.	Freque		Readir	•	Factor		vel	Limit	Margin	Detector
1	(MH 2483.	·	(dBuV 22.89		(dB/m) 31.48		.37	(dBuV/m) 74.00	(dB) -19.63	naak
-										peak
2 *	2483.	500	9.06		31.48	40	.54	54.00	-13.46	AVG

≺emarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value

CTC Laboratories, Inc.



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est	t Mo	de:	802	.11n(HT40)	Mode 2422	MHz			
20.0	dBu	V/m							
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0							FCC Part15	V C-Above 1	G PK
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223	94.500	2309.50	2324.50	2339.50 2	354.50 (MHz)	2384.50	2399.50 2414	.50 2429.	50 2444.
N	0.	Freque (MH		Reading (dBu∀)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1		2390.	000	23.17	31.31	54.48	74.00	-19.52	peak
2	*	2390.	000	13.43	31.31	44.74	54.00	-9.26	AVG
				1	1	1		1	

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value

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	2.11n(HT40)	Mode 2422I	MHz	FCC Part1 5 (-v	
				FCC Part15 (-v	
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06.50 2321.50	2336.50 23	851.50 (MHz)	2381.50 2	2396.50 2411.	50 2426.5	0 2441.5
requency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
2390.000	21.58	31.31	52.89	74.00	-21.11	peak
2390.000	8.81	31.31	40.12	54.00	-13.88	AVG
2	requency (MHz) 390.000	requency (MHz) Reading (dBuV) 390.000 21.58	requency Reading Factor (MHz) (dBuV) (dB/m) 390.000 21.58 31.31	requency (MHz) Reading Factor Level (dBuV) (dB/m) (dBuV/m) 390.000 21.58 31.31 52.89	requency (MHz) Reading (dBuV) Factor (dB/m) Level (dBuV/m) Limit (dBuV/m) 390.000 21.58 31.31 52.89 74.00	requency (MHz) Reading (dBuV) Factor (dB/m) Level (dBuV/m) Limit (dBuV/m) Margin (dB) 390.000 21.58 31.31 52.89 74.00 -21.11

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value

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2427.250	2442.25	2457.25	2472.2	5 24	87.25 (M	Hz)	251	7.25 2	2532.25 254	17.25 2562.	25 2577.3
No.	Freque (MH		Read (dBu		Facto (dB/m			vel iV/m)	Limit (dBuV/m	Margin	Detecto
1	2483.	500	28.3	36	31.48	3		.84	74.00	-14.16	peak
2 *	2483.	500	16.	52	31.48	3	48	.00	54.00	-6.00	AVG

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value

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0.0	2446.15 2	2461.15	2476.15 24	91.15 (MHz)	2521.15 2	2536.15 2551.	15 2566.1	5 2581.1		
2431.150	2440.15 2	401.15	2470.15 24	91.15 (MHz)	2521.15 2	200.10 2001.	15 2566.1	5 2501.		
No.	Freque (MHz		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector		
1	2483.5	00	21.33	31.48	52.81	74.00	-21.19	peak		
2 *	2483.5	500	8.97	31.48	40.45	54.00	-13.55	AVG		

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value

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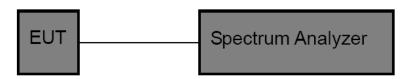


3.4. Band edge and Spurious Emissions (Conducted)

<u>Limit</u>

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (d):In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

Test Configuration



Test Procedure

- 1. The transmitter output was connected to the spectrum analyzer through an attenuator, the path loss was compensated to the results for each measurement.
- 2. Set to the maximum power setting and enable the EUT transmit continuously
- 3. Use the following spectrum analyzer settings: RBW = 100 kHz, VBW ≥ RBW, scan up through 10th harmonic.
- Sweep = auto, Detector function = peak, Trace = max hold4. Measure and record the results in the test report.

Test Mode

Please refer to the clause 2.4.

