

CTC Laboratories, Inc.

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	TEST REPORT	
Report No. ·····:	CTC20240101E16	
FCC ID······:	2AYD5-I23M03	
Applicant·····:	Imin Technology Pte Ltd	
Address	11 Bishan Street 21, #03-05 Bosch Buil	ding, Singapore, 573943
Manufacturer:	Imin Technology Pte Ltd	
Address	11 Bishan Street 21, #03-05 Bosch Buil	ding, Singapore, 573943
Product Name·····:	POS Device	
Trade Mark······	imin	
Model/Type reference······:	I23M03	
Listed Model(s) ······:	/	
Standard:	FCC CFR Title 47 Part 15 Subpart C	Section 15.247
Date of receipt of test sample:	Jan. 18, 2024	
Date of testing	Feb. 19, 2024 ~ Mar. 06, 2024	
Date of issue	Mar. 07, 2024	
Result:	PASS	
Compiled by:		Tana Cu
(Printed name+signature)	Terry Su	Terry Su Bic sharg Johnas
Supervised by:		Trice shang
(Printed name+signature)	Eric Zhang	
Approved by:		1 amas
(Printed name+signature)	Totti Zhao	/one
Testing Laboratory Name:	CTC Laboratories, Inc.	
Address	1-2/F., Building 2, Jiaquan Building, Gu Shenzhen, Guangdong, China	anlan High-Tech Park,
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not be taken into consideration beyond this limit. The test report merely correspond to the test sample.



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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.

<u>RSS 247 Issue 3:</u> 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.	Date of issue	Description
01	Mar. 07, 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	Cecilia Luo
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.



1.4. Test Facility

CTC Laboratories, Inc.

Add: 1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, 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.



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	
Unwanted Emissions In Non-restricted Freq Bands	9kHz-1GHz: ±0.746dB 1GHz-26GHz: ±1.328dB (
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

Applicant:	Imin Technology Pte Ltd
Address:	11 Bishan Street 21, #03-05 Bosch Building, Singapore, 573943
Manufacturer:	Imin Technology Pte Ltd
Address:	11 Bishan Street 21, #03-05 Bosch Building, Singapore, 573943
Factory 1:	Jiangxi Neostra Electronic Co. Ltd
Address:	279 Shenzhen Road, Jinggangshan economic and Technological Development Zone, Ji'an, Jiangxi, China
Factory 2:	Neosta Technology Sdn. Bhd.
Address:	No. 78, Jln I-Park SAC 5, Taman Perindustrian i-Park SAC, 81400 Senai, Johor, Malaysia

2.2. General Description of EUT

Product Name:	POS Device
Trade Mark:	iMiN
Model/Type reference:	I23M03
Listed Model(s):	1
Power supply:	5Vdc/2A from AC/DC Adapter 7.6Vdc from 2500mAh Li-ion Battery
Adapter 1 Model:	ADS-10LA-06 05010EPCU Input: 100-240V~ 50/60Hz 0.3A Max Output: 5Vdc/2A
Adapter 2 Model:	TPA-67050200UU Input: 100-240V~ 50/60Hz 0.3A Output: 5Vdc/2A
Hardware version:	1
Software version:	1
WIFI 802.11b/ g/ n(HT20)	
Modulation:	802.11b: DSSS(CCK, DQPSK, DBPSK) 802.11g/n: OFDM(BPSK, QPSK, 16QAM, 64QAM)
Operation frequency:	802.11b/g/n(HT20): 2412MHz~2462MHz
Channel number:	802.11b/g/n(HT20):11channels
Channel separation:	5MHz
Antenna type:	FPC Antenna
Antenna gain:	1.9dBi Max



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2.3. Accessory Equipment information

Equipment Information			
Name	Model	S/N	Manufacturer
1	1	1	1
Cable Information			
Name	Shielded Type	Ferrite Core	Length
1	1	1	1
Test Software Information			
Name	Versions	1	1
Engineering mode	1	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).

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	

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.



2.5. Measurement Instruments List

RF Tes	st System				
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated Until
1	Spectrum Analyzer	R&S	FSV40-N	101331	Mar. 14, 2024
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	Wideband Radio Communication Tester	R&S	CMW500	102257	May. 25, 2024
11	Wideband Radio Communication Tester	R&S	CMW500	102414	Dec. 12, 2024
12	High and low temperature test chamber	ESPEC	MT3035	1	Mar. 24, 2024
13	RF Control Unit	Tonscend	JS0806-2	/	Aug. 22, 2024
14	Test Software	Tonscend	JS1120-3	V3.3.38	/

Radiate	Radiated 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. 14, 2024					
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	1					

Radiated Emission (3m chamber 3)									
Item	Test Equipment Manufacturer Model No. Serial No. Calibrated U								
1	Trilog-Broadband Antenna	Schwarzbeck	VULB 9163	01026	Dec. 18, 2024				
2	Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-647	Dec. 01, 2024				
3	Test Receiver	Keysight	N9038A	MY56400071	Dec. 12, 2024				
4	Broadband Amplifier	SCHWARZBECK	BBV9743B	259	Dec. 12, 2024				
5	Mirowave Broadband	SCHWARZBECK	BBV9718C	111	Dec. 12, 2024				

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	Amplifier				
6	3m chamber 3	YIHENG	EE106	/	Aug. 28, 2026
7	Test Software	FARA	EZ-EMC	FA-03A2	/

Conducted 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	1				

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

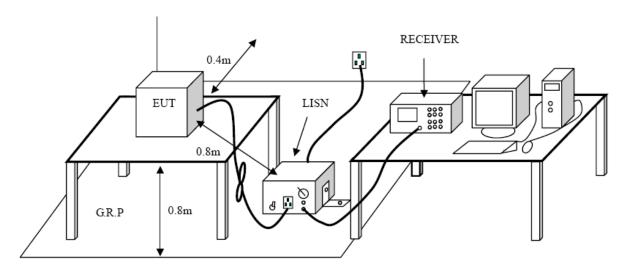
<u>Limit</u>

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



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.

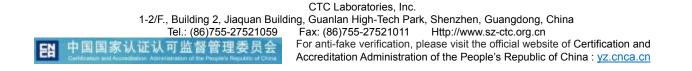
3. The EUT and simulators are connected to the main power through a line impedances stabilization network (LISN). The LISN provides a 50ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram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

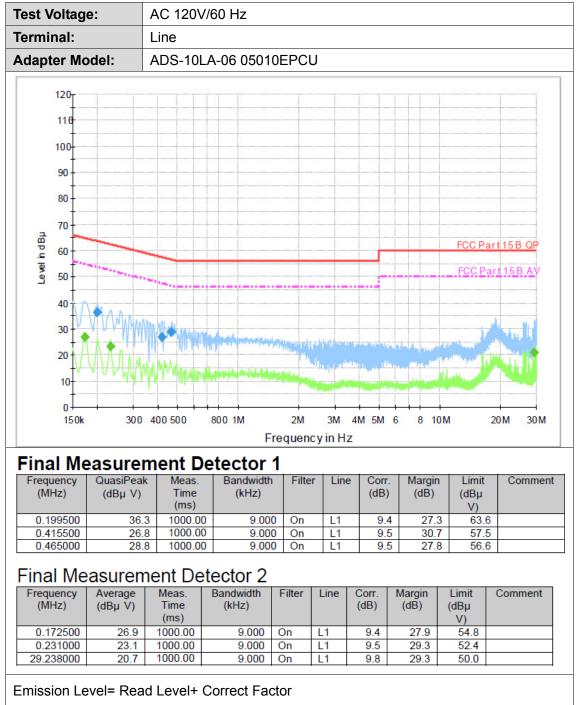




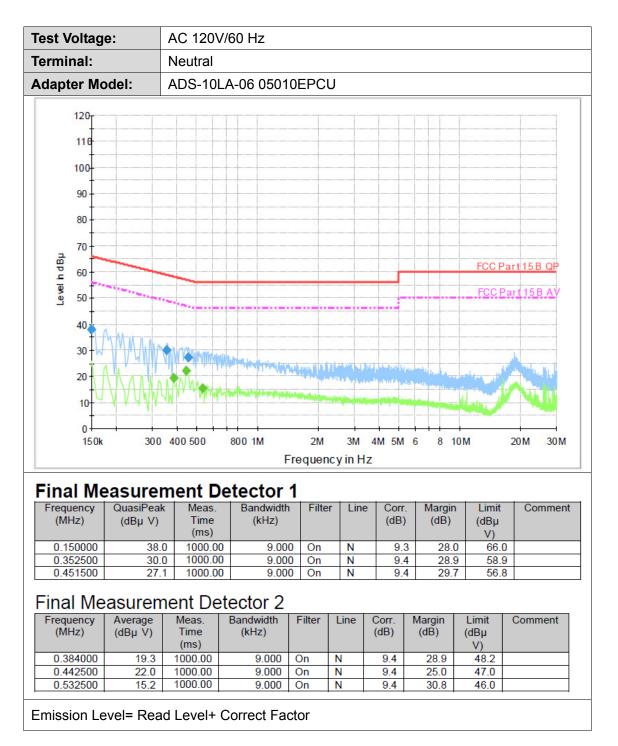
Test Mode:

Please refer to the clause 2.4.

