

## CTC Laboratories, Inc.

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TEST REPORT						
Report No	CTC20231460E03					
FCC ID······:	2ATHM-CAW23A301					
Applicant:	AIR-U Co., Ltd.					
Address	Yamaki 2nd BLDG, 8F, 3-4-2, Nishishinbashi, Minato-ku, Tokyo, Japan					
Manufacturer	AIR-U Co., Ltd.					
Address	Yamaki 2nd BLDG, 8F, 3-4-2, Nishi Japan	shinbashi, Minato-ku, Tokyo,				
Product Name:	4G Wireless Data Terminal					
Trade Mark	CLOUD AiR-WiFi					
Model/Type reference:	CAW23A301					
Listed Model(s)	1					
Standard:	FCC Part 15 Subpart E 15. 407					
Date of receipt of test sample:	Jul. 03, 2023					
Date of testing	Jul. 04, 2023 ~ Jul. 25, 2023					
Date of issue	Aug. 03, 2023					
Result	PASS					
Compiled by:		<del>-</del>				
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Supervised by:		Tric shang				
(Printed name+signature)	Eric Zhang					
Approved by:		Jenas				
(Printed name+signature)	Totti Zhao	/*				
Testing Laboratory Name:	CTC Laboratories, Inc.					
Address	1-2/F., Building 2, Jiaquan Building Shenzhen, Guangdong, China	, Guanlan High-Tech Park,				
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# 1. TEST SUMMARY

## 1.1. Test Standards

The tests were performed according to following standards:

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

<u>RSS-247\_Issue 2 February 2017</u> — Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices

<u>RSS-Gen</u> — General Requirements for Compliance of Radio Apparatus KDB 662911 D01: Multiple Transmitter Output v02r01.

## 1.2. Report version

Revised No.	Date of issue	Description
01	Aug. 03, 2023	Original



## 1.3. Test Description

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

Note: "N/A" is not applicable.

The measurement uncertainty is not included in the test result.



## 1.4. Test Facility

### CTC Laboratories, Inc.

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

### Laboratory accreditation

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

### A2LA-Lab Cert. No.: 4340.01

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

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

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

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

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

## **1.5. Measurement Uncertainty**

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

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



Test Items	Measurement Uncertainty	Notes
Emission Bandwidth	±0.0196%	(1)
Maximum Conduct Output Power	±0.766dB	(1)
Power Spectral Density	±1.22dB	(1)
Band Edge Measurements	±1.328dB	(1)
Unwanted Emissions Measurement	9kHz-1GHz: ±0.746dB 1GHz-40GHz: ±1.328dB	(1)
Frequency Stability	±2.76%	(1)
Conducted Emissions 9kHz~30MHz	±3.08 dB	(1)
Radiated Emissions 30~1000MHz	±4.51 dB	(1)
Radiated Emissions 1~18GHz	±5.84 dB	(1)
Radiated Emissions 18~40GHz	±6.12 dB	(1)

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

## 1.6. Environmental conditions

	Temperature	22 °C ~ 28°C
Normal Condition	Relative humidity	50% ~ 65%
Condition	Voltage	The equipment shall be the nominal voltage for which the equipment was designed.
Extreme	Temperature	Measurements shall be made over the extremes of the operating temperature range as declared by the manufacturer
Condition	Voltage	Measurements shall be made over the extremes of the operating voltage range as declared by the manufacturer

Normal Condition T <sub>N</sub> =Normal Temperature		22 °C ~ 28°C
Extreme Condition	T <sub>L</sub> =Lower Temperature	0°C
	T <sub>H</sub> =Higher Temperature	45 °C



# 2. GENERAL INFORMATION

## 2.1. Client Information

Applicant:	AIR-U Co., Ltd.
Address:	Yamaki 2nd BLDG, 8F, 3-4-2, Nishishinbashi, Minato-ku, Tokyo, Japan
Manufacturer:	AIR-U Co., Ltd.
Address:	Yamaki 2nd BLDG, 8F, 3-4-2, Nishishinbashi, Minato-ku, Tokyo, Japan
Factory:	Shenzhen uCloudlink Network Technology Co., Ltd.
Address:	3rd Floor, A part of Building 1, Shenzhen Software Industry Base, Nanshan District Xuefu Road, 518057 Shenzhen City, Guangdong, China

## 2.2. General Description of EUT

Product Name:	4G Wireless	Data Terminal						
Trade Mark:	CLOUD AiR-	CLOUD AiR-WiFi						
Model/Type reference:	CAW23A301	1						
Listed Model(s):	1							
Power supply:		n USB Cable n 3900mAh Li-i	on Battery					
Hardware version:	G40_MB_VE	3						
Software version:	K5_TSV3.2.	000.002.23070	3					
Antenna type:	Internal Ante	enna						
Antenna gain:	U-NII-1: 2.20dBi Max U-NII-3: 1.52dBi Max							
Technical index for 5G WIFI								
Operation Band:	⊠U-NII-1	□U-NII-2A	U-NII-2C		⊠U-NII	-3		
Operation Frequency Range:	U-NII-1:	5180MHz~52	40MHz					
Operation requency Mange.	U-NII-3:	5745MHz~58	25MHz					
	802.11a	🛛 20MHz						
Support bandwidth:	802.11n	🛛 20MHz	🛛 40MHz					
	802.11ac	🛛 20MHz	A0MHz	$\boxtimes$	80MHz	□ 160MHz		
Modulation:	802.11a: OFDM (BIT/SK, QPSK, BPSK, 16QAM) 802.11n: OFDM (BIT/SK, QPSK, BPSK, 16QAM, 64QAM) 802.11ac: OFDM (BIT/SK, QPSK, BPSK, 16QAM, 64QAM, 256QAM)							
Bit Rate of Transmitter:	802.11n: up	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. Accessory Equipment information

Equipment Information							
Name	ne Model		Manufacturer				
Notebook	ThinkBook 14G3 ACL	MP246QDR	Lenovo				
1	1	1	1				
Cable Information	Cable Information						
Name	Shielded Type	Ferrite Core	Length				
Type-C Cable	With	Without	1M				
Test Software Information	Test Software Information						
Name	Versions	1	1				
QRCT4.exe	V4.0.00172.0	1	/				



## 2.4. Operation state

Operation Frequency List:

	20MHz E	20MHz Bandwidth		40MHz Bandwidth		80MHz Bandwidth	
Band (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	
	36	5180	20	<b>F100</b>			
U-NII-1	40	5200	38	5190	42	5210	
	44	5220	46	5230			
	48	5240	40	5230			
	149	5745	151	5755	155	5775	
	153	5765	151	5755			
U-NII-3	157	5785					
	161	5805	159	5795			
	165	5825					

### Test channel is below:

Operating	Test	20MHz		40MHz		80MHz	
Band	Channel	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
	CH∟	36	5180	38	5190	/	/
U-NII-1	$CH_M$	40	5200	/	/	42	5210
	СН <sub>Н</sub>	48	5240	46	5230	/	/
	CH∟	149	5745	151	5755	/	/
U-NII-3	$CH_M$	157	5785	/	/	155	5775
	CH <sub>H</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.

For DFS test items

The EUT has been tested under test mode condition. The Applicant provides software to control the EUT for staying in DFS mode for testing.



### **Measurement Instruments List** 2.5.

Tonsce	Tonscend JS0806-2 Test system										
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated until						
1	MXA Signal Analyzer	Keysight	N9020A	MY46471737	Dec. 16, 2023						
2	Spectrum Analyzer	R&S	FSU26	100105	Dec. 16, 2023						
3	Spectrum Analyzer	R&S	FSV40-N	101331	Mar. 14, 2024						
4	MXG Vector Signal Generator	Agilent	N5182A	MY47420864	Dec. 16, 2023						
5	PSG Analog Signal Generator	Agilent	E8257D	MY46521908	Dec. 16, 2023						
6	Power Sensor	Keysight	U2021XA	MY55130004	Mar. 14, 2024						
7	Power Sensor	Keysight	U2021XA	MY55130006	Mar. 14, 2024						
8	Wideband Radio Communication Tester	R&S	CMW500	102414	Dec. 16, 2023						
9	High and low temperature box	ESPEC	MT3035	/	Mar. 24, 2024						
10	JS1120 RF Test system	TONSCEND	v2.6	/	/						

Radiate	Radiated emission(3m chamber 2)									
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated Until					
1	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	9168-1013	Dec. 07, 2024					
2	Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-647	Dec. 07, 2024					
3	Loop Antenna	LAPLAC	RF300	9138	Dec. 16, 2023					
4	Spectrum Analyzer	R&S	FSU26	100105	Dec. 16, 2023					
5	Spectrum Analyzer	R&S	FSV40-N	101331	Mar. 14, 2024					
6	Pre-Amplifier	SONOMA	310	186194	Dec. 16, 2023					
7	Low Noise Pre-Amplifier	EMCI	EMC051835	980075	Dec. 16, 2023					
8	Test Receiver	R&S	ESCI7	100967	Dec. 16, 2023					
9	3m chamber 2	Frankonia	EE025	/	Oct. 23, 2024					

Radiate	Radiated emission(3m chamber 3)										
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated Until						
1	Trilog-Broadband Antenna	Schwarzbeck	VULB 9163	01026	Dec. 18, 2024						
2	Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-647	Dec. 01, 2024						
3	Test Receiver	Keysight	N9038A	MY56400071	Dec. 16, 2023						
4	Broadband Premplifier	SCHWARZBECK	IWARZBECK BBV9743B		Dec. 16, 2023						
5	Mirowave Broadband Amplifier	SCHWARZBECK	BBV9718C	111	Dec. 16, 2023						
6	Pre-Amplifier	R&S	SCU-26	10033	Dec. 16, 2023						
7	Pre-Amplifier	R&S	SCU-40	10030	Dec. 16, 2023						
8	Board-Band Horn Antenna	Schwarzbeck	BBHA 9170	BBHA 9170-497	Dec. 16, 2023						
9	3m chamber 3	YIHENG	EE106	/	Sep. 09, 2023						



Condu	Conducted Emission										
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated until						
1	LISN	R&S	ENV216	101112	Dec. 16, 2023						
2	LISN	R&S	ENV216	101113	Dec. 16, 2023						
3	EMI Test Receiver	R&S	ESCS30	100353	Dec. 16, 2023						

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

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

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



# 3. TEST ITEM AND RESULTS

## 3.1. Conducted Emission

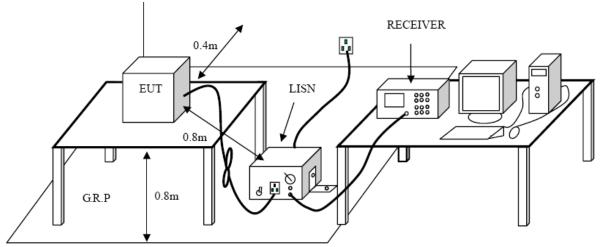
## <u>Limit</u>

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

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

\* Decreases with the logarithm of the frequency.

## Test Configuration



## Test Procedure

- 1. The EUT was setup according to ANSI C63.10:2013 requirements.
- 2. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface.
- 3. The EUT and simulators are connected to the main power through a line impedances stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment.

The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs)

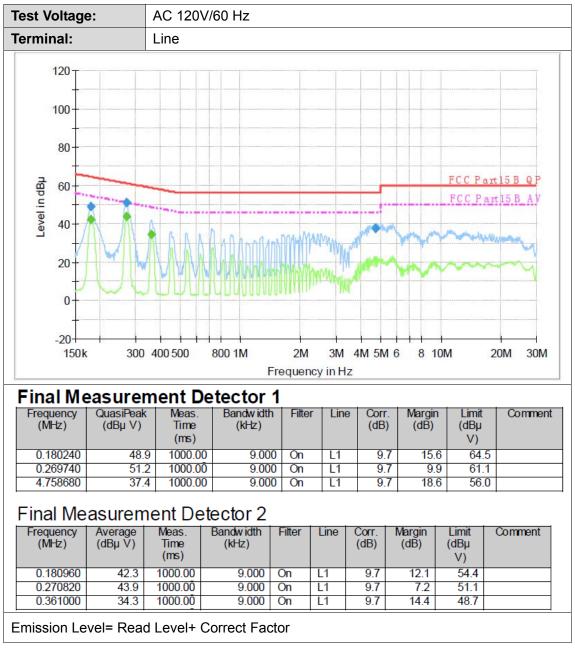
- 4. Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.
- 5. The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.
- 6. Conducted Emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.
- 7. During the above scans, the emissions were maximized by cable manipulation.

### Test Mode

Please refer to the clause 2.4.

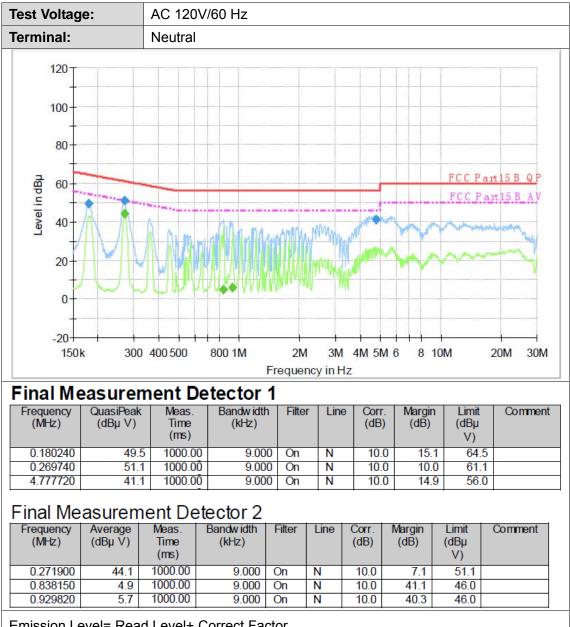


FN





FN



Emission Level= Read Level+ Correct Factor



## 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
	54.00	Average
Above 1 GHz	74.00	Peak

### Note:

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

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

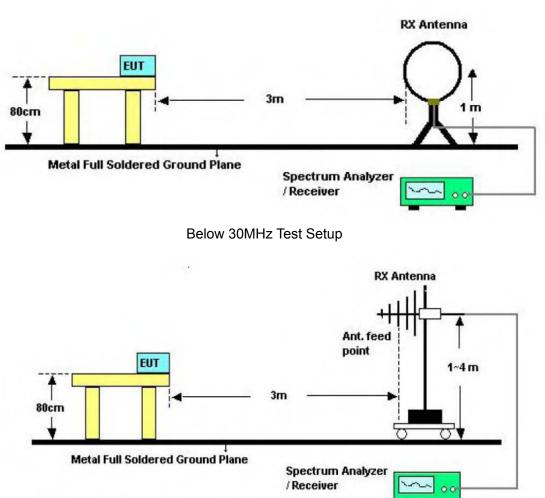
## Limits of unwanted emission out of the restricted bands FCC CFR Title 47 Part 15 Subpart C Section 15.407(b)/ RSS-247 6.2.1.2 & RSS-247 6.2.4.2

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

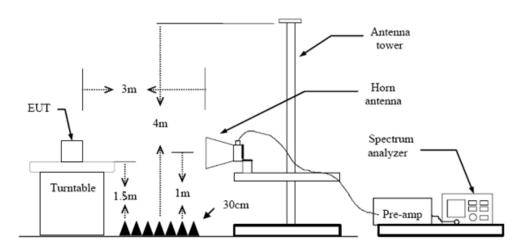
Note: 1. The following formula is used to convert the equipment isotropic radiated power (eirp) to field  $1000000\sqrt{30P}$ 

strength:  $E = \frac{1000000\sqrt{30P}}{2}$  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

## 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 40GHz:

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

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

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

### Test Mode

Please refer to the clause 2.4.