Test Results

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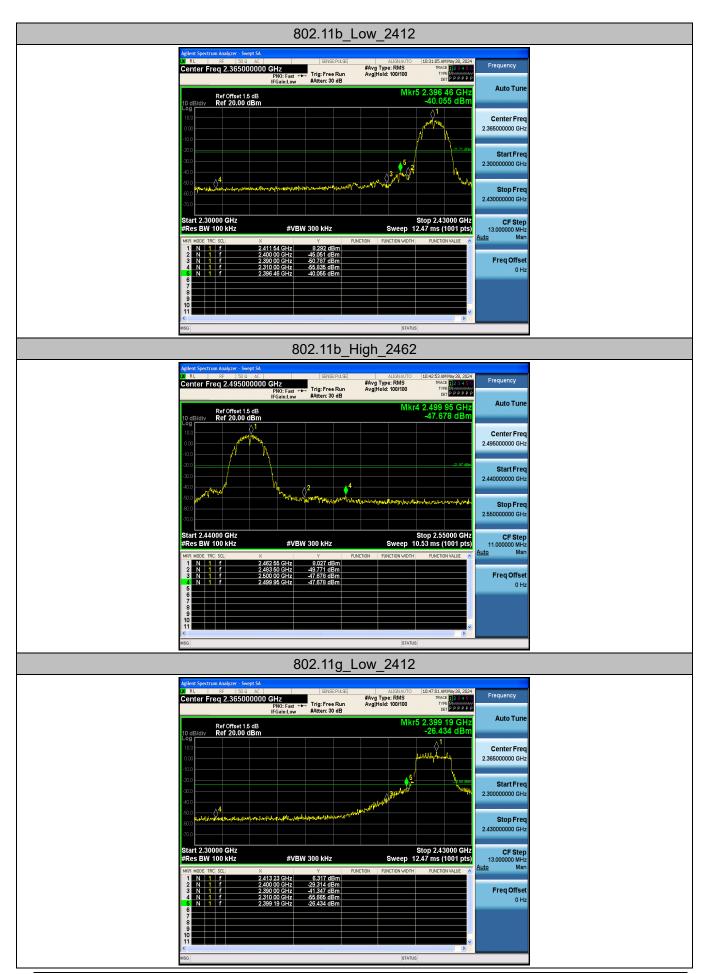


(1) Band edge Conducted Test

Test Mode	Test Frequency	Ref Level[dBm]	Result[dBm]	Limit[dBm]	Verdict
802.11b	2412	8.29	-40.06	≤-21.71	PASS
002.110	2462	8.03	-47.68	≤-21.97	PASS
902 11 a	2412	6.32	-26.43	≤-23.68	PASS
802.11g	2462	6.24	-37.57	≤-23.76	PASS
902 11p(UT20)	2412	4.78	-28.94	≤-25.22	PASS
802.11n(HT20)	2462	4.71	-35.34	≤-25.29	PASS
902 11p(UT40)	2422	2.01	-30.81	≤-27.99	PASS
802.11n(HT40)	2452	1.48	-31.54	≤-28.52	PASS

