

the test sample.

# **CTC** Laboratories, Inc.

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ТІ	EST REPORT				
Report No	CTC20230301E04				
FCC ID:	2AR24-AIBOX410				
Applicant:	Shenzhen Absen Optoelectronic Co.,Ltd				
Address	18-20/F,Tower A,Building 3,Phase I,Tian An Cloud Park,N0.2018,Xuegang Rd,Bantian,Longgang District,Shenzhen,Guangdong,P.R.China				
Manufacturer	Shenzhen Absen Optoelectronic C	o.,Ltd			
Address	18-20/F,Tower A,Building 3,Phase Park,N0.2018,Xuegang Rd,Bantia District,Shenzhen,Guangdong,P.R	n,Longgang			
Product Name:	LED Multimedia Processor				
Trade Mark	/				
Model/Type reference:	Ai Box 410				
Listed Model(s):	/				
Standard:	FCC Part 15, Subpart E 15. 407				
Date of receipt of test sample:	Mar. 02, 2023				
Date of testing	Mar. 02, 2023 to Mar. 27, 2023				
Date of issue:	Jun. 02, 2023				
Result:	PASS				
Compiled by:		1 10			
(Printed name+signature)	Lucy Lan	Incry Iom			
Supervised by:		Zi shang			
(Printed name+signature)	Eric Zhang	Zric zhang Jernes			
Approved by:		1 Inas			
(Printed name+signature)	Totti Zhao	10000			
Testing Laboratory Name:	CTC Laboratories, Inc.				
-		Cuantan High Toch Park			
Address	1-2/F., Building 2, Jiaquan Building Shenzhen, Guangdong, China	, Guanian Fiigh-Tech Faix,			
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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

RSS-Gen — General Requirements for Compliance of Radio Apparatus

# 1.2. Report Version

Revised No.	Date of issue	Description
01	Jun. 02, 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		
restitem	FCC IC		Result	Engineer		
Antenna Requirement	15.203	/	Pass	Lucy Lan		
Conducted Emission	15.207	RSS-Gen 8.8	Pass	Lucy Lan		
Band Edge Emissions	15.407(b)	RSS-247 6.2.1.2 RSS-247 6.2.2.2 RSS-247 6.2.4.2	Pass	Lucy Lan		
26dB Bandwidth & 99% Bandwidth	15.407(a) (5)	RSS-247 6.2.1.2	Pass	Lucy Lan		
6dB Bandwidth (only for UNII-3)	15.407(e)	RSS-247 6.2.4.1	Pass	Lucy Lan		
Peak Output Power	15.407(a)	RSS-247 6.2.1.1 RSS-247 6.2.4.1	Pass	Lucy Lan		
Power Spectral Density	15.407(a)	RSS-247 6.2	Pass	Lucy Lan		
Transmitter Radiated Spurious Emission	15.407(b) &15.209	RSS-Gen 8.9 RSS-247 6.2.1.2 RSS-247 6.2.4.2	Pass	Lucy Lan		
Frequency Stability	15.407(g)	/	Pass	Lucy Lan		
Dynamic Frequency Selection (DFS)	15.407(h)	RSS-247 6.3	N/A	N/A		
Automatically DiscontinueTransmission	15.407(c)	/	Pass	Note(3)		

Note:

(1)"N/A" is not applicable.

(2)The measurement uncertainty is not included in the test result.

(3)During no any information transmission, the EUT can automatically discontinue transmission and become standby mode for power saving. the EUT can detect the controlling sianal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.





# 1.4. Test Facility

# CTC Laboratories, Inc.

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

# Laboratory accreditation

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

# CNAS-Lab Code: L5365

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

# A2LA-Lab Cert. No.: 4340.01

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

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

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

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

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

# 1.5. Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01" Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties 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.



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Test Items	Measurement Uncertainty	Notes
Transmitter power conducted	0.42 dB	(1)
Transmitter power Radiated	2.14 dB	(1)
Conducted spurious emissions 9kHz~40GHz	1.60 dB	(1)
Radiated spurious emissions 9kHz~40GHz	2.20 dB	(1)
Conducted Emissions 9kHz~30MHz	3.20 dB	(1)
Radiated Emissions 30~1000MHz	4.70 dB	(1)
Radiated Emissions 1~18GHz	5.00 dB	(1)
Radiated Emissions 18~40GHz	5.54 dB	(1)
Occupied Bandwidth		(1)

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

# **1.6. Environmental Conditions**

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

Normal Condition         T <sub>N</sub> =Normal Temperature		21°C~27°C
	T <sub>L</sub> =Lower Temperature	-10 °C
Extreme Condition	T <sub>H</sub> =Higher Temperature	40 °C



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# 2. GENERAL INFORMATION

# 2.1. Client Information

Applicant:	Shenzhen Absen Optoelectronic Co.,Ltd
Address:	18-20/F, Tower A, Building 3, Phase I, Tian An Cloud Park, N0.2018, Xuegang Rd, Bantian, Longgang District, Shenzhen, Guangdong, P.R. China
Manufacturer:	Shenzhen Absen Optoelectronic Co.,Ltd
Address:	18-20/F, Tower A, Building 3, Phase I, Tian An Cloud Park, N0.2018, Xuegang Rd, Bantian, Longgang District, Shenzhen, Guangdong, P.R. China

# 2.2. General Description of EUT

Product Name:	LED	D Multimedia F	Processor				
Trade Mark:	A	Absen					
Model/Type reference:	Ai E	Box 410					
Listed Model(s):	/						
Model Difference:	/						
Power supply:	100	-240V~ 50/60	Hz				
RF Module Model:	ZK-	7632A					
Hardware version:	/						
Software version:	/						
Remark:	EUT is a fixed point-to-point access points operating device. According to the power limit for 5150~5250MHz band, ZK-7632A can operating in client mode.						
Technical index for 5G WIF	-1						
Operation Band:		⊠U-NII-1	□U-NII-2A	□U-NII-2C		⊠U-NII	-3
Operation Frequency Range		U-NII-1:	5150MHz~5250MHz				
	•	U-NII-3:	5725MHz~58	50MHz	1		
Support bondwidth		802.11a	🛛 20MHz				
Support bandwidth:		802.11n	🛛 20MHz	🛛 40MHz			
Modulation:		802.11a: OFDM (BIT/SK, QPSK, BPSK, 16QAM) 802.11n: OFDM (BIT/SK, QPSK, BPSK, 16QAM, 64QAM)					
Bit Rate of Transmitter:	802.11a: 6/9/12/18/24/36/48/54 Mbps 802.11n: up to 300Mbps						
Antenna 1 or 2 type:	External Antenna						
Antenna 1 or 2 gain:		5dBi					



# 2.3. Accessory Equipment Information

Equipment Information						
Name	Model	S/N	Manufacturer			
Notebook	X220	/	Lenovo			
Cable Information						
Name	Shielded Type	Ferrite Core	Length			
USB Cable	Unshielded	NO	150cm			
AC Cable	Unshielded	NO	120cm			
Test Software Information	Test Software Information					
Name	Software version	/	/			
QA Tool	0.0.1.88	/	/			

# 2.4. Operation State

**Operation Frequency List:** 

	20MHz E	Bandwidth	40MHz Bandwidth		
Band (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	
	36	5180	38	5190	
U-NII-1	40	5200	30	5190	
	44	5220	46	5230	
	48	5240	40		
	149	5745	151	5755	
	153	5765	151		
U-NII-3	157	5785			
	161	5805	159	5795	
	165	5825			

Test channel is below:

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Operating			)MHz	40MHz	
Band	Channel	Channel Frequency (MHz)		Channel	Frequency (MHz)
	CH∟	36	5180	38	5190
U-NII-1	CHM	40	5200	/	/
	СН <sub>н</sub>	48	5240	46	5230
	CH∟	149	5745	151	5755
U-NII-3	CH <sub>M</sub>	157	5785	/	/
	СН <sub>н</sub>	165	5825	159	5795



# Data Rated

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

Antenna Specification:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain(dBi)
1	NA	NA	External Antenna	IPEX	5
2	NA	NA	External Antenna	IPEX	5

Note: Antenna Gain=5dBi. This EUT supports MIMO 2X2, any transmit signals are correlated with each other, so Directional gain =  $G_{Ant}$ +10log(N)dBi, that is Directional gain=5+10log (2) dBi =8dBi; So, the UNII-1, UNII-3 output power limit is 30-8+6=28dBm. The UNII-1 power spectral density limit is 17-8+6=15dBm/MHz, the UNII-3 power spectral density limit is 30-8+6=28dBm/500kHz.

