

CTC Laboratories, Inc.

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TEST REPORT

Report No.: CTC20231666E16

FCC ID.....: 2AR24-XBOX

Applicant: Shenzhen Absen Optoelectronic Co.,Ltd

18-20/F, Tower A, Building 3, Phase I, Tian An Cloud Park, Address....:

N0.2018, Xuegang Rd, Bantian, Longgang District, Shenzhen,

Guangdong, P.R. China

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

18-20/F, Tower A, Building 3, Phase I, Tian An Cloud Park, Address....:

N0.2018, Xuegang Rd, Bantian, Longgang District, Shenzhen,

Guangdong, P.R. China

Product Name: **LED Multimedia Processor**

Absen Trade Mark:

Model/Type reference....: X-Box

Listed Model(s):

Standard: FCC CFR Title 47 Part 15 Subpart E Section 15.407

Date of receipt of test sample.....: Aug. 18, 2023

Date of testing.....: Aug. 19, 2023 ~ Dec 3, 2023

Date of issue....: Aug. 09, 2024

Result....: **PASS**

Compiled by:

(Printed name+signature) Lucy Lan

Supervised by:

(Printed name+signature) Eric Zhang lucy lan Ziz Zhang Jednas

Approved by:

(Printed name+signature) Totti Zhao

Testing Laboratory Name: CTC Laboratories, Inc.

Room 101 Building B, No. 7, Langing 1st Road, Luhu Address....::

Community, Guanhu Subdistrict, Longhua District, Shenzhen,

Guangdong, China

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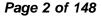
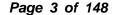




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1. TEST SUMMARY

1.1. Test Standards

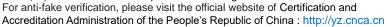
The tests were performed according to following standards:

<u>FCC Rules Part 15.407</u>: for 802.11a/n/ac/ax, the test procedure follows the FCC KDB 789033 D02 General UNII Test Procedures New Rules V02r01.

<u>ANSI C63.10-2013</u>: American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

1.2. Report Version

Revised No.	Report No.	Date of issue	Description
01	CTC20231666E16	Aug. 09, 2024	Original





1.3. Test Description

FCC Part 15 Subpart E (15.407)							
Test Item	Standard Section	Result	Test Engineer				
Antenna Requirement	15.203	Pass	Lucy Lan				
Conducted Emission	15.207	Pass	Lucy Lan				
Band Edge Emissions	15.407(b)	Pass	Lucy Lan				
26dB Bandwidth & 99% Bandwidth	15.407(a)	Pass	Lucy Lan				
6dB Bandwidth (only for UNII-3)	15.407(e)	Pass	Lucy Lan				
Peak Output Power	15.407(a)	Pass	Lucy Lan				
Power Spectral Density	15.407(a)	Pass	Lucy Lan				
Transmitter Radiated Spurious Emission	15.407(b) &15.209	Pass	Lucy Lan				
Frequency Stability	15.407(g)	Pass	Lucy Lan				
Dynamic Frequency Selection (DFS)	15.407(h)	N/A	N/A				
Automatically Discontinue Transmission	15.407(c)	Pass	Note 3				

Note:

- 1. The measurement uncertainty is not included in the test result.
- 2. N/A: means this test item is not applicable for this device according to the technology characteristic of device.
- 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 signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.

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1.4. Test Facility

Address of the report laboratory

CTC Laboratories, Inc.

Add: Room 101 of Building B, Room 107, 108, 207, 208 of Building A, No. 7, Lanqing 1st Road, Luhu Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China

Laboratory accreditation

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

A2LA-Lab Cert. No.: 4340.01

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

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

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

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

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

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



1.5. Measurement Uncertainty

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

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

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-26GHz: ±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	15 °C to 35 °C
Normal	Relative Humidity	20 % to 75 %
Condition	Air Pressure	101 kPa
	Voltage	The normal test voltage for the equipment shall be the nominal voltage for which the equipment was designed.
Extreme	Measurements shall be made over the extremes of the operating temperature range as declared by the manufacturer.	
Condition	Voltage	Measurements shall be made over the extremes of the operating temperature range as declared by the manufacturer.

Normal Condition	T _N =Normal Temperature	25 °C
Extreme Condition	T _L =Lower Temperature	-10 °C
	T _H =Higher Temperature	40 °C

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2. GENERAL INFORMATION

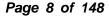
2.1. Client Information

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
Factory:	Huizhou Absen Optoelectronic Limited.
Address:	No. 03, Donghua South road, Dongjiang Hi-tech Industry Park, Huizhou. Guangdong, China

2.2. General Description of EUT

Product Name:	LED Multimed	LED Multimedia Processor				
Trade Mark:	Absen					
Model/Type reference:	X-Box					
Listed Model(s):	/					
Model Difference:	/					
Power Supply:	AC 100-240V	~2.6A 50/60Hz				
RF Module Model:	BL-M8811CU	2				
Hardware Version:	1					
Software Version:	/					
5G Wi-Fi						
Operation Band:	⊠U-NII-1	⊠U-NII-2A	⊠U-NII-2C	⊠U-NII-3		
Operation Frequency:	U-NII-1	5150MHz~52	50MHz			
Operation requeitcy.	U-NII-3	5725MHz~58	50MHz			
	802.11a	□ 20MHz				
Support Bandwidth:	802.11n	□ 20MHz	□ 40MHz			
	802.11ac	□ 20MHz	□ 40MHz	⊠ 80MHz	☐ 160MHz	
802.11a: OFDM (BPSK, QPSK, 16QAM, 64QAM) Modulation: 802.11n: OFDM (BPSK, QPSK, 16QAM, 64QAM) 802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM)						
Antenna Type:	PCB Antenna					
Antenna Gain:	2.08dBi					

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2.3. Accessory Equipment Information

Equipment Information						
Name	Model	S/N	Manufacturer			
Notebook	ThinkPad T460s	/	Lenovo			
Cable Information						
Name	Shielded Type	Ferrite Core	Length			
USB Cable	Unshielded	NO	150cm			
Test Software Information						
Name	Version	/	1			
adb.exe	/	/	/			

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



2.4. Operation State

Operation Frequency List: The EUT has been tested under typical operating condition. The Applicant provides communication tools software to control the EUT for staying in continuous transmitting.

Operation Frequency List:

Operating	20MHz E	Bandwidth	40MHz E	Bandwidth	80MHz Bandwidth		160MHz Bandwidth	
Band	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
	36	5180	38	5190				
U-NII-1	40	5200	30	5190	42	5040	5210	
O-INII-1	44	5220	46	5230	42	3210		
	48	5240	40	5230			50	5250
	52	5260	54	5270			30	3230
U-NII-2A	56	5280	54	5270	58	5290		
U-INII-ZA	60	5300	62	5310	56	5290		
	64	5320	02	5510				
	100	5500	102	5510	106		114	5570
	104	5520	102	3310		5530		
	108	5540	110	5550				
	112	5560	110					
	116	5580	118	5590				
U-NII-2C	120	5600	110			5610		
	124	5620	126	5630				
	128	5640	120	3030	122			
	132	5660			122			
	136	5680	134	5670				
	140	5700						
	149	5745	151	5755				
	153	5765	131	3733				
U-NII-3	157	5785			155	5775		/
	161	5805	159	5795				
	165	5825						



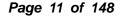
Test channel is below:

Operating	Test	20MHz I	Bandwidth	40MHz I	40MHz Bandwidth		80MHz Bandwidth		Bandwidth
Band	Channel	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
	CH∟	36	5180	38	5190	/	/		
U-NII-1	СНм	40	5200	/	/	42	5210	50	5250
	СНн	48	5240	46	5230	/	/		
	CH∟	52	5260	54	5270	/	/		
U-NII-2A	СНм	56	5280	/	/	58	5290		
	СНн	64	5320	62	5310	/	/		
	CH∟	100	5500	102	5510	106	5530	/	/
U-NII-2C	CH _M	116	5580	110	5550	/	/	114	5570
	СНн	140	5700	134	5670	122	5610	/	/
	CHL	149	5745	151	5755	/	/	/	/
U-NII-3	СНм	157	5785	/	/	155	5775	/	/
	СНн	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 the worsted case mode.

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





Test Mode:

For RF test items:

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

For AC power line conducted emissions:

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

For Radiated spurious emissions test item:

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



2.5. Measurement Instruments List

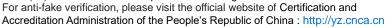
RF Tes	RF Test System								
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated Until				
1	Spectrum Analyzer	R&S	FSV40-N	101654	Aug. 07, 2024				
2	High and low temperature test chamber	ESPEC	MT3035	/	Mar. 24, 2024				
3	Test Software	WCS	WCS-WCN	2023.08.04	/				

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 Amplifier	SCHWARZBECK	BBV9743B	259	Dec. 16, 2023				
5	Mirowave Broadband Amplifier	SCHWARZBECK	BBV9718C	111	Dec. 16, 2023				
6	3m chamber 3	YIHENG	EE106	/	Aug. 28, 2026				
7	Test Software	FARA	EZ-EMC	FA-03A2	/				

Conduc	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					
6	Test Software	R&S	EMC32	6.10.10	/					

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

- 2. The Cal. Interval was three years of the antenna.
- 3. The cable loss has been calculated in test result which connection between each test instruments.





3. TEST ITEM AND RESULTS

3.1. Conducted Emission

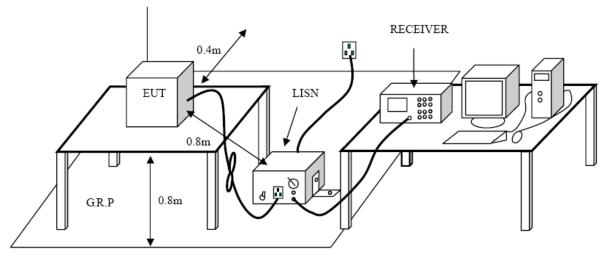
Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.207

Fraguerou (MILIF)	Conducted Limit (dBµV)					
Frequency (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 impedance stabilization network (LISN). The LISN provides a 50 ohm / 50 µH coupling impedance for the measuring equipment.
- 4. 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)
- 5. 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.
- 6. 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.
- 7. Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.
- 8. During the above scans, the emissions were maximized by cable manipulation.