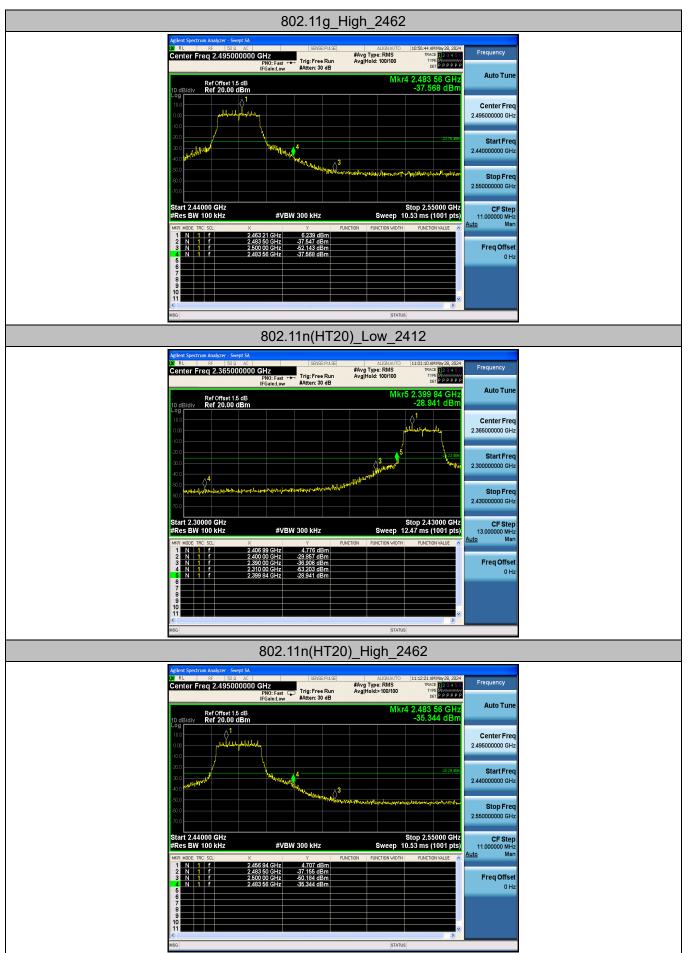
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(2) Conducted Spurious Emissions Test

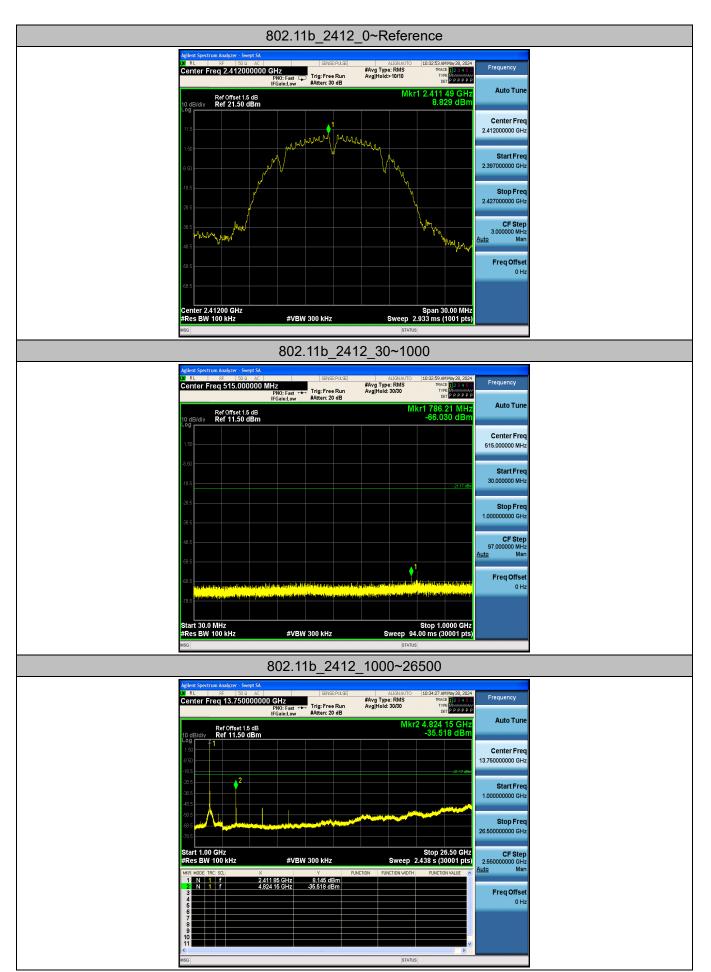
Test Mode	Frequency [MHz]	Freq Range [Mhz]	Ref Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
	2412	Reference	8.83	8.83		PASS
		30~1000	8.83	-66.03	≤-21.17	PASS
		1000~26500	8.83	-35.52	≤-21.17	PASS
		Reference	7.94	7.94		PASS
802.11b	2437	30~1000	7.94	-66.25	≤-22.06	PASS
		1000~26500	7.94	-34.51	≤-22.06	PASS
		Reference	8.50	8.50		PASS
	2462	30~1000	8.50	-67.98	≤-21.50	PASS
		1000~26500	8.50	-34.78	≤-21.50	PASS
	2412	Reference	6.18	6.18		PASS
		30~1000	6.18	-67.89	≤-23.82	PASS
		1000~26500	6.18	-47.38	≤-23.82	PASS
	2437	Reference	6.46	6.46		PASS
802.11g		30~1000	6.46	-67.6	≤-23.54	PASS