Test Results

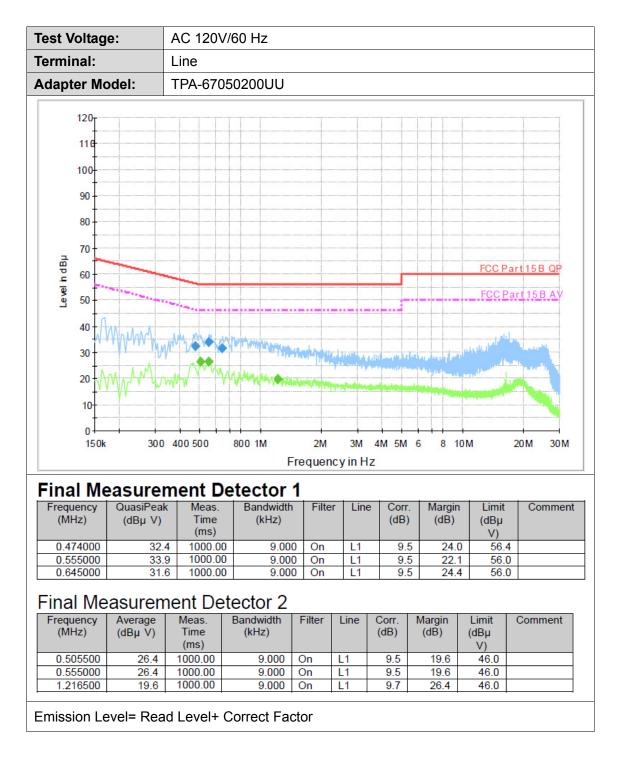






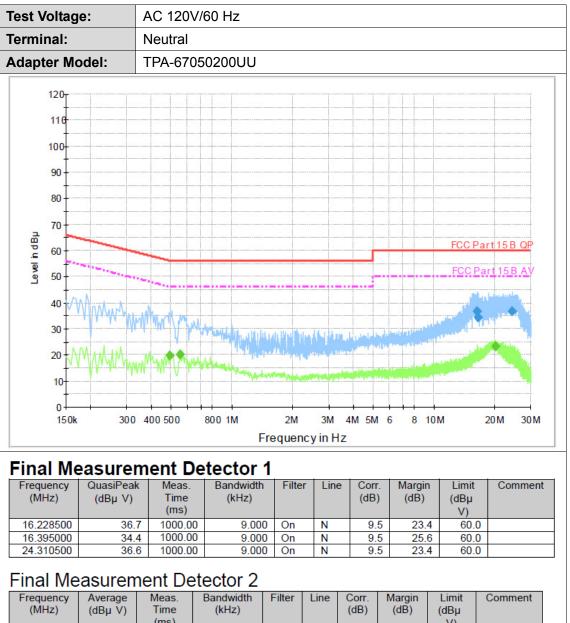












Frequency (MHz)	Average (dBµ V)	Meas. Time	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµ	Comment
		(ms)						V)	
0.492000	19.6	1000.00	9.000	On	N	9.4	26.5	46.1	
0.555000	20.2	1000.00	9.000	On	N	9.4	25.8	46.0	
20.206500	23.3	1000.00	9.000	On	Ν	9.5	26.7	50.0	

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:

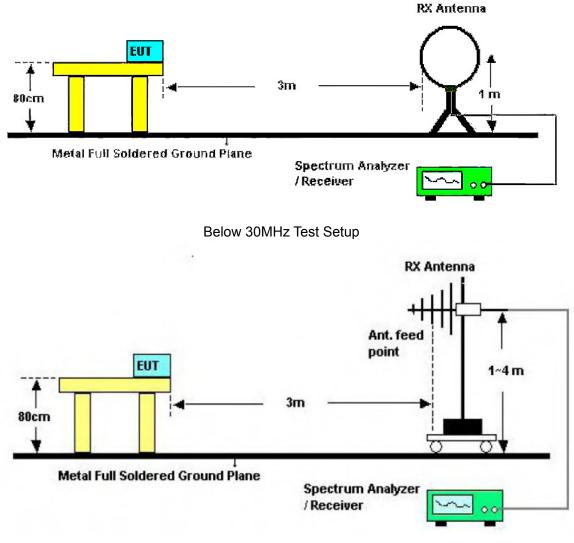
Frequency	Limit (dBuV/m @3m)	Value		
30 MHz ~ 88 MHz	40.00	Quasi-peak		
88 MHz ~ 216 MHz	43.50	Quasi-peak		
216 MHz ~ 960 MHz	46.00	Quasi-peak		
960 MHz ~ 1 GHz	54.00	Quasi-peak		
Above 1 GHz	54.00	Average		
Above i Grz	74.00	Peak		

Note:

(1) The tighter limit applies at the band edges.

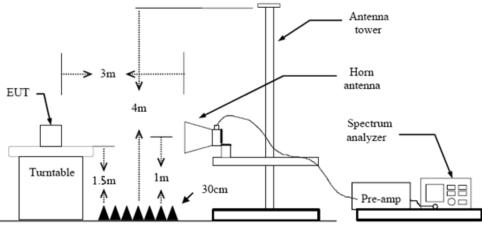
(2) Emission Level (dBuV/m)=20log Emission Level (uV/m).

Test Configuration



Below 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 guasi-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 10^{th} harmonic:

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

RBW=1MHz, VBW \geq 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.

Test Result

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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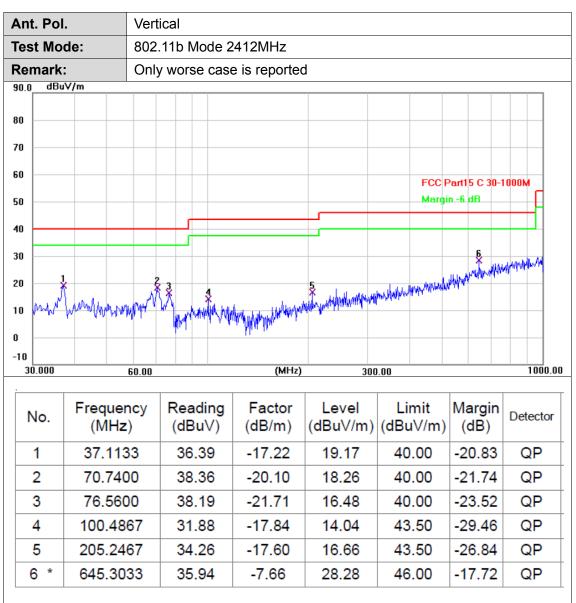


Ant. Pol. Horizontal												
est Mo	ode:	802	.11b M	ode 2	2412MHz							
Remark		Onl	y worse	e cas	e is reporte	d						
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0												
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	Freque (MHz	псу	Read (dBu	ling			Li	mit ıV/m)	Ma	rgin IB)		
30.000	Freque	ncy 2)	Read	ling ıV)	(MHz) Factor	Level	Li (dBu	mit	Ma (d	rgin	Det	1000.
30.000 No.	Freque (MHz	ncy 2) 33	Read (dBu	ling IV) 21	(MHz) Factor (dB/m)	Level (dBuV/m)	Li (dBu	mit ıV/m)	Ma (d -23	rgin IB)	Det	ector
30.000 No. 1 2 3	Freque (MHz 70.093 105.01 195.87	ncy z) 33 33 700	Read (dBu 36.2	ling IV) 21 39	(MHz) Factor (dB/m) -19.86	Level (dBuV/m) 16.35	Li (dBu 40	mit ıV/m) .00	Ma (d -23 -29 -29	rgin IB) 3.65 9.65 9.15	Det C	1000.1 ector
30.000 No. 1 2 3 4	Freque (MHz 70.093 105.01 195.87 314.53	ncy z) 33 33 700 333	Read (dBu 36.2 31.3 32.3 32.9	ling I∨) 21 39 38 97	(MHz) Factor (dB/m) -19.86 -17.54 -18.03 -14.57	Level (dBuV/m) 16.35 13.85 14.35 18.40	Li (dBu 40 43 43 46	mit IV/m) 0.00 0.50 0.50 0.00	Ma (d -23 -29 -29 -27	argin IB) 3.65 9.65 9.15 7.60	Det C C C	1000.1 ector 2P 2P 2P 2P
30.000 No. 1 2 3	Freque (MHz 70.093 105.01 195.87	ncy z) 33 33 700 333	Read (dBu 36.2 31.3 32.3	ling I∨) 21 39 38 97	(MHz) Factor (dB/m) -19.86 -17.54 -18.03	Level (dBuV/m) 16.35 13.85 14.35	Li (dBu 40 43 43 46	mit ıV/m) .00 .50	Ma (d -23 -29 -29 -27	rgin IB) 3.65 9.65 9.15	Det C C C	1000.1 ector (P (P) (P)

2.Margin value = Level -Limit value

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Ad	obe	10	βHz

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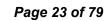
nt. Po			zontal								
est Mo	ode:	TX 8	302.11b Moo	de 2412MH	Z						
emark	(:		No report for the emission which more than 10 dB below the prescribed limit.								
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0											
						FCC Part15	C - Above 1	G PK			
						FCC Part15	C - Above 1	G AV			
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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	-	Reading	Factor	Level	Limit	Margin	Detector			
NO.	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector			
1 *	4824.1	07	25.11	2.02	27.13	54.00	-26.87	AVG			
2	4824.4	85	40.26	2.02	42.28	74.00	-31.72	peak			
emark	s:										
Facto	r (dB/m) = /		na Factor (-Limit value	dB/m)+Cab	le Factor (dE	3)-Pre-ampl	fier Facto	or			



Ant. F	Pol.	Vert	ical					
Test M	Node:	TX 8	302.11b Mo	de 2412MH	Z			
Rema	ırk:		eport for the cribed limit.		which more	than 10 dB l	below the	;
110.0	dBuV/m							
100								
90 -								
80						FCC Part15	C About 1	
70						FCC Partis	C-ADUVE I	
60								
50						FCC Part15	C - Above 1	GAV
40	Š							
30	<u>}</u>							
20	×							
10								
0								
-10								
1000.	.000 3500.00	6000.00	8500.00 11	1000.00 (MHz)	16000.00	18500.00 2100	0.00 23500	.00 26000.0
No.	Freque (MH:		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 '	* 4823.6	646	25.53	2.02	27.55	54.00	-26.45	AVG
2	4823.7	73	40.38	2.02	42.40	74.00	-31.60	peak
L	1		1	1	1	1		I