### Test mode

For RF test items

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

For AC power line conducted emissions:

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

For Radiated spurious emissions test item:

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



# 2.5. Measurement Instruments List

	Radiated emission						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated Until		
1	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	9168-759	Mar. 30, 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	BBV9743B	259	Dec. 16, 2023		
5	Mirowave Broadband Amplifier	SCHWARZBECK	BBV9718C	111	Dec. 16, 2023		
6	3m chamber 3	YIHENG	EE106	/	Sep. 09, 2023		

	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		
4	ISN CAT6	Schwarzbeck	NTFM 8158	CAT6-8158-0046	Dec. 16, 2023		
5	ISN CAT5	Schwarzbeck	NTFM 8158	CAT5-8158-0046	Dec. 16, 2023		

	Tonscend RF 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	/	/	

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

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



# 3. TEST ITEM AND RESULTS

# 3.1. Conducted Emission

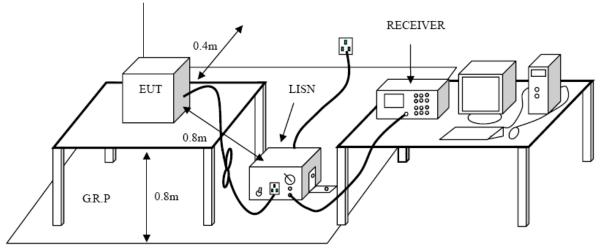
# <u>Limit</u>

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

	Limit (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.

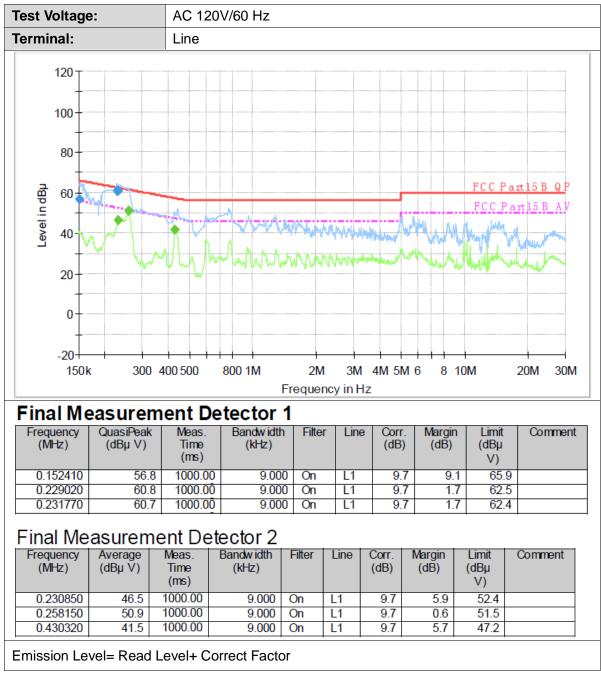
The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs)

- 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.

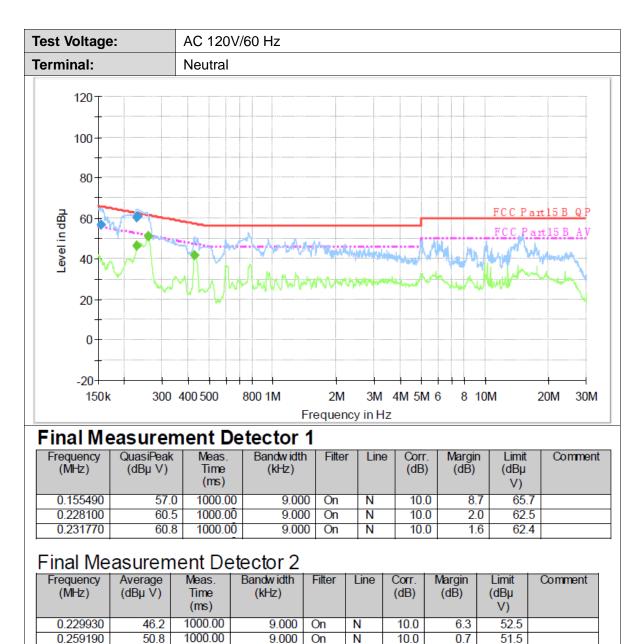
## Test Mode

Please refer to the clause 2.4.









Emission Level= Read Level+ Correct Factor

1000.00

9.000

On

Ν

10.0

5.3

47.2

41.9

0.430320



# 3.2. Radiated Emission

<u>Limit</u>

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

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

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

# Note:

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

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

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

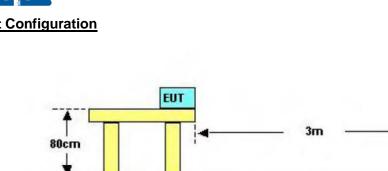
Frequency (MHz)	EIRP Limits (dBm)	Equivalent Field Strength at 3m (dBuV/m)
5150~5250	-27	68.2
5250~5350	-27	68.2
5470~5725	-27	68.2
	-27(Note 2)	68.2
	10(Note 2)	105.2
5725~5825	15.6(Note 2)	110.8
	27(Note 2)	122.2

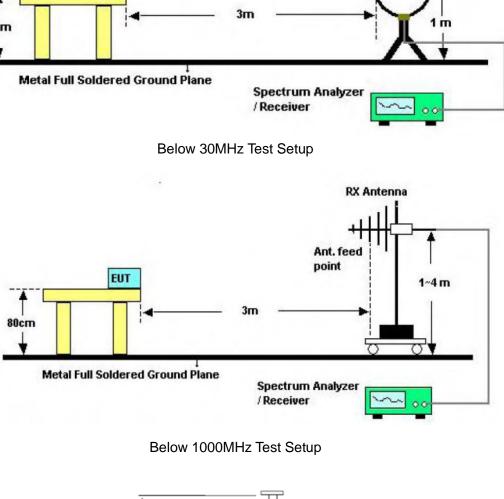
Note: 1. The following formula is used to convert the equipment isotropic radiated power (eirp) to field  $100000.\sqrt{30P}$ 

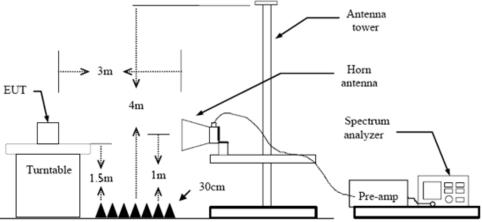
strength: 
$$E = \frac{1000000\sqrt{30P}}{2} \text{ uV/m}$$
, where P is the eirp (Watts)

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.

**RX Antenna** 







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 10th harmonic:

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

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

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

## Test Mode

Please refer to the clause 2.4.

## Test Result

## 9 KHz~30 MHz

From 9 KHz to 30 MHz: Conclusion: PASS

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

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



Ant No.	t No.: Ant 1									
Ant. Pol	Ι.	Horizontal								
Test Mo	de:	802	802.11a Mode 5180MHz (U-NII-1)							
Remark		Only worse case is reported								
30.0 dBu	iV/m									
30										
70										_
50							FCC	Part15 C 30-	1000M	
50							Marg	in -6 dB		
10 <b></b>					Jildi	2	>	5	6	
30					MARI	mont	6 Martin	M	Ampurt	4.1
		<u>_</u>		10 the 1 <sup>10</sup>	MANAN	hand	any have	when when	with handwith	44
	w Mugar Ary or	wM		and the	WWWRY		Arthurson White and an	LANDAN MA	turte Alexandree	4.11
20 10	w Mugad Ary M	wM	, Minikov V Minikov	mm	WWWRY		and the second second	Lulu MM	here a free free free free free free free	444
20 10 1	w Magne Ary P	wM	, mm	n n n n n n n n n n n n n n n n n n n	WWWRY		homen and have	ululu M	hinter Agenturk	44
20 10	60.0		 VMM/	mm <sup>m</sup>	(MHz)		0.00	Walk M		
20 10 10			Read	ding uV)	V		0.00 Limit	Margi ) (dB)	in <sub>Deter</sub>	
20 0 10 30.000	60.0 Frequency	0 / F (	Read	ding uV)	(мн₂) Factor	30 Level	0.00 Limit	-	in <sub>Dete</sub>	ctor
20 10 10 30.000 No.	Frequency (MHz)	0 / F (	Read (dB)	ding u∨) 54	(MH₂) Factor (dB/m)	30 Level (dBuV/m)	0.00 Limit (dBuV/m	) (dB)	Deter 1 QI	ctor D
20 10 30.000 No.	60.0 Frequency (MHz) 174.2067	0 / F (	Read (dB)	ding u∨) 54 76	(мн₂) Factor (dB/m) -18.38	30 Level (dBuV/m) 35.16	0.00 Limit (dBuV/m 43.50	) (dB) -8.34	in <sub>Deter</sub> 4 QI 7 QI	ctor D
20 10 30.000 No. 1 2	50.0 Frequency (MHz) 174.2067 239.8433		Read (dB) 53.	ding u∨) 54 76 19	(мн₂) Factor (dB/m) -18.38 -14.93	30 Level (dBuV/m) 35.16 38.83	0.00 Limit (dBuV/m 43.50 46.00	) (dB) -8.34 -7.17	in <sub>Deter</sub> 4 QI 7 QI 5 QI	ctor D D

