

CTC Laboratories, Inc.

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Report No...... CTC20211300E06

FCC ID....: 2AR24-AIBOX30UM

Applicant:: Shenzhen Absen Optoelectronic Co.,Ltd

18-20F Building 3A, Cloud Park, Bantian, Longgang District, Address.....

Shenzhen, China

Manufacturer....: Shenzhen Absen Optoelectronic Co.,Ltd

18-20F Building 3A, Cloud Park, Bantian, Longgang District, Address....:

Shenzhen, China

Product Name: LED Multimedia Processor

Trade Mark:

Model/Type reference.....: Ai Box3.0 UM

Listed Model(s) : /

Standard:: **FCC Part 15, Subpart E 15, 407**

Aug. 02, 2021 Date of receipt of test sample...:

Date of testing.....: Aug. 02, 2021 to Aug. 20, 2021

Date of issue..... Aug. 25, 2021

Result....: **PASS**

Compiled by:

Incry Iem Miller Ma (Printed name+signature) Lucy Lan

Supervised by:

(Printed name+signature) Miller Ma

Approved by:

(Printed name+signature) Walter Chen

Testing Laboratory Name.....: CTC Laboratories, Inc.

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

Shenzhen, Guangdong, China

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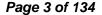


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1. TEST SUMMARY

1.1. Test Standards

The tests were performed according to following standards:

<u>FCC Part 15, Subpart E(15.407)</u> — for 802.11a/n/ac, the test procedure follows the FCC KDB 789033 D02 General UNII Test Procedures New Rules V02r01.

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RSS-247 Issue 2 February 2017 — Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices

RSS-Gen — General Requirements for Compliance of Radio Apparatus

1.2. Report Version

Revised No.	Date of issue	Description
01	Aug. 25, 2021	Original

For anti-fake verification, please visit the official website of Certification and Accreditation Administration of the People's Republic of China: yz.cnca.cn



1.3. Test Description

FCC Part 15 Subpart E (15.407) / RSS-247 Issue 2 February 2017							
Test Item	Test r	equire	Result	Test			
rest item	FCC	IC	Result	Engineer			
Antenna Requirement	15.203	/	Pass	Lucy Lan			
Conducted Emission	15.207	RSS-Gen 8.8	Pass	Lucy Lan			
Band Edge Emissions	15.407(b)	RSS-247 6.2.1.2 RSS-247 6.2.2.2 RSS-247 6.2.4.2	Pass	Lucy Lan			
26dB Bandwidth & 99% Bandwidth	15.407(a) (5)	RSS-247 6.2.1.2	Pass	Lucy Lan			
6dB Bandwidth (only for UNII-3)	15.407(e)	RSS-247 6.2.4.1	Pass	Lucy Lan			
Peak Output Power	15.407(a)	RSS-247 6.2.1.1 RSS-247 6.2.4.1	Pass	Lucy Lan			
Power Spectral Density	15.407(a)	RSS-247 6.2	Pass	Lucy Lan			
Transmitter Radiated Spurious Emission	15.407(b) &15.209	RSS-Gen 8.9 RSS-247 6.2.1.2 RSS-247 6.2.4.2	Pass	Lucy Lan			
Frequency Stability	15.407(g)	/	Pass	Lucy Lan			
Dynamic Frequency Selection (DFS)	15.407(h)	RSS-247 6.3	N/A	N/A			
Automatically DiscontinueTransmission	15.407(c)	1	Pass	Note(3)			

Note:

- (1)"N/A" is not applicable.
- (2) The measurement uncertainty is not included in the test result.
- (3)During no any information transmission, the EUT can automatically discontinue transmission and become standby mode for power saving. the EUT can detect the controlling sianal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.
- (4) The test data except AC conducted emission and Radiated emission below 1GHz refer to CTC20211289E06 (FCC ID: 2AR24-AIBOX30US; Equipment code: NII). The EUT wireless module, antenna, PCB layout and electrical circuit are the same, the difference is EUT size.

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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:

CNAS-Lab Code: L5365

CTC Laboratories, Inc. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation. Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2017 General Requirements) for the Competence of Testing and Calibration Laboratories.

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 in our 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 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.

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Test Items Measurement Uncertainty Notes Transmitter power conducted 0.42 dB (1) Transmitter power Radiated 2.14 dB (1) Conducted spurious emissions 9kHz~40GHz 1.60 dB (1) Radiated spurious emissions 9kHz~40GHz 2.20 dB (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) Occupied Bandwidth (1)

1.6. Environmental Conditions

	Temperature	21°C~27°C
Normal Condition	Relative humidity	40%~60%
Condition	Voltage	The equipment shall be the nominal voltage for which the equipment was designed.
Extreme	Temperature	Measurements shall be made over the extremes of the operating temperature range as declared by the manufacturer.
Condition	Voltage	Measurements shall be made over the extremes of the operating temperature range as declared by the manufacturer.

Normal Condition	T _N =Normal Temperature	21°C~27°C
Extreme Condition	T _L =Lower Temperature	-10 °C
	T _H =Higher Temperature	40 °C

Note (1): This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

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2. GENERAL INFORMATION

2.1. Client Information

Applicant:	Shenzhen Absen Optoelectronic Co.,Ltd
Address:	18-20F Building 3A, Cloud Park, Bantian, Longgang District, Shenzhen, China
Manufacturer:	Shenzhen Absen Optoelectronic Co.,Ltd
Address:	18-20F Building 3A, Cloud Park, Bantian, Longgang District, Shenzhen, China

2.2. General Description of EUT

LED Multimedia Processor						
/	1					
Model/Type reference: Ai B						
/						
/						
100	-240V~ 50/60l	Hz 23W				
RTL	_8822BU					
/						
/						
EUT is a fixed point-to-point access points operating device. According to the power limit for 5150~5250MHz band, RTL8822BU can operating in client mode.					2BU can	
Technical index for 5G WIFI						
	⊠U-NII-1	□U-NII-2A	□U-NII-2C ⊠U-NII-3			3
	U-NII-1: 5150MHz~5250MHz					
•	U-NII-3:	5725MHz~585	50MHz	ı		
	802.11a	□ 20MHz				
	802.11n	⊠ 20MHz	⊠ 40MHz			
	802.11ac	⊠ 20MHz	⊠ 40MHz	\boxtimes	80MHz	☐ 160MHz
Modulation:		802.11a: OFDM (BIT/SK, QPSK, BPSK, 16QAM) 802.11n: OFDM (BIT/SK, QPSK, BPSK, 16QAM, 64QAM) 802.11ac: OFDM (BIT/SK, QPSK, BPSK, 16QAM, 64QAM, 256QAM)				
Bit Rate of Transmitter:		802.11a: 6/9/12/18/24/36/48/54 Mbps 802.11n: up to 300Mbps 802.11ac: at most 866.7 Mbps				
Antenna 1 or 2 type:		a				
Antenna 1 or 2 gain:		5dBi				
	/ Ai E / 100 RTL / L Accope	/ Ai Box3.0 UM / / 100-240V~ 50/600 RTL8822BU / / EUT is a fixed point According to the properating in client U-NII-1: U-NII-1: U-NII-3: 802.11a 802.11a 802.11ac 802.11ac OFI 802.11ac; OFI 802.11ac; OFI 802.11ac; at PCB Antenna	/ Ai Box3.0 UM / 100-240V~ 50/60Hz 23W RTL8822BU / EUT is a fixed point-to-point access According to the power limit for 5 operating in client mode. EU U-NII-1	/ Ai Box3.0 UM / 100-240V~ 50/60Hz 23W RTL8822BU / EUT is a fixed point-to-point access points operal According to the power limit for 5150~5250MHz operating in client mode. IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	/ Ai Box3.0 UM / / 100-240V~ 50/60Hz 23W RTL8822BU / EUT is a fixed point-to-point access points operating of the power limit for 5150~5250MHz band operating in client mode. EI Su-NII-1	/ Ai Box3.0 UM / // 100-240V~ 50/60Hz 23W RTL8822BU / EUT is a fixed point-to-point access points operating device. According to the power limit for 5150~5250MHz band, RTL882 operating in client mode. EI



2.3. Accessory Equipment Information

Equipment Information						
Name	Model	S/N	Manufacturer			
Notebook	X220	/	Lenovo			
Cable Information						
Name	Shielded Type	Ferrite Core	Length			
USB Cable	Unshielded	NO	150cm			
AC Cable	Unshielded	NO	120cm			
Test Software Information	1					
Name	Software version	/	/			
REALTEK 11ac 8822BU USB WLAN NIC Massproduction Kit	1	/	/			

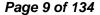
2.4. Operation State

Operation Frequency List:

	20MHz Bandwidth		40MHz Bandwidth		80MHz Bandwidth		
Band (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	
	36	5180	20	5190			
U-NII-1	40	5200	38	5190	42	5210	
	44	5220	46	5230			
	48	5240	40				
	149	5745	151	5755			
	153	5765	151	3733			
U-NII-3	157	5785	159	159		155	5775
	161	5805			159 5795	5795	
	165	5825					

Test channel is below:

Operating	Test	20MHz		40MHz		80MHz	
Band	Channel	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
	CH∟	36	5180	38	5190	/	/
U-NII-1	CH_M	40	5200	/	/	42	5210
	CH _H	48	5240	46	5230	/	/
	CH∟	149	5745	151	5755	/	/
U-NII-3	CH _M	157	5785	/	/	155	5775
	CH _H	165	5825	159	5795	/	/





Data Rated

Preliminary tests were performed in different data rate, and found which the below bit rate is worst case

Mode	Data rate (worst mode)		
802.11a	6Mbps		
802.11n(HT20)/ 802.11n(HT40)	HT-MCS0		
802.11ac(VHT20)/ 802.11ac(VHT40)/ 802.11ac(VHT80)	VHT-MCS0		

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Test mode

For RF test items

The engineering test program was provided and enabled to make EUT continuous transmit.

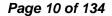
For AC power line conducted emissions:

mode, so only show data which it is a worst case mode.

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

Climate Chamber

Wideband Radio

Communication

Tester
Climate Chamber

300328 v2.2.2 test

system

中国国家认证认可监督管理委员会

10

11

12

Tonscei	Tonscend JS0806-2 Test system										
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated until						
1	Spectrum Analyzer	Rohde & Schwarz	FSU26	100105	Dec. 25, 2021						
2	Spectrum Analyzer	Rohde & Schwarz	FSV40-N	101331	Mar. 15, 2022						
3	Spectrum Analyzer	KEYSIGHT	N9020A	100231	Dec. 25, 2021						
4	MXG Vector Signal Generator	Agilent	N5182A	MY47420864	Dec. 25, 2021						
5	Signal Generator	Agilent	E8257D	MY46521908	Dec. 25, 2021						
6	Power Sensor	Agilent	U2021XA	MY5365004	Dec. 25, 2021						
7	Power Sensor	Agilent	U2021XA	MY5365006	Dec. 25, 2021						
8	Simultaneous Sampling DAQ	Agilent	U2531A	TW54493510	Dec. 25, 2021						

PR-4G

CMW500

MT3065

v2.6

A8708055

116410

/

Dec. 25, 2021

Dec. 25, 2021

Dec. 25, 2021

/

TABAI

Rohde & Schwarz

ESPEC

TONSCEND

Radiate	ed Emission and Transmi	tter spurious emissior	าร		
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	EMI Test Receiver	Rohde & Schwarz	ESCI	100658	Dec. 25, 2021
2	High pass filter	micro-tranics	HPM50111	142	Dec. 25, 2021
3	Log-Bicon Antenna	Schwarzbeck	CBL6141A	4180	Dec. 25, 2021
4	Ultra-Broadband Antenna	ShwarzBeck	BBHA9170	25841	Dec. 25, 2021
5	Loop Antenna	LAPLAC	RF300	9138	Dec. 25, 2021
6	Spectrum Analyzer	Rohde & Schwarz	FSU26	100105	Dec. 25, 2021
7	Horn Antenna	Schwarzbeck	BBHA 9120D	647	Dec. 25, 2021
8	Pre-Amplifier	HP	8447D	1937A03050	Dec. 25, 2021
9	Pre-Amplifier	EMCI	EMC051835	980075	Dec. 25, 2021
10	Antenna Mast	UC	UC3000	N/A	N/A
11	Turn Table	UC	UC3000	N/A	N/A
12	Cable Below 1GHz	Schwarzbeck	AK9515E	33155	Dec. 25, 2021
13	Cable Above 1GHz	Hubersuhner	SUCOFLEX 102	DA1580	Dec. 25, 2021
14	Splitter	Mini-Circuit	ZAPD-4	400059	Dec. 25, 2021
15	RF Connection Cable	HUBER+SUHNER	RE-7-FL	N/A	Dec. 25, 2021



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16	RF Connection Cable	Chengdu E-Microwave			Dec. 25, 2021
17	High pass filter	Compliance Direction systems	BSU-6	34202	Dec. 25, 2021
18	Attenuator	Chengdu E-Microwave	EMCAXX-10 RNZ-3		Dec. 25, 2021
19	High and low temperature box	ESPEC	MT3065	12114019	Dec. 25, 2021

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Conducted Emission								
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated until			
1	LISN	R&S	ENV216	101112	Dec. 25, 2021			
2	LISN	R&S	ENV216	101113	Dec. 25, 2021			
3	EMI Test Receiver	R&S	ESCI	100658	Dec. 25, 2021			