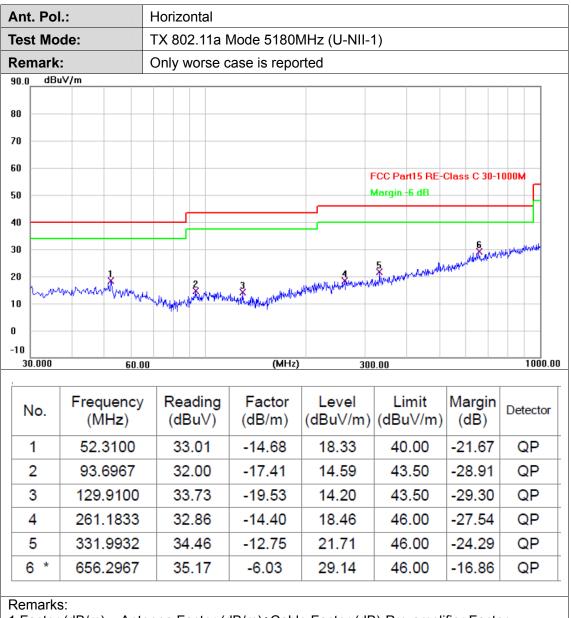
### Test Result

### 9 KHz~30 MHz

From 9 KHz to 30 MHz: Conclusion: PASS

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







Ant. Pol.: Test Mode:			Vertical								
			TX 802.11a Mode 5180MHz (U-NII-1)								
Rema		(	Only worse case is reported								
90.0	dBuV/m										
80											
70											
60											
50							FCC Part15 RE-C Margin -6 dB	lass C 30-1	ооом Г		
							-				
40						+					
30							5	6	Mound		
www.www.www.								144			
20 10	*~~~	rybringer	han and the second	MANNUNA	in and the second of the second of the	North The Instantion of the Instantion	Wheeler and Martin And Shanky				
m	*	rythinger	lown openall	MAL MUNIC	hannaddhaidheidheidheim All	almost an	ากและสมเหลือเจ้า				
10 -10 -			ll-and soften all	MANN AND							
10		60.00	the way when when	Arp Muria	(MHz)		лулық		1000.0		
10 -10	DO Erequ	60.00	Read (dBu	ding			Limit	Margin (dB)			
10 0 -10 30.00	Frequ	60.00 lency Hz)	Read	ding uV)	(MHz) Factor	Level	Limit	Margin	1000.0		
10 0 -10 0 30.00	Frequ (Mł	60.00 lency Hz) 033	Read (dBu	ding u∨) 75	(MHz) Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	1000.1		
10 -10 30.00 No.	00 Frequ (Mł 34.2	60.00 lency Hz) 033 067	Read (dBu	ding u∨) 75 44	(мнz) Factor (dB/m) -16.05	300 Level (dBuV/m) 16.70	Limit (dBuV/m) 40.00	Margin (dB) -23.30	Detector		
10 0 -10 30.00 No. 1 2	Frequ (Mł 34.2 57.8	60.00 lency Hz) 033 067 3000	Read (dBu 32. 31.	ding uV) 75 44 43	(MHz) Factor (dB/m) -16.05 -15.55	300 Level (dBuV/m) 16.70 15.89	Limit (dBuV/m) 40.00 40.00	Margin (dB) -23.30 -24.11	Detector QP QP		
10 0 -10 30.00 No. 1 2 3	Frequ (Mł 34.2 57.8 117.3	60.00 lency Hz) 033 067 3000 0600	Read (dBu 32. 31. 32.	ding u∨) 75 44 43 11	(MHz) Factor (dB/m) -16.05 -15.55 -17.63	Level (dBuV/m) 16.70 15.89 14.80	Limit (dBuV/m) 40.00 40.00 43.50	Margin (dB) -23.30 -24.11 -28.70	Detector QP QP QP		

Remarks:

EN



l.:	prizontal								
ode:	TX 802.11a Mode 5180MHz (U-NII-1) No report for the emission which more than 10 dB below the prescribed limit.								
:									
uV/m									
		FCC Part15	C - Above 1G PK						
	1	FCC Part15	C - Above 1G AV						
	×								
	§								
Freque (MHz		Level Limit BuV/m) (dBuV/m)	Margin (dB) Detector						
10360.	34.79 13.59 4	18.38 74.00	-25.62 peak						
10360.	23.07 13.59 3	36.66 54.00	-17.34 AVG						
(MHz 10360.	(dBuV) (dB/m) (dB 34.79 13.59 4	3uV/m) (dBuV/m) 48.38 74.00	(dB) -25.62 p						

2.Margin value = Level -Limit value

EN



Ant	t. Po	l.:	Verti	cal									
Tes	st Mo	de:		TX 802.11a Mode 5180MHz (U-NII-1)									
Rer	nark	:	No report for the emission which more than 10 dB below the prescribed limit.								;		
00.0	) dBu	V/m					-						
10													
0							-			FCC Part	15 C	- Above 10	3 PK
0													
0													
"										FCC Part	15 C	- Above 10	AV C
0			ş										
10			1×				-				-		
0			^										
0													
0													
0.0 10	00.000	4900.00 8	800.00	127	00.00 16	600.00 (N	IHz)	24	100.00 2	8300.00 32	200	.00 36100.	00 40000.
		Freque	ncy	Re	ading	Facto	or	Le	evel	Limit		Margin	Detector
	lo.	(MHz	)	`	BuV)	(dB/n	<u> </u>		· · ·	(dBuV/r		(dB)	
1	*	10359.8	393	2	3.15	13.6	כ	36	6.75	54.00		-17.25	AVG
2	2	10360.3	315	3	4.73	13.5	9	48	3.32	74.00		-25.68	peak

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

2.Margin value = Level -Limit value



Tes	. Pol. t Moc		Horiz									
		le:	TX 8	TX 802.11a Mode 5200MHz (U-NII-1)								
	nark:		No re	No report for the emission which more than 10 dB below the prescribed limit.								
100.	0 dBu'	V/m										
90												
80								FCC Part15	C - Above 1	G PK		
70												
60								ECC Part15	C - Above 1	GAV		
50			ş									
40			×									
30												
20												
10												
0.0 10	)00.000	4900.00	8800.00	12700.00 1	6600.00 (MI	lz) 244	100.00	28300.00 3220	0.00 3610	D.00 4000	0.0	
									1			
N	lo.	Freque (MH		Reading (dBuV)	Factor (dB/m)		vel IV/m)	Limit (dBuV/m)	Margin (dB)	Detecto	r	
1	*	10399.	349	349 23.65		37	37.32 54.00		-16.68	AVG		
	2	10399.	660	360 35.27		48	.94	74.00	-25.06	peak		
Rer	narks											

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Ant	. Pol	.:	Verti	cal					
Tes	t Mo	de:	TX 8	02.11a Mo	de 5200MH:	z (U-NII-1)			
Rer	nark	:		eport for the cribed limit	e emission v	which more t	han 10 dB l	pelow the	<b>;</b>
100.	) dBu	V/m							
90									
80							FCC Part15	C - Above 1	G PK
70									
60									
50			ş				FCC Part15	C - Above 1	G AV
40									
30			×						
20									
10 0.0									
	000.000	4900.00 8	800.00	12700.00 1	6600.00 (MHz)	24400.00	28300.00 3220	0.00 36100	.00 40000.0
	<b>l</b> o.	Freque		Reading	Factor	Level	Limit	Margin	Detector
		(MHz		(dBuV)	(dB/m)	. ,	(dBuV/m)	(dB)	
	1 *	10399.7		23.99	13.67	37.66	54.00	-16.34	AVG
	2	10399.8	379	34.98	13.67	48.65	74.00	-25.35	peak
	narks		Anton	na Eastar (	dD/m) + Cabl	o Eastar (de		fior East	or
	actor	(uB/III) = I	Anteni		dB/m)+Cabl	e Factor (de	oj-Pre-ampli		ונ

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2.Margin value = Level -Limit value

EN



	.:	Horiz	zontal					
est Mo	de:	TX 8	02.11a Moo	le 5240MHz	z (U-NII-1)			
Remark			eport for the cribed limit.	emission v	which more f	han 10 dB t	pelow the	9
00.0 dBu	//m	1 0.00						
0								
0								
0						FCC Part15	C - Above 1	G PK
0								
°						FCC Part15	C - Above 1	GAV
0		Å						
0		×						
0								
0								
0								
0.0				600.00 (MHz)				
1	Freque (MH		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
No.			· /	` '			-16.12	AVG
No.	10479	.683	24.08	13.80	37.88	54.00	-10.12	



Ant. P	ol.:		Vert	cal														
Test N	/lode:				11a N						,							
Rema	rk:		No r pres	epo crib	rt for ed lim	the nit.	emis	sion	whi	ich	more	tha	ın 1(	) dB	belo	w the	e	
100.0 d	lBuV/m				1													-
90																		
30																		
80													FCC	Part15	C-A	bove 1	IG PK	
70												_						
60																		_
50			ž									_	FCC	Part15	<u>C-A</u>	bove 1	IG AV	-
40			×															
30												_						-
20																		_
10																		
0.0																		
1000.0	000 490	0.00 8	800.00	127	700.00	166	600.00	(MHz	)	244	00.00	283	00.00	3220	00.00	3610	0.00 4	0000.0
No.	F	reque (MHz	-		eadin BuV)			ctor /m)	(0		vel V/m)	(c	Lin IBu'	nit √/m)		irgin IB)	Dete	ctor
1 '	* 10	0479.	439	2	4.07		13	.80		37	.87		54.	00	-16	5.13	AV	G
2	1	0480.	079	3	5.55		13	.80		49	.35		74.	00	-24	1.65	pea	ak
Rema 1.Fact		3/m) =	Anten	na F	actor	r (d	B/m)·	+Cab	le f	act	tor (dl	B)-l	Pre-	ampl	ifier	Facto	or	

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2.Margin value = Level -Limit value

EN



Ant	. Pol		Horiz	zontal					
	t Mod		-		20) Mode 5	180MHz (U-I	NII-1)		
	nark:		No re		e emission v	•	,	elow the	9
100.	0 dBu'	√/m							
90									
80							FCC Part15 (	C - Above 1	G PK
70									
60									
50			ş				FCC Part15 (	C - Above 1	GAV
40									
30			×						
20									
10 0.0									
	)00.000	4900.00 8	800.00	12700.00 1	6600.00 (MHz)	24400.00 2	8300.00 32200	0.00 36100	.00 40000.0
						1			
1	No.	Frequer (MHz		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
	1 *	10359.8	322	23.12	13.60	36.72	54.00	-17.28	AVG
	2	10360.1	176	34.90	13.60	48.50	74.00	-25.50	peak
Per	marks								

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Remarks:

EN



4nt	t. Pol	:	Verti	cal										
ſes	st Moo	de:			11n(HT2				•	,				
Rei	nark:				rt for the ed limit.	emissi	on v	vhich	more t	han 1(	) dB l	below th	е	
00.	) dBu\	//m												1
0														
0										FCCI	Part15	C - Above	1G PK	
0														
0														
"										FCC	Part15	C - Above	IG AV	
0			×											
10			ş											
0			^											
20														
0														
0.0	00 000	4900.00 8	800.00	197	00.00 16	600.00 (N	(Hz)	24	100.00 2	8300.00	3220	0.00 3610	0.00 400	 000.0
1												1	1	
١	<mark>ا</mark> ٥.	Freque (MHz			ading BuV)	Facto (dB/m			evel uV/m)	Lim (dBu\		Margin (dB)	Detec	tor
	1	10359.	049	3	4.74	13.6	)	48	3.34	74.	00	-25.66	pea	k
1	2 *	10359.	963	2	3.45	13.6	)	37	. <mark>0</mark> 5	54.	00	-16.95	AVC	3
	narks													

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			•	NII-1) than 10 dB b	elow the	
		nission w	hich more	than 10 dB t	elow the	
				FCC Part15 0	C-Above 10	i PK
9				FCC Part15 C	- Above 1G	AV .
ş						
×						
8800.00 127	00.00 16600.0	10 (MHz)	24400.00	28300.00 32200	.00 36100.0	00 40000.
•	<b>J</b>	actor B/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
9.586 23	3.68 1	3.67	37.35	54.00	-16.65	AVG
9.895 34	4.91 1	3.67	48.58	74.00	-25.42	peak
; ).	z) (d 586 2	z) (dBuV) (c 586 23.68 1	z) (dBuV) (dB/m) 586 23.68 13.67	z) (dBuV) (dB/m) (dBuV/m) 586 23.68 13.67 37.35	z) (dBuV) (dB/m) (dBuV/m) (dBuV/m) 586 23.68 13.67 37.35 54.00	z) (dBuV) (dB/m) (dBuV/m) (dBuV/m) (dB) 586 23.68 13.67 37.35 54.00 -16.65



Ant.	Pol.	:	Verti	cal					
Test	t Moo	de:				200MHz (U-I			
	nark:			eport for the cribed limit.	e emission v	vhich more t	han 10 dB t	elow the	•
100.0	) dBu'	V/m							
90									
80							FCC Part15	C - About 1	C PK
70							FCC Partis	C-ABOVE T	GPK
60									
50			ž				FCC Part15	C - Above 1	<u>G AV</u>
40			×						
30									
20									
10									
0.0 10	00.000	4900.00	8800.00	12700.00 16	600.00 (MHz)	24400.00 2	28300.00 32200	0.00 36100	.00 40000.0
N	o.	Frequ (MF		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	*	10400	.321	23.89	13.67	37.56	54.00	-16.44	AVG
2	2	10400	.989	35.49	13.67	49.16	74.00	-24.84	peak
	narks						,		

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Remarks:

FN



No re	•	1	240MHz (U-M which more the second sec	,	C-Above 10	3 PK
¢resc			which more t	FCC Part15 C	C-Above 10	3 PK
				FCC Part15 C	C-Above 10	3 AV
				FCC Part1 5 C	C - Above 10	3 AV
X						
×						
8800.00	12700.00 16	600.00 (MHz)	24400.00 2	8300.00 32200	.00 36100.	00 40000.
	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
79.905	24.01	13.80	37.81	54.00	-16.19	AVG
30.368	35.25	13.80	49.05	74.00	-24.95	peak
		luency 1Hz) Reading (dBuV) 79.905 24.01	Juency Reading Factor 1Hz) (dBuV) (dB/m) 79.905 24.01 13.80	Juency Reading Factor Level (dBuV) (dB/m) (dBuV/m) 79.905 24.01 13.80 37.81	Juency Reading Factor Level Limit (dBuV) (dB/m) (dBuV/m) (dBuV/m) 79.905 24.01 13.80 37.81 54.00	Juency Reading Factor Level Limit Margin (dBuV) (dB/m) (dBuV/m) (dBuV/m) (dB) 79.905 24.01 13.80 37.81 54.00 -16.19



Ant	. Po	l.:	Vert	ical									
Tes	t Mo	de:	ТХ	802.1	1n(HT	20) Mode	e 52	240MH	Hz (U-	NII-1)			
	nark	-			t for the d limit.		٥n ۱	which	more	han 10	dB	below the	9
100.	) dBi	ıV/m											
90							-				_		
80							_			ECC P	ort15	C - Above	
70										TCCF		C-VD0A6	
60													
50				<						FCC P	art15	C - Above	IG AV
40				2									
30			5	ζ									
20													
10 0.0													
	00.000	) 4900.00	8800.00	127	00.00 10	6600.00 (N	(Hz)	244	00.00	28300.00	3220	0.00 3610	0.00 40000.0
1				1									
N	lo.	Freque (MHz	-		ading BuV)	Facto (dB/m			vel V/m)	Limi (dBuV/		Margin (dB)	Detector
	1	10479.	440	37	7.06	13.80	)	50	.86	74.0	0	-23.14	peak
2	*	10480.	136	24	1.05	13.80	)	37	.85	54.0	0	-16.15	AVG
Dati													

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Remarks:

FN



Ant	. Pol	.:	Hori	zonta	al									
Tes	t Mo	de:	TX 8	302.1	1ac(VI	HT20) Mc	bde	5180	MHz (	U-NII-1	)			
Ren	nark	:			t for the		n v	which I	nore t	han 10	dB	below the	;	
100.	0 dBu	iV/m		1			_							
90														
80							-			FCC P	art15	C - Above 1	G PK	
70							-							
60							-			FCC P	art15	C - Above 1	GAV	
50			Ş	:			-							
40			1×	:			-							
30							-							
20							-							
10							-							
0.0	00.000	) 4900.00 8	800.00	127	00.00 1	6600.00 (M	IHz)	244	00.00	28300.00	3220	0.00 36100	0.00 40000	D.O
N	о.	Frequer (MHz			ading 3u∨)	Facto (dB/m		Lev (dBu	vel V/m)	Lim (dBuV		Margin (dB)	Detector	r
1	*	10360.3	65	23	3.35	13.59		36.	94	54.0	0	-17.06	AVG	+
2	2	10360.4	96	34	.61	13.59		48.	20	74.0	0	-25.80	peak	
Don	narko	<u>.</u>												

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Remarks:

FN



Ant	t. Pol.	:	Vertio	cal					
Tes	t Moo	de:	TX 8	02.11ac(VH	T20) Mode	5180MHz (	J-NII-1)		
Rei	nark:			port for the cribed limit.	emission v	hich more t	han 10 dB b	elow the	!
100.	0 dBu\	√/m							
90									
80							FCC Part15 (	C-Above 10	G PK
70									
60									
50			ŝ				FCC Part15 (	C-Above 10	S AV
40									
			×						
30									
20									
10									
0.0 10	) )00.000	4900.00 8	800.00	12700.00 16	600.00 (MHz)	24400.00 2	8300.00 32200	0.00 36100.	00 40000.0
1	No.	Freque (MHz		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
	1 *	10359.0	518	23.23	13.60	36.83	54.00	-17.17	AVG
	2	10359.6	667	34.51	13.60	48.11	74.00	-25.89	peak
1.F		(dB/m) = /		na Factor (d		e Factor (dB	)-Pre-ampli	fier Facto	pr

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2.Margin value = Level -Limit value



