

# TEST REPORT

**FCC ID: 2AOKI-WFM668UWP1**

**Product: Wireless Module&Bluetooth Module**

**Model No.: WF-M668-UWP1**

**Additional Model No.: N/A**

**Trade Mark: N/A**

**Report No.: TCT171205E034**

**Issued Date: Dec. 27, 2017**

Issued for:

**Sichuan AI-Link Technology Co., Ltd.  
Anzhou, Industrial park, Mianyang, Sichuan, China**

Issued By:

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**Appendix A: Photographs of Test Setup**

**Appendix B: Photographs of EUT**

## 1. Test Certification

<b>Product:</b>	Wireless Module&Bluetooth Module
<b>Model No.:</b>	WF-M668-UWP1
<b>Additional Model No.:</b>	N/A
<b>Trade Mark:</b>	N/A
<b>Applicant:</b>	Sichuan AI-Link Technology Co., Ltd.
<b>Address:</b>	Anzhou, Industrial park, Mianyang, Sichuan, China
<b>Manufacturer:</b>	Sichuan AI-Link Technology Co., Ltd.
<b>Address:</b>	Anzhou, Industrial park, Mianyang, Sichuan, China
<b>Date of Test:</b>	Dec. 06, 2017 – Dec. 26, 2017
<b>Applicable Standards:</b>	FCC CFR Title 47 Part 15 Subpart E Section 15.407: 2016 KDB662911 D01 Multiple Transmitter Output v02r01 KDB789033 D02 General U-NII Test Procedures New Rules v02

The above equipment has been tested by Shenzhen Tongce Testing Lab. and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Tested By:

*Brews Xu*

Date:

Dec. 26, 2017

**Brews Xu**

Reviewed By:

*Benji Zhao*

Date:

Dec. 27, 2017

*Joe Zhou*

Approved By:

*Tomsin*

Date:

Dec. 27, 2017

**Tomsin**



## 2. Test Result Summary

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) §2.1046	PASS
6dB Emission Bandwidth	§15.407(a) §2.1049	PASS
26dB Emission Bandwidth & 99% Occupied Bandwidth	§15.407(a) §2.1049	PASS
Power Spectral Density	§15.407(a)	PASS
Restricted Bands around fundamental frequency	§15.407(a)	PASS
Radiated Emission	§15.407(a) §2.1053	PASS
Frequency Stability	§15.407(g) §2.1055	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.

### 3. EUT Description

<b>Product:</b>	Wireless Module&Bluetooth Module
<b>Model No.:</b>	WF-M668-UWP1
<b>Additional Model No.:</b>	N/A
<b>Trade Mark:</b>	N/A
<b>Hardware Version:</b>	JUB7.820.0243-1
<b>Software Version:</b>	customer_package_Ulv1.84_DLLv3.84_20170627_WinDriver V.0.0.4.26_FWv.66103
<b>Operation Frequency:</b>	Band 1: 5180 MHz -5240 MHz band 2A: 5260 MHz -5320 MHz band 2C: 5500 MHz -5720 MHz band 3: 5745 MHz -5825 MHz
<b>Channel Bandwidth:</b>	802.11a: 20MHz 802.11n: 20MHz, 40MHz 802.11ac: 20MHz, 40MHz.80MHZ
<b>Modulation Technology:</b>	Orthogonal Frequency Division Multiplexing(OFDM)
<b>Modulation Type</b>	256QAM, 64QAM, 16QAM, BPSK, QPSK
<b>Antenna Type:</b>	Integral Antenna
<b>Antenna Gain:</b>	2dBi
<b>Power Supply:</b>	DC 5V

**Test Frequency each of channel**

**Band 1**

20MHz		40MHz		80MHz	
Channel	Frequency	Channel	Frequency	Channel	Frequency
36	5180	38	5190	42	5210
40	5200	46	5230		
48	5240				

**Band 2A**

20MHz		40MHz		80MHz	
Channel	Frequency	Channel	Frequency	Channel	Frequency
52	5260	54	5270	58	5290
60	5300	62	5310		
64	5320				

**Band 2C**

20MHz		40MHz		80MHz	
Channel	Frequency	Channel	Frequency	Channel	Frequency
100	5500	102	5510	106	5530
120	5600	118	5590	138	5690
144	5720	142	5710		

**Band 3**

20MHz		40MHz		80MHz	
Channel	Frequency	Channel	Frequency	Channel	Frequency
149	5745	151	5755	155	5775
157	5785	159	5795		
165	5825				

**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:*

## 4. Genera Information

### 4.1. 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%)
<p>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 &amp; 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.</p>	

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)	6.5 Mbps
802.11n(HT40)	13.5 Mbps
802.11ac(HT20)	6.5 Mbps
802.11ac(HT40)	13.5 Mbps
802.11ac(HT80)	29.3 Mbps