Page 22 of 79

Remarks:





nt. Po	I.	Horiz	zontal					
est Mo	de:	TX 8	02.11b Mod	le 2437MHz	2			
emark			eport for the cribed limit.	emission w	vhich more t	han 10 dB t	pelow the	;
10. <u>0</u> dB	uV/m							
00								
,								
,						FCC Part15	C - Above 1	G PK
)						FCC Part15	C - Above 1	G AV
)	ŝ							
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)	×							
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)								
1000.00	0 3500.00	6000.00	8500.00 11	000.00 (MHz)	16000.00	18500.00 2100	0.00 23500	.00 26000
No.	Freque		Reading	Factor	Level	Limit	Margin	Detector
	(MHz	<u>z)</u>	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1 *	4874.1	44	24.89	2.09	26.98	54.00	-27.02	AVG
2	4874.2	255	39.71	2.09	41.80	74.00	-32.20	peak



EN

nt. Pol	•	Verti	cal									
est Mo		-	-		de 2437							
Remark	:			for the d limit.	e emiss	ion v	vhich	more t	han 10	dB k	pelow the	;
10.0 dBu	V/m											
00												
0												
0									FCC Pa	rt15 (C - Above 1	G PK
0												
0									FCC Pa	rt15 (C - Above 1	GAV
0	2											
0	Š											
o	1											
o	×											
o												
10												
1000.000	3500.00 6	000.00	8500	.00 11	000.00 (MHz)	16	000.00 1	8500.00	21000	0.00 23500	.00 26000
No.	Freque (MHz			ading 3uV)	Fac (dB/			evel uV/m)	Limi (dBuV/		Margin (dB)	Detector
1 *	4873.5	54	24	.72	2.0	9	26	6.81	54.0)	-27.19	AVG
1	4874.4	33	40	.71	2.0	9	42	2.80	74.0)	-31.20	peak



nt. Pol	•	Hori	zonta	al 📃							
est Mo	de:	TX 8	302.1	1b Moo	de 2462	MHz	Z				
Remark	:			t for the d limit.		on v	vhich	more t	han 10 dB	below the	;
10.0 dB	uV/m			<u>.</u>							
00											
									FCC Part1	5 C - Above 1	G PK
0						+					
50									FCC Part1	i C - Above 1	GAV
50	1					+					
10	×	_				+					
80	Š										
20											
0											
ı											
10		000.00	850(00 11	1000.00 (1	MHz)	100	00.00 1	8500.00 210	00.00 23500	.00 26000
1000.00	0 3500.00 E										
1000.000 No.	Frequer	псу		ading	Facto (dB/n			vel	Limit (dBuV/m	Margin	Detector
		ncy)	(dE	ading 3uV)	Facto (dB/n 2.16	n)	(dBu		Limit (dBuV/m 74.00		Detector peak



Ant. Pol. Test Mode:

Remark:

100 90

110.0 dBuV/m

	Page	26 of 7	9		Repo	ort No.:	СТ
Vertical							
TX 802.2	11b Mod	e 2462N	1Hz				
No repor prescribe		emissio	n which	more tha	an 10 dE	B below t	he

							FCC I	^o art15 C - A	bove 1G P	<u> </u>
							FCC	Part15 C - A	bove 1G A	<i>,</i>
		k								
		2								
		ĸ								
)										
1000.00	0 3500.00	6000.00	8500.0	0 11000.0	0 (MHz)	16000.00	18500.00	21000.00	23500.00	2600

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	4924.262	40.42	2.16	42.58	74.00	-31.42	peak
2 *	4924.441	24.36	2.16	26.52	54.00	-27.48	AVG

Remarks:



nt. Po	l	Horiz	Horizontal									
est Mo	de:	TX 8	802.1	1g Moo	le 2412I	ИНz	Z					
emark				t for the ed limit.	e emissio	on v	vhich	more t	han 10 d	B be	ow the	
10. <u>0</u> dBu	uV/m	p.00	01100									
									_			
									FCC Part	15 C - /	Above 10	i PK
ı									FCC Part	15.0	A.h	
		_							FCC Pan	150-7		
	Š											
	1											
	×											
		_										
0 1000 001	0 3500.00 6	000.00	850	0.00 11	000.00 (N	(Hz)	160	00.00 1	8500.00 21	000.00	23500.	00 26000.
	Freque		Re	ading	Facto	or	le	evel	Limit	N	largin	
No.	(MHz)	(d	BuV)	(dB/n	ר)	(dBı	ıV/m)	(dBuV/ı	n)	(dB)	Detector
1 *	4823.7	80	2	5.32	2.02	2	27	.34	54.00		26.66	AVG
2	4824.4	82	3	9.70	2.02		41	.72	74.00		32.28	peak



Ant	. Pol.		Verti	cal										
	t Moc				11a Moo	de 2412	ИНz	2						
Ren	nark:		No re	epor	-				more t	han 10 dE	3 below	the	•	
110.0) dBu\	√/m												
100														
90														
80										FCC Part1	5 C - Abov	/e 10	3 PK	
70														
60										FCC Part1	F.C. Aba	10		
50										FLC Parti	5 C - ADOV		<u>1 AV</u>	
40		X												
30		ş					_							
20		^												
10														
0														
-10	00 000	3500.00 6	000.00	850	0.00 11	000.00 (N	(Hz)	160	00.00 1	8500.00 21	00.00 23	500.	00 2600	n n n
						<u> </u>	,							
N	lo.	Freque (MHz	-		ading BuV)	Facto (dB/n			evel iV/m)	Limit (dBuV/n	Marg n) (dE		Detect	or
	1	4823.5	38	4	0.17	2.02		42	.19	74.00	-31.	81	peal	k
2	2 *	4823.6	12	2	5.34	2.02		27	.36	54.00	-26.	64	AVG	3
Ren	narks	:						1					1	

Page 28 of 79



Page	29	of	79	

est Mod		Horizontal									
	le:	TX 8	802.11g Mo	de 2437MH	z						
emark:			eport for the cribed limit.		which more t	han 10 dB t	pelow the	!			
0. <u>0</u> dBuV	//m										
0											
						FCC Part15 (C-Above 10	B PK			
							2 Ab 14				
						FCC Part15 (J-Above II	<u>1 AV</u>			
	×										
	Š										
		_									
) 1000.000 (2500.00 60	000.00	8500.00 11	000.00 (MHz)	16000.00 1	8500.00 21000).00 23500.	00 26000			
1000.000	3300.00 61	00.00	0000.00 11	000.00 (MHZ)	16000.00 1	0500.00 21000	1.00 23500.	00 20000			
No.	Freque		Reading	Factor	Level	Limit	Margin	Detecto			
	(MHz	·	(dBuV)	(dB/m)	(dBuV/m)		(dB)				
1	4873.6	11	40.37	2.09	42.46	74.00	-31.54	peak			
2 *	4874.0	07	24.75	2.09	26.84	54.00	-27.16	AVG			



	Ι.	Vert						
est Mo			302.11g Mo					
Remark	K:		eport for the cribed limit.		which more	than 10 dB l	below the	3
10.0 dB	uV/m	_			1			
00								
0								
'0						FCC Part15	C - Above 10	G PK
50						FCC Part15	C - Above 10	
	ş							
20	×							
,								
10								
1000.00	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
No.)						Detector AVG



nt. Po	l.	Horiz	zontal					
est Mo	ode:	TX 8	802.11g Mo	de 2462MH	Z			
emark	:		eport for the cribed limit		which more t	han 10 dB b	pelow the	!
10. <u>0</u> dB	uV/m	p						
00								
)								
						FCC Part15	C - Above 10	G PK
) <u> </u>								
)						FCC Part15	0. 41 14	
)							C-Above I	JAV
	1 X							
	Š							
)								
0	0 3500.00 6	000.00	8500.00 1	1000.00 (MHz)	16000.00 1	8500.00 2100	0.00 23500	.00 26000.
No.	Frequer (MHz		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4923.6	37	40.79	2.16	42.95	74.00	-31.05	peak
2 *	4924.4	95	24.09	2.16	26.25	54.00	-27.75	AVG
	1	1		1	1	1	1	1



Ant. Pol.		Vertical									
lest Mode:		TX 802.11g Mode 2462MHz									
emark	(:	No report for the emission which more than 10 dB below the prescribed limit.									
0.0 dB	uV/m										
10											
						FCC Part15	C - Above 1	G PK			
						FCC Part15	C - Above 1	GAV			
	Š										
	×										
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 (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector			
1 *	4923.5	33	24.36	2.16	26.52	54.00	-27.48	AVG			
2	4924.1	69	39.46	2.16	41.62	74.00	-32.38	peak			

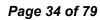
EN



Ant	. Pol.		Horizontal									
Test Mode:TX 802.11n(HT20) Mode 2412MHz												
Remark: No report for the emission which more than 10 dB below th prescribed limit.											below the	;
110.0	0 dBu	√/m										
100							_					
90							_					
80										FCC Part1	C - Above 1	GPK
70							-				TO ADOVE I	
60							-					
50							-			FCC Partly	C - Above 1	
40		1×										
30		ş										
20		^										
10							-					
0												
-10	00 000	3500.00 6	000.00	850	0.00 11	000.00 (M	Hz)	160	00.00 1	8500.00 210	0.00 23500	.00 26000.0
						<u></u>	<u></u> ,					
N	lo.	Freque (MHz			ading BuV)	Facto (dB/m			vel IV/m)	Limit (dBuV/m	Margin (dB)	Detector
	1	4823.8	44	4(0.76	2.02		42	.78	74.00	-31.22	peak
2	2 *	4824.4	22	2	5.18	2.02		27	.20	54.00	-26.80	AVG
Ren	narks											L