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

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



3. TEST ITEM AND RESULTS

3.1. Conducted Emission

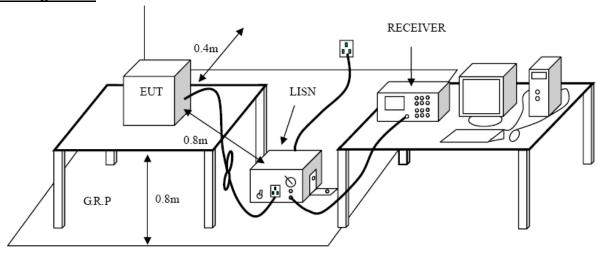
Limit

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

Frequency range (MHz)	Limit (d	lBuV)
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

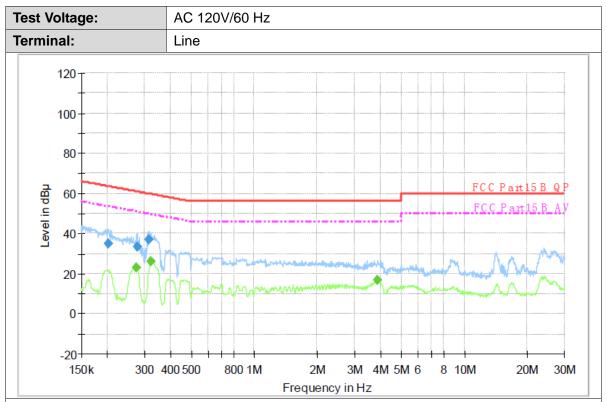
- 1. The EUT was setup according to ANSI C63.10:2013 requirements.
- 2. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm 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 50 ohm /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



Final Measurement Detector 1

	Frequency (MHz)	QuasiPeak (dBμ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµ V)	Comment
Г	0.202360	34.9	1000.00	9.000	On	L1	9.7	28.6	63.5	
Г	0.277390	33.2	1000.00	9.000	On	L1	9.7	27.7	60.9	
Г	0.313930	37.0	1000.00	9.000	On	L1	9.7	22.9	59.9	

Final Measurement Detector 2

F	requency (MHz)	Average (dBµ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµ V)	Comment
	0.275180	23.0	1000.00	9.000	On	L1	9.7	28.0	51.0	
	0.321540	26.3	1000.00	9.000	On	L1	9.7	23.4	49.7	
	3.851240	16.6	1000.00	9.000	On	L1	9.7	29.4	46.0	

Emission Level= Read Level+ Correct Factor



Test Voltage: AC 120V/60 Hz

Terminal: Neutral

120
100
80
FCC Part 15 B QP
FCC Part 15 B AV

Final Measurement Detector 1

300 400 500

0

-20↓ 150k

Frequency (MHz)	QuasiPeak (dBµ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµ V)	Comment
0.186830	34.5	1000.00	9.000	On	N	10.0	29.7	64.2	
0.278490	36.2	1000.00	9.000	On	N	10.0	24.7	60.9	
0.315180	35.3	1000.00	9.000	On	N	10.0	24.5	59.8	

2M

Frequency in Hz

3M 4M 5M 6

8 10M

20M

30M

800 1M

Final Measurement Detector 2

Frequency (MHz)	Average (dBµ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµ V)	Comment
0.276280	25.5	1000.00	9.000	On	N	10.0	25.4	50.9	
0.325410	24.4	1000.00	9.000	On	N	10.0	25.2	49.6	
3.018860	22.9	1000.00	9.000	On	N	10.0	23.1	46.0	

Emission Level= Read Level+ Correct Factor



3.2. Radiated Emission

Limit

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

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3

Frequency (MHz)	dB(uV/m) (at 3 meters)				
Frequency (MHZ)	Peak	Average			
Above 1000	74	54			

Note:

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

Limits of unwanted emission out of the restricted bands

FCC CFR Title 47 Part 15 Subpart C Section 15.407(b)/ RSS-247 6.2.1.2 & RSS-247 6.2.4.2

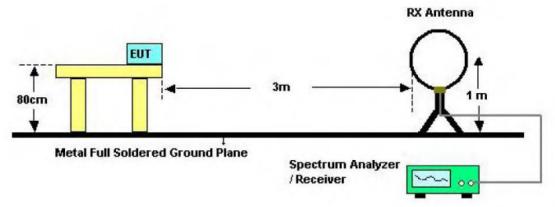
Frequency (MHz)	EIRP Limits (dBm)	Equivalent Field Strength at 3m (dBuV/m)
5150~5250	-27	68.2
5250~5350	-27	68.2
5470~5725	-27	68.2
	-27(Note 2)	68.2
E70E E00E	10(Note 2)	105.2
5725~5825	15.6(Note 2)	110.8
	27(Note 2)	122.2

Note: 1. The following formula is used to convert the equipment isotropic radiated power (eirp) to field $1000000\sqrt{30P}$

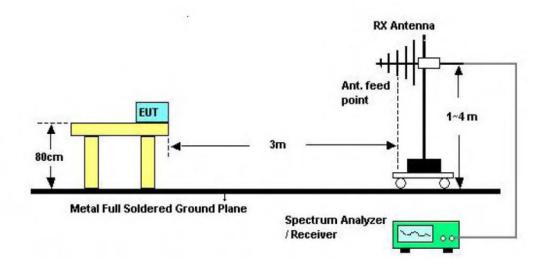
uV/m, where P is the eirp (Watts)

2. According to FCC 16-24, All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27dBm/MHz at the band edge.

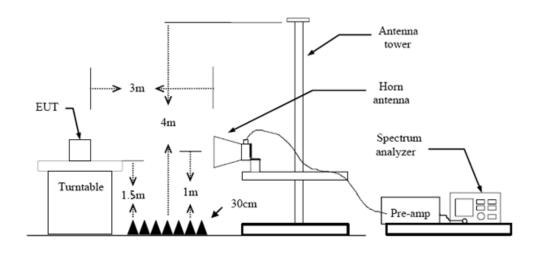
Test Configuration



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.

CTC Laboratories, Inc.



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- 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 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.

(3) From 1 GHz to 10th harmonic:

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

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

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

Test Mode

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.

Pre-scan all antenna, only show the test data for worse case antenna on the test report.





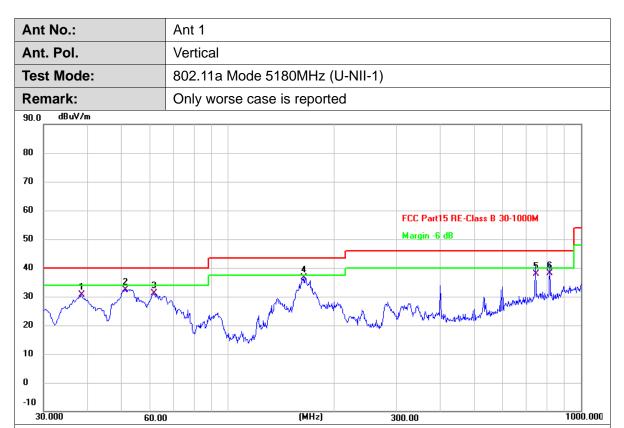
30MHz-1GHz

Ant No.:	Ant 1
Ant. Pol.	Horizontal
Test Mode:	802.11a Mode 5180MHz (U-NII-1)
Remark:	Only worse case is reported
90.0 dBuV/m	
80	
70	
60	FCC Part 5 RE-Class B 30-1000M
50	Margin -6 dB
40	\$ 5 E
30	Manufacture Manufa
20	Market
10	
0	
-10 60.00 30.000	(MHz) 300.00 1000.0

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	53.6033	41.61	-14.93	26.68	40.00	-13.32	QP
2	176.4700	49.94	-15.70	34.24	43.50	-9.26	QP
3	199.7500	51.25	-17.87	33.38	43.50	-10.12	QP
4	399.8933	51.80	-11.85	39.95	46.00	-6.05	QP
5 *	742.6267	44.03	-3.93	40.10	46.00	-5.90	QP
6	816.6700	42.14	-2.64	39.50	46.00	-6.50	QP

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



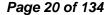


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	38.4067	45.15	-14.56	30.59	40.00	-9.41	QP
2	51.0167	47.18	-14.69	32.49	40.00	-7.51	QP
3	61.6867	46.60	-15.58	31.02	40.00	-8.98	QP
4 *	163.8600	51.33	-14.62	36.71	43.50	-6.79	QP
5	742.6267	41.83	-3.93	37.90	46.00	-8.10	QP
6	816.6700	40.74	-2.64	38.10	46.00	-7.90	QP

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value





Above 1GHz

Ant No.:	Ant 1			
Ant. Pol.:	Horizontal			
Test Mode:	TX 802.11a Mode 5180MHz (U-NII-1)			
Remark:	No report for the emission which more than 20 dB below the prescribed limit.			

Report No.: CTC20211300E06

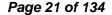
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	10359.422	48.93	14.96	63.89	74.00	-10.11	peak
2 *	10360.050	36.59	14.96	51.55	54.00	-2.45	AVG

Note: The chart shows Limits 74dBuV for Peak, 54dBuV for AVG, but Unwanted Emissions that fall Outside of the Restricted Bands is 68.2dBuV for Peak. No limit for AVG. All test results are in t compliance with the limits. After calculation, the Peak measurement value meets the limit requirements.

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value





Ant No.:	Ant 1
Ant. Pol.:	Vertical
Test Mode:	TX 802.11a Mode 5180MHz (U-NII-1)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	10359.456	33.52	14.96	48.48	54.00	-5.52	AVG
2	10360.650	46.06	14.95	61.01	74.00	-12.99	peak

Note: The chart shows Limits 74dBuV for Peak, 54dBuV for AVG, but Unwanted Emissions that fall Outside of the Restricted Bands is 68.2dBuV for Peak. No limit for AVG. All test results are in t compliance with the limits. After calculation, the Peak measurement value meets the limit requirements.

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





Ant No.:	Ant 1			
Ant. Pol.:	Horizontal			
Test Mode:	TX 802.11a Mode 5200MHz (U-NII-1)			
Remark:	No report for the emission which more than 20 dB below the prescribed limit.			

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	10399.390	47.45	15.02	62.47	74.00	-11.53	peak
2 *	10400.150	34.79	15.02	49.81	54.00	-4.19	AVG

Note: The chart shows Limits 74dBuV for Peak, 54dBuV for AVG, but Unwanted Emissions that fall Outside of the Restricted Bands is 68.2dBuV for Peak. No limit for AVG. All test results are in t compliance with the limits. After calculation, the Peak measurement value meets the limit requirements.

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





Ant No.:	Ant 1		
Ant. Pol.:	Vertical		
Test Mode:	TX 802.11a Mode 5200MHz (U-NII-1)		
Remark:	No report for the emission which more than 20 dB below the prescribed limit.		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	10399.488	32.08	15.02	47.10	54.00	-6.90	AVG
2	10400.866	44.89	15.02	59.91	74.00	-14.09	peak

Note: The chart shows Limits 74dBuV for Peak, 54dBuV for AVG, but Unwanted Emissions that fall Outside of the Restricted Bands is 68.2dBuV for Peak. No limit for AVG. All test results are in t compliance with the limits. After calculation, the Peak measurement value meets the limit requirements.

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





Ant No.:	Ant 1
Ant. Pol.:	Horizontal
Test Mode:	TX 802.11a Mode 5240MHz (U-NII-1)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

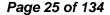
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)		Detector
1	10479.434	46.19	15.13	61.32	74.00	-12.68	peak
2 *	10480.272	33.43	15.13	48.56	54.00	-5.44	AVG

Note: The chart shows Limits 74dBuV for Peak, 54dBuV for AVG, but Unwanted Emissions that fall Outside of the Restricted Bands is 68.2dBuV for Peak. No limit for AVG. All test results are in t compliance with the limits. After calculation, the Peak measurement value meets the limit requirements.

Remarks:

- 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 No.:	Ant 1
Ant. Pol.:	Vertical
Test Mode:	TX 802.11a Mode 5240MHz (U-NII-1)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	10479.326	30.07	15.13	45.20	54.00	-8.80	AVG
2	10480.600	42.83	15.13	57.96	74.00	-16.04	peak

Note: The chart shows Limits 74dBuV for Peak, 54dBuV for AVG, but Unwanted Emissions that fall Outside of the Restricted Bands is 68.2dBuV for Peak. No limit for AVG. All test results are in t compliance with the limits. After calculation, the Peak measurement value meets the limit requirements.

Remarks:

- 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 No.:	Ant 1 + Ant 2
Ant. Pol.:	Horizontal
Test Mode:	TX 802.11n(HT20) Mode 5180MHz (U-NII-1)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	10359.760	33.45	14.96	48.41	54.00	-5.59	AVG
2	10360.870	45.63	14.96	60.59	74.00	-13.41	peak

Note: The chart shows Limits 74dBuV for Peak, 54dBuV for AVG, but Unwanted Emissions that fall Outside of the Restricted Bands is 68.2dBuV for Peak. No limit for AVG. All test results are in t compliance with the limits. After calculation, the Peak measurement value meets the limit requirements.

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



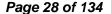


Ant No.:	Ant 1 + Ant 2
Ant. Pol.:	Vertical
Test Mode:	TX 802.11n(HT20) Mode 5180MHz (U-NII-1)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	10359.272	30.95	14.96	45.91	54.00	-8.09	AVG
2	10360.880	43.49	14.96	58.45	74.00	-15.55	peak

Note: The chart shows Limits 74dBuV for Peak, 54dBuV for AVG, but Unwanted Emissions that fall Outside of the Restricted Bands is 68.2dBuV for Peak. No limit for AVG. All test results are in t compliance with the limits. After calculation, the Peak measurement value meets the limit requirements.

