



FCC TEST REPORT

**Test report
On Behalf of
Bowe Technology Co., Ltd
For**

**XGSPON
Model No.: WAG-8F2W6-XS**

FCC ID: 2AVWB-WAG-8F2W6-XS

Prepared for : **Bowe Technology Co., Ltd**
2F, Building No. 6C, 1658, Gumei Rd., Xuhui District, Shanghai, China

Prepared By : **Shenzhen HUAKE Testing Technology Co., Ltd.**
**1-2/F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping,
Fuhai Street, Bao'an District, Shenzhen, Guangdong, China**

Date of Test: **Aug. 27, 2021 ~ Sept. 03, 2021**

Date of Report: **Sept. 03, 2021**

Report Number: **HK2108303184-2E**



TEST RESULT CERTIFICATION

Applicant's name: Bowei Technology Co., Ltd
Address: 2F, Building No. 6C, 1658, Gumei Rd., Xuhui District, Shanghai, China
Manufacture's Name.....: TDG Technology Co., Ltd
Address: No.1 Yatai Road, Jiaxing City, Zhejiang Province, P.R.C.

Product description

Trade Mark: **AZORES BOW**
Product name.....: XGSPON
Model and/or type reference ..: WAG-8F2W6-XS
Standards: FCC Rules and Regulations Part 15 Subpart E Section 15.407
ANSI C63.10: 2013

This publication may be reproduced in whole or in part for non-commercial purposes as long as the Shenzhen HUAKE Testing Technology Co., Ltd. is acknowledged as copyright owner and source of the material. Shenzhen HUAKE Testing Technology Co., Ltd. takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

Date of Test:
Date (s) of performance of tests: Aug. 27, 2021 ~ Sept. 03, 2021
Date of Issue: Sept. 03, 2021
Test Result.....: Pass

Prepared by:

Guang Dian

Project Engineer

Reviewed by:

Zden Hu

Project Supervisor

Approved by:

Jason Hu

Technical Director





TABLE OF CONTENTS

1. Test Result Summary	5
1.1. TEST PROCEDURES AND RESULTS.....	5
1.2. TEST FACILITY	5
1.3. MEASUREMENT UNCERTAINTY	6
2. EUT Description	7
2.1. GENERAL DESCRIPTION OF EUT	7
2.2. OPERATION FREQUENCY EACH OF CHANNEL.....	8
2.3. OPERATION OF EUT DURING TESTING	8
2.4. DESCRIPTION OF TEST SETUP	9
3. Genera Information	10
3.1. TEST ENVIRONMENT AND MODE	10
3.2. DESCRIPTION OF SUPPORT UNITS	11
4. Test Results and Measurement Data	12
4.1. CONDUCTED EMISSION	12
4.2. MAXIMUM CONDUCTED OUTPUT POWER	18
4.3. 6dB EMISSION BANDWIDTH	21
4.4. 26dB BANDWIDTH AND 99% OCCUPIED BANDWIDTH.....	22
4.5. POWER SPECTRAL DENSITY	55
4.6. BAND EDGE.....	97
4.7. SPURIOUS EMISSION	188
4.8. FREQUENCY STABILITY MEASUREMENT.....	219
4.9. ANTENNA REQUIREMENT	221
4.10. PHOTOGRAPHS OF TEST SETUP	222
4.11. PHOTOS OF THE EUT	225



**** Modified History ****

Revision	Description	Issued Data	Remark
Revision 1.0	Initial Test Report Release	Sept. 03, 2021	Jason Zhou



1. Test Result Summary

1.1. TEST PROCEDURES AND RESULTS

Requirement	CFR 47 Section	Result
Antenna requirement	§15.203	PASS
AC Power Line Conducted Emission	§15.207	PASS
Maximum Conducted Output Power	§15.407(a)	PASS
6dB Emission Bandwidth	§15.407(e)	N/A
26dB Emission Bandwidth & 99% Occupied Bandwidth	§15.407(a)	PASS
Power Spectral Density	§15.407(a)	PASS
Band edge	§15.407(b)/15.209/15.205	PASS
Radiated Emission	§15.407(b)/15.209/15.205	PASS
Frequency Stability	§15.407(g)	PASS

Note:

1. PASS: Test item meets the requirement.
2. Fail: Test item does not meet the requirement.
3. N/A: Test case does not apply to the test object.
4. The test result judgment is decided by the limit of test standard.

1.2. TEST FACILITY

Information of the Test Laboratory

Shenzhen HUAKE Testing Technology Co., Ltd.

Add.: 1-2/F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

Testing Laboratory Authorization:

A2LA Accreditation Code is 4781.01.

FCC Designation Number is CN1229.

Canada IC CAB identifier is CN0045.

CNAS Registration Number is L9589.