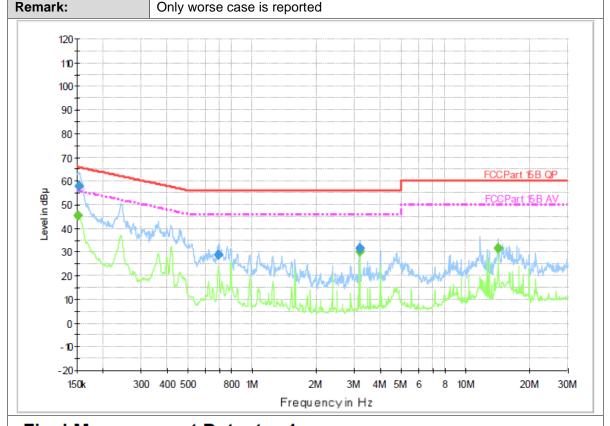
Test Mode

Please refer to the clause 2.4.



Test Result

Test Voltage:	AC 120V/60Hz
Terminal:	Line



Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)	Comment
0.153640	57.9	1000.00	9.000	On	L1	9.4	7.9	65.8	
0.692000	28.8	1000.00	9.000	On	L1	9.5	27.2	56.0	
3.167000	31.7	1000.00	9.000	On	L1	9.5	24.3	56.0	

Final Measurement Detector 2

Frequency	Average	Meas.	Bandwidth	Filter	Line	Corr.	Margin	Limit	Comment
(MHz)	(dB µ V)	Time	(kHz)			(dB)	(dB)	(dB μ	
		(ms)						V)	
0.151200	45.3	1000.00	9.000	On	L1	9.4	10.6	55.9	
3.167000	30.1	1000.00	9.000	On	L1	9.5	15.9	46.0	
14.151110	31.4	1000.00	9.000	On	L1	9.8	18.6	50.0	

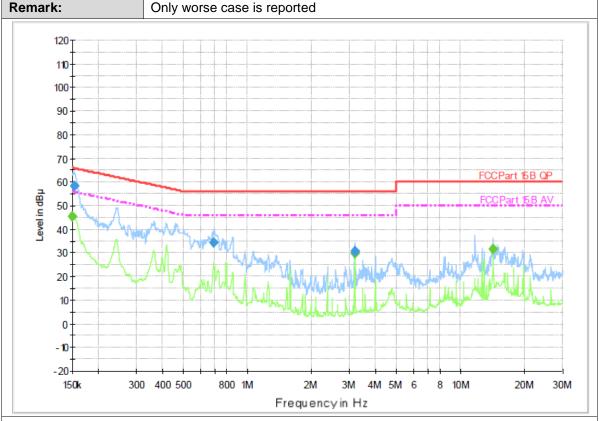
Emission Level = Read Level + Correct Factor



Test Voltage: AC 120V/60Hz

Terminal: Neutral

Remark: Only worse case is reported



Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)	Comment
0.153020	58.2	1000.00	9.000	On	N	9.3	7.6	65.8	
0.694760	34.5	1000.00	9.000	On	N	9.4	21.5	56.0	
3.167000	30.7	1000.00	9.000	On	N	9.4	25.3	56.0	

Final Measurement Detector 2

	Frequency	Average	Meas.	Bandwidth	Filter	Line	Corr.	Margin	Limit	Comment
1	(MHz)	(dB μ V)	Time	(kHz)			(dB)	(dB)	(dB μ	
			(ms)						`V)	
	0.150600	45.5	1000.00	9.000	On	N	9.3	10.5	56.0	
	3.167000	29.8	1000.00	9.000	On	N	9.4	16.2	46.0	
	14.151110	31.5	1000.00	9.000	On	N	9.6	18.5	50.0	

Emission Level = Read Level + Correct Factor



3.2. Radiated Emission

Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.209

Frequency	Field Strength	Measurement Distance		
(MHz)	(microvolts/meter)	(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		

Fraguency Panga (MHz)	dBµV/m	(at 3 meters)
Frequency Range (MHz)	Peak	Average
Above 1000	74	54

Note:

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

(2) Emission Level ($dB\mu V/m$)=20log Emission Level ($\mu V/m$).

Limits of unwanted emission out of the restricted bands FCC CFR Title 47 Part 15 Subpart E Section 15. 407(b)

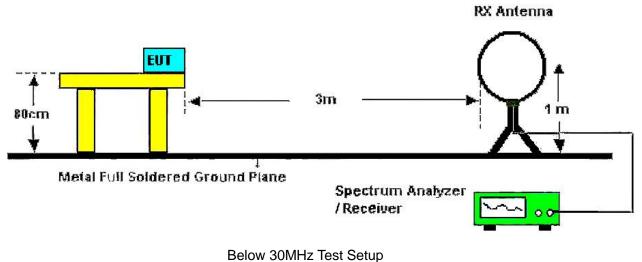
Frequency	EIRP Limits	Equivalent Field Strength
(MHz)	(dBm)	at 3m (dBµV/m)
5150~5250	-27	68.2
5250~5350	-27	68.2
5470~5725	-27	68.2
	-27 (Note 2)	68.2
5725~5825	10 (Note 2)	105.2
3725~3623	15.6 (Note 2)	110.8
	27 (Note 2)	122.2

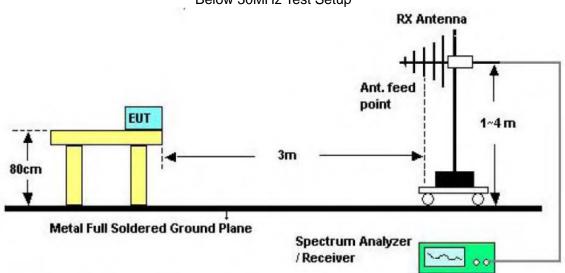
Note:

1. The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength: $E = \frac{1000000\sqrt{30P}}{3} \mu V/m$, where P is the eirp (Watts).

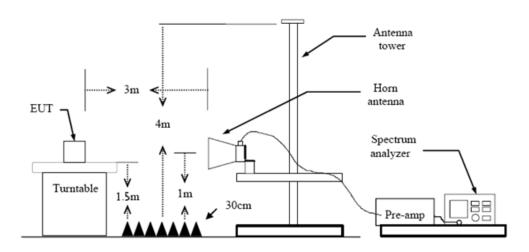
2. According to FCC 16-24, all emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5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







30-1000MHz Test Setup



Above 1GHz Test Setup



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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) 9k 150kHz:

RBW=300 Hz, VBW=1 kHz, Sweep=auto, Detector function=peak, Trace=max hold

(3) 0.15M - 30MHz:

RBW=10 kHz, VBW=30 kHz, Sweep=auto, Detector function=peak, Trace=max hold

(4) 30M - 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.

(5) From 1 GHz to 10th harmonic:

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 Duty Cycle.

Test Mode

Please refer to the clause 2.4.

Test Result

9 kHz~30 MHz

From 9 kHz to 30 MHz: The conclusion is PASS.

- Note: 1. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
 - 2. Pre-scan all antenna, only show the test data for worse case antenna on the test report.

CTC Laboratories, Inc.

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Ant. No.	Ant 1			
Ant. Pol.	Horizontal			
Test Mode:	TX 802.11a Mode 5180MHz (U-NII-1)			
Remark:	Only worse case is reported.			
90.0 dBuV/m				
80				
70				
60	FCC Part15 RE-Class B 30-1000M			
50	Margin -6 dB			
40	* * * * * * * * * * * * * * * * * * * *			
30	- Invalor Inva			
20 10	war market war war war for the forest of the same of t			
0				
-10	441			
30.000 60	0.00 (MHz) 300.00 1000.00			

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	214.6233	52.12	-15.54	36.58	43.50	-6.92	QP
2	351.3933	49.78	-11.83	37.95	46.00	-8.05	QP
3 *	382.4333	51.36	-11.38	39.98	46.00	-6.02	QP
4	411.8567	49.90	-10.93	38.97	46.00	-7.03	QP
5	496.8933	47.98	-9.36	38.62	46.00	-7.38	QP
6	812.4667	42.70	-4.15	38.55	46.00	-7.45	QP

Remarks

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



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	214.3000	52.62	-15.55	37.07	43.50	-6.43	QP
2	382.7567	48.99	-11.38	37.61	46.00	-8.39	QP
3	416.3833	50.10	-10.85	39.25	46.00	-6.75	QP
4!	500.1267	49.86	-9.29	40.57	46.00	-5.43	QP
5 *	624.9333	49.44	-6.81	42.63	46.00	-3.37	QP
6 !	812.4667	44.46	-4.15	40.31	46.00	-5.69	QP

Remarks:

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



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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	10359.669	23.42	13.93	37.35	54.00	-16.65	AVG
2	10360.715	38.61	13.92	52.53	74.00	-21.47	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 5180MHz (U-NII-1)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	10359.121	23.74	13.93	37.67	54.00	-16.33	AVG
2	10360.199	38.39	13.93	52.32	74.00	-21.68	peak

Remarks:

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



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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	10400.247	23.81	13.99	37.80	54.00	-16.20	AVG
2	10400.813	40.25	13.99	54.24	74.00	-19.76	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 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	10399.150	38.99	13.99	52.98	74.00	-21.02	peak
2 *	10399.391	23.70	13.99	37.69	54.00	-16.31	AVG

Remarks:

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



Ant. No.	Ant 1
Ant. Pol.	Horizontal
Test Mode:	TX 802.11a Mode 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	10480.163	38.77	14.03	52.80	74.00	-21.20	peak
2 *	10480.443	23.25	14.03	37.28	54.00	-16.72	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 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)	I	Margin (dB)	Detector
1 *	10479.372	23.45	14.03	37.48	54.00	-16.52	AVG
2	10480.505	38.32	14.03	52.35	74.00	-21.65	peak

Remarks:

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



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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	10360.400	38.69	13.92	52.61	74.00	-21.39	peak
2 *	10360.621	23.21	13.92	37.13	54.00	-16.87	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 802.11n(HT20) Mode 5180MHz (U-NII-1)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10359.360	37.94	13.93	51.87	74.00	-22.13	peak
2 *	10359.713	23.66	13.93	37.59	54.00	-16.41	AVG

Remarks:

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



Ant. No.	Ant 1
Ant. Pol.	Horizontal
Test Mode:	TX 802.11n(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 *	10399.443	23.81	13.99	37.80	54.00	-16.20	AVG
2	10399.981	39.26	13.99	53.25	74.00	-20.75	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 802.11n(HT20) Mode 5200MHz (U-NII-1)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10399.291	38.80	13.99	52.79	74.00	-21.21	peak
2 *	10400.145	24.03	13.99	38.02	54.00	-15.98	AVG

Remarks:

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



Ant. No.	Ant 1			
Ant. Pol.	Horizontal			
Test Mode:	TX 802.11n(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	10479.019	37.98	14.03	52.01	74.00	-21.99	peak
2 *	10480.801	23.83	14.03	37.86	54.00	-16.14	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 802.11n(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 *	10479.349	23.15	14.03	37.18	54.00	-16.82	AVG
2	10480.148	38.34	14.03	52.37	74.00	-21.63	peak

Remarks:

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



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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	10359.856	23.44	13.93	37.37	54.00	-16.63	AVG
2	10360.028	37.99	13.93	51.92	74.00	-22.08	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 802.11ac(VHT20) Mode 5180MHz (U-NII-1)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	10359.413	23.14	13.93	37.07	54.00	-16.93	AVG
2	10360.801	38.51	13.92	52.43	74.00	-21.57	peak

Remarks:

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



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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	10399.065	23.58	13.99	37.57	54.00	-16.43	AVG
2	10399.853	38.74	13.99	52.73	74.00	-21.27	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 802.11ac(VHT20) Mode 5200MHz (U-NII-1)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	10400.427	38.26	13.99	52.25	74.00	-21.75	peak
2 *	10400.913	23.66	13.99	37.65	54.00	-16.35	AVG

Remarks:

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



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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	10479.375	23.19	14.03	37.22	54.00	-16.78	AVG
2	10480.967	38.19	14.03	52.22	74.00	-21.78	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. Pol.	Vertical			
Test Mode:	TX 802.11ac(VHT20) Mode 5240MHz (U-NII-1)			
Remark:	No report for the emission which more than 20 dB below the prescribed limit.			

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	10479.337	38.50	14.03	52.53	74.00	-21.47	peak
2 *	10480.351	23.16	14.03	37.19	54.00	-16.81	AVG

Remarks:

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



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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	10379.249	23.73	13.96	37.69	54.00	-16.31	AVG
2	10380.105	38.18	13.96	52.14	74.00	-21.86	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 802.11n(HT40) Mode 5190MHz (U-NII-1)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	10379.052	38.26	13.96	52.22	74.00	-21.78	peak
2 *	10379.416	23.51	13.96	37.47	54.00	-16.53	AVG

Remarks:

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



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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	10459.849	23.50	14.02	37.52	54.00	-16.48	AVG
2	10460.235	38.72	14.02	52.74	74.00	-21.26	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 802.11n(HT40) Mode 5230MHz (U-NII-1)			
Remark:	No report for the emission which more than 20 dB below the prescribed limit.			

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	10459.332	23.36	14.02	37.38	54.00	-16.62	AVG
2	10460.481	38.25	14.02	52.27	74.00	-21.73	peak

Remarks:

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



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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	10379.167	24.01	13.96	37.97	54.00	-16.03	AVG
2	10379.413	38.53	13.96	52.49	74.00	-21.51	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 802.11ac(VHT40) Mode 5190MHz (U-NII-1)			
Remark:	No report for the emission which more than 20 dB below the prescribed limit.			

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	10379.732	23.65	13.96	37.61	54.00	-16.39	AVG
2	10380.549	38.48	13.96	52.44	74.00	-21.56	peak

Remarks:

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



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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	10460.192	38.12	14.02	52.14	74.00	-21.86	peak
2 *	10460.365	23.46	14.02	37.48	54.00	-16.52	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 802.11ac(VHT40) Mode 5230MHz (U-NII-1)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	l .	Margin (dB)	Detector
1	10459.504	37.94	14.02	51.96	74.00	-22.04	peak
2 *	10459.851	23.60	14.02	37.62	54.00	-16.38	AVG

Remarks:

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



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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	10419.763	38.60	13.99	52.59	74.00	-21.41	peak
2 *	10419.893	23.27	13.99	37.26	54.00	-16.74	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 802.11ac(VHT80) Mode 5210MHz (U-NII-1)			
Remark:	No report for the emission which more than 20 dB below the prescribed limit.			

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	10419.473	23.38	13.99	37.37	54.00	-16.63	AVG
2	10420.041	38.46	13.99	52.45	74.00	-21.55	peak

Remarks:

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



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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	11489.077	22.48	15.08	37.56	54.00	-16.44	AVG
2	11489.384	38.45	15.09	53.54	74.00	-20.46	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 5745MHz (U-NII-3)		
Remark:	No report for the emission which more than 20 dB below the prescribed limit.		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	11490.249	38.75	15.09	53.84	74.00	-20.16	peak
2 *	11490.911	22.17	15.09	37.26	54.00	-16.74	AVG

Remarks:

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



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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	l .	Margin (dB)	Detector
1	11569.055	38.70	15.23	53.93	74.00	-20.07	peak
2 *	11570.491	23.03	15.23	38.26	54.00	-15.74	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 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	11569.843	37.79	15.23	53.02	74.00	-20.98	peak
2 *	11570.127	22.65	15.23	37.88	54.00	-16.12	AVG

Remarks:

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



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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	11649.073	22.51	15.28	37.79	54.00	-16.21	AVG
2	11650.694	37.14	15.29	52.43	74.00	-21.57	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 5825MHz (U-NII-3)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)		Level (dBuV/m)		Margin (dB)	Detector
1 *	11649.187	22.65	15.28	37.93	54.00	-16.07	AVG
2	11650.021	38.11	15.28	53.39	74.00	-20.61	peak

Remarks:

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



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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	11490.115	37.91	15.09	53.00	74.00	-21.00	peak
2 *	11490.183	22.36	15.09	37.45	54.00	-16.55	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 802.11n(HT20) Mode 5745MHz (U-NII-3)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	11489.012	37.57	15.08	52.65	74.00	-21.35	peak
2 *	11489.521	22.36	15.09	37.45	54.00	-16.55	AVG

Remarks:

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



Ant. No.	Ant 1
Ant. Pol.	Horizontal
Test Mode:	TX 802.11n(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 *	11570.436	23.13	15.23	38.36	54.00	-15.64	AVG
2	11570.821	37.70	15.23	52.93	74.00	-21.07	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 802.11n(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 *	11569.207	22.93	15.23	38.16	54.00	-15.84	AVG
2	11570.409	38.26	15.23	53.49	74.00	-20.51	peak

Remarks:

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



Ant. No.	Ant 1
Ant. Pol.	Horizontal
Test Mode:	TX 802.11n(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 *	11649.080	22.66	15.28	37.94	54.00	-16.06	AVG
2	11649.121	37.85	15.28	53.13	74.00	-20.87	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 802.11n(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)	I	Margin (dB)	Detector
1 *	11649.453	22.54	15.28	37.82	54.00	-16.18	AVG
2	11650.579	37.90	15.29	53.19	74.00	-20.81	peak

Remarks:

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



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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	I	Margin (dB)	Detector
1	11489.535	38.07	15.09	53.16	74.00	-20.84	peak
2 *	11489.653	22.42	15.09	37.51	54.00	-16.49	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 802.11ac(VHT20) Mode 5745MHz (U-NII-3)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	11490.359	37.78	15.09	52.87	74.00	-21.13	peak
2 *	11490.944	22.17	15.09	37.26	54.00	-16.74	AVG

Remarks:

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



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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	11569.913	37.44	15.23	52.67	74.00	-21.33	peak
2 *	11570.335	22.98	15.23	38.21	54.00	-15.79	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 802.11ac(VHT20) Mode 5785MHz (U-NII-3)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	11569.048	22.79	15.23	38.02	54.00	-15.98	AVG
2	11570.040	37.86	15.23	53.09	74.00	-20.91	peak

Remarks:

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



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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	11649.633	22.70	15.28	37.98	54.00	-16.02	AVG
2	11650.375	39.25	15.29	54.54	74.00	-19.46	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 802.11ac(VHT20) Mode 5825MHz (U-NII-3)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	I	Margin (dB)	Detector
1 *	11649.261	22.49	15.28	37.77	54.00	-16.23	AVG
2	11649.277	38.08	15.28	53.36	74.00	-20.64	peak

Remarks:

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



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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	l	Margin (dB)	Detector
1	11510.122	37.82	15.12	52.94	74.00	-21.06	peak
2 *	11510.959	22.32	15.12	37.44	54.00	-16.56	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 802.11n(HT40) Mode 5755MHz (U-NII-3)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	11509.624	38.16	15.12	53.28	74.00	-20.72	peak
2 *	11509.759	22.28	15.12	37.40	54.00	-16.60	AVG

Remarks:

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



Ant. No.	Ant 1
Ant. Pol.	Horizontal
Test Mode:	TX 802.11n(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 *	11589.230	22.88	15.27	38.15	54.00	-15.85	AVG
2	11589.352	38.31	15.27	53.58	74.00	-20.42	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 802.11n(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)		Level (dBuV/m)		Margin (dB)	Detector
1	*	11589.388	22.67	15.27	37.94	54.00	-16.06	AVG
2		11589.679	37.72	15.27	52.99	74.00	-21.01	peak

Remarks:

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



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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	11510.121	22.48	15.12	37.60	54.00	-16.40	AVG
2	11510.211	37.82	15.12	52.94	74.00	-21.06	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 802.11ac(VHT40) Mode 5755MHz (U-NII-3)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	11509.040	37.59	15.12	52.71	74.00	-21.29	peak
2 *	11510.163	22.61	15.12	37.73	54.00	-16.27	AVG

Remarks:

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



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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	11589.703	22.80	15.27	38.07	54.00	-15.93	AVG
2	11590.876	37.73	15.27	53.00	74.00	-21.00	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 802.11ac(VHT40) Mode 5795MHz (U-NII-3)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	I	Margin (dB)	Detector
1 *	11590.564	22.68	15.27	37.95	54.00	-16.05	AVG
2	11590.709	37.30	15.27	52.57	74.00	-21.43	peak

Remarks:

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



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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	11550.349	37.73	15.20	52.93	74.00	-21.07	peak
2 *	11550.885	22.33	15.20	37.53	54.00	-16.47	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 802.11ac(VHT80) Mode 5775MHz (U-NII-3)
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	11550.349	37.73	15.20	52.93	74.00	-21.07	peak
2 *	11550.885	22.33	15.20	37.53	54.00	-16.47	AVG

Remarks:

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



3.3. Band Edge Emissions

Limit

Limits of unwanted emission out of the restricted bands

FCC CFR Title 47 Part 15 Subpart E Section 15, 407(b) / RSS-247 6.2

CO Of It Title 47 Fait 13 Subpart L Sect	1011 13. 101 (b) / 1100 211 0.2	
Frequency	EIRP Limits	Equivalent Field Strength
(MHz)	(dBm)	at 3m (dBµV/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
3725~3625	15.6 (Note 2)	110.8
	27 (Note 2)	122.2

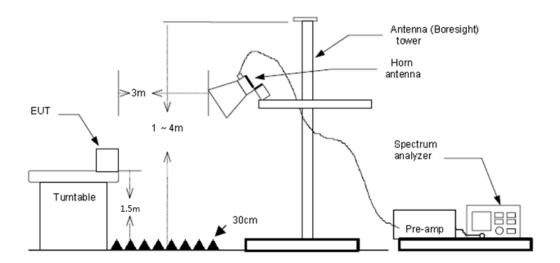
Note:

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

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

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

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

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

RBW=1MHz, VBW see note 1 with Peak Detector for Average Value.

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

Test Mode

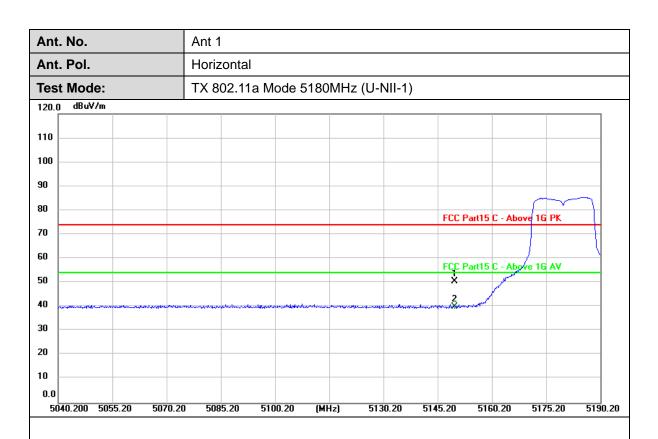
Please refer to the clause 2.4.

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Test Result

Note: 1. Pre-scan both 4500-5150MHz, 5350-5460MHz were investigated, report only shows the test data for worst case.



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	I	Margin (dB)	Detector
1	5150.000	13.39	37.18	50.57	74.00	-23.43	peak
2 *	5150.000	2.78	37.18	39.96	54.00	-14.04	AVG

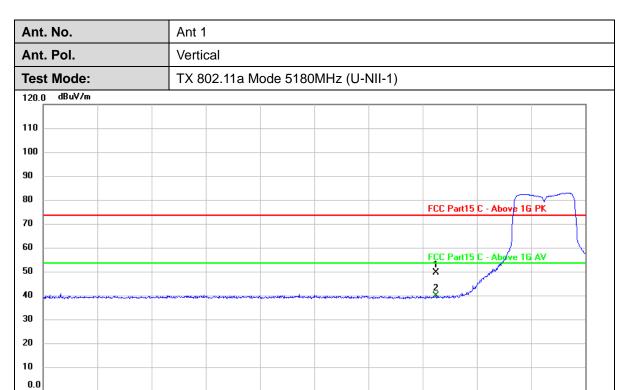
Remarks:

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

5191.25

5176.25





No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	5150.000	12.98	37.18	50.16	74.00	-23.84	peak
2 *	5150.000	3.35	37.18	40.53	54.00	-13.47	AVG

(MHz)

5131.25

5146.25

5161.25

Remarks:

5041.250 5056.25

5071.25

5086.25

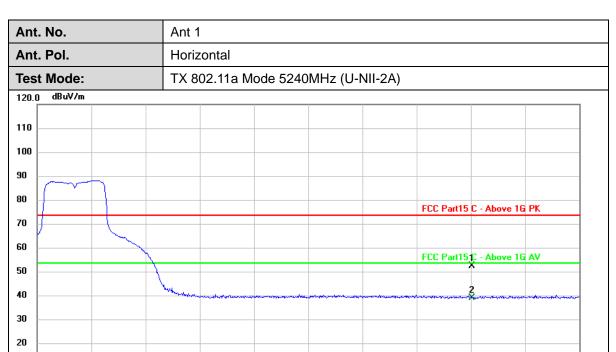
1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

5101.25

5379.50

5364.50





No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	I	Margin (dB)	Detector
1	5350.000	15.67	37.40	53.07	74.00	-20.93	peak
2 *	5350.000	2.35	37.40	39.75	54.00	-14.25	AVG

(MHz)

5319.50

5334.50

5349.50

Remarks:

10 0.0

5229.500 5244.50

5259.50

5274.50

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

5289.50

5378.75

5363.75



Ant. No. Ant 1 Ant. Pol. Vertical **Test Mode:** TX 802.11a Mode 5240MHz (U-NII-2A) dBuV/m 120.0 110 100 90 80 FCC Part15 C - Above 1G PK 70 60 FCC Part15 (- Above 16 AV 50 40 30

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	5350.000	13.04	37.40	50.44	74.00	-23.56	peak
2 *	5350.000	2.87	37.40	40.27	54.00	-13.73	AVG

(MHz)

5318.75

5333.75

5348.75

20 10 0.0

5228.750 5243.75

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

5288.75

2.Margin value = Level -Limit value

5258.75

5273.75

5191.25

5176.25



5041.250 5056.25

5071.25

5086.25

Ant. No. Ant 1 Ant. Pol. Horizontal TX 802.11n(HT20) Mode 5180MHz (U-NII-1) **Test Mode:** dBuV/m 120.0 110 100 90 80 FCC Part15 C - Above 1G PK 70 60 FCC Part15 P - Above 1G AV 50 40

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	5150.000	13.12	37.18	50.30	74.00	-23.70	peak
2 *	5150.000	3.51	37.18	40.69	54.00	-13.31	AVG

(MHz)

5131.25

5146.25

5161.25

Remarks:

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

5101.25

5191.25

5176.25



Ant. No. Ant 1 Ant. Pol. Vertical **Test Mode:** TX 802.11n(HT20) Mode 5180MHz (U-NII-1) dBuV/m 120.0 110 100 90 80 FCC Part15 C - Above 1G PK 70 60 FCC Part15 0 Above 1G AV Ÿ 50 40 30 20 10

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	5150.000	12.62	37.18	49.80	74.00	-24.20	peak
2 *	5150.000	3.27	37.18	40.45	54.00	-13.55	AVG

(MHz)

5131.25

5146.25

5161.25

Remarks:

0.0

5041.250 5056.25

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

5101.25

5086.25

5071.25

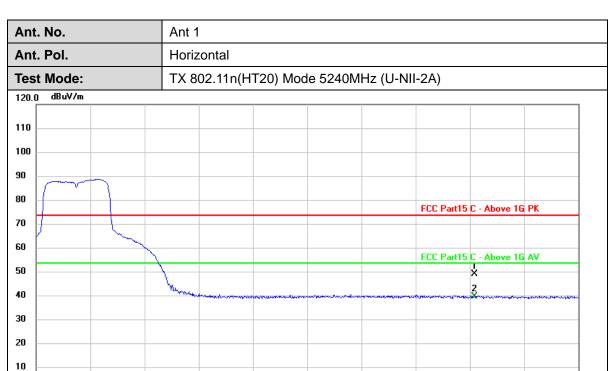
2.Margin value = Level -Limit value

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5378.75

5363.75





No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	5350.000	12.35	37.40	49.75	74.00	-24.25	peak
2 *	5350.000	3.08	37.40	40.48	54.00	-13.52	AVG

(MHz)

5318.75

5333.75

5348.75

Remarks:

0.0

5228.750 5243.75

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

5288.75

2.Margin value = Level -Limit value

5258.75

5273.75

5378.00

5363.00



Ant. No. Ant 1 Ant. Pol. Vertical **Test Mode:** TX 802.11n(HT20) Mode 5240MHz (U-NII-2A) dBuV/m 120.0 110 100 90 80 FCC Part15 C - Above 1G PK 70 60 FCC Part15 G - Above 1G AV 50 40 30 20

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	5350.000	14.93	37.40	52.33	74.00	-21.67	peak
2 *	5350.000	2.64	37.40	40.04	54.00	-13.96	AVG