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





Ant No.:	Ant 1 + Ant 2
Ant. Pol.:	Horizontal
Test Mode:	TX 802.11n(HT20) Mode 5200MHz (U-NII-1)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	10399.238	32.29	15.02	47.31	54.00	-6.69	AVG
2	10400.732	44.55	15.02	59.57	74.00	-14.43	peak

Note: The chart shows Limits 74dBuV for Peak, 54dBuV for AVG, but Unwanted Emissions that fall Outside of the Restricted Bands is 68.2dBuV for Peak. No limit for AVG. All test results are in t compliance with the limits. After calculation, the Peak measurement value meets the limit requirements.

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



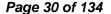


Ant No.:	Ant 1 + Ant 2
Ant. Pol.:	Vertical
Test Mode:	TX 802.11n(HT20) Mode 5200MHz (U-NII-1)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	10399.466	29.66	15.02	44.68	54.00	-9.32	AVG
2	10400.662	42.31	15.02	57.33	74.00	-16.67	peak

Note: The chart shows Limits 74dBuV for Peak, 54dBuV for AVG, but Unwanted Emissions that fall Outside of the Restricted Bands is 68.2dBuV for Peak. No limit for AVG. All test results are in t compliance with the limits. After calculation, the Peak measurement value meets the limit requirements.

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



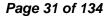


Ant No.:	Ant 1 + Ant 2
Ant. Pol.:	Horizontal
Test Mode:	TX 802.11n(HT20) Mode 5240MHz (U-NII-1)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	10479.378	31.70	15.13	46.83	54.00	-7.17	AVG
2	10479.850	43.31	15.13	58.44	74.00	-15.56	peak

Note: The chart shows Limits 74dBuV for Peak, 54dBuV for AVG, but Unwanted Emissions that fall Outside of the Restricted Bands is 68.2dBuV for Peak. No limit for AVG. All test results are in t compliance with the limits. After calculation, the Peak measurement value meets the limit requirements.

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



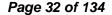


Ant No.:	Ant 1 + Ant 2
Ant. Pol.:	Vertical
Test Mode:	TX 802.11n(HT20) Mode 5240MHz (U-NII-1)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	10479.390	28.36	15.13	43.49	54.00	-10.51	AVG
2	10479.424	40.90	15.13	56.03	74.00	-17.97	peak

Note: The chart shows Limits 74dBuV for Peak, 54dBuV for AVG, but Unwanted Emissions that fall Outside of the Restricted Bands is 68.2dBuV for Peak. No limit for AVG. All test results are in t compliance with the limits. After calculation, the Peak measurement value meets the limit requirements.

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





Ant No.:	Ant 1 + Ant 2
Ant. Pol.:	Horizontal
Test Mode:	TX 802.11ac(VHT20) Mode 5180MHz (U-NII-1)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	10359.924	31.68	14.96	46.64	54.00	-7.36	AVG
2	10360.490	44.75	14.95	59.70	74.00	-14.30	peak

Note: The chart shows Limits 74dBuV for Peak, 54dBuV for AVG, but Unwanted Emissions that fall Outside of the Restricted Bands is 68.2dBuV for Peak. No limit for AVG. All test results are in t compliance with the limits. After calculation, the Peak measurement value meets the limit requirements.

Remarks:

- 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 No.:	Ant 1 + Ant 2
Ant. Pol.:	Vertical
Test Mode:	TX 802.11ac(VHT20) Mode 5180MHz (U-NII-1)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	10359.734	30.36	14.96	45.32	54.00	-8.68	AVG
2	10360.704	43.79	14.95	58.74	74.00	-15.26	peak

Note: The chart shows Limits 74dBuV for Peak, 54dBuV for AVG, but Unwanted Emissions that fall Outside of the Restricted Bands is 68.2dBuV for Peak. No limit for AVG. All test results are in t compliance with the limits. After calculation, the Peak measurement value meets the limit requirements.

Remarks:

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

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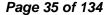


Ant No.:	Ant 1 + Ant 2
Ant. Pol.:	Horizontal
Test Mode:	TX 802.11ac(VHT20) Mode 5200MHz (U-NII-1)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	10400.178	29.54	15.02	44.56	54.00	-9.44	AVG
2	10400.704	43.99	15.02	59.01	74.00	-14.99	peak

Note: The chart shows Limits 74dBuV for Peak, 54dBuV for AVG, but Unwanted Emissions that fall Outside of the Restricted Bands is 68.2dBuV for Peak. No limit for AVG. All test results are in t compliance with the limits. After calculation, the Peak measurement value meets the limit requirements.

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





Ant No.:	Ant 1 + Ant 2
Ant. Pol.:	Vertical
Test Mode:	TX 802.11ac(VHT20) Mode 5200MHz (U-NII-1)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	10399.304	29.44	15.02	44.46	54.00	-9.54	AVG
2	10400.562	42.97	15.02	57.99	74.00	-16.01	peak

Note: The chart shows Limits 74dBuV for Peak, 54dBuV for AVG, but Unwanted Emissions that fall Outside of the Restricted Bands is 68.2dBuV for Peak. No limit for AVG. All test results are in t compliance with the limits. After calculation, the Peak measurement value meets the limit requirements.

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





Ant No.:	Ant 1 + Ant 2		
Ant. Pol.:	Horizontal		
Test Mode:	t Mode: TX 802.11ac(VHT20) Mode 5240MHz (U-NII-1)		
Remark:	No report for the emission which more than 20 dB below the prescribed limit.		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	10479.814	28.33	15.13	43.46	54.00	-10.54	AVG
2	10480.476	42.84	15.13	57.97	74.00	-16.03	peak

Note: The chart shows Limits 74dBuV for Peak, 54dBuV for AVG, but Unwanted Emissions that fall Outside of the Restricted Bands is 68.2dBuV for Peak. No limit for AVG. All test results are in t compliance with the limits. After calculation, the Peak measurement value meets the limit requirements.

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



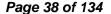


Ant No.:	Ant 1 + Ant 2
Ant. Pol.:	Vertical
Test Mode:	TX 802.11ac(VHT20) Mode 5240MHz (U-NII-1)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	10479.500	27.45	15.13	42.58	54.00	-11.42	AVG
2	10480.792	41.04	15.13	56.17	74.00	-17.83	peak

Note: The chart shows Limits 74dBuV for Peak, 54dBuV for AVG, but Unwanted Emissions that fall Outside of the Restricted Bands is 68.2dBuV for Peak. No limit for AVG. All test results are in t compliance with the limits. After calculation, the Peak measurement value meets the limit requirements.

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





Ant No.:	Ant 1 + Ant 2
Ant. Pol.:	Horizontal
Test Mode:	TX 802.11n(HT40) Mode 5190MHz (U-NII-1)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	10379.834	30.59	14.99	45.58	54.00	-8.42	AVG
2	10379.878	42.90	14.99	57.89	74.00	-16.11	peak

Note: The chart shows Limits 74dBuV for Peak, 54dBuV for AVG, but Unwanted Emissions that fall Outside of the Restricted Bands is 68.2dBuV for Peak. No limit for AVG. All test results are in t compliance with the limits. After calculation, the Peak measurement value meets the limit requirements.

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



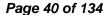


Ant No.:	Ant 1 + Ant 2
Ant. Pol.:	Vertical
Test Mode:	TX 802.11n(HT40) Mode 5190MHz (U-NII-1)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)		Detector
1	10380.212	41.19	14.99	56.18	74.00	-17.82	peak
2 *	10380.886	28.65	14.99	43.64	54.00	-10.36	AVG

Note: The chart shows Limits 74dBuV for Peak, 54dBuV for AVG, but Unwanted Emissions that fall Outside of the Restricted Bands is 68.2dBuV for Peak. No limit for AVG. All test results are in t compliance with the limits. After calculation, the Peak measurement value meets the limit requirements.

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



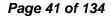


Ant No.:	Ant 1 + Ant 2
Ant. Pol.:	Horizontal
Test Mode: TX 802.11n(HT40) Mode 5230MHz (U-NII-1)	
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	10459.748	29.72	15.10	44.82	54.00	-9.18	AVG
2	10459.828	42.28	15.10	57.38	74.00	-16.62	peak

Note: The chart shows Limits 74dBuV for Peak, 54dBuV for AVG, but Unwanted Emissions that fall Outside of the Restricted Bands is 68.2dBuV for Peak. No limit for AVG. All test results are in t compliance with the limits. After calculation, the Peak measurement value meets the limit requirements.

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



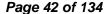


Ant No.:	Ant 1 + Ant 2
Ant. Pol.:	Vertical
Test Mode:	TX 802.11n(HT40) Mode 5230MHz (U-NII-1)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	10460.036	27.70	15.10	42.80	54.00	-11.20	AVG
2	10460.980	39.50	15.11	54.61	74.00	-19.39	peak

Note: The chart shows Limits 74dBuV for Peak, 54dBuV for AVG, but Unwanted Emissions that fall Outside of the Restricted Bands is 68.2dBuV for Peak. No limit for AVG. All test results are in t compliance with the limits. After calculation, the Peak measurement value meets the limit requirements.

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



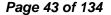


Ant No.:	Ant 1 + Ant 2
Ant. Pol.:	Horizontal
Test Mode:	TX 802.11ac(VHT40) Mode 5190MHz (U-NII-1)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)		Detector
1	10379.926	41.56	14.99	56.55	74.00	-17.45	peak
2 *	10379.990	29.33	14.99	44.32	54.00	-9.68	AVG

Note: The chart shows Limits 74dBuV for Peak, 54dBuV for AVG, but Unwanted Emissions that fall Outside of the Restricted Bands is 68.2dBuV for Peak. No limit for AVG. All test results are in t compliance with the limits. After calculation, the Peak measurement value meets the limit requirements.

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



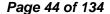


Ant No.:	Ant 1 + Ant 2
Ant. Pol.:	Vertical
Test Mode:	TX 802.11ac(VHT40) Mode 5190MHz (U-NII-1)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	10379.852	41.30	14.99	56.29	74.00	-17.71	peak
2 *	10380.556	28.30	14.99	43.29	54.00	-10.71	AVG

Note: The chart shows Limits 74dBuV for Peak, 54dBuV for AVG, but Unwanted Emissions that fall Outside of the Restricted Bands is 68.2dBuV for Peak. No limit for AVG. All test results are in t compliance with the limits. After calculation, the Peak measurement value meets the limit requirements.

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





Ant No.:	Ant 1 + Ant 2
Ant. Pol.:	Horizontal
Test Mode:	TX 802.11ac(VHT40) Mode 5230MHz (U-NII-1)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)		Detector
1 *	10459.044	27.49	15.10	42.59	54.00	-11.41	AVG
2	10460.946	40.60	15.11	55.71	74.00	-18.29	peak

Note: The chart shows Limits 74dBuV for Peak, 54dBuV for AVG, but Unwanted Emissions that fall Outside of the Restricted Bands is 68.2dBuV for Peak. No limit for AVG. All test results are in t compliance with the limits. After calculation, the Peak measurement value meets the limit requirements.

Remarks:

- 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 No.:	Ant 1 + Ant 2
Ant. Pol.:	Vertical
Test Mode:	TX 802.11ac(VHT40) Mode 5230MHz (U-NII-1)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	10459.912	40.39	15.10	55.49	74.00	-18.51	peak
2 *	10460.860	27.10	15.11	42.21	54.00	-11.79	AVG

Note: The chart shows Limits 74dBuV for Peak, 54dBuV for AVG, but Unwanted Emissions that fall Outside of the Restricted Bands is 68.2dBuV for Peak. No limit for AVG. All test results are in t compliance with the limits. After calculation, the Peak measurement value meets the limit requirements.

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





Ant No.:	Ant 1 + Ant 2
Ant. Pol.:	Horizontal
Test Mode:	TX 802.11ac(VHT80) Mode 5210MHz (U-NII-1)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	10419.612	39.55	15.04	54.59	74.00	-19.41	peak
2 *	10419.934	27.13	15.04	42.17	54.00	-11.83	AVG

Note: The chart shows Limits 74dBuV for Peak, 54dBuV for AVG, but Unwanted Emissions that fall Outside of the Restricted Bands is 68.2dBuV for Peak. No limit for AVG. All test results are in t compliance with the limits. After calculation, the Peak measurement value meets the limit requirements.

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



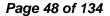


Ant No.:	Ant 1 + Ant 2
Ant. Pol.:	Vertical
Test Mode:	TX 802.11ac(VHT80) Mode 5210MHz (U-NII-1)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)		Detector
1	10420.048	38.92	15.04	53.96	74.00	-20.04	peak
2 *	10420.298	26.74	15.04	41.78	54.00	-12.22	AVG

Note: The chart shows Limits 74dBuV for Peak, 54dBuV for AVG, but Unwanted Emissions that fall Outside of the Restricted Bands is 68.2dBuV for Peak. No limit for AVG. All test results are in t compliance with the limits. After calculation, the Peak measurement value meets the limit requirements.