		1000~26500	6.46	-46.97	≤-23.54	PASS
	2462	Reference	4.54	4.54		PASS
		30~1000	4.54	-67.63	≤-25.46	PASS
		1000~26500	4.54	-44.27	≤-25.46	PASS
	2412	Reference	5.28	5.28		PASS
		30~1000	5.28	-67.46	≤-24.72	PASS
		1000~26500	5.28	-45.03	≤-24.72	PASS
	2437	Reference	5.07	5.07		PASS
802.11n(HT20)		30~1000	5.07	-67.82	≤-24.93	PASS
		1000~26500	5.07	-47.65	≤-24.93	PASS
		Reference	5.92	5.92		PASS
	2462	30~1000	5.92	-67.57	≤-24.08	PASS
		1000~26500	5.92	-43.7	≤-24.08	PASS
	2422	Reference	2.19	2.19		PASS
		30~1000	2.19	-67.25	≤-27.81	PASS
		1000~26500	2.19	-48.02	≤-27.81	PASS
		Reference	1.86	1.86		PASS
802.11n(HT40)	2437	30~1000	1.86	-55.69	≤-28.14	PASS
		1000~26500	1.86	-47.45	≤-28.14	PASS
		Reference	-0.85	-0.85		PASS
	2452	30~1000	-0.85	-53.26	≤-30.85	PASS
		1000~26500	-0.85	-47.87	≤-30.85	PASS