#### Final Test Mode:

Operation mode:	Keep the EUT in continuous transmitting with modulation
-----------------	---

## 4.2. 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
Notebook	G485	LB00402300	/	Lenovo

**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.



## 5. Facilities and Accreditations

### 5.1. Facilities

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

- FCC - Registration No.: 645098

Shenzhen Tongce Testing Lab

The 3m Semi-anechoic chamber has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

- IC - Registration No.: 10668A-1

The 3m Semi-anechoic chamber of Shenzhen TCT Testing Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing

### 5.2. Location

Shenzhen Tongce Testing Lab

Address: 1B/F., Building 1, Yibaolai Industrial Park, Qiaotou, Fuyong, Baoan District, Shenzhen, Guangdong, China

TEL: +86-755-27673339

### 5.3. Measurement Uncertainty

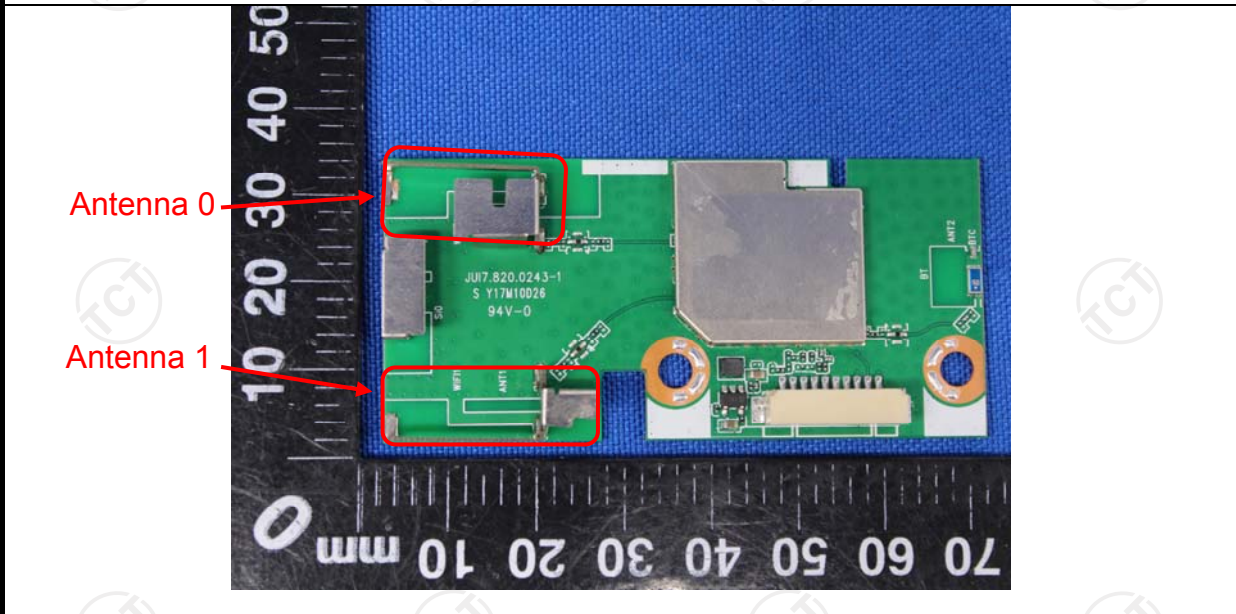
The reported uncertainty of measurement  $y \pm U$ , where expanded uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of approximately 95 %.

No.	Item	MU
1	Conducted Emission	$\pm 2.56\text{dB}$
2	RF power, conducted	$\pm 0.12\text{dB}$
3	Spurious emissions, conducted	$\pm 0.11\text{dB}$
4	All emissions, radiated(<1G)	$\pm 3.92\text{dB}$
5	All emissions, radiated(>1G)	$\pm 4.28\text{dB}$
6	Temperature	$\pm 0.1^\circ\text{C}$
7	Humidity	$\pm 1.0\%$

## 6. Test Results and Measurement Data

### 6.1. Antenna requirement

<b>Standard requirement:</b>	FCC Part15 C Section 15.203 /247(c)
<p>15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.</p>	
<b>E.U.T Antenna:</b>	
<p>The EUT has two Integral antennas, and the best case gains of the both antennas are 2dBi.</p>	