(MHz)

5318.00

5333.00

5348.00

10 0.0

5228.000 5243.00

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

5288.00

2.Margin value = Level -Limit value

5258.00

5273.00

5191.25

5176.25



Ant. No. Ant 1 Ant. Pol. Horizontal TX 802.11ac(VHT20) Mode 5180MHz (U-NII-1) **Test Mode:** dBuV/m 120.0 110 100 90 80 FCC Part15 C - Above 1G PK 70 60 FC Part15 C - Above 1G AV 50 40 30 20

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	5150.000	16.24	37.18	53.42	74.00	-20.58	peak
2 *	5150.000	4.27	37.18	41.45	54.00	-12.55	AVG

(MHz)

5131.25

5146.25

5161.25

Remarks:

10 0.0

5041.250 5056.25

5071.25

5086.25

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

5101.25

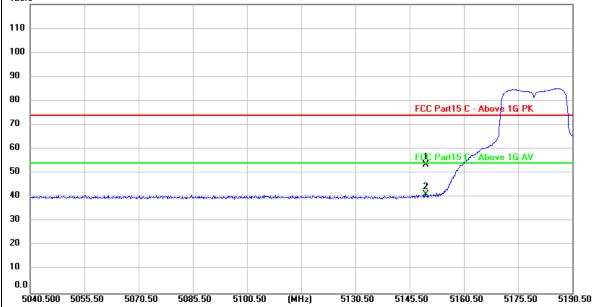


 Ant. No.
 Ant 1

 Ant. Pol.
 Vertical

 Test Mode:
 TX 802.11ac(VHT20) Mode 5180MHz (U-NII-1)

 120.0 dBuV/m



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	5150.000	16.38	37.18	53.56	74.00	-20.44	peak
2 *	5150.000	3.95	37.18	41.13	54.00	-12.87	AVG

Remarks:

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

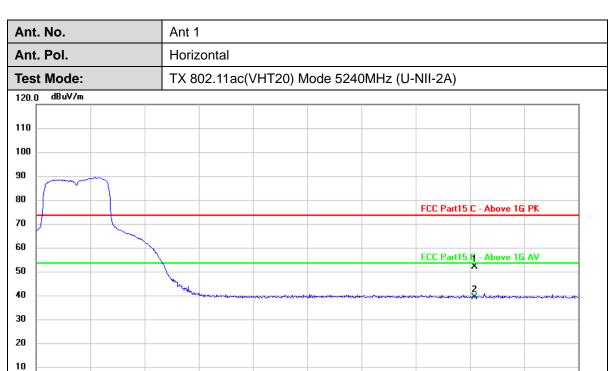
2.Margin value = Level -Limit value

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5378.75

5363.75





No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	l e	Margin (dB)	Detector
1	5350.000	15.34	37.40	52.74	74.00	-21.26	peak
2 *	5350.000	2.64	37.40	40.04	54.00	-13.96	AVG

(MHz)

5318.75

5333.75

5348.75

Remarks:

0.0

5228.750 5243.75

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

5288.75

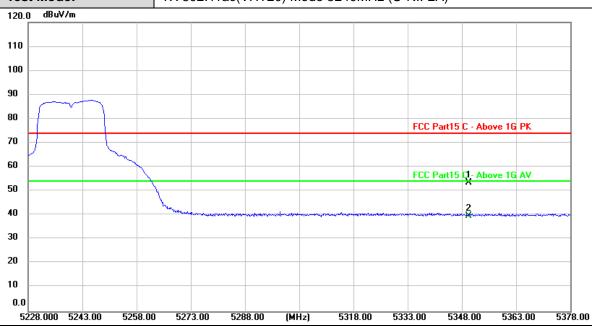
2.Margin value = Level -Limit value

5258.75

5273.75



Ant. No. Ant 1 Ant. Pol. Vertical **Test Mode:** TX 802.11ac(VHT20) Mode 5240MHz (U-NII-2A)



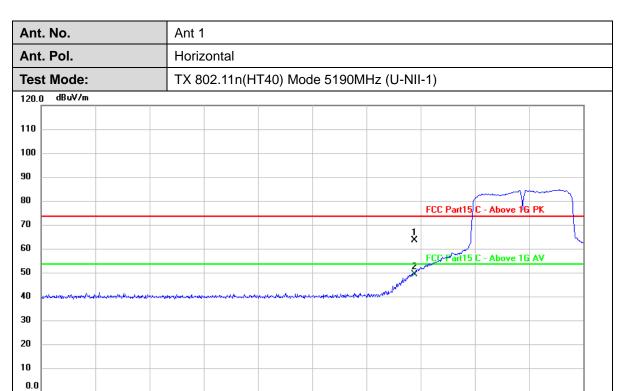
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	5350.000	16.17	37.40	53.57	74.00	-20.43	peak
2 *	5350.000	2.26	37.40	39.66	54.00	-14.34	AVG

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

5212.25

5192.25





No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	5150.000	26.79	37.18	63.97	74.00	-10.03	peak
2 *	5150.000	12.76	37.18	49.94	54.00	-4.06	AVG

(MHz)

5132.25

5152.25

5172.25

Remarks:

5012.250 5032.25

5052.25

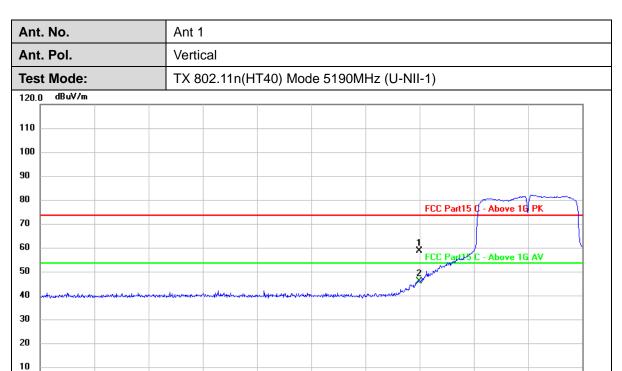
5072.25

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

5092.25

5210.00





No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	l	Margin (dB)	Detector
1	5150.000	22.20	37.18	59.38	74.00	-14.62	peak
2 *	5150.000	9.57	37.18	46.75	54.00	-7.25	AVG

(MHz)

5130.00

5150.00

5170.00

5190.00

Remarks:

0.0

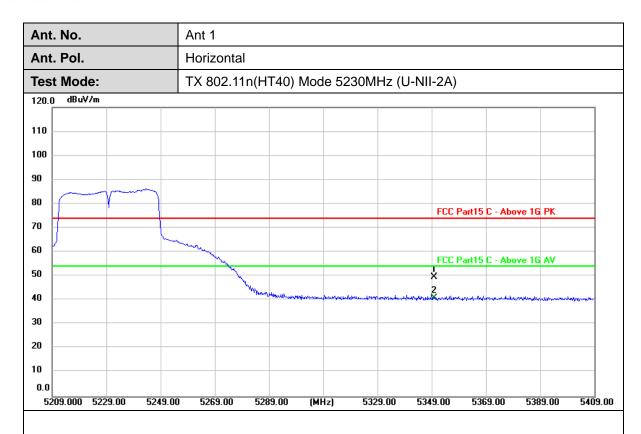
5010.000 5030.00

5050.00

5070.00

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

5090.00

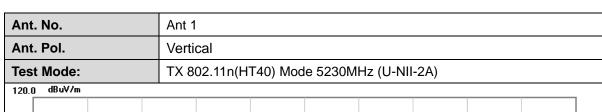


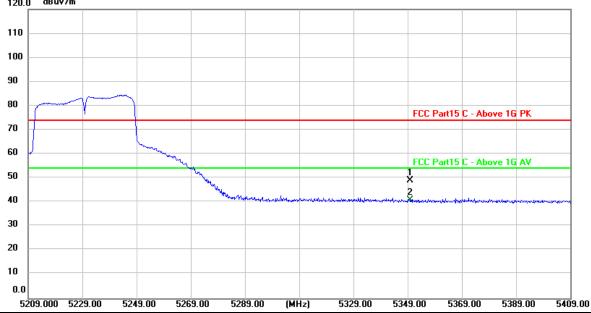
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	5350.000	12.37	37.40	49.77	74.00	-24.23	peak
2 *	5350.000	3.64	37.40	41.04	54.00	-12.96	AVG

Remarks:

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







No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	5350.000	11.79	37.40	49.19	74.00	-24.81	peak
2 *	5350.000	3.61	37.40	41.01	54.00	-12.99	AVG

Remarks:

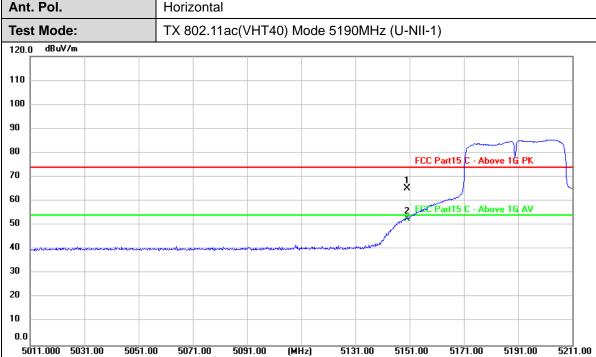
1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

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Ant. No. Ant 1 Ant. Pol. Horizontal



No.	Frequency (MHz)	Reading (dBuV)		Level (dBuV/m)		Margin (dB)	Detector
1	5150.000	27.99	37.18	65.17	74.00	-8.83	peak
2 *	5150.000	15.45	37.18	52.63	54.00	-1.37	AVG

Remarks:

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

5212.00

5192.00



Ant. No. Ant 1 Ant. Pol. Vertical TX 802.11ac(VHT40) Mode 5190MHz (U-NII-1) **Test Mode:** dBuV/m 120.0 110 100 90 80 FCC Part15 C - Above 1G PK 70 60 FCC Part15 C - Above 1G AV 50 40 30