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





Ant No.:	Ant 1
Ant. Pol.:	Horizontal
Test Mode:	TX 802.11a Mode 5745MHz (U-NII-3)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	11489.912	31.75	16.27	48.02	54.00	-5.98	AVG
2	11490.798	45.34	16.27	61.61	74.00	-12.39	peak

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

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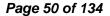


Ant No.:	Ant 1
Ant. Pol.:	Vertical
Test Mode:	TX 802.11a Mode 5745MHz (U-NII-3)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)		Level (dBuV/m)			Detector
1 *	11489.968	31.25	16.27	47.52	54.00	-6.48	AVG
2	11490.578	44.13	16.27	60.40	74.00	-13.60	peak

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor



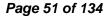


Ant No.:	Ant 1
Ant. Pol.:	Horizontal
Test Mode: TX 802.11a Mode 5785MHz (U-NII-3)	
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	11569.678	34.01	16.35	50.36	54.00	-3.64	AVG
2	11570.756	46.73	16.35	63.08	74.00	-10.92	peak

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor





Ant No.:	Ant 1
Ant. Pol.:	Vertical
Test Mode:	TX 802.11a Mode 5785MHz (U-NII-3)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	11569.904	32.62	16.35	48.97	54.00	-5.03	AVG
2	11570.488	45.33	16.35	61.68	74.00	-12.32	peak

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor





Ant No.:	Ant 1
Ant. Pol.:	Horizontal
Test Mode:	TX 802.11a Mode 5825MHz (U-NII-3)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)		Level (dBuV/m)		Margin (dB)	Detector
1 *	11569.678	34.01	16.35	50.36	54.00	-3.64	AVG
2	11570.756	46.73	16.35	63.08	74.00	-10.92	peak

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor





Ant No.:	Ant 1
Ant. Pol.:	Vertical
Test Mode:	TX 802.11a Mode 5825MHz (U-NII-3)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	11650.002	31.51	16.43	47.94	54.00	-6.06	AVG
2	11650.634	44.84	16.44	61.28	74.00	-12.72	peak

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor





Ant No.:	Ant 1 + Ant 2
Ant. Pol.:	Horizontal
Test Mode:	TX 802.11n(HT20) Mode 5745MHz (U-NII-3)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	11489.728	31.73	16.27	48.00	54.00	-6.00	AVG
2	11489.972	43.26	16.27	59.53	74.00	-14.47	peak

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor





Ant No.:	Ant 1 + Ant 2
Ant. Pol.:	Vertical
Test Mode:	TX 802.11n(HT20) Mode 5745MHz (U-NII-3)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

	No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
	1 *	11489.758	30.07	16.27	46.34	54.00	-7.66	AVG
ĺ	2	11489.788	42.23	16.27	58.50	74.00	-15.50	peak

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor



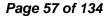


Ant No.:	Ant 1 + Ant 2
Ant. Pol.:	Horizontal
Test Mode:	TX 802.11n(HT20) Mode 5785MHz (U-NII-3)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)		Detector
1 *	11569.498	30.63	16.35	46.98	54.00	-7.02	AVG
2	11569.702	43.09	16.35	59.44	74.00	-14.56	peak

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor



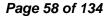


Ant No.:	Ant 1 + Ant 2
Ant. Pol.: Vertical	
Test Mode:	TX 802.11n(HT20) Mode 5785MHz (U-NII-3)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	11569.810	30.00	16.35	46.35	54.00	-7.65	AVG
2	11569.882	42.92	16.35	59.27	74.00	-14.73	peak

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor





Ant No.:	Ant 1 + Ant 2
Ant. Pol.: Horizontal	
Test Mode: TX 802.11n(HT20) Mode 5825MHz (U-NII-3)	
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)		Detector
1	11649.326	41.47	16.43	57.90	74.00	-16.10	peak
2 *	11649.646	29.10	16.43	45.53	54.00	-8.47	AVG

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor



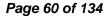


Ant No.:	Ant 1 + Ant 2
Ant. Pol.: Vertical	
Test Mode:	TX 802.11n(HT20) Mode 5825MHz (U-NII-3)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	11649.814	30.01	16.43	46.44	54.00	-7.56	AVG
2	11649.920	42.16	16.44	58.60	74.00	-15.40	peak

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor



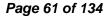


Ant No.:	Ant 1 + Ant 2
Ant. Pol.:	Horizontal
Test Mode:	TX 802.11ac(VHT20) Mode 5745MHz (U-NII-3)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)		Level (dBuV/m)			Detector
1	11489.004	44.47	16.26	60.73	74.00	-13.27	peak
2 *	11489.534	31.68	16.27	47.95	54.00	-6.05	AVG

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor



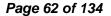


Ant No.:	Ant 1 + Ant 2
Ant. Pol.:	Vertical
Test Mode:	TX 802.11ac(VHT20) Mode 5745MHz (U-NII-3)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	11489.816	29.25	16.27	45.52	54.00	-8.48	AVG
2	11490.556	40.97	16.27	57.24	74.00	-16.76	peak

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor



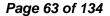


Ant No.:	Ant 1 + Ant 2
Ant. Pol.:	Horizontal
Test Mode:	TX 802.11ac(VHT20) Mode 5785MHz (U-NII-3)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)			Detector
1 *	11569.234	30.28	16.35	46.63	54.00	-7.37	AVG
2	11569.418	42.23	16.35	58.58	74.00	-15.42	peak

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor





Ant No.:	Ant 1 + Ant 2
Ant. Pol.:	Vertical
Test Mode:	TX 802.11ac(VHT20) Mode 5785MHz (U-NII-3)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	11569.894	28.80	16.35	45.15	54.00	-8.85	AVG
2	11570.508	42.47	16.35	58.82	74.00	-15.18	peak

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor



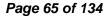


Ant No.:	Ant 1 + Ant 2
Ant. Pol.:	Horizontal
Test Mode:	TX 802.11ac(VHT20) Mode 5825MHz (U-NII-3)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	11650.156	27.89	16.44	44.33	54.00	-9.67	AVG
2	11650.692	40.68	16.44	57.12	74.00	-16.88	peak

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor





Ant No.:	Ant 1 + Ant 2
Ant. Pol.:	Vertical
Test Mode:	TX 802.11ac(VHT20) Mode 5825MHz (U-NII-3)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	11649.920	29.55	16.44	45.99	54.00	-8.01	AVG
2	11650.010	44.88	16.43	61.31	74.00	-12.69	peak

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

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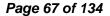


Ant No.:	Ant 1 + Ant 2			
Ant. Pol.:	Horizontal			
Test Mode:	TX 802.11n(HT40) Mode 5755MHz (U-NII-3)			
Remark:	No report for the emission which more than 20 dB below the prescribed limit.			

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	11509.634	42.41	16.28	58.69	74.00	-15.31	peak
2 *	11510.468	30.22	16.28	46.50	54.00	-7.50	AVG

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor



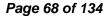


Ant No.:	Ant 1 + Ant 2
Ant. Pol.:	Vertical
Test Mode:	TX 802.11n(HT40) Mode 5755MHz (U-NII-3)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	11509.472	40.44	16.28	56.72	74.00	-17.28	peak
2 *	11509.770	28.72	16.28	45.00	54.00	-9.00	AVG

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor





Ant No.:	Ant 1 + Ant 2
Ant. Pol.:	Horizontal
Test Mode:	TX 802.11n(HT40) Mode 5795MHz (U-NII-3)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	11589.194	29.68	16.37	46.05	54.00	-7.95	AVG
2	11590.760	42.30	16.37	58.67	74.00	-15.33	peak

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor



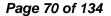


Ant No.:	Ant 1 + Ant 2
Ant. Pol.:	Vertical
Test Mode:	TX 802.11n(HT40) Mode 5795MHz (U-NII-3)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)		Detector
1	11589.632	41.11	16.37	57.48	74.00	-16.52	peak
2 *	11589.804	29.18	16.37	45.55	54.00	-8.45	AVG

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor





Ant No.:	Ant 1 + Ant 2
Ant. Pol.:	Horizontal
Test Mode:	TX 802.11ac(VHT40) Mode 5755MHz (U-NII-3)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

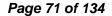
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	11510.514	41.59	16.28	57.87	74.00	-16.13	peak
2 *	11510.950	29.44	16.28	45.72	54.00	-8.28	AVG

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

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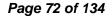


Ant No.:	Ant 1 + Ant 2
Ant. Pol.:	Vertical
Test Mode:	TX 802.11ac(VHT40) Mode 5755MHz (U-NII-3)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	11509.832	28.32	16.28	44.60	54.00	-9.40	AVG
2	11510.238	40.32	16.28	56.60	74.00	-17.40	peak

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor





Ant No.:	Ant 1 + Ant 2
Ant. Pol.:	Horizontal
Test Mode:	TX 802.11ac(VHT40) Mode 5795MHz (U-NII-3)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

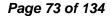
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	11589.838	28.93	16.37	45.30	54.00	-8.70	AVG
2	11590.326	41.34	16.37	57.71	74.00	-16.29	peak

Remarks:

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 No.:	Ant 1 + Ant 2
Ant. Pol.:	Vertical
Test Mode:	TX 802.11ac(VHT40) Mode 5795MHz (U-NII-3)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	11589.706	28.09	16.37	44.46	54.00	-9.54	AVG
2	11590.026	40.65	16.37	57.02	74.00	-16.98	peak

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor



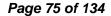


Ant No.:	Ant 1 + Ant 2
Ant. Pol.:	Horizontal
Test Mode:	TX 802.11ac(VHT80) Mode 5775MHz (U-NII-3)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	11549.714	40.45	16.32	56.77	74.00	-17.23	peak
2 *	11549.956	28.00	16.33	44.33	54.00	-9.67	AVG

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor





Ant No.:	Ant 1 + Ant 2
Ant. Pol.:	Vertical
Test Mode:	TX 802.11ac(VHT80) Mode 5775MHz (U-NII-3)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	11549.532	26.96	16.32	43.28	54.00	-10.72	AVG
2	11549.564	35.46	16.32	51.78	74.00	-22.22	peak

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor



3.3. Band Edge Emissions

Limit

Limits of unwanted emission out of the restricted bands

FCC CFR Title 47 Part 15 Subpart C Section 15.407(b)/ RSS-247 6.2.1.2 & RSS-247 6.2.4.2

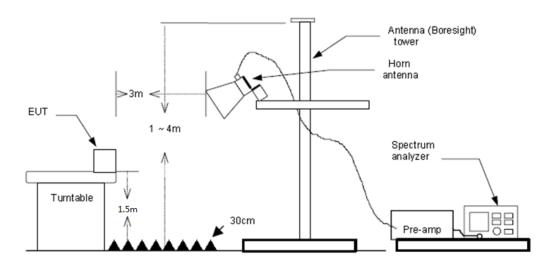
Frequency (MHz)	EIRP Limits (dBm)	Equivalent Field Strength at 3m (dBuV/m)		
5150~5250	-27	68.2		
5250~5350	-27	68.2		
5470~5725	-27	68.2		
	-27(Note 2)	68.2		
E70E E00E	10(Note 2)	105.2		
5725~5825	15.6(Note 2)	110.8		
	27(Note 2)	122.2		

Note: 1. The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength: $E = \frac{1000000\sqrt{30P}}{1000000\sqrt{30P}}$ where P is the eirp (Watte)

strength: $E = \frac{1000000\sqrt{30P}}{3}$ uV/m, where P is the eirp (Watts)

2. According to FCC 16-24, All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27dBm/MHz at the band edge.

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.

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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 Appendix E: Duty Cycle

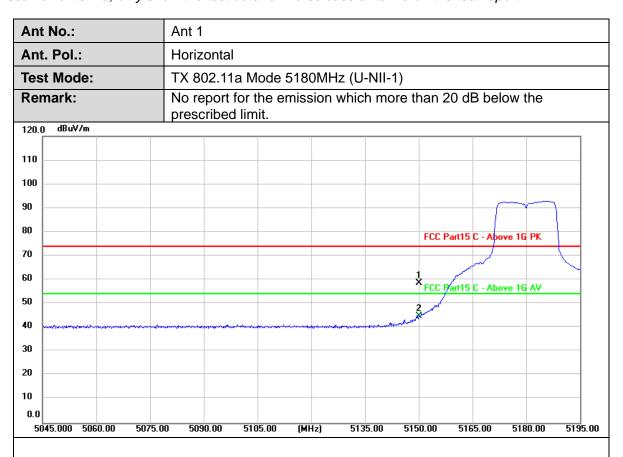
Report No.: CTC20211300E06

Test Mode

Please refer to the clause 2.4.

Test Results

Pre-scan all antenna, only show the test data for worse case antenna on the test report.

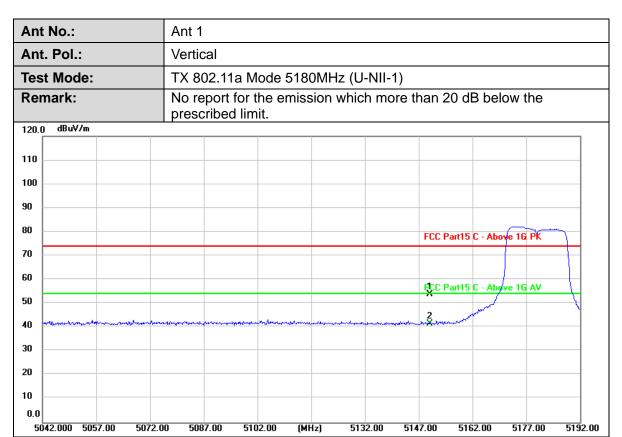


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	5150.000	21.45	37.15	58.60	74.00	-15.40	peak
2 *	5150.000	7.58	37.15	44.73	54.00	-9.27	AVG

Remarks

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor





No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	5150.000	16.69	37.15	53.84	74.00	-20.16	peak
2 *	5150.000	4.40	37.15	41.55	54.00	-12.45	AVG

Remarks:

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

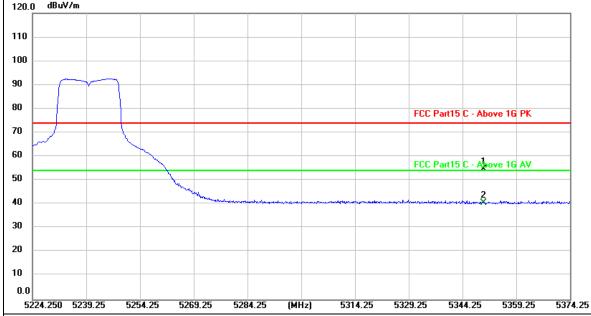


Ant No.:
Ant. Pol.:
Horizontal

Test Mode: TX 802.11a Mode 5240MHz (U-NII-1)

Remark: No report for the emission which more than 20 dB below the prescribed limit.