6

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

-4.82

39.38

-6.62

46.00

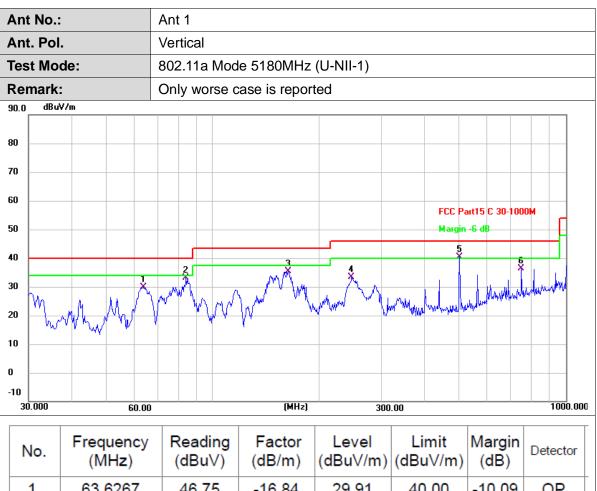
QP

44.20

2.Margin value = Level -Limit value

750.0633





	(MHZ)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	63.6267	46.75	-16.84	29.91	40.00	-10.09	QP
2	83.9967	52.45	-19.43	33.02	40.00	-6.98	QP
3	163.5367	54.42	-19.01	35.41	43.50	-8.09	QP
4	247.2800	48.21	-14.72	33.49	46.00	-12.51	QP
5 *	500.1267	49.69	-9.19	40.50	46.00	-5.50	QP
6	750.0633	41.09	-4.82	36.27	46.00	-9.73	QP
	- -						



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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)		Detector
1	10359.999	40.35	13.60	53.95	74.00	-20.05	peak
2 *	10360.301	26.63	13.60	40.23	54.00	-13.77	AVG

Remarks:

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

Ant No.:	:	Ant 1						
Ant. Pol.: Vertical								
Test Mode: TX 802.11a Mode 5180MHz (U-NII-1)								
Remark		No report for the emission which more than 20 dB below the prescribed limit.						
[]								
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	
1	10359.975	40.20	13.60	53.80	74.00	-20.20	peak	
2 *	10360.065	26.11	13.60	39.71	54.00	-14.29	AVG	
that fall ( are in t c limit requ	e chart shows L Dutside of the R compliance with uirements.	estricted Ban	ds is 68.2dB	uV for Peak.	No limit for A	AVG. All t	est results	
	s: (dB/m) = Anten n value = Level -	•	/m)+Cable	Factor (dB)-F	Pre-amplifier	Factor		

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EN



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

No.	Frequency (MHz)	Reading (dBuV)		Level (dBuV/m)		Margin (dB)	Detector
1	10399.688	40.27	13.67	53.94	74.00	-20.06	peak
2 *	10400.127	25.12	13.67	38.79	54.00	-15.21	AVG

Remarks:

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

Ant No.: Ant 1									
Ant. Pol.: Vertical									
Test Mode: TX 802.11a Mode 5200MHz (U-NII-1)									
Remark: No report for the emission which more than 20 dB below prescribed limit.					below the	е			
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector		
1 *	10399.218	24.71	13.67	38.38	54.00	-15.62	AVG		
2	10400.487	39.78	13.67	39.78 13.67 53.45 74.00 -20.55 peak					

limit requirements.

Remarks:

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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	10479.649	26.66	13.80	40.46	54.00	-13.54	AVG
2	10479.869	41.49	13.80	55.29	74.00	-18.71	peak

Remarks:

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

Ant No.:		Ant 1					
Ant. Pol.: Vertical							
Test Mode: TX 802.11a Mode 5240MHz (U-NII-1)							
Remark:		No report for prescribed lin		n which more	e than 20 dB	below th	e
						I	1
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	10480.521	25.13	13.80	38.93	54.00	-15.07	AVG
2	10480.563	39.06	13.80	52.86	74.00	-21.14	peak
that fall C are in t c	e chart shows I Dutside of the R ompliance with uirements.	estricted Band	ds is 68.2dE	BuV for Peak.	No limit for	AVG. All 1	test result
Remarks		ina Factor (dB	/m)+Cable	Factor (dB)-F	Pre-amplifier	Factor	

2.Margin value = Level -Limit value





Ant No.	•	Ant 1 + Ant 2	Ant 1 + Ant 2						
Ant. Po	l.:	Horizontal	Iorizontal						
Test Mo	de:	TX 802.11n(HT20) Mode 5180MHz (U-NII-1)							
Remark		No report for the emission which more than 20 dB below the prescribed limit.							
No.	Frequency (MHz)	y Reading Factor Level Limit Margin (dBuV) (dB/m) (dBuV/m) (dBuV/m) (dB) Detector							

13.60

13.59

40.30

55.18

54.00

74.00

-13.70

-18.82

AVG

peak

Remarks:

1 \*

2

10360.118

10360.364

26.70

41.59

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

Ant No.:         Ant 1 + Ant 2								
Ant. Pol.: Vertical								
Test Mode:         TX 802.11n(HT20) Mode 5180MHz (U-NII-1)								
Remark: No report for the emission which more than 20 dB below the prescribed limit.				Э				
				1				
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	
1 *	10359.584	27.37	27.37 13.60 40.97 54.00 -13.03 A					
2	10359.991	.991 41.20 13.60 54.80 74.00 -19.20 peak						

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

Remarks:

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



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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	10399.765	25.52	13.67	39.19	54.00	-14.81	AVG
2	10400.275	39.55	13.67	53.22	74.00	-20.78	peak

Remarks:

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

Ant No.:		Ant 1 + Ant 2					
Ant. Pol.	:	Vertical					
Test Mod	de:	TX 802.11n(H	IT20) Mode	5200MHz (L	J-NII-1)		
Remark:		No report for prescribed lim		n which more	e than 20 dB	below the	Э
						1	
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	10400.007	27.05	13.67	40.72	54.00	-13.28	AVG
2	10400.262	41.08	13.67	54.75	74.00	-19.25	peak
that fall C are in t co	e chart shows Outside of the R ompliance with irements.	Restricted Band	ds is 68.2dB	BuV for Peak.	No limit for /	AVG. All t	est results
Remarks		nna Factor (dB	/m)+Cable I	Factor (dB)-F	Pre-amplifier	Factor	

2.Margin value = Level -Limit value





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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	10480.000	38.31	13.80	52.11	74.00	-21.89	peak
2 *	10480.288	23.83	13.80	37.63	54.00	-16.37	AVG

Remarks:

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

Ant No.:	:	Ant 1 + Ant 2					
Ant. Pol	l.:	Vertical					
Test Mo	de:	TX 802.11n(H	HT20) Mode	e 5240MHz (L	J-NII-1)		
Remark	:	No report for prescribed lin		n which more	e than 20 dB	below the	9
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10480.025	39.79	13.80	53.59	74.00	-20.41	peak
2 *	10480.367	25.51	13.80	39.31	54.00	-14.69	AVG
Note: Th	ne chart shows	Limits 74dBuV	for Peak, 5/	54dBuV for A	VG, but Unw	anted En	nissions
	Outside of the F compliance with						
	uirements.						
Remarks	s: <sup>·</sup> (dB/m) = Anter	nna Eactor (dB	(m)+Cable	Eactor (dP)	Pro-omplifier	Factor	
1.Faci01	(uD/III) = AIIIeI	IIIA FACIUI (UD		1 actor (ub)-r	ampiner	aciui	

2.Margin value = Level -Limit value



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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	10380.059	24.12	13.63	37.75	54.00	-16.25	AVG
2	10380.308	39.22	13.63	52.85	74.00	-21.15	peak

Remarks:

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

Ant No.	:	Ant 1 + Ant 2					
Ant. Po	l.:	Vertical					
Test Mo	de:	TX 802.11n(H	HT40) Mode	5190MHz (L	J-NII-1)		
Remark	:	No report for prescribed lin		n which more	e than 20 dB	below the	e
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
110.							
1 *	10379.988	26.17	13.63	39.80	54.00	-14.20	AVG

are in t compliance with the limits. After calculation, the Peak measurement value meets the limit requirements.