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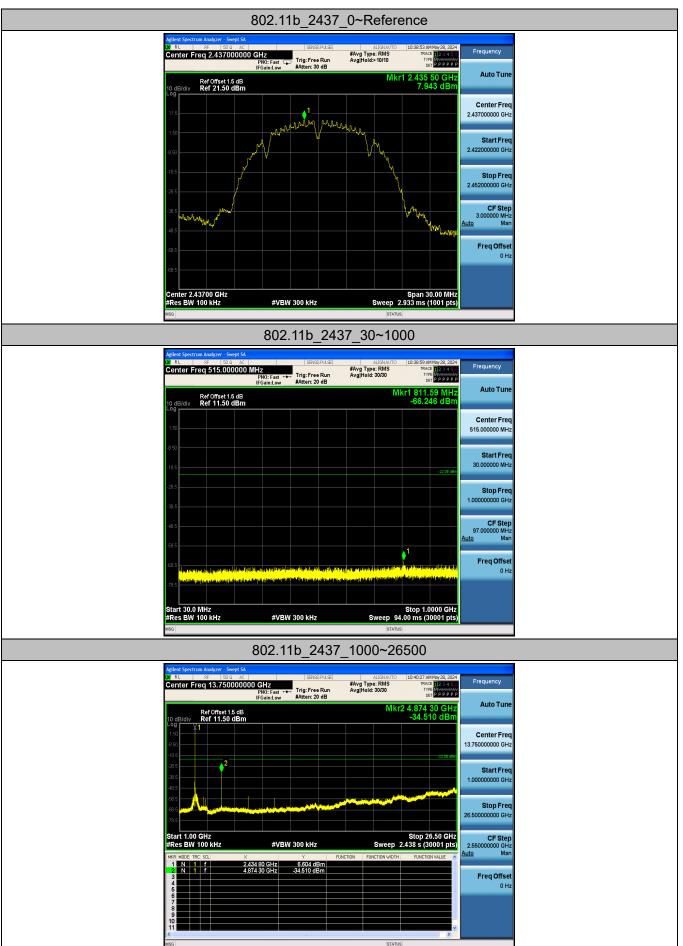
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