Report No.: CTC20211300E06



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	5350.000	17.36	37.41	54.77	74.00	-19.23	peak
2 *	5350.000	3.29	37.41	40.70	54.00	-13.30	AVG

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor



Ant No.: Ant 1 Ant. Pol.: Vertical **Test Mode:** TX 802.11a Mode 5240MHz (U-NII-1) No report for the emission which more than 20 dB below the Remark: prescribed limit. 120.0 dBuV/m 110 100 90 80 FCC Part15 C - Above 1G PK 70 60 FCC Part15 (L - Above 1G AV 50 40 30 20 10 0.0

No.	Frequency (MHz)	Reading (dBuV)		Level (dBuV/m)		Margin (dB)	Detector
1	5350.000	16.23	37.41	53.64	74.00	-20.36	peak
2 *	5350.000	4.70	37.41	42.11	54.00	-11.89	AVG

(MHz)

5318.75

5333.75

5348.75

5363.75

5378.75

Remarks:

5228.750 5243.75

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

5273.75

5288.75

5258.75

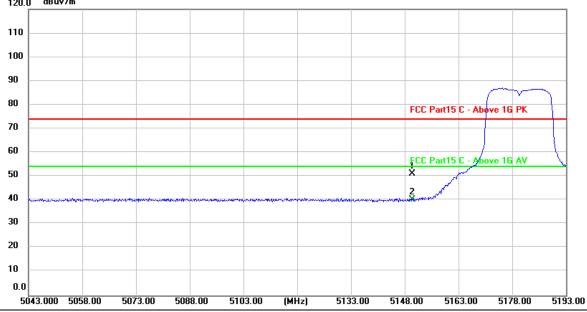
2.Margin value = Level -Limit value

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Ant No.: Ant 1 + Ant 2 Ant. Pol.: Horizontal **Test Mode:** TX 802.11n(HT20) Mode 5180MHz (U-NII-1) No report for the emission which more than 20 dB below the Remark: prescribed limit. 120.0 dBuV/m 110

Report No.: CTC20211300E06



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	5150.000	13.93	37.15	51.08	74.00	-22.92	peak
2 *	5150.000	3.22	37.15	40.37	54.00	-13.63	AVG

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor



Ant No.: Ant 1 + Ant 2 Ant. Pol.: Vertical **Test Mode:** TX 802.11n(HT20) Mode 5180MHz (U-NII-1) No report for the emission which more than 20 dB below the Remark: prescribed limit. 120.0 dBuV/m 110 100 90 80 FCC Part15 C - Above 1G PK 70 60 FCC Part15 C - Above 1G AV 50 40 30 20 10

No.	Frequency (MHz)	Reading (dBuV)		Level (dBuV/m)		Margin (dB)	Detector
1	5150.000	15.22	37.15	52.37	74.00	-21.63	peak
2 *	5150.000	4.04	37.15	41.19	54.00	-12.81	AVG

(MHz)

5131.25

5146.25

5161.25

5176.25

5191.25

Remarks:

0.0

5041.250 5056.25

5071.25

5086.25

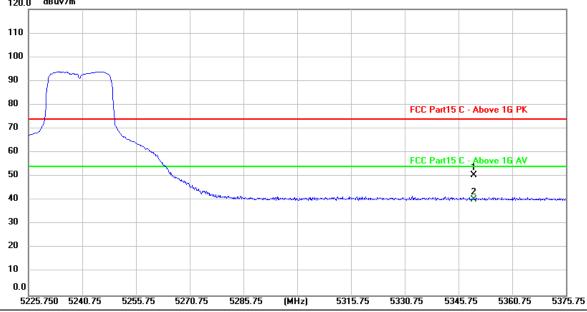
5101.25

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



Ant No.: Ant 1 + Ant 2 Ant. Pol.: Horizontal **Test Mode:** TX 802.11n(HT20) Mode 5240MHz (U-NII-1) No report for the emission which more than 20 dB below the Remark: prescribed limit. 120.0 dBuV/m

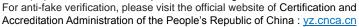
Report No.: CTC20211300E06



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	5350.000	13.11	37.41	50.52	74.00	-23.48	peak
2 *	5350.000	2.92	37.41	40.33	54.00	-13.67	AVG

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor









Ant No.: Ant 1 + Ant 2 Ant. Pol.: Vertical **Test Mode:** TX 802.11n(HT20) Mode 5240MHz (U-NII-1) No report for the emission which more than 20 dB below the Remark: prescribed limit. 120.0 dBuV/m 110 100 90 80 FCC Part15 C - Above 1G PK 70 60 FCC Part15 CI- Above 16 AV 50 40 30 20 10 0.0

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	5350.000	15.78	37.41	53.19	74.00	-20.81	peak
2 *	5350.000	4.14	37.41	41.55	54.00	-12.45	AVG

(MHz)

5318.00

5333.00

5348.00

5363.00

5378.00

Remarks:

5228.000 5243.00

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

5258.00

5273.00

5288.00

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5193.00



Ant No.: Ant 1 + Ant 2 Ant. Pol.: Horizontal **Test Mode:** TX 802.11ac(VHT20) Mode 5180MHz (U-NII-1) No report for the emission which more than 20 dB below the Remark: prescribed limit. 120.0 dBuV/m 110 100 90 80 FCC Part15 C - Above 1G PK 70 60 FCC Part15 C ove 1G AV 50 40 30 20

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	5150.000	15.28	37.15	52.43	74.00	-21.57	peak
2 *	5150.000	2.95	37.15	40.10	54.00	-13.90	AVG

(MHz)

5133.00

5148.00

5163.00

5178.00

Remarks:

10 0.0

5043.000 5058.00

5073.00

5088.00

5103.00

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor



Ant No.: Ant 1 + Ant 2 Ant. Pol.: Vertical **Test Mode:** TX 802.11ac(VHT20) Mode 5180MHz (U-NII-1) No report for the emission which more than 20 dB below the Remark: prescribed limit. 120.0 dBuV/m 110 100 90 80 FCC Part15 C - Aboye 1G PK 70 60 FCC Part15 C - Above 16 AV 50 40 30 20 10

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	5150.000	14.36	37.15	51.51	74.00	-22.49	peak
2 *	5150.000	2.86	37.15	40.01	54.00	-13.99	AVG

(MHz)

5132.00

5147.00

5162.00

5177.00

5192.00

Remarks:

0.0

5042.000 5057.00

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

5072.00

5087.00

5102.00



Ant No.:

Ant 1 + Ant 2

Ant. Pol.:

Horizontal

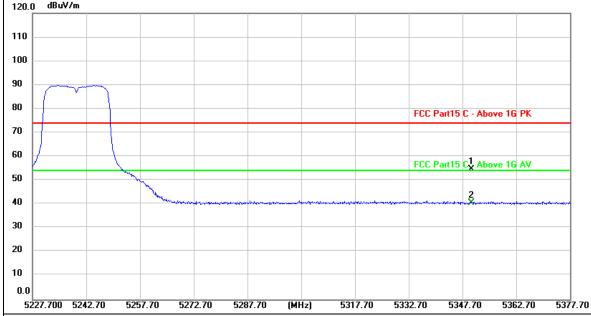
Test Mode:

TX 802.11ac(VHT20) Mode 5240MHz (U-NII-1)

Remark:

No report for the emission which more than 20 dB below the prescribed limit.

Report No.: CTC20211300E06



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	5350.000	17.25	37.41	54.66	74.00	-19.34	peak
2 *	5350.000	3.29	37.41	40.70	54.00	-13.30	AVG

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor



Ant No.: Ant 1 + Ant 2 Ant. Pol.: Vertical **Test Mode:** TX 802.11ac(VHT20) Mode 5240MHz (U-NII-1) No report for the emission which more than 20 dB below the Remark: prescribed limit. 120.0 dBuV/m 110 100 90 80 FCC Part15 C - Above 1G PK 70 60 FCC Part15 CL- Above 1G AV 50 40 30 20 10

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	5350.000	16.57	37.41	53.98	74.00	-20.02	peak
2 *	5350.000	3.36	37.41	40.77	54.00	-13.23	AVG

(MHz)

5318.00

5333.00

5348.00

5363.00

5378.00

Remarks:

0.0

5228.000 5243.00

5258.00

5273.00

5288.00

- 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 No.:

Ant 1 + Ant 2

Ant. Pol.:

Horizontal

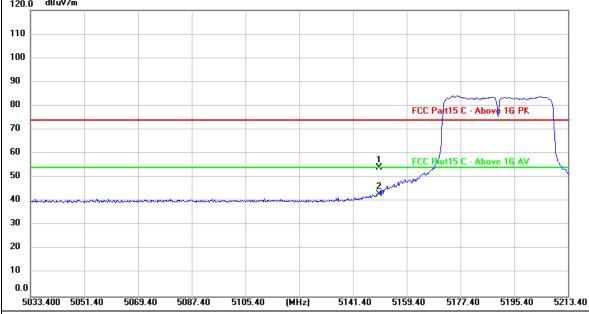
Test Mode:

TX 802.11n(HT40) Mode 5190MHz (U-NII-1)

Remark:

No report for the emission which more than 20 dB below the prescribed limit.

Report No.: CTC20211300E06

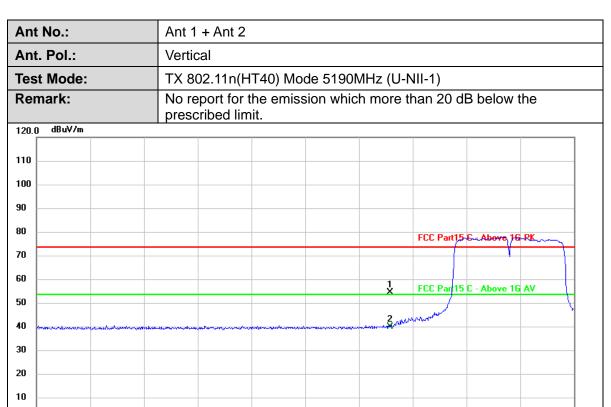


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	5150.000	16.89	37.15	54.04	74.00	-19.96	peak
2 *	5150.000	5.90	37.15	43.05	54.00	-10.95	AVG

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor





No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	5150.000	17.80	37.15	54.95	74.00	-19.05	peak
2 *	5150.000	3.40	37.15	40.55	54.00	-13.45	AVG

(MHz)

5139.60

5157.60

5175.60

5193.60

5211.60

Remarks:

0.0

5031.600 5049.60

5067.60

5085.60

5103.60

- 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 No.:

Ant 1 + Ant 2

Ant. Pol.:

Horizontal

Test Mode:

TX 802.11n(HT40) Mode 5230MHz (U-NII-1)

Remark:

No report for the emission which more than 20 dB below the prescribed limit.



No.	Frequency (MHz)	Reading (dBuV)		Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	
1	5350.000	17.84	37.41	55.25	74.00	-18.75	peak	
2 *	5350.000	3.11	37.41	40.52	54.00	-13.48	AVG	

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor



Ant No.: Ant 1 + Ant 2 Ant. Pol.: Vertical **Test Mode:** TX 802.11n(HT40) Mode 5230MHz (U-NII-1) No report for the emission which more than 20 dB below the Remark: prescribed limit. 120.0 dBuV/m 110 100 90 80 FCC Part15 C - Above 1G PK 70 60 FCC Part 15 C - Above 16 AV 50 ۲ 40 30 20

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	5350.000	12.62	37.41	50.03	74.00	-23.97	peak
2 *	5350.000	2.50	37.41	39.91	54.00	-14.09	AVG

(MHz)

5317.30

5335.30

5353.30

5371.30

5389.30

Remarks:

10 0.0

5209.300 5227.30

5245.30

5263.30

5281.30

- 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 No.:

Ant 1 + Ant 2

Ant. Pol.:

Horizontal

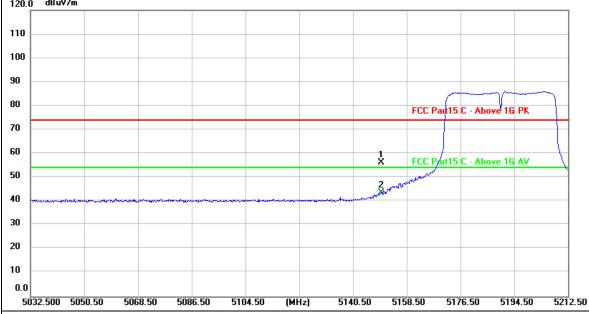
Test Mode:

TX 802.11ac(VHT40) Mode 5190MHz (U-NII-1)

Remark:

No report for the emission which more than 20 dB below the prescribed limit.