Remarks:

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



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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	10460.220	23.82	13.77	37.59	54.00	-16.41	AVG
2	10460.439	38.67	13.77	52.44	74.00	-21.56	peak

Remarks:

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

Ant No.:		Ant 1 + Ant 2					
Ant. Pol.	.:	Vertical					
Test Mod	de:	TX 802.11n(H	IT40) Mode	5230MHz (U	-NII-1)		
Remark:		No report for prescribed lim		n which more	than 20 dB	below the	9
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	10459.698	24.90	13.77	38.67	54.00	-15.33	AVG
2	10460.310	39.06	13.77	52.83	74.00	-21.17	peak
N - 4 <b>T</b> '	- short sho						
that fall C are in t c	e chart shows Dutside of the F ompliance with iirements.	Restricted Band	ds is 68.2dB	uV for Peak.	No limit for A	AVG. All t	est results
Remarks 1.Factor	: (dB/m) = Anter	nna Factor (dB	/m)+Cable I	Factor (dB)-P	Pre-amplifier	Factor	

2.Margin value = Level -Limit value





	Ant No.:		Ant 1						
	Ant. Pol	.:	Horizontal						
•	Test Mode:TX 802.11a Mode 5745MHz (U-NII-3)								
Remark:         No report for the emission which more than 20 dB below the prescribed limit.			Э						
	No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	
	1	10489.853	38.54	13.82	52.36	74.00	-21.64	peak	
	2 *	10490.308	23.84	13.83	37.67	54.00	-16.33	AVG	Ī

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

2.Margin value = Level -Limit value

Ant No.: Ant 1							
Ant. Pol	l.:	Vertical					
Test Mo	TX 802.11a Mode 5745MHz (U-NII-3)						
Remark	mark: No report for the emission which more than 20 dB below the prescribed limit.				9		
No.	Frequency	Reading	Factor	Level	Limit	Margin	
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1 *	10489.588	24.08	(dB/m) 13.82	(dBuV/m) 37.90	(dBuV/m) 54.00	(dB) -16.10	Detector AVG

## Remarks:





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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	10570.005	23.25	14.01	37.26	54.00	-16.74	AVG
2	10570.129	37.15	14.01	51.16	74.00	-22.84	peak

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

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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	11569.648	23.15	15.06	38.21	54.00	-15.79	AVG
2	11570.299	38.19	15.07	53.26	74.00	-20.74	peak

## Remarks:



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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	10649.892	38.62	14.17	52.79	74.00	-21.21	peak
2 *	10650.300	22.84	14.18	37.02	54.00	-16.98	AVG

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

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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	11649.897	39.27	15.13	54.40	74.00	-19.60	peak
2 *	11650.374	23.13	15.14	38.27	54.00	-15.73	AVG

## Remarks:



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

No.	Frequency (MHz)	Reading (dBuV)		Level (dBuV/m)			Detector
1	10489.659	37.75	13.82	51.57	74.00	-22.43	peak
2 *	10490.027	23.46	13.83	37.29	54.00	-16.71	AVG

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

Ant No.:		Ant 1 + Ant 2						
Ant. Pol.	.: ``	Vertical						
Test Mod	de:	TX 802.11n(HT20) Mode 5745MHz (U-NII-3)						
Remark:	Remark: No report for the emission which more than 20 dB below the prescribed limit.					B below the		
	Frequency	Reading	Factor	Level	Limit	Margin		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	11489.967	37.56	15.00	52.56	74.00	-21.44	peak
2 *	11490.034	23.09	15.01	38.10	54.00	-15.90	AVG

### Remarks:





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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	11569.986	38.40	15.06	53.46	74.00	-20.54	peak
2 *	11570.055	23.49	15.07	38.56	54.00	-15.44	AVG

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

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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	11569.516	38.89	15.06	53.95	74.00	-20.05	peak
2 *	11570.315	23.08	15.07	38.15	54.00	-15.85	AVG

Remarks:





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

No.	Frequency (MHz)	Reading (dBuV)		Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10649.502	37.56	14.17	51.73	74.00	-22.27	peak
2 *	10649.721	22.62	14.17	36.79	54.00	-17.21	AVG

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

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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	11649.709	38.03	15.13	53.16	74.00	-20.84	peak
2 *	11650.452	22.74	15.14	37.88	54.00	-16.12	AVG

## Remarks:



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

No.	Frequency (MHz)	Reading (dBuV)		Level (dBuV/m)			Detector
1	11509.515	37.62	15.00	52.62	74.00	-21.38	peak
2 *	11509.992	22.67	15.00	37.67	54.00	-16.33	AVG

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

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

No.	Frequency (MHz)	Reading (dBuV)		Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	11509.794	38.88	15.00	53.88	74.00	-20.12	peak
2 *	11510.224	22.91	15.01	37.92	54.00	-16.08	AVG

### Remarks:



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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	11589.532	23.11	15.08	38.19	54.00	-15.81	AVG
2	11590.451	39.29	15.09	54.38	74.00	-19.62	peak

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

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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector	
1	11589.506	38.32	15.08	53.40	74.00	-20.60	peak	
2 *	11589.999	23.14	15.08	38.22	54.00	-15.78	AVG	

### Remarks:



# 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

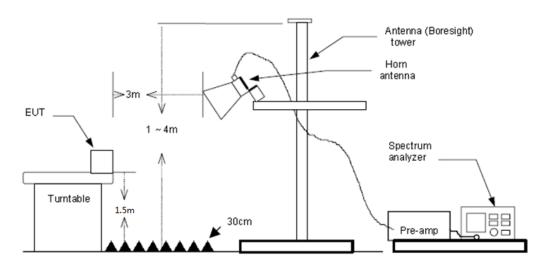
Frequency (MHz)	EIRP Limits (dBm)	Equivalent Field Strength at 3m (dBuV/m)						
5150~5250	-27	68.2						
5250~5350	-27	68.2						
5470~5725	-27	68.2						
	-27(Note 2)	68.2						
5725~5825	10(Note 2)	105.2						
5725~5625	15.6(Note 2)	110.8						
	27(Note 2)	122.2						

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

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

# 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.

 CTC Laboratories, Inc.

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



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**

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

Ant No	.:			An	nt 1															
Ant. Po	ol.:			Ho	orizo	ntal														
Test M	ode:			TX 802.11a Mode 5180MHz (U-NII-1)																
Remar	k:				No report for the emission which more than 20 dB below the prescribed limit.															
120.0 dB	uV/m																			
110																			_	
100																			_	
90																			_	
80														FCC P	art15 C	: - Abo	ve 1G	PK	_	
70																				
60														FCC P	art15-C	- Abo	ve 16 .	\ AV		
50													×							
40	har and a start of the	den verse	un haven a	-al-mant	manne	ww.Technikelow-	lenner-1		Ann	h-mhann-		man and a second	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	an and						
30																				
20																				
10																				
0.0 5046.50	0 5061.	50	5076.	50	5091.	50	5106.	50	(MHz)		513	6.50	515	1.50	5166	6.50	5181	1.50	5196	6.50
No.		eque (MH	ency Iz)			ding uV)		Fac (dB/		(c		vel V/m)	) (0	Lim Bu\			argir dB)	n <sub>De</sub>	etecto	or
1	51	50.	000		12	.52		37.	15		49	.67		74.	00	-2	4.33	3 p	eak	:
2 *	51	50.	000		1.	18		37.	15	1	38	.33	+	54.0	00	-1	5.67	' A	٨VG	-
L																				
Remark 1.Facto 2.Margi	r (dB/r						IB/m	ı)+C	able	Fac	ctor	(dB)-	Pre	-amp	olifier	<sup>.</sup> Fac	tor			



Ant No.	.:	/	Ant 1											
Ant. Po	ol.:	١	/ertica	l										
Test Mo	ode:	-	FX 802	2.11a N	/lode 51	80M	Hz (U	-NII-1)						
Remark	<b>(</b> :		No rep prescri		the emi nit.	ssio	n whic	h more	e than 2	20 dE	belo	w the	9	
120.0 dB	u¥/m													1
110														
00														
90												$\neg \neg$	$\sim$	
30									Fee I			- 10 DK		
70										rantip L	- ADOV	e 1G PK	<u> </u>	
50									1		<u> </u>	e 16 A\		
50									FELT		- Abov	e 16 AV	,	
10	ويستوده ويستوجرون والمواجعة	www.www.		مىلىمۇمۇر <u>دە</u> رىرە	mar and a second	at he way	manu		2 and	~~~				
0														
20														
10														
0.0 5041.250	0 5056.25	5071.25	5086.3	<b>DE E</b> 4	01.25	(MHz)	<b>E12</b>	1.25	5146.25	5161	25	5176.2	F F1	91.2
No.	Frequ (Mł	-	Rea (dB	ding uV)	Fact (dB/r			vel V/m)	Lin (dBu\			rgin B)	Detec	tor
1	5150	.000	19.	.02	37.1	5	56	.17	74.	00	-17	.83	pea	k
2 *	5150	.000	3.	76	37.1	5	40	.91	54.	00	-13	.09	AV	G
Remark	<u>(S:</u>													