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Ant. Pol.: Fest Mode:		Horizontal								
		ТХ 8	TX 802.11ac(VHT20) Mode 5200MHz (U-NII-1)							
Remark		No report for the emission which more than 10 dB below the prescribed limit.								
00. <u>0</u> dBu	V/m	1 0.00								
0										
0						FCC Part15 C - Above 1G PK				
0										
0										
		ŝ				FCC Part15 C - Above 1G AV				
0		8								
0		ł								
0										
:0										
0										
0.0										
1000.000	4900.00	8800.00	12700.00 16	600.00 (MHz)	24400.00	28300.00 3220	0.00 36100	.00 40000		
No.	Freque (MH:	z)	Reading (dBu∀)	Factor (dB/m)	. ,	Limit (dBuV/m)	Margin (dB)	Detector		
1 *	10399.025		23.78	13.67	37.45	54.00	-16.55	AVG		
2	10400.813		35.76	13.67	49.43	74.00	-24.57	peak		

2.Margin value = Level -Limit value

EN



Ant. Pol.:		Vertical									
Test Mode:		TX 802.11ac(VHT20) Mode 5200MHz (U-NII-1)									
Remark:		No report for the emission which more than 10 dB below the prescribed limit.									
100.0 dBuV	/m										
90											
80											
70						FCC Part15 (	C-Above 10	G PK			
60		1				FCC Part15 (	C-Above 10	S AV			
50		×									
40		Š									
30											
20											
10											
	4900.00 8	300.00	12700.00 16	600.00 (MHz)	24400.00 2	8300.00 32200	).00 36100.	.00 40000.0			
	_		<b>D</b> "	<b>-</b> .							
No.	Frequer (MHz		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector			
1	10399.1	41	35.45	13.67	49.12	74.00	-24.88	peak			
2 *	10399.5	73	23.73	13.67	37.40	54.00	-16.60	AVG			
Remarks:											

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Remarks:

FN



Test Mode:							
		2.11ac(VH	T20) Mode	5240MHz (	U-NII-1)		
Remark:		port for the ribed limit.	emission v	vhich more t	han 10 dB t	pelow the	;
100.0 dBuV/m							
90							
80					FCC Part15 (	C - Above 1	G PK
70							
60					FCC Part15 (	C - Above 1	G AV
50	×						
40	ş						
30							
20							
10							
0.0	8800.00	12700.00 16	600.00 (MHz)	24400.00 2	28300.00 32200	).00 36100	.00 40000.0
1							
No. Freque (MH	•	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 10479.	093	35.63	13.80	49.43	74.00	-24.57	peak
2 * 10479.	575	24.13	13.80	37.93	54.00	-16.07	AVG
Remarks:							

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			M											
	t. Pol.		Verti											
	t Moo					T20) Mc				,				
Rer	mark:				rt for the ed limit.	emissio	n v	vhich	more t	han 10 d	dB k	below the	9	
100.	0 dBu\	//m	pies											
90														
80										FCC Pa	rt15 (	C-Above 1	G PK	
70														
60														
			1×							FCC Pa	rt15 (	C - Above 1	GAV	
50														
40			Š											
30														
20											_			
10														
0.0														_
11	100.000	4900.00 8	800.00	127	00.00 160	600.00 (M	Hz)	244	00.00 2	8300.00 3	2200	).00 36100	.00 40000.	u
1														Т
1	No.	Freque	-		eading BuV)	Facto			vel			Margin	Detector	
		(MHz	·			(dB/m	·			(dBuV/		(dB)		_
	1	10479.			5.26	13.80			.06	74.00	)	-24.94	peak	
	2 *	10480.	015	2	4.19	13.80	)	37	.99	54.00	)	-16.01	AVG	
-	narks	: (dB/m) =	Anton	n n T	Jactor (d	R/m\⊥C	ahl	o Eoo	tor (dD		nnli	fior East	or	

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Ant. Pol	:	Horiz	zontal					
est Mo	de:		02.11n(HT4	,	•	,		
Remark	1		eport for the cribed limit.	e emission v	which more	than 10 dB b	pelow the	<b>;</b>
100.0 dBu	V/m	1 0.00						
90								
80						FCC Part15	C - Above 1	G PK
70								
60						FCC Part15	C - Above 1	GAV
50		×						
40		ş						
30								
20								
10								
0.0	4900.00	8800.00	12700.00 16	6600.00 (MHz)	24400.00	28300.00 3220	0.00 36100	).00 40000
No.	Freque (MHz		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10379.	149	35.89	13.63	49.52	74.00	-24.48	peak
2 *	10380.	744	23.92	13.63	37.55	54.00	-16.45	AVG



Ant.	Pol	•		Vert	ical										
Test						l1n(HT	40) M	ode 5	190MF	Iz (U-	NII-1	1)			
Rem	ark:					t for th ed limit		sion v	which	more	than	10 dB	below t	he	
100.0	dBu	V/m		pree			•								
Γ															]
90 -															-
80  -											F	CC Part15	C - Above	1G PK	-
													0-70046	STUFK	1
70 -															1
60 -															
											F	CC Part15	C - Above	e 1G AV	
50				- 1×											-
40															
40				Ş											1
30															
20															-
10															1
0.0							0000.00			00.00		00 000			
100	10.000	4900.	00 81	800.00	127	00.00 1	6600.00	(MHz)	244	00.00	28300	.00 322	0.00 361	00.00 40	000.0
·													1		
No	<b>b</b> .		quen MHz)	•		ading BuV)		ctor /m)	Le (dBu			.imit uV/m)	Margi (dB)	n <sub>Detec</sub>	tor
1		103	79.4	63	35	5.16	13	.63	48.	79	7	4.00	-25.2	1 pea	k
2	*	103	80.2	42	23	3.92	13	.63	37.	55	5	4.00	-16.4	5 AVG	G
Rem			m) – 1	nton		instar (	dP(m)	. Cabl	- Eoo	tor (d			ifier Fa		

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de:	ТХ 8	802.11n(HT4	0) Mode 52	20MHz (U_N	JII_1)		
	No r	eport for the			,	elow the	
//m							
					FCC Part15 (	C-Above 10	3 PK
					FCC Part15 (	C-Above 10	AV (
	Š						
	1						
4900.00	8800.00	12700.00 160	00.00 (MHz)	24400.00 2	8300.00 32200	00 36100	00 40000
	-	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
10460.	.649	23.14	13.77	36.91	54.00	-17.09	AVG
10460.	.829	34.55	13.78	48.33	74.00	-25.67	peak
	//m 4900.00	//m /// /// /// /// /// /// /// /// ///	prescribed limit.           //m           //m      //m	prescribed limit.           //m           //m	prescribed limit.           //m           //m      //m	Image: prescribed limit.           //m           //	Image: constraint of the second sec

2.Margin value = Level -Limit value

EN



Ant	. Pol	.:	Verti	cal									
Tes	t Mo	de:	TX 8	02.1	l1n(HT4	0) Mode	e 52	230MF	lz (U-I	NII-1)			
Ren	nark	:			t for the ed limit.	e emissio	n v	vhich	more t	han 10 dB I	below the	;	
100.	) dBu	V/m					_						
90													
80										FCC Part15	C - Above 1	G PK	
70													
60										FCC Part15	C - Above 1	GAV	
50			ş										
40			1×										
30													
20													
10													
0.0 10	00.000	4900.00 8	800.00	127	00.00 16	600.00 (M	Hz)	244	00.00 2	28300.00 3220	0.00 36100	.00 400	00.0
N	lo.	Frequer (MHz	-		ading BuV)	Facto (dB/m			vel IV/m)	Limit (dBuV/m)	Margin (dB)	Detect	or
1	1 *	10459.3	347	2	3.07	13.77	'	36	.84	54.00	-17.16	AVG	3
	2	10460.	712	3	3.98	13.77	·	47	.75	74.00	-26.25	peal	<
Der													
Ren	narks	8:											

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70	No report for the emission which more than 10 dB below the prescribed limit.         /m         /m         FCC Part15 C - Above 1G PK         X         X	Ant. Po	l.:	Horiz	zontal						
prescribed limit.           100.0         dBuV/m           90	prescribed limit.           /m           Image: Image	Test Mo	de:	TX 8	02.11ac(V	HT40) Mo	de 5190	) MHz (	J-NII-1)		
100.0     dBuV/m       90	/m FCC Part 5 C - Above 1G PK FCC Part 5 C - Above 1G AV FCC Part 5 C - Above 1G AV	Remark	:				n which	more t	han 10 dB b	elow the	!
90 90 60 70 60 50 50 50 50 50 50 50 50 50 5	Image: Sector of the sector	400 0 dD	Adam	pres	cribed limi	t.					
80       FCC Part15 C - Above 1G         70       FCC Part15 C - Above 1G         60       FCC Part15 C - Above 1G         50       FCC Part15 C - Above 1G         30       1	Image: state of the state	100.0 00	u v / m								
FCC Part15 C - Above 1G       70	Image: state of the state	90									
FCC Part15 C - Above 1G       70	Image: state of the state	80									
60     FCC Part15 C - Above 1G       50     \$\$       40     1       30     \$\$									FCC Part15 (	C - Above 10	ЭРК
FCC Part15 C - Above 1G           50         2           40         1           30         1		70									
50 <u><u><u>x</u></u> 40 <u>1</u> 30 <u></u></u>		60							ECC Part15 (	C- Above 1(	
30	Image: Second	50		ž							
30	Image: Second	4n 📃		1							
	1900.00 8800.00 12700.00 16600.00 (MHz) 24400.00 28300.00 32200.00 36100.00 40000.0			×							
20	1900.00 8800.00 12700.00 16600.00 (MHz) 21400.00 28300.00 32200.00 36100.00 40000.0	30									
	1900.00 8800.00 12700.00 16600.00 (MHz) 21100.00 28300.00 32200.00 36100.00 10000.0	20									
10	1900.00 8800.00 12700.00 16600.00 (MHz) 24400.00 28300.00 32200.00 36100.00 40000.0	10									
0.0	1900.00 8800.00 12700.00 16600.00 (MHz) 21400.00 28300.00 32200.00 36100.00 40000.0										
1000.000 4900.00 8800.00 12700.00 16600.00 (MHz) 24400.00 28300.00 32200.00 36100.0		1000.00	0 4900.00	8800.00	12700.00	16600.00 <b>(M</b> F	lz) 24	100.00 2	8300.00 32200	.00 36100.	00 40000.
· · · · · · · · · · · · · · · · · · ·		No.		-					Limit (dBuV/m)	Margin (dB)	Detector
No in the second s		1 *	10379	.695	24.06	13.63	3	7.69	54.00	-16.31	AVG
(MHz) (dBuV) (dB/m) (dBuV/m) (dBuV/m) (dB)	(MHz) (dBuV) (dB/m) (dBuV/m) (dBuV/m) (dB)		+								

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Remarks:

EN



FN

Ant. Pol.:	Verti	ical					
Test Mode:	TX 8	302.11ac(V⊦	IT40) Mode	5190MHz (	U-NII-1)		
Remark:		eport for the cribed limit.	e emission v	vhich more t	than 10 dB l	below the	;
100.0 dBuV/m							
90							
80							
70					FCC Part15	C - Above 1	G PK
60					FCC Part15	C - Above 1	GAV
50	Å						
40	ş	:					
30							
20							
10							
0.0		10700 00 10	2000.00 (111.)	0.4.400.000		0.00 00100	
1000.000 4900.0	0 8800.00	12700.00 16	600.00 (MHz)	24400.00	28300.00 3220	0.00 36100	1.00 40000.0
						I	
	quency /IHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 103	79.360	35.23	13.63	48.86	74.00	-25.14	peak
2 * 103	79.847	23.84	13.63	37.47	54.00	-16.53	AVG
· I							L
Remarks:							

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Ant.	Pol.	•	Hori	zontal					
est	Mod	le:	TX 8	802.11ac(VH	HT40) Mode	5230MHz (	U-NII-1)		
Rema	ark:			eport for the cribed limit.		vhich more t	han 10 dB t	pelow the	
00.0	dBu\	//m							
0 -									
							FCC Part15	C - Above 1	ЭРК
0									
io  -							FCC Part15	C - Above 1	GAV
10			<u>}</u>						
10 -			ş	:					
10 -									
0									
0.0	0.000	4900.00	8800.00	12700.00 1	6600.00 (MHz)	24400.00	28300.00 3220	0.00 36100	.00 40000.
No	D.		uency Hz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1		1045	9.346	34.53	13.77	48.30	74.00	-25.70	peak
2	*	1046	0.455	23.03	13.77	36.80	54.00	-17.20	AVG
2 Rema			0.455	23.03	13.77	36.80	54.00	-17.20	AVG

2.Margin value = Level -Limit value

EN



			N/ 11											
	t. Pol		Vertio											
	st Mo				1ac(VH	;								
Re	mark	:			t for the ed limit.	emissi	on v	vhich	more t	han 10	dB t	pelow th	ne	
100.	0 dBu	√/m	prese											
90														
80							_			FCC P	art15	C - Above	1G PK	
70														
60														
							_			FCC P	art15	C - Above	1G AV	
50			ş											
40			1×											
30														
20														
10														
0.0														
10	000.000	4900.00 8	800.00	127	00.00 16	600.00 (	MHz)	244	00.00 2	8300.00	3220	0.00 361	00.00 40	000.a
-								1						
	No.	Freque			ading	Fact			vel	Lim		Margir	n <sub>Detec</sub>	tor
		(MHz	:)	(d	BuV)	(dB/r	n)	(dBu	ıV/m)	(dBuV	/m)	(dB)		
	1 *	10459.	209	2	2.93	13.7	7	36	.70	54.0	0	-17.30	) AV	G
	2	10460.	383	34	4.16	13.7	7	47	.93	74.0	0	-26.07	7 pea	k
	1													L
	marks		• •	_				_	=			<i>a</i> . —		
1.F	actor	(dB/m) =	Antenr	าa F	actor (d	B/m)+(	Cabl	e Fac	tor (dB	)-Pre-a	mpli	tier Fac	tor	

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Ant. Po	ol.:	Horiz	zontal					
Test M	ode:	TX 8	02.11ac(VI	HT80) Mode	e 5210MHz	(U-NII-1)		
Remar	k:		eport for the cribed limit.		which more	than 10 dB	below the	e
100.0 d	BuV/m							
90								
80								
70						FCC Part15	i C - Above	1G PK
60		-				FCC Part1	i C - Above	1G AV
50		X	:					
40		ş	:					
30								
20								
10								
0.0	00 4900.00	8800.00	12700.00 1	6600.00 (MHz	24400.00	28300.00 322	00.00 3610	0.00 40000.0
								0.00 10000.0
No.	Frequer (MHz	-	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10419.6	59	35.64	13.70	49.34	74.00	-24.66	peak
2 *	10420.8	393	24.28	13.70	37.98	54.00	-16.02	AVG
Demon								<u>_</u>

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Remarks:

FN



Ant. Pol.:	Vertical						
Test Mode:		ac(VHT80) M		•			
Remark:	No report f	for the emissi I limit.	on which	more t	han 10 dB l	below the	<b>;</b>
100.0 dBuV/m							
90							
50							
80					FCC Part15	C - Above 1	G PK
70							
60							
50					FCC Part15	C - Above 1	GAV
40	1						
40	×						
30							
20							
10							
0.0							
1000.000 4900.00	3800.00 12700	).00 16600.00 (	MHz) 24-	400.00 2	8300.00 3220	0.00 36100	.00 40000.0
, 							
No. Freque (MHz	•	•		vel ıV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 * 10419.	711 24.	10 13.7	0 37	.80	54.00	-16.20	AVG
2 10420.	198 36.	10 13.7	0 49	.80	74.00	-24.20	peak
L I	1	1					L L
Remarks: 1 Factor (dB/m) =	Antonno E-	eter (dD/ms): (				fion Fost	

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nt. Pol.	:	Horiz	ontal									
est Mod	de:	TX 8	02.11a	Mod	le 5745N	1Hz	z (U-N	II-3)				
emark:			eport fo cribed l		emissio	n v	vhich	more	than 10 dB	below the	Э	
100.0 dBu	V/m											
90												
30						_			ECC Dest	5 C - Above '		
70						_			FUU Parti	C-ADOVE		
50												
50			1×						FCC Part1	5 C - Above '	IG AV	
10			ş									
30			×									
20												
0.0												
1000.000	4900.00	8800.00	12700.0	0 16	600.00 (M	Hz)	244	00.00	28300.00 322	00.00 3610	0.00 4000	0.
No.	Freque (MH:		Readi (dBu)		Facto (dB/m		Le (dBu		Limit (dBuV/m)	Margin (dB)	Detector	r
1	11489.	894	34.8	0	15.00	)	49	.80	74.00	-24.20	peak	
	11490.	220	22.2	8	15.01		37	29	54.00	-16.71	AVG	

Remarks:

EN



Ant. Po	ol.:		Verti	cal										
Test M	-				1a Mod	e 5745N	/Hz	(U-N	11-3)					
Remar			No re	epor		emissio		•	,	han 1	0 dB l	below tl	ne	
100.0 d	BuV/m													
90														_
80										FCC	Part15	C - Above	1G PK	_
70							-			_				
60										FCC	DertIE	C - Above	10 44	_
50				ł								C - ADUVE	IGAV	
40				ş						_				_
30										_				_
20														_
10										_				_
	100 4900	100 8	800.00	127	700.00 16	600.00 (M	Hz)	244	00.00 2	8300.0	0 3220	0 00 361	00.00	10000.0
							,							
No.		equer (MHz			ading BuV)	Facto (dB/m			vel V/m)		mit Ⅳ/m)	Margi (dB)	n <sub>Dete</sub>	ector
1	11	489.1	19	3	4.10	14.99	)	49	.09	74	.00	-24.9	1 pe	ak
2 *	11	489.7	'14	2	2.32	15.00	)	37	.32	54	.00	-16.68	B A	/G
Remar	-					B/m)+C								

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	.:	Horiz	contal					
est Mo	de:			de 5785MH	. ,			
Remark	•		eport for the cribed limit.		which more	than 10 dB t	pelow the	<b>;</b>
00. <u>0</u> dBu	√/m							
0								
0						FCC Part15	C - Above 1	G PK
0								
0								
			<u>z</u>			FCC Part15	C - Above 1	GAV
0			x					
0			×					
0								
0								
0								
D.0 1000.000	4900.00	8800.00	12700.00 10	6600.00 (MHz)	24400.00	28300.00 32200	0.00 36100	.00 40000
1000.000	4900.00	8800.00	12700.00 10	5600.00 (MHz)	24400.00	28300.00 32200	).00 36100	.00 4000
No.	Freque (MH		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
No.		z)						Detector AVG



Ant. Pol.:       Vertical         Test Mode:       TX 802.11a Mode 5785MHz (U-NII-3)         Remark:       No report for the emission which more than 10 dB below prescribed limit.         100.0       dBuV/m         90       60       FCC Part15 C - Abo         60       FCC Part15 C - Abo         50       X       FCC Part15 C - Abo         30       X       FCC Part15 C - Abo         20       X       FCC Part15 C - Abo	
Remark:     No report for the emission which more than 10 dB below prescribed limit.       100.0     dBuV/m       90	
90     <	v the
80     FCC Part1 5 C - Abo       70     FCC Part1 5 C - Abo       60     FCC Part1 5 C - Abo       50     X       40     X       30     Image: Second	
FCC Part15 C - Abo       70       60       70       60       70 <t< th=""><th></th></t<>	
60	ove 1G PK
S0         X         FCC Part15 C - Abo           40         2         -	
50         1	
30	
20	
10	
0.0 1000.000 4900.00 8800.00 12700.00 16600.00 (MHz) 24400.00 28300.00 32200.00 3	36100.00 40000.0
No. Frequency Reading Factor Level Limit Mar (MHz) (dBuV) (dB/m) (dBuV/m) (dBuV/m) (dB	
1     11569.411     34.86     15.06     49.92     74.00     -24.	·
2 * 11570.052 22.56 15.07 37.63 54.00 -16.	
Z     11570.052     22.50     15.07     57.65     54.00     -16.       Remarks:     1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier F	

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2.Margin value = Level -Limit value

EN



Ant. Po	ol.:	Hori	zontal					
est Mo	ode:			ode 5825MH	. ,			
Remarl	k:		eport for the	ne emission v t.	which more t	than 10 dB l	below the	<del>)</del>
100.0 dE	3uV/m							
90								
30						FCC Part15	C - Above 1	G PK
70								
50						ECO D. HE	o 11 1	
50			* *			FCC Part15	C-Above I	<u>3 AV</u>
10			2					
			8					
30								
20								
IO								
0.0	00 4900.00	8800.00	12700.00	16600.00 (MHz)	24400.00	28300.00 3220	0.00 36100	.00 40000.0
No.	Freque (MH	-	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	11650.	.202	34.62	15.14	49.76	74.00	-24.24	peak
2 *	11650	.853	22.75	15.14	37.89	54.00	-16.11	AVG
								· ·

2.Margin value = Level -Limit value

EN



Δnt	Pol.	•	Verti	cal										
	Mod				1a Moo	le 5825N	лн-	7 (U-N	11-3)					
	nark:		No r	epor		emissio			,	han 10	) dB k	pelow t	he	
100.	) dBu'	√/m												7
90														_
80										FCC	Part15	C - Above	e 1G PK	_
70														-
60										_				
50				1 X						FCC	Part15	<u>C - Above</u>	9 1G AV	_
40				ş										_
30														_
20														_
10							-							_
0.0	00 000	4900.00	800.00	197	00.00 16	600.00 (N	(Hz)	244	00.00 2	28300.00	32200	00 361	00.00 4	0000.0
												1		
N	o.	Frequer (MHz			ading BuV)	Facto (dB/m			vel V/m)	Lin (dBu		Margi (dB)		ector
1		11649.3	802	34	4.54	15.13	3	49	.67	74.	00	-24.3	3 pe	ak
2	*	11650.0	070	22	2.71	15.13	3	37	.84	54.	00	-16.1	6 A\	/G
	arks:	(dB/m) = d	∆nton	na F	actor (c	IB/m)+C	ahlı	a Fact	or (dB	)_Pro_	amnli	fior Fa	otor	

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EN



Ant	. Pol	.:	Hori	zont	al								
Tes	t Mo	de:			•	0) Mode			•	,			
Ren	nark	:			t for the ed limit.	emissio	n v	vhich	more t	han 10 dB I	below the	è	
100.0	) dBu	V/m	1 10.00				_						
90													
80										FCC Part15	C - Above 1	G PK	
70													
60										FCC Part15	C - Above 1	GAV	
50													
40		* *											
30		Š											
20													
10													
0.0 10	00.000	4900.00	3800.00	127	00.00 16	600.00 (M	Hz)	244	100.00	28300.00 3220	0.00 36100	).00 4000	0.0
1								1				Γ	
N	lo.	Freque (MHz			ading BuV)	Facto (dB/m			vel iV/m)	Limit (dBuV/m)	Margin (dB)	Detecto	r
	1	5745.8	859	3	7.03	4.61		41	.64	74.00	-32.36	peak	
2	2 *	5745.9	90	2	5.34	4.61		29	.95	54.00	-24.05	AVG	
Ren	narks	3:											

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Ant. P	ol.:	Vertica	al									
Test N	ode:	TX 80	TX 802.11n(HT20) Mode 5745MHz (U-NII-3) No report for the emission which more than 10 dB below the									
Rema			oort for the		which more	than 10 dB	below the	;				
100.0 d	BuV/m											
90												
80												
70						FCC Part15	C-Above 1	G PK				
60						FCC Part15	C - Above 1	GAV				
50		Š										
40		×										
30												
20												
10												
0.0												
1000.0	00 4900.00 8	3800.00	12700.00 16	600.00 (MHz)	24400.00	28300.00 3220	0.00 36100	.00 40000.0				
1												
No.	Frequer (MHz		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector				
1 *	11489.5	582	22.40	15.00	37.40	54.00	-16.60	AVG				
2	11490.2	239	33.25	15.01	48.26	74.00	-25.74	peak				
								L				
Remar												

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\III	. Pol.	•	Ho	rizont	al						
es	t Moo	de:			-	20) Mode		-			
len	nark:				rt for the ed limit.	e emissior	which	more t	han 10 dB l	below the	9
00.	0 dBu	V/m									
90											
10									FCC Part15	C - Above 1	G PK
0											
0									FCC Part15	C - Above 1	G AV
50				ž							
10				X							
0											
20											
10 0.0											
10	000.000	4900.00	8800.0	00 12	700.00 16	600.00 (MI	lz) 24	400.00	28300.00 3220	0.00 36100	.00 40000
	lo.		uency Hz)		eading BuV)	Factor (dB/m)		evel JV/m)	Limit (dBuV/m)	Margin (dB)	Detector
Ν		1157	0.501	2	2.44	15.07	37	.51	54.00	-16.49	AVG
	1 *	1157	0.001	_		15.07	1 40	).11	74.00	-24.89	peak



Ant	. Pol.	:	Vertic	al								
	t Moc			-	HT2	0) Mode	57	85MH	z (U-N	NII-3)		
Ren	nark:		No re		r the				•	,	below the	9
100.	0 dBu'	V/m										
90												
80										FCC Part	5 C - Above	1G PK
70												
60												
50				ş						FCC Part	5 C - Above	1G AV
40				1×								
30				×								
20												
10 0.0												
	000.000	4900.00	8800.00	12700.0	0 16	600.00 (N	(Hz)	244	00.00	28300.00 32	200.00 3610	0.00 40000.0
1		Freque		Readi	na	Facto	)r	Lev	/el	Limit	Margin	
N	lo.	(MH:		(dBu	-	(dB/m				(dBuV/m		Detector
1	1 *	11569.	133	22.4	9	15.00	3	37.	55	54.00	-16.45	AVG
	2	11569.	248	34.6	4	15.06	3	49.	70	74.00	-24.30	peak
Den	narks	-										

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Remarks: 1 Eactor (dB/m) = Anten

EN



	•	Horiz	contal					
Test Mod	le:	TX 8	02.11n(HT2	20) Mode 5	825MHz (U-I	VII-3)		
Remark:			eport for the cribed limit.		which more t	han 10 dB b	elow the	
100.0 dBuV	//m	1 p. co						
90								
10								
30						FCC Part15 C	- Above 1G	PK
70								
50								
			1×			FCC Part15 C	- Above 1G	AV
50								
10			\$					
30								
20								
10								
0.0								
			12700.00 16	600.00 (MHz)				
No.	Freque (MHz	-	Reading (dBu∀)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	11649.	800	34.64	15.13	49.77	74.00	-24.23	peak
2 *	11650.4	413	22.84	15.14	37.98	54.00	-16.02	AVG

2.Margin value = Level -Limit value

EN



Ant	. Pol	.:	Verti	cal									
Tes	t Moo	de:	TX 8	802.1	1n(HT2	20) Mode	e 58	825MF	lz (U-	NII-3)			
Ren	nark:				t for the d limit.	e emissio	on v	vhich	more	than 10 dB	below the	9	
100.0	) dBu'	√/m											
90													
80													
										FCC Part15	C - Above 1	G PK	
70													
60										FCC Part15	C - Above 1	G AV	
50				š									
40				ł									
30													
20													
10													
0.0													
10	00.000	4900.00	8800.00	127	00.00 16	600.00 (N	/Hz)	244	00.00	28300.00 3220	0.00 3610	).00 4000	10.0
N	lo.	Freque (MH			ading BuV)	Facto (dB/m			vel V/m)	Limit (dBuV/m)	Margin (dB)	Detecto	r
1	*	11649.	616	22	2.93	15.13	3	38	.06	54.00	-15.94	AVG	+
	2	11650.	326	34	4.87	15.14	4	50	.01	74.00	-23.99	peak	
													<u>_</u>
	narks												

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nt. Pol.:       Horizontal         est Mode:       TX 802.11ac(VHT20) Mode 5745MHz (U-NII-3)         emark:       No report for the emission which more than 10 dB below the										
est Mo	de:	TX 8	302.1 <sup>′</sup>	1ac(VF	IT20) Mod	le 5745	5MHz (	U-NII-3)		
lemark	:			for the	e emissior	which	more	than 10 dB l	below the	9
00.0 dB	uV/m	1 0100		<u>u</u>						
								FCC Part15	C - Above 1	G PK
0										
o										
50			ş					FCC Part15	C - Above 1	GAV
			x							
10			ł							
20										
0										
0.0										
1000.00	0 4900.00	8800.00	1270	0.00 10	6600.00 (MH	z) 24	400.00	28300.00 3220	0.00 36100	.00 40000.
No.	Freque (MH:	-		ading 8uV)	Factor (dB/m)		evel ıV/m)	Limit (dBuV/m)	Margin (dB)	Detector
	11490.	376	22	.33	15.01	37	.34	54.00	-16.66	AVG
1 *		759	33	.94	15.01	48	.95	74.00	-25.05	peak

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Ant. P	ol.:	Vert	ical								
Test M	ode:	TX 8	302.11	ac(V⊦	IT20) Mo	ode	5745	MHz (	U-NII-3)		
Remar	k:		eport f		e emissio	on v	vhich	more t	han 10 dB	below the	;
100.0 d	BuV/m					_					
90											
80									500 D		0.0%
						-			FCC Part1	i C - Above 1	<u>G PK</u>
70											
60						-			ECC Pertl	i C - Above 1	C AV
50			ł							- ADUVE I	
40			ş								
30											
20											
10											
0.0	00 4900.00	8800.00	12700	.00 16	600.00 (M	(Hz)	244	00.00 2	28300.00 322	00.00 36100	.00 40000.0
No.	Frequ (MF		Read (dBi		Facto (dB/m			vel V/m)	Limit (dBuV/m	Margin (dB)	Detector
1	11489	.753	33.	88	15.00	)	48	.88	74.00	-25.12	peak
2 *	11489	.931	22.	41	15.00	)	37	.41	54.00	-16.59	AVG
Remar 1 Facto		= Anter	ina Fa	ctor (c	IB/m)+C	abl	e Fac	or (dB	)-Pre-amp	lifier Facto	)r

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2.Margin value = Level -Limit value



Ant	. Pol	.:	Но	rizont	al							
Tes	t Mo	de:			•	IT20) Mo			,	,		
Rer	nark	•			t for the ed limit.		י ר	vhich	more f	than 10 dB	below the	<b>;</b>
100.	0 dBu	ıV/m										
90												
80												
										FCC Part15	C - Above 1	G PK
70												
60										FCC Part15	C - Above 1	G AV
50				Å								
40				1×								
30												
20												
10												
0.0												
10	00.00	0 4900.00	8800.0	0 127	00.00 10	6600.00 (MI	۱z)	244	100.00	28300.00 3220	0.00 3610	D.00 40000.0
		Free		Da	e elin e	Factor			vel	Limit	Marrin	
N	lo.		uency Hz)		ading BuV)	(dB/m)				(dBuV/m)	Margin (dB)	Detector
1	*	1157	0.085	2	2.50	15.07		37.	.57	54.00	-16.43	AVG
	2	1157	0.333	34	4.20	15.07		49	.27	74.00	-24.73	peak
1.Fa		(dB/m	) = Ante = Level			dB/m)+Ca	ble	e Fac	tor (dE	3)-Pre-ampl	ifier Fact	or

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Ant	. Pol	.:		Vert	ical									
Tes	t Mo	de:		TX 8	302.1	I1ac(VF	IT20) M	lode	5785	MHz (	U-NII-3)			
Rer	nark	•				t for the ed limit.	e emissi	on v	which	more t	han 10 dE	below the	9	
100.	) dBu	lV/m												
90														
80								_			FCC Part1	5 C - Above 1	G PK	
70								_						
60								_						
50					1×						FCC Part1	5 C - Above 1	GAV	
40					ş									
30								_						
20				_										
10														
0.0														
10	00.000	1 4900	J.UU 8	300.00	127	00.00 18	600.00 (	MHz)	244	00.00	28300.00 323	200.00 36100	).00 4000	JU.U
1														
N	lo.		equen (MHz)			ading BuV)	Fact (dB/r			vel V/m)	Limit (dBuV/m	) Margin (dB)	Detecto	or
1	1	11	569.5	28	34	4.74	15.0	6	49	.80	74.00	-24.20	peak	
2	*	11	570.7	81	2	2.40	15.0	7	37	.47	54.00	-16.53	AVG	i
	<u> </u>													
	narks		(ma) /			1 / -		<b>7</b> -  -				11:C		

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Ant.	. Pol	.:	Horiz	zonta	al							
Test	t Mo	de:	TX 8	02.1	1ac(VH	IT20) M	ode	5825	MHz (	U-NII-3)		
	nark				t for the ed limit.	emissi	on w	/hich	more t	han 10 dB I	pelow the	
100.0	dBu	V/m										
90  -												
80  -										FCC Part15	C - Above 10	G PK
70												
60  -			_				_			ECC Dest1E	C - Above 10	- AV
50				1×						ruu Paftis	C - ADUVE T	101
<sup>30</sup>				^								
40  -				ş								
20												
30												
20							_					
10			_									
0.0	00 000	4900.00 8	800.00	107	00.00 16	600.00 (I	/Hz)		00.00 2	8300.00 3220	0.00 36100	.00 40000.0
1												
N	о.	Frequer (MHz	-		ading BuV)	Fact (dB/n			vel IV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1	11649.1	136	34	4.34	15.1	3	49	.47	74.00	-24.53	peak
2	*	11649.3	355	2	2.75	15.1	3	37	.88	54.00	-16.12	AVG
	narks		Anteni	na F	actor (c	IB/m)+C	able	e Fac	tor (dB	)-Pre-ampli	fier Facto	)r