1.3. Measurement Uncertainty

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

No.	Item	MU
1	Conducted Emission	$\pm 0.37\text{dB}$
2	RF power, conducted	$\pm 3.35\text{dB}$
3	Spurious emissions, conducted	$\pm 2.20\text{dB}$
4	All emissions, radiated(<1G)	$\pm 3.90\text{dB}$
5	All emissions, radiated(>1G)	$\pm 4.28\text{dB}$
6	Temperature	$\pm 0.1^{\circ}\text{C}$
7	Humidity	$\pm 1.0\%$



2. EUT Description

2.1. GENERAL DESCRIPTION OF EUT

Equipment	XGSPON
Model Name	WAG-8F2W6-XS
Serial No.	N/A
Trade Mark	AZORES BOW
Model Difference	N/A
FCC ID	2AVWB-WAG-8F2W6-XS
Operation Frequency:	IEEE 802.11a/n/ac/ax(HT20) 5.180GHz-5.240GHz IEEE 802.11n/ac/ax(HT40) 5.190GHz-5.230GHz IEEE 802.11ac/ax(HT80) 5.210GHz
Modulation Technology:	IEEE 802.11a/n/ac/ax
Modulation Type	OFDM, OFDMA
Antenna Type	External Antenna
Antenna Gain	Antenna 1:5dBi Antenna 2:5dBi Antenna 3:5dBi Antenna 4:5dBi MIMO: 11.021dBi
Power Source	DC 12V from Adapter
Power Supply:	DC 12V from Adapter
Hardware Version	V1.1
Software Version	V1.1.073
Note: The EUT incorporates a MIMO function. Physically, it provides two completed transmitters and receivers(4T4R), two transmit signals are completely correlated, then, Direction gain=GANT + Array Gain(Array Gain=10 log(4) dB for power spectral density; Array Gain=0 for power measurement)	



2.2. Operation Frequency each of channel

802.11a/802.11n(HT20) 802.11ac(HT20)/ 802.11ax(HT20)		802.11n(HT40)/ 802.11ac(HT40)/ 802.11ax(HT40)		802.11ac(HT80)/ 802.11ax(HT80)	
Channel	Frequency	Channel	Frequency	Channel	Frequency
36	5180	38	5190	42	5210
40	5200	46	5230		
44	5220				
48	5240				

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

2.3. Operation of EUT during testing

For 802.11a/n (HT20)/ac(HT20)/ax(HT20)

Band I (5150 - 5250 MHz)		
Channel Number	Channel	Frequency (MHz)
36	Low	5180
40	Mid	5200
48	High	5240

For 802.11n (HT40)/ ac(HT40)/ax(HT40)

Band I (5150 - 5250 MHz)		
Channel Number	Channel	Frequency (MHz)
38	Low	5190
46	High	5230

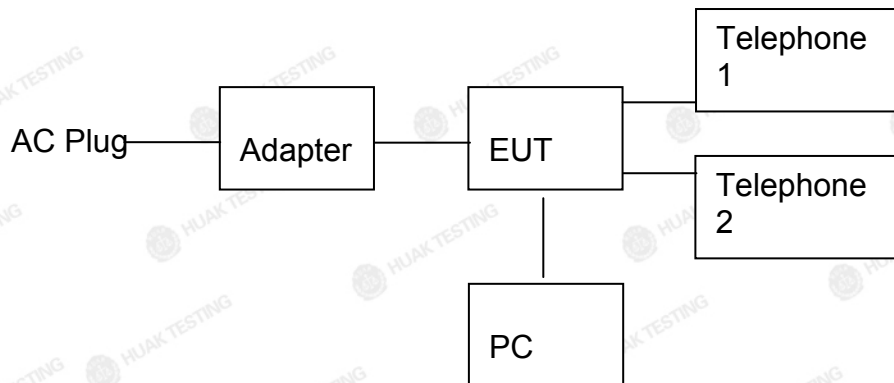
For 802.11ac(HT80)/ax(HT80)

Band I (5150 - 5250 MHz)	
Channel Number	Frequency (MHz)
42	5210

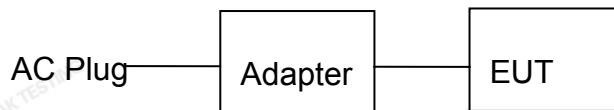


2.4. DESCRIPTION OF TEST SETUP

Operation of EUT during conducted testing and below 1GHz Radiation testing:



Operation of EUT during Above 1GHz Radiation testing:



- PC information
Model: TP00067A
Input: DC 20V, 2.25~3.25A
Output: 5VDC, 0.5A

Adapter information

Adapter 1:

Model: MSS-V2000WR120-024E0-US

Input: 100-240V~50-60Hz 0.7A max

Output: DC12V 2.0A

Adapter 2:

Model: RD1202000-C55-154MG

Input: 100-240V~50-60Hz 1.0A MAX

Output: DC12V 2.0A

Telephone information

Model: HCD2968(95)TSD

The sample was placed (0.8m below 1GHz, 1.5m above 1GHz) above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages. The worst case is X position.



3. General Information

3.1. Test environment and mode

Operating Environment:	
Temperature:	25.0 °C
Humidity:	56 % RH
Atmospheric Pressure:	1010 mbar
Test Mode:	
Engineering mode:	Keep the EUT in continuous transmitting by select channel and modulations(The value of duty cycle is 100%)
The sample was placed 0.8m/1.5m for blow/above 1GHz above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.	

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

Per-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.

Mode	Data rate
802.11a	6 Mbps
802.11n(HT20)	MCS0
802.11n(HT40)	MCS0
802.11ac(HT20)/ac(HT40)/ac(HT80)	MCS0
802.11ax(HT20)/ax(HT40)/ax(HT80)	MCS0
Final Test Mode:	
Operation mode:	Keep the EUT in continuous transmitting with modulation



3.2. Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Equipment	Model No.	Serial No.	FCC ID	Trade Name
/	/	/	/	/

Note:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.
3. For conducted measurements (Output Power, Emission Bandwidth, Power Spectral Density, Spurious Emissions), the antenna of EUT is connected to the test equipment via temporary antenna connector, the antenna connector is soldered on the antenna port of EUT, and the temporary antenna connector is listed in the Test Instruments.