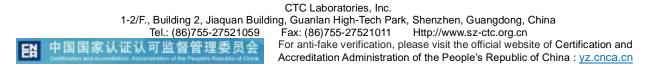
Ant N	No.:				А	nt 1															
Ant.	Pol.	:			F	loriz	ontal														
Test	Mod	le:											-NII-1]								
Rema	ark:						port ribec			missi	on	whick	n mor	e th	an 2	:0 dE	3 bel	ow t	the		
20.0	dBu¥	/m			ΙP				int.												_
110																					
30		v	7																		
70															FCC P	art15	C - Abo	ove 16	PK		
			L																		
50				Y											FCC P	art15	I - Abo	ve 1G	AV		
																	2				
					ner	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	*****	946-979A					usular vari				X		*******		~~
20																					
0.0																					
5228	8.750	5243.	.75	5258.	75	527	3.75	528	8.75	(MHz	)	531	8.75	533	3.75	534	8.75	536	3.75	5	378.7
No	<b>D</b> .		equ (MH	ency Iz)	/		adin BuV	-		ictor 3/m)			vel V/m)	) (c	Lim IBu\			argi dB)		Dete	ctor
1		53	350.	000		1	5.70		37	.41		53.	.11		74.(	00	-2	0.8	9	pea	ak
2	*	53	350.	000		C	0.90		37	.41		38	.31		54.(	00	-1	5.6	9	AV	G
	ctor (	(dB/i					ictor value		/m)+(	Cable	F	actor	(dB)-	Pre	-amp	olifie	r Fa	ctor			



nt No.	•	Ant '	1						
nt. Pol	l.:	Verti	cal						
est Mo	de:	TX 8	02.11a N	lode 5240	MHz (U-	NII-1)			
emark	:		eport for cribed lin	the emission the emission the emission the emission the emission of the emissi	on which	n more	than 20 dl	B below 1	the
20.0 dBu	iV/m			1					
10									
	$\sim$								
							FCC Part15	C - Above 1G	РК
) [									
)							FCC Part15	<mark>C - Above 1G</mark>	AV
)								×	
)		Herry	to man down down	www.com.	den son an	munited	manintermeter	2	terrage-Martoneratuation
·									
)									
) <u> </u>									
).0 5228.450	5243.45 5258		73.45 52	88.45 (MHz	5318	45 5	333.45 534	8.45 536	3.45 5378.
No.	Frequenc (MHz)		eading IBuV)	Factor (dB/m)	Lev (dBu)		Limit (dBuV/m	Margi ) (dB)	n <sub>Detecto</sub>
1	5350.000	) 1	3.38	37.41	50.	79	74.00	-23.2	1 peak
2 *	5350.000	)	1.12	37.41	38.	53	54.00	-15.4	7 AVG



Ant No	.:	1	Ant 1 -	Ant 2										
Ant. Po	ol.:		Horizo	ntal										
Test M					-				J-NII-1)					
Remar	k:			ort for bed lin		missio	n whic	h more	than 2	20 dB	below	the		
120.0 dE	3u∀/m													7
110														_
														_
10														_
:0									FCC	Part15 C	- Above 1	G PK	7	-
'0 <u> </u>														
50									FCC	Part15 C	- Above 1	G AV	-	-
50									X		2		K	
10 <b></b>	agentral conservation			erradiada da que presenta			-	-24	2	when when				-
10 <u> </u>														-
20												-		-
10														-
0.0	0 5060.00	5075.00	5090.	00 51	05.00	(MHz)	513	5.00	5150.00	5165	.00 51	80.00	) 51	95.00
No.		uency Hz)	1	ding uV)		ctor 3/m)		vel V/m)	Lin (dBu)		Marg (dB)		Detec	tor
1	5150	0.000	12	.72	37	.15	49	.87	74.	00	-24.1	3	pea	k
2 *	5150	0.000	1.	54	37	.15	38	.69	54.	00	-15.3	1	AV	G
	ks: or (dB/m) in value =				3/m)+(	Cable I	actor	(dB)-F	re-am	plifier	Factor			





T	X 802.11n(H	,		J-NII-1)											
N	•	,		Vertical TX 802.11n(HT20) Mode 5180MHz (U-NII-1)											
	lo report for														
p	rescribed lin		n which more	e than 20 dB	below the	Э									
			1	1											
					v	~~~~									
				FCC Part15 C	- Above 1G Pl	K I									
						L.									
					Above 1G A	/									
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0 5072.00	5087.00 51	02.00 (MHz)	5132.00	5147.00 5162.	.00 5177.0	0 5192.0									
	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector									
50.000	10.73	37.15	47.88	74.00	-26.12	peak									
50.000	1.83	37.15	38.98	54.00	-15.02	AVG									
	0 5072.00 quency MHz) 50.000 50.000	quency MHz) Reading (dBuV) 50.000 10.73	quency MHz)Reading (dBuV)Factor (dB/m)50.00010.7337.15	quency MHz)Reading (dBuV)Factor (dB/m)Level (dBuV/m)50.00010.7337.1547.88	quency MHz)         Reading (dBuV)         Factor (dB/m)         Level (dBuV/m)         Limit (dBuV/m)           50.000         10.73         37.15         47.88         74.00	quency MHz)         Reading (dBuV)         Factor (dB/m)         Level (dBuV/m)         Limit (dBuV/m)         Margin (dB)           50.000         10.73         37.15         47.88         74.00         -26.12									



Ant	No.:				/	Ant 1	+ Ar	nt 2												
Ant.	Pol.	:			ł	Horiz	onta	I												
Test	Mod	de:			-	FX 8(	)2.11	In(⊦	IT20)	Мос	de	5240N	ИНz (L	J-NI	I-1)					
Rem	nark:					No re preso				miss	ior	whic	h more	e tha	an 20 (	dB I	below t	he		
120.0	dBuV	'/m							1											
110 -																_				_
100 -																				_
90  -																				_
30 -	~~~	m	7											F	CC Part1	5 C -	Above 1G	PK		-
'0																_				
50			+												CC Part1	5 C -	Above 1G	AV		_
50 🗖			ſ	M.												¥				7
10  -				· ``v	Man	multima	m.a.Mr.	manana	*****	<b></b>	and.		and a fill and a fill of the	•	manualis	2	and and a start of the second s	4	man	••••
30  -														_		_				-
20  -																_				_
10 -																				-
0.0 522	28.000	5243.	.00	525	8.00	527	3.00	52	88.00	(MH	z)	531	8.00	5333.	00 5	348.0	0 536	3.00	5	378.00
N	0.		equ (Mł	ieno Hz)	су	1	eadir BuV	-		ictoi 3/m)			vel V/m)	1	Limit BuV/r		Margi (dB)	n	Dete	ctor
1		53	350	.00	0	1	2.33	3	37	.41		49	.74	7	74.00		-24.20	6	pea	ak
2	*	53	350	.00	0	0	0.90		37	.41		38	.31	Ę	54.00		-15.69	9	AV	G
								1												
1.Fa		(dB/ı				na Fa _imit			/m)+(	Cabl	e F	actor	(dB)-F	Pre-a	amplifi	er l	Factor			



Ant No.	:		Ant 1	+ Ant 2								
Ant. Po	l.:		Vertic	al								
est Mo	de:			•	HT20) Mo				,			
Remark	:			port for ribed lin		sior	n whic	h more	e than 20 d	B below t	he	
20.0 dBu	V/m	1										
10												
00												
0	m											
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D									FCC Part15	C - Above 1G	РК	
) —	have											
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,												
,												
D.O												
No.	Freque (MHz			ading BuV)	Facto (dB/m		Le <sup>.</sup> (dBu		Limit (dBuV/m	Margin ) (dB)	n <sub>Detecto</sub>	
1	5350.0	00	1	1.29	37.41		48	.70	74.00	-25.30	) peak	:
2 *	5350.0	00	0	.74	37.41		38	.15	54.00	-15.85	5 AVG	
Remark	<u>s:</u>											



Ant N	<b>o</b> .:			Ant 1	+ An	nt 2														
Ant. P	ol.:			Horiz	ontal															
Test N	Nod	e:		TX 8	02.11	n(H	T40)	Mod	e 5	1901	ИНz (	U-N	<b>II-1</b> )	)						
Rema	rk:			No re prese				missi	on	whic	h mor	e th	an :	20 d	B be	low	the	•		
120.0 (	dBuV∕	'n	ĺ																	
110																				
100																				
0																				
0													FCC	Patlis	۲۰۵۱	ove 10	PK	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
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50 <u> </u>													FCC	Part15	С . Al	ove 10	- AV		$\left  \right $	
50 -										1 X			1	arra					4	
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80 -																			_	
20																			_	
10 -																			-	
0.0	000	5076.00	5091.00	510	)6.00	512	1.00	(MHz	1	515	1.00	5166	6.00	51	31.00	51	96.00	D	5211	.00
No.		Frequ (Mi	iency Hz)		adin BuV	-		ctor 3/m)	(	Le <sup>v</sup> dBu	vel V/m)	1	Lin Bu'			argi dB)		Dete	ecto	)r
1		5150	.000	1	0.87		37	.15		48.	.02		74.	00	-2	25.9	8	ре	ak	
2 '	*	5150	.000	1	1.62		37	.15		38.	.77		54.	00	-1	5.2	3	A١	/G	
	I			-																
	tor (	dB/m) :	= Anten				′m)+(	Cable	e Fa	actor	(dB)-	Pre	-am	plifie	er Fa	ctor				



