

## CTC Laboratories, Inc.

1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China Tel: +86-755- 27521059 Fax: +86-755- 27521011 Http://www.sz-ctc.com.cn

Report No:	CTC20200268E06					
FCC ID······:	2APPZ-X7A					
Applicant:	Fanvil Technology Co., Ltd					
Address	4F, Block A, Building 1#, GaoXinQl Hi-Tech Park( Phase-II ), 67th District, Bao'An, Shenzhen, China					
Manufacturer	Fanvil Technology Co., Ltd					
Address	4F, Block A, Building 1#, GaoXinQ District, Bao'An, Shenzhen, China	, ,				
Product Name:	IP phone					
Trade Mark:	Fanvil					
Model/Type reference	X7A					
Listed Model(s)	N/A					
Standard:	FCC Part 15, Subpart E 15. 407					
Date of receipt of test sample:	Mar. 10, 2020					
Date of testing	Mar. 11, 2020 to Apr. 13, 2020					
Date of issue	Apr. 14, 2020					
Result:	PASS					
Compiled by:		Tanna Su				
(Printed name+signature)	Terry Su	Jarry Ju				
Supervised by:		Tenny Su Miller Ma				
(Printed name+signature)	Miller Ma					
Approved by:	Welter Chan	water chis				
(Printed name+signature)	Walter Chen					
Testing Laboratory Name:	CTC Laboratories, Inc.					
Address	1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China					

test report shall be invalid without all the signatures of testing engineers, reviewer and approver. Any objections must be raised to CTC within 15 days since the date when the report is received. It will not be taken into consideration beyond this limit. The test report merely correspond to the test sample.



#### **Table of Contents**

#### Page

1.	TEST	SUMMARY	. 3
	1.1.	Test Standards	3
	1.2.	REPORT VERSION	3
	1.3.	TEST DESCRIPTION	4
	1.4.	TEST FACILITY	5
	1.5.	Measurement Uncertainty	
	1.6.	ENVIRONMENTAL CONDITIONS	6
2.	GENE	RAL INFORMATION	. 7
	2.1.	CLIENT INFORMATION	
2	2.2.	GENERAL DESCRIPTION OF EUT	8
2	2.3.	OPERATION STATE	
	2.4.	Measurement Instruments List	10
3.	TEST	ITEM AND RESULTS	12
	3.1.	CONDUCTED EMISSION	12
3	3.2.	RADIATED EMISSION	15
3	3.3.	BAND EDGE EMISSIONS	76
3	3.4.	BANDWIDTH TEST1	21
3	3.5.	OUTPUT POWER TEST	23
3	3.6.	POWER SPECTRAL DENSITY TEST	24
3	3.7.	FREQUENCY STABILITY MEASUREMENT	
3	3.8.	ANTENNA REQUIREMENT1	
3	3.9.	DYNAMIC FREQUENCY SELECTION (DFS)	28



# 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.

<u>RSS-247</u> <u>Issue 2 February 2017</u> — 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	Apr. 14, 2020	Original



## **1.3. Test Description**

FCC Part 15 Subpart E (15.407) / RSS-247 Issue 2 February 2017							
Test Item	Test re	quire	Decult				
rest item	FCC	IC	Result	Test Engineer			
Antenna Requirement	15.203	/	Pass	Rod Luo			
Conducted Emission	15.207	RSS-Gen 8.8	Pass	Jon Huang			
Band Edge Emissions	15.407(b)	RSS-247 6.2.1.2 RSS-247 6.2.2.2 Pass RSS-247 6.2.4.2		Rod Luo			
26dB Bandwidth & 99% Bandwidth	15.407(a) (5)	RSS-247 6.2.1.2	Pass	Rod Luo			
6dB Bandwidth (only for UNII-3)	15.407(e)	RSS-247 6.2.4.1	Pass	Rod Luo			
Peak Output Power	15.407(a)	RSS-247 6.2.1.1 RSS-247 6.2.4.1	Pass	Rod Luo			
Power Spectral Density	15.407(a)	RSS-247 6.2	Pass	Rod Luo			
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	Rod Luo			
Frequency Stability	15.407(g)	1	Pass	Rod Luo			
Dynamic Frequency Selection(DFS)	15.407(h)	RSS-247 6.3	N/A	N/A			

Note: "N/A" is not applicable.

EN

The measurement uncertainty is not included in the test result.



## 1.4. Test Facility

#### CTC Laboratories, Inc.

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

#### Laboratory accreditation

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

#### CNAS-Lab Code: L5365

CTC Laboratories, Inc. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation. Crit eria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2005 General Requirements) for the C ompetence 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 th e 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 C anada for the performance of with Registration NO.: 9783A on Jan, 2016.

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

CTC Laboratories, Inc. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained inour files. Registrati on 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. guality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

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



Test Items	Measurement Uncertainty	Notes
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	3.20 dB	(1)
Radiated Emissions 30~1000MHz	4.70 dB	(1)
Radiated Emissions 1~18GHz	5.00 dB	(1)
Radiated Emissions 18~40GHz	5.54 dB	(1)
Occupied Bandwidth		(1)

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

## 1.6. Environmental conditions

	Temperature	25 °C
Normal Condition	Relative humidity	55 %
	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 <sub>N</sub> =Normal Temperature	25 °C
Extreme Condition	T <sub>L</sub> =Lower Temperature	-20 °C
Extreme Condition	T <sub>H</sub> =Higher Temperature	55 °C



# 2. GENERAL INFORMATION

## 2.1. Client Information

Applicant:	Fanvil Technology Co., Ltd
Address:	4F, Block A, Building 1#, GaoXinQI Hi-Tech Park (Phase-II), 67th District, Bao'An, Shenzhen, China
Manufacturer:	Fanvil Technology Co., Ltd
Address:	4F, Block A, Building 1#, GaoXinQI Hi-Tech Park (Phase-II), 67th District, Bao'An, Shenzhen, China



## 2.2. General Description of EUT

Product Name:	IP phone
Trade Mark:	Fanvil
Model/Type reference:	X7A
Listed Model(s):	N/A
Power supply:	Supplied from POE 5Vdc/2A from AC/DC Adapter
Adapter Model:	F12W8-050200SPAU Input:100-240V 50/60Hz 0.3A Output:5V/2A
Hardware version:	N/A
Software version:	N/A
Antenna type:	FPC Antenna
Antenna gain:	2.3dBi

Technical index for 5G WIFI							
Operation Band:	⊠U-NII-1	□U-NII-2A □U-NII-2C ☑U-NI			-NII-3		
Operation Frequency Range:	U-NII-1:	5180MHz~5240MHz					
	U-NII-3:	5745MHz~582	5MH	Z	-		
	802.11a	🛛 20MHz					
Support bandwidth:	802.11n	🛛 20MHz	$\boxtimes$	40MHz			
	802.11ac	🛛 20MHz	$\boxtimes$	40MHz	🛛 80N	1Hz	🗌 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)					6QAM)	
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						



## 2.3. Operation state

**Operation Frequency List:** 

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

#### Test channel is below:

Operating	Test	20MHz		40	OMHz	80MHz		
Band	Channel	Channel	Frequency (MHz)	Channel Frequency (MHz)		Channel	Frequency (MHz)	
	$CH_{L}$	36	5180	38	5190	/	/	
U-NII-1	$CH_M$	40	5200	/	/	42	5210	
	СН <sub>н</sub>	48	5240	46	5230	/	/	
	$CH_{L}$	149	5745	151	5755	/	/	
U-NII-3	$CH_M$	157	5785	/	/	155	5775	
	СН <sub>н</sub>	165	5825	159	5795	/	1	

#### Data Rated

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

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

Test mode

For RF test items

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

For AC power line conducted emissions:

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

For Radiated spurious emissions test item:

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





## 2.4. Measurement Instruments List

Tonscer	nd JS0806-2 Test system				
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	Spectrum Analyzer	Rohde & Schwarz	FSU26	100105	Dec. 27, 2020
2	Spectrum Analyzer	Rohde & Schwarz	FUV40-N	101331	Mar. 15, 2021
3	MXG Vector Signal Generator	Agilent	N5182A	MY47420864	Dec. 27, 2020
4	Signal Generator	Agilent	E8257D	MY46521908	Dec. 27, 2020
5	Power Sensor	Agilent	U2021XA	MY5365004	Dec. 27, 2020
6	Power Sensor	Agilent	U2021XA	MY5365006	Dec. 27, 2020
7	Simultaneous Sampling DAQ	Agilent	U2531A	TW54493510	Dec. 27, 2020
8	Climate Chamber	TABAI	PR-4G	A8708055	Dec. 27, 2020
9	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	116410	Dec. 27, 2020
10	Climate Chamber	ESPEC	MT3065	/	Dec. 27, 2020
11	300328 v2.1.1 test system	TONSCEND	v2.6	/	/

Radiate	d Emission and Transmitte	er spurious emissions			
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	EMI Test Receiver	Rohde & Schwarz	ESCI	100658	Dec. 27, 2020
2	High pass filter	micro-tranics	HPM50111	142	Dec. 27, 2020
3	Log-Bicon Antenna	Schwarzbeck	CBL6141A	4180	Dec. 27, 2020
4	Ultra-Broadband Antenna	ShwarzBeck	BBHA9170	25841	Dec. 27, 2020
5	Loop Antenna	LAPLAC	RF300	9138	Dec. 27, 2020
6	Spectrum Analyzer	Rohde & Schwarz	FSU26	100105	Dec. 27, 2020
7	Horn Antenna	Schwarzbeck	BBHA 9120D	647	Dec. 27, 2020
8	Pre-Amplifier	HP	8447D	1937A03050	Dec. 27, 2020
9	Pre-Amplifier	EMCI	EMC051835	980075	Dec. 27, 2020
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. 27, 2020
13	Cable Above 1GHz	Hubersuhner	SUCOFLEX1 02	DA1580	Dec. 27, 2020
14	Splitter	Mini-Circuit	ZAPD-4	400059	Dec. 27, 2020
15	RF Connection Cable	HUBER+SUHNER	RE-7-FL	N/A	Dec. 27, 2020
16	RF Connection Cable	Chengdu E-Microwave			Dec. 27, 2020
17	High pass filter	Compliance Direction systems	BSU-6	34202	Dec. 27, 2020





18	Attenuator	Chengdu E-Microwave	EMCAXX-10 RNZ-3		Dec. 27, 2020
19	High and low temperature box	ESPEC	MT3065	12114019	Dec. 27, 2020

Conduc	Conducted Emission							
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated until			
1	LISN	R&S	ENV216	101112	Dec. 27, 2020			
2	LISN	R&S	ENV216	101113	Dec. 27, 2020			
3	EMI Test Receiver	R&S	ESCI	100658	Dec. 27, 2020			

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

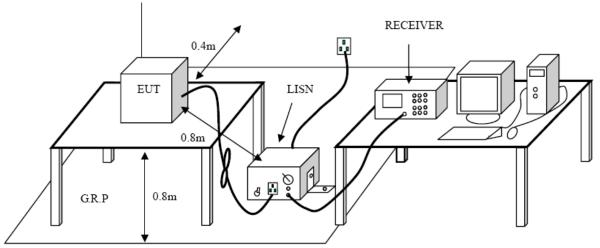
#### <u>Limit</u>

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

	Limit (dBuV)				
Frequency range (MHz)	Quasi-peak	Average			
0.15-0.5	66 to 56*	56 to 46*			
0.5-5	56	46			
5-30	60	50			

\* Decreases with the logarithm of the frequency.

#### **Test Configuration**



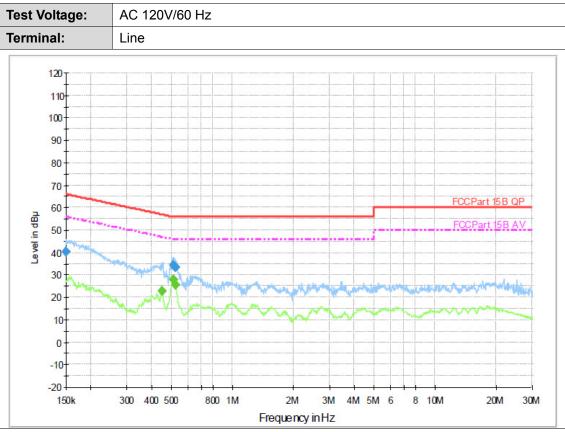
#### Test Procedure

- 1. The EUT was setup according to ANSI C63.10:2013 requirements.
- 2. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface.
- 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 2.3





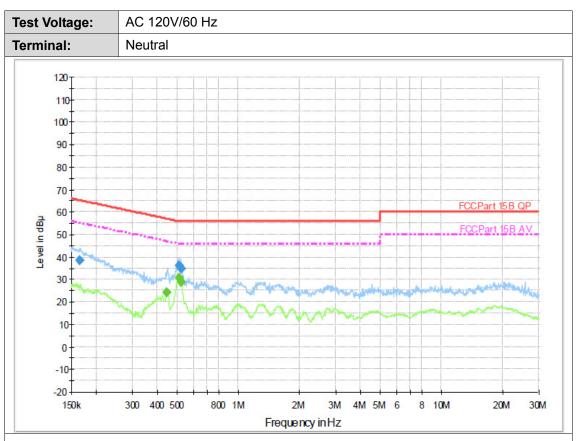
## **Final Measurement Detector 1**

Frequency (MHz)	QuasiPeak (dBµ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµ V)	Comment
0.150600	40.2	1000.00	9.000	On	L1	9.4	25.8	66.0	
0.508870	34.1	1000.00	9.000	On	L1	9.4	21.9	56.0	
0.521210	33.3	1000.00	9.000	On	L1	9.4	22.8	56.0	

## Final Measurement Detector 2

	Frequency (MHz)	Average (dBµ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµ V)	Comment
	0.449640	22.6	1000.00	9.000	On	L1	9.4	24.3	46.9	
ſ	0.506840	27.8	1000.00	9.000	On	L1	9.4	18.2	46.0	
[	0.521210	25.7	1000.00	9.000	On	L1	9.4	20.3	46.0	





### **Final Measurement Detector 1**

Frequency (MHz)	QuasiPeak (dBµ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµ V)	Comment
0.165740	38.6	1000.00	9.000	On	N	9.4	26.6	65.2	
0.506840	36.4	1000.00	9.000	On	Ν	9.4	19.6	56.0	
0.521210	34.7	1000.00	9.000	On	N	9.4	21.3	56.0	

## Final Measurement Detector 2

Frequency (MHz)	Average (dBµ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµ V)	Comment
0.444280	24.4	1000.00	9.000	On	Ν	9.4	22.6	47.0	
0.508870	30.6	1000.00	9.000	On	Ν	9.4	15.4	46.0	
0.521210	28.8	1000.00	9.000	On	Ν	9.4	17.2	46.0	



## 3.2. Radiated Emission

<u>Limit</u>

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

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

#### 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

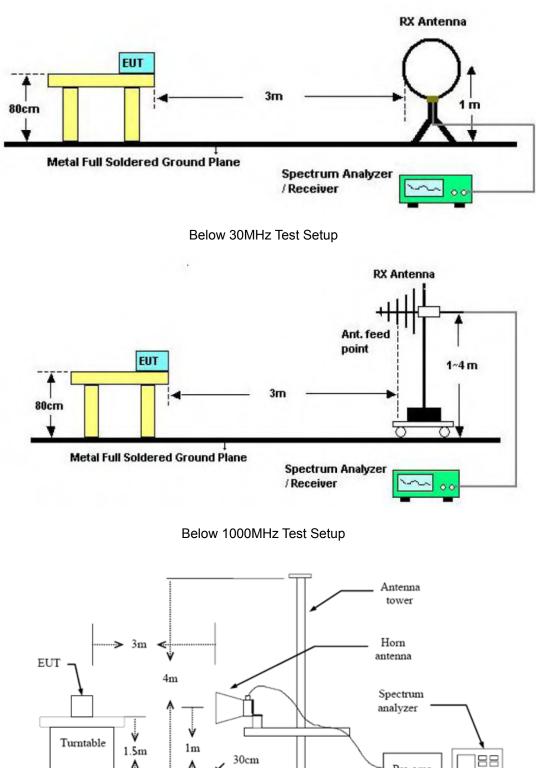
Frequency (MHz)	EIRP Limits (dBm)	Equivalent Field Strength at 3m (dBuV/m)
5150~5250	-27	68.2
5250~5350	-27	68.2
5470~5725	-27	68.2
	-27(Note 2)	68.2
5725~5825	10(Note 2)	105.2
5725~5625	15.6(Note 2)	110.8
	27(Note 2)	122.2

Note: 1. The following formula is used to convert the equipment isotropic radiated power (eirp) to field  $100000\sqrt{30P}$ 

strength: E= $\frac{100000\sqrt{30P}}{3}$  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.





Above 1GHz Test Setup

Pre-amp

#### Test Procedure

- 1. The EUT was setup and tested according to ANSI C63.10:2013
- 2. The EUT is placed on a turn table which is 0.8 meter above ground for below 1 GHz, and 1.5 m for above 1 GHz. The turn table is rotated 360 degrees to determine the position of the maximum emission level.



- 3. The EUT was set 3 meters from the receiving antenna, which was mounted on the top of a variable height antenna tower.
- 4. For each suspected emission, the EUT was arranged to its worst case and then tune the Antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines.
- 5. Set to the maximum power setting and enable the EUT transmit continuously.
- 6. Use the following spectrum analyzer settings
  - (1) Span shall wide enough to fully capture the emission being measured;
  - (2) Below 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=3MHz RMS detector for Average value.