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Remarks:





nt. Po	l. 🗌	Vertical									
est Mo	de:	TX 802.11n(HT20) Mode 2412MHz									
emark				t for the ed limit.	e emissio	n w	/hich	more t	han 10 dB l	pelow the	;
0.0 dBu	ıV/m										
00											
)											
)									FCC Part15	C - Above 1(2 PK
, 📂									TOCFAILIS		
)											
, 									FCC Part15	C - Above 10	<u>AV</u>
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ı	ş										
,	×										
ı											
0											
1000.000) 3500.00 6	000.00	850	0.00 11	000.00 (M	Hz)	160	00.00 1	8500.00 21000).00 23500.	00 26000
No.	Frequer (MHz			ading BuV)	Facto (dB/m			vel iV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4823.7	69	4(0.15	2.02		42	.17	74.00	-31.83	peak
2 *	4824.1	21	2	5.39	2.02		27	.41	54.00	-26.59	AVG
		-									





nt. Pol.		Horiz	zontal								
est Moo	de:	TX 8	K 802.11n(HT20) Mode 2437MHz								
emark: No report for the emission which more than 10 dB below the prescribed limit.											
10.0 dBu\	//m										
0											
						FCC Part15 (C-Above 10	3 PK			
,											
						FCC Part15 (C-Above 10	AV .			
ı	Š										
	1										
0											
1000.000	3500.00 6	000.00	8500.00 11	000.00 (MHz)	16000.00 1	8500.00 21000	.00 23500.	00 26000.			
No.	Freque (MHz		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector			
	4873.6	77	24.63	2.09	26.72	54.00	-27.28	AVG			
1 *						1	-32.50				



Ant. Po	I.	Vertical									
Test Mo	de:	TX 802.11n(HT20) Mode 2437MHz									
Remark		No report for the emission which more than 10 dB below the prescribed limit.									
110.0 dBu	uV/m				1						
100											
90											
80						FCC Part15	C - Above 1	G PK			
70											
60											
50						FCC Part15	C - Above 1	<u>G AV</u>			
40	Š										
30											
20	×										
10											
0											
-10											
1000.000	0 3500.00 6	000.00	8500.00 11	000.00 (MHz)	16000.00	18500.00 2100	0.00 23500	0.00 26000.0			
1											
No.	Frequen (MHz)		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector			
1 *	4874.07	75	24.93	2.09	27.02	54.00	-26.98	AVG			
2	4874.15	51	40.47	2.09	42.56	74.00	-31.44	peak			
Remarks	<u>.</u>										

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Remarks:





nt. Po	ol.	Hori	zontal					
est Mo	ode:	ТХ 8	302.11n(H ⁻	T20) Mode 2	462MHz			
Remarl			eport for t cribed lim	he emission it.	which more	than 10 dB	below the	;
	547711							
00								
						FCC Part15	C - Above 1	G PK
						FCC Part15	C - Above 1	G AV
10	1							
	Š							
0								
-10								0.00 2600
No.	Frequer (MHz		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4924.0		39.58	2.16	41.74	74.00	-32.26	peak
2 *	4924.14		24.15	2.16	26.31	54.00	-27.69	AVG
-				2.10	20.01	•	2	

2.Margin value = Level -Limit value



Ant. Po	J	Vertic						
Test Mo			-	0) Mode 24	60MU-7			
Remark		No re	•	,	hich more t	han 10 dB b	elow the	
110.0 dB	uV/m	p.000						
100								
90								
80								
70						FCC Part15 (C-Above 10) PK
60						FCC Part15 (- Above 10	AV
50	1							
40								
30	Š							
20								
10								
0								
-10 1000.00	0 3500.00 6	000.00	8500.00 11	000.00 (MHz)	16000.00 1	8500.00 21000	.00 23500.	00 26000.0
1	1							
No.	Frequer (MHz		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4923.6	18	40.04	2.16	42.20	74.00	-31.80	peak
2 *	4923.7	78	24.00	2.16	26.16	54.00	-27.84	AVG
Remark	s:				1			

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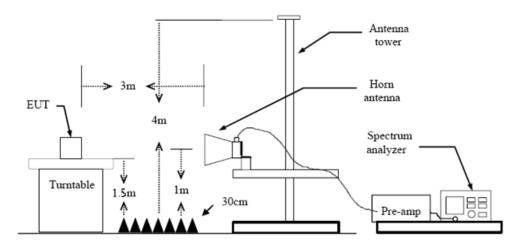
3.3. Band Edge Emissions (Radiated)

<u>Limit</u>

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.
- 5. The receiver set as follow:
 - 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

For anti-fake verification, please visit the official website of Certification and

Accreditation Administration of the People's Republic of China : yz.cnca.cn



nt. Pol		Horiz	zontal					
est Mo	de:	802.	11b Mode 2	2412MHz				
20.0 dBu	IV/m							
0								
0								
							\sim	
								4
,						FCC Part15 (C-Above 10	і РК
,								
						ECC Part15	C-Above 10	
						Burney		
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.0								
2304.600	2316.60 2	328.60	2340.60 23	52.60 (MHz)	2376.60 2	388.60 2400.0	60 2412.6	0 2424.6
No.	Freque (MHz		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2390.0	000	22.60	31.31	53.91	74.00	-20.09	peak
2 *	2390.0	000	5.49	31.31	36.80	54.00	-17.20	AVG
			-					

Remarks:

EN



													1
Ant.	Pol.		Verti	cal									
Test	t Mod	e:	802.	11b M	ode 2	412MH	Z						
120.0) dBu\	//m											
110													
100													
90												\wedge	
80										ECC Pe	#15 C	- Above 1G	h PK
70													
60													
50										FICC Pa X	rt15 9	- Above 1G	
40													{
30	aler wight digtle	and the second and the second	- Andrewski -	Al Aren har me	fel-gibre-molecent)	entre transmission		ind Allenade	and a second	and blocker			
20													
10													
0.0	02 000	2315.80 2	327.80	2339.0	00 22	51.80 (N	/Hz)	227	75.80 23	387.80	2399.8	0 2411.80	2423.80
						<u>, , , , , , , , , , , , , , , , , , , </u>			0.00 2.				2.120.00
N	lo.	Frequer (MHz	-		ding uV)	Fact (dB/r			evel uV/m)	Lim (dBu∖		Margin (dB)	Detector
	1	2390.0	00	21	.10	31.3	1	52	2.41	74.0	0	-21.59	peak
2	*	2390.0	00	5.	49	31.3	1	- 30	6.80	54.0	0	-17.20	AVG
	1												h
1.Fa		(dB/m) = A value = L				IB/m)+C	Cable	e Fac	tor (dB)-Pre-a	mpli	fier Facto	or

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nt. Pol	l. 🔰	Hori	zontal									
st Mo	de:	802.	11b Mod	le 24	462 M⊦	Ηz						
).0 dBu	V/m		1									
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)	~											
	\wedge											
									FCC F	^p art15	C - Above	1G PK
\vdash			1			_			ECC I	Part15	C - Above	16 AV
Ħ			X			-				arris		
\square			at Brown									
a		Wink	et Summe	11.10/01 ⁻⁰ -1	**************************************	and and the second s	dreen all	alexan may an	elle selenter	men	www.www.	and the second second
o												
2449.300	2461.30 2	473.30	2485.30	249	7.30 (MHz)	252	1.30	2533.30	2545	.30 2557	.30 2569.
No.	Freque	ncy	Readir	ng	Fact	or	Le	vel	Lim	it	Margin	Detector
	(MHz	·	(dBu∖	·	(dB/r		•		(dBu∖		(dB)	Delector
1	2483.5	00	20.75	5	31.4	8	52	.23	74.(00	-21.77	peak
2 *	2483.5	00	4.61		31.4	8	36	.09	54.(00	-17.91	AVG

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Ant. Pol	•	Vert	ical					
Fest Mo		802.	.11b Mode	2462 MHz				
120.0 dBu	uV/m							
110								
100								
90	\wedge							
30	$/ \rightarrow$					FCC Part15	C - Abovo 1(
70	/ 4							
50								
			1 X			FCC Part15	C - Above 10	GAV
50								
10		hum	materier	Manmon Marchar	monortheoperation	monteren	manne	Anna
80								
20								
0.0								
2449.300	0 2461.30	2473.30	2485.30 2	2497.30 (MHz)	2521.30 2	2533.30 2545.	30 2557.3	30 2569.30
	Freque	encv	Reading	Factor	Level	Limit	Margin	-
No.	(MH	-	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)		Detector
1	2483.	500	21.20	31.48	52.68	74.00	-21.32	peak
2 *	2483.	500	4.80	31.48	36.28	54.00	-17.72	AVG
Remarks								
.Factor	(dB/m) =		ina Factor (-Limit value	dB/m)+Cabl	e Factor (dE	8)-Pre-ampli	fier Facto	or

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Ant	Pol		Hori	zont	al										
Test	t Mo	de:	802.	11g	Mode	24	12MHz	2							
120.0) dBu	V/m													Г
110															-
100															_
90													~	\frown	_
80												D		10.54	_
70											FCC	Part15	¢ - Above	e 1G PK	-
60															
50											FCC X	Part15	C - Abov	∎ 1G AV \	4
40											3	hand			
30			mhiri	-desona			hteren		*****	-a	- Alexandre				
20															
10															
0.0															
23	04.600	2316.60 2	328.60	234	10.60	2352	2.60 (N	(Hz)	23	76.60 2	2388.60	2400	.60 241	2.60 24	24.60
N	o.	Frequer (MHz			ading BuV)		Facto (dB/m			evel uV/m)	Lir (dBu		Margi (dB)		ctor
1		2390.0	00	2	1.08		31.31	1	52	.39	74	.00	-21.6	1 pea	ak
2	*	2390.0	00	7	7.00		31.31	1	38	.31	54	.00	-15.6	9 AV	G
	1								1		1				L