Ant No.	:	/	Ant 1	+ Ant 2										
Ant. Po	l.:	١	Vertic	al										
lest Mo	de:	-	TX 80	)2.11n(H	HT40) Mo	ode	5190N	/Hz (U	J-N	ll-1)				
Remark	:			port for ribed lir	the emis nit.	sio	n whic	h more	e th	an 20 d	B be	ow th	е	
20.0 dBu	iV/m													_
10														
00														
o 📃														
											~~~~	$\neg$	J	
										FCC Part15	C - Abo	ove 1G P	чK	
									X					
										FCC Part15	C - Abo	ve 1G A	v	7
0									2	where we are a second				
0		an anna	ndra-lasana#th	<b>*****</b> **********		man	the street of th	and the second second second						
0						_								
0						_								
0.0 5012.000	5032.00	5052.00	507	2.00 50	192.00 (M	(Hz)	513	2.00 !	5152	.00 51	72.00	5192.	00 5	212.0
No.	Freque (MHz	-	1	ading BuV)	Facto (dB/m		1	vel V/m)		Limit BuV/m		argin dB)	Dete	ctor
1 *	5150.0	00	20	6.97	37.1	5	64	.12		74.00	-9	9.88	pe	ak
2	5150.0	00	5	.70	37.1	5	42	.85		54.00	-1	1.15	A۷	G
Remark	s:													



Ant N	lo.:			Ar	nt 1	+ An	ıt 2														
Ant. F	Pol.:			Но	orizo	ontal															
Test N		e:					•	,				ИНz (l		,							
Rema	ark:					port f ribed			miss	ion	whic	h more	e th	nan 2	0 dE	8 bel	ow t	the			
120.0	dBuV/	m		Th	6301		<u></u>													_	
110																					
30																					
80																					
70 🕇		-γ		-									_	FCC P	art15 (	C - Abo	ve 16	PK			
:0																					
50					$\vdash$									FCC P	art15 (	C - Abo	ve 16	AV	ļ		
40					m	have and the second	harrow	maria		N. e. h.	a at and do	a new another	-								
30 -																					
20																					
10																					
0.0	500	5224.50	5239.	50	5254	50	<b>E</b> 2(	69.50	(MH		E 20	9.50	5314	4 60	5329	) 50	534	4.50	F	359.5	-0
No		Freq (M	uency Hz)	<b>y</b>		adin BuV	-		acto B/m)			vel iV/m)	(0	Lim  Bu\			argi dB)		Dete	ctor	
1		5350	0.000		11	1.68		37	7.41		49	.09		74.(	00	-24	4.9	1	pe	ak	-
2	*	5350	0.000		0	.77		37	7.41		38	.18		54.0	00	-1	5.8	2	AV	G	-
Rema	arks:															_					
	tor (	dB/m) /alue =						/m)+•	Cabl	e F	actor	(dB)-l	⊃re	-amp	olifie	<sup>.</sup> Fac	tor				



nt No.:	:	Ant 1	+ Ant 2									
nt. Pol	l.:	Verti	cal									
est Mo	de:			HT40) Mo			``		,			
Remark	:		eport for cribed lin	the emiss nit.	sior	n whic	n more	than	20 dB	below t	he	
20.0 dBu	W/m			1								1
10												
00												
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		-										
		when when						FCC	Part15 C	- Above 1G	AV	
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5209.000	5229.00 5249	0.00 52	69.00 52	89.00 (M	Hz)	532	9.00 !	5349.00	5369.	.00 538	9.00 540	09.0
No.	Frequenc (MHz)	-	eading IBuV)	Facto (dB/m			vel V/m)		nit V/m)	Margi (dB)	n <sub>Detec</sub>	tor
1	5350.000	)   1	2.40	37.41		49	.81	74	.00	-24.1	9 pea	k
2 *	5350.000	) (	0.86	37.41		38	.27	54	.00	-15.73	3 AVC	3
Remarks	s: (dB/m) = Ant			2/m)+Cab		actor			nlifior	Factor		



Ant No.:	Ant 1
Ant. Pol.:	Horizontal
Test Mode:	TX 802.11a Mode 5745MHz (U-NII-3)
Remark:	No report for the emission which more than 20 dB below the
120.0 dBuV/m	prescribed limit.
110	
100	
90	
80	
70	FCC Part15.407 U-NII-3
60	Margin -6 dB
50 million and all million the second	www.uk
40	Micros. c
30	
20	
10	
5650.000 5677.50 570	5.00 5732.50 5760.00 (MHz) 5815.00 5842.50 5870.00 5897.50 5925.00
No. Frequence (MHz)	ey Reading Factor Level Limit (dBuV) (dB/m) (dBuV/m) (dBuV/m) (dB) Detector
1 * 5725.000	0 25.51 38.07 63.58 122.20 -58.62 peak
Demorto	
Remarks: 1.Factor (dB/m) = Ant 2.Margin value = Lev	tenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor el -Limit value

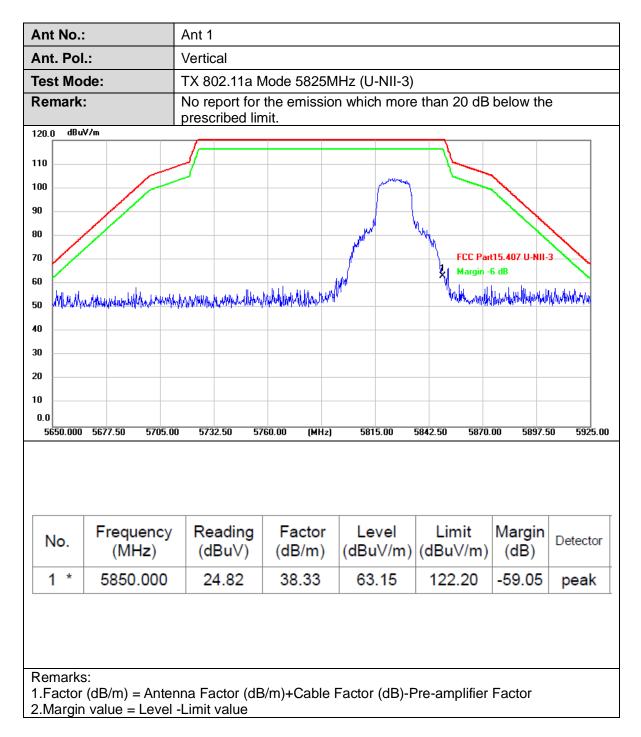


	Ant 1						
Ant. Pol.:	Vertical	Vertical					
Test Mode:	TX 802.11a Mode 5745N	IHz (U-NII-3)					
Remark:	No report for the emissio prescribed limit.	n which more	e than 20 dB	below the	e		
120.0 dBuV/m							
110							
100	- may						
90							
80	1 martine have						
70	× N		FCC Parl	15.407 U-NII			
60	W L		Margin -				
1 rd web Allasher with Harrison of the	MM MANANA	hulowanterthan how	Man Jan And Party and A	(supplied would any	hilman history		
40							
30							
20							
10							
0.0 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 Factor (dBuV) (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector		
1 * 5725.000	39.18 38.07	77.25	122.20	-44.95	peak		
Remarks: 1.Factor (dB/m) = Ante 2.Margin value = Leve	enna Factor (dB/m)+Cable	Factor (dB)-F	Pre-amplifier	Factor			



Ant No.:		Ant 1	Ant 1					
Ant. Pol	.:	Horizontal	Horizontal					
Test Mo	de:	TX 802.11a N	Node 5825M	Hz (U-NII-3)				
Remark	:	No report for		n which more	e than 20 dB	below the	e	
120.0 dBu	V/m	prescribed lin	nit.					
110								
100				many				
90								
80				JK I	W			
70	·			J. Mar	FCC Parl	15.407 U-NII- 5 dB	3	
60				1	- <u>\</u> .			
50	all the father which you the	Anatan Mandada Madala	nik generalika shika di kw	d	×1,000,000,000	wedneythered	selsed kolen and	
40								
30								
20								
10								
0.0								
5650.000	5677.50 5705.	00 5732.50 57	760.00 (MHz)	5815.00	5842.50 5870.	00 5897.9	50 5925.00	
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	
1 *	5850.000	12.71	38.33	51.04	122.20	-71.16	peak	
Remarks								