#### <u>Test Mode</u>

Please refer to the clause 2.3

#### <u>Test Result</u>

#### 9 KHz~30 MHz

From 9 KHz to 30 MHz: Conclusion: PASS

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

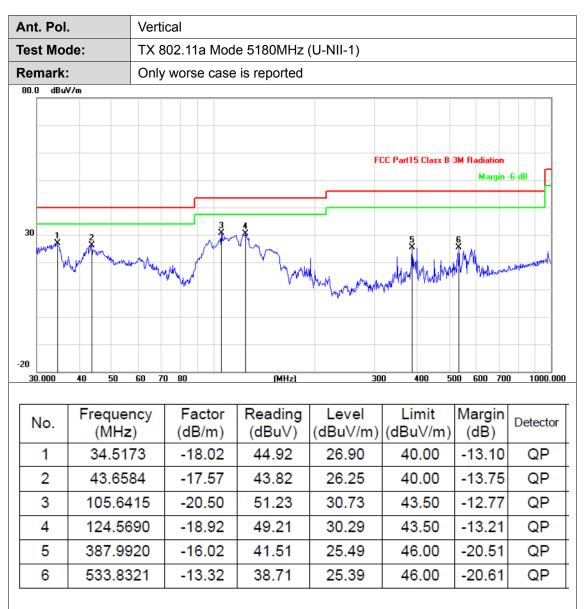


Ant. Pol.	•	Horiz	ontal							
Test Mod	de:	TX 80	02.11a	Mod	e 5180MHz	(U-NII-1)				
Remark:		Only	worse	case	is reported					
80.0 dBu	V/m									
30					Luna Me	3 4×	FCC Part15 Clas	6	adiation Margin	
Millingender	manthan have		$\sim$		"WWWW	W I				
-20 30 000	40 50	60 70	80		(MHz)		200 400	500	600 70	
-20 30.000	40 50	60 70	80		(MHz)	3	800 400	500	600 70	0 1000.000
	40 50 Frequer (MHz	ncy	80 Fact (dB/r		(MHz) Reading (dBuV)	Level (dBuV/m)	Limit	Ma	600 700 argin dB)	0 1000.000
30.000	Freque	ncy :)	Fact	n)	Reading	Level	Limit	Ma n) (o	argin	
30.000 No.	Freque (MHz	ncy :) 48	Fact (dB/r	n) 17	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/n	Ma n) (c	argin dB)	Detector
30.000 No.	Frequer (MHz 97.11	ncy :) 48 26	Fact (dB/r -21.1	n) 17 47	Reading (dBuV) 42.37	Level (dBuV/m) 21.20	Limit (dBuV/n 43.50	m) (0 -2	argin dB) 2.30	Detector QP
30.000 No. 1 2	Freque (MHz 97.11 106.01	ncy () 48 26 43	Fact (dB/r -21.7	n) 17 47 39	Reading (dBuV) 42.37 43.92	Level (dBuV/m) 21.20 23.45	Limit (dBuV/n 43.50 43.50	m) (0 -2 -2 -2	argin dB) 2.30 0.05	Detector QP QP
30.000 No. 1 2 3	Frequer (MHz 97.114 106.01 214.51	ncy 2) 48 26 43 660	Fact (dB/r -21.7 -20.4 -20.3	n) 17 47 39 05	Reading (dBuV) 42.37 43.92 42.51	Level (dBuV/m) 21.20 23.45 22.12	Limit (dBuV/n 43.50 43.50 43.50	Ma n) (0 -2 -2 -2 -2 -2	argin dB) 2.30 0.05 1.38	Detector QP QP QP

#### Remarks:

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





Remarks:

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



### Above 1GHz

Ant. Pol.		Hori	zontal					
Fest Mod	le:			de 5180MHz				
Remark:		No r		e emission w	hich more the	an 10 dB bel	ow the pr	escribed
100.0 dBu\	//m		•					
					FCC Pa	rt15 Class C 3M Ab	ove-16 Peak	
		1			FCC	Part15 Class C 3M	Above-1G AV	
50		Ż						
			·					
0.0								
1000.000	4900.00	8800.00	12700.00	16600.00 20500.	00 24400.00	28300.00 32200	).00	40000.00 MH
No.	Frequ (MF		Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10359	9.504	6.64	46.16	52.80	74.00	-21.20	peak
2	10360	0.739	6.64	31.30	37.94	54.00	-16.06	AVG
Remarks		Antenr	na Factor (/	1B/m)+Cable	Eactor (dB)-E	Pre-amplifier	Factor	



Ant.	Pol.		Verti	cal					
Test	Mod	le:	TX 8	02.11a Moo	de 5180MHz	(U-NII-1)			
Rem	ark:		No re limit.		e emission wl	nich more tha	an 10 dB belo	ow the pre	escribed
100.0	dBuV	'/m							
						FCC Pa	rt15 Class C 3M Ab	ove-1G Peak	
			1			FCC	Part15 Class C 3M	Above-1G AV	
50			Ť						
			2						
			Î						
0.0	0 000	4900.00	8800.00	12700.00 1	6600.00 20500.0	0 24400.00	28300.00 32200	00	40000.00 MHz
N	o.	Frequ (MF		Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
	1	1035	9.904	6.64	46.30	52.94	74.00	-21.06	peak
2	2	1036	0.893	6.64	31.27	37.91	54.00	-16.09	AVG
Dom	arks								

Page 21 of 133

EN

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



Test Mode:         TX 802.11a Mode 5200MHz (U-NII-1)           Remark:         No report for the emission which more than 10 dB below the prescribed limit.           100.0         dBW/m         FCC Part15 Class C 3M Above-16 Peak           100.0         PCC Part15 Class C 3M Above-16 Peak         PCC Part15 Class C 3M Above-16 Peak           100.0         1         PCC Part15 Class C 3M Above-16 Peak         PCC Part15 Class C 3M Above-16 Peak           100.000         4500.00         BB00.00         12700.00         16600.00         20500.00         24400.00         28300.00         32200.00         40000.00 MHz           No.         Frequency (MHz)         Factor (dB/m)         Reading (dBUV)         Level (dBUV/m)         Limit (dBUV/m)         Margin (dB)         Detector           1         10399.041         6.75         46.40         53.15         74.00         -20.85         peak           2         10400.825         6.76         32.23         38.99         54.00         -15.01         AVG	Ant.	Pol.		Hor	izonta	I								
Imit.         Imit.           100.0         dBW/m           6         6           100.0         FCC Part15 Class C 3M Above-16 Peak           50         1           1000.000         FCC Part15 Class C 3M Above-16 AV           50         1           1000.000         FCC Part15 Class C 3M Above-16 AV           1000.000         4900.00           1000.000         4900.00           1000.000         4900.00           1000.000         12700.00           1000.000         4900.00           1000.000         12700.00           1000.000         12700.00           1000.000         12700.00           1000.000         12700.00           1000.000         12700.00           1000.000         12700.00           1000.000         12700.00           1000.000         12700.00           1000.000         12700.00           1000.000         12700.00           1000.000         12700.00           1000.000         12700.00           1000.000         12700.00           1000.000         12700.00           1000.000         12700.00           1000.000	Test	Mod	de:	TX	802.11	la Moc	le 520	0MHz	(U-NII-	·1)				
No.         Frequency         Factor         Reading         Level         Limit         Margin         Detector           1         10399.041         6.75         46.40         53.15         74.00         -20.85         peak           2         10400.825         6.76         32.23         38.99         54.00         -15.01         AVG	Ren	nark:				for the	e emiss	sion wł	nich m	ore tha	an 10 d	B bel	ow the pr	escribed
No.         Frequency (MHz)         Factor (dB/m)         Reading (dBuV)         Level (dBuV/m)         Limit (dBuV/m)         Margin (dBuV/m)         Detector           1         10399.041         6.75         46.40         53.15         74.00         -20.85         peak 2         10400.825         6.76         32.23         38.99         54.00         -15.01         AVG	100.0 Г	dBu	√/m											
No.         Frequency (MHz)         Factor (dB/m)         Reading (dBuV)         Level (dBuV/m)         Limit (dBuV/m)         Margin (dBuV/m)         Detector           1         10399.041         6.75         46.40         53.15         74.00         -20.85         peak 2         10400.825         6.76         32.23         38.99         54.00         -15.01         AVG														
No.         Frequency (MHz)         Factor (dB/m)         Reading (dBuV)         Level (dBuV/m)         Limit (dBuV/m)         Margin (dBuV/m)         Detector           1         10399.041         6.75         46.40         53.15         74.00         -20.85         peak 2         10400.825         6.76         32.23         38.99         54.00         -15.01         AVG														
S0         Remarks:										FCC Pa	rt15 Class	C 3M A	bove-1G Peak	
S0         Remarks:														
No.         Frequency (MHz)         Factor (dB/m)         Reading (dBuV) (dBuV/m)         Level (dBuV/m)         Limit (dBuV/m)         Margin (dB)         Detector           1         10399.041         6.75         46.40         53.15         74.00         -20.85         peak 2           2         10400.825         6.76         32.23         38.99         54.00         -15.01         AVG					1					FCC	Part15 Cla	ss C 3M	Above-1G AV	
1000.000         4900.00         8800.00         12700.00         16600.00         20500.00         24400.00         28300.00         32200.00         40000.00         MHz           No.         Frequency (MHz)         Factor (dB/m)         Reading (dBuV)         Level (dBuV/m)         Limit (dBuV/m)         Margin (dB)         Detector           1         10399.041         6.75         46.40         53.15         74.00         -20.85         peak           2         10400.825         6.76         32.23         38.99         54.00         -15.01         AVG	50				Î									
1000.000         4900.00         8800.00         12700.00         16600.00         20500.00         24400.00         28300.00         32200.00         40000.00         MHz           No.         Frequency (MHz)         Factor (dB/m)         Reading (dBuV)         Level (dBuV/m)         Limit (dBuV/m)         Margin (dB)         Detector           1         10399.041         6.75         46.40         53.15         74.00         -20.85         peak           2         10400.825         6.76         32.23         38.99         54.00         -15.01         AVG					2									
No.         Frequency (MHz)         Factor (dB/m)         Reading (dBuV)         Level (dBuV/m)         Limit (dBuV/m)         Margin (dB)         Detector           1         10399.041         6.75         46.40         53.15         74.00         -20.85         peak           2         10400.825         6.76         32.23         38.99         54.00         -15.01         AVG					Î									
No.         Frequency (MHz)         Factor (dB/m)         Reading (dBuV)         Level (dBuV/m)         Limit (dBuV/m)         Margin (dB)         Detector           1         10399.041         6.75         46.40         53.15         74.00         -20.85         peak           2         10400.825         6.76         32.23         38.99         54.00         -15.01         AVG														
No.         Frequency (MHz)         Factor (dB/m)         Reading (dBuV)         Level (dBuV/m)         Limit (dBuV/m)         Margin (dB)         Detector           1         10399.041         6.75         46.40         53.15         74.00         -20.85         peak           2         10400.825         6.76         32.23         38.99         54.00         -15.01         AVG														
No.         Frequency (MHz)         Factor (dB/m)         Reading (dBuV)         Level (dBuV/m)         Limit (dBuV/m)         Margin (dB)         Detector           1         10399.041         6.75         46.40         53.15         74.00         -20.85         peak           2         10400.825         6.76         32.23         38.99         54.00         -15.01         AVG														
No.         Frequency (MHz)         Factor (dB/m)         Reading (dBuV)         Level (dBuV/m)         Limit (dBuV/m)         Margin (dB)         Detector           1         10399.041         6.75         46.40         53.15         74.00         -20.85         peak           2         10400.825         6.76         32.23         38.99         54.00         -15.01         AVG	1 K	00 000	4900.00	9900.00	1270	0.00 1	00 00	20500.0	0 244	0.00	20200.00	2220	0.00	40000.00 MH
No.         (MHz)         (dB/m)         (dBuV)         (dBuV/m)         (dBuV/m)         (dB)         Detector           1         10399.041         6.75         46.40         53.15         74.00         -20.85         peak           2         10400.825         6.76         32.23         38.99         54.00         -15.01         AVG	10	00.000	4300.00	0000.00	1270	0.00 1	0000.00	20500.0	0 244	0.00	20300.00	3220	0.00	40000.00 MH
No.         (MHz)         (dB/m)         (dBuV)         (dBuV/m)         (dBuV/m)         (dB)         Detector           1         10399.041         6.75         46.40         53.15         74.00         -20.85         peak           2         10400.825         6.76         32.23         38.99         54.00         -15.01         AVG														
No.         (MHz)         (dB/m)         (dBuV)         (dBuV/m)         (dBuV/m)         (dB)         Detector           1         10399.041         6.75         46.40         53.15         74.00         -20.85         peak           2         10400.825         6.76         32.23         38.99         54.00         -15.01         AVG					1		-1				I			
2 10400.825 6.76 32.23 38.99 54.00 -15.01 AVG Remarks:	N	о.						-						Detector
Remarks:		1	1039	9.041	6	.75	46	.40	53.	.15	74.	00	-20.85	peak
		2	1040	0.825	6	.76	32	.23	38.	.99	54.	00	-15.01	AVG
							•						•	
1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor				- 1 - 1 -	<b>-</b> -	- <b>1</b> - 11 - 11								

Page 22 of 133

2.Margin value = Level -Limit value



Ant. Pol	•	Verti	cal								
Test Mo	de:	TX 8	02.11a Mo	de 5200MHz	(U-NII-1)						
Remark:		No re limit.		e emission w	hich more tha	an 10 dB bel	ow the pr	escribed			
100.0 dBu	V/m										
					FCC Pa	rt15 Class C 3M Ab	ove-1G Peak				
The second secon											
50											
		*									
0.0	4900.00	8800.00	12700.00 1	6600.00 20500.	0 24400.00 2	28300.00 32200	00	40000.00 MHz			
					1						
No.		uency Hz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector			
1	1039	9.840	6.76	46.68	53.44	74.00	-20.56	peak			
2	1040	0.657	6.76	32.21	38.97	54.00	-15.03	AVG			

Page 23 of 133

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



Ant.	Pol.		Hori	zontal								
est	Мос	de:		802.11a Mo								
Rem	nark:		No r limit	eport for th	e emis	sion wh	ich m	ore tha	an 10 dB	bel	ow the pr	escribed
00.0	dBu\	//m										
								FCC Pa	rt15 Class C	вм Аб	ove-1G Peak	
								FCC	Part15 Class	C 3M	Above-16 AV	
50				{				ruu		C 3M	ADOVE-TO AV	
			\$	\$								
0.0												
10	00.000	4900.00	8800.00	12700.00	16600.00	20500.0	) 244	0.00 2	28300.00	32200	.00	40000.00 MH
N	<b>o</b> .		uency Hz)	Factor (dB/m)		ading BuV)		vel V/m)	Limi (dBuV/		Margin (dB)	Detector
	1	1047	79.415	6.99	46	.56	53	.55	74.0	0	-20.45	peak
	2	1048	30.675	6.99	31	.49	38	.48	54.0	0	-15.52	AVG
	narks											

Page 24 of 133

2.Margin value = Level -Limit value



Ant	. Pol		Vert	ical									
					lada	E040N4			1)				
	t Mo			802.11a N						n 10 d	P hol	ow the pr	oporihod
Ren	Idi K.	•	limit		line ei	1155101					D Del	ow the pr	escribed
100.0	dBu	V/m											
									FCC Parl	15 Class	C 3M Ab	ove-1G Peak	
50			1				-		FUUF	'art15 Cla	ss C 3M i	Above-1G AV	
0.0													
10	00.000	4900.00	8800.00	12700.00	16600	.00 205	00.00	2440	0.00 2	8300.00	32200.	.00	40000.00 MHz
1													
N	0.		iency Hz)	Facto (dB/m		Readir (dBu∖	-		vel iV/m)	Lin (dBu		Margin (dB)	Detector
	1	1047	9.117	6.99		45.98	3	52	.97	74	.00	-21.03	peak
	2	1048	0.553	6.99		31.45	5	38	.44	54	.00	-15.56	AVG
	narks			•								·	·]
		` '		a Factor	•	n)+Cab	le F	actor	(dB)-P	re-am	olifier	Factor	

Page 25 of 133

2.Margin value = Level -Limit value



Ant. P	ol.	Horiz	zontal					
Test M	lode:	TX 8	02.11n(HT2	0) Mode 518	30MHz (U-NI	I-1)		
Remar	ˈk:	No r		emission wi	nich more tha	an 10 dB bel	ow the pr	escribed
100.0	lBu¥/m							
					FCC Pa	rt15 Class C 3M Ab	ove-1G Peak	
					FCC	Part15 Class C 3M	Above-16 AV	
50								
		*						
0.0								
1000.0	00 4900.00	8800.00	12700.00 16	600.00 20500.0	0 24400.00	28300.00 32200	.00	40000.00 MHz
	Frequ	uency	Factor	Reading	Level	Limit	Margin	
No.		Hz)	(dB/m)	(dBuV)		(dBuV/m)		Detector
1		9.007	6.64	45.86	52.50	74.00	-21.50	peak
2	1035	9.129	6.64	31.29	37.93	54.00	-16.07	AVG
								L
Remar	ks:							

Page 26 of 133

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



Ant. Po	Ι.	Vert	ical					
est Mo	de:	TX 8	302.11n(HT	20) Mode 518	30MHz (U-NI	I-1)		
Remark		No i limit		e emission w	hich more the	an 10 dB bel	ow the pr	rescribed
00.0 dB	uV/m							
					FCC Pa	rt15 Class C 3M Ab	ove-16 Peak	
50			*		FCC	Part15 Class C 3M	Above-1G AV	
50								
		Ś	k l					
0.0	) 4900.00	8800.00	12700.00	16600.00 20500.0	0 24400.00	28300.00 32200	).00	40000.00 MH
No.		iency Hz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1036	0.647	6.64	45.64	52.28	74.00	-21.72	peak
2	1036	0.909	6.64	31.26	37.90	54.00	-16.10	AVG
	1		<u> </u>		1	1		L

Page 27 of 133

2.Margin value = Level -Limit value



Ant. P	ol.			Hori	zonta	al									
Test N	lod	e:		TX 8	302.1	1n(H	T20	D) Moo	de 520	0MHz	z (U-NI	I-1)			
Rema	rk:			No r limit		t for t	he	emiss	ion wł	nich m	ore tha	an 10 c	B bel	ow the pr	rescribed
100.0 d	dBu∀∕	'n													
											FCC Par	t15 Class	С ЗМ АЬ	ove-16 Peak	
				2							FCC I	Part15 Cla	ss C 3M .	Above-16 AV	
50															
				×											
_															
0.0															
1000.0	000 4	900.00	880	0.00	1270	0.00	166	00.00	20500.00	) 244(	00.00 2	8300.00	32200.	.00	40000.00 MHz
No		Freq	uen	су		acto		Rea	ding	Le	vel	Lir	nit	Margin	Detector
	•	· ·	lHz)			B/m			uV)	`	ıV/m)	·	V/m)	· · ·	
1		104(				6.76			.23		.99		.00	-15.01	AVG
2		104(	00.9	05		6.76		47	.37	54	.13	74	.00	-19.87	peak
Desta															
Remar 1.Fact		dB/m)	= An	itenr	na Fa	ctor	(dB	/m)+C	able F	actor	(dB)-F	re-am	plifier	Factor	
2.Marg													-		