4. Test Results and Measurement Data

4.1. Conducted Emission

4.1.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.207														
Test Method:	ANSI C63.10:2013														
Frequency Range:	150 kHz to 30 MHz														
Receiver setup:	RBW=9 kHz, VBW=30 kHz, Sweep time=auto														
Limits:	<table><tr><th rowspan="2">Frequency range (MHz)</th><th colspan="2">Limit (dBuV)</th></tr><tr><th>Quasi-peak</th><th>Average</th></tr><tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr><tr><td>0.5-5</td><td>56</td><td>46</td></tr><tr><td>5-30</td><td>60</td><td>50</td></tr></table>	Frequency range (MHz)	Limit (dBuV)		Quasi-peak	Average	0.15-0.5	66 to 56*	56 to 46*	0.5-5	56	46	5-30	60	50
Frequency range (MHz)	Limit (dBuV)														
	Quasi-peak	Average													
0.15-0.5	66 to 56*	56 to 46*													
0.5-5	56	46													
5-30	60	50													
Test Setup:	Reference Plane 40cm 80cm E.U.T AC power LISN Filter AC power EMI Receiver Test table/Insulation plane Remark E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m														
Test Mode:	Tx Mode														
Test Procedure:	1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement.														
Test Result:	Pass														



4.1.2. Test Instruments

Conducted Emission Shielding Room Test Site (843)

Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Receiver	R&S	ESCI 7	HKE-010	Dec. 10, 2020	Dec. 09, 2021
LISN	R&S	ENV216	HKE-002	Dec. 10, 2020	Dec. 09, 2021
Coax cable (9KHz-30MHz)	Times	381806-002	N/A	Dec. 10, 2020	Dec. 09, 2021
Conducted test software	Tonscend	TS+ Rev 2.5.0.0	HKE-081	N/A	N/A

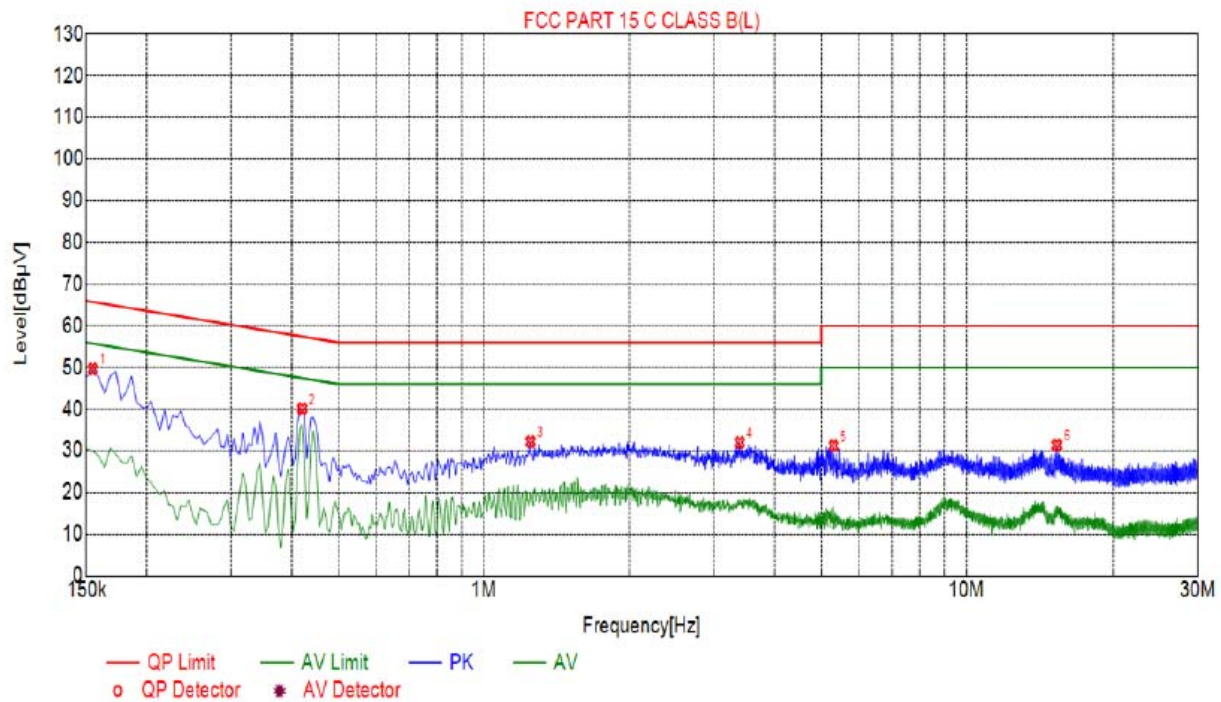
Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).