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	5150.000	23.03	37.18	60.21	74.00	-13.79	peak
2 *	5150.000	13.03	37.18	50.21	54.00	-3.79	AVG

(MHz)

5132.00

5152.00

5172.00

Remarks:

20 10 0.0

5012.000 5032.00

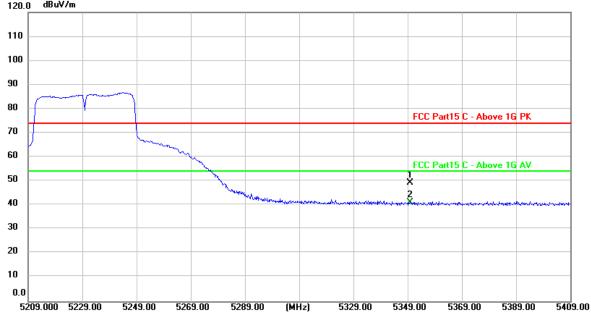
5052.00

5072.00

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

5092.00

Ant. No. Ant 1 Ant. Pol. Horizontal TX 802.11ac(VHT40) Mode 5230MHz (U-NII-2A) **Test Mode:** dBuV/m 120.0



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	5350.000	12.00	37.40	49.40	74.00	-24.60	peak
2 *	5350.000	3.85	37.40	41.25	54.00	-12.75	AVG

Remarks:

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

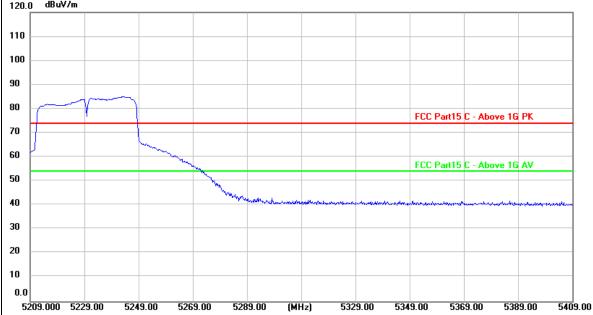


 Ant. No.
 Ant 1

 Ant. Pol.
 Vertical

 Test Mode:
 TX 802.11ac(VHT40) Mode 5230MHz (U-NII-2A)

 120.0
 dBuV/m



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	l .	Margin (dB)	Detector
1	5350.000	12.81	37.40	50.21	74.00	-23.79	peak
2 *	5350.000	3.90	37.40	41.30	54.00	-12.70	AVG

Remarks:

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

2.Margin value = Level -Limit value

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5385.00



Ant. No. Ant 1 Ant. Pol. Horizontal **Test Mode:** TX 802.11ac(VHT80) Mode 5210MHz (U-NII-1) dBuV/m 120.0 110 100 90 80 FCC Part15 C - Above 1G PK 70 60 JECC Part15 C Above 1G 50 40 30 20

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	5150.000	23.27	37.18	60.45	74.00	-13.55	peak
2 *	5150.000	13.41	37.18	50.59	54.00	-3.41	AVG
3	5350.000	12.48	37.40	49.88	74.00	-24.12	peak
4	5350.000	4.46	37.40	41.86	54.00	-12.14	AVG

(MHz)

5245.00

5280.00

5315.00

5350.00

Remarks:

10 0.0

5035.000 5070.00

5105.00

5140.00

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

5175.00



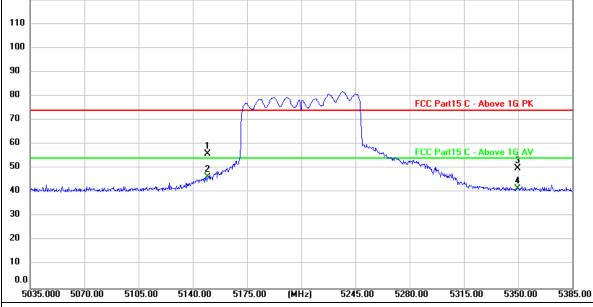
Ant. No. Ant 1

Ant. Pol. Vertical

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

120.0 dBuV/m

110
100
90



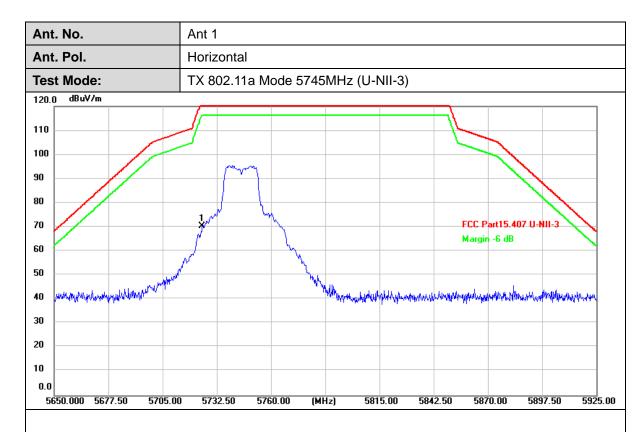
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	5150.000	18.63	37.18	55.81	74.00	-18.19	peak
2 *	5150.000	9.06	37.18	46.24	54.00	-7.76	AVG
3	5350.000	12.42	37.40	49.82	74.00	-24.18	peak
4	5350.000	4.16	37.40	41.56	54.00	-12.44	AVG

Remarks:

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

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No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	5725.000	65.79	4.50	70.29	122.20	-51.91	peak

Remarks:

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

5870.00

5925.00

5897.50



Ant. No. Ant 1 Ant. Pol. Vertical **Test Mode:** TX 802.11a Mode 5745MHz (U-NII-3) dBuV/m 120.0 110 100 90 80 70 FCC Part15.407 U-NII-3 Margin -6 dB 60 50 40 30 20 10

No.	Frequency (MHz)			Level (dBuV/m)	Limit (dBuV/m)		Detector
1 *	5725.000	61.96	4.50	66.46	122.20	-55.74	peak

(MHz)

5815.00

5842.50

Remarks:

0.0

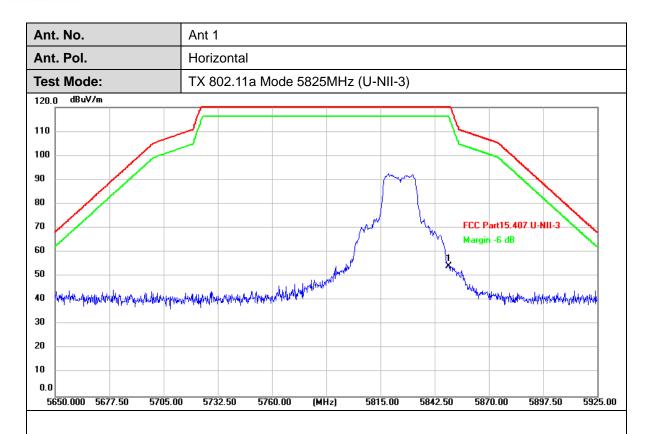
5650.000 5677.50

5705.00

5732.50

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

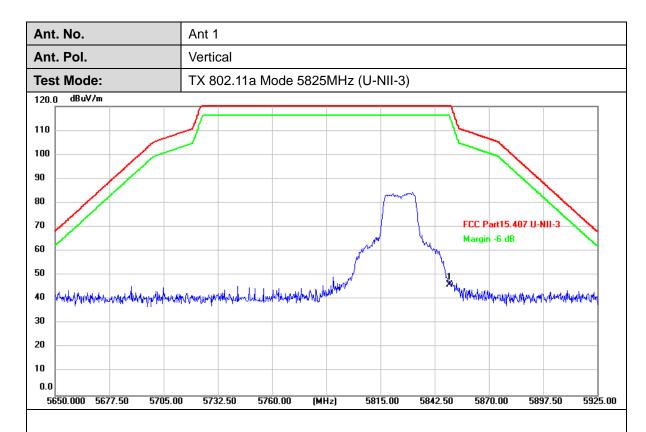
5760.00



No.	Frequency (MHz)			Level (dBuV/m)		Margin (dB)	Detector
1 *	5850.000	49.26	4.95	54.21	122.20	-67.99	peak

Remarks:

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



No.	Frequency (MHz)	Reading (dBuV)		Level (dBuV/m)	Limit (dBuV/m)		Detector
1 *	5850.000	41.14	4.95	46.09	122.20	-76.11	peak

Remarks:

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

2.Margin value = Level -Limit value

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Ant. No.	Ant 1
Ant. Pol.	Horizontal
Test Mode:	TX 802.11n(HT20) Mode 5745MHz (U-NII-3)
120.0 dBuV/m	
110	
100	
80	
70	FCC Part15.407 U-NII-3 Margin -6 dB
60	
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20	
10	
0.0 5650.000 5677.50 5705.0	00 5732.50 5760.00 (MHz) 5815.00 5842.50 5870.00 5897.50 5925.1

No.	Frequency (MHz)			Level (dBuV/m)	l .	Margin (dB)	Detector
1 *	5725.000	66.84	4.50	71.34	122.20	-50.86	peak

Remarks:

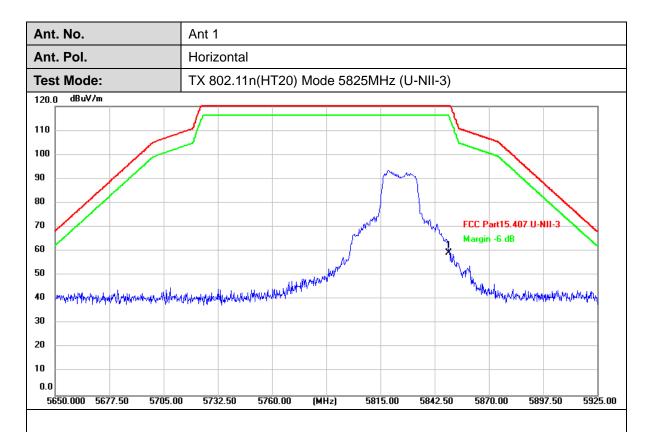
1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