Page 28 of 133



nt. Po	l	Verti	cal					
est Mo	de:	TX 8	02.11n(HT2	0) Mode 520	0MHz (U-NI	-1)		
Remark		No re limit.		emission wh	nich more tha	an 10 dB bel	ow the pr	escribed
00.0 dBu	IV/m							
					FCC Par	t15 Class C 3M Ab	ove-1G Peak	
		1			FCC	Part15 Class C 3M	Above-1G AV	
50								
		3						
0.0								
1000.000	4900.00 88	00.00	12700.00 16	600.00 20500.0	0 24400.00 2	8300.00 32200	.00	40000.00 MH
No.	Frequer (MHz		Factor (dB/m)	Reading (dBu∀)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10400.0	082	6.76	46.57	53.33	74.00	-20.67	peak
2	10400.	705	6.76	32.22	38.98	54.00	-15.02	AVG

Page 29 of 133

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



Ant	. Pol.		Hori	Horizontal TX 802.11n(HT20) Mode 5240MHz (U-NII-1)											
Tes	t Moo	de:	TX 8	802.11n(HT20) Mode 5240MHz (U-NII-1) report for the emission which more than 10 dB below the prescribed											
Ren	nark:		No r limit		for the	emiss	sion wł	nich m	ore tha	an 10 dB	bel	ow the pre	escribed		
100.0 [	) dBu¥	//m													
									FCC Par	t15 Class C	ЗМ АЬ	ove-16 Peak			
50			2						FCC	Part15 Class	СЗМ	Above-16 AV			
			×												
0.0	00.000	4900.00 88	00.00	1270	0.00 16	600.00	20500.0	0 244(	10.00 2	8300.00	32200	.00	40000.00 MHz	z	
	lo.	Frequer	псу	Fa	actor	Rea	ding	Le	vel	Limi	t	Margin	Detector	T	
		(MHz	,		B/m)	· ·	uV)	•	V/m)	(dBuV		(dB)			
	1	10479.4	111	6	6.99	31	.48	38	.47	54.0	0	-15.53	AVG		
	2	10479.8	342	6	6.99	46	.17	53	.16	74.0	0	-20.84	peak		
	narks													┥	
		(dB/m) = A				8/m)+C	Cable F	actor	(dB)-P	re-ampl	ifier	Factor			

Page 30 of 133

2.Margin value = Level -Limit value



Ant. Po	l.	Verti	cal									
lest Mo	ode:	TX 8	TX 802.11n(HT20) Mode 5240MHz (U-NII-1)									
Remark	<b>c</b> :	No re limit.	No report for the emission which more than 10 dB below the prescribed									
100.0 dB	uV/m											
					FCC P	art15 Class C 3M Ab	ove-1G Peak					
50		1			FLL	C Part15 Class C 3M	Above-IG AV					
		×										
0.0												
1000.00	0 4900.00	8800.00	12700.00 1	6600.00 20500.	00 24400.00	28300.00 32200	.00	40000.00 MH				
No.		uency Hz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector				
1	1047	9.531	6.99	46.22	53.21	74.00	-20.79	peak				
2	1048	0.577	6.99	31.45	38.44	54.00	-15.56	AVG				
Remark	0.											

Page 31 of 133

2.Margin value = Level -Limit value



Ant. Pol.			Hori	Horizontal								
Test	Mod	e:	TX 8	TX 802.11ac(VHT20) Mode 5180MHz (U-NII-1)								
Rem	ark:			No report for the emission which more than 10 dB below the prescribed limit.								
100.0	dBuV	/m										
								FCC Pa	rt15 Class (	: 3M AL	ove-16 Peak	
			1					FCC	Part15 Clas	s C 3M	Above-1G AV	
50												
-												
0.0												
100	0.000	4900.00	8800.00	12700.00	16600.0	0 20500.0	0 244	00.00 2	28300.00	32200	.00	40000.00 MH
N	<b>b</b> .		uency	Facto		eading dBuV)	1	vel V/m)	Lim (dBu\		Margin (dB)	Detector
			Hz)	(dB/m	· ·		•	.39	•		· · ·	maale
	1		80.533	6.64		15.75			74.		-21.61	peak
2	2	1036	80.961	6.64		31.27	37	.91	54.	00	-16.09	AVG
	arks											

Page 32 of 133

2.Margin value = Level -Limit value



nt. Pol		Verti	Vertical									
est Mo	de:		TX 802.11ac(VHT20) Mode 5180MHz (U-NII-1)									
lemark	•	No re limit.	No report for the emission which more than 10 dB below the prescribed									
00.0 dBu	W/m											
							t15 Class C 3M At	oue 16 Peak				
						FUL Fa	ILLO CIOSS C OM AL	JUYE-TU FEAK				
		1				FCC	Part15 Class C 3M	Above-16 AV				
50		Ť										
		Ť										
0.0	4900.00	8800.00	12700.00 1	600.00 20500.0	)0 2440	0.00 2	28300.00 32200	).00	40000.00 MI			
No.		uency Hz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Detector			
1	1035	9.610	6.64	46.27	52.	91	74.00	-21.09	peak			
2	1036	0.739	6.64	31.28	37.	92	54.00	-16.08	AVG			
Remarks	<u>.</u>											

Page 33 of 133

2.Margin value = Level -Limit value



Ant. P	ol.	Horizontal									
Test M	lode:	TX 802.11ac(VHT20) Mode 5200MHz (U-NII-1)									
Remar	rk:	No re limit.	eport for the	emission wh	nich more tha	an 10 dB bel	ow the pr	escribed			
100.0 d	lBuV/m										
					FCC Pa	rt15 Class C 3M Ab	ove-1G Peak				
		1			FCC	Part15 Class C 3M	Above-16 AV				
50		ž									
_											
0.0	000 4900.00 8	800.00	12700.00 16	6600.00 20500.0	0 24400.00 2	28300.00 32200	.00	40000.00 MHz	z		
[	Freque	ncv	Factor	Reading	Level	Limit	Margin		T		
No.	(MHz	)	(dB/m)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	Detector			
1	10400.	320	6.76	47.10	53.86	74.00	-20.14	peak			
2	10400.	767	6.76	32.21	38.97	54.00	-15.03	AVG			
Remar									-		
	or (dB/m) = A vin value = L		•	3/m)+Cable I	Factor (dB)-F	re-amplifier	⊢actor				

Page 34 of 133

2.Margin value = Level -Limit value



vnt. F	Pol.		Ver	tical									
est I	Mod	le:	TX	TX 802.11ac(VHT20) Mode 5200MHz (U-NII-1)									
Rema	ark:			No report for the emission which more than 10 dB below the prescribed limit.									
00.0	dBu¥	//m											
									FCC Pa	rt15 Class	C 3M Ab	ove-16 Peak	
				1					FCC	Part15 Cla	ss C 3M	Above-1G AV	
50				Î									
				2									
0.0													
0.0													
			8800.00	1270 Fa	actor	16600.00	20500 ading	Le	vel	28300.00 Lin		Margin	
No	).	Frequ (MI	uency Hz)	Fa (dE	actor 3/m)	Re (dl	ading BuV)	Le (dBu	evel iV/m)	Lin (dBu'	nit √/m)	Margin (dB)	
	).	Frequ (MI	lency	Fa (dE	actor	Re (dl	ading	Le (dBu	vel	Lin (dBu) 74	nit √/m)	Margin	40000.00 M Detecto peak

Page 35 of 133

2.Margin value = Level -Limit value



Ant. I	Pol.		Horizontal										
Test	Mod	le:	TX 802.11ac(VHT20) Mode 5240MHz (U-NII-1)										
Rema	ark:		No re limit.		for the	emissi	on wł	nich m	ore tha	an 10 dB be	low the pr	escribed	
100.0	dBu¥	/m											
									FCC Par	t15 Class C 3M A	bove-16 Peak		
			1						FCC I	Part15 Class C 3	4 Above-16 AV		
50			ļ										
			×										
0.0	000	4900.00 88	00.00	1270	0.00 166	200.00	20500.00	244	10 00 2	8300 00 3220	0.00	40000 00 MH	-
1000.000 4900.00 8800.00 12700.00 16600.00 20500.00 24400.00 28300.00 32200.00 40000.00 MHz												т	
No	<b>)</b> .	Frequer (MHz	-		actor B/m)	Read (dBu	-		vel IV/m)	Limit (dBuV/m	Margin ) (dB)	Detector	
1		10479.	744	6	6.99	46.	19	53	.18	74.00	-20.82	peak	
2	2	10480.	248	6	6.99	31.4	47	38	.46	54.00	-15.54	AVG	
	ctor (				•	8/m)+Ca	able F	actor	(dB)-P	re-amplifie	r Factor		

Page 36 of 133

2.Margin value = Level -Limit value



Ant. Po	d.	Vert	cal					
Fest Mo	ode:	TX 8	802.11ac(VF	HT20) Mode	5240MHz (U-	·NII-1)		
Remark	<b>c</b> :	No r limit		e emission w	hich more tha	an 10 dB belo	ow the pro	escribed
100.0 dB	uV/m							
					FCC Par	rt15 Class C 3M Ab	ove-16 Peak	
		1			FCC	Part15 Class C 3M	Above-1G AV	
50			·					
0.0								
1000.00	0 4900.00	8800.00	12700.00 1	6600.00 20500.	0 24400.00 2	28300.00 32200.	.00	40000.00 MH
No.		uency Hz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1048	0.370	6.99	46.51	53.50	74.00	-20.50	peak
2	1048	0.871	6.99	31.46	38.45	54.00	-15.55	AVG

Page 37 of 133



Ant.	Pol.			Horiz	zonta	l									
Test	Мос	le:		TX 8	02.1 <sup>′</sup>	1n(H	T40	) Mod	le 519	0MHz	(U-NI	I-1)			
Rem	ark:			No r limit.		for tl	ne e	emissi	on wł	nich m	ore tha	an 1	0 dB be	low the p	rescribed
100.0	dBu	V/m													
											FCC Pa	urt15 C	lass C 3M .	Above-16 Pea	k
				1							FCC	Part1	5 Class C 3	M Above-16 A	v
50															
				X											
												-			
0.0	00.000	4900.00	88	)0.00	1270	00.00	166	500.00	20500.0	)0 244	00.00	28300	.00 322	00.00	40000.00 MHz
N	о.		quen /IHz)			actor B/m)		Read (dBi	-	Le <sup>v</sup> (dBu	vel V/m)		_imit 3uV/m	Margin	Detector
	1	`	80.8		· ·	6.70	_	46.		53.		·	74.00	-20.47	/ peak
	2	103	80.8	79	6	6.70		31.	76	38.	.46	Ę	54.00	-15.54	AVG
	ctor							′m)+C	able F	actor	(dB)-F	re-a	mplifie	r Factor	

Page 38 of 133

EN



nt. Po	I.	Vert	ical					
est Mo	de:	TX 8	802.11n(H <sup>-</sup>	T40) Mode 5 <sup>2</sup>	90MHz (U-N	III-1)		
Remark	:	No r limit		he emission v	vhich more th	nan 10 dB bel	ow the pr	escribed
00.0 dB	u¥/m		1		i			
					FCC F	art15 Class C 3M Ab	ove-16 Peak	
					FC	C Part15 Class C 3M	Above-16 AV	
50		2	Ś					
		Š	ζ					
0.0								
1000.00	0 4900.00	8800.00	12700.00	16600.00 20500	.00 24400.00	28300.00 32200	).00	40000.00 M
	Freq	8800.00 uency Hz)	Factor	Reading	Level	Limit	Margin	40000.0
1	×		(dB/m)		(dBuV/m			maal
-		30.070	6.70	46.25	52.95	74.00	-21.05	peak
2	1038	30.999	6.70	31.76	38.46	54.00	-15.54	AVG
	s:							

Page 39 of 133



Ant.	Pol.	I		ŀ	Horiz	zonta	al									
Test	Мо	de:		٦	FX 8	802.1	1n(H	T4(	D) Mo	de 52	30MH	z (U-NI	I-1)			
Rem	ark:				No r imit.		t for t	he	emiss	sion w	hich n	nore tha	an 10	dB be	low the pr	escribed
100.0	dBu'	//m														
-												FCC Pa	rt15 Cla	ss C 3M AI	oove-1G Peak	
					2							FCC	Part15 (	Class C 3M	Above-1G AV	
50					1 X											
0.0	0.000	4900	00	8800		127	)0.00	160	500.00	20500	00 24	100.00	28300.0	0 32200	1.00	40000.00 MHz
No	o.		equ		зy		acto			ding		evel		imit	Margin	Detector
			(MH				B/m	)		8uV)		uV/m)	-	uV/m)		A) (O
1			0459				5.93 0.04			.39		3.32		4.00	-15.68	AVG
4	2	10	0460	).70	13	e	6.94		45	.80	52	2.74	1	4.00	-21.26	peak
Rem 1.Fac 2.Ma	ctor	(dB/							/m)+0	Cable	Facto	<sup>-</sup> (dB)-F	Pre-ar	nplifier	Factor	

Page 40 of 133



Ant. F	Pol.		Ve	ertical									
Fest I	Mod	e:	T>	<b>(</b> 802.	11n(HT4	l0) Mode	523	0MHz	U-NI	-1)			
Rema	ark:		No lin		rt for the	e emissio	n wh	ich m	ore tha	an 10 dE	belo	ow the pre	escribed
100.0	dBuV	/m											
									FCC Pa	t15 Class C	3м АЬ	ove-16 Peak	
									FCC	Part15 Class	C 3M	Above-1G AV	
50				1									
				2									
				Ť									
0.0	000	4900.00	8800.0	. 12	700.00 1	6600.00 2	0500.0	0 244	00.00 2	28300.00	32200	00	40000.00 N
		Frog	uency		actor	Read	ing		vel	Lim	i+	Margin	
No			Hz)		dB/m)	(dBu	-		vei iV/m)	(dBuV		Margin (dB)	Detecto
1		1046	60.256	5	6.94	46.1	1	53	.05	74.0	00	-20.95	peal
2		1046	60.955	5	6.95	31.2	.7	38	.22	54.0	00	-15.78	AVG
	•			·								•	
Rema	arks:												

Page 41 of 133

2.Margin value = Level -Limit value



Ant.	Pol.			H	loriz	zonta	I													٦
Test	Мос	de:		Т	X 8	02.1 <sup>°</sup>	1ac(\	VH	F40) <b>f</b>	Node	519	0Mł	Hz (U-	NII-	1)					
Rem	nark:				lo re mit.	eport	for t	he	emiss	sion v	/hich	n mo	ore tha	an 1	0 dB	bel	ow the	pre	escribed	
100.0	) dBu	iV/m																		
													FCC Pa	rt15 (	Class C	3M AL	ove-1G P	eak		
					1								FCC	Part1	5 Class	C 3M	Above-10	i AV		
50					Ĩ									_				-		
					2									_				+		
0.0																				
10	00.000	4900	.00	8800	.00	1270	00.00	16	600.00	20500	.00	2440	0.00	28300	.00	32200	).00		40000.00 MHz	z
		_				_			_									•		т
N	o.		equ (M⊦	enc Iz)	У		acto B/m			ading 3uV)		Le\ Bu\	/ei V/m)		Limi 3uV/		Marg (dB		Detector	
	1		·	9.80	0		6.70	/	· · ·	.02	•	52.		·	74.0		-21.2	·	peak	$\left  \right $
	2			0.18			6.70			.71	_	38.			54.0		-15.		AVG	†
																-				T
Rem				_		_					_									
1.Fa 2.Ma									/m)+(	Cable	Fac	tor	(dB)-F	re-a	ampli	fier	Factor	•		
	J		-																	

Page 42 of 133



Ant. Pol	•	Vert	ical								
Test Mo	de:	TX 8	302.11ac(\	/HT40) M	ode 5	190M	Hz (U-	NII-1)			
Remark	•	No r limit	eport for t	he emissi	on wh	ich m	ore tha	an 10 dB	belo	ow the pr	escribed
00.0 dBu	V/m								_		
							FCC Pa	t15 Class C 3	в Аьс	ove-16 Peak	
		1					FCC	Part15 Class	С ЗМ /	Above-1G AV	
50											
		2									
0.0	4900.00	8800.00	12700.00	16600.00	20500.00	244	0.00 2	28300.00	32200.	.00	40000.00 MI
No.		uency	Factor		_		vel	Limit		Margin	Detector
	``	Hz)	(dB/m)				V/m)	(dBuV/		(dB)	
1		80.631	6.70	46.			.02	74.0		-20.98	peak
2	1038	30.853	6.70	31.	77	38	.47	54.0	0	-15.53	AVG

Page 43 of 133

2.Margin value = Level -Limit value



Ant	. Pol.		Hori	zontal									
Test	t Moo	de:	TX 8	302.11	ac(VH	T40) M	ode 5	5230M	Hz (U-	NII-1)			
Ren	nark:		No r limit		or the	emissi	on wł	nich m	ore tha	an 10 d	B bel	ow the pr	escribed
100.0 Г	dBu¥	//m											
									FCC Pa	rt15 Class	С ЗМ АЬ	ove-16 Peak	
-													
			2						FCC	Part15 Cla	ss C 3M	Above-1G AV	
50			Î										
-			×										
-													
-													
0.0	00 000	4900.00	8800.00	12700.	00 10	600.00 3	20500.0	0 244	00.00 2	28300.00	32200	00	40000.00 MHz
10	00.000	1000.00	0000.00	12100.	00 10	000.00	20000.0	<u> </u>	00.00		ULLUU		10000.0011112
		_											T
N	lo.	Frequ (Mł	lency Hz)		ctor /m)	Read (dBu			vel iV/m)	Lin (dBu)		Margin (dB)	Detector
	1	1046	0.344	6.	94	31.	38	38	.32	54.	00	-15.68	AVG
	2	1046	0.867	6.	95	46.	20	53	.15	74.	00	-20.85	peak
Ren	narks	:											
1.Fa	actor	(dB/m) = value =				3/m)+Ca	able F	actor	(dB)-F	re-am	olifier	Factor	
2.101	aryin	value -	LEVEI -L										