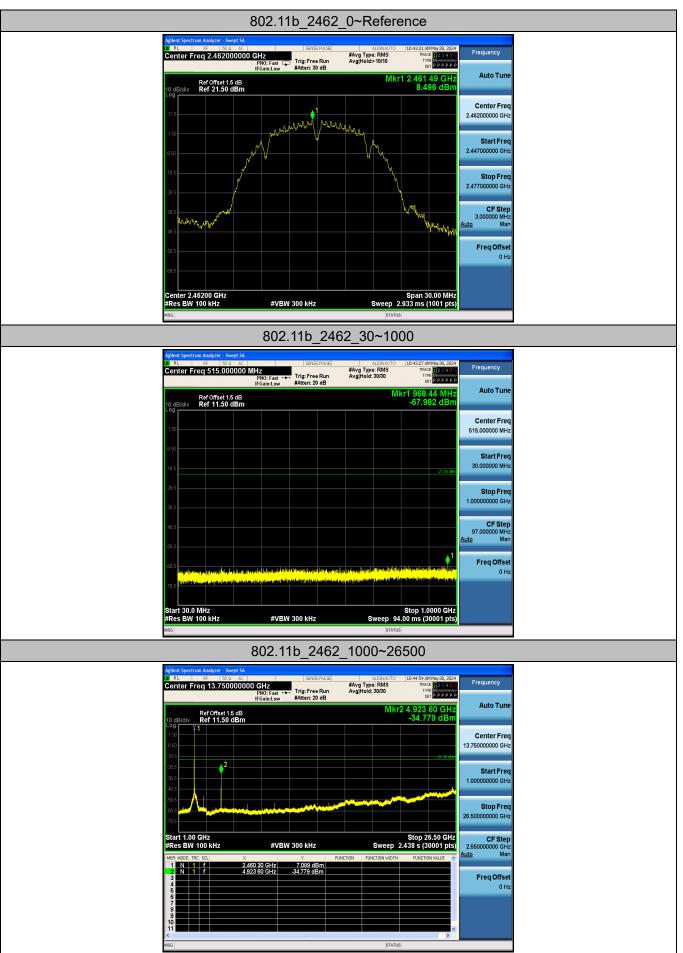
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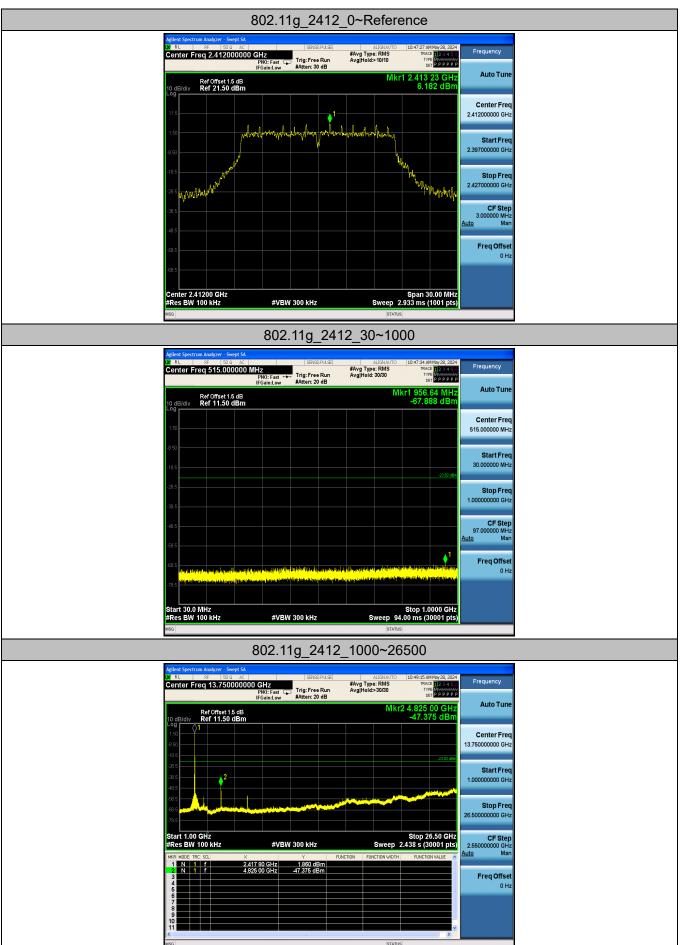