4.1.3. Test data

Adapter 1:

Test Specification: Line



Suspected List

NO.	Freq. [MHz]	Level [dBμV]	Factor [dB]	Limit [dBμV]	Margin [dB]	Reading [dBμV]	Detector	Type
1	0.1545	49.64	20.03	65.75	16.11	29.61	PK	L
2	0.4200	40.08	20.04	57.45	17.37	20.04	PK	L
3	1.2480	32.17	20.09	56.00	23.83	12.08	PK	L
4	3.3900	31.98	20.24	56.00	24.02	11.74	PK	L
5	5.3070	31.21	20.26	60.00	28.79	10.95	PK	L
6	15.2970	31.35	19.96	60.00	28.65	11.39	PK	L

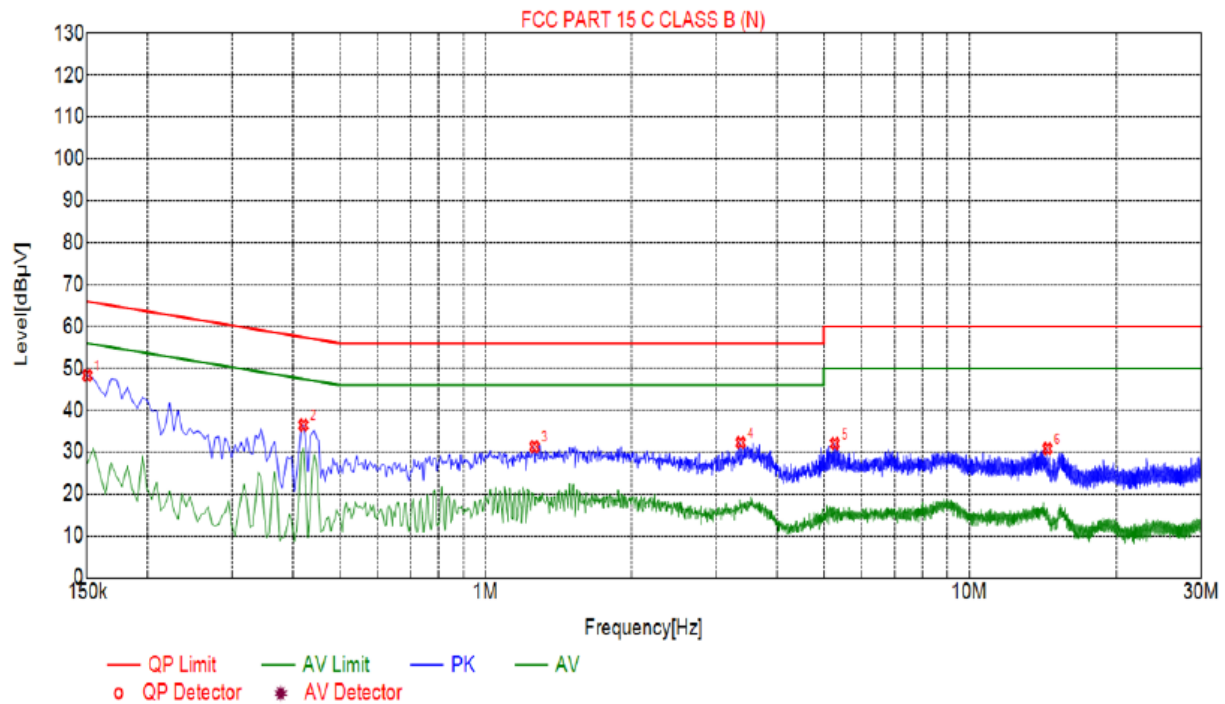
Remark: Margin = Limit – Level

Correction factor = Cable lose + LISN insertion loss

Level=Test receiver reading + correction factor



Test Specification: Neutral



Suspected List

NO.	Freq. [MHz]	Level [dBμV]	Factor [dB]	Limit [dBμV]	Margin [dB]	Reading [dBμV]	Detector	Type
1	0.1500	48.29	20.03	66.00	17.71	28.26	PK	N
2	0.4200	36.43	20.04	57.45	21.02	16.39	PK	N
3	1.2615	31.24	20.09	56.00	24.76	11.15	PK	N
4	3.3675	32.24	20.24	56.00	23.76	12.00	PK	N
5	5.2755	32.03	20.26	60.00	27.97	11.77	PK	N
6	14.4105	30.78	19.95	60.00	29.22	10.83	PK	N

Remark: Margin = Limit – Level

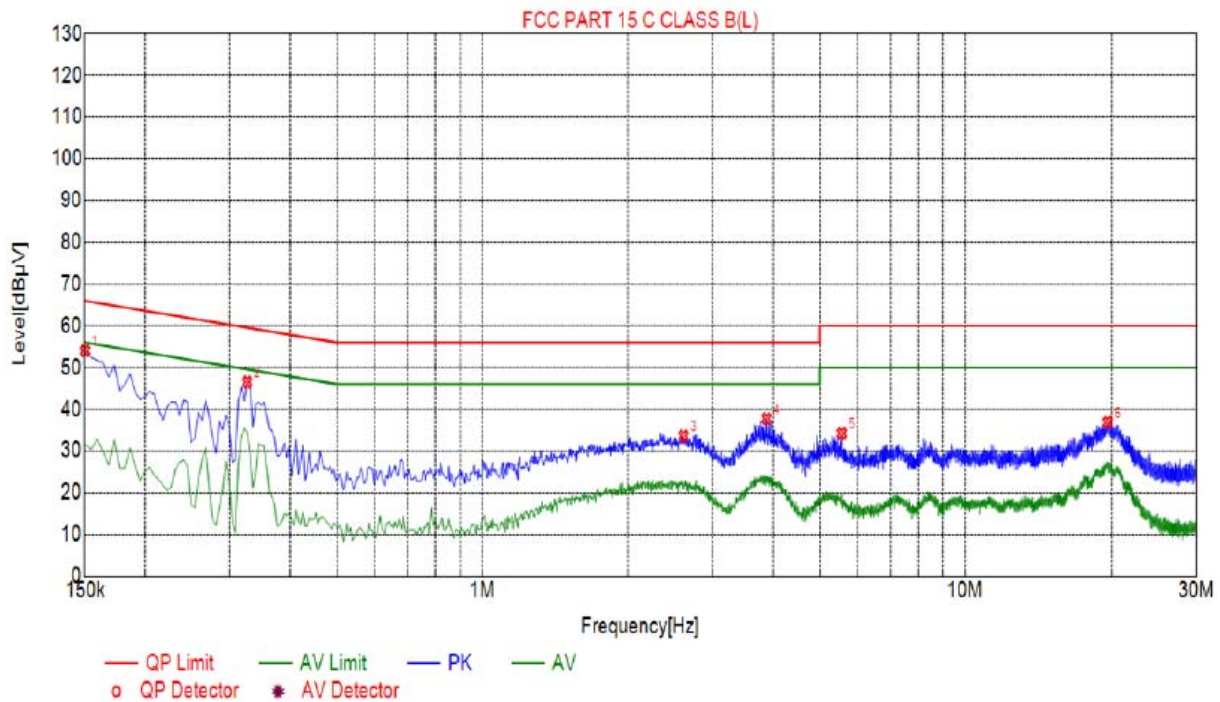
Correction factor = Cable lose + LISN insertion loss