Ant. No.	Ant 1
Ant. Pol.	Vertical
Test Mode:	TX 802.11n(HT20) Mode 5745MHz (U-NII-3)
120.0 dBuV/m	
110	
100	
90	
80	
70	FCC Part15,407 U-NII-3 Margin -6 dB
60	magin o as
50	
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30	
20	
10	
0.0 5650.000 5677.50 5705	.00 5732.50 5760.00 (MHz) 5815.00 5842.50 5870.00 5897.50 5925.1

No.	Frequency (MHz)	Reading (dBuV)		Level (dBuV/m)	Limit (dBuV/m)		Detector
1 *	5725.000	64.94	4.50	69.44	122.20	-52.76	peak

Remarks:

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

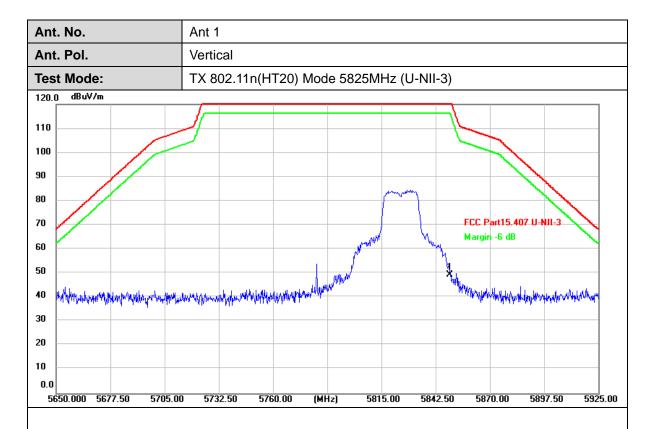


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	5850.000	54.31	4.95	59.26	122.20	-62.94	peak

Remarks:

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

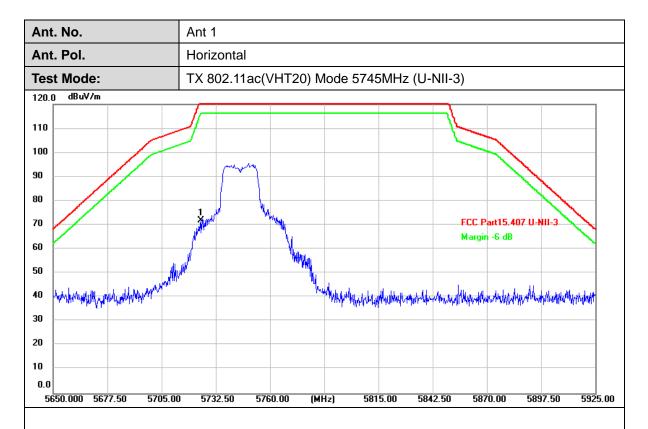




No.	Frequency (MHz)	Reading (dBuV)		Level (dBuV/m)	Limit (dBuV/m)		Detector
1 *	5850.000	44.36	4.95	49.31	122.20	-72.89	peak

Remarks:

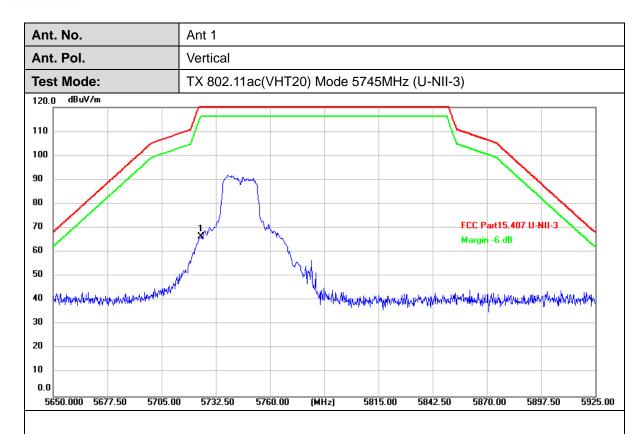
1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	5725.000	67.40	4.50	71.90	122.20	-50.30	peak

Remarks:

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



No.	Frequency (MHz)	Reading (dBuV)		Level (dBuV/m)	Limit (dBuV/m)		Detector
1 *	5725.000	61.99	4.50	66.49	122.20	-55.71	peak

Remarks:

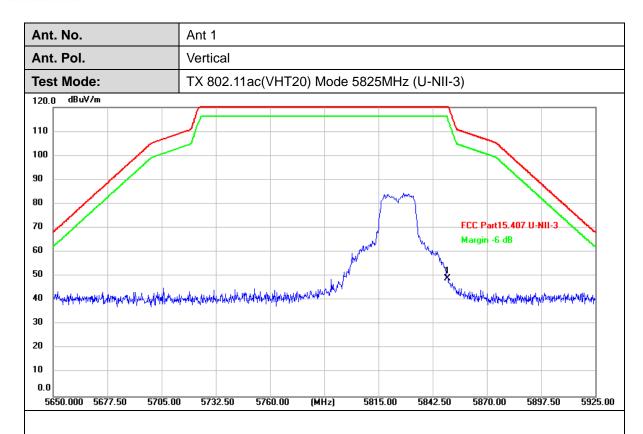
1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

Ant. No.	Ant 1
Ant. Pol.	Horizontal
Test Mode:	TX 802.11ac(VHT20) Mode 5825MHz (U-NII-3)
120.0 dBuV/m	
110	
100	
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30	
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0	
0.0	

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	5850.000	49.06	4.95	54.01	122.20	-68.19	peak

Remarks:

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

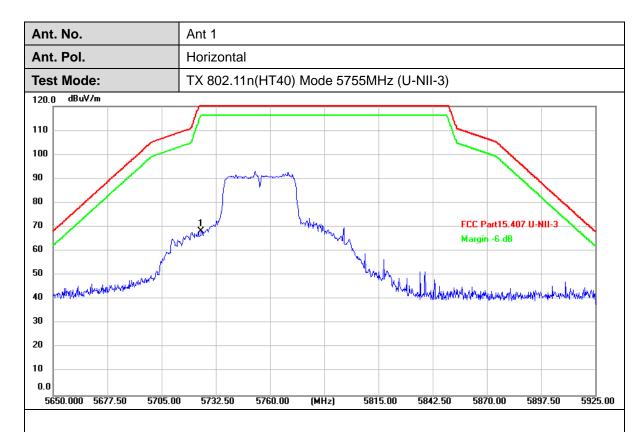


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	5850.000	44.22	4.95	49.17	122.20	-73.03	peak

Remarks:

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





No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	5725.000	63.68	4.50	68.18	122.20	-54.02	peak

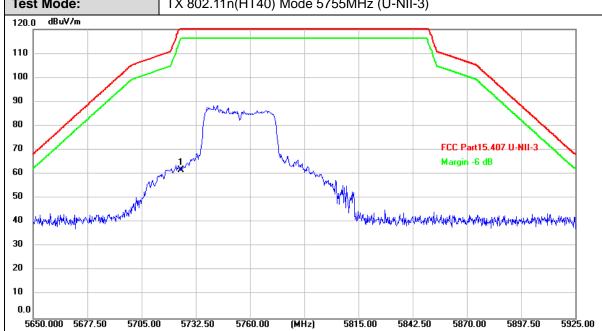
Remarks:

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

 Ant. No.
 Ant 1

 Ant. Pol.
 Vertical

 Test Mode:
 TX 802.11n(HT40) Mode 5755MHz (U-NII-3)



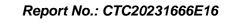
No.	Frequency (MHz)	Reading (dBuV)		Level (dBuV/m)	Limit (dBuV/m)		Detector
1 *	5725.000	57.29	4.50	61.79	122.20	-60.41	peak

Remarks:

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

2.Margin value = Level -Limit value

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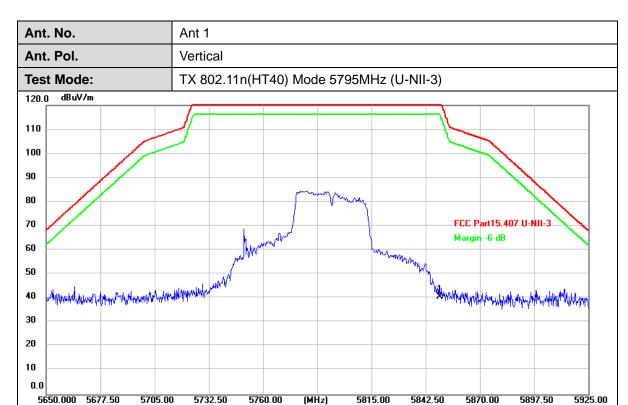
Ant. No.	Ant 1
Ant. Pol.	Horizontal
Test Mode:	TX 802.11n(HT40) Mode 5795MHz (U-NII-3)
120.0 dBuV/m	
110	
90	Language Control of the Control of t
80	FCC Part15.407 U-NII-3
70	Margin -6 dB
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20	
0.0	

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	5850.000	46.70	4.95	51.65	122.20	-70.55	peak

Remarks:

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

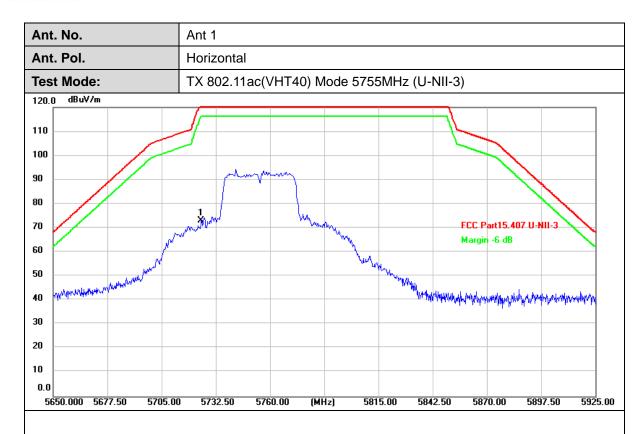




No.	Frequency (MHz)	_		Level (dBuV/m)	Limit (dBuV/m)		Detector
1 *	5850.000	35.58	4.95	40.53	122.20	-81.67	peak