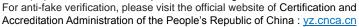
Report No.: CTC20211300E06



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	5150.000	19.19	37.15	56.34	74.00	-17.66	peak
2 *	5150.000	6.52	37.15	43.67	54.00	-10.33	AVG

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor







Ant No.: Ant 1 + Ant 2 Ant. Pol.: Vertical **Test Mode:** TX 802.11ac(VHT40) Mode 5190MHz (U-NII-1) No report for the emission which more than 20 dB below the Remark: prescribed limit. 120.0 dBuV/m 110 100 90 80 70 60 FCC Part15 C - Above 1G AV 50 40 30 20 10 0.0

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)		Detector
1	5150.000	16.77	37.15	53.92	74.00	-20.08	peak
2 *	5150.000	4.45	37.15	41.60	54.00	-12.40	AVG

(MHz)

5141.40

5159.40

5177.40

5195.40

5213.40

Remarks:

5033.400 5051.40

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

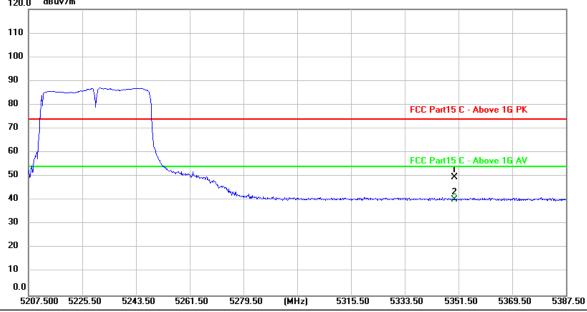
5069.40

5087.40

5105.40



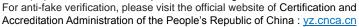
Ant No.: Ant 1 + Ant 2 Ant. Pol.: Horizontal **Test Mode:** TX 802.11ac(VHT40) Mode 5230MHz (U-NII-1) No report for the emission which more than 20 dB below the Remark: prescribed limit. 120.0 dBuV/m 110



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	5350.000	12.24	37.41	49.65	74.00	-24.35	peak
2 *	5350.000	2.95	37.41	40.36	54.00	-13.64	AVG

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor









Ant No.: Ant 1 + Ant 2 Ant. Pol.: Vertical **Test Mode:** TX 802.11ac(VHT40) Mode 5230MHz (U-NII-1) No report for the emission which more than 20 dB below the Remark: prescribed limit. 120.0 dBuV/m 110 100 90 80 FCC Part15 C - Above 1G PK 70 60 FCC Part15 C - Above 16 AV 50 40 30 20 10

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	5350.000	14.26	37.41	51.67	74.00	-22.33	peak
2 *	5350.000	3.10	37.41	40.51	54.00	-13.49	AVG

(MHz)

5314.60

5332.60

5350.60

5368.60

5386.60

Remarks:

0.0

5206.600 5224.60

5242.60

5260.60

5278.60

- 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 No.:

Ant 1 + Ant 2

Ant. Pol.:

Horizontal

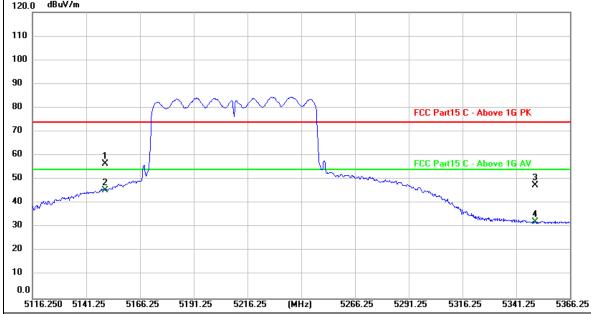
Test Mode:

TX 802.11ac(VHT80) Mode 5210MHz (U-NII-1)

Remark:

No report for the emission which more than 20 dB below the prescribed limit.

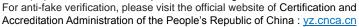
Report No.: CTC20211300E06



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	5150.000	19.35	37.15	56.50	74.00	-17.50	peak
2 *	5150.000	8.29	37.15	45.44	54.00	-8.56	AVG
3	5350.000	10.22	37.41	47.63	74.00	-26.37	peak
4	5350.000	-5.14	37.41	32.27	54.00	-21.73	AVG

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor





Ant No.: Ant 1 + Ant 2 Ant. Pol.: Vertical **Test Mode:** TX 802.11ac(VHT80) Mode 5210MHz (U-NII-1) No report for the emission which more than 20 dB below the Remark: prescribed limit. 120.0 dBuV/m 110 100 90 80 FCC Part15 C - Above 1G PK 70 60 FCC Part15 C - Above 1G AV 50 40 30 20 10 0.0

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	5150.000	15.05	37.15	52.20	74.00	-21.80	peak
2 *	5150.000	4.33	37.15	41.48	54.00	-12.52	AVG
3	5350.000	12.88	37.41	50.29	74.00	-23.71	peak
4	5350.000	3.17	37.41	40.58	54.00	-13.42	AVG

(MHz)

5265.00

5290.00

5315.00

5340.00

5365.00

Remarks:

5115.000 5140.00

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

中国国家认证认可监督管理委员会

5165.00

5190.00

5215.00



5650.000 5677.50

5705.00

5732.50

5760.00

Ant No.: Ant 1 Ant. Pol.: Horizontal **Test Mode:** TX 802.11a Mode 5745MHz (U-NII-3) No report for the emission which more than 20 dB below the Remark: prescribed limit. 120.0 dBuV/m 110 100 90 80 FCC Part15.407 U-NII-3 70 Margin -6 dB 60 50 market and the second second section of the second second contribution of the second s e straple of the property of the

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	5725.000	37.16	38.07	75.23	122.20	-46.97	peak

(MHz)

5842.50

5870.00

5897.50

5925.00

5815.00

Remarks:

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 No.: Ant 1 Ant. Pol.: Vertical **Test Mode:** TX 802.11a Mode 5745MHz (U-NII-3) No report for the emission which more than 20 dB below the Remark: prescribed limit. 120.0 dBuV/m 110 100 90 80 FCC Part15.407 U-NII-3 70 Margin -6 dB 60 50 MAN of he case and the color of Mary Marine Mary Carlot State Company 40 30 20 10 0.0

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	5725.000	29.22	38.07	67.29	122.20	-54.91	peak

(MHz)

Remarks:

5650.000 5677.50

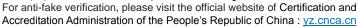
5705.00

5732.50

5760.00

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value



5842.50

5870.00

5897.50

5925.00

5815.00



5925.00



Ant No.: Ant 1 Ant. Pol.: Horizontal **Test Mode:** TX 802.11a Mode 5825MHz (U-NII-3) No report for the emission which more than 20 dB below the Remark: prescribed limit. 120.0 dBuV/m 110 100 90 80 FCC Part15.407 U-NII-3 70 Margin -6 dB 60 had had had been prompted, the state of the state of the state of the forest had been a prompted by the state of the state wind but fill ment flower per fre 40 30 20 10

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	
1 *	5850.000	27.70	38.33	66.03	122.20	-56.17	peak	

(MHz)

5815.00

5842.50

5870.00

5897.50

Remarks:

0.0

5650.000 5677.50

5705.00

5732.50

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

5760.00



Ant No.: Ant 1 Ant. Pol.: Vertical **Test Mode:** TX 802.11a Mode 5825MHz (U-NII-3) No report for the emission which more than 20 dB below the Remark: prescribed limit. 120.0 dBuV/m 110 100 90 80 FCC Part15.407 U-NII-3 70 Margin -6 dB 60 50 Destructives and a state of the second of the second and the second of t 40 30 20 10 0.0 5842.50 5650.000 5677.50 5705.00 5732.50 5760.00 (MHz) 5815.00 5870.00 5897.50 5925.00

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	5850.000	19.78	38.33	58.11	122.20	-64.09	peak

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

Tel.: (86)755-27521059

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Horizontal
TX 802.11n(HT20) Mode 5745MHz (U-NII-3)
No report for the emission which more than 20 dB below the prescribed limit.
FCC Part15.407 U-NII-3 Margin -6 dB
And the sales of t

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	5725.000	34.10	38.07	72.17	122.20	-50.03	peak

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor



Ant No.: Ant 1 + Ant 2 Ant. Pol.: Vertical **Test Mode:** TX 802.11n(HT20) Mode 5745MHz (U-NII-3) No report for the emission which more than 20 dB below the Remark: prescribed limit. 120.0 dBuV/m 110 100 90 80 FCC Part15.407 U-NII-3 70 Margin -6 dB 60 50 ald Marchelman M. Marcaland 40 30 20 10 0.0 5842.50 5650.000 5677.50 5705.00 5732.50 5760.00 (MHz) 5815.00 5870.00 5897.50 5925.00

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	5725.000	25.72	38.07	63.79	122.20	-58.41	peak

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

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5925.00



Ant No.: Ant 1 + Ant 2 Ant. Pol.: Horizontal **Test Mode:** TX 802.11n(HT20) Mode 5825MHz (U-NII-3) No report for the emission which more than 20 dB below the Remark: prescribed limit. 120.0 dBuV/m 110 100 90 80 FCC Part15.407 U-NII-3 70 Margin -6 dB 60 whater of the state of the stat Many had a share the first of the supplied to 40 30 20

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	5850.000	25.50	38.33	63.83	122.20	-58.37	peak

(MHz)

5815.00

5842.50

5870.00

5897.50

Remarks:

10 0.0

5650.000 5677.50

5705.00

5732.50

5760.00

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor



Ant No.: Ant 1 + Ant 2 Ant. Pol.: Vertical **Test Mode:** TX 802.11n(HT20) Mode 5825MHz (U-NII-3) No report for the emission which more than 20 dB below the Remark: prescribed limit. 120.0 dBuV/m 110 100 90 80 FCC Part15.407 U-NII-3 70 Margin -6 dB 60 50 odyk holydraegan films gestyn in ar a hasfrelyn ar a hillen seelan fan a hefanna har a hefangan general a bleve 40 30 20 10 0.0 5842.50 5650.000 5677.50 5705.00 5732.50 5760.00 (MHz) 5815.00 5870.00 5897.50 5925.00

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	5850.000	15.11	38.33	53.44	122.20	-68.76	peak

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor



 Ant No.:
 Ant 1 + Ant 2

 Ant. Pol.:
 Horizontal

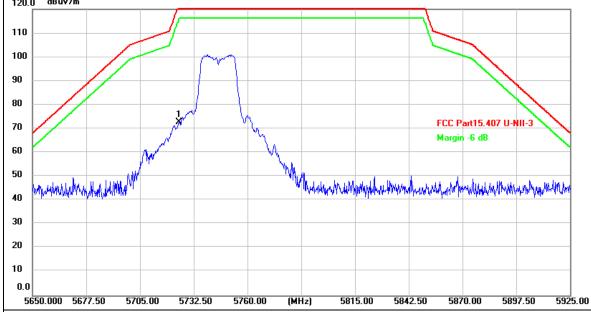
 Test Mode:
 TX 802.11ac(VHT20) Mode 5745MHz (U-NII-3)

Report No.: CTC20211300E06

Remark:

No report for the emission which more than 20 dB below the prescribed limit.

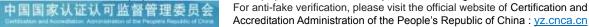
120.0 dBuV/m



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	5725.000	34.72	38.07	72.79	122.20	-49.41	peak

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor







Ant No.: Ant 1 + Ant 2 Ant. Pol.: Vertical **Test Mode:** TX 802.11ac(VHT20) Mode 5745MHz (U-NII-3) No report for the emission which more than 20 dB below the Remark: prescribed limit. 120.0 dBuV/m 110 100 90 80 FCC Part15.407 U-NII-3 70 Margin -6 dB 60 50 40 major professionalista asistet programa va programa programa de programa de programa de la compansión de la where where the state of the second 40 30 20 10

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	5725.000	26.17	38.07	64.24	122.20	-57.96	peak

(MHz)

Remarks:

0.0

5650.000 5677.50

5705.00

5732.50

5760.00

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

5842.50

5870.00

5897.50

5925.00

5815.00

5925.00



Ant No.: Ant 1 + Ant 2 Ant. Pol.: Horizontal **Test Mode:** TX 802.11ac(VHT20) Mode 5825MHz (U-NII-3) No report for the emission which more than 20 dB below the Remark: prescribed limit. 120.0 dBuV/m 110 100 90 80 FCC Part15.407 U-NII-3 70 Margin -6 dB 60 40 30 20 10

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	5850.000	29.93	38.33	68.26	122.20	-53.94	peak

(MHz)

5815.00

5842.50

5870.00

5897.50

Remarks:

0.0

5650.000 5677.50

5705.00

5732.50

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

5760.00



Ant No.: Ant 1 + Ant 2 Ant. Pol.: Vertical **Test Mode:** TX 802.11ac(VHT20) Mode 5825MHz (U-NII-3) No report for the emission which more than 20 dB below the Remark: prescribed limit. 120.0 dBuV/m 110 100 90 80 FCC Part15.407 U-NII-3 70 Margin -6 dB 60 50 More March 1 and the state of t warpellader and helpellader and a few and a state of the second and the 40 30 20 10 0.0 5842.50 5650.000 5677.50 5705.00 5732.50 5760.00 (MHz) 5815.00 5870.00 5897.50 5925.00

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	5850.000	19.40	38.33	57.73	122.20	-64.47	peak

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

5925.00



Ant No.: Ant 1 + Ant 2 Ant. Pol.: Horizontal **Test Mode:** TX 802.11n(HT40) Mode 5755MHz (U-NII-3) No report for the emission which more than 20 dB below the Remark: prescribed limit. 120.0 dBuV/m 110 100 90 80 FCC Part15.407 U-NII-3 70 Margin -6 dB Address of the state of the forest of the forest of the second of the se 60 and the second of the second o 40 30 20

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	
1 *	5725.000	30.42	38.07	68.49	122.20	-53.71	peak	Ī

(MHz)

5815.00

5842.50

5870.00

5897.50

Remarks:

10 0.0

5650.000 5677.50

5705.00

5732.50

5760.00

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor



Ant No.: Ant 1 + Ant 2 Ant. Pol.: Vertical **Test Mode:** TX 802.11n(HT40) Mode 5755MHz (U-NII-3) No report for the emission which more than 20 dB below the Remark: prescribed limit. 120.0 dBuV/m 110 100 90 80 FCC Part15.407 U-NII-3 70 mention and the separate of the Market of the Secretary o Margin -6 dB 60 John Market Mark 50 40 30 20 10

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	5725.000	23.39	38.07	61.46	122.20	-60.74	peak

(MHz)

5815.00

5842.50

5870.00

5897.50

5925.00

Remarks:

0.0

5650.000 5677.50

5705.00

5732.50

5760.00

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

5925.00



Ant No.: Ant 1 + Ant 2 Ant. Pol.: Horizontal **Test Mode:** TX 802.11n(HT40) Mode 5795MHz (U-NII-3) No report for the emission which more than 20 dB below the Remark: prescribed limit. 120.0 dBuV/m 110 100 90 80 FCC Part15.407 U-NII-3 70 Margin -6 dB 60 50 40 30 20

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	5850.000	16.97	38.33	55.30	122.20	-66.90	peak

(MHz)

5815.00

5842.50

5870.00

5897.50

Remarks:

10 0.0

5650.000 5677.50

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

5732.50

5705.00

5760.00



Ant No.: Ant 1 + Ant 2 Ant. Pol.: Vertical **Test Mode:** TX 802.11n(HT40) Mode 5795MHz (U-NII-3) No report for the emission which more than 20 dB below the Remark: prescribed limit. 120.0 dBuV/m 110 100 90 80 FCC Part15.407 U-NII-3 70 Margin -6 dB 60 Mary the state of holded with a day of both who does have been a wife will great he will be the former. 50 40 30 20 10 0.0 5842.50 5650.000 5677.50 5705.00 5732.50 5760.00 (MHz) 5815.00 5870.00 5897.50 5925.00

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	5850.000	5.66	38.33	43.99	122.20	-78.21	peak

Remarks:

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

5925.00



Ant No.: Ant 1 + Ant 2 Ant. Pol.: Horizontal **Test Mode:** TX 802.11ac(VHT40) Mode 5755MHz (U-NII-3) No report for the emission which more than 20 dB below the Remark: prescribed limit. 120.0 dBuV/m 110 100 90 80 FCC Part15.407 U-NII-3 70 Margin -6 dB war on the state of the state o 60 tyralizationy topicity on a field (1944) 40 30 20 10 0.0

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	
1 *	5725.000	30.68	38.07	68.75	122.20	-53.45	peak	

(MHz)

5815.00

5842.50

5870.00

5897.50

Remarks:

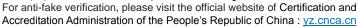
5650.000 5677.50

5705.00

5732.50

5760.00

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor







Ant No.: Ant 1 + Ant 2 Ant. Pol.: Vertical **Test Mode:** TX 802.11ac(VHT40) Mode 5755MHz (U-NII-3) No report for the emission which more than 20 dB below the Remark: prescribed limit. 120.0 dBuV/m 110 100 90 80 FCC Part15.407 U-NII-3 70 Margin -6 dB Apriliander freshold of second della strand 60 warde har and the state of the 50 40 30 20 10 0.0

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	5725.000	22.81	38.07	60.88	122.20	-61.32	peak

(MHz)

5815.00

5842.50

5870.00

5897.50

5925.00

Remarks:

5650.000 5677.50

5705.00

5732.50

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

5925.00



Ant No.: Ant 1 + Ant 2 Ant. Pol.: Horizontal **Test Mode:** TX 802.11ac(VHT40) Mode 5795MHz (U-NII-3) No report for the emission which more than 20 dB below the Remark: prescribed limit. 120.0 dBuV/m 110 100 90 80 FCC Part15.407 U-NII-3 hillywydnosoffranddon daegler ddiodden ddiod y ddiodd ddiodd ddiod ddiodd ddiodd ddiodd ddiodd ddiodd ddiodd d 70 Margin -6 dB 60 50 40 30 20 10 0.0

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	5850.000	12.18	38.33	50.51	122.20	-71.69	peak

(MHz)

5815.00

5842.50

5870.00

5897.50

Remarks:

5650.000 5677.50

5705.00

5732.50

5760.00

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor



Ant No.: Ant 1 + Ant 2 Ant. Pol.: Vertical **Test Mode:** TX 802.11ac(VHT40) Mode 5795MHz (U-NII-3) No report for the emission which more than 20 dB below the Remark: prescribed limit. 120.0 dBuV/m 110 100 90 80 FCC Part15.407 U-NII-3 70 Margin -6 dB All I while how made for my profit me and the part of the ministration of the first field by the first of the contract of the 60 Volumental de la company de la 50 40 30 20 10 0.0

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	5850.000	7.08	38.33	45.41	122.20	-76.79	peak

(MHz)

Remarks:

5650.000 5677.50

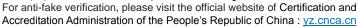
5705.00

5732.50

5760.00

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value



5842.50

5870.00

5897.50

5925.00



Ant No.: Ant 1 + Ant 2 Ant. Pol.: Horizontal **Test Mode:** TX 802.11ac(VHT80) Mode 5775MHz (U-NII-3) No report for the emission which more than 20 dB below the Remark: prescribed limit. 120.0 dBuV/m 110 100 90 80 FCC Part15.407 U-NII-3 70 1 Samuel Control of the state o Margin -6 dB 60 50 40 30 20 10

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	5725.000	26.25	38.07	64.32	122.20	-57.88	peak
2	5850.000	20.43	38.33	58.76	122.20	-63.44	peak

(MHz)

Remarks:

0.0

5650.000 5677.50

5705.00

5732.50

5760.00

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

5842.50

5870.00

5897.50

5925.00



5650.000 5677.50

5705.00

5732.50

5760.00

Ant No.: Ant 1 + Ant 2 Ant. Pol.: Vertical **Test Mode:** TX 802.11ac(VHT80) Mode 5775MHz (U-NII-3) No report for the emission which more than 20 dB below the Remark: prescribed limit. 120.0 dBuV/m 110 100 90 80 FCC Part15.407 U-NII-3 70 Margin -6 dB 60 here the second of the second 50 h what had had had had 40

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	5725.000	18.92	38.07	56.99	122.20	-65.21	peak
2	5850.000	10.40	38.33	48.73	122.20	-73.47	peak

(MHz)

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

5842.50

5870.00

5897.50

5925.00

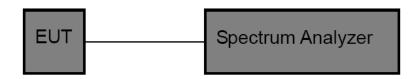


3.4. Bandwidth Test

Limit

FCC Part 15 Subpart C(15.407)/ RSS-247			
Test Item Limit Frequency Range (MHz)			
26 dB Bandwidth		5150~5250	
	N/A	5250~5350	
		5500~5700	
6 dB Bandwidth	>500kHz	5725~5850	

Test Configuration



Test Procedure

Please refer to According to KDB789033 D02, for the measurement methods.

The setting of the spectrum analyser as below:

26dB Bandwidth Test		
Spectrum Parameters	Setting	
Attenuation	Auto	
Span	>26 dB Bandwidth	
RBW	Approximately 1% of the emission bandwidth	
VBW	VBW>RBW	
Detector	Peak	
Trace	Max Hold	
Sweep Time	Auto	



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6dB Bandwidth Test		
Spectrum Parameters	Setting	
Attenuation	Auto	
Span	>6 dB Bandwidth	
RBW	100 kHz	
VBW	VBW≥ 3*RBW	
Detector	Peak	
Trace	Max Hold	
Sweep Time	Auto	
99% Occupied Bandwidth Test		
Spectrum Parameters	Setting	
Attenuation	Auto	
RBW	1% to 5% of the OBW	
VBW	≥ 3RBW	
Detector	Peak	
Trace	Max Hold	

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

Please see the Appendix A1, A2, A3.



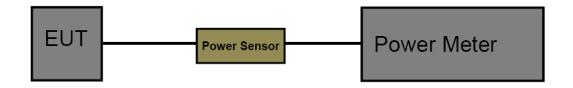
3.5. Output Power Test

<u>Limit</u>

FCC Part 15 Subpart E (15.407)			
Test Item	Limit	Frequency Range(MHz)	
Conducted Output Power	Fixed: 1 Watt (30dBm) Mobile and Portable: 250mW (24dBm)	5150~5250	
	250mW (24dBm)	5250~5350	
	250mW (24dBm)	5500~5700	
	1 Watt (30dBm)	5725~5850	

	IC Power&PSD Limit				
Frequency	Type of devices	Maximum Conducted	EIRP Output Power	Conducted Power	EIRP Power
rrequency	Type of devices	Output Power	Elkr Output rower	Spectral Density	Spectral Density
5150MHz-5250MHz	in vehicles		30mW or 1.76 + 10 × log:0B dBm, whichever is less (B=99% OBW in MHz)		
	Other Devices		200mW or 10 + 10 × logsoB dBm, whichever is less (B=99% OBW in MHz)		10dBm/MHz
	in vehicles		30mW or 1.76 + 10 × log10B dBm, whichever is less (B=99% OBW in MHz)		
5250MHz-5350MHz	Other Devices	250mW or 11 + 10 × log10B dBm, whichever is less (B=99% OBW in MHz)	1W or 17 + 10 ×logioB dBm, whichever is less (B=99% OBW in MHz)	11 dBm/Mhz	
5470MHz-5600MHz 5650MHz-5725MHz	ALL Devices	250mW or 11 + 10 × log10B dBm, whichever is less (B=99% OBW in MHz)	1W or 17 + 10 ×logioB dBm, whichever is less (B=99% OBW in MHz)	11 dBm/Mhz	
5725MHz-5850MHz	ALL Devices	1₩		30dBm/500KHz	

Test Configuration









Test Procedure

The measurement is according to section 3 of KDB 789033 D02 General UNII Test Procedures New Rules V02r01.

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Test Mode

Please refer to the clause 2.4.

Test Result

Please see the Appendix B.



3.6. Power Spectral Density Test

Limit

FCC Part 15 Subpart E(15.407)/ RSS-247

For the 5.15~5.25GHz band:

Outdoor AP

The peak power spectral density (PSD) shall not exceed the lesser of 17dBm/MHz. If G_{Tx} >6dBi, then PSD =17-(G_{Tx} -6).

Indoor AP

The peak power spectral density (PSD) shall not exceed the lesser of 17dBm/MHz. If G_{Tx} >6dBi, then PSD =17-(G_{Tx} -6).

Point-to-point AP

The peak power spectral density (PSD) shall not exceed the lesser of 17dBm/MHz. If $G_{Tx}>23dBi$, then PSD =17-(G_{Tx} -23).

Client devices

The peak power spectral density (PSD) shall not exceed the lesser of 11dBm/MHz. If G_{Tx} >6dBi, then PSD =11-(G_{Tx} -6).

For the 5.25~5.35GHz band:

The peak power spectral density (PSD) shall not exceed the lesser of 11dBm/MHz. If G_{Tx} >6dBi, then PSD =11-(G_{Tx} -6).

For the 5.47~5.725GHz band:

The peak power spectral density (PSD) shall not exceed the lesser of 11dBm/MHz. If G_{Tx} >6dBi, then PSD =11-(G_{Tx} -6).

For the 5.725~5.85GHz band:

Point-to-multipoint systems (P2M)

The peak power spectral density (PSD) shall not exceed the lesser of 30dBm/500kHz. If $G_{Tx}>6dBi$, then PSD = $30-(G_{Tx}-6)$.

Point-to-point systems (P2P)

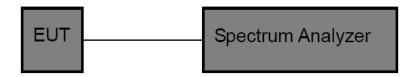
The peak power spectral density (PSD) shall not exceed the lesser of 30dBm/500kHz.

Note: G_{Tx}: EUT Antenna gain.

	IC Power&PSD Limit				
Frequency	Type of devices	Maximum Conducted	EIRP Output Power	Conducted Power	EIRP Power
rrequency	Type of devices	Output Power	LIAT Output rower	Spectral Density	Spectral Density
5150MHz-5250MHz	in vehicles		30mW or 1.76 + 10 × log:0B dBm, whichever is less (B=99% OBW in MHz)		
	Other Devices		200mW or 10 + 10 × log10B dBm, whichever is less (B=99% OBW in MHz)		10dBm/MHz
	in vehicles		30mW or 1.76 + 10 × logioB dBm, whichever is less (B=99% OBW in MHz)		
5250MHz-5350MHz	Other Devices	250mW or 11 + 10 × log10B dBm, whichever is less (B=99% OBW in MHz)	1W or 17 + 10 ×logioB dBm, whichever is less (B=99% OBW in MHz)	11 dBm/Mhz	
5470MHz-5600MHz 5650MHz-5725MHz	ALL Devices	250mW or 11 + 10 × log10B dBm, whichever is less (B=99% OBW in MHz)	1W or 17 + 10 ×log10B dBm, whichever is less (B=99% OBW in MHz)	11 dBm/Mhz	
5725MHz-5850MHz	ALL Devices	1₩		30 dBm/500 KH z	



Test Configuration



Test Procedure

The EUT was directly connected to the Spectrum Analyzer and antenna output port as show in the block diagram above. The measurement is according to KDB 789033 D02 General UNII Test Procedures New Rules V02r01.