Level=Test receiver reading + correction factor



Adapter 2:

Test Specification: Line



Suspected List

NO.	Freq. [MHz]	Level [dBμV]	Factor [dB]	Limit [dBμV]	Margin [dB]	Reading [dBμV]	Detector	Type
1	0.1500	54.03	20.03	66.00	11.97	34.00	PK	L
2	0.3255	46.53	20.05	59.57	13.04	26.48	PK	L
3	2.6115	33.55	20.21	56.00	22.45	13.34	PK	L
4	3.8805	37.72	20.25	56.00	18.28	17.47	PK	L
5	5.5590	34.21	20.25	60.00	25.79	13.96	PK	L
6	19.6260	36.87	20.09	60.00	23.13	16.78	PK	L

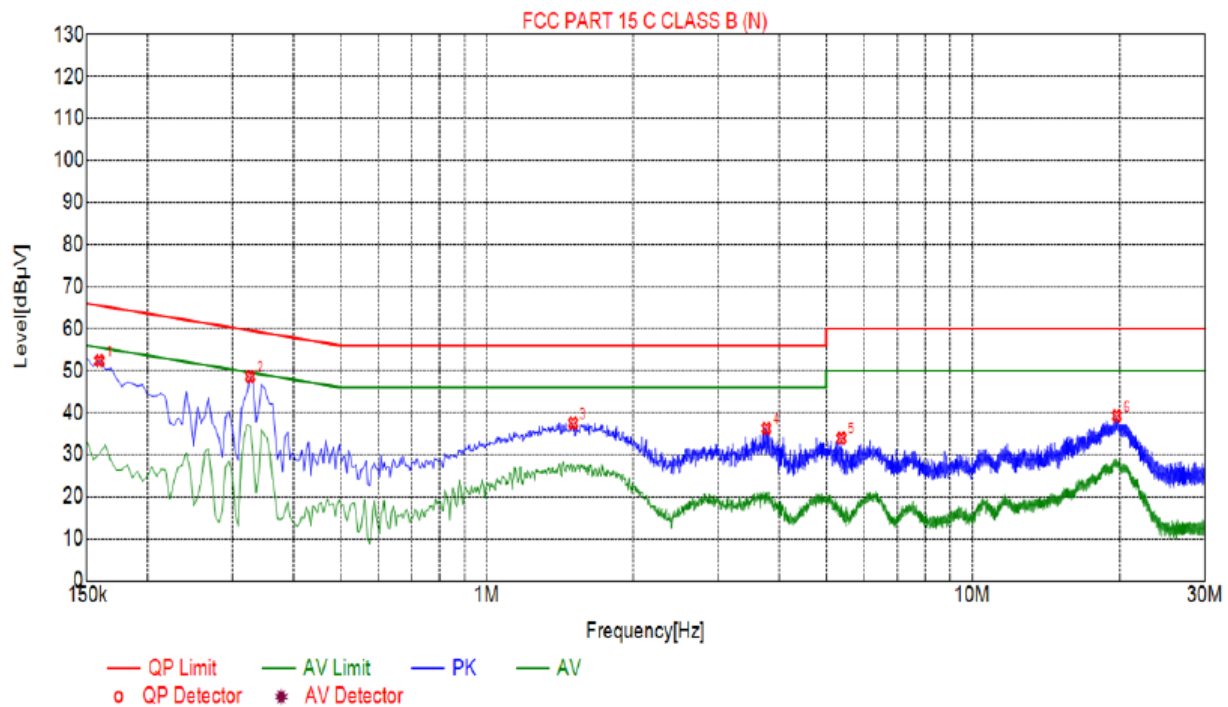
Remark: Margin = Limit – Level

Correction factor = Cable lose + LISN insertion loss

Level=Test receiver reading + correction factor



Test Specification: Neutral



Suspected List

NO.	Freq. [MHz]	Level [dBμV]	Factor [dB]	Limit [dBμV]	Margin [dB]	Reading [dBμV]	Detector	Type
1	0.1590	52.35	20.01	65.52	13.17	32.34	PK	N
2	0.3255	48.60	20.05	59.57	10.97	28.55	PK	N
3	1.5045	37.51	20.11	56.00	18.49	17.40	PK	N
4	3.7680	36.25	20.25	56.00	19.75	16.00	PK	N
5	5.3790	33.89	20.26	60.00	26.11	13.63	PK	N
6	19.7205	39.24	20.09	60.00	20.76	19.15	PK	N