Ant No.:	Ant 1 + Ant 2
Ant. Pol.:	Horizontal
Test Mode:	TX 802.11n(HT20) Mode 5745MHz (U-NII-3)
Remark:	No report for the emission which more than 20 dB below the
120.0 dBuV/m	prescribed limit.
110	
100	
90	
80	
70	FCC Part15.407 U-NII-3
60	Margin -6 dB
50 Marin Marin Marin Marin Marin	What may reliage any the second of the secon
40	A A MALL
30	
20	
10	
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 Factor Level Limit Margin (dBuV) (dB/m) (dBuV/m) (dBuV/m) (dB) Detector
1 * 5725.000	22.47 38.07 60.54 122.20 -61.66 peak
Pomorko:	
Remarks: 1.Factor (dB/m) = Ante 2.Margin value = Leve	enna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor I -Limit value



Ant No.:	:	Ant 1 + Ant 2						
Ant. Pol	L:	Vertical	/ertical					
Test Mo	de:	TX 802.11n(H	HT20) Mode	5745MHz (L	J-NII-3)			
Remark	:	No report for prescribed lin		n which more	e than 20 dB	below the	Э	
120.0 dBu	V/m							
110								
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90								
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70		1	N.		FCC Parl Margin -	t15.407 U-NII- 6 dB	3	
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5650.000	5677.50 5705.0	0 5732.50 57	'60.00 (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 *	5725.000	32.53	38.07	70.60	122.20	-51.60	peak	



Ant No.		Ant 1 + Ant 2	Ant 1 + Ant 2					
Ant. Po	l.:	Horizontal	Horizontal					
Test Mo	de:	TX 802.11n(H	HT20) Mode	5825MHz (L	J-NII-3)			
Remark		No report for prescribed lin		n which more	e than 20 dB	below the	Э	
120.0 dBu	N∕m		1	i				
110								
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				J.				
10				hunther	Margin -	t15.407 U-NII- 6 dB	3	
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0.0	5677.50 5705	.00 5732.50 57	'60.00 (MHz)	5815.00	5842.50 5870.	00 5897.5		
			'60.00 (MHz)					
No.	Frequenc (MHz)	y Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	
1 *	5850.000	14.31	38.33	52.64	122.20	-69.56	peak	



Ant No.:		Ant 1 + Ant 2										
Ant. Pol.:		Vertical	/ertical									
Test Mode:			•	IT20) Mo			•					
Remark:		No repo prescril		the emiss	sion w	hich n	nore	than 2	20 dB	below th	ie	
120.0 dBuV/m												
110								-1				
100						مر مر مر م	Maring	<u> </u>				
90												
80												
70						with the		MAN WAY	FCC Parl	15.407 U-NII	-3	
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	quency /Hz)	Read (dB)	-	Facto (dB/m		Leve IBuV/		Lin (dBu\		Margin (dB)	Detect	or
1 * 585	0.000	19.	56	38.33		57.89	Э	122	.20	-64.31	peal	<b>(</b>
Remarks: 1.Factor (dB/m) 2.Margin value				/m)+Cabl	e Fa	tor (d	B)-P	re-am	plifier	Factor		



Ant No.:	:	Ant 1 + Ant 2	Ant 1 + Ant 2						
Ant. Pol	.:	Horizontal	Horizontal						
Test Mo	de:	TX 802.11n(	HT40) Mode	5755MHz (L	J-NII-3)				
Remark	:	No report fo prescribed li	r the emission	n which more	e than 20 dB	below the	9		
120.0 dBu	V/m								
110									
100		day and	July mary						
90									
80									
70		1.4	Mu. As		FCC Par	t15.407 U-NII-	3		
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5650.000	5677.50 5705.0	0 5732.50 5	5760.00 (MHz)	5815.00	5842.50 5870.	00 5897.5	50 5925.00		
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector		
		00.40			400.00	-60.67	peak		
1 *	5725.000	23.46	38.07	61.53	122.20	-00.07	реак		
Remarks							реак		



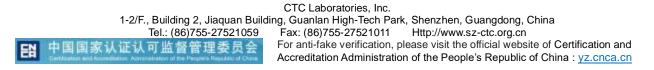
Ant No.:		Ant 1 + Ant	2				
Ant. Pol.:		Vertical					
Test Mode:		TX 802.11n	(HT40) Mode	5755MHz (L	J-NII-3)		
Remark:		No report for prescribed l	or the emission	n which more	e than 20 dB	below th	е
120.0 dBuV/m		prescribed i					
110							
100		1 morente	mann				
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5650.000 5677.50	5705.00	5732.50	5760.00 (MHz)	5815.00	5842.50 5870.	00 5897.	50 5925.00
	uency Hz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 * 572	5.000	33.40	38.07	71.47	122.20	-50.73	peak
Remarks:							
1.Factor (dB/m) 2.Margin value =			IB/m)+Cable	Factor (dB)-F	Pre-amplifier	Factor	



Ant No.	•	Ant 1 + Ant 2							
Ant. Po	l.:	Horizontal	Horizontal						
Test Mo	ode:	TX 802.11n(ł	HT40) Mode	5795MHz (L	J-NII-3)				
Remark	:	No report for prescribed lir		n which more	e than 20 dB	below the	9		
120.0 dBu	J¥/m								
110									
100									
90			remark	whenter					
70		k	NAMON	Markey	FLL Parl	15.407 U-NII- 6 dB			
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0.0	) 5677.50 5705.0	0 5732.50 57	760.00 (MHz)	5815.00	5842.50 5870.	00 5897.	50 5925.00		
	Frequency	Reading	Factor	Level	Limit	Margin			
No.	(MHz)	(dBuV)	(dB/m)	(dBuV/m)		(dB)	Detector		
1 *	5850.000	9.18	38.33	47.51	122.20	-74.69	peak		
Remark	<u>s:</u>		3/m)+Cable F						



Ant No.:	Ant 1 + Ant 2					
Ant. Pol.:	/ertical					
Test Mode:	TX 802.11n(HT40) Mode 5795MHz (U-NII-3)					
Remark:	No report for the emission which more than 20 dB below the prescribed limit.					
120.0 dBuV/m						
110						
100	mouthyman					
90						
80	FCC Part15.407 U-NII-3					
70	FEC Part15.407 U-NII-3					
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0.0 5650.000 5677.50 57	5.00 5732.50 5760.00 (MHz) 5815.00 5842.50 5870.00 5897.50 5925.00					
No. Frequen	y Reading Factor Level Limit Margin Detector					
(MHZ)	(dBuV) (dB/m) (dBuV/m) (dBuV/m) (dB)					
1 * 5850.00	0 17.21 38.33 55.54 122.20 -66.66 peak					
Remarks: 1.Factor (dB/m) = Ar 2.Margin value = Le	enna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor					



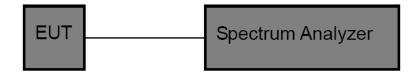


# 3.4. Bandwidth Test

# <u>Limit</u>

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

# **Test Configuration**



## **Test Procedure**

ΞN

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				
Trace	Max Hold				
Sweep Time	Auto				
99% Occupied Bandwidth Test					
Spectrum Parameters	Setting				
Attenuation	Auto				
RBW	1% to 5% of the OBW				
VBW	≥ 3RBW				
Detector	Peak				
Trace	Max Hold				

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

## Test Mode

Please refer to the clause 2.4.