## 6.2. Conducted Emission

### 6.2.1. Test Specification

<b>Test Requirement:</b>	FCC Part15 C Section 15.207														
<b>Test Method:</b>	ANSI C63.10:2013														
<b>Frequency Range:</b>	150 kHz to 30 MHz														
<b>Receiver setup:</b>	RBW=9 kHz, VBW=30 kHz, Sweep time=auto														
<b>Limits:</b>	<table border="1"> <thead> <tr> <th rowspan="2">Frequency range (MHz)</th> <th colspan="2">Limit (dBuV)</th> </tr> <tr> <th>Quasi-peak</th> <th>Average</th> </tr> </thead> <tbody> <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> </tbody> </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													
<b>Test Setup:</b>	<p><i>Remark</i> E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m</p>														
<b>Test Mode:</b>	Tx Mode														
<b>Test Procedure:</b>	<ol style="list-style-type: none"> <li>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.</li> <li>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).</li> <li>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.</li> </ol>														
<b>Test Result:</b>	PASS														

**6.2.2. Test Instruments**

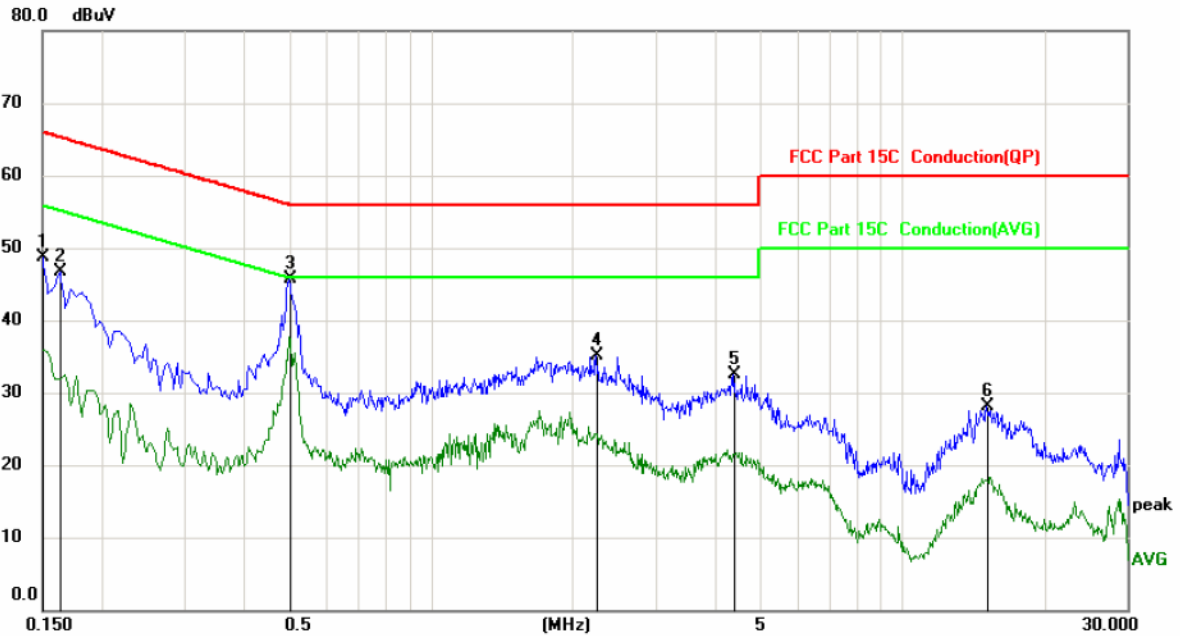
Conducted Emission Shielding Room Test Site (843)				
Equipment	Manufacturer	Model	Serial Number	Calibration Due
Test Receiver	R&S	ESPI	101401	Jun. 12, 2018
LISN	Schwarzbeck	NSLK 8126	8126453	Sep. 27, 2018
Coax cable (9KHz-30MHz)	TCT	CE-05	N/A	Sep. 27, 2018
EMI Test Software	Shurple Technology	EZ-EMC	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).

6.2.3. Test data

Please refer to following diagram for individual

Conducted Emission on Line Terminal of the power line (150 kHz to 30MHz)