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Remarks:



nt. Po	I.	Vert	ical					
est Mo	ode:	802.	11g Mode 2	412MHz				
20.0 dE	luV/m							
10								
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)								
o								
2303.8	0 2315.80	2327.80	2339.80 23	351.80 (MHz)	2375.80 2	2387.80 2399.	80 2411.8	30 2423.0
	Freque	ency	Reading	Factor	Level	Limit	Margin	Detector
No.	(MH	z)	(dBuV)	(dB/m)		(dBuV/m)	(dB)	Detecto
1	2390.	000	22.85	31.31	54.16	74.00	-19.84	peak
2 *	2390.	000	5.80	31.31	37.11	54.00	-16.89	AVG

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nt. Pol	-	Horizontal								
est Mo	de:	802	.11g I	Mode 2	462MHz					
20. <u>0</u> dB	ıV/m									
10										
00										
0										
	$\langle \rangle$							ECC Part15	C - Above 10	3 PK
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0		$\left\{ - \right\}$	1×					ECC Part15	C - Above 1(
0		\mathbf{x}	-							
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0										
20										
0										
) 2461.30	2473.30	248	5.30 24	197.30 (MH	z) 252	1.30 2	2533.30 2545	.30 2557.3	0 2569.3
No.	Freque (MHz			ading BuV)	Factor (dB/m)		vel iV/m)	Limit (dBuV/m)	Margin (dB)	Detector
No. 1		z)	(dE			(dBu				Detector peak

Remarks:

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nt. Po	l.	Vert	ical								
est Mo		802	.11g N	/lode 2	2462MH	z					
20.0 dB	uV/m										
10											
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						_			FCC Part	15 C - Above 1	
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0											
			1						FCC Part	15 C - Above 1	IG AV
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o						_					
D.O	0 2461.30	2473.30	2485		497.30 (MHz)		1.30	2533.30 29	45.30 2557.	.30 2569.3
No.	Freque (MH			ding uV)	Fact (dB/r			vel V/m)	Limit (dBuV/n	Margin (dB)	Detector
1	2483.	500	23	.42	31.4	8	54	.90	74.00	-19.10	peak
2 *	2483.	500	8.	63	31.4	8	40	.11	54.00	-13.89	AVG



nt. Po	I.	Hori	zontal					
est Mo	de:	802	.11n(HT20)	Mode 2412	MHz			
0.0 dB	uV/m		, ,					
0								
								\sim
						FCC Part15	C - Above 1	G PK
						CC Part15	C - Above 1	GAV
vena	man	m	mante marked and and and and and and and and and an	-	monutare	- Emeral		
·								
0.0 2304.60	0 2316.60	2328.60	2340.60 23	52.60 (MHz)	2376.60	2388.60 2400.	.60 2412.0	50 2424.0
No.	Freque (MHz		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2390.0	000	24.05	31.31	55.36	74.00	-18.64	peak
2 *	2390.0	000	6.78	31.31	38.09	54.00	-15.91	AVG
					-		-	

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nt. Pol		Verti	cal					
est Mo	de:	802.	11n(HT20) N	/lode 2412	ИНz			
0.0 dBu	V/m							
0								
0								
								~
						FCC Part15 C	Above 10	i PK
						FiCC Part15 C	- Above 10	AV \
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.0								
2303.800	2315.80	2327.80	2339.80 23	51.80 (MHz)	2375.80 2	387.80 2399.8	30 2411.8	0 2423.8
No.	Freque (MH:		Reading (dBuV)	Factor (dB/m)		Limit (dBuV/m)	Margin (dB)	Detecto
		·						
1	2390.0		21.38	31.31	52.69	74.00	-21.31	peak
2 *	2390.0	000	6.14	31.31	37.45	54.00	-16.55	AVG

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nt. Po	I.	Hori	izontal					
est Mo	de:	802	.11n(HT20) Mode 2462	MHz			
20.0 dB	uV/m				1			
0								
10								
	$\langle \rangle$					FCC Part15	C - Above 1	G PK
י 								
•			1			FCC Part15	C - Above 1	C AV
			*				C Above I	
		have	3				4	
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.0								
2449.30	0 2461.30	2473.30	2485.30	2497.30 (MHz)	2521.30	2533.30 2545	.30 2557.	30 2569.
	1		1					
No.	Frequer (MHz		Reading (dBuV)	-	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.5	00	21.87	31.48	53.35	74.00	-20.65	peak
	2483.5	00	5.76	31.48	37.24	54.00	-16.76	AVG
2 *	1							1

Remarks:





nt. Pol		Verti	cal					
est Mo	de:	802.	11n(HT20) I	Mode 24621	MHz			
0.0 dBu	√/m		,					
0								
0								
	\wedge							
	\leftarrow					FCC Part15 C	- Above 1G	i PK
		1						
			×			FCC Part15 C	- Above 1G	
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.0								
.u 2449.300	2461.30 2	473.30	2485.30 249	97.30 (MHz)	2521.30 2	533.30 2545.3	0 2557.3	0 2569.3
No	Freque	ncy	Reading	Factor	Level	Limit	Margin	Detecto
No.	(MHz	:)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detecto
No. 1 2 *		2) 000						Detecto peak

Remarks:



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
- Use the following spectrum analyzer settings: RBW = 100 kHz, VBW ≥ RBW, scan up through 10th harmonic. Sweep = auto, Detector function = peak, Trace = max hold
- Measure and record the results in the test report.

Test Mode

Please refer to the clause 2.4.

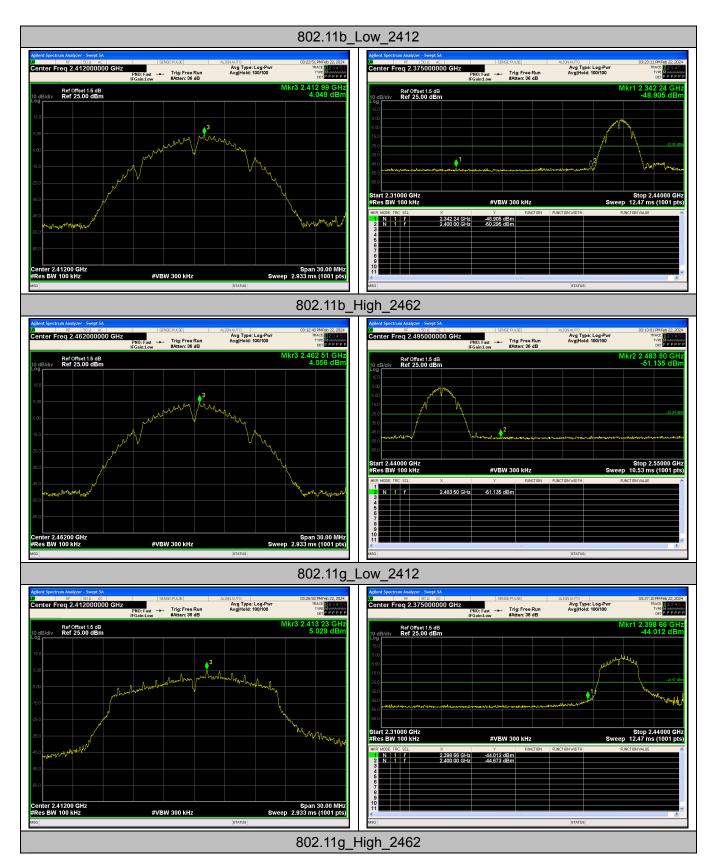
Test Results



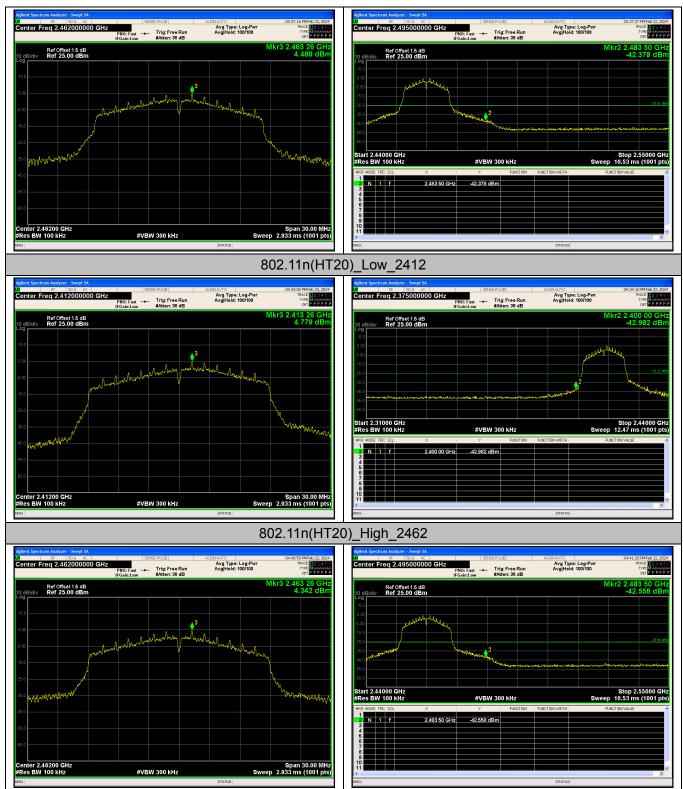
(1) Band edge Conducted Test

Test Mode	Test Frequency	Ref Level[dBm]	Result[dBm]	Limit[dBm]	Verdict
802.11b	2412	4.049	-48.905	≤-25.95	PASS
002.110	2462	4.056	-51.135	≤-25.94	PASS
900 11 a	2412	5.029	-44.012	≤-24.97	PASS
802.11g	2462	4.488	-42.378	≤-25.51	PASS
902 11p(UT20)	2412	4.779	-42.982	≤-25.22	PASS
802.11n(HT20)	2462	4.342	-42.558	≤-25.66	PASS