Remark: Margin = Limit – Level

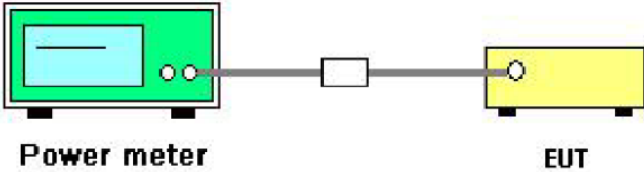
Correction factor = Cable lose + LISN insertion loss

Level=Test receiver reading + correction factor



4.2. Maximum Conducted Output Power

4.2.1. Test Specification

Test Requirement:	FCC Part15 E Section 15.407(a)	
Test Method:	KDB789033 D02 General UNII Test Procedures New Rules v02.r01 Section E	
Limit:	Frequency Band (MHz)	Limit
	5150-5250	1W
Test Setup:	 Power meter EUT	
Test Mode:	Transmitting mode with modulation	
Test Procedure:	1. The testing follows the Measurement Procedure of KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section E, 3, a 2. The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement. 3. Set to the maximum power setting and enable the EUT transmit continuously. 5. Measure the conducted output power and record the results in the test report.	
Test Result:	PASS	
Remark:	Conducted output power= measurement power +10log(1/x) X is duty cycle=1, so 10log(1/1)=0 Conducted output power= measurement power	



4.2.2. Test Instruments

RF Test Room					
Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Spectrum analyzer	Agilent	N9020A	HKE-048	Dec. 10, 2020	Dec. 09, 2021
Power meter	Agilent	E4419B	HKE-085	Dec. 10, 2020	Dec. 09, 2021
Power Sensor	Agilent	E9300A	HKE-086	Dec. 10, 2020	Dec. 09, 2021
RF cable	Times	1-40G	HKE-034	Dec. 10, 2020	Dec. 09, 2021
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Dec. 10, 2020	Dec. 09, 2021

Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).



4.2.3. Test Data

Configuration Band I (5150 - 5250 MHz)								
Mode	Test channel	Maximum Conducted Output Power (dBm)					FCC Limit (dBm)	Result
		Antenna port 1	Antenna port 2	Antenna port 3	Antenna port 4	MIMO		
11a	CH36	12.42	12.99	12.71	9.45	/	30	PASS
11a	CH40	12.33	13.16	12.59	9.53	/	30	PASS
11a	CH48	12.09	12.32	11.87	12.89	/	30	PASS
11n(HT20)	CH36	12.36	13.40	12.94	13.35	19.05	30	PASS
11n(HT20)	CH40	11.65	12.74	12.76	13.14	18.63	30	PASS
11n(HT20)	CH48	11.43	12.09	11.69	12.57	17.99	30	PASS
11n(HT40)	CH38	12.11	13.27	12.68	13.13	18.84	30	PASS
11n(HT40)	CH46	12.35	12.31	11.88	12.86	18.38	30	PASS
11ac(HT20)	CH36	12.99	12.43	12.51	12.77	18.70	30	PASS
11ac(HT20)	CH40	12.29	12.74	12.33	12.64	18.52	30	PASS
11ac(HT20)	CH48	12.07	12.18	11.68	12.58	18.16	30	PASS
11ac(HT40)	CH38	13.89	13.32	12.88	13.03	19.32	30	PASS
11ac(HT40)	CH46	13.19	12.36	12.11	12.62	18.61	30	PASS
11ac(HT80)	CH42	12.24	12.25	11.95	12.36	18.22	30	PASS
11ax(HT20)	CH36	12.99	12.62	12.65	12.85	18.80	30	PASS
11ax(HT20)	CH40	12.48	12.18	12.49	12.87	18.53	30	PASS
11ax(HT20)	CH48	12.22	11.40	11.42	12.71	17.99	30	PASS
11ax(HT40)	CH38	12.94	12.21	12.39	9.30	17.94	30	PASS
11ax(HT40)	CH46	12.53	11.83	11.74	12.39	18.16	30	PASS
11ax(HT80)	CH42	12.52	12.18	11.88	12.64	18.34	30	PASS

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAKE, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.



4.3. 6dB Emission Bandwidth

4.3.1. Test Specification

Test Requirement:	FCC CFR47 Part 15 Section 15.407(e)
Test Method:	KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section C
Limit:	>500kHz
Test Setup:	 Spectrum Analyzer EUT
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section C 2. Set to the maximum power setting and enable the EUT transmit continuously. 3. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6dB bandwidth must be greater than 500 kHz. 4. Measure and record the results in the test report.
Test Result:	PASS

4.3.2. Test Instruments

RF Test Room					
Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Spectrum analyzer	Agilent	N9020A	HKE-048	Dec. 10, 2020	Dec. 09, 2021
RF cable	Times	1-40G	HKE-034	Dec. 10, 2020	Dec. 09, 2021
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Dec. 10, 2020	Dec. 09, 2021

Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

4.3.3. Test data

N/A



4.4. 26dB Bandwidth and 99% Occupied Bandwidth

4.4.1. Test Specification

Test Requirement:	47 CFR Part 15C Section 15.407
Test Method:	KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section C
Limit:	No restriction limits
Test Setup:	 Spectrum Analyzer EUT
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section C 2. Set to the maximum power setting and enable the EUT transmit continuously. 3. Make the measurement with the spectrum analyzer's resolution bandwidth $RBW = 1\% \text{ EBW}$, $VBW \geq 3RBW$, In order to make an accurate measurement. 4. Measure and record the results in the test report.
Test Result:	PASS

4.4.2. Test Instruments

RF Test Room					
Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Spectrum analyzer	Agilent	N9020A	HKE-048	Dec. 10, 2020	Dec. 09, 2021
RF cable	Times	1-40G	HKE-034	Dec. 10, 2020	Dec. 09, 2021
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Dec. 10, 2020	Dec. 09, 2021

Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

**4.4.3. Test data****Band I****ANT 1**

Mode	Test channel	Frequency (MHz)	26 dB Bandwidth (MHz)	Verdict
11a	CH36	5180	20.960	PASS
11a	CH40	5200	21.080	PASS
11a	CH48	5240	21.000	PASS
11n(HT20)	CH36	5180	21.360	PASS
11n(HT20)	CH40	5200	21.600	PASS
11n(HT20)	CH48	5240	21.320	PASS
11n(HT40)	CH38	5190	39.680	PASS
11n(HT40)	CH46	5230	39.520	PASS
11ac(HT20)	CH36	5180	21.480	PASS
11ac(HT20)	CH40	5200	21.440	PASS
11ac(HT20)	CH48	5240	21.720	PASS
11ac(HT40)	CH38	5190	39.760	PASS
11ac(HT40)	CH46	5230	39.760	PASS
11ac(HT80)	CH42	5210	81.600	PASS
11ax(HT20)	CH36	5180	21.240	PASS
11ax(HT20)	CH40	5200	21.400	PASS
11ax(HT20)	CH48	5240	21.160	PASS
11ax(HT40)	CH38	5190	40.160	PASS
11ax(HT40)	CH46	5230	39.920	PASS
11ax(HT80)	CH42	5210	80.640	PASS

Test plots as follows:

**Band I (5150 – 5250 MHz)**

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAKE, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.



802.11n(HT20)



Low



Mid



High

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAKE, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.

HUAKE Testing Lab TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : service@cer-mark.com

1-2/F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China



802.11n(HT40)



Low



High



802.11ac(HT20)



Low



Mid



High

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAKE, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.



802.11ac(HT40)



Low



High

802.11ac(HT80)





802.11ax(HT20)



Low



Mid



High

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAKE, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.



802.11ax(HT40)



Low



High

802.11ax(HT80)



**ANT 2**

Mode	Test channel	Frequency (MHz)	26 dB Bandwidth (MHz)	Verdict
11a	CH36	5180	20.920	PASS
11a	CH40	5200	20.960	PASS
11a	CH48	5240	20.880	PASS
11n(HT20)	CH36	5180	21.480	PASS
11n(HT20)	CH40	5200	21.360	PASS
11n(HT20)	CH48	5240	21.440	PASS
11n(HT40)	CH38	5190	39.600	PASS
11n(HT40)	CH46	5230	39.920	PASS
11ac(HT20)	CH36	5180	21.400	PASS
11ac(HT20)	CH40	5200	21.720	PASS
11ac(HT20)	CH48	5240	21.200	PASS
11ac(HT40)	CH38	5190	39.760	PASS
11ac(HT40)	CH46	5230	39.520	PASS
11ac(HT80)	CH42	5210	81.760	PASS
11ax(HT20)	CH36	5180	21.080	PASS
11ax(HT20)	CH40	5200	21.160	PASS
11ax(HT20)	CH48	5240	21.360	PASS
11ax(HT40)	CH38	5190	40.000	PASS
11ax(HT40)	CH46	5230	39.920	PASS
11ax(HT80)	CH42	5210	80.480	PASS

Test plots as follows:



Band I (5150 – 5250 MHz)



The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAKE, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.



802.11n(HT20)



Low



Mid



High

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAKE, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.



The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAKE, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.



802.11ac(HT20)



Low



Mid



High

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAKE, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.



802.11ac(HT40)



Low



High

802.11ac(HT80)



The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAKE, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.



802.11ax(HT20)



Low



Mid

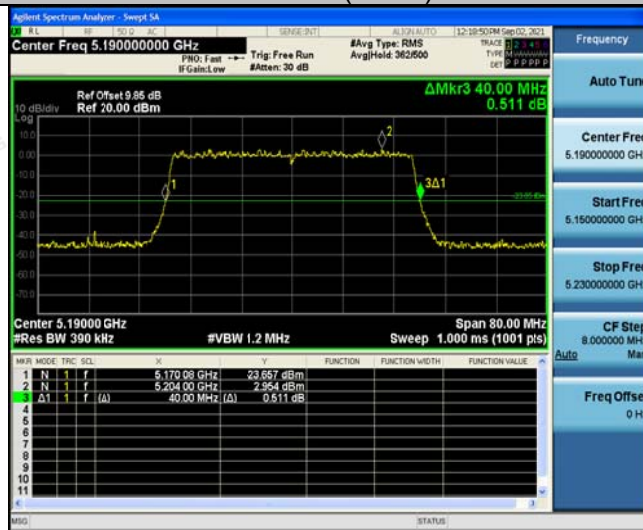


High

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAKE, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.