Page 44 of 133



Ant. Po	l.	Verti	cal									
lest Mo	de:	TX 8	02.11ac(VF	IT40) Mode 8	5230MHz (U-	-NII-1)						
Remark		No r		e emission wl	hich more tha	an 10 dB bel	ow the pr	escribed				
100.0 dB	uV/m											
					ECC Pa	rt15 Class C 3M Ab	oue 16 Peak					
					ТССТА	ICI D CIASS C 3M AD	UVE-TU FEAK					
FCC Part15 Class C 3M Above-16 AV												
50												
		×										
0.0												
	) 4900.00	8800.00	12700.00 1	6600.00 20500.0	0 24400.00	28300.00 32200	.00	40000.00 MH				
No.	Frequ		Factor	Reading	Level	Limit	Margin	Detector				
	(MF	'	(dB/m)	(dBuV)	(dBuV/m)	. ,	· · ·					
1	10459		6.93	45.71	52.64	74.00	-21.36	peak				
2	10459	9.045	6.93	31.40	38.33	54.00	-15.67	AVG				

Page 45 of 133

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



Ant. Po	I.	Hori	zontal					
Test Mo	de:	TX 8	802.11ac(VH	T80) Mode 5	5210MHz (U-	NII-1)		
Remark	:	No r limit.		emission wh	nich more tha	an 10 dB belo	ow the pre	escribed
100.0 dB	uV/m							
					FCC Par	t15 Class C 3M Ab	ove-16 Peak	
		2			FCC I	Part15 Class C 3M /	Above-1G AV	
50		1						
0.0	) 4900.00 88	300.00	12700.00 16	600.00 20500.0	0 24400.00 2	8300.00 32200.		40000.00 MHz
No.	Frequer (MHz		Factor (dB/m)	Reading (dBu∀)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10420.	012	6.82	32.28	39.10	54.00	-14.90	AVG
2	10420.	977	6.82	48.04	54.86	74.00	-19.14	peak
			•	3/m)+Cable F	Factor (dB)-P	re-amplifier	Factor	

Page 46 of 133

2.Margin value = Level -Limit value



Ant. Po	Ι.	Verti	cal					
Test Mo	de:	TX 8	802.11ac(V	HT80) Mode	5210MHz (U-	NII-1)		
Remark	:	No r limit		e emission w	hich more tha	an 10 dB bel	ow the pr	escribed
100.0 dBu	ıV/m							
					FCC Pa	t15 Class C 3M Ab	ove-16 Peak	
		2			FCC	Part15 Class C 3M	Above-16 AV	
50								
		*						
0.0	) 4900.00	8800.00	12700.00	16600.00 20500.0	0 24400.00 2	28300.00 32200	00	40000.00 MHz
No.	Frequ (MH	lz)	Factor (dB/m)	(dBuV)	Level (dBuV/m)		· · ·	Detector
1	10419		6.82	32.29	39.11	54.00	-14.89	AVG
2	10420	0.298	6.82	46.39	53.21	74.00	-20.79	peak
	<sup>-</sup> (dB/m) =		a Factor ( imit value	dB/m)+Cable	Factor (dB)-F	Pre-amplifier	Factor	

Page 47 of 133



Ant.	Pol.		Horiz	ontal									
Test	Mod	le:	TX 8	02.11a N	/lode	e 5745N	IHz (	(U-NII	-3)				
Rem	ark:		No re limit.	eport for	the	emissio	n wh	iich m	ore tha	an 10 dB	bel	ow the pro	escribed
100.0	dBu¥	/m											
_													
_									FCC Pa	rt15 Class C 3	м аб	ove-16 Peak	
											-		
-				1					FCC	Part15 Class	C 3M	Above-1G AV	
50				1							-		
				2							_		
0.0													
	0.000	4900.00	8800.00	12700.00	166	500.00 20	500.0	0 244	00.00 2	28300.00 3	2200	.00	40000.00 MHz
N	o.	Frequ (Mł	-	Facto (dB/m		Readi (dBu)	-		vel iV/m)	Limit (dBuV/		Margin (dB)	Detector
	1	1148	9.003	7.44	ŀ	45.6	7	53	.11	74.0	D	-20.89	peak
2	2	1148	9.401	7.44	ŀ	31.1	7	38	.61	54.0	D	-15.39	AVG
·													
	arks:		: Antenn	a Factor	(dR	/m)+Cal	nle F	actor	(dR)-¤	Pre-ampli	fier	Factor	

Page 48 of 133

2.Margin value = Level -Limit value



Ant. P	ol.	Verti	cal					
Test M	ode:	TX 8	02.11a Mod	e 5745MHz	(U-NII-3)			
Remar	k:	No r		emission wh	nich more tha	an 10 dB belo	ow the pre	escribed
100.0 d	BuV/m							
					FCC Par	t15 Class C 3M Ab	ove-1G Peak	
			1		FCC	Part15 Class C 3M	Above-1G AV	
50								
			2 X					
0.0								
1000.0	00 4900.00	8800.00	12700.00 10	600.00 20500.0	0 24400.00 2	28300.00 32200.	.00	40000.00 MHz
No.		uency IHz)	Factor (dB/m)	Reading (dBu∀)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	114	89.782	7.44	45.89	53.33	74.00	-20.67	peak
2	114	89.966	7.44	31.18	38.62	54.00	-15.38	AVG
Remar								

Page 49 of 133

2.Margin value = Level -Limit value



0.0

1000.000 4900.00

8800.00

12700.00

16600.00

2			Page 50 of 133	Report No.: CTC20200
Ant	t. Pol.	Horizontal		
Tes	t Mode:	TX 802.11a	Mode 5785MHz (U-N	NII-3)
Rer	mark:	No report fo	or the emission which	more than 10 dB below the prescribed
100.0 50	dBuV/m			FCC Part15 Class C 3M Above-16 Peak  FCC Part15 Class C 3M Above-16 AV  FCC Part15 Class C 3M Above-16 AV

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)		Margin (dB)	Detector
1	11569.343	7.39	32.17	39.56	54.00	-14.44	AVG
2	11569.495	7.39	47.17	54.56	74.00	-19.44	peak

20500.00

24400.00

28300.00

32200.00

40000.00 MHz

Remarks:

EN

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



Ant	. Pol		Verti	cal										
Tes	t Mo	de:	TX 8	02.1	1a Mod	e 5785M⊦	łz (	(U-NII-	-3)					
Ren	nark:	:	No re limit.		t for the	emission	wł	nich m	ore tha	an 10 d	B bel	ow the pr	escribe	d
100.0	dBu <sup>1</sup>	V/m												1
									FCC Pa	rt15 Class	C 3M AL	ove-16 Peak		
				1					FCC	Part15 Cla	s C 3M	Above-1G AV		
50				1										
				2										
				Î										
0.0														
10	00.000	4900.00	8800.00	127	00.00 16	600.00 205	00.0	0 2440	0.00 2	28300.00	32200	).00	40000.001	MHz
		Frequ	oncv	F	actor	Readin	~		vel	Lim	it	Margin		$\neg$
N	lo.	(MH	-		B/m)	(dBuV			V/m)				Detecto	or
	1	11569	1		7.39	46.45		-	.84	74.		-20.16	peak	<
	2	11569	9.606		7.39	32.19		39.	.58	54.	00	-14.42	AVG	3
	narks					s/m)+Cabl								

Page 51 of 133

EN

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



Ant. F	Pol.		Hori	zont	al							
Test I	Mode:		TX 8	802.1	11a Moc	le 5825I	MHz	(U-NII	-3)			
Rema	ark:		No r limit		t for the	emissi	on wl	nich m	ore tha	an 10 dB b	elow the pr	escribed
100.0	dBuV/m											
									FCC Pa	rt15 Class C 3M	Above-16 Peak	
				1					FCC	Part15 Class C	3M Above-1G AV	
50				Ť								
				2								
				Î								
0.0	.000 490		800.00		00.00 16	600.00	20500.0		00.00	28300.00 32	200.00	40000.00 MH
No	F	reque			actor	Read			vel	Limit	Margin	Detector
		(MHz	2)		B/m)	(dBu	IV)	(dBu	V/m)	-		20100101
1	1	1650.	356		7.33	46.1	18	53	.51	74.00	-20.49	peak
2	1	1650.	969		7.33	31.6	64	38	.97	54.00	-15.03	AVG
Rema	arko:											
1.Fac	tor (dE	s/m) = / lue = L				3/m)+Ca	able I	actor	(dB)-F	Pre-amplifie	er Factor	

CTC Laboratories, Inc. 1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China Tel.: (86)755-27521059 Fax: (86)755-27521011 Http://www.sz-ctc.org.cn 证认可监督管理委员会 For anti-fake verification, please visit the official website of Certification and **記** 中国国家认证认可监督管理委员会 Accreditation Administration of the People's Republic of China : yz.cnca.cn



Ant	Pol.		Verti	cal								
Test	t Moo	de:	TX 8	02.1 <sup>′</sup>	1a Mod	e 5825MH	١z (	(U-NII-	-3)			
Ren	nark:		No re limit.	eport	for the	emission	wł	nich m	ore tha	an 10 dB b	elow the pr	rescribed
100.0	dBu	√/m					_					
									FCC Pa	rt15 Class C 3M	Above-1G Peak	
							_		FCC	Deutle Class C	3M Above-1G AV	
50				1					FLL	Parti 5 Liass L	3M ADOVE-TO AV	
				,								
				×			-					
							-					
0.0												
10	00.000	4900.00	8800.00	1270	0.00 16	600.00 205	00.0	0 2440	0.00 2	28300.00 32	200.00	40000.00 MH
N	lo.	Frequ (MF			actor B/m)	Readin (dBuV	-	Le (dBu		Limit (dBuV/m	Margin (dB)	Detector
	1	11649	9.984	7	.34	46.04		53.	38	74.00	-20.62	peak
	2	11650	D. <mark>88</mark> 3	7	.33	31.67		39.	00	54.00	-15.00	AVG
Ren	narks											

Page 53 of 133

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



Ant.	Pol			ŀ	Horiz	zonta	al									
Test	Мо	de:									5MHz					
Rem	nark:				No re imit.	epor	t for t	he	emissi	ion wł	nich m	ore tha	an 10 (	dB bel	ow the pr	escribed
100.0	dBu	V/m														
												FCC Pa	rt15 Clas:	: C 3M At	oove-16 Peak	
50						2						FCC	Part15 Cl	ass C 3M	Above-16 AV	
						×										
0.0	00.000	1000		8800		107	DO. 00	10	600.00	20500.0		0.00	28300.00	32200		40000.00 MHz
10	00.000	1000		0000		121	0.00	100		20300.0				52200		10000.00 MHZ
N	0.	Fr	equ (M⊦		ÿ		actoi B/m)	- 1	Read (dBi	_	Le <sup>v</sup> (dBu	vel V/m)		nit V/m)	Margin (dB)	Detector
	1	1	1489	9.84	14	7	7.44		31.	17	38.	.61	54	.00	-15.39	AVG
	2	1	1490	0.46	61	7	7.44		45.	93	53.	.37	74	.00	-20.63	peak
	ctor	(dB/					ctor ( value		/m)+C	able I	actor	(dB)-F	re-am	plifier	Factor	

Page 54 of 133



Ant. Po	l.	Verti	cal					
est Mo	de:	TX 8	02.11n(HT2	20) Mode 574	45MHz (U-NI	I-3)		
Remark		No re limit.		emission w	hich more tha	an 10 dB bel	ow the pr	escribed
100.0 dB	uV/m							
					FCC Pa	rt15 Class C 3M Ab	ove-16 Peak	
			1		FCC	Part15 Class C 3M	Above-1G AV	
50								
			2					
0.0								
1000.000	0 4900.00	8800.00	12700.00 1	6600.00 20500.0	00 24400.00	28300.00 32200	.00	40000.00 M
	0 4900.00	8800.00	12700.00 1	6600.00 20500.1	00 24400.00 3	28300.00 32200	.00	4000
No.	Frequ (MI	iency Hz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detecto
1	1148	9.524	7.44	45.82	53.26	74.00	-20.74	peak
2	1148	9.547	7.44	31.17	38.61	54.00	-15.39	AVG
2 Remarks	1	9.547	7.44	31.17	38.61	54.00	-15.39	AV

Page 55 of 133



Ant	. Pol.			Horiz	onta	al									
Test	t Moc	le:		TX 80	)2.1	1n(H	T20	D) Moc	le 578	5MHz	U-NI	I-3)			
Ren	nark:			No re limit.	epor	t for t	he	emiss	ion wł	nich m	ore tha	an 10 d	B belo	ow the pr	escribed
100.0	) dBu\	//m									1				
											FCC Pa	t15 Class	с зм Аб	ove-1G Peak	
					2 X						FCC	Part15 Cla	ss C 3M	Above-1G AV	
50															
					×										
0.0															
10	00.000	4900.00	880	0.00	127	DO.OO	166	600.00	20500.0	U 244I	00.00 2	8300.00	32200	.00	40000.00 MHz
	lo.	Free	quen	су	F	acto	r	Rea	ding	Le	vel	Lin	nit	Margin	Detector
	10.	()	/Hz)	-	(d	B/m	)	(dB	uV)	(dBu	ıV/m)	(dBu\	//m)	(dB)	Detector
	1	115	69.1	55		7.39		32.	.19	39	.58	54.	00	-14.42	AVG
	2	115	69.6	32		7.39		46.	.95	54	.34	74.	00	-19.66	peak
-															
	narks actor		) = An	tenna	a Fa	ctor (	dB	/m)+C	able F	actor	(dB)-P	re-amp	olifier	Factor	
		value						,			. ,				

Page 56 of 133



nt. Po	l.	Verti	cal					
est Mo	de:	TX 8	02.11n(HT2	0) Mode 578	5MHz (U-NI	I-3)		
emark		No re		emission wh	nich more tha	an 10 dB bel	ow the pr	escribed
00.0 dBu	iV/m							
					ECC Par	t15 Class C 3M Ab	ove-16 Peak	
			Ş		FCC	Part15 Class C 3M	Above-1G AV	
50								
			1					
0.0								
1000.000	4900.00	8800.00	12700.00 16	600.00 20500.0	0 24400.00 2	28300.00 32200	.00	40000.00 MH
No.	Frequ (MI		Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1156	9.083	7.39	32.19	39.58	54.00	-14.42	AVG
2	1156	9.724	7.39	46.71	54.10	74.00	-19.90	peak
emark				1		1		

Page 57 of 133



Ant.	Pol		Horiz	zontal					
Test	t Moo	de:	TX 8	02.11n(H <sup>-</sup>	T20) Mode 582	25MHz (U-NI	I-3)		
Rem	nark:		No re limit.		ne emission wl	nich more tha	an 10 dB bel	ow the pr	escribed
100.0	dBu	√/m							
						FCC Pa	rt15 Class C 3M Ab	ove-16 Peak	
				1		FCC	Part15 Class C 3M	Above-16 AV	
50									
-				2 X					
0.0									
10	00.000	4900.00	8800.00	12700.00	16600.00 20500.0	0 24400.00 2	28300.00 32200	.00	40000.00 MHz
N	о.	Frequ (MH	-	Factor (dB/m)		Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
	1	11649	9.884	7.34	46.60	53.94	74.00	-20.06	peak
	2	1165	0.538	7.33	<mark>31.6</mark> 6	38.99	54.00	-15.01	AVG
1.Fa		(dB/m) =		a Factor ( imit value	dB/m)+Cable I	Factor (dB)-F	Pre-amplifier	Factor	

Page 58 of 133



nt. Pol		Verti	cal					
est Mo	de:				25MHz (U-NI			
emark	•	No re limit.		e emission w	hich more tha	an 10 dB belo	ow the pr	escribed
00.0 dBu	₩/m							
					ECC Pa	t15 Class C 3M Ab	un 16 Park	
					FUU Fal	(15 CI922 C 3M AD	DVE-TO FEAK	
			1		FCC	Part15 Class C 3M	Above-1G AV	
50			Ň.					
			2					
			×					
0.0	4900.00	8800.00	12700.00 1	6600.00 20500.0	0 24400.00 2	8300.00 32200.	.00	40000.00 MH
	Frog	uency	Factor	Reading	Level	Limit	Morgin	
No.		Hz)	(dB/m)	(dBuV)	(dBuV/m)		Margin (dB)	Detector
1	1165	50.861	7.33	46.36	53.69	74.00	-20.31	peak
2	1165	50.995	7.33	31.63	38.96	54.00	-15.04	AVG

Page 59 of 133

2.Margin value = Level -Limit value



Ant	. Pol		Horiz	contal					
Tes	t Mo	de:	TX 8	02.11ac(VH	T20) Mode 5	745MHz (U-	NII-3)		
Rer	nark:	1	No re limit.	eport for the	emission wh	nich more tha	in 10 dB belo	ow the pre	escribed
100.0	) dBu	√/m							
						FCC Par	t15 Class C 3M Abo	ove-1G Peak	
				2		FCC I	Part15 Class C 3M /	Above-1G AV	
50				1					
				*					
0.0		4900.00	8800.00	12700.00 16	600.00 20500.0	0 24400.00 2	8300.00 32200.	00	40000.00 MHz
		Frequ	ency	Factor	Reading	Level	Limit	Margin	Detector
	lo.	(MF	lz)	(dB/m)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	Detector
	1	1148	9.513	7.44	31.20	38.64	54.00	-15.36	AVG
	2	1148	9.950	7.44	45.42	52.86	74.00	-21.14	peak
Rer	narks								
			Antenn	a Factor (dE	3/m)+Cable F	actor (dB)-P	re-amplifier	Factor	

Page 60 of 133

2.Margin value = Level -Limit value



Ant. Po	ol.	Verti	cal					
Fest Mo	ode:	TX 8	02.11ac(V	HT20) Mode 5	5745MHz (U-	NII-3)		
Remark	<b>K</b> :	No re limit.		e emission wh	nich more tha	an 10 dB belo	ow the pre	escribed
100.0 dB	uV/m							
					ECC Par	t15 Class C 3M Ab	ove-16 Peak	
			2		FCC I	Part15 Class C 3M	Above-1G AV	
50			1					
			1					
			Î					
0.0								
1000.00	0 4900.00	8800.00	12700.00	16600.00 20500.0	0 24400.00 2	8300.00 32200.	.00	40000.00 MH
No.		uency Hz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1148	39.281	7.44	31.16	38.60	54.00	-15.40	AVG
2	1148	9.427	7.44	45.66	53.10	74.00	-20.90	peak
Remark								