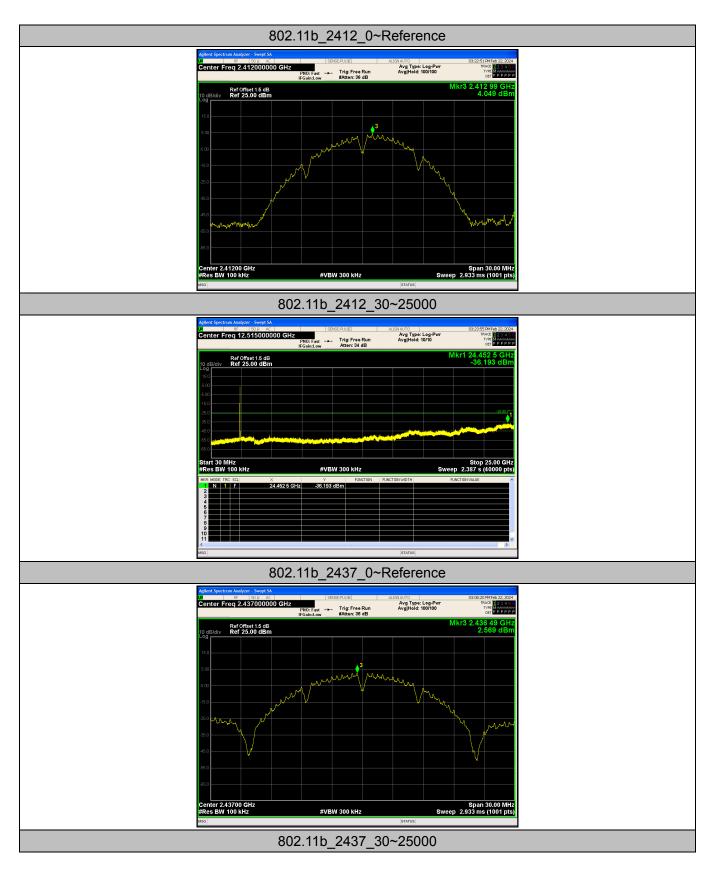




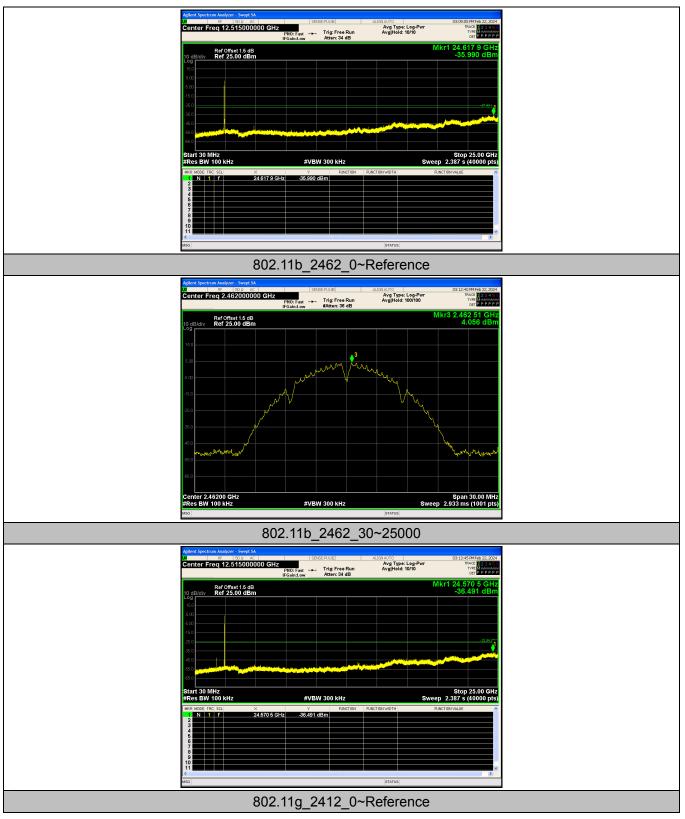
(2) Conducted Spurious Emissions Test

Test Mode	Frequency[MHz]	Freq Range [Mhz]	Ref Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
	2412	Reference	4.049	4.049		PASS
	2412	30~25000	4.049	-36.193	≤-25.95	PASS
802.11b	2437	Reference	2.569	2.569		PASS
002.110	2437	30~25000	2.569	-35.990	≤-27.43	PASS
	2462	Reference	4.056	4.056		PASS
	2402	30~25000	4.056	-36.491	≤-25.94	PASS
	2412	Reference	5.029	5.029		PASS
	2412	30~25000	5.029	-35.621	≤-24.97	PASS
902 11a	2437	Reference	2.384	2.384		PASS
802.11g		30~25000	2.384	-35.873	≤-27.62	PASS
	0.400	Reference	4.488	4.488		PASS
	2462	30~25000	4.488	-35.713	≤-25.51	PASS
	2412	Reference	4.779	4.779		PASS
	2412	30~25000	4.779	-35.935	≤-25.22	PASS
902 11p(UT20)	2437	Reference	2.305	2.305		PASS
802.11n(HT20)	2437	30~25000	2.305	-36.170	≤-27.70	PASS
	2462	Reference	4.342	4.342		PASS
	2462	30~25000	4.342	-35.266	≤-35.66	PASS