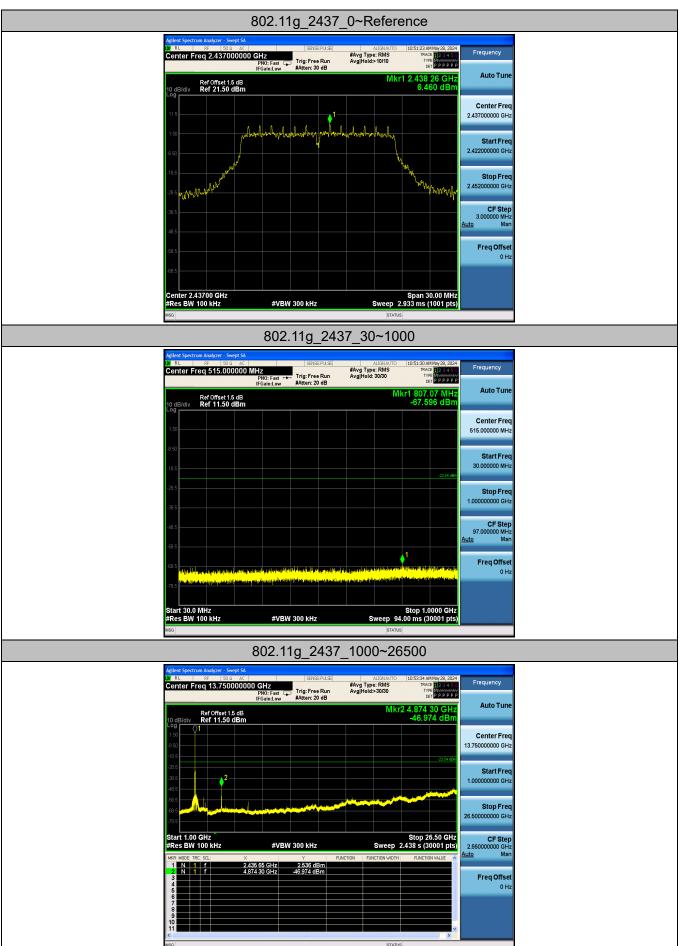






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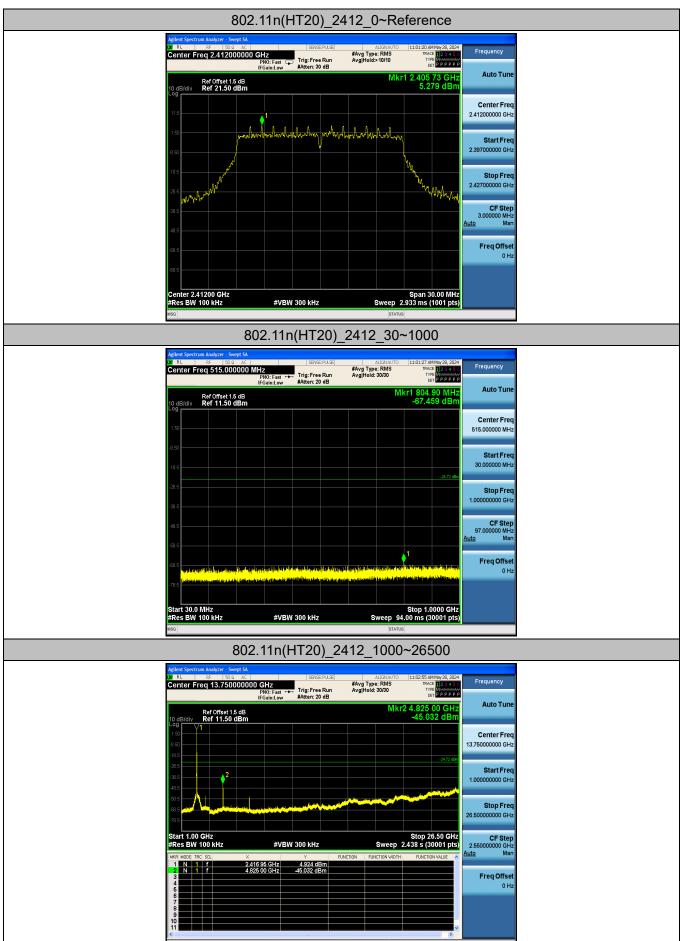