Page 61 of 133

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



EN

Ant.	. Pol	•		Hori	zont	al									
Test	t Mo	de:		TX 8	802. <sup>-</sup>	11ac(\	٧H	T20) N	Node 5	5785M	Hz (U-	NII-3)			
Ren	nark	:		No r limit.		rt for t	he	emiss	ion wl	nich m	ore tha	an 10	dB bel	ow the pr	escribed
100.0	) dBu	V/m													
											FCC Pa	rt15 Clas	s C 3M Al	oove-16 Peak	
					2						FCC	Part15 C	lass C 3M	Above-1G AV	
50					1										
					Î										
0.0															
10	00.000	4900.0	00 88	00.00	127	/00.00	16	600.00	20500.0	0 244	00.00	28300.00	32200	).00	40000.00 MHz
N	о.		equen (MHz)			acto IB/m			ding uV)	Le <sup>.</sup> (dBu	vel V/m)		mit ıV/m)	Margin (dB)	Detector
	1	11	569.0	41		7.39		32	.20	39	.59	54	.00	-14.41	AVG
	2	11	569.2	37		7.39		46	.59	53	.98	74	.00	-20.02	peak
1.Fa		(dB/r	m) = Aı e = Le					s/m)+C	Cable I	actor	(dB)-F	Pre-an	nplifier	Factor	

Page 62 of 133



Test Mode:         TX 802.11ac(VHT20) Mode 5785MHz (U-NII-3)           Remark:         No report for the emission which more than 10 dB below the prelimit.           100.0         dBuV/m           dBuV/m         FCC Part15 Class C 3M Above-16 Peak           50         7         8         7 <th7< th=""></th7<>										cal	Verti	`			Pol.	Ant
Imit.         Imit.           100.0         dBuV/m           Imit.         Imit.           Imit. </th <th></th> <th></th> <th>3)</th> <th>J-NI</th> <th>1Hz (</th> <th>5785</th> <th>Mode</th> <th>Г20)</th> <th>ac(VH</th> <th>02.11</th> <th>TX 8</th> <th>-</th> <th></th> <th>de:</th> <th>Мос</th> <th><b>Fes</b>t</th>			3)	J-NI	1Hz (	5785	Mode	Г20)	ac(VH	02.11	TX 8	-		de:	Мос	<b>Fes</b> t
No.         Frequency (MHz)         Factor (dB/m)         Reading (dBuV)         Level (dBuV/m)         Limit (dBuV/m)         Margin (dBuV/m)           1         11569.021         7.39         32.19         39.58         54.00         -14.42	escribed	ow the pre	0 dB belo	han	nore	/hich	sion	emis	for the						nark:	Ren
No.         Frequency (MHz)         Factor (dB/m)         Reading (dBuV)         Level (dBuV/m)         Limit (dBuV/m)         Margin (dBuV/m)           1         11569.021         7.39         32.19         39.58         54.00         -14.42														V/m	dBu\	100.0
No.         Frequency (MHz)         Factor (dB/m)         Reading (dBuV)         Level (dBuV/m)         Limit (dBuV/m)         Margin (dBuV/m)           1         11569.021         7.39         32.19         39.58         54.00         -14.42																
No.         Frequency (MHz)         Factor (dB/m)         Reading (dBuV)         Level (dBuV/m)         Limit (dBuV/m)         Margin (dBuV/m)           1         11569.021         7.39         32.19         39.58         54.00         -14.42																
50         X		ove-16 Peak	lass C 3M Abo	Part15	FCC											
50         X																
50         X																
No.         Frequency (MHz)         Factor (dB/m)         Reading (dBuV)         Level (dBuV/m)         Limit (dBuV/m)         Margin (dB)           1         11569.021         7.39         32.19         39.58         54.00         -14.42		Above-16 AV	5 Class C 3M A	CC Par	F					2 X						
1000.000         4900.00         8800.00         12700.00         16600.00         20500.00         24400.00         28300.00         32200.00           No.         Frequency (MHz)         Factor (dB/m)         Reading (dBuV)         Level (dBuV/m)         Limit (dBuV/m)         Margin (dB)           1         11569.021         7.39         32.19         39.58         54.00         -14.42																50
1000.000         4900.00         8800.00         12700.00         16600.00         20500.00         24400.00         28300.00         32200.00           No.         Frequency (MHz)         Factor (dB/m)         Reading (dBuV)         Level (dBuV/m)         Limit (dBuV/m)         Margin (dB)           1         11569.021         7.39         32.19         39.58         54.00         -14.42										*						
1000.000         4900.00         8800.00         12700.00         16600.00         20500.00         24400.00         28300.00         32200.00           No.         Frequency (MHz)         Factor (dB/m)         Reading (dBuV)         Level (dBuV/m)         Limit (dBuV/m)         Margin (dB)           1         11569.021         7.39         32.19         39.58         54.00         -14.42																
1000.000         4900.00         8800.00         12700.00         16600.00         20500.00         24400.00         28300.00         32200.00           No.         Frequency (MHz)         Factor (dB/m)         Reading (dBuV)         Level (dBuV/m)         Limit (dBuV/m)         Margin (dB)           1         11569.021         7.39         32.19         39.58         54.00         -14.42																-
1000.000         4900.00         8800.00         12700.00         16600.00         20500.00         24400.00         28300.00         32200.00           No.         Frequency (MHz)         Factor (dB/m)         Reading (dBuV)         Level (dBuV/m)         Limit (dBuV/m)         Margin (dB)           1         11569.021         7.39         32.19         39.58         54.00         -14.42																
1000.000         4900.00         8800.00         12700.00         16600.00         20500.00         24400.00         28300.00         32200.00           No.         Frequency (MHz)         Factor (dB/m)         Reading (dBuV)         Level (dBuV/m)         Limit (dBuV/m)         Margin (dB)           1         11569.021         7.39         32.19         39.58         54.00         -14.42																
No.         Frequency (MHz)         Factor (dB/m)         Reading (dBuV)         Level (dBuV/m)         Limit (dBuV/m)         Margin (dB           1         11569.021         7.39         32.19         39.58         54.00         -14.42	40000.00 MH		00 22200	202	100.00	00	2050	200.00	00 10	1070	0.00	0000		4000	00.000	
No.         (MHz)         (dB/m)         (dBuV)         (dBuV/m)         (dBuV/m)         (dBuV/m)           1         11569.021         7.39         32.19         39.58         54.00         -14.42	40000.00 MF	.00	.00 32200.	283	400.00	.00	2030	500.00	J.UU 16	1270	0.00	8801	J.UU	4900	00.000	10
1         11569.021         7.39         32.19         39.58         54.00         -14.42	Detector	-									су			Fr	0.	N
	AVG	· · ·		1) (0				· ·			21		×	1	1	
2 11569.884 7.39 46.84 54.23 74.00 -19.77				_		_									-	
	peak	-19.77	74.00		1.23		0.84	40	.39	1	54	9.80	1503	1	2	
Remarks:														:	narks	Ren

Page 63 of 133

2.Margin value = Level -Limit value



Ant. Pol	I.	Horiz	zontal										
Test Mo	de:	TX 8	02.11	ac(VH	IT20) M	ode 5	825M	Hz (U-	NII-3)				
Remark	:	No re limit.	eport 1	for the	emissi	on wh	nich m	ore tha	ın 10 d	B bel	ow the pr	escribed	
100.0 dBu	ıV/m												
								FCC Pa	t15 Class	с зм Аб	ove-16 Peak		
			2					FCC	Part15 Cla	ss C 3M	Above-1G AV		
50			1										
0.0	) 4900.00 88	300.00	12700	00 16	600.00	20500.0	n 244(	)0.00 2	8300.00	32200	00	40000.00 MHz	7
	- Free anno			-4	Deed	lin a			1 :	.:4	Marrie		т
No.	Frequer (MHz			ctor /m)	Read (dBu	-		vel V/m)	Lin (dBu)		Margin (dB)	Detector	
1	11650.3	302	7.	33	31.	60	38	.93	54.	00	-15.07	AVG	
2	11650.	523	7.	33	46.	66	53	.99	74.	00	-20.01	peak	
Remarks	s: (dB/m) = A	ntonn	a Fac	tor (dF	3/m)+C	ahle F	actor	(dB)-P	re_am	lifier	Factor		

Page 64 of 133

2.Margin value = Level -Limit value



Ant. Po	l <b>.</b>	Verti	cal					
est Mo	de:	TX 8	02.11ac(VH	HT20) Mode (	5825MHz (U-	NII-3)		
Remark	:	No r		e emission w	hich more tha	an 10 dB belo	ow the pr	escribed
100.0 dB	ıV/m							
					FCC Pa	rt15 Class C 3M Ab	ove-16 Peak	
			1		FCC	Part15 Class C 3M	Above-1G AV	
50			1					
			3					
			Î					
0.0	4900.00	8800.00	12700.00 1	6600.00 20500.0	0 24400.00	28300.00 32200	.00	40000.00 MH
No.		uency Hz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1164	19.526	7.34	46.08	53.42	74.00	-20.58	peak
2	1165	50.849	7.33	31.66	38.99	54.00	-15.01	AVG

Page 65 of 133



EN

Ant	Pol			Hor	izont	al									
Test	t Mo	de:		ТΧ	302. <sup>-</sup>	11n(H	T4(	)) Mode	e 575	5MHz	U-NI	I-3)			
Ren	nark:	:		No limi		t for t	he	emissic	on wh	nich m	ore tha	an 10 d	B bel	ow the pr	escribed
100.0	dBu	V/m													
											FCC Pa	rt15 Class	С ЗМ АЬ	ove-16 Peak	
50					1						FCC	Part15 Cla	iss C 3M	Above-1G AV	
					2										
0.0															
	00.000	4300.	.00 6	800.00	121	700.00	100	<u>:00.00 2</u>	0500.0	U 244I	00.00 2	28300.00	32200		40000.00 MHz
N	о.		eque (MHz		1	acto IB/m	I	Read (dBu	-		vel iV/m)	Lin (dBu)		Margin (dB)	Detector
	1	11	1510.	214		7.43		46.4	4	53	.87	74	.00	-20.13	peak
	2	11	1510.	685		7.43		31.6	6	39	.09	54	.00	-14.91	AVG
1.Fa		(dB/	′m) = A Je = Le					/m)+Ca	ble F	actor	(dB)-F	re-am	plifier	Factor	

Page 66 of 133



Test Mode:       TX 802.11n(HT40) Mode 5755MHz (U-NII-3)         Remark:       No report for the emission which more than 10 dB below the prince         100.0       dBuV/m         FCC Part15 Class C 3M Above-16 Peak         50       1	ak
limit.         100.0 dBuV/m         FCC Part15 Class C 3M Above-16 Peak         FCC Part15 Class C 3M Above-16 Av	ak
Image: Sector of the sector	
FCC Part15 Class C 3M Above-16 AV	
FCC Part15 Class C 3M Above-16 AV	
FCC Part15 Class C 3M Above-16 AV	
×	AV
<u>×</u>	AV
X	AV
50	
	1 I I I I I I I I I I I I I I I I I I I
0.0 1000.000 4900.00 8800.00 12700.00 16600.00 20500.00 24400.00 28300.00 32200.00	40000.00.14
1000.000 4900.00 8800.00 12700.00 16600.00 20500.00 24400.00 28300.00 32200.00	40000.00 M

Page 67 of 133

1.Factor (dB/m) = Antenna Factor (dB/m) = Level -Limit value



Ant	. Pol	•		Hori	zont	al									
Tes	t Mo	de:		TX 8	302.´	l1n(H	T4(	D) Mo	de 579	95MHz	: (U-NI	I-3)			
Ren	nark:	:		No i limit		t for t	he	emiss	sion w	hich m	ore tha	an 10 (	dB bel	ow the pr	escribed
100.0	) dBu'	V/m			·			1			1				
											FCC Pa	rt15 Class	C 3M Ab	ove-1G Peak	
50					2						FCC	Part15 Cl	ass C 3M	Above-1G AV	
50															
					×										
					_										
0.0	00.000	4900.	00 8	800.00	127	00.00	166	500.00	20500.	0 244	00.00 2	28300.00	32200	.00	40000.00 MHz
		Er	eque	nev		acto	r	Pos	ding		vel	Li	nit	Margin	
N	lo.		(MH:	-	1	IB/m	I		BuV)	1	iV/m)		V/m)		Detector
	1	11	589	.271		7.37		31	.53	38	.90	54	.00	-15.10	AVG
	2	11	589	.562		7.37		46	.20	53	.57	74	.00	-20.43	peak
1.Fa		(dB/i		Antenr evel -l				/m)+0	Cable	Factor	(dB)-F	Pre-am	plifier	Factor	

Page 68 of 133



Ant. Pol	l <b>.</b>	Verti	cal								
Fest Mo	de:	TX 8	02.11	n(HT4	0) Mode	579	5MHz	(U-NI	I-3)		
Remark	:	No re limit.		for the	emissio	ז wh	nich m	ore tha	an 10 dB bel	ow the pr	escribed
100.0 dBu	uV/m										
								FCC Pa	rt15 Class C 3M Al	ove-1G Peak	
			2					FCC	Part15 Class C 3M	Above-1G AV	
50						_					
			*			_					
			_			_					
0.0	) 4900.00	8800.00	12700	00 10	600.00 20	500.0	0 2440	0.00	28300.00 3220	1.00	40000.00 Mi
No.	Frequ (MH	-		ctor /m)	Readi (dBu\			vel V/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1158	9.846	7.	37	31.4	7	38	.84	54.00	-15.16	AVG
2	1158	9.922	7.	37	46.1	1	53	.48	74.00	-20.52	peak
Remarks	3:										
.Factor	(dB/m) =	Antenn	a Fac	tor (dE	8/m)+Cal	ole F	actor	(dB)-F	Pre-amplifier	Factor	

Page 69 of 133



Ant.	Pol	•	Н	loriz	onta	ıl									
Test	Mo	de:	Т	X 80	)2.1	1ac(∖	/H <sup>-</sup>	T40) Mc	de 5	5755M	Hz (U-	NII-3)			
Rem	nark	:		lo re mit.	port	for ti	he	emissio	n wł	nich m	ore tha	an 10	dB bel	ow the pr	escribed
100.0	dBu	V/m													
-											FCC Pa	t15 Clas	s C 3M Ab	ove-16 Peak	
50					1 7						FCC	Part15 C	ass C 3M	Above-1G AV	
					2 X										
0.0															
100	00.000	4900.00	8800.	00	1270	0.00	166	600.00 2	)500.0	0 244	00.00 2	28300.00	32200	.00	40000.00 MHz
N	0.		uenc Hz)	У		actor B/m)		Read (dBu	_		vel IV/m)		mit ıV/m)	Margin (dB)	Detector
	1	1150	09.46	9	7	.42		45.9	5	53	.37	74	.00	-20.63	peak
1	2	115 <sup>-</sup>	10.67	3	7	.43		31.6	4	39	.07	54	.00	-14.93	AVG
	ctor							/m)+Ca	ble F	actor	(dB)-F	re-an	nplifier	Factor	

Page 70 of 133



Ant. Po	d.	Verti	cal					
Test Mo	ode:	TX 8	802.11ac(VF	HT40) Mode {	5755MHz (U-	NII-3)		
Remark	<b>c</b> :	No r		e emission wl	hich more tha	an 10 dB bel	ow the pr	escribed
100.0 dB	uV/m							
					FCC Pa	t15 Class C 3M Ab	ove-16 Peak	
			1		FCC	Part15 Class C 3M	Above-1G AV	
50			*					
			3					
			Î					
0.0	0 4900.00	8800.00	12700.00 1	6600.00 20500.0	10 24400.00 2	28300.00 32200	00	40000.00 MHz
No.	Frequ (MF		Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	11510	0.665	7.43	46.13	53.56	74.00	-20.44	peak
2	11510	).921	7.43	31.66	39.09	54.00	-14.91	AVG
Remark	rs.							
1.Facto	r (dB/m) =			B/m)+Cable I	Factor (dB)-F	Pre-amplifier	Factor	
2.Margi	n value =	Level -L	imit value.					