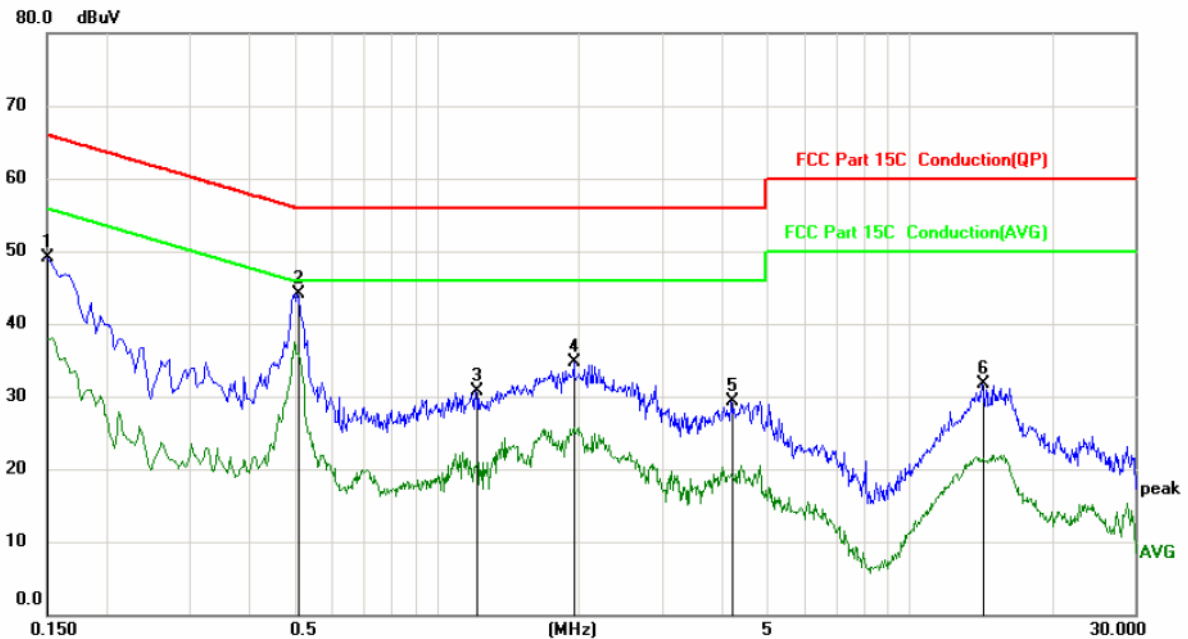
Site: \_\_\_\_\_ Phase: **L1** Temperature: 25  
 Limit: FCC Part 15C Conduction(QP) Power: AC 120V/60Hz Humidity: 55 %

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1500	37.20	11.47	48.67	66.00	-17.33	peak	
2		0.1635	35.31	11.47	46.78	65.28	-18.50	peak	
3	*	0.5010	34.42	11.30	45.72	56.00	-10.28	peak	
4		2.2380	23.52	11.60	35.12	56.00	-20.88	peak	
5		4.4069	21.59	10.83	32.42	56.00	-23.58	peak	
6		15.0900	16.42	11.66	28.08	60.00	-31.92	peak	

**Note:**

- Freq. = Emission frequency in MHz
- Reading level (dBuV) = Receiver reading
- Corr. Factor (dB) = Antenna factor + Cable loss
- Measurement (dBuV) = Reading level (dBuV) + Corr. Factor (dB)
- Limit (dBuV) = Limit stated in standard
- Margin (dB) = Measurement (dBuV) – Limits (dBuV)
- Q.P. =Quasi-Peak
- AVG =average
- \* is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz

**Conducted Emission on Neutral Terminal of the power line (150 kHz to 30MHz)**



Site: \_\_\_\_\_ Phase: **N** Temperature: 25  
 Limit: FCC Part 15C Conduction(QP) Power: AC 120V/60Hz Humidity: 55 %

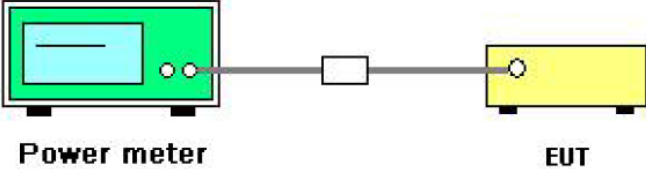
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1500	37.61	11.47	49.08	66.00	-16.92	peak	
2	*	0.5100	32.87	11.29	44.16	56.00	-11.84	peak	
3		1.2120	19.33	11.30	30.63	56.00	-25.37	peak	
4		1.9500	23.12	11.67	34.79	56.00	-21.21	peak	
5		4.2225	18.47	10.89	29.36	56.00	-26.64	peak	
6		14.2485	20.03	11.59	31.62	60.00	-28.38	peak	

**Note:**

- Freq. = Emission frequency in MHz
- Reading level (dBuV) = Receiver reading
- Corr. Factor (dB) = attenuator factor + Cable loss
- Measurement (dBuV) = Reading level (dBuV) + Corr. Factor (dB)
- Limit (dBuV) = Limit stated in standard
- Margin (dB) = Measurement (dBuV) – Limits (dBuV)
- Q.P. =Quasi-Peak
- AVG =average
- \* is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz.