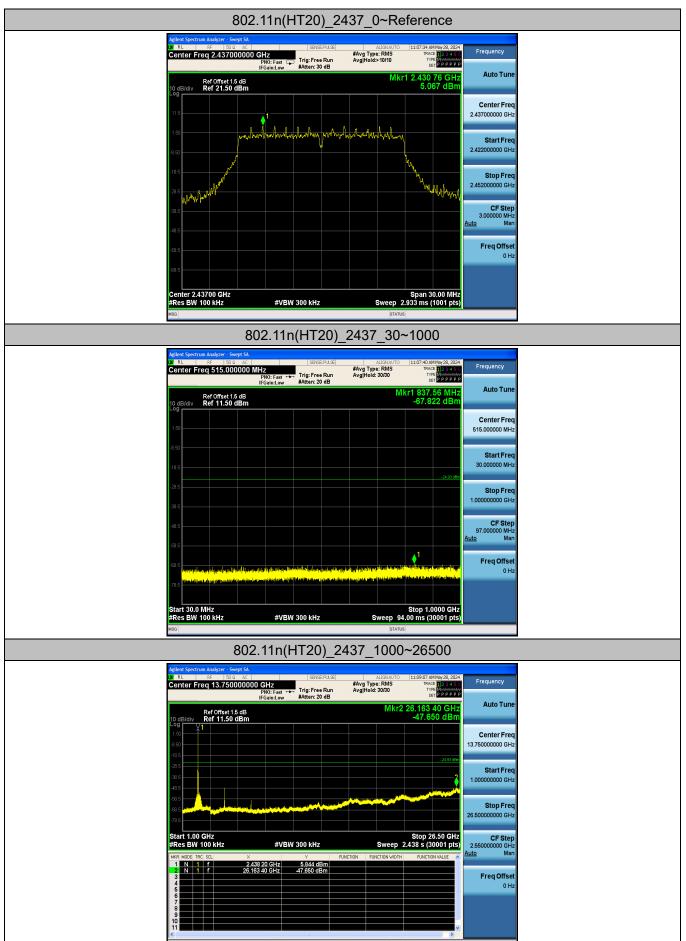






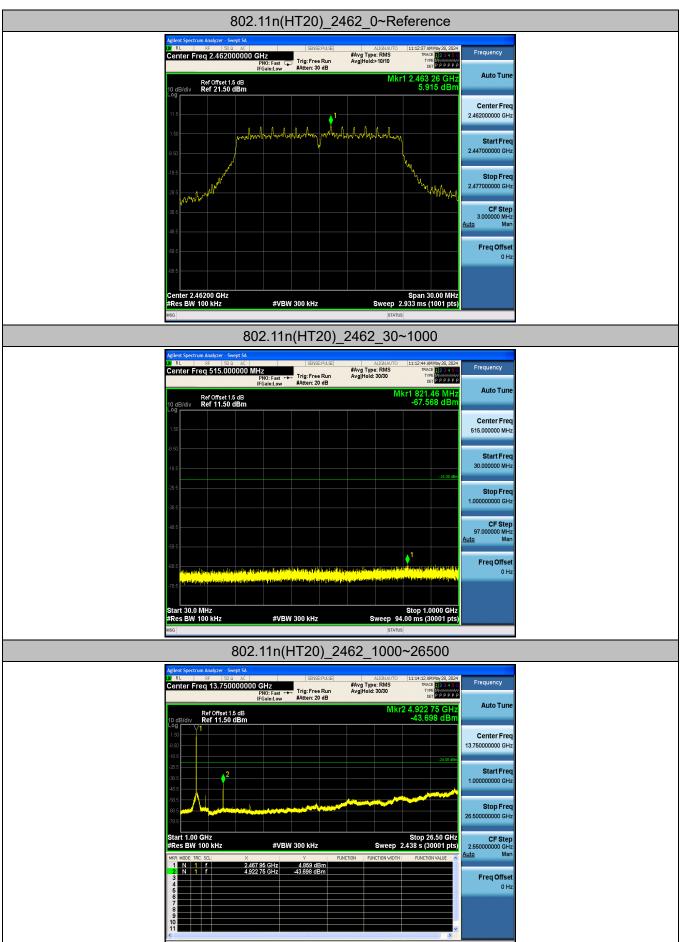
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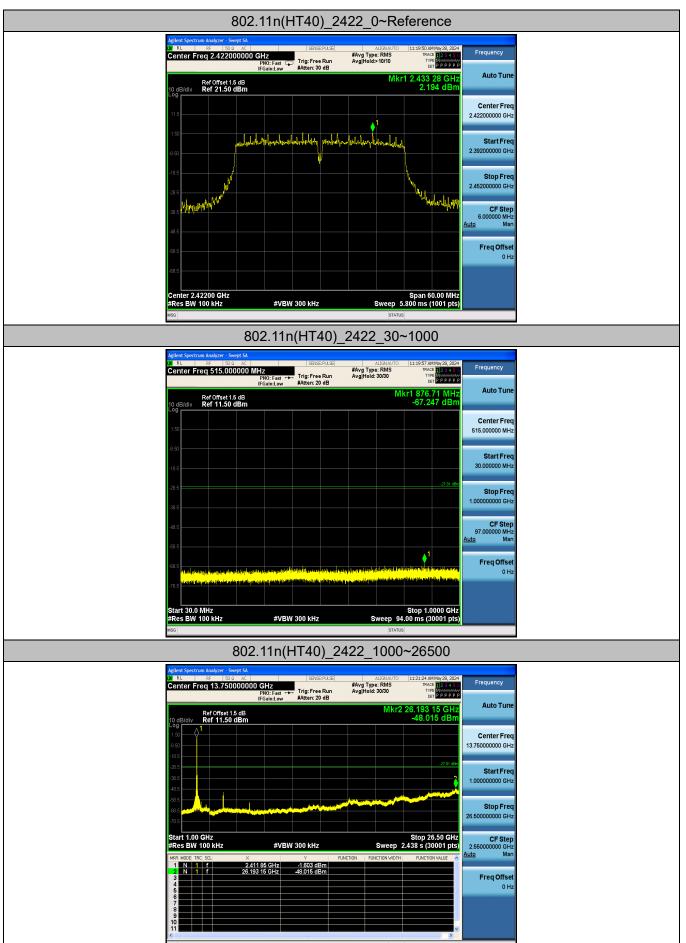






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