Page 71 of 133



Ant. Pol.			Horizontal										
Test Mode:			TX 802.11ac(VHT40) Mode 5795MHz (U-NII-3)										
Rer	nark:		No report for the emission which more than 10 dB below the prescribed limit.										
100.0	) dBu\	//m											
50													
									FCC Par	t15 Class	С ЗМ АЬ	ove-16 Peak	
							_						
				2					FCC I	Part15 Cla	ss C 3M .	Above-1G AV	
				1 X									
0.0	00.000	4000 00 0	900.00	12700.00	100	00.00 205	00.00	244	0.00 2	0200.00	22200	00	40000.00 MH-
1000.000 4900.00 8800.00 12700.00 16600.00 20500.00 24400.00 28300.00 32200.00 40000.00 MHz													
												1	
N	lo.	Frequency (MHz)		Factor (dB/m)		Reading (dBuV)		Level (dBuV/m)				Margin (dB)	Detector
	1	11589.477		7.37		31.50		38.87		54.00		-15.13	AVG
	2	11590.853		7.37		45.96		53.33		74.00		-20.67	peak
													<u>.</u>
Ron	narke												
Remarks: 1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor													
2.Margin value = Level -Limit value													

Page 72 of 133



nt. Pol		Verti	cal					
est Mo	de:	TX 8	02.11ac(VH	IT40) Mode 5	5795MHz (U-	NII-3)		
Remark	:	No re limit.	port for the	emission wh	nich more tha	an 10 dB bel	ow the pr	escribed
00.0 dBu	W/m							
					FCC Pa	t15 Class C 3M Ab	ove-1G Peak	
50			2 *		FCC	Part15 Class C 3M	Above-1G AV	
50								
			1 *					
_								
0.0	4900.00	8800.00	12700.00 16	600.00 20500.0	0 24400.00 2	8300.00 32200	.00	40000.00 MH
No.	Freque (MH		Factor (dB/m)	Reading (dBu∀)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	11590	.016	7.37	31.53	38.90	54.00	-15.10	AVG
2	11590	.350	7.37	45.52	52.89	74.00	-21.11	peak

Page 73 of 133

EN

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



Ant	. Pol.		Hori	zontal									
Test	t Moc	le:	ТХ 8	02.11	ac(VH	T80) Mode	e 5	775M	Hz (U-	NII-3)			
Ren	nark:		No r limit		for the	emission	wh	ich m	ore tha	an 10 d	B bel	ow the pr	escribed
100.0	) dBu\	//m											
									FCC Pa	t15 Class	С ЗМ АЬ	ove-16 Peak	
				2					FCC	Part15 Cla	⊧s C 3M	Above-1G AV	
50				1 X									
										_			
0.0	00.000	4900.00	8800.00	12700	00 10	600.00 2050	0.00	244	0.00 2	8300.00	32200	00	40000.00 MHz
Ν	lo.	Frequ (Mł			actor 3/m)	Readin (dBuV	-		vel V/m)	Lim (dBu\		Margin (dB)	Detector
	1	1155	0.176	7	.39	32.63		40	.02	54.	00	-13.98	AVG
	2	1155	0.823	7	.39	47.03		54	.42	74.	00	-19.58	peak
1.Fa						/m)+Cabl	e F	actor	(dB)-P	re-amp	lifier	Factor	

Page 74 of 133



nt. Po	l.	Verti	cal					
est Mo	de:	TX 8	02.11ac(VF	HT80) Mode	5775MHz (U	J-NII-3)		
emark		No re	•	emission w	hich more th	an 10 dB bel	ow the pr	escribed
00.0 dBu	ıV/m							
					ECC P	art15 Class C 3M Ab	ove-16 Peak	
			1 ×		FC	C Part15 Class C 3M	Above-1G AV	
50								
			\$					
0.0								
1000.000	4900.00	8800.00	12700.00 1	6600.00 20500.0	00 24400.00	28300.00 32200	).00	40000.00 MI
	Freq	uency	12700.00 1 Factor (dB/m)	6600.00 20500.0 Reading (dBu√)	00 24400.00	Limit	Margin	40000.00
No.	1 (N/I		(GD/III)	(abav)	(ubu v/m			
		Hz)				74.00	-19.64	noak
No.	1154	9.409 0.024	7.41	46.95	54.36 39.99	74.00 54.00	-19.64 -14.01	peak AVG

Page 75 of 133

2.Margin value = Level -Limit value



# 3.3. Band Edge Emissions

<u>Limit</u>

# 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

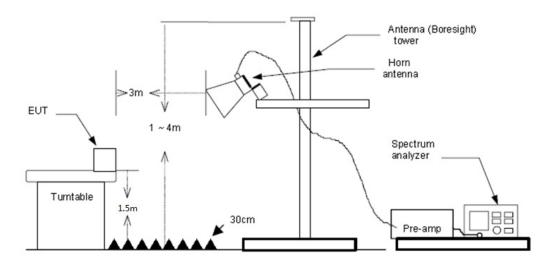
Frequency (MHz)	EIRP Limits (dBm)	Equivalent Field Strength at 3m (dBuV/m)
5150~5250	-27	68.2
5250~5350	-27	68.2
5470~5725	-27	68.2
	-27(Note 2)	68.2
5705, 5005	10(Note 2)	105.2
5725~5825	15.6(Note 2)	110.8
	27(Note 2)	122.2

Note: 1. The following formula is used to convert the equipment isotropic radiated power (eirp) to field

strength:  $E = \frac{1000000\sqrt{30P}}{3}$  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 5 MHz above or below 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.
- 5. The receiver set as follow:



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

## <u>Test Mode</u>

Please refer to the clause 2.3

#### Test Results

Ant. Po	I.	Horiz	zontal					
Test Mo	ode:			e 5180MHz	• •			
Remark	K:	No re limit.	eport for the	emission wh	nich more tha	an 10 dB belo	ow the pr	escribed
100.0 dB	uV/m							
						FCC	Part 15.407 Po	sąk
					1	r F		
						f	C Part 15.407	AY
50			r					
0.0	0 5064.50	5079.50	5094.50 51	09.50 5124.50	5139.50	5154.50 5169.		5199.50 MH
No.	Frequ (MH	-	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	5150	.000	37.21	25.48	62.69	74.00	-11.31	peak
2	5150	.000	37.21	13.96	51.17	54.00	-2.83	AVG
Remark	s: r (dB/m) =							



Ant. Pol.	Vertie	cal												
Test Mode:	TX 8	02.11a Mod	e 5180MHz (	(U-NII-1)										
Remark:	No re limit.	eport for the	emission wh	nich more tha	an 10 dB bel	ow the pr	escribed							
100.0 dBu∀/m														
					~	$\sim$								
					FCC I	Part 15.407 Pe	ak							
				1 X										
FCC Part 15.407 AV														
50														
0.0 5082.800 5094.80	5106.80	5118.80 513	30.80 5142.80	5154.80	5166.80 5178.9	90	5202.80 MHz							
3002.000 3034.00	5108.00	5110.00 51.	50.00 5142.00	5154.00	5100.00 5170.0	80	3202.00 MH2							
. Freq	uency	Factor	Reading	Level	Limit	Margin								
	IHz)	(dB/m)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	Detector							
1 515	0.000	37.21	26.60	63.81	74.00	-10.19	peak							
2 515	0.000	37.21	14.04	51.25	54.00	-2.75	AVG							
	I					I I	I.							
Remarks:	• •		( ) 0 !											

Page 78 of 133

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



Ant. Po	I.	ł	Horiz	zontal											
lest Mo	ode:								(U-NI						
Remark	:		No re imit.		for th	ne e	emiss	ion w	hich n	nore th	an 10 c	dB be	low the	prescribe	ed
100.0 dB	uV/m														_
		~~										FCC	Part 15.407	7 Peak	
													1 X		
												F	CC Part 15	407 AV	
50						~~					_		Ť		
0.0															1
	0 5232.50	524	7.50	5262	.50	527	7.50	5292.5	0 53	07.50	5322.50	5337	.50	5367.50	_  
No.		quenc /Hz)	ÿ		ctor 3/m)		Rea (dB	-		evel uV/m)	Lin (dBu		Margi (dB)	n Detect	tor
1	53	50.00	0	37	.66		25.	41	63	3.07	74	.00	-10.9	3 pea	k
2	53	50.00	0	37	.66		13.	92	51	.58	54	.00	-2.42	2 AVC	G



Ant	. Pol		Vert	ical										
	t Mod			302.11a	Node	5240MI	Hz (	U-NII-	-1)					
	nark:			eport for						an 10 d	B bel	ow the pr	escribe	ed
100.0	) dBu\	//m		•										_
			$\sim$								FCC	Part 15.407 Pr 1	eak	-
			-+								FC	C Part 15.407		{
50		~									_	2 T alt 13.50		
														{
							-							1
0.0														
	215.400	5230.40	5245.40	5260.40	5275	.40 529	0.40	5305	5.40 !	5320.40	5335.	40	5365.40	J MHz
		From		Facto		Deedin	~	Lev	(al	Lim	:4	Margin		
N	lo.	Frequ (MF	-	(dB/n		Readin (dBuV	-		Vei V/m)			Margin (dB)	Detect	or
	1	5350	.000	37.6	6	25.21		62.	87	74.	00	-11.13	pea	k
	2	5350	.000	37.6	6	13.93		51.	59	54.0	00	-2.41	AVC	3
	narks		<b>A</b>								1.6			
		(dB/m) =				m)+Cab	le F	actor	(dB)-F	're-amp	olifier	Factor		

Page 80 of 133

2.Margin value = Level -Limit value



Ant. F	Pol.	Hori	zontal							
Test N	Node:		802.11n(H	,				,		
Rema	ırk:	No r limit		he emis	sion wł	nich mor	e tha	an 10 dB be	elow the pr	escribed
100.0	dBuV/m									
								FC	2 Part 15.407 Pr	sak
									1	
								1 X		
50								\$	CC Part 15.407	AV
30										
0.0 5048.	000 5063.00	5078.00	5093.00	5108.00	5123.00	5138.0	0 !	5153.00 516	8.00	5198.00 MHz
No	Frequ		Facto (dB/m)		ading BuV)	Lev (dBuV		Limit (dBuV/m	Margin ) (dB)	Detector
1	5150	.000	37.21	2	5.01	62.2	2	74.00	-11.78	peak
2	5150	.000	37.21	1	3.94	51.1	5	54.00	-2.85	AVG
Rema	rks: tor (dB/m) =									

Page 81 of 133

2.Margin value = Level -Limit value



Ant. Po	l.	Vert	cal							
Test Mo	ode:	TX 8	802.11n(HT	20) Mod	e 518	0MHz (U	-NII	-1)		
Remark	<b>c</b> :	No r limit		e emissi	on wh	lich more	tha	n 10 dB be	low the pr	escribed
100.0 dB	uV/m		i.							
								FCC	Part 15.407 Pe	ak
							>	<		
							ŧ		CC Part 15.407	AV
50								•		
0.0	0 5063.00	5078.00	5093.00 !	5108.00	5123.00	5138.00	5	153.00 5168	.00	5198.00 MH;
No.		uency Hz)	Factor (dB/m)	Read (dBi	-	Leve (dBuV/		Limit (dBuV/m	Margin (dB)	Detector
1	515	0.000	37.21	26.	14	63.35	;	74.00	-10.65	peak
2	515	0.000	37.21	14.	01	51.22	2	54.00	-2.78	AVG
				-			1			

Page 82 of 133

2.Margin value = Level -Limit value



Ant. Po	I.	Horiz	zontal									
Test Mo	ode:		302.11n(H <sup>-</sup>									
Remark	K:	No r limit	eport for t	he emis	ssion w	hich m	ore tha	an 10 d	B bel	ow the	prescribe	ed
100.0 dB	uV/m											1
									FCC	Part 15.40	7 Peak	
										1 ¥		
									FC	C Part 15	407 AV	
50										Ť		
0.0												
5217.50	0 5232.50	5247.50	5262.50	5277.50	5292.50	) 530)	7.50 !	5322.50	5337.	50	5367.50	MHz
						1						
No.	Frequ (MF		Factor (dB/m)		ading BuV)		vel V/m)	Lim (dBu\		Margi (dB)		or
1	5350	.000	37.66	2	5.17	62	.83	74.	00	-11.1	7 pea	k
2	5350	.000	37.66	1	3.95	51	.61	54.	00	-2.39	9 AVC	3
	r (dB/m) =		a Factor (		Cable	Factor	(dB)-F	Pre-amp	lifier	Factor		
2.Margi	n value =	Level -L	imit value									

Page 83 of 133



Ant. Po	ol		Verti	cal										
Test M					1n/HT2	0) Mode 5	24		(1 I_NII	-1)				
Remar					•	emission			•		lB be	low the r	prescribe	-d
			limit.											/0
100.0 d	lBu¥/m						_							1
	ſ		N								FCC	Part 15.407	Peak	1
												1		
			$\left  \right $								-	X CC Part 15.	07 AV	{
50			<u> </u>			~					_	2		
														1
														{
0.0														
5216.0	00 5231.00	) 524	6.00	5261	.00 52	76.00 529	1.00	5306	.00 t	5321.00	5336	.00	5366.00	MHz
				_										
No.		quen	су		actor	Readin				Lin		Margir	Detect	or
		MHz)			B/m)	(dBuV	·			(dBu				
1	_	50.00			7.66	25.36	_	63.			.00	-10.98	-	
2	53	50.00	0	3	7.66	13.98		51.	64	54	.00	-2.36	AVC	3
Remar		) - 4 -	1000	<u>а</u> Га		/m)+Cabl	~ F	- otor				Fastar		

Page 84 of 133

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



Ant	. Pol	•	Hori	zontal									
Tes	t Moo	de:	ТХ 8	802.11	ac(VH	T20) N	/lode 5	5180M	Hz (U-	-NII-1	)		
Ren	nark:		No r limit.		or the	emiss	ion wł	nich m	ore tha	an 10	dB bel	ow the pr	escribed
100.0	) dBu\	//m											
											FCC I	Part 15.407 Pe	ak
										1 ¥			
										Ť.	ε¢	C Part 15.407	AV
50										*			
0.0													
50	48.000	5063.00	5078.00	5093.0	0 51	08.00	5123.00	513	B.00	5153.00	5168.0	00	5198.00 MHz
										1			
N	lo.	Freque (MH		Fa (dB	ctor /m)	1	ding uV)		vel IV/m)	1	imit uV/m)	Margin (dB)	Detector
	1	5150.	000	37	.21	24	.75	61	.96	7	4.00	-12.04	peak
	2	5150.	000	37	.21	13	.88	51	.09	5	4.00	-2.91	AVG
1.Fa		: (dB/m) = value = L				8/m)+C	Cable F	actor	(dB)-F	Pre-a	nplifier	Factor	

Page 85 of 133



Ant.	Pol.			١	Verti	cal												
Test	Мос	de:		-	TX 8	802.1	1ac(	VH	[20) I	Mode	5180	MHz (	U-N	III-1)				
Rema	ark:				No r imit.		t for	the	emis	sion w	hich	more t	har	n 10 c	IB be	low the p	rescribe	эd
100.0	dBu	√/m																7
																		]
															FCC	Part 15.407 P	eak	
																		1
													X					
													-		Ľ	CC Part 15.40	7 AV	4
50												~	1					1
																		-
													+					1
																		-
0.0																		
5049	9.500	5064	.50	5079	9.50	5094	4.50	510	9.50	5124.9	05	139.50	51	54.50	5169	.50	5199.50	MHz
		_															I	
No	<b>)</b> .		equ (M⊦		;y		acto B/m			lding luV)	1	evel uV/m	) (	Lin dBu\		Margin (dB)	Detect	tor
1		5	150	.00	0	3	7.21		24	.94	6	2.15		74.	00	-11.85	pea	k
2	2	5	150	.00	0	3	7.21		13	.94	5	1.15		54.	00	-2.85	AVG	З
Rema			m) -	: An	tonn	a Fa	ctor	(dP	/m)+(	Cable	Facto	or (dP)	_Pr	a_2m	nlifier	Factor		
							value		11) <b>T</b> (	Janie	acit	n (ub)	-1-10	e-am	himei	าือบเบเ		

Page 86 of 133



Ant	Pol.	I	I	Horiz	onta	I												
Test	t Moo	de:	-	TX 8	02.1′	lac(V	'HT20	) Mod	e 5	240M	Hz (U	-NII-	-1)					
Ren	nark:			No re limit.	eport	for th	ne em	ission	wh	ich m	ore th	an 1	0 dE	3 bel	ow t	he pr	escribe	ed
100.0	dBu\	//m					ĺ											1
		~~~												FCC I	Part 1	5.407 Pe	ak	
															1 X			
												_		FC		t 15.407	AV	
50			L			~~									*			
																		1
												_						
0.0																		
52	23.500	5238.50	5253	3.50	5268	.50	5283.50	529	8.50	5313	3.50	5328.	50	5343.	50		5373.50	MHz
N	lo.	Freq (M	ueno Hz)	су		actor B/m)		eadin dBuV	-		vel IV/m)	1	Lim Bu∨	it ⁄/m)		argin dB)	Detect	tor
	1	535	0.00	0	3	7.66		27.10		64	.76		74.0	00	-9	9.24	pea	k
	2	535	0.00	0	3	7.66		13.95		51	.61		54.(	00	-2	2.39	AV	G
Ren	narks																	
1.Fa	actor	(dB/m)					dB/m)	+Cab	e F	actor	(dB)-l	Pre-	amp	lifier	Fac	tor		
2.M	argin	value =	= Lev	ei -L	imit v	alue												

Page 87 of 133



Ant	. Pol.		Verti	cal											
Tes	t Mod	e:	TX 8	02.11ac(	VHT	20) Mo	de 5	240M	Hz (U-	NII-1)					
Ren	nark:		No r limit	eport for	the e	emissio	ז wh	ich m	ore tha	an 10 c	IB bel	ow th	ne pro	escribe	ed
100.0	) dBu¥	/m													1
											FCC I	Part 15	.407 Pe	ak	-
												X	15.407	AV/	
50			<u> </u>										13.407		
0.0															
	22.000	5237.00	5252.00	5267.00	528	2.00 52	97.00	5312	2.00 !	5327.00	5342.0	)0		5372.00	_  MHz
	lo.		lency	Facto		Readi	-		vel	Lin			rgin	Detect	tor
			Hz)	(dB/m	'	(dBu)		•	V/m)	(dBu		· ·	B)		
	1		0.000	37.6		25.4			.10		.00		0.90	pea	
	2	5350	0.000	37.6	0	13.9	1	51	.63	54	.00	-2	.37	AV	و
1.Fa		dB/m) =		a Factor		/m)+Cat	ole F	actor	(dB)-F	re-am	olifier	Fact	or		

Page 88 of 133

2.Margin value = Level -Limit value



Ant.	Pol.		Hor	izontal										
Test	Мос	le:	ТХ	802.11	n(HT4	0) Mo	de 519	0MHz	(U-NI	I-1)				
Rem	nark:		No limi		for the	emiss	sion wł	nich m	ore tha	an 10 c	B bel	ow the pr	escribe	d
100.0	dBu\	//m												
50								1	]			Part 15.407 Pe		
0.0	70.000	5085.00	5100.00	5115.	00 51	30.00	5145.00	516	D.00 !	5175.00	5190.1	D0	5220.00	MHz
				_										
N	<b>o</b> .		uency Hz)		ctor 3/m)	1	ading Bu∨)		vel V/m)	Lin (dBu)		Margin (dB)	Detecto	or
	1	515	0.000	37	.21	25	.55	62	.76	74	.00	-11.24	peal	<
	2	515	0.000	37	.21	14	.22	51	.43	54	.00	-2.57	AVG	3
	narks		<b>A</b>								- 1:6:	<b>Factor</b>		
		(dB/m) =				3/m)+(	Jable H	actor	(dB)-F	're-am	plifier	Factor		

Page 89 of 133

2.Margin value = Level -Limit value



Ant	. Pol		Vert	ical										
Tes	t Mo	de:	TX 8	302.11n(	HT4	0) Mo	de 519	90MHz	z (U-NI	I-1)				
Rer	nark:		No r limit		the	emiss	sion w	hich m	ore th	an 10 (	dB bel	ow the pr	escribe	ed
100.0	) dBu\	//m												-
						_								1
											~~FEE	Part 15:407 P	eak.	-
								1 X						1
								Ť						
											FC	C Part 15.407	AV	
50								1						
														1
0.0									<b>F F A</b>				5015 50	
50	165.500	5080.50	5095.50	5110.50	512	25.50	5140.50	515	5.50	5170.50	5185.	50	5215.50	MHz
N	10.	Frequ		Fact			ading		vel	Lir		Margin	Detect	tor
		(MI	,	(dB/n			3uV)		ıV/m)			(dB)		$\rightarrow$
	1	5150	000.	37.2	1	26	.51	63	.72	74	.00	-10.28	pea	k
	2	5150	000.	37.2	1	14	.75	51	.96	54	.00	-2.04	AVG	3
Rer	narks													
			Antenr	a Facto	· (dB	s/m)+(	Cable	Factor	(dB)-F	Pre-am	plifier	Factor		

Page 90 of 133

1.Factor (dB/m) = Antenna Factor (d 2.Margin value = Level -Limit value



Page	91	of	133	

Ant.	Pol.			ł	Horiz	zont	al												
<b>Fest</b>	Mode	e:		-	ТХ 8	802. <sup>-</sup>	11n(ŀ	HT4(	)) Mo	de 52	30N	lHz	(U-NII	-1)					
Rem	ark:				No r imit.		rt for	the	emis	sion v	hich	n mo	ore tha	an 10	dB be	elow t	he pr	escril	bed
100.0	dBu¥	/m																	_
															FC	C Part 1	5.407 Pe	eak	
	- [	~~~~		V	~~													1	
																FCC Par	t 15.407	AV ]	
50	_								-			_	~~					Ť	
0.0																			
	04.500	5219.5	0	523	4.50	52	49.50	52	64.50	5279	50	5294	.50 !	5309.50	532	4.50		5354.5	io MH
No	0.	Fre	equ MF		су		acto			ading BuV)		Lev Bu'	∕el V/m)		mit uV/m		argin B)	Dete	ector
1	1	53	50	.00	0		37.6	9	25	5.72		63.	38	74	4.00	-1	0.62	pe	ak
2	2	53	50	.00	0	3	37.6	6	14	.01		51.	67	54	4.00	-2	2.33	A١	/G
Rem	arks:																		



Ant. F	Pol.			Vert	ical													
Test I	Mode	<b>):</b>		TX 8	302.1	l1n(ł	HT4	0) Mc	de 5	23	0MHz	: (U-N	II-1)					
Rema	ark:			No r limit		t for	the	emis	sion	wh	ich m	ore th	an 1	0 dB	bel	ow the pr	escrit	bed
100.0	dBuV/r	n			-										_			_
		~~~~	$\sim$	~~~											FCC F	Part 15.407 Pe	eak	
			•													C D-+ 15 407	¥	
50	/					6							_		FL	C Part 15.407	AV	-
30																		
															_			_
0.0 5204	500 52	219 50	523	4.50	524	9.50	526	64.50	5279	50	5294	4 50	5309.5	0 5	324.5	50	5354.5	 0MH;
No		Freq (M	uen Hz)			acto B/m			ading BuV)	-		vel IV/m)		Limit BuV/		Margin (dB)	Dete	ctor
1		535	0.00	00	3	7.6	6	25	5.53		63	.19		74.00	)	-10.81	pe	ak
2		535	0.00	00	3	7.6	6	13	8.97		51	.63		54.00	)	-2.37	A١	/G
Rema																		