## Test Results



#### 26dB Bandwidth Test

TestMode	Antenna	Channel	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	30.16	5164.88	5195.04		PASS
	Ant2	5180	21.04	5169.96	5191.00		PASS
	Ant1	5200	28.72	5185.72	5214.44		PASS
	Ant2	5200	24.16	5188.12	5212.28		PASS
	Ant1	5240	28.20	5226.20	5254.40		PASS
	Ant2	5240	26.76	5227.68	5254.44		PASS
ПА	Ant1	5745	27.88	5730.80	5758.68		PASS
	Ant2	5745	23.64	5733.00	5756.64		PASS
	Ant1	5785	22.44	5774.28	5796.72		PASS
	Ant2	5785	26.40	5771.44	5797.84		PASS
	Ant1	5825	29.16	5810.24	5839.40		PASS
	Ant2	5825	27.32	5810.48	5837.80		PASS
	Ant1	5180	20.28	5169.80	5190.08		PASS
	Ant2	5180	19.84	5170.16	5190.00		PASS
	Ant1	5200	20.00	5190.04	5210.04		PASS
	Ant2	5200	20.00	5190.04	5210.04		PASS
	Ant1	5240	20.88	5229.80	5250.68		PASS
11N20MIMO	Ant2	5240	19.52	5230.28	5249.80		PASS
	Ant1	5745	23.24	5733.12	5756.36		PASS
	Ant2	5745	20.04	5735.04	5755.08		PASS
	Ant1	5785	20.28	5774.80	5795.08		PASS
	Ant2	5785	20.32	5774.64	5794.96		PASS
	Ant1	5825	21.44	5813.52	5834.96		PASS
	Ant2	5825	19.88	5814.92	5834.80		PASS
	Ant1	5190	42.24	5168.00	5210.24		PASS
	Ant2	5190	40.00	5170.00	5210.00		PASS
11N40MIMO	Ant1	5230	45.12	5209.52	5254.64		PASS
	Ant2	5230	40.08	5209.68	5249.76		PASS
	Ant1	5755	47.04	5728.44	5775.48		PASS
	Ant2	5755	40.40	5734.84	5775.24		PASS
	Ant1	5795	44.08	5773.16	5817.24		PASS
	Ant2	5795	39.84	5775.56	5815.40		PASS

#### 6dB Bandwidth Test

TestMode	Antenna	Channel	6db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5745	16.32	5736.80	5753.12	0.5	PASS
	Ant2	5745	15.72	5736.84	5752.56	0.5	PASS
	Ant1	5785	16.32	5776.80	5793.12	0.5	PASS
	Ant2	5785	16.36	5776.80	5793.16	0.5	PASS
	Ant1	5825	15.68	5816.80	5832.48	0.5	PASS
	Ant2	5825	16.32	5816.80	5833.12	0.5	PASS
	Ant1	5745	16.68	5736.44	5753.12	0.5	PASS
	Ant2	5745	17.56	5736.20	5753.76	0.5	PASS
11N20MIMO	Ant1	5785	17.56	5776.20	5793.76	0.5	PASS
	Ant2	5785	17.56	5776.20	5793.76	0.5	PASS
	Ant1	5825	17.56	5816.20	5833.76	0.5	PASS
	Ant2	5825	16.92	5816.44	5833.36	0.5	PASS
11N40MIMO	Ant1	5755	35.12	5737.40	5772.52	0.5	PASS
	Ant2	5755	35.52	5737.24	5772.76	0.5	PASS
	Ant1	5795	35.12	5777.40	5812.52	0.5	PASS
	Ant2	5795	35.12	5777.40	5812.52	0.5	PASS





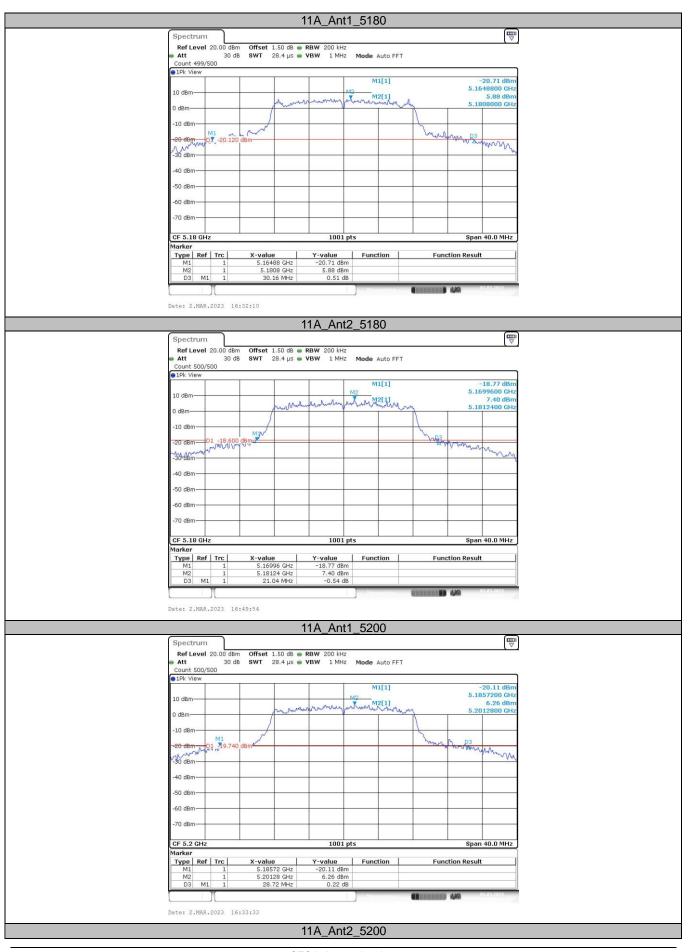
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#### 99% Occupied Bandwidth Test

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
-	Ant1	5180	17.343	5171.289	5188.631		PASS
	Ant2	5180	17.463	5171.209	5188.671		PASS
	Ant1	5200	17.542	5191.329	5208.871		PASS
	Ant2	5200	17.463	5191.209	5208.671		PASS
	Ant1	5240	17.982	5231.129	5249.111		PASS
11A	Ant2	5240	17.902	5230.969	5248.871		PASS
ПА	Ant1	5745	17.463	5736.289	5753.751		PASS
	Ant2	5745	17.383	5736.329	5753.711		PASS
	Ant1	5785	17.343	5776.329	5793.671		PASS
	Ant2	5785	17.662	5776.089	5793.751		PASS
	Ant1	5825	17.662	5816.129	5833.791		PASS
	Ant2	5825	17.463	5816.129	5833.591		PASS
	Ant1	5180	18.222	5170.929	5189.151		PASS
	Ant2	5180	17.742	5171.089	5188.831		PASS
	Ant1	5200	17.862	5191.049	5208.911		PASS
	Ant2	5200	17.862	5191.009	5208.871		PASS
	Ant1	5240	17.982	5231.009	5248.991		PASS
11N20MIMO	Ant2	5240	17.822	5231.049	5248.871		PASS
	Ant1	5745	18.422	5735.689	5754.111		PASS
	Ant2	5745	17.822	5736.009	5753.831		PASS
	Ant1	5785	18.142	5775.889	5794.031		PASS
	Ant2	5785	17.902	5776.009	5793.911		PASS
	Ant1	5825	18.302	5815.569	5833.871		PASS
	Ant2	5825	17.902	5815.969	5833.871		PASS
	Ant1	5190	36.843	5171.459	5208.302		PASS
11N40MIMO	Ant2	5190	36.444	5171.698	5208.142		PASS
	Ant1	5230	36.364	5211.778	5248.142		PASS
	Ant2	5230	36.444	5211.858	5248.302		PASS
	Ant1	5755	36.284	5736.858	5773.142		PASS
	Ant2	5755	36.284	5736.778	5773.062		PASS
	Ant1	5795	36.364	5776.858	5813.222		PASS
	Ant2	5795	36.603	5776.778	5813.382		PASS



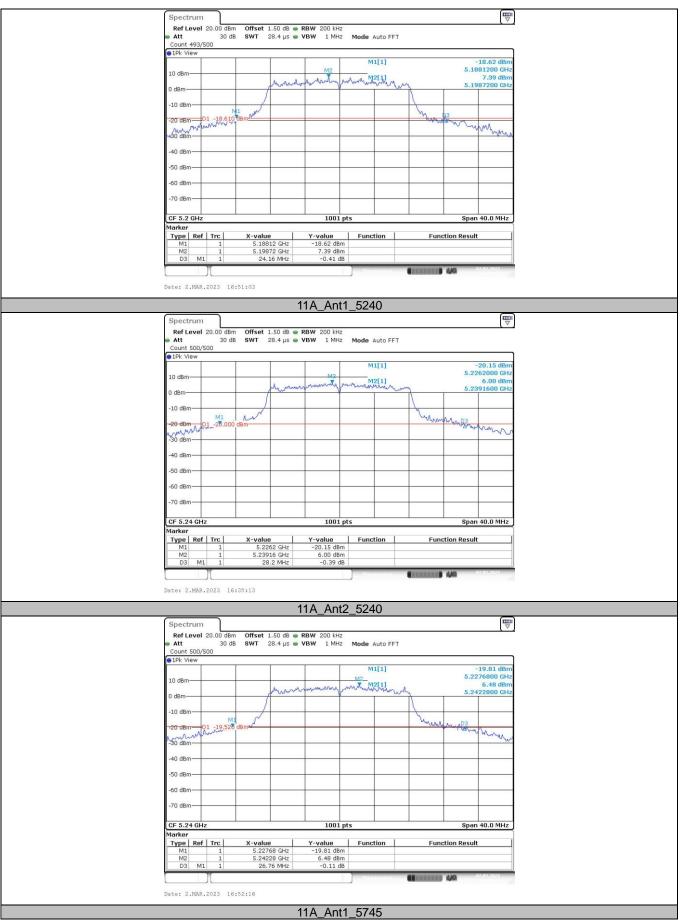
#### 26dB Bandwidth Test:



CTC Laboratories, Inc.







CTC Laboratories, Inc.