### 6.3. Maximum Conducted Output Power

#### 6.3.1. Test Specification

<b>Test Requirement:</b>	FCC Part15 E Section 15.407(a)& Part 2 J Section 2.1046										
<b>Test Method:</b>	KDB662911 D01 Multiple Transmitter Output v02r01 KDB789033 D02 General UNII Test Procedures New Rules v02 Section E										
<b>Limit:</b>	<table border="1"> <thead> <tr> <th>Frequency Band (MHz)</th> <th>Limit</th> </tr> </thead> <tbody> <tr> <td>5150 - 5250</td> <td>24dBm(250mW) for client device</td> </tr> <tr> <td>5250 - 5350</td> <td>24dBm(250mW)</td> </tr> <tr> <td>5470 - 5725</td> <td>24dBm(250mW)</td> </tr> <tr> <td>5725 - 5850</td> <td>30dBm(1W)</td> </tr> </tbody> </table>	Frequency Band (MHz)	Limit	5150 - 5250	24dBm(250mW) for client device	5250 - 5350	24dBm(250mW)	5470 - 5725	24dBm(250mW)	5725 - 5850	30dBm(1W)
Frequency Band (MHz)	Limit										
5150 - 5250	24dBm(250mW) for client device										
5250 - 5350	24dBm(250mW)										
5470 - 5725	24dBm(250mW)										
5725 - 5850	30dBm(1W)										
<b>Test Setup:</b>	 <p>The diagram illustrates the test setup. On the left is a green Power meter. A cable connects it to a small white attenuator. Another cable connects the attenuator to a yellow EUT (Equipment Under Test) on the right.</p>										
<b>Test Mode:</b>	Transmitting mode with modulation										
<b>Test Procedure:</b>	<ol style="list-style-type: none"> <li>1. The testing follows the Measurement Procedure of KDB789033 D02 General UNII Test Procedures New Rules v02 Section E, 3, a</li> <li>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.</li> <li>3. Set to the maximum power setting and enable the EUT transmit continuously.</li> <li>5. Measure the conducted output power and record the results in the test report.</li> </ol>										
<b>Test Result:</b>	PASS										
<b>Remark:</b>	Conducted output power= measurement power +10log(1/x) X is duty cycle=1, so 10log(1/1)=0 Conducted output power= measurement power										

### 6.3.2. Test Instruments

RF Test Room				
Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	N9020A	MY49100060	Sep. 27, 2018
Power Meter	Agilent	N1911a	MY45101557	Sep. 27, 2018
Power Sensor	Agilent	N1922-A	MY44124432	Sep. 27, 2018
RF Cable (9KHz-40GHz)	TCT	RE-03	N/A	Sep. 27, 2018
Antenna Connector	TCT	RFC-03	N/A	Sep. 27, 2018

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



**6.3.3. Test Data**

Configuration Band 1 (5150 - 5250 MHz) / Antenna 0+Antenna 1						
Mode	Test channel	Maximum Conducted (Average) Output Power (dBm)			FCC Limit (dBm)	Result
		Ant0	Ant1	Total		
11a	CH36	13.31	13.27	16.30	24	PASS
11a	CH40	13.59	13.28	16.45	24	PASS
11a	CH48	13.59	13.50	16.56	24	PASS
11n(HT20)	CH36	13.24	12.15	15.74	24	PASS
11n(HT20)	CH40	13.14	12.06	15.64	24	PASS
11n(HT20)	CH48	13.26	12.75	16.02	24	PASS
11n(HT40)	CH38	12.47	11.51	15.03	24	PASS
11n(HT40)	CH46	12.51	11.05	14.85	24	PASS
11ac(HT20)	CH36	12.34	12.06	15.21	24	PASS
11ac(HT20)	CH40	12.78	12.43	15.62	24	PASS
11ac(HT20)	CH48	13.00	12.53	15.78	24	PASS
11ac(HT40)	CH38	12.27	12.09	15.19	24	PASS
11ac(HT40)	CH46	12.60	12.81	15.72	24	PASS
11ac(HT80)	CH42	12.50	12.28	15.40	24	PASS

Note :  $G_{ANT}=2dBi$ ,  $Array\ Gain=10\log(N_{ANT}/N_{SS})=3.01dBi$ ,  $Directional\ Gain=G_{ANT} + Array\ Gain=5.01dBi$ ,

$5.01dBi < 6dBi$  so limit=24dBm/MHz

**Configuration Band 2A (5250 - 5350 MHz ) / Antenna 0+Antenna 1**

Mode	Test channel	Maximum Conducted (Average) Output Power (dBm)			FCC Limit (dBm)	Result
		Ant0	Ant1	Total		
11a	CH52	13.76	13.24	16.52	24	PASS
11a	CH60	13.60	13.52	16.57	24	PASS
11a	CH64	13.49	13.38	16.45	24	PASS
11n(HT20)	CH52	13.16	12.53	15.87	24	PASS
11n(HT20)	CH60	13.25	12.33	15.82	24	PASS
11n(HT20)	CH64	13.24	12.84	16.05	24	PASS
11n(HT40)	CH54	12.70	11.82	15.29	24	PASS
11n(HT40)	CH62	12.66	12.69	15.69	24	PASS
11ac(HT20)	CH52	12.91	12.42	15.68	24	PASS
11ac(HT20)	CH60	12.85	12.85	15.86	24	PASS
11ac(HT20)	CH64	13.02	12.64	15.84	24	PASS
11ac(HT40)	CH54	12.59	11.76	15.21	24	PASS
11ac(HT40)	CH62	12.52	12.06	15.31	24	PASS
11ac(HT80)	CH58	12.70	12.12	15.43	24	PASS