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2.Margin value = Level -Limit value

EN



Ant	. Pol	:	Vertio	cal										
Tes	t Mo	de:	TX 8	02.11a	ac(V⊢	IT20) M	ode	5825	MHz (	U-NII-3)				
Rer	nark:			eport f cribed		e emissi	on v	vhich	more t	han 10	dB I	below the	e	
100.	0 dBu'	V/m												
90							_				_			
80							_			ECC De	-+1E	C - Above 1	C DK	
70										FUUPE	IIIID	C - ADUVE I		
60														
50				ş						FCC Pa	urt15	C - Above 1	G AV	
40				1 X										
30				×										
20														
10 0.0														
10	)00.000	4900.00 8	800.00	12700.	.00 16	600.00 (N	(Hz)	244	00.00 2	8300.00	3220	0.00 36100	1.00 40000.0	
1								I						_
1	۱o.	Freque (MHz		Read (dBu		Facto (dB/n			vel IV/m)	Limi (dBuV/		Margin (dB)	Detector	
	1 *	11649.0	093	22.	82	15.1	3	37	.95	54.0	0	-16.05	AVG	-
	2	11649.	550	34.	57	15.1	3	49	.70	74.0	0	-24.30	peak	
	narke													

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Remarks:

FN



Ant. Pol	.:	Horiz	ontal					
est Mo	de:	TX 8	02.11n(HT4	0) Mode 57	'55MHz (U-I	VII-3)		
Remark	:		eport for the cribed limit.	emission v	hich more t	han 10 dB b	elow the	
100.0 dBu	ıV/m							
10						FCC Part15 0	C-Above 10	i PK
'0								
:0								
			ş			FCC Part15 (	C-Above 10	AV
50			X					
10			×					
0								
20								
10								
0.0								
1	1							
No.		uency Hz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	1151	0.551	22.24	15.01	37.25	54.00	-16.75	AVG
2	1151	0.879	33.76	15.01	48.77	74.00	-25.23	peak
1 *	(MI 1151)	0.551	22.24	15.01	37.25	54.00	-16.75	A١

2.Margin value = Level -Limit value

EN



FN

A	Del	_	) (anti											
	. Pol.		Verti											
	t Moo				11n(HT4				•	,				
Rer	nark:				rt for the ed limit.	emissic	n w	hich	more t	han 10	dB t	below th	ne	
100.	) dBu	V/m												-
90														
80										FCC P	art15 (	C-Above	1G PK	
70														
60										ECC P	ort15 (	- Above	16 AV	-
50				2 X										
40				ł										
30														-
20														-
10														
0.0														
10	00.000	4900.00	800.00	127	00.00 160	500.00 (M	Hz)	244	100.00 2	8300.00	32200	.00 3610	0.00 40	000.0
		-		-	P	<b>F</b>								
N	lo.	Freque (MH	ency Reading Iz) (dBuV)			Facto (dB/m			evel uV/m)	Lim (dBu\		Margi (dB)	n Dete	ctor
	1 *	11510.	·		2.10	15.01	·	•	.11	` 54.(		-16.8	AV	'G
	2	11510.			3.60	15.01			3.61	74.0		-25.39		
	2	11510.	551	5	5.60	15.0	]	40	5.01	74.0	0	-20.38	9 pe	aĸ
Dor	norka													
-	Remarks: .Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor													

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Ant. Pol	.:	Horiz	ontal					
Test Mo	de:	TX 80	02.11n(HT4	0) Mode 57	'95MHz (U-I	VII-3)		
Remark			port for the cribed limit.	emission v	hich more t	han 10 dB t	pelow the	!
100. <u>0</u> dBu	√/m							
90								
80						FCC Part15	C - Above 1	G PK
70								
60						FCC Part15	C - Above 1	C AV
50			<u> </u>				C-ADOVE IN	
40			1×					
30			×					
20								
10								
0.0	A900.00 8	3800.00	12700.00 16	600.00 (MHz)	24400.00 2	28300.00 3220	0.00 36100	.00 40000
No.	Freque (MHz		Reading (dBu∀)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	11589.2	253	22.70	15.08	37.78	54.00	-16.22	AVG
2	11590.1	163	34.15	15.09	49.24	74.00	-24.76	peak

2.Margin value = Level -Limit value



Ant	. Pol			Verti	cal										
	t Mo					11n(HT4	0) Mod	e 57	'95MF	Hz (U-I	VII-3)				
Ren	nark	:		No re	epor	t for the	,			•	,	dB k	pelow t	he	
100.	0 dBu	V/m		<u></u>											-
90															_
80											FCC P	art15 (	C - Above	1G PK	
70															
60											ECC P	ort1E (	C - Above	10 41	
50					ş								J - ADOVE		
40					ł						_				-
30												_			
20															
10															-
0.0	00.000	4900.00	88	00.00	127	700.00 16	600.00 (	MHz)	244	00.00 2	8300.00	32200	00 361	00.00 40	000.0
N	lo.	Freq (N	uen IHz)			ading BuV)	Fact (dB/r			vel iV/m)	Lim (dBu∖		Margi (dB)		ctor
1	*	1159	90.1	55	2	2.63	15.0	9	37	.72	54.0	00	-16.2	8 AV	G
	2	1159	90.4	43	3	4.89	15.0	9	49	.98	74.0	00	-24.0	2 pea	ak
	narks		) = A	nten	na F	actor (d	B/m)+(	Cabl	e Fac	tor (dB	)-Pre-2	mnli	fier Fa	ctor	

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:					ode	5755	<u>МНन (</u> )	I_NII_3)						
	No re	nort	fortho		TX 802.11ac(VHT40) Mode 5755MHz (U-NII-3)									
	No report for the emission which more than 10 dB below the prescribed limit.													
n														
					-			FCC Part15	FCC Part15 C - Above 1G PK					
								FCC Part15	C - Above 1	G AV				
		×			-									
		2			_									
		^												
		1070								.00 40000				
								Limit (dBuV/m)	Margin (dB)	Detector				
1509.	34.60		15.00		49.60		74.00	-24.40	peak					
2 * 11510.613		22.08		15.01		37.09		54.00	-16.91	AVG				
				Image: state	Image: state	Image: state of the state	Image: state stat	Image: Second	Image: Sector (MHz)         Reading (dBuV)         Factor (dBuV/m)         Level (dBuV/m)         Limit (dBuV/m)           1509.827         34.60         15.00         49.60         74.00	FCC Part1       SC - Above 1         FCC Part1       SC - Above 1         FCC Part1       SC - Above 1         Reading (MHz)       Factor (dBuV)       Level (dBuV)       Limit (dBuV/m)       Margin (dB)         11509.827       34.60       15.00       49.60       74.00       -24.40				



∆nt	. Pol	•	Vertic	اد							
Test Mode:		TX 802.11ac(VHT40) Mode 5755MHz (U-NII-3)									
Remark:		No report for the emission which more than 10 dB below the prescribed limit.									
100.0	) dBu	V/m			1						
90											
80							FCC Part15 (	`- Ahove 1(	DK		
70							FOUPartist	- MUUVE IN			
60											
50				ş.			FCC Part15 C	- Above 10			
40			_	*							
30											
20											
10											
0.0	00 000	4900.00 8	800.00	12700.00 16	600.00 (MHz)	24400.00 2	8300.00 32200	00 36100	00 40000.0		
1000.000 4900.00 8800.00 12700.00 16600.00 (MHz) 24400.00 28300.00 32200.00 36100.00 40000.0											
I											
N	lo.	Frequency (MHz)		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector		
1	1 *	11509.3	395	22.30	15.00	37.30	54.00	-16.70	AVG		
	2	11510.1	59	34.18	15.01	49.19	74.00	-24.81	peak		
			I						L		
ĸer	narks	5.									

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EN



Ant. Po	l.:	Horiz	zontal					
Test Mo	de:	TX 8	802.11ac(VH	IT40) Mode	5795MHz (	U-NII-3)		
Remark	:		eport for the cribed limit.	emission v	hich more t	han 10 dB b	elow the	
100.0 dBu	ıV/m							
90								
80						FCC Part15 (	C-Above 10	à PK
70								
60						FCC Part15 (	2 - About 10	
50			×				<u>- Above re</u>	
40			<u>k</u>					
30								
20								
10								
	) 4900.00	8800.00	12700.00 16	600.00 (MHz)	24400.00 2	8300.00 32200	.00 36100.	00 40000.0
No.	Frequ (Mł		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	11589	9.221	34.51	15.08	49.59	74.00	-24.41	peak
2 *	11590	0.044	22.85	15.09	37.94	54.00	-16.06	AVG

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Remarks:

EN



Test Mode:       TX 802.11ac(VHT40) Mode 5795MHz (U-NII-3)         Remark:       No report for the emission which more than 10 dB below the prescribed limit.         100.0       dBuV/m         90	
prescribed limit.           100.0         dBuV/m           90	
90	
80       Image: state of the s	
FCC Part15 C - Above 1G PK         70	_
70	_
So     So     So     FCC Part15 C - Above 1G AV       40     1     -     -     -       30     -     -     -     -       20     -     -     -     -       10     -     -     -     -	
50     2     1     1       40     1     1     1       30     20     1     1       10     0.0     1     1	
40     1	,
30     <	
20 10 0.0	
10 0.0	
0.0	
1000.000 4900.00 8800.00 12700.00 16600.00 (MHz) 24400.00 28300.00 32200.00 36100.00	
	40000.0
l	
No.Frequency (MHz)Reading (dBuV)Factor (dB/m)Level (dBuV/m)Limit (dBuV/m)Margin (dB)No.(MHz)(dBuV)(dBuV)(dB/m)Level (dBuV/m)Limit (dBuV/m)Margin (dB)De	etector
1 * 11589.001 22.60 15.08 37.68 54.00 -16.32 A	VG
2 11589.905 34.42 15.08 49.50 74.00 -24.50 p	eak
Remarks:	

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Ant	t. Pol	.:	Hori	zont	al								]
Tes	t Mo	de:	ТХ 8	302.	11ac(VF	IT80) Mo	ode	5775	MHz (	U-NII-3)			
Rer	nark	:			rt for the ed limit.	emissio	on v	vhich	more t	han 10 dB l	pelow the	;	
100.	o dBu	V/m				1							
90													
80										FCC Part15	C - Above 1	G PK	
70													
60													
50				1 X						FCC Part15	C - Above 1	G AV	
40				ş			_						
30													
20													
10													
0.0													
	100.000	4900.00	8800.00	121	700.00 16	600.00 (M	IHz)	244	00.00 2	8300.00 3220	0.00 36100	.00 4000	50.u
Ν	lo.	Freque (MH			ading BuV)	Facto (dB/m		1	vel iV/m)	Limit (dBuV/m)	Margin (dB)	Detect	or
	1	11549.	571	3	4.21	15.04	1	49	.25	74.00	-24.75	peal	<
2	2 *	11550.	206	2	2.63	15.05	5	37	.68	54.00	-16.32	AVG	;
Rer	narks	:									·		

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Ant	. Pol	.:		Verti	cal								
	t Mo					11ac(V⊦	IT80) M	ode	5775	MHz (	U-NII-3)		
Rer	nark	:		No r	еро		,				han 10 dE	below the	9
100.	) dBu	V/m											
90													
80											FCC Part1	5 C - Above 1	G PK
70													
60													
50					1×						FCC Part1	5 C - Above 1	GAV
40					ž								
					×								
30													
20													
10													
0.0 10	00.000	4900.00	88	00.00	127	00.00 16	600.00 (N	(Hz)	244	00.00 2	8300.00 322	00.00 36100	.00 40000.0
<u> </u>									1				
N	lo.	Freq (N	uen IHz)	-		ading BuV)	Facto (dB/n			vel iV/m)	Limit (dBuV/m	) Margin (dB)	Detector
	1	1154	19.1	05	3	4.41	15.04	4	49	.45	74.00	-24.55	peak
2	2 *	1154	19.3	81	2	2.72	15.04	4	37	.76	54.00	-16.24	AVG
													·

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Remarks:

EN

# 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

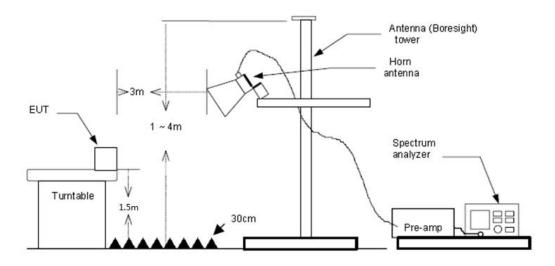
Frequency (MHz)	EIRP Limits (dBm)	Equivalent Field Strength at 3m (dBuV/m)
5150~5250	-27	68.2
5250~5350	-27	68.2
5470~5725	-27	68.2
	-27(Note 2)	68.2
5725~5825	10(Note 2)	105.2
0720~0020	15.6(Note 2)	110.8
	27(Note 2)	122.2

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

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

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

## **Test Configuration**



## Test Procedure

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



The receiver set as follow: 5.

RBW=1MHz, VBW=3MHz PEAK detector for Peak value. RBW=1MHz, VBW see note 1 with Peak Detector for Average Value.

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

#### Test Mode

Please refer to the clause 2.4.

#### **Test Results**

Ant	. Pol	.:	Hori	zontal					
Tes	t Mo	de:	ТХ 8	802.11a Mod	le 5180MHz	z (U-NII-1)			
Rer	nark	:		eport for the cribed limit.	emission v	vhich more t	han 10 dB t	pelow the	9
110.0	) dBu <sup>v</sup>	√/m							
100									
90								$\sim$	1
80							FCC Part 15C 3M	Above-1G Pea	sk.
70									
60							FCC Part 15C and	Apove-1G AV	$\rightarrow$
50							×		-+
40						******	1 de la		
30									
20 10.0									
	32.500	4960.00 4	987.50	5015.00 50	42.50 (MHz)	5097.50	5125.00 5152	.50 5180.	00 5207.50
N	<b>l</b> o.	Frequer (MHz	-	Reading (dBu∀)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
	1	5128.0	25	51.45	-1.25	50.20	74.00	-23.80	peak
2		5128.0		41.23	-1.25	39.98	54.00	-14.02	AVG
	3	5150.0		56.05	-1.18	54.87	74.00	-19.13	peak
	4	5150.0	00	41.03	-1.18	39.85	54.00	-14.15	AVG
1.Fa		$(dB/m) = \lambda$		na Factor (c Limit value	IB/m)+Cabl	e Factor (dE	8)-Pre-ampli	fier Facto	or



Ant.	Pol.	•	\	/erti	cal									
	Мос						de 5180I		•	,				
Rem	nark:					t for the d limit.	emissio	on w	hich ı	more t	han 10	) dB I	below the	9
110.0	dBu	//m												
100 -														
90								_					M	
80								_			FCC Part	15C 3M	Above-1G Pe	ak
70								-						
60													Above-1G AV	$\rightarrow$
50								_			i X	15% 31	Above-16 AV	
40											2	Å		
30				~~~~~					~~~~~~	~~~				
20														
10.0														
		Free	quenc	-v	Re	ading	Facto	or		vel	Lin	nit	Margin	
N	o.		/Hz)	.,		BuV)	(dB/n			V/m)				Detector
1		512	27.45	0	51	1.63	-1.2	5	50	.38	74.	00	-23.62	peak
2	*	512	27.75	0	41	1.12	-1.2	5	39	.87	54.	00	-14.13	AVG
3			0.00		56	3.21	-1.18			.03	74.	00	-18.97	peak
4	L	515	0.00	0	40	0.59	-1.18	3	39	.41	54.	00	-14.59	AVG

Remarks:

FN



nt. Pol	.:	Hori	zontal									
est Mo	de:	TX 8	802.11a	Mod	le 5240	ЭМНz	z (U-N	ll-1)				
emark	:		eport fo cribed		e emiss	sion w	vhich ı	more f	han 1	0 dB k	pelow th	ıe
10.0 dBu	¥/m											
,	m											
,												
)									FCC Part	15C 3M	Above-1G F	eak
) —	+											
,	- N											
,						-			FCC Part	15C 3M	Above-1G A	<u>.v</u>
V		L.				×						
)		Kan	m	~		2 	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~					
)												
)												
0.0	5240.00	5267.50	5295.00		22.50	(MHz)	507	7.50	5405.00	5432.	F0 F40	0.00 5487.
No.	Freque (MH		Read (dBu	<b>U</b>	Fac (dB/			vel V/m)	Lir (dBu		Margi (dB)	n Detecto
1	5350.	000	46.9	90	-0.6	32	46	.28	74.	00	-27.72	2 peak
2 *	5350.	000	36.1	17	-0.6	32	35	.55	54.	00	-18.4	5 AVG
emarks												

2.Margin value = Level -Limit value

EN



nt. Po	l.:	Vert	ical					
est Mo			302.11a Mod		,			
emark	:		eport for the cribed limit.	emission v	hich more t	han 10 dB t	pelow the	;
10.0 dBu	V/m							
00								
0	m							
0						FCC Part 15C 3M	Above-1G Pea	ak
0	$1 \downarrow$							
0 /								
		$\lambda$				FCC Part 15C 3M	Above-1G AV	
				1 X				
o 🍊 🗕			$-\Lambda_{-}$	Ş				
D						*****		
0								
0.0								
5209.750	5237.25	5264.75	5292.25 53	19.75 (MHz)	5374.75	5402.25 5429	.75 5457.	25 5484.
No.	Freque (MH		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	5350.	000	47.16	-0.62	46.54	74.00	-27.46	peak
2 *	5350.	000	36.02	-0.62	35.40	54.00	-18.60	AVG
Remark	2.							