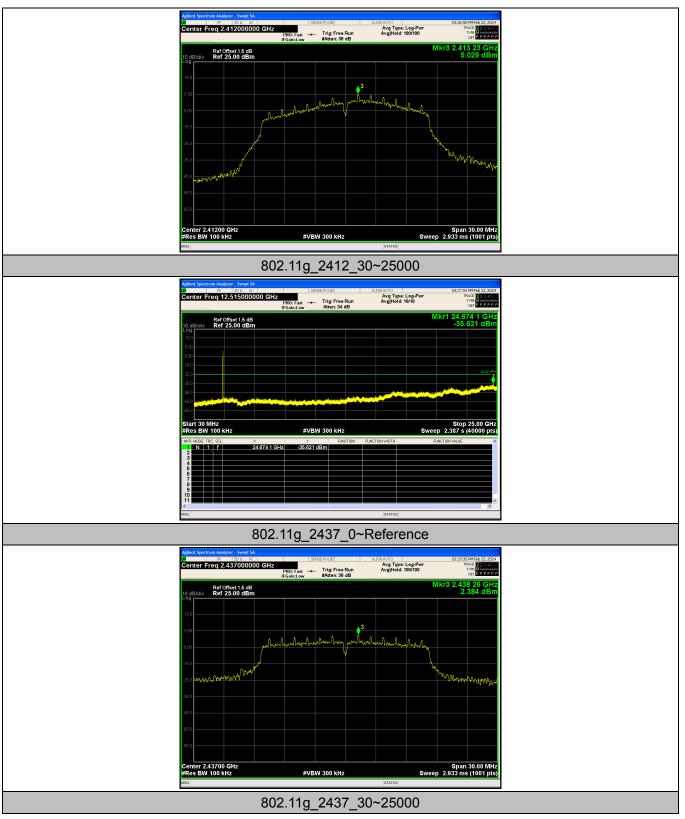




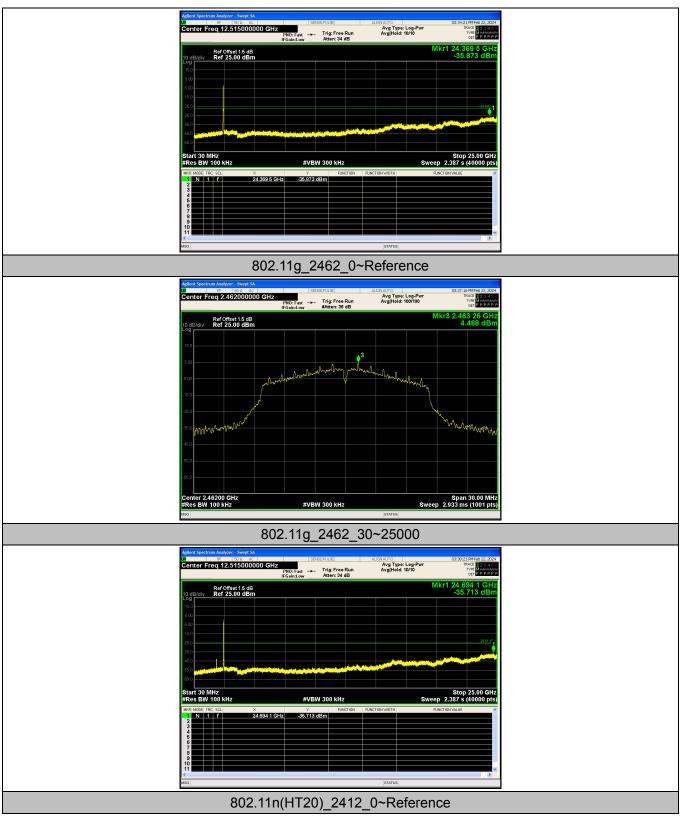




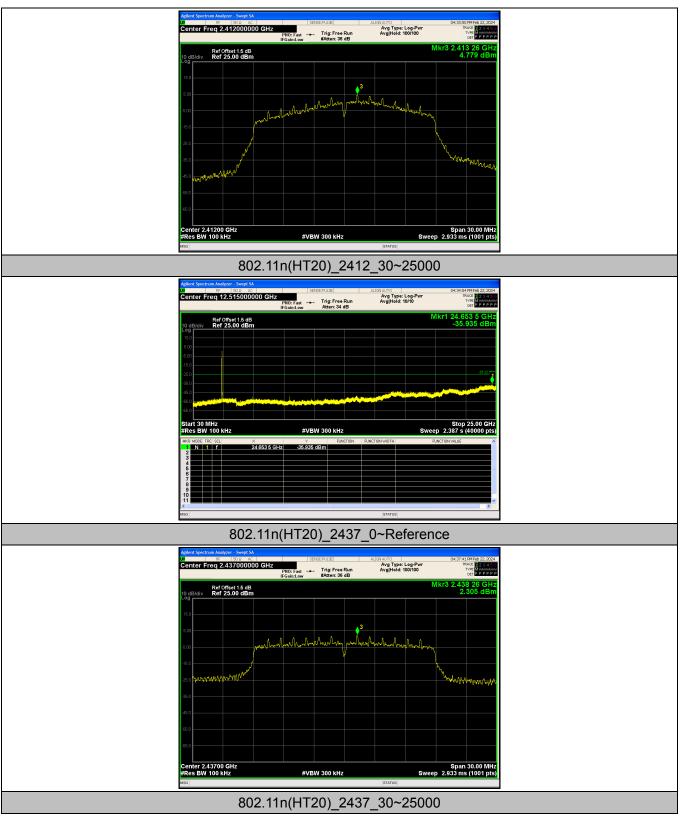




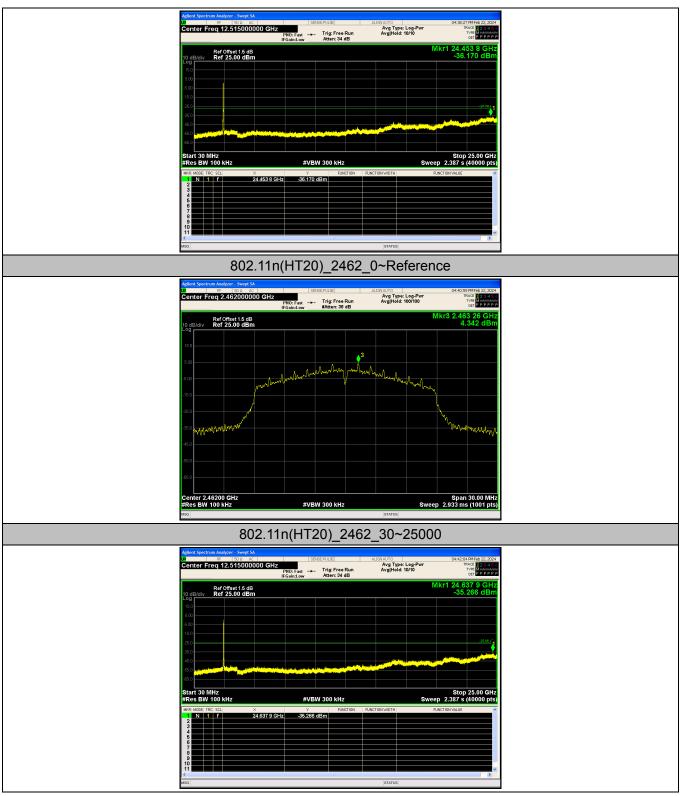














3.5. DTS Bandwidth

<u>Limit</u>

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (a)(2)/ RSS-247 5.2 a:

Test Item	Limit	Frequency Range(MHz)
DTS Bandwidth	>=500 KHz (6dB bandwidth)	2400~2483.5

Test Configuration



Test Procedure

- 5. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- 6. DTS Spectrum Setting:
 - (1) Set RBW = 100 kHz.
 - (2) Set the video bandwidth (VBW) \geq 3 RBW.
 - (3) Detector = Peak.
 - (4) Trace mode = Max hold.
 - (5) Sweep = Auto couple.
 - OCB Spectrum Setting:
 - (1) Set RBW = $1\% \sim 5\%$ occupied bandwidth.
 - (2) Set the video bandwidth (VBW) \ge 3 RBW.
 - (3) Detector = Peak.
 - (4) Trace mode = Max hold.
 - (5) Sweep = Auto couple.

NOTE: The EUT was set to continuously transmitting in each mode and low, Middle and high channel for the test.

Test Mode

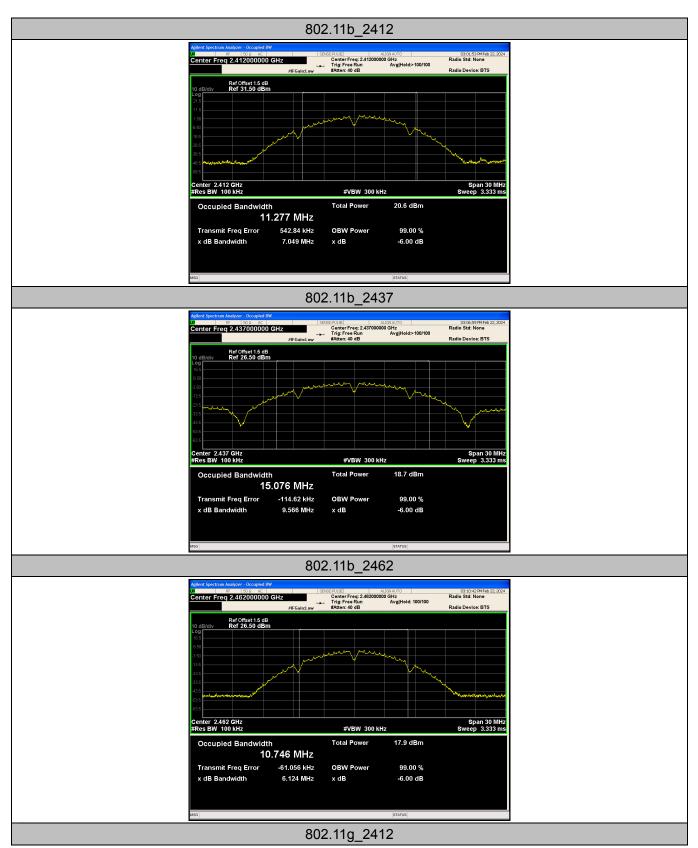
Please refer to the clause 2.4.



Test Results

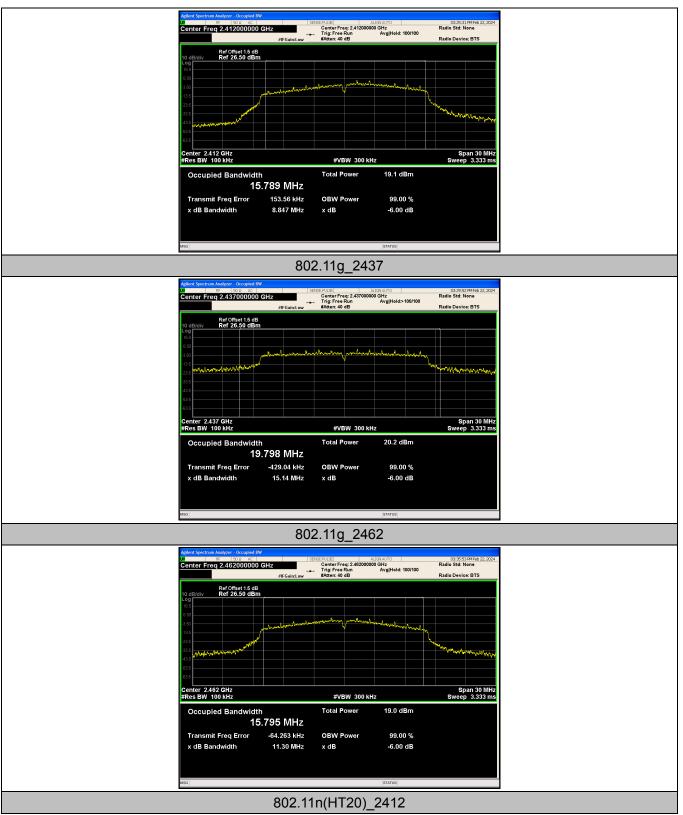
Test Mode	Channel	DTS BW [MHz]	Limit [MHz]	Verdict
	2412	7.049	>=0.5	PASS
802.11b	2437	9.566	>=0.5	PASS
	2462	6.124	>=0.5	PASS
	2412	8.847	>=0.5	PASS
802.11g	2437	15.14	>=0.5	PASS
	2462	11.30	>=0.5	PASS
	2412	8.818	>=0.5	PASS
802.11n(HT20)	2437	15.94	>=0.5	PASS
	2462	10.05	>=0.5	PASS







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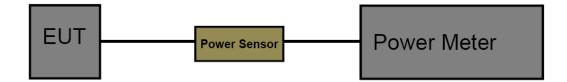
3.6. Maximum Conducted Output Power

<u>Limit</u>

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (b)(3)/ RSS-247 5.4:

Section	Test Item	Limit	Frequency Range(MHz)
CFR 47 FCC 15.247(b)(3)	Maximum conducted output power	1 Watt or 30dBm	2400~2483.5
ISED RSS-247 5.4 d	EIRP	4 Watt or 36dBm	2400~2483.5

Test Configuration



Test Procedure

- 1. The maximum conducted output power may be measured using a broadband RF power meter.
- 2. Power measurements were performed only when the EUT was transmitting at its AVG power control level using a broadband power meter with a pulse sensor.
- 3. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter.
- 4. Record the measurement data.