Note :  $G_{ANT}=2dBi$ ,  $Array\ Gain=10\log(N_{ANT}/N_{SS})=3.01dBi$ ,  $Directional\ Gain=G_{ANT} + Array\ Gain=5.01dBi$ ,

$5.01dBi < 6dBi$  so  $limit=24dBm/MHz$

**Configuration Band 2C (5470 - 5750 MHz ) / Antenna 0+Antenna 1**

Mode	Test channel	Maximum Conducted (Average) Output Power (dBm)			FCC Limit (dBm)	Result
		Ant0	Ant1	Total		
11a	CH100	13.11	13.07	16.10	24	PASS
11a	CH120	13.53	13.24	16.40	24	PASS
11a	CH144	13.39	13.34	16.38	24	PASS
11n(HT20)	CH100	13.14	12.24	15.72	24	PASS
11n(HT20)	CH120	12.87	12.60	15.75	24	PASS
11n(HT20)	CH144	12.94	12.83	15.90	24	PASS
11n(HT40)	CH102	12.17	11.96	15.08	24	PASS
11n(HT40)	CH118	12.18	12.81	15.52	24	PASS
11n(HT40)	CH142	11.86	13.09	15.53	24	PASS
11ac(HT20)	CH100	12.68	12.44	15.57	24	PASS
11ac(HT20)	CH120	12.70	13.16	15.95	24	PASS
11ac(HT20)	CH144	12.87	12.75	15.82	24	PASS
11ac(HT40)	CH102	11.90	12.39	15.16	24	PASS
11ac(HT40)	CH118	12.29	12.83	15.58	24	PASS
11ac(HT40)	CH142	11.79	13.06	15.48	24	PASS
11ac(HT80)	CH106	11.79	12.75	15.31	24	PASS
11ac(HT80)	CH138	12.66	11.80	15.26	24	PASS

**Note :**  $G_{ANT}=2\text{dBi}$ ,  $\text{Array Gain}=10\log(N_{ANT}/N_{SS})=3.01\text{dBi}$ ,  $\text{Directional Gain}=G_{ANT} + \text{Array Gain}=5.01\text{dBi}$ ,  
 $5.01\text{dBi} < 6\text{dBi}$  so  $\text{limit}=24\text{dBm/MHz}$

**Configuration Band 3 (5725 - 5850 MHz ) / Antenna 0+Antenna 1**


Mode	Test channel	Maximum Conducted (Average) Output Power (dBm)			FCC Limit (dBm)	Result
		Ant0	Ant1	Total		
11a	CH149	13.13	12.74	15.95	30	PASS
11a	CH157	13.09	12.40	15.77	30	PASS
11a	CH165	13.17	12.75	15.98	30	PASS
11n(HT20)	CH149	12.80	12.45	15.64	30	PASS
11n(HT20)	CH157	12.89	12.08	15.51	30	PASS
11n(HT20)	CH165	13.11	12.36	15.76	30	PASS
11n(HT40)	CH151	11.56	12.61	15.13	30	PASS
11n(HT40)	CH159	11.55	12.31	14.96	30	PASS
11ac(HT20)	CH149	11.91	12.36	15.15	30	PASS
11ac(HT20)	CH157	11.89	12.22	15.07	30	PASS
11ac(HT20)	CH165	12.23	12.44	15.35	30	PASS
11ac(HT40)	CH151	11.29	12.47	14.93	30	PASS
11ac(HT40)	CH159	11.39	12.48	14.98	30	PASS
11ac(HT80)	CH155	11.31	11.83	14.59	30	PASS

Note :  $G_{ANT}=2dBi$ ,  $Array\ Gain=10\log(N_{ANT}/N_{SS})=3.01dBi$ ,  $Directional\ Gain=G_{ANT} + Array\ Gain=5.01dBi$ ,