Remarks:

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



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	5725.000	68.56	4.50	73.06	122.20	-49.14	peak

Remarks:

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

5925.00

5897.50



Ant 1 Ant. No. Ant. Pol. Vertical TX 802.11ac(VHT40) Mode 5755MHz (U-NII-3) **Test Mode:** dBuV/m 120.0 110 100 90 80 70 FCC Part15.407 U-NII-3 Margin -6 dB 60 50 40 30 20

No.	Frequency (MHz)			Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	5725.000	60.49	4.50	64.99	122.20	-57.21	peak

(MHz)

5842.50

5870.00

5815.00

Remarks:

10 0.0

5650.000 5677.50

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

5760.00

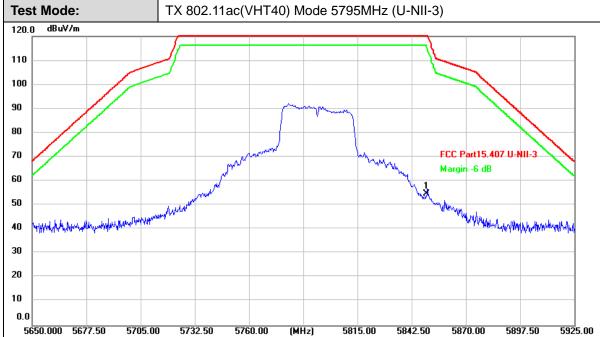
5732.50

5705.00

2.Margin value = Level -Limit value

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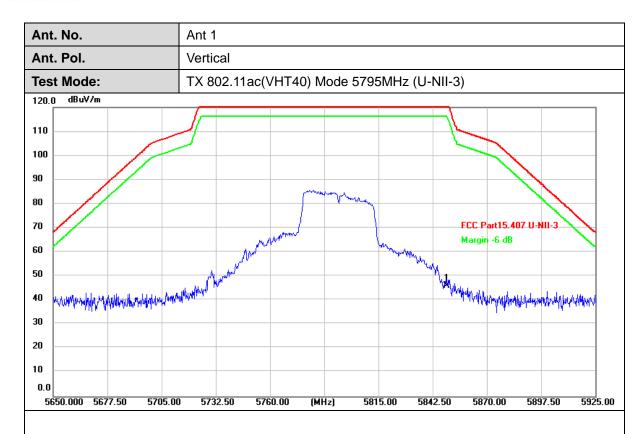
Ant. No. Ant 1 Ant. Pol. Horizontal



No.	Frequency (MHz)			Level (dBuV/m)		Margin (dB)	Detector
1 *	5850.000	49.84	4.95	54.79	122.20	-67.41	peak

Remarks:

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



No.	Frequency (MHz)	Reading (dBuV)		Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	5850.000	41.05	4.95	46.00	122.20	-76.20	peak

Remarks:

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

2.Margin value = Level -Limit value

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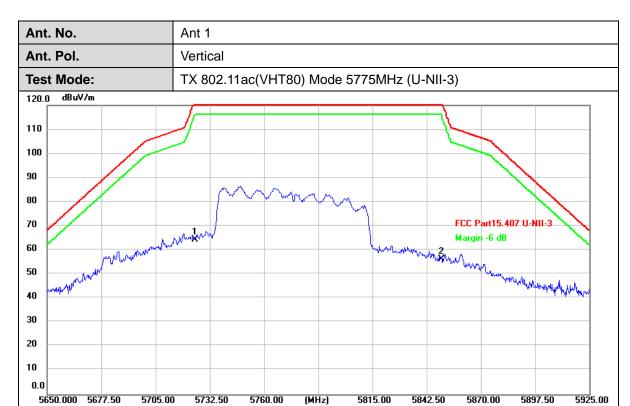
Ant. No.	Ant 1					
Ant. Pol.	Horizontal					
Test Mode:	TX 802.11ac(VHT80) Mode 5775MHz (U-NII-3)					
120.0 dBuV/m						
110						
100						
90						
80	Market Ma					
	FCC Part15.407 U-NII-3 Margin -6 dB					
, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Margin -6 dB					
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No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	5725.000	63.93	4.50	68.43	122.20	-53.77	peak
2	5850.000	58.61	4.95	63.56	122.20	-58.64	peak

Remarks:

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





No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	5725.000	59.80	4.50	64.30	122.20	-57.90	peak
2	5850.000	51.36	4.95	56.31	122.20	-65.89	peak

Remarks:

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



3.4. Bandwidth

<u>Limit</u>

FCC CFR Title 47 Part 15 Subpart E Section 15.407(a) & (e)

Test Item	Limit	Frequency Range (MHz)	
		5150~5250	
26dB Bandwidth& 99% Bandwidth	N/A	5250~5350	
		5500~5700	
6 dB Bandwidth	≥500 kHz	5725~5850	

Test Configuration



Test Procedure

Please refer to KDB789033 D02 for the measurement methods.

The setting of the spectrum analyzer as below:

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

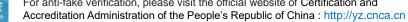


6dB Bandwidth Test				
Spectrum Parameters	Setting			
Attenuation	Auto			
Span	>6 dB Bandwidth			
RBW	100 kHz			
VBW	≥ 3*RBW			
Detector	Peak			
Trace	Max Hold			
Sweep Time	Auto			
	99% Occupied Bandwidth Test			
Spectrum Parameters	Setting			
Attenuation	Auto			
RBW	1% to 5% of the OBW			
VBW	≥ 3*RBW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

26dB Bandwidth & 99% Bandwidth

TestMode	Antenna	Freq(MHz)	26db EBW [MHz]	OCB [MHz]
		5180	29.60	17.582
		5200	30.28	17.742
11A	A m+4	5240	29.36	17.902
IIA	Ant1	5745	32.24	17.662
		5785	30.72	17.982
		5825	32.04	17.862
		5180	24.68	18.102
		5200	25.48	18.062
11N20SISO	A m+4	5240	31.24	18.342
1111/205150	Ant1	5745	33.92	18.941
		5785	32.00	18.462
		5825	34.44	18.621
		5190	75.28	37.163
11N40SISO	Ant1	5230	75.76	37.403
1111403130	Anti	5755	74.64	36.843
		5795	74.08	37.003
		5180	31.28	18.541
		5200	33.64	18.541
11AC20SISO	Ant1	5240	34.36	18.981
11AC20515O	Anti	5745	33.20	18.861
		5785	35.12	19.261
		5825	30.60	18.142
		5190	66.08	37.083
11AC40SISO	Ant1	5230	76.32	38.282
1140403130	Anti	5755	75.76	37.562
		5795	79.60	37.483
1110000100	Ant1	5210	129.44	77.363
11AC80SISO	Anti	5775	149.12	76.563

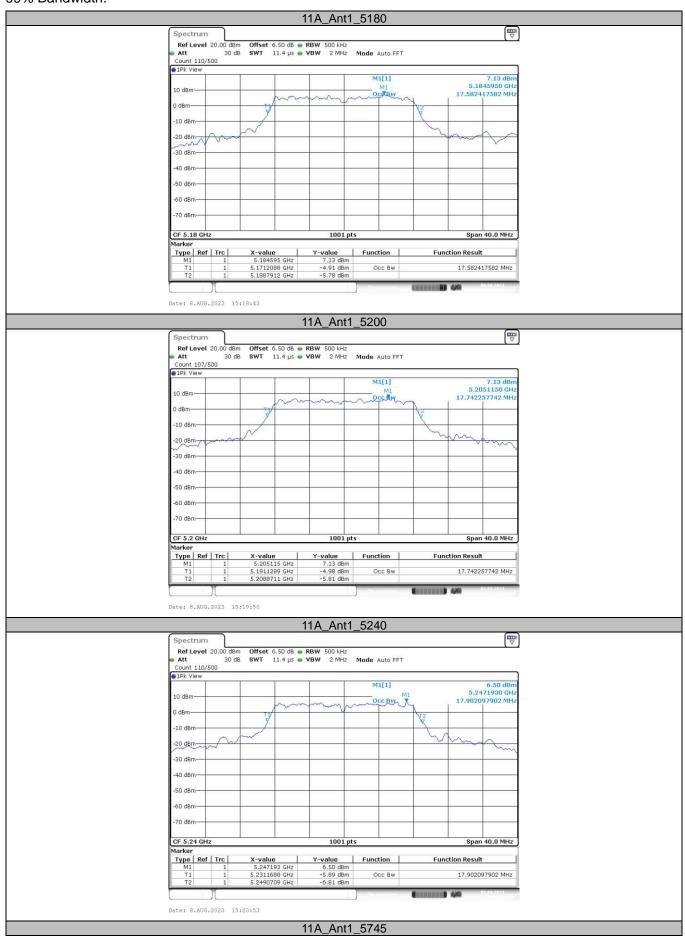


6dB Bandwidth

Mode	Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Result
	149	16.36		PASS
IEEE 802.11a	157	16.36		PASS
	165	16.36		PASS
	149	17.56		PASS
IEEE 802.11n_20	157	17.20		PASS
	165	16.72		PASS
IEEE 902 445 40	151	35.36	0.5	PASS
IEEE 802.11n_40	159	35.76	0.5	PASS
	149	17.72		PASS
IEEE 802.11ac_20	157	16.04		PASS
	165	17.28		PASS
IEEE 802 1100 40	151	35.36		PASS
IEEE 802.11ac_40	159	34.16		PASS
IEEE 802.11ac_80	155	72.64		PASS



99% Bandwidth:



CTC Laboratories, Inc.