<u>Test Mode</u>

Please refer to the clause 2.4.

Test Result



Test Mode	Channel	Result Avg [dBm]	Limit [dBm]	Verdict
	2412	12.380	<=30	PASS
802.11b	2437	12.374	<=30	PASS
	2462	12.465	<=30	PASS
	2412	12.795	<=30	PASS
802.11g	2437	12.396	<=30	PASS
	2462	12.818	<=30	PASS
	2412	12.596	<=30	PASS
802.11n(HT20)	2437	12.236	<=30	PASS
	2462	12.431	<=30	PASS

Note: Test results increased RF cable loss by 1.5dB and Duty Cycle Factor.



3.7. Power Spectral Density

<u>Limit</u>

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (e)/ RSS-247 5.2 b:

Test Item	Limit	Frequency Range(MHz)
Power Spectral Density	8dBm(in any 3 kHz)	2400~2483.5

Test Configuration



Test Procedure

1. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.

2. The EUT was directly connected to the Spectrum Analyzer and antenna output port as show in the block diagram above. The measurement according to section 10.2 of KDB 558074 D01 DTS Meas Guidance v05r02.

3. Spectrum Setting:

Set analyzer center frequency to DTS channel center frequency.

Set the span to 1.5 times the DTS bandwidth.

Set the RBW to: 3 kHz

Set the VBW to: 10 kHz

Detector: PK

Sweep time: Auto

Allow trace to fully stabilize. Then use the peak marker function to determine the maximum amplitude level.

Test Mode

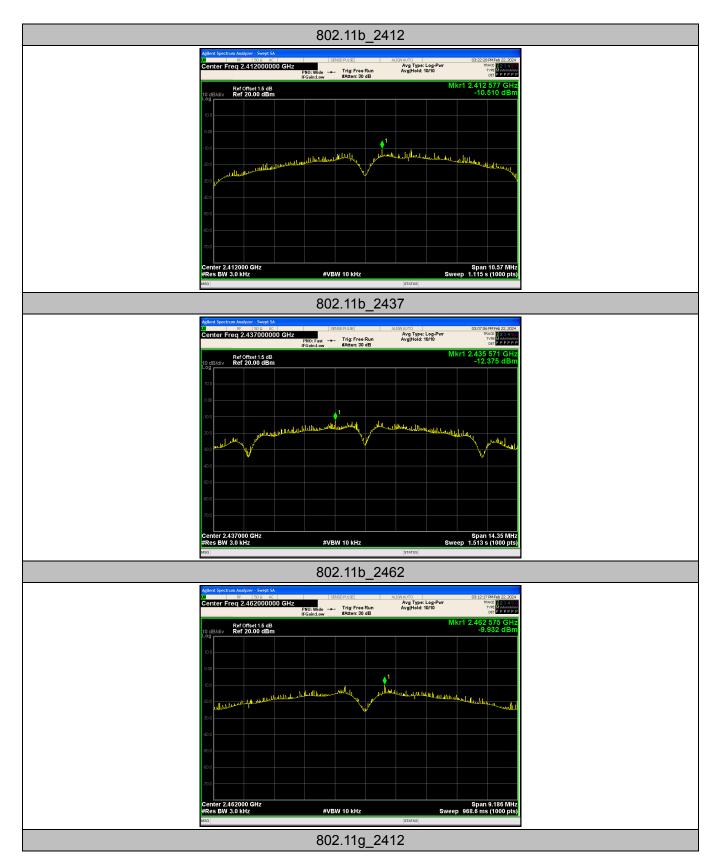
Please refer to the clause 2.4.



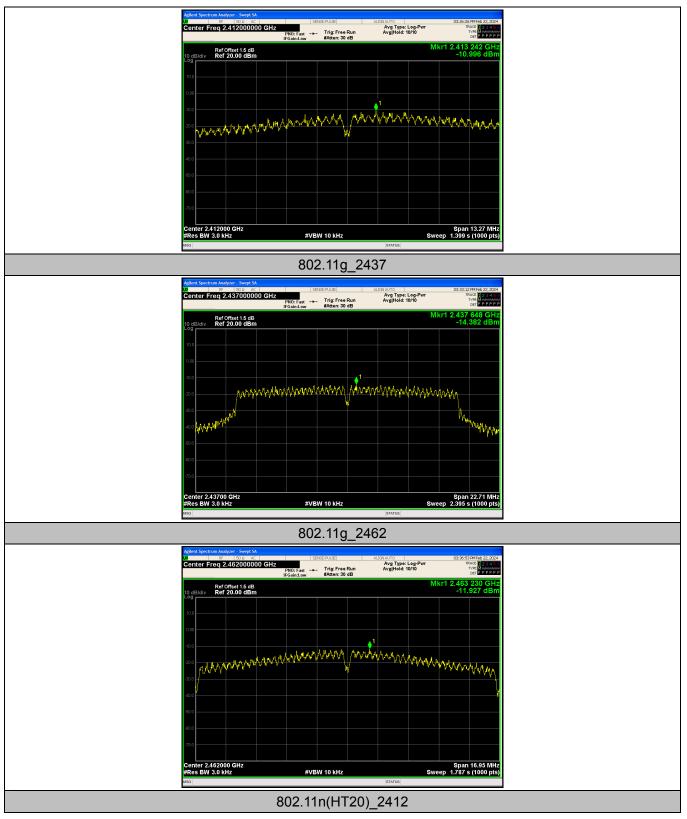
Test Mode	Channel	Result [dBm/3kHz]	Limit [dBm/3kHz]	Verdict
	2412	-10.510	<=8	PASS
802.11b	2437	-12.375	<=8	PASS
	2462	-9.932	<=8	PASS
	2412	-10.996	<=8	PASS
802.11g	2437	-14.382	<=8	PASS
	2462	-11.927	<=8	PASS
	2412	-11.370	<=8	PASS
802.11n(HT20)	2437	-13.641	<=8	PASS
	2462	-11.734	<=8	PASS

Note: Test results increased Duty Cycle Factor.

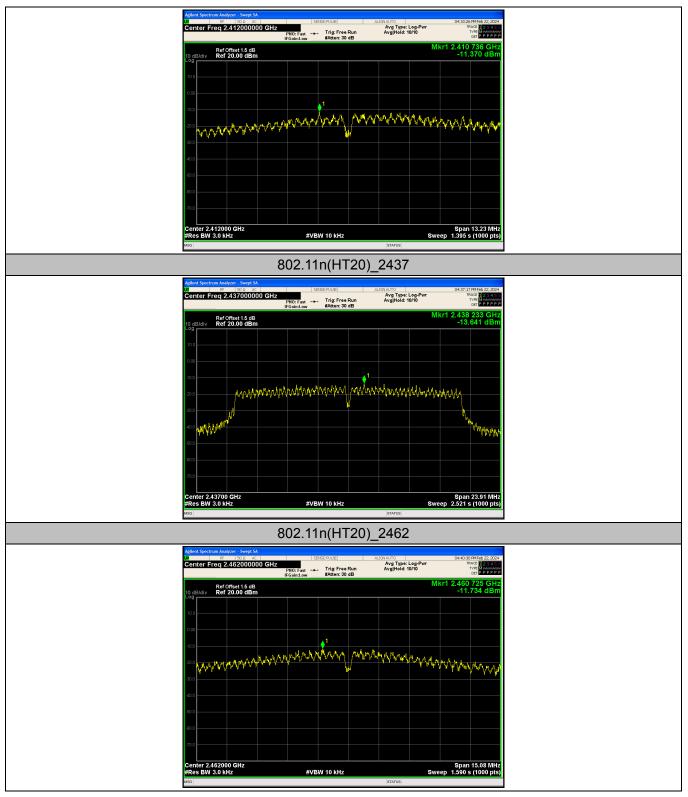












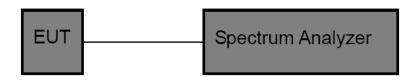


3.8. Duty Cycle

Limit

None, for report purposes only.

Test Configuration



Test Procedure

1. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.

2. The EUT was directly connected to the Spectrum Analyzer and antenna output port as show in the block diagram above. The measurement according to section 10.2 of KDB 558074 D01 DTS Meas Guidance v05r02.

Spectrum Setting: 3.

Set analyzer center frequency to DTS channel center frequency. Set the span to 0Hz Set the RBW to 8MHz Set the VBW to 8MHz Detector: peak Sweep time: auto Allow trace to fully stabilize. Then use the peak marker function to determine the maximum amplitude level.

Test Mode

Please refer to the clause 2.4.

Test Result

Test Mode	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Duty Cycle Factor	1/T Minimum VBW (kHz)	Final setting For VBW (kHz)
	2412	8.385	8.414	99.66	0.01	0.119	1
802.11b	2437	8.384	8.413	99.66	0.01	0.119	1
	2462	8.384	8.413	99.66	0.01	0.119	1
	2412	1.393	1.429	97.53	0.11	0.718	1
802.11g	2437	1.393	1.429	97.53	0.11	0.718	1
	2462	1.393	1.429	97.53	0.11	0.718	1
	2412	1.301	1.336	97.34	0.12	0.769	1
802.11n(HT20)	2437	1.301	1.337	97.36	0.12	0.769	1
	2462	1.301	1.336	97.34	0.12	0.769	1

Note: Duty Cycle Factor = 10*Log10(1/ Duty Cycle)







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3.9. Antenna requirement

<u>Requirement</u>

FCC CFR Title 47 Part 15 Subpart C Section 15.203:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

FCC CFR Title 47 Part 15 Subpart C Section 15.247(c) (1)(i):

(i) Systems operating in the 2400~2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

<u>Test Result</u>

The directional gain of the antenna less than 6dBi, please refer to the EUT internal photographs antenna photo.