802.11ax(HT40)

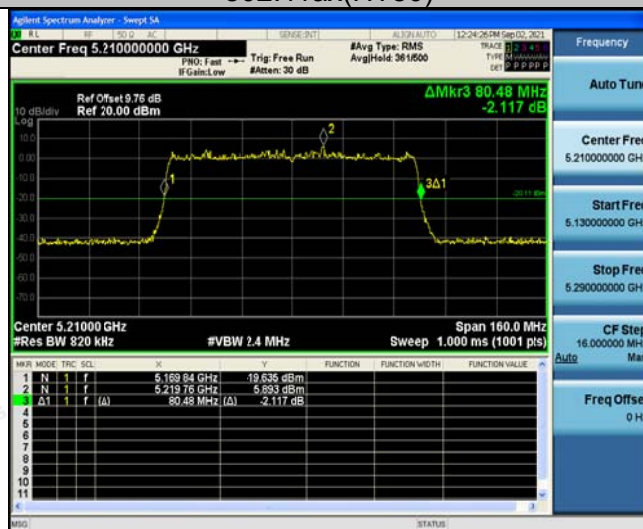


Low



High

802.11ax(HT80)



The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAKE, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.

**ANT 3**

Mode	Test channel	Frequency (MHz)	26 dB Bandwidth (MHz)	Verdict
11a	CH36	5180	20.960	PASS
11a	CH40	5200	21.120	PASS
11a	CH48	5240	21.040	PASS
11n(HT20)	CH36	5180	21.280	PASS
11n(HT20)	CH40	5200	21.320	PASS
11n(HT20)	CH48	5240	21.520	PASS
11n(HT40)	CH38	5190	39.840	PASS
11n(HT40)	CH46	5230	39.680	PASS
11ac(HT20)	CH36	5180	21.440	PASS
11ac(HT20)	CH40	5200	21.320	PASS
11ac(HT20)	CH48	5240	21.280	PASS
11ac(HT40)	CH38	5190	40.080	PASS
11ac(HT40)	CH46	5230	39.760	PASS
11ac(HT80)	CH42	5210	81.440	PASS
11ax(HT20)	CH36	5180	21.160	PASS
11ax(HT20)	CH40	5200	21.200	PASS
11ax(HT20)	CH48	5240	21.200	PASS
11ax(HT40)	CH38	5190	40.000	PASS
11ax(HT40)	CH46	5230	39.920	PASS
11ax(HT80)	CH42	5210	80.480	PASS

Test plots as follows:



Band I (5150 – 5250 MHz)



The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAKE, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.



802.11n(HT20)



Low



Mid



High

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAKE, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.



HUAK Testing Lab TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : service@cer-mark.com

1-2/F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China



802.11ac(HT20)



Low



Mid



High

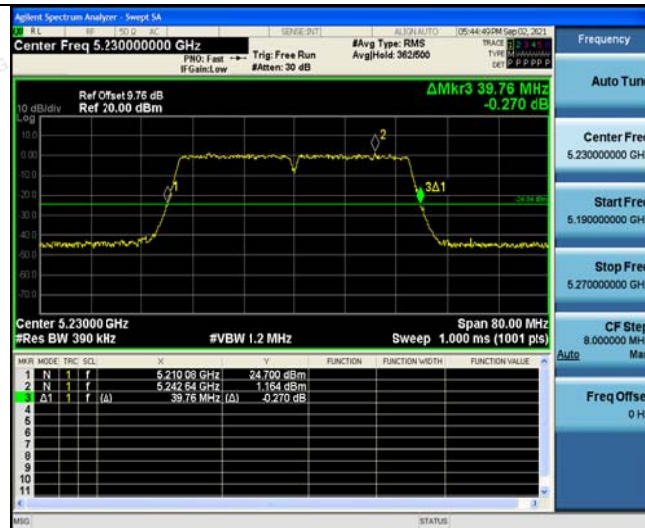
The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAKE, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.



802.11ac(HT40)



Low



High

802.11ac(HT80)





802.11ax(HT20)



Low



Mid



High

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAKE, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.



802.11ax(HT40)



Low



High

802.11ax(HT80)



The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAKE, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.

**ANT 4**

Mode	Test channel	Frequency (MHz)	26 dB Bandwidth (MHz)	Verdict
11a	CH36	5180	21.040	PASS
11a	CH40	5200	21.000	PASS
11a	CH48	5240	20.960	PASS
11n(HT20)	CH36	5180	21.480	PASS
11n(HT20)	CH40	5200	21.440	PASS
11n(HT20)	CH48	5240	21.400	PASS
11n(HT40)	CH38	5190	39.680	PASS
11n(HT40)	CH46	5230	39.760	PASS
11ac(HT20)	CH36	5180	21.600	PASS
11ac(HT20)	CH40	5200	21.280	PASS
11ac(HT20)	CH48	5240	21.320	PASS
11ac(HT40)	CH38	5190	39.760	PASS
11ac(HT40)	CH46	5230	39.840	PASS
11ac(HT80)	CH42	5210	81.760	PASS
11ax(HT20)	CH36	5180	21.200	PASS
11ax(HT20)	CH40	5200	21.160	PASS
11ax(HT20)	CH48	5240	21.280	PASS
11ax(HT40)	CH38	5190	40.160	PASS
11ax(HT40)	CH46	5230	40.240	PASS
11ax(HT80)	CH42	5210	80.480	PASS

Test plots as follows:



Band I (5150 – 5250 MHz)



The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAKE, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.



802.11n(HT20)



Low



Mid



High

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAKE, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.



802.11n(HT40)



Low



High