$5.01dBi < 6dBi$  so  $limit=30dBm/MHz$

## 6.4. 6dB Emission Bandwidth

### 6.4.1. Test Specification

<b>Test Requirement:</b>	FCC CFR47 Part 15 Section 15.407(e)& Part 2 J Section 2.1049
<b>Test Method:</b>	KDB662911 D01 Multiple Transmitter Output v02r01 KDB789033 D02 General UNII Test Procedures New Rules v02 Section C
<b>Limit:</b>	>500kHz
<b>Test Setup:</b>	 <p style="text-align: center;">Spectrum Analyzer                      EUT</p>
<b>Test Mode:</b>	Transmitting mode with modulation
<b>Test Procedure:</b>	<ol style="list-style-type: none"> <li>1. KDB789033 D02 General UNII Test Procedures New Rules v02 Section C</li> <li>2. Set to the maximum power setting and enable the EUT transmit continuously.</li> <li>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.</li> <li>4. Measure and record the results in the test report.</li> </ol>
<b>Test Result:</b>	PASS

### 6.4.2. Test Instruments

RF Test Room				
Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	N9020A	MY49100060	Sep. 27, 2018
RF Cable (9KHz-40GHz)	TCT	RE-03	N/A	Sep. 27, 2018
Antenna Connector	TCT	RFC-03	N/A	Sep. 27, 2018

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

**6.4.3. Test data**

**ANT 0**

Band 3 (5725 - 5850 MHz )					
Mode	Test channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (MHz)	Result
11a	CH149	5745	15.47	0.5	PASS
11a	CH157	5785	15.35	0.5	PASS
11a	CH165	5825	16.04	0.5	PASS
11n(HT20)	CH149	5745	15.11	0.5	PASS
11n(HT20)	CH157	5785	15.38	0.5	PASS
11n(HT20)	CH165	5825	15.08	0.5	PASS
11n(HT40)	CH151	5755	35.17	0.5	PASS
11n(HT40)	CH159	5795	35.05	0.5	PASS
11ac(HT20)	CH149	5745	15.12	0.5	PASS
11ac(HT20)	CH157	5785	15.13	0.5	PASS
11ac(HT20)	CH165	5825	15.11	0.5	PASS
11ac(HT40)	CH151	5755	35.15	0.5	PASS
11ac(HT40)	CH159	5795	35.10	0.5	PASS
11ac(HT80)	CH155	5775	76.48	0.5	PASS

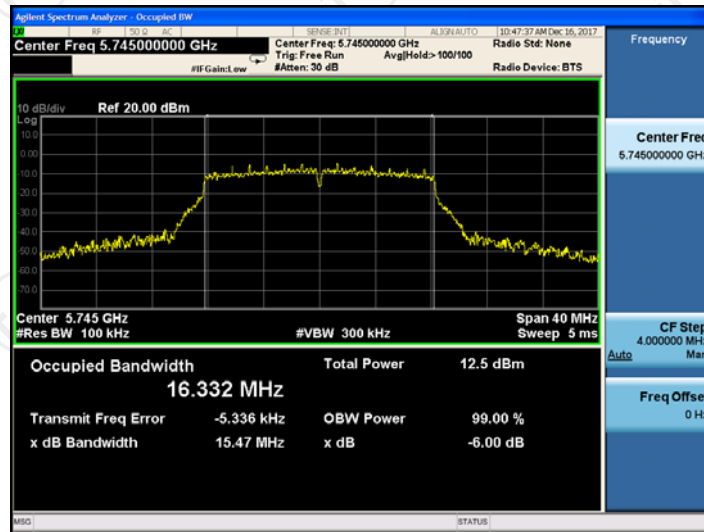
**ANT 1**

<b>Band 3 (5725 - 5850 MHz )</b>					
Mode	Test channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (MHz)	Result
11a	CH149	5745	15.34	0.5	PASS
11a	CH157	5785	15.12	0.5	PASS
11a	CH165	5825	15.07	0.5	PASS
11n(HT20)	CH149	5745	15.45	0.5	PASS
11n(HT20)	CH157	5785	14.19	0.5	PASS
11n(HT20)	CH165	5825	13.86	0.5	PASS
11n(HT40)	CH151	5755	35.17	0.5	PASS
11n(HT40)	CH159	5795	35.28	0.5	PASS
11ac(HT20)	CH149	5745	15.43	0.5	PASS
11ac(HT20)	CH157	5785	15.10	0.5	PASS
11ac(HT20)	CH165	5825	15.14	0.5	PASS
11ac(HT40)	CH151	5755	35.44	0.5	PASS
11ac(HT40)	CH159	5795	35.63	0.5	PASS
11ac(HT80)	CH155	5775	76.45	0.5	PASS