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) Set analyzer center frequency to transmitting frequency.
- (3) Set the span to encompass the entire emissions bandwidth (EBW)(alternatively, the entire 99% OBW) of the signal.
- (4) RBW=1MHz for devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz RBW=500kHz for devices operating in the band 5.725-5.85 GHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of RBWs less than 1 MHz, or 500 kHz, "provided that the measured power is integrated over the full reference bandwidth" to show the total power over the specified measurement bandwidth (i.e., 1 MHz, or 500 kHz). If measurement bandwidth of Maximum PSD is specified in 500 kHz, add 10 log (500 kHz/RBW) to the measured result, whereas RBW (<500 kHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement. If measurement bandwidth of Maximum PSD is specified in 1 MHz, add 10 log (1MHz/RBW) to the measured result, whereas RBW (< 1 MHz) is the reduced resolution bandwidth of spectrum analyzer set during measurement.
- (5) Set the VBW to: ≥ 3 RBW
- (6) Detector: AVG
- (7) Trace: Max Hold and View
- (7) Sweep time: auto
- (8) Trace average at least 100 traces in power averaging.
- (9) User the peak marker function to determine the maximum amplitude level within the RBW. Apply correction to the result if different RBW is used.

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 Result

Please see the Appendix C.



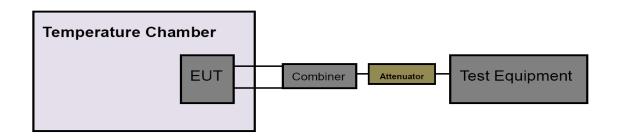


3.7. Frequency Stability Measurement

<u>Limit</u>

FCC Part 15 Subpart C(15.407)				
Test Item	Limit	Frequency Range(MHz)		
Peak Excursion Measurement	Specified in the user's manual, the transmitter center frequency tolerance shall be ±20 ppm maximum for the 5 GHz band (IEEE 802.11n specification)	5150~5250		
		5250~5350		
		5500~5700		
		5725~5850		

Test Configuration



Test Procedure

The EUT was directly connected to the Spectrum Analyzer and antenna output port as show in the block diagram above.

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) Set analyzer center frequency to transmitting frequency.
- (3) Set the span to encompass the entire emissions bandwidth (EBW) of the signal.
- (4) Set the RBW to: 10MHz, VBW=10MHz with peak detector and maxhold settings.
- (5) The test extreme voltage is to change the primary supply voltage from 6.66V to 8.14V percent of the nominal value.
- (6) Extreme temperature is -10°C~40°C

NOTE: The EUT was set to continuously transmitting in continuously un-modulation transmitting mode. The limit for frequency stability is maintained within the band of operation.

Test Mode

Please refer to the clause 2.4.

Test Result

Please see the Appendix D.







3.8. Antenna Requirement

Standard Requirement

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 an 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.

Test Result

Complies

Directional gain = G_{ANT} = 5dBi

Note: All transmit signals are completely uncorrelated with each other in MIMO transmitting modes (Manufacturer's Declaration).



3.9. Dynamic Frequency Selection(DFS)

Requirement

Table 1: Applicability of DFS Requirements Prior to Use of a Channel

Report No.: CTC20211300E06

		Operational Mode	
Requirement	Master	Client Without Radar Detection	Client With Radar Detection
Non-Occupancy Period	Yes	Not required	Yes
DFS Detection Threshold	Yes	Not required	Yes
Channel Availability Check Time	Yes	Not required	Not required
U-NII Detection Bandwidth	Yes	Not required	Yes

Table 2: Applicability of DFS requirements during normal operation

	Operational Mode		
Requirement	Master Device or Client with Radar Detection	Client Without Radar Detection	
DFS Detection Threshold	Yes	Not required	
Channel Closing Transmission Time	Yes	Yes	
Channel Move Time	Yes	Yes	
U-NII Detection Bandwidth	Yes	Not required	

Additional requirements for devices with multiple bandwidth modes	Master Device or Client with Radar Detection	Client Without Radar Detection
U-NII Detection Bandwidth and Statistical Performance Check	All BW modes must be tested	Not required
Channel Move Time and Channel Closing Transmission Time	Test using widest BW mode available	Test using the widest BW mode available for the link
All other tests	Any single BW mode	Not required

Note: Frequencies selected for statistical performance check (Section 7.8.4) should include several frequencies within the radar detection bandwidth and frequencies near the edge of the radar detection bandwidth. For 802.11 devices it is suggested to select frequencies in each of the bonded 20 MHz channels and the channel center frequency.



LIMIT

1. DFS Detection Thresholds

Table 3: DFS Detection Thresholds for Master Devices and Client Devices With Radar Detection

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Maximum Transmit Power	Value (See Notes 1, 2, and 3)
EIRP ≥ 200 milliwatt	-64 dBm
EIRP < 200 milliwatt and power spectral density < 10 dBm/MHz	-62 dBm
EIRP < 200 milliwatt that do not meet the power spectral density requirement	-64 dBm

Note 1: This is the level at the input of the receiver assuming a 0dBi receive antenna.

Note 2: Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response.

Note3: EIRP is based on the highest antenna gain. For MIMO devices refer to KDB Publication 662911 D01.

2. DFS Response Requirements

Table 4: DFS Response Requirement Values

Parameter	Value
Non-occupancy period	Minimum 30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds See Note 1.
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.
U-NII Detection Bandwidth	Minimum 100% of the U-NII 99% transmission power bandwidth. See Note 3.

Note 1: Channel Move Time and the Channel Closing Transmission Time should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst.

Note 2: The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required facilitating a Channel move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions

Note 3: During the U-NII Detection Bandwidth detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.

RADAR TEST WAVEFORMS

This section provides the parameters for required test waveforms, minimum percentage of successful detections, and the minimum number of trials that must be used for determining DFS conformance. Step intervals of 0.1 microsecond for Pulse Width, 1 microsecond for PRI, 1 MHz for chirp width and 1 for the number of pulses will be utilized for the random determination of specific test waveforms.



Table 5 Short Pulse Radar Test Waveforms

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Radar Type	Pulse Width (µsec)	PRI (µsec)	Number of Pulses	Minimum Percentage of Successful Detection	Minimum Number of Trials
0	1	1428	18	See Note 1	See Note 1
		Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in Table 5a	$\operatorname{Roundup} \left\{ \left(\frac{1}{360} \right) \cdot \left(\frac{19 \cdot 10^6}{\operatorname{PRI}_{\mu \text{sec}}} \right) \right\}$		
1	1	Test B: 15 unique PRI values randomly selected within the range of 518-3066 µsec, with a minimum increment of 1 µsec, excluding PRI values selected in Test A		60%	30
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
		gregate (Radar Types 1	,	80%	120
Note 1: Short Pulse Radar Type 0 should be used for the detection bandwidth test, channel move time,					

Note 1: Short Pulse Radar Type 0 should be used for the detection bandwidth test, channel move time, and channel closing time tests.

A minimum of 30 unique waveforms are required for each of the Short Pulse Radar Types 2 through 4. If more than 30 waveforms are used for Short Pulse Radar Types 2 through 4, then each additional waveform must also be unique and not repeated from the previous waveforms. If more than 30 waveforms are used for Short Pulse Radar Type 1, then each additional waveform is generated with Test B and must also be unique and not repeated from the previous waveforms in Tests A or B.

For example if in Short Pulse Radar Type 1 Test B a PRI of 3066 µsec is selected, the number of pulses

would be Round up
$$\left\{ \left(\frac{1}{360} \right) \cdot \left(\frac{19 \cdot 10^6}{3066} \right) \right\} = \text{Round up } \{17.2\} = 18.$$

Table 5a - Pulse Repetition Intervals Values for Test A

Pulse Repetition Frequency Number	Pulse Repetition Frequency (Pulses Per Second)	Pulse Repetition Interval (Microseconds)
1	1930.5	518
2	1858.7	538
3	1792.1	558
4	1730.1	578
5	1672.2	598
6	1618.1	618
7	1567.4	638
8	1519.8	658
9	1474.9	678
10	1432.7	698

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11	1392.8	718
12	1355	738
13	1319.3	758
14	1285.3	778
15	1253.1	798
16	1222.5	818
17	1193.3	838
18	1165.6	858
19	1139	878
20	1113.6	898
21	1089.3	918
22	1066.1	938
23	326.2	3066

Table 6 - Long Pulse Radar Test Waveform

Radar Type	Pulse Width (µsec)	Chirp Width (MHz)	PRI (µsec)	Number of Pulses per Burst	Number of Bursts	Minimum Percentage of Successful Detection	Minimum Number of Trials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

The parameters for this waveforms are randomly chosen. Thirty unique waveforms are required for the Long Pulse Radar Type waveforms. If more than 30 waveforms are used for the Long Pulse Radar Type wave forms, then each additional waveform must also be unique and not repeated from the previous waveforms.

Table 7 – Frequency Hopping Radar Test Waveform

Radar Type	Pulse Width (µsec)	PRI (µsec)	Pulses per Hop	Hopping Rate (kHz)	Hopping Sequence Length (msec)	Minimum Percentage of Successful Detection	Minimum Number of Trials
6	1	333	9	0.333	300	70%	30

For the Frequency Hopping Radar Type, the same Burst parameters are used for each wave form. The hopping sequence is different for each wave form and a 100-length segment is selected from the hopping sequence defined by the following algorithm:

The first frequency in a hopping sequence is selected randomly from the group of 475 integer frequencies from 5250–5724MHz.Next,the frequency that was just chosen is removed from the group and a frequency is randomly selected from the remaining 474 frequencies in the group. This process continues until all 475 frequencies are chosen for the set. For selection of a random frequency, the frequencies remaining within the group are always treated as equally likely.

Calibration of Radar Waveform

Radar Waveform Calibration Procedure

- 1) A 50 ohm load is connected in place of the spectrum analyzer, and the spectrum analyzer is connected to place of the master
- 2) The interference Radar Detection Threshold Level is -62dBm + 0dBi +1dB = -61dBm that had been taken into account the output power range and antenna gain.
- 3) The following equipment setup was used to calibrate the conducted radar waveform. A vector signal generator was utilized to establish the test signal level for radar type 0. During this process there were no transmissions by either the master or client device. The spectrum analyzer was switched to the zero spans (time domain) at the frequency of the radar waveform generator. Peak detection was

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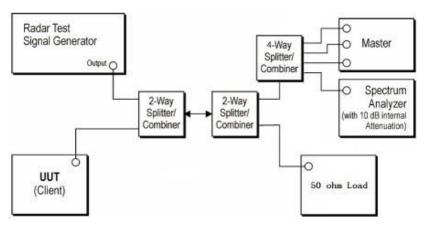


used. The spectrum analyzer resolution bandwidth (RBW) and video bandwidth (VBW) were set to 3 MHz. The spectrum analyzer had offset -1.0dB to compensate RF cable loss 1.0dB.

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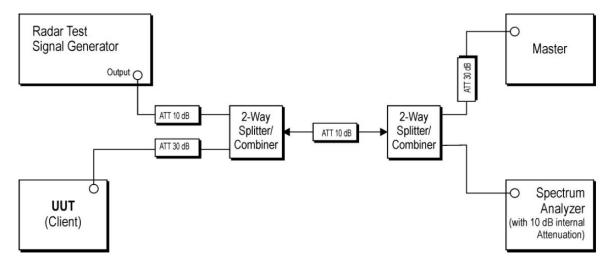
4) The vector signal generator amplitude was set so that the power level measured at the spectrum analyzer was - -62dBm + 0dBi +1dB = -61dBm. Capture the spectrum analyzer plots on short pulse radar waveform.

Conducted Calibration Setup



Test Configuration

Setup for Client with injection at the Master





Radar Waveform Calibration Result

\boxtimes	Not	App	licab	le
\sim		, ,bb		

Test Procedure

- 1. The radar pulse generator is setup to provide a pulse at frequency that the master and client are operating. A type 0 radar pulse with a 1us pulse width and a 1428us PRI is used for the testing.
- 2. The vector signal generator is adjusted to provide the radar burst (18 pulses) at the level of approximately -61dBm at the antenna port of the master device
- 3. A trigger is provided from the pulse generator to the DFS monitoring system in order to capture the traffic and the occurrence of the radar pulse.
- 4. EUT will associate with the master at channel. The file "iperf.exe" specified by the FCC is streamed from the PC 2 through the master and the client device to the PC 1 and played in full motion video using Media Player Classic Ver. 6.4.8.6 in order to properly load the network for the entire period of the test.
- 5. When radar burst with a level equal to the DFS Detection Threshold +1dB is generated on the operating channel of the U-NII device. At time T0 the radar waveform generator sends a burst of pulse of the radar waveform at Detection Threshold +1dB.
- 6. Observe the transmissions of the EUT at the end of the radar Burst on the Operating Channel Measure and record the transmissions from the UUT during the observation time (Channel Move Time). One 15 seconds plot is reported for the Short Pulse Radar Type 0. The plot for the Short Pulse Radar Types start at the end of the radar burst. The Channel Move Time will be calculated based on the zoom in 600ms plot of the Short Pulse Radar Type
- 7. Measurement of the aggregate duration of the Channel Closed Transmission Time method. With the spectrum analyzer set to zero span tuned to the center frequency of the EUT operating channel at the radar simulated frequency, peak detection, and max hold, the dwell time per bin is given by: Dwell (0.3ms) =S (12000ms) / B (4000); where Dwell is the dwell time per spectrum analyzer sampling bin, S is sweep time and B is the number of spectrum analyzer sampling bins. An upper bound of the aggregate duration of the intermittent control signals of Channel Closing Transmission Time is calculated by: C (ms)= N X Dwell (0.3ms); where C is the Closing Time, N is the number of spectrum analyzer sampling bins (intermittent control signals) showing a U-NII transmission and Dwell is the dwell time per bin.
- 8. Measurement the EUT for more than 30 minutes following the channel move time to verify that no transmission or beacons occur on this channel.

Test Mode	
Please refer to the clause 2.4.	
Test Results	
Passed	Not Applicable ■
****	**************************************