2.Margin value = Level -Limit value

EN



	ol.:	Hori	zontal					
Test Mo	ode:	TX 8	802.11n(l	HT20) Mode 5	180MHz (U-	NII-1)		
Remarl	<b>c</b> :		report for scribed lir	the emission nit.	which more t	than 10 dB l	below the	9
10.0 dB	ıV/m							
100								
							~~~~	~
30						FCC Part 15C 3M	Above 1G Pea	ak
70								
50							A.	-
50						FCC Part 15C 🕺 X	Above-1G AV	
						3 4	·	N N
•0						A		
30								
20								
10.0 4932.500	4960.00	4987.50	5015.00	5042.50 (MHz)	5097.50	5125.00 5152	.50 5180.	00 5207.50
	1							
No.	Freque (MH:	-	Readir (dBuV	•	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
No.		z)		(dB/m)				Detector peak
	(MH	z) 750	(dBuV	(dB/m) -1.25	(dBuV/m)	(dBuV/m)	(dB)	Detector
1	(MH: 5127.7	z) 750 025	(dBuV 52.75	(dB/m) -1.25 -1.25	(dBuV/m) 51.50	(dBuV/m) 74.00	(dB) -22.50	peak

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An	t. Pol	.:		Verti	cal															
Tes	st Mo	de:		ТХ 8	802. <sup>-</sup>	11n(	HT2	20) M	ode	51	80M⊦	lz (U-	NII	-1)						
Rei	mark	-		No r pres				emi	ssion	ı w	/hich ı	more	tha	n 10	dB	belo	ow t	he		
110.0	) dBu¥	//m																		
100																				
90																	~~~	h		
80																				
													FC	Part 1	5C 3M	Abo	e-1G F	Peak	t.	_
70																1		h	~	
60													FCC	Part 1	3 58 31	Abov	e-16 /	v	<b>1</b>	-
50													×		-1			-		
40													2		*				ر ر	
30				•••••							<b>u</b> nia									-
20																				_
10.0																				
49	38.000	4965.50	499	3.00	502	0.50	50	48.00	(MH:	z)	510	3.00	513	).50	5158	3.00	518	35.5	0 52	213.00
1	۷o.	Frequ (M	uen Hz)			eadii Bu∖	-		actor 3/m)			vel V/m)	(c	Lim IBu\			argi dB)		Dete	ctor
	1	5128	8.00	0	5	2.4	1	-1	.25		51	.16		74.0	00	-2	2.8	4	pea	ak
:	2 *	5128	8.57	5	4	1.68	3	-1	.25		40	.43	$\square$	54.0	00	-1	3.5	7	AV	G
	3	5150	00.0	0	5	7.84	4	-1	.18		56	.66		74.0	00	-1	7.3	4	pea	ak
	4	5150	00.0	0	4	1.40	)	-1	.18		40	.22		54.0	00	-1	3.7	8	AV	G

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Remarks:

EN



:	Horiz	zontal					
de:	TX 8	302.11n(HT2	20) Mode 52	240MHz (U-I	NII-1)		
				vhich more t	han 10 dB t	elow the	•
//m							
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~							
					FCC Part 15C 3M /	Above-1G Pea	k
have							
	$\downarrow$				FCC Part 15C 3M /	Above-1G AV	
			1 X				
	- Non	ml m	2				
5240.00	5267.50	5295.00 5	322.50 (MHz)	5377.50	5405.00 5432.	50 5460.0	0 5487.9
		Reading (dBu∀)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
5350.0	000	47.06	-0.62	46.44	74.00	-27.56	peak
5350.0	000	35.85	-0.62	35.23	54.00	-18.77	AVG
	7/m 5240.00 Freque (MH;	//m	Frequency (MHz) Reading (dBuV)	No report for the emission v prescribed limit.       //m       //m	No report for the emission which more to prescribed limit.         //m         //m	No report for the emission which more than 10 dB to prescribed limit.       //m       //m       FCC Part 15C 3M /       FCC Part 15C 3M /       FCC Part 15C 3M /       5240.00       5267.50       5295.00       5322.50       (MHz)       Reading (dBuV)       Factor (dB/m)       Level (dBuV/m)	No report for the emission which more than 10 dB below the prescribed limit.         //m         FCC Part 15C 3M Above-16 Pea         S240.00 5267.50 5295.00 5322.50 (MHz)         Frequency (dBuV)       Factor (dB/m)       Level (dBuV/m)       Limit (dBuV/m)       Margin (dB)

2.Margin value = Level -Limit value

EN



Ant	. Pol.	:	Verti	cal										
Tes	t Mod	le:	TX 8	02.1	1n(HT2	20) Mc	ode 52	40MF	lz (U-I	NII-1)				
Rer	nark:					e emis	sion v	hich ı	more t	han 10	) dB k	pelow th	е	
110.0	) dBuV	/m	pres	cribe	d limit.									
100														
90		m												
80														
70										FCC Part	15C 3M	Above-1G P	eak	-
60														
	7		1							FCC Part	15C 3M	Above-1G A	v	
50	$\int$						1 X							
40				~	Lon		2							
30														-
20														_
10.0 51	209.750	5227.25	5264.75	5292	2 25 F	319.75	(MHz)	527	4.75	5402.25	5429	.75 545	7.25 54	84.75
							(							
I	No.	Freque (MH			ading BuV)		ctor 3/m)		vel V/m)	Lin (dBu)		Margin (dB)	Detec	tor
	1	5350.0	000	4	7.04	-0.	.62	46	.42	74.	00	-27.58	pea	k
	2 *	5350.0	000	30	6.14	-0.	.62	35	.52	54.	00	-18.48	AVC	3
-	narks actor (	(dB/m) =	Anten	na Fa	actor (d	dB/m)-	+Cabl	e Fact	or (dE	8)-Pre-	ampli	fier Fac	tor	

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EN

Pre-ampi mer Facio IJ 2.Margin value = Level -Limit value



			r												
Ant	. Pol.	:	Hori	zont	al										
	t Moo				l1ac(V⊦	,			•		,				
Rer	nark:				t for the ed limit.	e emiss	sion v	vhich i	nore t	han 1	0 dB k	oelov	w the	<del>;</del>	
110.0	) dBuV	//m													
100															
90													$\sim$	7	
80										FCC Part	15C 3M	Above	16 Pea	J.	
70											100 044	ADOTE			
60										ECC Parl	15C 3M		16 AV	$\rightarrow$	
50										ž	×				
40										1 X	4			\	
30	•	·····													
20															
10.0															
49	32.500	4960.00	4987.50	501	5.00 50	942.50	(MHz)	509	7.50	5125.00	5152.	.50	5180.0	00 5207	.50
N	lo.	Freque (MHz	-		ading BuV)	Fac (dB/			vel V/m)		nit V/m)		rgin B)	Detecto	or
1	*	5128.3	00	4	2.20	-1.2	25	40	.95	54	.00	-13	8.05	AVG	1
	2	5128.4	50	5	2.09	-1.2	25	50	.84	74	.00	-23	8.16	peak	:
	3	5150.0	000	5	4.68	-1.1	18	53	.50	74	.00	-20	.50	peak	:
4	4	5150.0	00	4	1.62	-1.1	18	40	.44	54	.00	-13	8.56	AVG	i
Rer	narks	:													
		(dR/m) =	Anton	no E	actor (c	IB/m\⊥	Cabl	- Ead	or (dD		ampli	fior	Eacto	hr.	

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Ant. Pol.:	Vertical					
	Vertical					
Test Mode:	TX 802.11ac(VI	,	,	,		
Remark:	No report for the prescribed limit.		vnich more i	inan 10 dB i	below the	<b>;</b>
110.0 dBuV/m						
100						
90					m	
80				500 D 450 Ol		
70				FCC Part 15C 3M	Above-16 Pe	ak
						Mar I
60				FCC Part 152 3M	# Above-1G AV	
50				×		-+
40				2 4		
30		*				
20						
	4993.00 5020.50 5	048.00 (MHz)	5103.00	5130.50 5158	.00 5185.	50 5213.00
No. Freque		Factor	Level	Limit	Margin	Detector
(MH:	z) (dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Delector
1 5128.	550 52.16	-1.25	50.91	74.00	-23.09	peak
2 * 5128.	575 42.10	-1.25	40.85	54.00	-13.15	AVG
3 5150.0	000 55.43	-1.18	54.25	74.00	-19.75	peak
4 5150.0	000 41.25	-1.18	40.07	54.00	-13.93	AVG
LI						L
Remarks:						

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EN



l.:		
ode:	ac(VHT20) Mode 5240MHz (U-NII-1)	
<b>K:</b>	for the emission which more than 10 dB below the d limit.	
W/m		
man		
	FCC Part 15C 3M Above-16 Peak	
- Ma		
	FCC Part 15C 3M Above-1G AV	
	1	
	2	
5240.00	00 5322.50 (MHz) 5377.50 5405.00 5432.50 5460.00	5487.
Freque (MH	ding Factor Level Limit Margin (dB/m) (dBuV/m) (dBuV/m) (dB)	etecto
5350.	.06 -0.62 46.44 74.00 -27.56	peak
5350.	.78 -0.62 35.16 54.00 -18.84	AVG
(MH 5350.	uV) (dB/m) (dBuV/m) (dBuV/m) (dB) (dB) .06 -0.62 46.44 74.00 -27.56	



Ant	. Pol	:	Verti	cal							
Tes	t Moo	de:		802.11ac( <sup>\</sup>				-			
Rer	nark:			eport for t cribed lim		ssion v	/hich n	nore t	han 10 dB t	elow the	;
110.0	) dBu¥	//m	1 0.00								
100											
90		m									
80											
70		$\left\{ \right\}$							FCC Part 15C 3M /	Above-16 Pea	k
70	~		、								
60			$\setminus$						FCC Part 15C 3M /	Above-1G AV	
50	1					1×					
40	<u>۲</u>		~								
30				and and		2 X	~~~~~				
20											
10.0 52	209.750	5237.25	5264.75	5292.25	5319.75	(MHz)	5374	75	5402.25 5429.	75 5457.2	25 5484.75
	lo.	Freque (MH:		Reading (dBuV)		actor 3/m)	Lev (dBu)		Limit (dBuV/m)	Margin (dB)	Detector
	1	5350.0	000	47.48	-0	.62	46.	86	74.00	-27.14	peak
2	2 *	5350.0	000	36.11	-0	.62	35.	49	54.00	-18.51	AVG
	narks										

Remarks:

FN



	l.:	Hor	Horizontal											
Fest Mo	ode:	TX	302.11	In(HT₄	40) Mode	e 5190	MHz	(U-N	VII-1)					
Remark	<b>c</b> :		report scribed		emissio	on whi	ch m	ore t	han 1	0 dB	below the	e		
110.0 dB	uV/m	1 p. e.												
100														
90														
BO									ECC Part	150 20	Above-16 Pe			
70										1 X				
60											A			
50									FCC Part	150,8M	Above-1G AV			
40								and the second	mar and the second					
30	hanga kalang	********************				as and an								
20														
10.0	4070.00	4997.50	5025.	00 54	052.50 (N	Hz)	5107.5		5135.00	5162	2.50 5190.	00 5217		
4942.50	) 4970.00													
4942.500 No.	Frequ (MH			ding auV)	Facto (dB/m		Leve		Lin (dBu'		Margin (dB)	Detecto		
I	Frequ	lz)	(dB			n) (d		/m)		V/m)		Detecto peak		



Ant. Po	l.:	Verti	cal					
lest Mo	de:	TX 8	802.11n(HT4	10) Mode 51	90MHz (U-I	NII-1)		
Remark	:		eport for the cribed limit.	emission v	hich more t	han 10 dB b	elow the	;
10.0 dBu	√/m	1 0.00						
00								
0							- mart	
o								
						FCC Part 15C 3M /	Above-1G Pea	ik 👘
0						X		- Var
.o								
						FCC Part 15C 3M	bove-1G AV	
io						- All -		
	www.www.ww			and the second s	Conner and and a state			
:0								
:0								
0.0 4939.750	4967.25	4994.75	5022.25 50	49.75 (MHz)	5104.75	5132.25 5159.	75 5187.2	25 5214.7
No.	Freque (MH	-	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	5150.	000	70.83	-1.18	69.65	74.00	-4.35	peak
2 *	5150.	000	52.38	-1.18	51.20	54.00	-2.80	AVG

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2.Margin value = Level -Limit value

EN



nt. Po	l.:	Horiz	ontal					
est Mo	ode:	TX 80	02.11n(HT	40) Mode 5	230MHz (U-	NII-1)		
emark	<b>(:</b>		port for the ribed limit		which more	than 10 dB I	below the	9
0.0 dBu	iV/m							
o								
	martine from the second							
$\left  \right $								
						FCC Part 15C 3M	Above-1G Pe	ak
$\square$	1	۷.,						
M		Allow Barrow						
			<b>\</b>		1	FCC Part 15C 3M	Above-1G AV	
			No.		X			
			and the second	apren and	2	******		
.0 5202.500	5230.00	5257.50	5285.00 5	312.50 (MHz)	5367.50	5395.00 5422	.50 5450.	00 5477.
	Freque	ncy	Reading	Factor	Level	Limit	Margin	
No.	(MHz		(dBuV)	(dB/m)		(dBuV/m)	(dB)	Detector
1	5350.0	00	48.04	-0.62	47.42	74.00	-26.58	peak
2 *	5350.0	00	36.89	-0.62	36.27	54.00	-17.73	AVG



Ant. Pol.:	Vertical
Test Mode:	TX 802.11n(HT40) Mode 5230MHz (U-NII-1)
Remark:	No report for the emission which more than 10 dB below the prescribed limit.
110.0 dBu¥/m	
100	
90	
80	FCC Part 15C 3M Above-16 Peak
70	
~	Marchan -
60 / <sup>r</sup>	FCC Part 15C 3M Above-16 AV
50	
40	
30	
20	
10.0	
5202.500 5230.00	5257.50 5285.00 5312.50 (MHz) 5367.50 5395.00 5422.50 5450.00 5477.50
1	
No. Frequ	
1 5350	000 47.01 -0.62 46.39 74.00 -27.61 peak
2 * 5350	000 36.86 -0.62 36.24 54.00 -17.76 AVG
Remarks:	

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	.:	Hori:	zontal					
Test Mo	de:	TX 8	02.11ac	(VHT40) Mod	e 5190MHz	(U-NII-1)		
Remark	-		eport for cribed lir	the emission	which more	e than 10 dB	below the	e
110.0 dBu	V/m							
100								
90							m	may
80								
						FCC Part 15C 3	Above-16 Pea	ak
70						X		www.
60	FCC Part 15C/3M Above-16 A						Above-1G AV	
50						E.		
40						warmontenew		
30	-	www.	and a second	- and the second and a second the	Mummer Martin			
50								
20								
10.0 4942.500	4970.00	4997.50	5025.00	5052.50 (MHz	2) 5107.50	5135.00 516	2.50 5190.	00 5217.
No.	Frequ (MF		Readir (dBu√		Level (dBuV/m	Limit ) (dBuV/m	Margin (dB)	Detector
No.		lz)		/) (dB/m)				Detector



nt.	Pol.	:	Vert	cal										
est	Мос	le:	TX 8	802.11a	ac(V⊢	IT40) M	ode	5190	MHz (	U-NII-	1)			
em	ark:			eport fo		e emissi	on v	vhich	more t	han 1	) dB I	pelow the	e	
10.0	dBuV.	/m												
00														
													~~~	
												from		
										FCC Part	15C 3M /	Above-1G Pea	ak	
											1 X		h	
										FCC Part	15C 3M /	Above-1G AV		
	ent-m	maneno			مور میں اور میں اور			m	aller all the second second	-				
۱  -														
.0 4939	9.750	4967.25	4994.75	5022.25	i 50	49.75 (	MHz)	510	4.75	5132.25	5159.	75 5187.	25 5214	4.7
No	o.	Frequ (MF		Read (dBu	-	Fact (dB/r			vel V/m)	Lir (dBu		Margin (dB)	Detect	or
1		5150	.000	68.	76	-1.1	8	67	.58	74.	00	-6.42	peak	(
2	*	5150	.000	52.8	38	-1.1	8	51	.70	54.	00	-2.30	AVG	;