Page 92 of 133

2.Margin value = Level -Limit value



Ant.	Pol.		Horiz	zontal								
<b>Test</b>	t Moc	le:	TX 8	02.11ac(	VHT4	0) Mode	e 5190	MHz (U	-NII-1)			
Ren	nark:		No r		the en	nission	which	more th	an 10 dE	3 bel	ow the pr	escribed
100.0 T	dBu\	//m										
										FCC I	Part 15.407 Pe	ak
								~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	<u></u>	m	
						1 X				1		
										FC	C Part 15.407	AV
50						Ť						
									_			
0.0												
50	76.000	5091.00	5106.00	5121.00	5136.0	0 5151	.00 5	166.00	5181.00	5196.	00	5226.00 MI
N	o.		uency Hz)	Facto (dB/m		(dBuV)	-	.evel BuV/m)	Lim (dBu∨		Margin (dB)	Detector
	1	515	0.000	37.21	1	25.29	6	2.50	74.0	00	-11.50	peak
	2	515	0.000	37.21	1	14.06	5	51.27	54.0	00	-2.73	AVG
	narks				I				1		1	

2.Margin value = Level -Limit value



Ant. Pol		Verti	cal										
Test Mo	de:	TX 8	02.11ac(	VH-	T40) M	ode 5	190M	Hz (U-	NII-1)				
Remark	:	No re limit.		the	emissi	on wh	ich m	ore tha	an 10	dB bel	ow the pr	escribe	d
100.0 dBu	i¥/m												1
							1			FCC	Part 15,407 Pc	eak	
							Î			FC	C Part 15.407	AM	
50						_	*		/			<u> </u>	
0.0	5083.50	5098.50	5113.50	613	28.50	5143.50	5158		5173.50	5188.	F0	5218.50	 
3000.300	5005.30	030.30	3113.30	512	.0.30	5145.50	3130	5.50	3173.30	5100.	JU	J210.J0	MILZ
No.	Freque (MH:		Facto (dB/m	I	Read (dBi	-		vel V/m)	1	nit V/m)	Margin (dB)	Detecto	or
1	5150.	000	37.2	1	25.	18	62	.39	74	.00	-11.61	peal	k
2	5150.	000	37.2	1	14.	24	51	.45	54	.00	-2.55	AVG	3
Remarks									1				

Page 94 of 133

2.Margin value = Level -Limit value



Ant	. Pol	•	Hori	zonta	I									
Tes	t Mo	de:	TX 8	302.11	lac(VH	T40) Mo	ode 5	5230M	Hz (U-	NII-1)				
Ren	nark	:	No i limit		for the	emissic	on wł	nich m	ore tha	an 10 d	IB bel	ow the pr	escribed	
100.0	) dBu	V/m												
											FCC I	Part 15.407 Pe	ak	
	1		$\sqrt{-}$	$\neg$									1	
											FC	C Part 15.407	AV	
50	_												×	
0.0 52	04.500	5219.50	5234.50	5249.	50 52	64.50 5	279.50	5294	4.50 5	5309.50	5324.5	50	5354.50 MHz	
N	o.	Freque	-		ctor	Read	_	1	vel	Lin		Margin	Detector	
-	4	(MH	,		3/m)	(dBu		•	ıV/m) .22	(dBu) 74		× /	n e e la	$\left  \right $
	1	5350			7.66	25.5						-10.78	peak	$\left  \right $
	2	5350	000	3/	7.66	14.0	2	51	.68	54.	00	-2.32	AVG	
Doo	narks													
		s: (dB/m) =	Antenr	na Fao	ctor (dE	3/m)+Ca	ble F	actor	(dB)-F	Pre-am	olifier	Factor		
		value =												

Page 95 of 133



Ant.	Pol.		Ve	rtical												
Test	Mod	e:	TX	802.1	1ac(	VHT	(40)	Node	5230	MHz (	U-I	NII-1)				
Rem	ark:		No lim		t for	the	emiss	sion v	/hich I	nore	tha	n 10	dB bel	low the pi	rescrib	ed
100.0	dBu¥	/m														_
			~~~	~									FCC	Part 15.407 P	eak	
			v										F	CC Part 15.40		:
50	~				L										4	H
-										_						-
0.0 520	3.000 !	5218.00	5233.00	524	8.00	526	3.00	5278.	0 5	93.00	5	308.00	5323.	.00	5353.00	) MHz
N	<b>o</b> .	Frequ (MI	iency Hz)		acto IB/m			ading BuV)		evel uV/n	n)		mit ıV/m)	Margin (dB)	Deteo	ctor
	1	5350	0.000	3	87.6	6	25	5.78	6	3.44		74	.00	-10.56	pe	ak
	2	5350	0.000	3	87.6	6	13	8.95	5	1.61		54	.00	-2.39	AV	'G
Rem	arks:			1		I			1						·	
1.Fa	ctor (	dB/m) =					/m)+(	Cable	Facto	r (dB	)-P	re-an	plifier	Factor		

Page 96 of 133

2.Margin value = Level -Limit value



Ant. Pol		Hori	zontal					
est Mo	de:	TX 8	302.11ac(V	HT80) Mode	5210MHz (U-	-NII-1)		
Remark	:	No r		e emission w	hich more tha	an 10 dB bel	ow the pr	rescribed
100.0 dBu	i¥/m	_						
						FCC	Part 15.407 P	eak
				man man and			2	
		1 X	Y	VV			хс	
50						FC	CC Part 15.407	AV
50			-				Ť	
0.0 5087 000	5117.00	5147.00	5177.00	5207.00 5237.0	0 5267.00	5297.00 5327.	00	5387.00 MI
	Frequ	ency	Factor	Reading	Level	Limit	Margin	
No.	(MF		(dB/m)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1	5150	.000	37.21	25.51	62.72	74.00	-11.28	peak
2	5150	.000	37.21	14.05	51.26	54.00	-2.74	AVG
3	5350	.000.	37.66	26.40	64.06	74.00	-9.94	peak
5	5050	000	37.66	14.03	51.69	54.00	-2.31	AVG
4	5350	.000	37.00	14.05	51.05	04.00	-2.01	

Page 97 of 133

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



Ant. Po	Ι.	Vert	ical							
lest Mo	de:	TX 8	302.11a	c(VH	Г80) Mod	e 5210N	IHz (U-	-NII-1)		
Remark		No r limit		or the	emission	which m	ore the	an 10 dB be	low the pi	rescribed
100.0 dB	uV/m									
								FCC	Part 15.407 P	eak
			~~~~	1 ~~~~	1mm	3				
		1 X		V	V V				3 X	
		2						F	CC Part 15.407	AV .
50		*								
0.0										
5087.00	0 5117.00	5147.00	5177.00	520	7.00 523	7.00 526	7.00	5297.00 5327	.00	5387.00 MH
	Frequ	iency	Fac	tor	Readin	a Le	vel	Limit	Margin	
No.	(MI		(dB/ı	m)	(dBuV	-	ıV/m)	(dBuV/m)	(dB)	Detector
	5150	000	37.2	24	25.51	62	.72	74.00	-11.28	peak
1		.000	J 37.4	21	25.51	02	.12	74.00	-11.20	poun
1 2	5150	0.000	37.2		14.26		.12 .47	54.00	-2.53	AVG
-				21		51			-2.53	AVG
2	5350	0.000	37.2	21 36	14.26	51 63	.47	54.00		•

Page 98 of 133

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



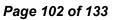
Ant. Pol.		Horiz	zonta	I									
Fest Mode:		TX 8	02.11	la Mo	de 57	45MH	z (U-N	VII-3)					
Remark:		No re limit.	•	for th	e emi	ssion	which	more	e tha	in 10	dB be	low the	prescribed
130.0 dBuV/m													
			$\Gamma$										
			$\prod$							/I			
			7										
			·										
				m.									
	//			f" ~						_			
80													
			{								FCC Pa	rt15.407 U-	NII-3
												Marg	jin-6 dB
			, P		M								
			1		$\sim$	hickness	u					Audulah	hampenshaushappe
whatwaariighin	hyridesteisten militen	www.dr.4emer					and a short of the second s	- www.	n-rin-m	n a suite anna an suite an suite	Alex and all an and a	a ostrustantin katoleo	eero cathanalanala
										_			
30.0													
5650.000 5677	50 570	05.00	5732	50	5760.00	5787	.50 !	5815.00	5	842.50	5870	.00	5925.00 M
													. 1
No.	equen (MHz)			ictor 3/m)		ading BuV)		Level BuV/I	I		mit ıV/m)	Margi (dB)	
1 5	725.00	00	-0	.23	5	0.80	5	50.57	<b>′</b>	12	2.20	-71.6	3 peak
Remarks: 1.Factor (dB/				-1								<b>F</b> (	



Ant. Pol.	Vert	ical					
fest Mode:	TX 8	302.11a Mod	e 5745MHz (	(U-NII-3)			
Remark:	No r limit		emission wh	nich more tha	an 10 dB belo	ow the pr	escribed
30.0 dBuV/m							
80 80 0 0 0 0 0 0 0 0 0 0 0 0 0	5705.00		60.00 5787.50		FCC Part		6 dB
No. Freque	-	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 5725	.000	-0.23	52.68	52.45	122.20	-69.75	peak



Ant. Pol.		Horiz	zontal									
Test Mode:		TX 8	02.11	a Mod	e 5825	5MHz (	(U-NII-	-3)				
Remark:		No re limit.	eport	for the	emiss	ion wh	nich m	ore tha	an 10	dB belo	ow the pr	escribed
130.0 dBuV/m												
80	Murrau Marine 77.50 57		5732.		60.00	¢	581	5.00	5842.50	FCC Par		
No. F	requer	су	Fa	ctor	Rea	ding	Le	vel	Li	mit	Margin	Detector
NO.	(MHz)	)	(dE	8/m)	(dB	uV)	(dBu	V/m)	(dBu	ıV/m)	(dB)	Delector
1	5850.0	00	0	.26	52	.11	52	.37	12	2.20	-69.83	peak
Remarks: 1.Factor (df 2.Margin va					8/m)+C	Cable F	actor	(dB)-F	Pre-an	nplifier	Factor	



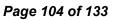


Ant. Pol.	Vert	ical					
Test Mode:	TX 8	302.11a Mod	e 5825MHz (	(U-NII-3)			
Remark:	No r limit		emission wh	nich more tha	an 10 dB belo	ow the pr	escribed
130.0 dBuV/m 80 80 90.0 5650.000 5677.50		5732.50 57	60.00 5787.50	5815.00	W <sub>1</sub>	t15.407 U-NII- Margin - hylawayawaya D0	6 dB
INO. (I	quency MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 58	50.000	0.26	56.45	56.71	122.20	-65.49	peak
Remarks: 1.Factor (dB/m	n) = Antenr	na Factor (dE	3/m)+Cable F	Factor (dB)-F	Pre-amplifier	Factor	
2.Margin value				. ,	•		

CTC Laboratories, Inc. 1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China Tel.: (86)755-27521059 中国国家认证认可监督管理委员会 Accreditation Administration of the People's Republic of China : <u>yz.cnca.cn</u>



X 802.11n(HT2	) Mada 574				
مطلبه مسلبه مسمس	J) MOUE 574	5MHz (U-NI	-3)		
mit.	emission wh	iich more tha	an 10 dB belo	ow the pr	escribed
	50.00 5787.50		enselvationalisticient	Margin - Annahmananahai	6 dB
y Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
0 -0.23	54.04	53.81	122.20	-68.39	peak
	00 5732.50 570 y Factor (dB/m)	00 5732.50 5760.00 5787.50 y Factor Reading (dB/m) (dBuV)	y Factor Reading Level (dB/m) (dBuV) (dBuV/m)	y Factor Reading Level Limit (dB/m) (dBuV) (dBuV/m) (dBuV/m)	y Factor Reading Level Limit Margin (dB/m) (dBuV) (dBuV/m) (dBuV/m) (dB)

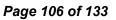




Ant. Pol.		Verti	cal									
Test Mod	de:	TX 8	02.11n(	HT2	0) Mode	e 574	5MHz	(U-NI	I-3)			
Remark:		No re limit.	eport fo	r the	emissic	on wh	nich m	ore tha	an 10 c	B bel	ow the pr	escribed
130.0 dBu\	//m											
80	5677.50	5705.00	5732.50	57	60.00 5	787.50	5815		5842.50		t15.407 U-NII Margin Kr., hor giron Ned	-6 dB
No.	Freque (MH	-	Fact (dB/r		Read (dBu			vel V/m)	Lin (dBu		Margin (dB)	Detector
1	5725	.000	-0.2	23	55.8	35	55	.62	122	.20	-66.58	peak
Remarks 1.Factor 2.Margin	(dB/m) =				3/m)+Ca	ble F	actor	(dB)-F	Pre-am	plifier	Factor	



Ant. Pol	•	Horiz	zontal									
Test Mo	de:	TX 8	802.11n(	HT2	D) Mode	582	5MHz	(U-NI	I-3)			
Remark	:	No r limit.		the	emissio	n wł	nich m	ore that	an 10	dB bel	ow the p	rescribed
130.0 dBu	√/m											
			1			_						
			/			_			`			
		$\frown$	,							$\leq$		
								M.				
								٢٦				
80	/											
										FCC Par	t15.407 U-NI	1-3
									1.		Margin	-6 dB
							Mart		MAL			
and the second	endedaateriskaanse	ad and when the state	Mundaman	mann	and American	won/th	Maller		- 1	adapathation	law when the second	method
مميدولية الملحة	And the second											
30.0												
5650.000	5677.50	5705.00	5732.50	576	0.00 57	87.50	5815	5.00 !	5842.50	5870.0	00	5925.00 MHz
	_											1 1
No.	Frequ	-	Fact	I	Readi	-		vel		mit	Margin	Detector
4	(MH		(dB/n	'	(dBu\	·		V/m)		uV/m)	(dB)	/
1	5850	0.000	0.26	5	48.1	(	48	.43	12	2.20	-73.77	peak
Remarks												
1.Factor		- Antenn	a Facto	r (dB	/m)+Cal	ole F	actor	(dB)-F	Pre-ar	nplifier	Factor	
	value =				,			· · · · ·				

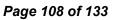




Ant. Pol		Vertio	cal					
Test Mo	de:	TX 8	02.11n(H	T20) Mode 58	25MHz (U-NI	I-3)		
Remark	:	No re limit.	eport for th	ne emission w	hich more that	an 10 dB bel	ow the pr	escribed
130.0 dBu	₩/m		Î					
30.0	5677.50 5	705.00	5732.50	5760.00 5787.5	0 5815.00 5	Vu.	15.407 U-NIL: Margin - ( Margin - 1 Margin - 1 0	i dB
No.	Freque	ncy	Factor			Limit	Margin	Detector
	(MHz	·	(dB/m)		(dBuV/m)	(dBuV/m)	(dB)	200000
1	5850.0	00	0.26	52.02	52.28	122.20	-69.92	peak
				dB/m)+Cable	Factor (dB)-F	Pre-amplifier	Factor	