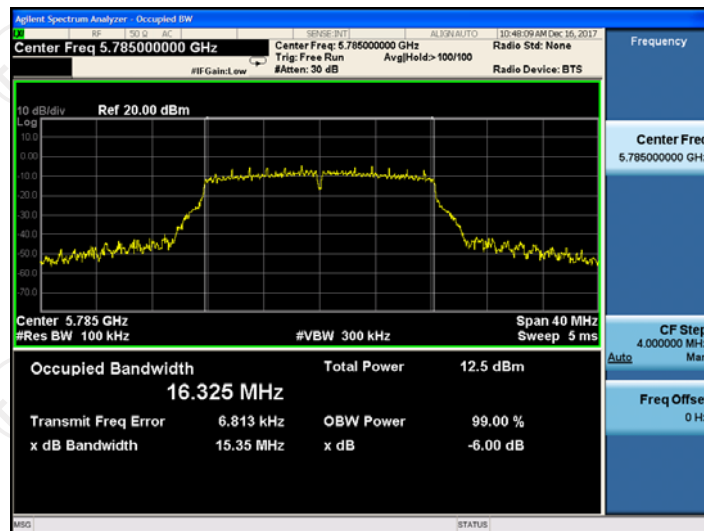
Test plots as follows:

**ANT 0**  
**Band 3 (5725 – 5850 MHz)**  
 11a

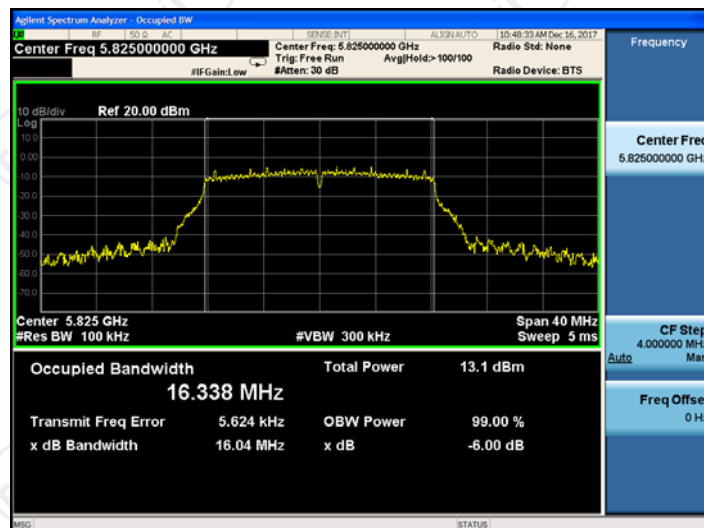
CH149



CH157



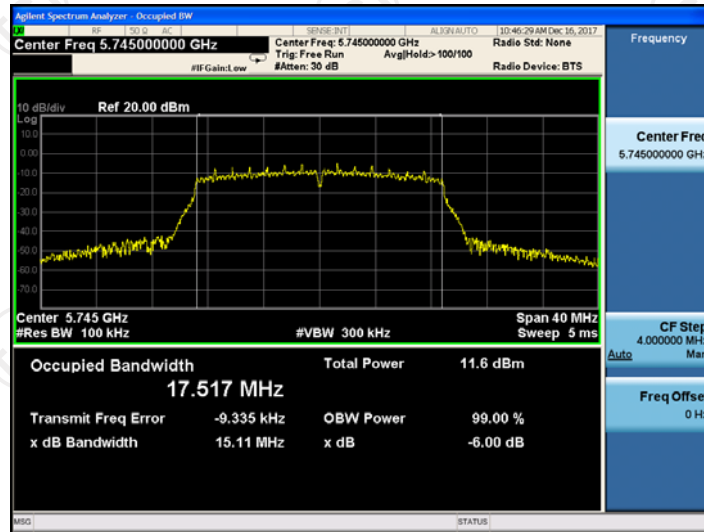
CH165



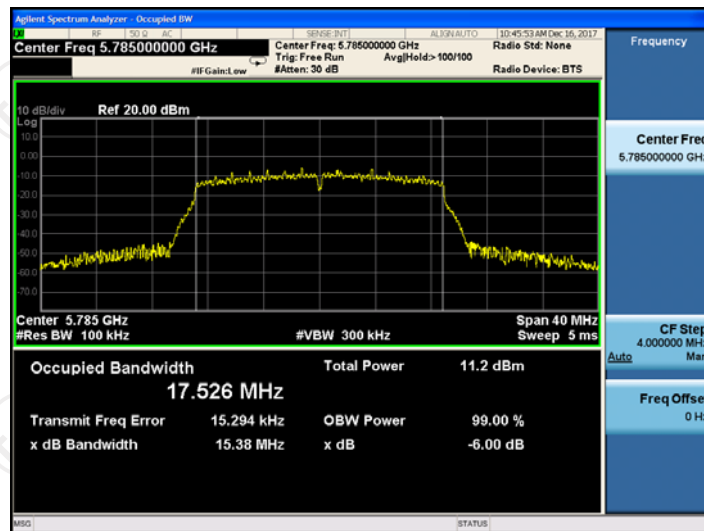


11n(HT20)

CH149



CH157



CH165