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FN



	Horizontal											
TX 8	302.11ac(VH	HT40) Mode	e 5230MHz (	U-NII-1)								
			which more	than 10 dB	below the	Э						
<u>.</u>												
				FCC Part 15C 3M	Above-1G Pea	ak						
have												
Warder	<b>\</b>											
			1	FCC Part 15C 3M	Above-1G AV							
	L.		×									
		the manual the same	2	hourse management and a	un managener							
5257.50	5285.00 5	312.50 (MHz)	5367.50	5395.00 5422	.50 5450.	00 5477.5						
	Reading (dBu∀)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector						
0.000	48.36	-0.62	47.74	74.00	-26.26	peak						
0.000	36.67	-0.62	36.05	54.00	-17.95	AVG						
		prescribed limit.	prescribed limit.	prescribed limit.	prescribed limit.           Image: state	FCC Part 15C 3M Above-16 Per           FCC Part 15C 3M Above-16 Per           FCC Part 15C 3M Above-16 AV           X           S257.50         5285.00         5312.50         (MHz)         5367.50         5395.00         5422.50         5450.           uency         Reading (dBuV)         Factor (dB/m)         Level (dBuV/m)         Limit (dBuV/m)         Margin (dB)						

2.Margin value = Level -Limit value

EN



Ant. Po	ol.:	Verti	cal						
lest Mo	ode:	TX 8	02.11ac(VH	IT40) Mode	5230MHz (I	U-NII-1)			
Remarl	k:		No report for the emission which more than 10 dB below the prescribed limit.						
110.0 dB	uV/m	pico							
00									
0 4	mymm								
	1								
0						FCC Part 15C 3M A	bove-1G Pea	k	
o 🗖									
		monen							
o / <u>'</u>			h			FCC Part 15C 3M A	bove-16 AV		
o 📃									
			New 1		1 X				
0			and and a second se	monent	2				
o 📃									
:0									
0.0 5202.50	0 5230.00	5257.50	5285.00 53	12.50 (MHz)	5367.50	5395.00 5422.	50 5450.0	0 5477.5	
	Frequ	iency	Reading	Factor	Level	Limit	Margin		
No.	(MI	Hz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector	
1	5350	.000	47.01	-0.62	46.39	74.00	-27.61	peak	
2 *	5350	.000	36.86	-0.62	36.24	54.00	-17.76	AVG	



				, ug		50			Керо		102025
Ant. Po	l.:	Horiz	zonta								
Test Mo	de:	TX 8	802.11	lac(VH	T80) Mo	de {	52101	MHz (I	J-NII-1)		
Remark	:	No report for the emission which more than 10 dB below the prescribed limit.						9			
110.0 dBu	ıV/m										
100											
90						-					
80			- M	hand					FCC Part 15C 3M	Above-16 Pea	ak
70		1 X									
60		2					monar	man	FCC Part 15C 3M	Above-16 AV	
50	مالا کرد. مراجع عالمان مراجع	and the second	~					4446	man and	3 X	
40									- Vinderman		allan - Annaholisangka
30											
20											
10.0 5087.000	) 5117.00	5147.00	5177.	.00 52	07.00 (MI	lz)	526	7.00	5297.00 5327	.00 5357.	00 5387.
No.	Freque (MH			ading Bu∀)	Factor (dB/m)		Le (dBu		Limit (dBuV/m)	Margin (dB)	Detector
1	5150.	000	67	.78	-1.18		66.	.60	74.00	-7.40	peak
2 *	5150.	000	53	.18	-1.18		52	.00	54.00	-2.00	AVG

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Remarks:

FN

3

4

5350.000

5350.000

46.67

37.54

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

-0.62

-0.62

46.05

36.92

74.00

54.00

-27.95

-17.08

peak

AVG



Aı	nt. Pol	.:	Vert	cal								
Те	est Mo	de:	ТХ 8	302.11	ac(VH	T80) Mo	de 52'	I0MHz	z (U-NI	I-1)		
Re	emark:	:			for the I limit.	emissior	ו whic	h mor	e than	10 dB k	below the	;
110	).0 dBuV	/m				1						
00	,											
90							Marca -					
80								my	FCC P	wt 15C 3M /	Above-1G Pea	<b>k</b>
70										11 130 3117		
60				1 X					ware and		Above-1G AV	
50				white white	James Law				FCC P	MASC 3M /	Above-1G AV	3 X
40		and the second states	a marine								Mary Mary Mary and an	Â
30	and the second second	man .										and the Kington
20												
10.	o											
!	5060.000	5090.00 5	120.00	5150.0	0 51	30.00 (MH	z) !	5240.00	5270.00	) 5300.	00 5330.0	)0 5360.
İ	No.	Freque (MH:	-		ding uV)	Factor (dB/m)		_evel BuV/m		imit uV/m)	Margin (dB)	Detecto
F	1	5150.0	000	64	.37	-1.18		3.19	7	4.00	-10.81	peak
	2 *	5150.0			.21	-1.18	<u> </u>	52.03		4.00	-1.97	AVG

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Remarks:

EN

3

4

5350.000

5350.000

48.20

37.87

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

-0.62

-0.62

47.58

37.25

74.00

54.00

-26.42

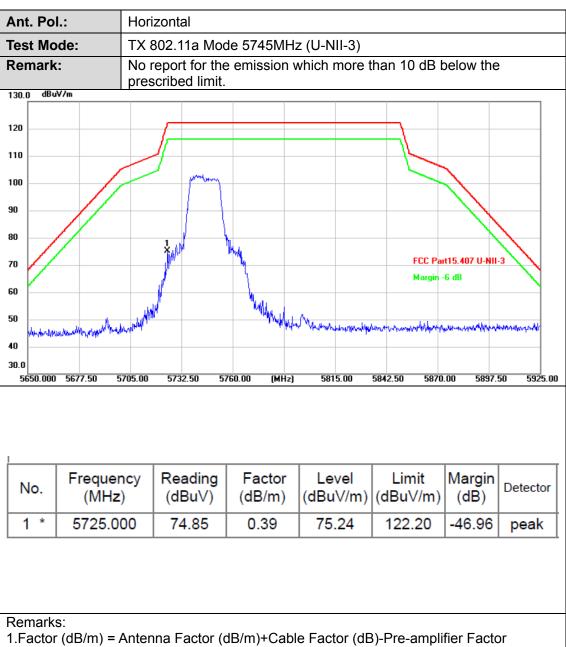
-16.75

peak

AVG



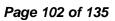
FN



2.Margin value = Level -Limit value



Ant. Pol.:	Vert	ical							
Test Mode:	TX 8	302.11a Mod	le 5745MHz	z (U-NII-3)					
Remark:		o report for the emission which more than 10 dB below the rescribed limit.							
130.0 dBuV/m									
120 110 100 90 80 70 50 11,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,		5732.50 57	60.00 (MHz)		FCC Part Margin - 6	hat for an	endedurate		
	equency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detecto		
1 * 57	725.000	68.81	0.39	69.20	122.20	-53.00	peak		

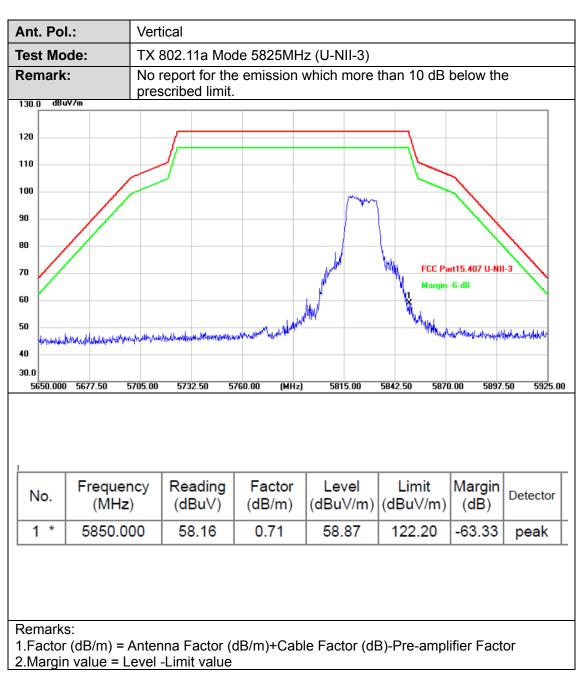


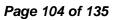


	-					
Ant. Pol.:	Horizontal					
Test Mode:	TX 802.11a Mo	de 5825MH	z (U-NII-3)			
Remark:	No report for th		which more	than 10 dB I	pelow the	;
130.0 dBu∀/m	prescribed limit					
120				-		
110						
100						
100			m			
90						
80						
70			Jun .	FCC Pa	rt15.407 U-NII	-3
60			uľ –	Margin		
80	wordnessenseenselver	why	M	King Mary		
50	mondmanipendesserved	man human		" The hall	M mps when we	mappenet
40						
30.0 5650.000 5677.50		5760.00 (MHz)	5815.00	5842.50 5870	.00 5897.	50 5925.00
		- Factor		1.5.5.9		
No. Freque (MH		Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 * 5850.0	000 57.51	0.71	58.22	122.20	-63.98	peak
Remarks: 1.Factor (dB/m) = 2.Margin value =			e Factor (dE	3)-Pre-ampli	fier Facto	Dr



FN







Ant. Pol.:	Hori	zontal					
Test Mode:	TX 8	302.11n(HT2	0) Mode 57	45MHz (U-1	VII-3)		
Remark:		eport for the	emission w	hich more t	han 10 dB b	pelow the	:
130.0 dBuV/m	pres	cribed limit.					
120							
110		<i>J</i>					
100		Norman					
90							
80		- M					
70		<b>M</b>	m			15.407 U-NII-	3
60		/			Margin -		
50	أمضراب	/	Why was	x.	ninsky mytomet tit men statemet med		
White years the same dore no	pp way have a property and		1 Million	"Mudarthe Whater inversion of the open	which produced the equilibrium of	Annanimiation	a channel whether
40							
30.0 5650.000 5677.50	5705.00	5732.50 57	60.00 (MHz)	5815.00	5842.50 5870.	00 5897.5	0 5925.00
	quency /IHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 * 572	25.000	71.15	0.39	71.54	122.20	-50.66	peak
Remarks: 1.Factor (dB/m	) = Anten	na Factor (d	IB/m)+Cable	e Factor (dP	3)-Pre-ampli	fier Facto	or
2.Margin value			,	(32	,		



	Vertica									
Test Mode:	TX 802	.11n(HT2	0) Mode 57	'45MHz (U-N	VII-3)					
Remark:		No report for the emission which more than 10 dB below the prescribed limit.								
130.0 dBuV/m	prescri	bed limit.								
120 110 100 90 80 70 60 50 40 30.0 5650.000 5677.50		732.50 57	50.00 (MHz)	<sup>~~</sup> \\dm\\\\ 5815.00	Margin -	hestranompiadami	maan			
No. Frequ	•	eading dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector			
1 * 5725	.000	67.52	0.39	67.91	122.20	-54.29	peak			

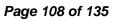




Ant. Pol.:	Horizontal	
Test Mode:	TX 802.11n(HT20) Mode 5825MHz (U-NII-3)	
Remark:	No report for the emission which more than 10 dB below the prescribed limit.	
130.0 dBuV/m		
120		
110		
100		
90		
80		
70	FCC Part15.407 U-NII-3	$\mathbf{X}$
60	AND MARKED IN	
50 with way and the second	marganeral water water the water the water and the water a	hippoper manual
30.0	5705.00 5732.50 5760.00 (MHz) 5815.00 5842.50 5870.00 5897.50	5925.00
5550.000 5517.50		5525.00
No. Freque (MH:		Detector
1 * 5850.0	000 62.81 0.71 63.52 122.20 -58.68	peak
Remarks:		
	Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor	
2.Margin value = L		



Ant. Po	ol.:	Verti	cal					
Test Mo	ode:	TX 8	02.11n(HT2	0) Mode 58	325MHz (U-I	VII-3)		
Remarl	<b>K</b> :	No re	pelow the	;				
130.0 dB	uV/m	1 10 10 10						
20								
10								
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o	_ //							
					Laf	V		
• 🅢	/				with.	FCC Par	t15.407 U-NII	-3
					J I	Margin -	6 dB	
0					d l	W.		
	L J		المقديد و ال	an approximately and	`	"My and	at the second second	illing webs . m
0	Anerrotenshirehour	an an the state of	nt handler och som and and an and an	marrier with floor			n "Mike-anterne	an a frail and an
0.0								
5650.00	0 5677.50	5705.00	5732.50 57	60.00 (MHz)	5815.00	5842.50 5870.	.00 5897.	50 5925.
1								
No.	Frequ (MH		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	5850	.000	60.98	0.71	61.69	122.20	-60.51	peak
							1	-





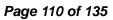
Ant. Pol.: Test Mode: Remark: 130.0 dBuV/m 120 110 100 90 80 70 60 50	No repo	.11ac(VF		5745MHz ( vhich more t	han 10 dB t	115.407 U-NII-	
Remark: 130.0 dBuV/m 120 110 100 90 80 70 60	No repo	ort for the			han 10 dB t	115.407 U-NII-	
130.0 dBuV/m 120 110 90 80 70 60			e emission v	vhich more t	FCC Par	115.407 U-NII-	
120       110       100       90       80       70       60							3
120 110 100 90 80 70 60	J.	Morria					3
110       100       90       80       70       60	, in the second	Marina					3
100 90 80 70 60	j	Norma	Marin Marine Contraction of the second secon				3
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80 70 60	j	M	WMW				3
80 70 60	, ind	M	Virrilly				3
70 60	, jinh	M	Vm				3
60	/ <sup>60"*</sup>						3
	<u>[</u>						N
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30.0							
5650.000 5677.50	5705.00 57	732.50 57	60.00 (MHz)	5815.00	5842.50 5870.	00 5897.5	50 5925.00
No. Frequ	•	eading dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 * 5725.	.000	71.15	0.39	71.54	122.20	-50.66	peak
Remarks: 1.Factor (dB/m) = 2.Margin value =			IB/m)+Cabl	e Factor (dB	s)-Pre-ampli	fier Facto	Dr



Ant. Po	.:	Verti	cal					
est Mo	de:	TX 8	02.11ac(VH	IT20) Mode	5745MHz (	U-NII-3)		
Remark	:		eport for the cribed limit.	emission v	hich more t	han 10 dB t	elow the	;
130.0 dBu	V/m	1 10.00						
20			$\int$					
10								
00			phypery					
o								
	$\boldsymbol{N}$							
				1				
0	<b></b>		111	n <sub>w.</sub>		FCC Par	t15.407 U-NII	-3
			<b>6</b> 7'			Margin -	6 dB	
0			j –					
o		HAM		PH/WWW	theman			t al al a
within	nghugh-rayahith	Apul		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	" "Mininethelinenglederiter	₩₩₽₩₽₩₽₩₽₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩	nyeMintheoniyYiYinniinyY	an management
-								
0.0 5650.000	5677.50	5705.00	5732.50 57	760.00 (MHz)	5815.00	5842.50 5870.	.00 5897.	50 5925.
	Freque	Pancy	Reading	Factor	Level	Limit	Margin	
No.	(MH		(dBuV)	(dB/m)	(dBuV/m)		(dB)	Detector
1 *	5725.	000	68.29	0.39	68.68	122.20	-53.52	peak

EN

ΠPI 2.Margin value = Level -Limit value



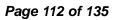


Ant. Pol.: Horizontal
Test Mode: TX 802.11ac(VHT20) Mode 5825MHz (U-NII-3)
<b>Remark:</b> No report for the emission which more than 10 dB below the
130.0 dBuV/m
120
110
100
90
80 70 FCC Part15.407 U-NII-3
70 FCC Part15.407 U-NII-3 Margin -6 dB
60 50 40
and the second of the second o
30.0
5650.000 5677.50 5705.00 5732.50 5760.00 (MHz) 5815.00 5842.50 5870.00 5897.50 5925.00
No.Frequency (MHz)Reading (dBuV)Factor (dB/m)Level (dBuV/m)Limit (dBuV/m)Margin (dB)Detector
1 * 5850.000 63.20 0.71 63.91 122.20 -58.29 peak
Remarks:
1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value