Ant. Pol.		Horiz	zontal					
Fest Mod	de:	TX 8	802.11ac(VH	T20) Mode 5	745MHz (U-	NII-3)		
Remark:		No r		emission wh	nich more tha	an 10 dB bel	ow the pr	escribed
130.0 dBu\	√/m	1						
			Start Start Start					
			( )					
80	4 -							
						FCC Par	t15.407 U-NII-	3
							Margin -	6 dB
r				<u>и</u> .				
			1.14	When the second se			1	
Winhow	Manaderstation	munnahand	w.uk	""In sugar with the second	Alemental and a second s	haanna an a	international second	chandrate a try with the
30.0								
5650.000	5677.50	5705.00	5732.50 57	60.00 5787.50	5815.00 5	842.50 5870.0	)0	5925.00 MHz
	Frequ		Factor	Reading	Level	Limit	Margin	
No.	(Mł	-	(dB/m)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1		5.000	-0.23	(dBdV) 49.30	49.07	122.20	-73.13	peak
I	5720	0.000	-0.25	40.00	43.07	122.20	-75.15	peak
Remarks								
.Factor	(dB/m) =		a Factor (di imit value	3/m)+Cable F	Factor (dB)-F	Pre-amplifier	Factor	



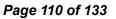


Ant. Pol.		Vertical						
Test Mode:		TX 802.11ac(VHT20) Mode 5745MHz (U-NII-3)						
Remark:		No report for the emission which more than 10 dB below the prescribed limit.						
130.0 dBuV/m								
30.0	5677.50 5	705.00	1 5732.50 57	60.00 5787.50		FCC Part		6 dB
No.	Frequer (MHz		Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	5725.0	·	-0.23	50.25	50.02	122.20	-72.18	peak
				3/m)+Cable F	Factor (dB)-P	re-amplifier	Factor	

CTC Laboratories, Inc. 1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China Tel.: (86)755-27521059 下ax: (86)755-27521011 Http://www.sz-ctc.org.cn For anti-fake verification, please visit the official website of Certification and Accreditation Administration of the People's Republic of China : yz.cnca.cn



Ant. Pol	•	Hori	zontal									
Test Mo	de:	TX 8	302.11ac(	VHT2	20) Mod	le 5	825M	Hz (U	-NII-3	)		
Remark		No r limit		the er	mission	ı wh	nich m	ore th	an 10	dB bel	ow the pr	rescribed
130.0 dBu	V/m											
			]									
											$\sim$	
								man				
80												
										FCC Pa	t15.407 U-NII	-3
											Margin	-6 dB
									M.			
		ويعاقبهم والمحمد ومعامير	والجهير والمعاد والمراد والمراد والمراد والمراد المراد والمراد و والمراد والمراد و والمرد والمراد والمر والمراد والمر	Munichardenth	athrony and frankly for	weather	unker		"WU 1	Hunderscolage	**************	optimited with the
de analysis	llefer i stadie and and	A charter to the										
30.0												
5650.000	5677.50	5705.00	5732.50	5760.	00 578	37.50	581	5.00	5842.50	5870.	00	5925.00 MH:
No.	Frequ	lency	Facto	or F	Readin	ng	Le	vel	Li	imit	Margin	Detector
INO.		Hz)	(dB/m		(dBuV	_	(dBu	V/m)	(dB	uV/m)	(dB)	Detector
1	5850	0.000	0.26	-	49.16	\$	49	.42	12	2.20	-72.78	peak
Remarks	:											
			na Factor		n)+Cab	le F	actor	(dB)-F	Pre-ai	nplifier	Factor	
Margin	value =	Level -L	_imit valu	е								

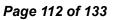




	802.11ac(VH <sup>*</sup> report for the t.				ow the pres	cribed
limit		emission wh	iich more tha	an 10 dB bel	ow the pres	scribed
130.0 dBuV/m						
80 30.0 5650.000 5677.50 5705.00		0.00 <b>5787.50</b>	5815.00	Nu .	t15.407 U-NII-3 Margin -6 d	
No. Frequency	Factor	Reading	Level	Limit	Margin	Detector
(MHz)	(dB/m)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1 5850.000	0.26	50.95	51.21	122.20	-70.99	peak



Horiz	zontal					
TX 8	02.11n(HT4	0) Mode 575	5MHz (U-NI	I-3)		
		emission wh	nich more tha	an 10 dB belo	ow the pr	escribed
	J met of a				Margin -(	i dB
Constraint and an						
5705.00	5732.50 576	60.00 5787.50	5815.00 5	842.50 5870.0	0	5925.00 MHz
	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
25.000	-0.23	49.37	49.14	122.20	-73.06	peak
	TX 8 No re limit.	TX 802.11n(HT44 No report for the limit.	TX 802.11n(HT40) Mode 575 No report for the emission while imit.	TX 802.11n(HT40) Mode 5755MHz (U-NI No report for the emission which more that limit.	TX 802.11n(HT40) Mode 5755MHz (U-NII-3) No report for the emission which more than 10 dB belo limit.	TX 802.11n(HT40) Mode 5755MHz (U-NII-3)         No report for the emission which more than 10 dB below the prilimit.         Image: Comparison of the emission which more than 10 dB below the prilimit.         Image: Comparison of the emission which more than 10 dB below the prilimit.         Image: Comparison of the emission which more than 10 dB below the prilimit.         Image: Comparison of the emission which more than 10 dB below the prilimit.         Image: Comparison of the emission of t

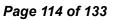




Ant. Pol		Verti	cal					
Test Mo	de:	TX 8	02.11n(HT4	0) Mode 575	5MHz (U-NI	I-3)		
Remark	:	No re limit.		emission wh	nich more tha	an 10 dB bel	ow the pr	escribed
130.0 dBu	ıV/m							
30.0	5 5677.50 5	Weishard 705.00		1 <u>60.00</u> 5787.50		FCC Par		6 dB
No.	Frequer (MHz		Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	5725.0	00	-0.23	51.18	50.95	122.20	-71.25	peak
				3/m)+Cable F	Factor (dB)-F	Pre-amplifier	Factor	



est Mod	<u>.</u> .												
	е.		X 802	2.11n(H	HT40	) Mod	le 579	5MHz	2 (U-N	II-3)			
emark:			o rep nit.	ort for	the e	emissi	ion wh	nich m	ore th	an 10	dB bel	ow the pr	escribed
30.0 dBuV/	'n												
			J										
												$\mathbf{X}$	
	//					(	martin	MAR APAN					
80	/							]					
											FCC Par	t15.407 U-NII	.3
												Margin -	
						MN			m	1			
when worker	Network	10 Annie martite	undrater	when approved	176p-Lanor					"New York'n A	erne der Anderson	llouter table to a start	uted see the particula
0.0													
5650.000 \$	5677.50	5705.0	)0 5	732.50	5760	).00	5787.50	581	5.00	5842.50	5870.0	00	5925.00 MH;
No.	Freq		/	Facto	I	Rea	-		vel	1	imit	Margin	Detector
	<b>`</b>	Hz)		(dB/m		(dBi		-	iV/m)	-	uV/m)	(dB)	
1	585	0.000	)	0.26	5	48.	82	49	.08	12	2.20	-73.12	peak





Ant. Pol	•	Verti	cal								
Test Mo	de:	TX 8	02.11n(ł	HT40) N	Node 57	95MHz	: (U-NI	I-3)			
Remark	:	No r		the em	iission v	/hich m	ore that	an 10	dB bel	ow the pr	escribed
130.0 dBu	V/m										
80 30.0 5650.000		,Mechanical (1997)	5732.50			50 581		5842.50		nt15.407 U-NII Margin Ang Ang Ang Ang Ang Ang Ang Ang Ang Ang	-6 dB
No.		uency Hz)	Facto (dB/m		eading dBuV)		vel V/m)		mit uV/m)	Margin (dB)	Detector
1	``	0.000	0.26		48.68		.94		2.20	-73.26	peak
Remarks 1.Factor 2.Margin	(dB/m) =				)+Cable	Factor	(dB)-F	Pre-ar	nplifier	Factor	



Ant. Pol.	Horizontal					
Test Mode:	TX 802.11ac(VH	T40) Mode 5	755MHz (U-	NII-3)		
Remark:	No report for the limit.	emission wh	nich more tha	an 10 dB belo	ow the pre	escribed
130.0 dBuV/m 80 30.0 5650.000 5677.50 570		60.00 5787.50		FCC Par 5842.50 5870.0		dB
No. Frequen (MHz)	-	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 5725.00	00 -0.23	51.44	51.21	122.20	-70.99	peak
MHz)	) (dB/m)	(dBu∀)	(dBuV/m)	(dBuV/m)	(dB)	





Ant. Pol.	.	Verti	cal					
Test Mo	de:	TX 8	02.11ac(VH	T40) Mode 5	5755MHz (U-	NII-3)		
Remark:		No re limit.	eport for the	emission wh	nich more tha	an 10 dB bel	ow the pr	escribed
130.0 dBu	V/m							
80 	5677.50 S	1705.00	5732.50 57	60.00 5787.50		FCC Par		-6 dB
No.	Freque (MHz		Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	5725.0	<i>'</i>	-0.23	51.22	50.99	122.20	-71.21	peak
Remarks 1.Factor	::	Antenna	a Factor (dE	51.22 B/m)+Cable F				peak



Ant. Po	Ι.		Hori	zontal									
Test Mo				802.11a									
Remark	:		No r limit		or the	emiss	ion wł	nich m	ore tha	an 10	dB bel	ow the pr	escribed
130.0 dB	uV/m												
80 			Alternation 2005.00	5732.5		ALLAN A	5787.50	) 581	5.00	5842.50	gange inderstellere	rt15.407 U-NII Margin ym(w-4.44/h-u-Wm	-6 dB
No.		equer		Fac			ding	Lev			imit	Margin	Detector
		MHz		(dB/		•	uV) ⊼o	•		•	uV/m)	(dB)	
1	5	350.0	00	0.2	26	47.	.78	48.	.04	12	2.20	-74.16	peak
Remarks		m) = 4	ntenn	a Fact	or (dF	3/m)+C	ahle i	actor	(dB)-P	Pre-21	mplifier	Factor	
	dB/ı					3/n	n)+C	n)+Cable F	n)+Cable Factor	n)+Cable Factor (dB)-F	n)+Cable Factor (dB)-Pre-ar	n)+Cable Factor (dB)-Pre-amplifier	n)+Cable Factor (dB)-Pre-amplifier Factor





Ant. Pol	•	Verti	cal					
Test Mo	de:	TX 8	02.11ac(VH	T40) Mode 5	5795MHz (U-	-NII-3)		
Remark	:	No re limit.		emission wl	nich more tha	an 10 dB bel	ow the pr	escribed
130.0 dBu	V/m							
80		h			h h h h h h h h h h h h h h h h h h h	FCC Par	rt15.407 U-NII- Margin -	
30.0	alan ala kanalakan kanalakan asar							
5650.000	5677.50	5705.00	5732.50 57	60.00 5787.50	5815.00	5842.50 5870.0	00	5925.00 MHz
No.	Freque (MH	z)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)			Detector
1	5850	.000	0.26	49.14	49.40	122.20	-72.80	peak
	(dB/m) =		a Factor (dE	3/m)+Cable I	<sup>-</sup> actor (dB)-F	Pre-amplifier	Factor	



EN

Ant. Pol	-	Horiz	zontal					
Test Mo	de:	TX 8	02.11ac(VH	T80) Mode 5	5775MHz (U-	NII-3)		
Remark	:	No re limit.	eport for the	emission wh	nich more tha	an 10 dB bel	ow the pr	escribed
130.0 dBu	iV/m							
30.0		5705.00		60.00 5787.50		FCC Par	t15.407 U-NII- Margin -	-6 dB
No.	Freque	ency	Factor	Reading	Level	Limit	Margin	Detector
	(MH:	'	(dB/m)	(dBuV)	(dBuV/m)	. ,	(dB)	
1	5725.		-0.23	48.44	48.21	122.20	-73.99	peak
2	5850.	000	0.26	49.28	49.54	122.20	-72.66	peak

CTC Laboratories, Inc. 1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China Tel.: (86)755-27521059 中国国家认证认可监督管理委员会 Accreditation Administration of the People's Republic of China : yz.cnca.cn



		Verti	cal									
est Mo	de:	TX 8	802.11ac	(νητε	80) Moo	de 5	775M	Hz (U-	-NII-3)			
Remark	:	No r limit.		the er	nissior	ז wh	ich m	ore that	an 10	dB bel	ow the pr	escribed
30.0 dBu\	√/m											
80	-anaugh Araumire A	erera laije et ortaarte		nnghana dha naad	put				Madhy din		15.407 U-NII- Margin -I	6 dB
).0 5650.000	5677.50	5705.00	5732.50	5760.0	0 578	37.50	581	5.00 5	842.50	5870.0	0	5925.00 MH
No.	Frequ	lency	Facto	or F	Readi	ng	Le	vel	Li	mit	Margin	5925.00 MH
5650.000	Frequ (MI			or f		ng /)	Le (dBu		Li (dBu	mit		

2.Margin value = Level -Limit value

EN

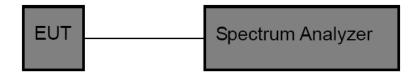


## 3.4. Bandwidth Test

<u>Limit</u>

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

## **Test Configuration**



#### Test Procedure

EN

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	



6dB Bandwidth Test			
Spectrum Parameters	Setting		
Attenuation	Auto		
Span	>6 dB Bandwidth		
RBW	100 kHz		
VBW	VBW>=3*RBW		
Detector	Peak		
Тгасе	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		
Тгасе	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 2.3

#### Test Results

Please see the Appendix A1, A2, A3



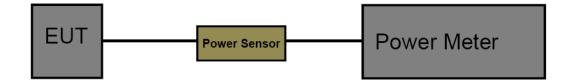
## 3.5. Output Power Test

## <u>Limit</u>

FCC Part 15 Subpart E (15.407)			
Test Item	Limit Frequency Range(M		
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	

RSS-247			
Test Item	Limit	Frequency Range(MHz)	
Conducted Output Power	/	5150~5250	
	/		
	/ Other devices: 250mW or 11 +10*log <sub>10</sub> <sup>B</sup> dBm, Whichever is less (B=99% OBW in MHz)	5250~5350	
	All devices: 250mW or 11 +10*log <sub>10</sub> <sup>B</sup> dBm, Whichever is less (B=99% OBW in MHz)	5500~5700	
	1W	5725~5850	

## Test Configuration



### Test Procedure

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

### <u>Test Mode</u>

Please refer to the clause 2.3

### <u>Test Result</u>

Please see the Appendix B



## 3.6. Power Spectral Density Test

## <u>Limit</u>

### 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).

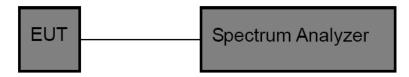
### For the 5.47~5.725GHz band:

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<sub>Tx</sub>>6dBi, then PSD =30-(G<sub>Tx</sub>-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.

### **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

CTC Laboratories, Inc.



- (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 2.3

#### Test Result

Please see the Appendix C

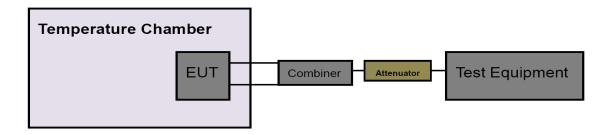


## 3.7. Frequency Stability Measurement

### <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	5150~5250		
	transmitter center frequency	5250~5350		
	tolerance shall be ±20 ppm maximum for the 5 GHz band	5500~5700		
	(IEEE 802.11n specification)	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: 10 kHz, VBW=10 kHz with peak detector and maxhold settings.
- (5) The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value.
- (6) Extreme temperature is -30°C~50°C

NOTE: The EUT was set to continuously transmitting in continuously un-modulation transmitting mode.

### Test Mode

Please refer to the clause 2.3

### <u>Test Result</u>

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.

### <u>Test Result</u>

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



# 3.9. Dynamic Frequency Selection(DFS)

## Requirement

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

	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.

## <u>LIMIT</u>

### 1. DFS Detection Thresholds

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

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

Paramenter	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.			
<ul> <li>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.</li> <li>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</li> </ul>			

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.

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
1	1	Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in Table 5a 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	$\operatorname{Roundup}\left\{ \begin{pmatrix} \frac{1}{360} \end{pmatrix}, \\ \begin{pmatrix} \frac{19 \cdot 10^6}{\operatorname{PRI}_{\mu \text{sec}}} \end{pmatrix} \right\}$	60%	30

#### Table 5 Short Pulse Radar Test Waveforms

CTC Laboratories, Inc.





2	1-5	150-230	23-29	60%	30	
3	3 6-10 200-500 16-18			60%	30	
4	11-20	200-500	12-16	60%	30	
	Agg	80%	120			
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

$$\left\{ \left(\frac{1}{360}\right) \cdot \left(\frac{19 \cdot 10^6}{3066}\right) \right\}$$

<sup>7</sup> = Round up {17.2} = 18.

Table 5a - Pulse Repetition Intervals Values for Test A

Pulse Repetition Frequency	Pulse Repetition Frequency	Pulse Repetition Interval
Number	(Pulses Per Second)	(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
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.

Tahla 7	Frequency	Honning	Dadar	Toot	Wayoform
	riequency	Topping	rauar	icai	vaveloitti

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

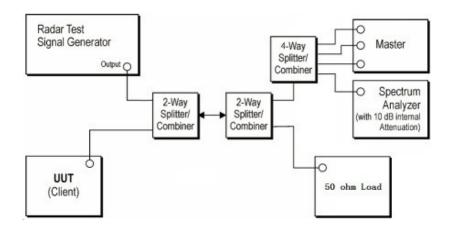
- 1) A 50 ohm load is connected in place of the spectrum analyzer, and the spectrum analyzer is connected to place of the master
- 2) The interference Radar Detection Threshold Level is -62dBm + 0dBi +1dB = -61dBm that had been taken into account the output power range and antenna gain.
- 3) The following 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 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.

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**

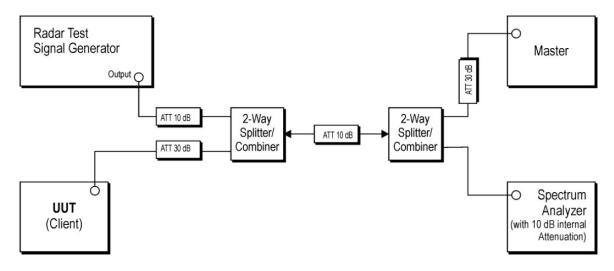


#### Radar Waveform Calibration Result

Not Applicable

### **Test Configuration**

Setup for Client with injection at the Master



### 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 2.3

#### Test Results

Passed

Not Applicable