/e: /m	No r		1T20) Mode e emission v			below the	<u></u>
/m			e emission v	vhich more t	han 10 dB t	below the	;
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		11					
		<i>y</i>					
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manus humble	entronen deltanen a	welthe store AWA have	republic to the function of the		Martinet Land	N/Manunum	whenesmal
	-	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
5850.0	000	57.20	0.71	57.91	122.20	-64.29	peak
	5677.50 Freque (MH: 5850.0 dB/m) =	5677.50 5705.00 Frequency (MHz) 5850.000 dB/m) = Anten	5677.50         5705.00         5732.50         57           Frequency (MHz)         Reading (dBuV)           5850.000         57.20	5677.50         5705.00         5732.50         5760.00         (MHz)           Frequency (MHz)         Reading (dBuV)         Factor (dB/m)           5850.000         57.20         0.71           dB/m) = Antenna Factor (dB/m)+Cable	Frequency (MHz)Reading (dBuV)Factor (dB/m)Level (dBuV/m)5850.00057.200.7157.91dB/m) = Antenna Factor (dB/m)+Cable Factor (dE	Frequency (MHz)         Reading (dBuV)         Factor (dB/m)         Level (dBuV/m)         Limit (dBuV/m)           5850.000         57.20         0.71         57.91         122.20	5677.50         5705.00         5732.50         5760.00         (MHz)         5815.00         5842.50         5870.00         5897.3           Frequency (MHz)         Reading (dBuV)         Factor (dB/m)         Level (dBuV/m)         Limit (dBuV/m)         Margin (dB)           5850.000         57.20         0.71         57.91         122.20         -64.29           dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor         CB/m)         -64.29         -64.29

2.Margin value = Level -Limit value





Ant. Pol.	.:	Horiz	zont	al								
Test Mod	de:	TX 8	02.1	11n(HT4	0) Mo	de 57	′55Mŀ	lz (U-l	VII-3)			
Remark:				t for the	emis	sion v	vhich	more t	han 10	dB k	pelow the	•
130.0 dBuV	/m	p1000										
120			$\Gamma$						-			
110			$\square$						Ľ		<u> </u>	
100				1 Martin Va	awany						$\mathbf{\mathbf{X}}$	
90												
70	milminum	. //	<b>MARKIN</b>	(	¥	11Mmultinyly	ki l				t15.407 U-NII-	3
60		July by all and					MV			largin -		
50	northe Harrison	PY					, ul	Howkey	wither and	Warner	anfrenn mitterhada ann	-literation liter
40												
		/05.00			60.00	(MHz)	501	5.00	5842.50	5870.	.00 5897.!	50 5925.00
					<b>F</b> -1						Manufa	
No.	Frequer (MHz			ading BuV)	(dB	ctor /m)		evel iV/m)	Lim (dBuV		Margin (dB)	Detector
1 *	5725.0	00	7	0.25	0.3	39	70	.64	122.2	20	-51.56	peak
Remarks												
	(dB/m) = A value = L			•	IB/m)+	+Cable	e Fac	tor (dB	)-Pre-a	mpli	fier Facto	or

2.Margin value = Level -Limit value



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Ant. Pol.	:	Verti	cal					
Test Mod	le:	TX 8	02.11n(HT4	0) Mode 57	55MHz (U-N	VII-3)		
Remark:			eport for the cribed limit.	emission w	hich more t	han 10 dB b	elow the	;
130.0 dBuV	/m	1 10.000						
120			[ <b></b>					
110			, here where we	Last Maria				
90			~~~V"				$\sim$	
80	/							
70			with the second s	Whenhay			15.407 U-NII	3
60		with my the state	• •	1	M.	Margin -	6 dB	
50		will <sup>ar</sup>			VINNIPHENERIN	ntaimentationean	المراجعة والمراجعة	
40 /um/p/mm	mathematication				14. 1911	kr. mundestes madistry	alater dans dan panapagan	Markal Anna ann
30.0	5677.50	5705.00	5732.50 57	60.00 (MHz)	5815.00	5842.50 5870.	00 5897.	50 5925.00
¦1				-				
No.	Freque (MH		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	5725.0	000	70.47	0.39	70.86	122.20	-51.34	peak
Remarks		<b>A</b>	na Factor (d				г <b>г</b>	

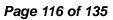
1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
 2.Margin value = Level -Limit value



	1					
Ant. Pol.:	Horizontal					
Test Mode:	TX 802.11n(HT	40) Mode 57	'95MHz (U-N	VII-3)		
Remark:	No report for the		/hich more t	han 10 dB b	elow the	
130.0 dBuV/m	prescribed limit					
120				<u> </u>		
110						
100		munding	an synaptic ().			
90						
80						
70	<b>L</b>	AWAR	Vww.WWWWW	Mi l	15.407 U-NII-	3
60	705.00 5732.50 5			Margin -		
50	and when the			MAR WAR AND	u.,	
50 All role relations of the relation of the	man and the state of the state			and the second se	Patel Holl Marchine	mpileth manufacture
40						
30.0 5650.000 5677.50 5	705.00 5732.50 5	760.00 (MHz)	5815.00	5842.50 5870.	00 5897.5	50 5925.00
No. Freque (MHz		Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 * 5850.0	00 53.72	0.71	54.43	122.20	-67.77	peak
Remarks: 1.Factor (dB/m) = 1 2.Margin value = L		dB/m)+Cable	e Factor (dB	)-Pre-ampli	fier Facto	pr



Ant. Pol.:	Vert	ical					
Test Mode:	TX 8	802.11n(HT4	0) Mode 57	'95MHz (U-I	VII-3)		
Remark:		report for the scribed limit.	emission v	vhich more t	han 10 dB b	pelow the	!
130.0 dBu∀/m	1 10.00						
120 110 100 90 80 70 60 50 40 30.0 5650.000 5677	50 5705.00	5732.50 57	60.00 (MHz)		FCC Part Margin -1	flertleggentreder	wayshared
	equency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 * 58	350.000	50.19	0.71	50.90	122.20	-71.30	peak





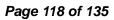
Ant. Pol.:	Horizontal					
Test Mode:	TX 802.11ac(VI	HT40) Mode	5755MHz (	U-NII-3)		
Remark:	No report for th prescribed limit		vhich more t	han 10 dB b	elow the	
130.0 dBuV/m						
120				-		
110						
100	manan	mmy				
90						
80	1.1	Warner		ECC Part	15.407 U-NII-	
70 60	www.wayara		h.	Margin -(		
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30.0 5650.000 5677.50	5705.00 5732.50 5	760.00 (MHz)	5815.00	5842.50 5870.	00 5897.5	0 5925.00
1						
No. Freque (MHz		Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 * 5725.0	00 71.14	0.39	71.53	122.20	-50.67	peak
Remarks:						
1.Factor (dB/m) = 2.Margin value = L			e Factor (dB	s)-Pre-ampli	fier Facto	or



nt. Po	l.:	Vert	ical					
est Mo	de:	TX 8	302.11ac(VH	IT40) Mode	5755MHz (	U-NII-3)		
emark	:		eport for the cribed limit.	e emission v	which more f	than 10 dB t	pelow the	;
30.0 dBu	√/m	pres						
20			,			<u> </u>		
			6			<u> </u>		
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)								
).0 5650.000	5677.50	5705.00	5732.50 57	60.00 (MHz)	5815.00	5842.50 5870.	00 5897.5	50 5925.0
No.	Freque (MHz		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	5725.0	00	69.18	0.39	69.57	122.20	-52.63	peak
1 *	5725.0	000	69.18	0.39	69.57	122.20	-52.63	peak

2.Margin value = Level -Limit value

EN





Ant. Pol.:	Hori	zontal					
Test Mode:	TX 8	302.11ac(V⊢	IT40) Mode	5795MHz (	U-NII-3)		
Remark:		eport for the cribed limit.	emission v	which more t	han 10 dB t	pelow the	;
130.0 dBu¥/m	pree						
120							
110							
		<i>J</i>					
100	//		anderth	mont			
90						$\rightarrow$	
80			-				
70			Mount	Hull Hr. Martin	FCC Par	rt15.407 U-NII	-3
60 50 40		a Martin			Malak		
50		WWW MANY			Mart Marthan	that is	
Attention in province Although	With hard the walk	hulting				a surveyer for	Man many
40							
30.0 5650.000 5677.50			/60.00 (MHz)	5815.00	5842.50 5870	.00 5897.	50 5925.00
	quency //Hz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 * 58	50.000	53.33	0.71	54.04	122.20	-68.16	peak
Remarks: 1.Factor (dB/m			lB/m)+Cable	e Factor (dE	8)-Pre-ampli	fier Facto	or
2.Margin value	= Level -	Limit value					



Ant. Pol	.:	Verti	cal								
est Mo	de:										
lemark	:		eport for the cribed limit.	emission v	hich more t	han 10 dB t	pelow the	;			
30.0 dBu	√/m										
20											
20			I								
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0.0 5650.000	5677.50	5705.00	5732.50 57	60.00 (MHz)	5815.00	5842.50 5870.	00 5897.9	50 5925.0			
No.	Frequ (MF		Reading (dBu∀)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector			
1 *	5850.	000	50.37	0.71	51.08	122.20	-71.12	peak			

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

EN



	.:	Horizo	ontal					
lest Mo	de:	TX 80	2.11ac(VF	IT80) Mode	e 5775MHz	(U-NII-3)		
Remark	:		port for the ribed limit.	e emission	which more	than 10 dB l	below the	9
130.0 dBu\	//m							
	MMMMM	muthin	A Communities of the second se		manuna -	FCC Pa	rt15.407 U-NI -6 dB	1-3
5650.000 No.	Frequer (MHz		5732.50 57 Reading (dBu∨)	60.00 (мн <sub>2</sub> ) Factor (dB/m)	Level	5842.50 5870 Limit (dBuV/m)	Margin	50 5925.0 Detector
1 *	5725.0	00	66.39	0.39	66.78	122.20	-55.42	peak
	5850.0	00	65.59	0.71	66.30	122.20	-55.90	peak

EN

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



Ant. Pol	l.:	Vertical						
Test Mo			•	,	5775MHz (	,		
Remark	:		eport for the cribed limit.	e emission v	which more t	han 10 dB l	below the	<b>;</b>
130.0 dBu	V/m	1 0.00						
120 110 100 90 80 70 60 50 40 30.0 5650.000	5677.50 S	5705.00		/60.00 (MHz)		FCC Par & Margin - WWW WILL 5842.50 5870.		
No.	Frequer (MHz		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	5725.0	00	64.49	0.39	64.88	122.20	-57.32	peak
2	5850.0	00	61.21	0.71	61.92	122.20	-60.28	peak

Remarks:

EN

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

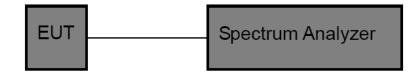


# 3.4. Bandwidth Test

# <u>Limit</u>

FCC Part 15 Subpart C(15.407)/ RSS-247			
Test Item Limit		Frequency Range (MHz)	
		5150~5250	
26 Bandwidth	N/A	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 2.4.

## Test Results

Please see the Appendix A1, A2, A3.



# 3.5. Output Power Test

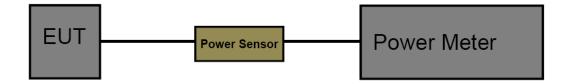
# <u>Limit</u>

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

IC Power&PSD Limit					
Frequency	Type of devices	Maximum Conducted Output Power	EIRP Output Power	Conducted Power Spectral Density	EIRP Power Spectral Density
5150MHz-5250MHz	in vehicles		30mW or 1.76 + 10 × log10B dBm, whichever is less (B=99% OBW in MHz)	$\mathbf{\mathbf{X}}$	$\mathbf{\mathbf{X}}$
	Other Devices		200mW or 10 + 10 × log10B dBm, whichever is less (B=99% OBW in MHz)	$\ge$	10dBm/MHz
	in vehicles		30mW or 1.76 + 10 × log10B dBm, whichever is less (B=99% OBW in MHz)	$\ge$	$\ge$
5250MHz-5350MHz	Other Devices	250mW or 11 + 10 × log10B dBm, whichever is less (B=99% OBW in MHz)	1W or 17 + 10 ×log10B dBm, whichever is less (B=99% OBW in MHr)	11dBm/Mhz	
5470MHz-5600MHz 5650MHz-5725MHz	ALL Devices	250mW or 11 + 10 × log10B dBm, whichever is less (B=99% OBW in MHz)	1W or 17 + 10 ×log10B dBm, whichever is less (B=99% OBW in MHz)	11 dBm/Mhz	$\ge$
5725MHz-5850MHz	ALL Devices	1₩		30 dBm/500 KHz	

# **Test Configuration**

EN





# **Test Procedure**

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

# Test Mode

Please refer to the clause 2.4.

# **Test Result**

Please see the Appendix B.



# 3.6. Power Spectral Density Test

# Limit

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

For the 5.15~5.25GHz band:

Outdoor AP

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

Indoor AP

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

Point-to-point AP

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

Client devices

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

# For the 5.25~5.35GHz band:

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

For the 5.47~5.725GHz band:

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

# For the 5.725~5.85GHz band:

- Point-to-multipoint systems (P2M) The peak power spectral density (PSD) shall not exceed the lesser of 30dBm/500kHz. If  $G_{Tx}$ >6dBi, then PSD =30-( $G_{Tx}$ -6).
- Point-to-point systems (P2P)

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

Note: G <sub>Tx</sub> : EUT	Antenna gain.
-----------------------------	---------------

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

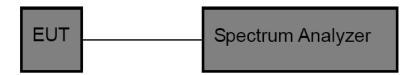
CTC Laboratories, Inc.



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



# 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
- (5) Set the VBW to:  $\geq$  3 RBW
- (6) Detector: AVG
- (7) Trace: Max Hold and View
- (7) Sweep time: auto
- (8) Trace average at least 100 traces in power averaging.
- (9) User the peak marker function to determine the maximum amplitude level within the RBW. Apply correction to the result if different RBW is used.

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

## Test Mode

Please refer to the clause 2.4.

## Test Result

Please see the Appendix C.

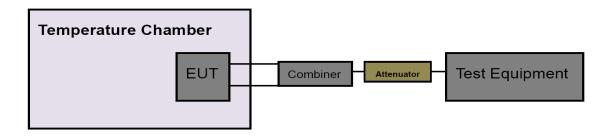


# 3.7. Frequency Stability Measurement

# Limit

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

# **Test Configuration**



# **Test Procedure**

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

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) Set analyzer center frequency to transmitting frequency.
- (3) Set the span to encompass the entire emissions bandwidth (EBW) of the signal.
- (4) Set the RBW to: 10MHz, VBW=10MHz with peak detector and maxhold settings.
- (5) The test extreme voltage is to change the primary supply voltage from 3.465V to 4.235V percent of the nominal value.
- (6) Extreme temperature is 0°C~45°C

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

## **Test Mode**

Please refer to the clause 2.4.

## **Test Result**

Please see the Appendix D.



3.8. Antenna Requirement

# Standard Requirement

# FCC CFR Title 47 Part 15 Subpart C Section 15.203:

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

# <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.



# 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

Parameter	Value				
Non-occupancy period	Minimum 30 minutes				
Channel Availability Check Time	60 seconds				
Channel Move Time	10 seconds See Note 1.				
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.				
U-NII Detection Bandwidth	Minimum 100% of the U-NII 99% transmission power bandwidth. See Note 3.				
<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 duration of control signals will not count quiet periods in between transmissions.</li> <li>Note 3: During the U-NII Detection Bandwidth detection test, radar type 0 should be used. For each</li> </ul>					

# with no data traffic.

**RADAR TEST WAVEFORMS** 

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





Table 5 Short Pulse Radar Test Waveform	າຣ
-----------------------------------------	----

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

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

would be Round up

= Round up {17.2} = 18.

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

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

## Table 6 – Long Pulse Radar Test Waveform

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

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

Table 7 – Frequency	Hopping	Radar	Test	Waveform
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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

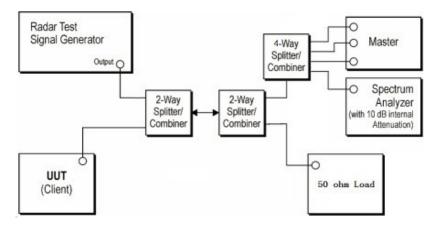


used. The spectrum analyzer resolution bandwidth (RBW) and video bandwidth (VBW) were set to 3

MHz. The spectrum analyzer had offset -1.0dB to compensate RF cable loss 1.0dB.

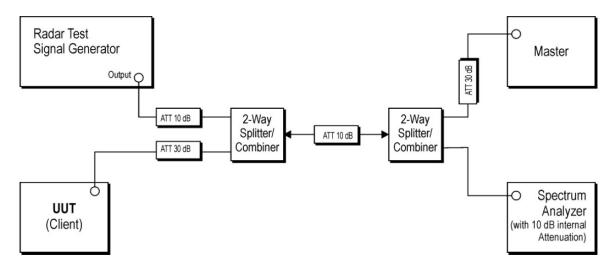
4) The vector signal generator amplitude was set so that the power level measured at the spectrum analyzer was - -62dBm + 0dBi +1dB = -61dBm. Capture the spectrum analyzer plots on short pulse radar waveform.

## **Conducted Calibration Setup**



# **Test Configuration**

Setup for Client with injection at the Master



## **Radar Waveform Calibration Result**



#### Test Procedure

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

## Test Mode

Please refer to the clause 2.4.

#### Test Results

Passed

Not Applicable