TCT 通测检测 TESTING CENTRE TECHNOLOGY

TEST REPORT

FCC ID: 2AOH4WIT01CR

Product: 5G Wireless Video Transmitter

Model No.: WIT01

Additional Model No.: WIT01-M, WIT01-R, WIT01-P

Trade Mark: Accsoon

Report No.: TCT190412E014

Issued Date: May. 06, 2019

Issued for:

Chengdu Accsoon Technology Co., LTD.
No.505, Building 6, D Zone, Tianfu Software Park, No.599, Shijicheng South Road, Chengdu 610000, China

Issued By:

Shenzhen Tongce Testing Lab.
1B/F., Building 1, Yibaolai Industrial Park, Qiaotou, Fuyong, Baoan District, Shenzhen, Guangdong, China
TEL: +86-755-27673339
FAX: +86-755-27673332

TABLE OF CONTENTS

Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

1. Test Certification

Product:	5G Wireless Video Transmitter
Model No.:	WIT01
Additional Model No.:	WIT01-M, WIT01-R, WIT01-P
Trade Mark:	**Accsoon**
Applicant:	Chengdu Accsoon Technology Co., LTD.
Address:	No.505, Building 6, D Zone, Tianfu Software Park, No.599, Shijicheng South Road, Chengdu 610000, China
Manufacturer:	ShenZhen Accsoon Technology Co., LTD.
Address:	No. 302, 3rd Floor, Building A3, Guigudongli Park, Qinghu, Longhua District, Shenzhen, China
Date of Test:	Apr. 15, 2019 – May. 05, 2019
Applicable Standards:	FCC CFR Title 47 Part 15 Subpart E Section 15.407 KDB662911 D01 Multiple Transmitter Output v02r01 KDB789033 D02 General U-NII Test Procedures New Rules v02r01

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:***	***May. 05, 2019***
	Brews Xu		
Reviewed By:	Beryl Zhao	***Date:***	***May. 06, 2019***
	Beryl Zhao		
Approved By:	Tomsin	***Date:***	***May. 06, 2019***
	Tomsin		

Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

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)	PASS
6dB Emission Bandwidth	§15.407(a)	PASS
26dB Emission Bandwidth& 99% Occupied Bandwidth	§15.407(a)	PASS
Power Spectral Density	§15.407(a)	PASS
Restricted Bands around fundamental frequency	§15.407(a)	PASS
Radiated Emission	§15.407(a)	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.

Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

3. EUT Description

Product:	5G Wireless Video Transmitter
Model No.:	WIT01
Additional Model No.:	WIT01-M, WIT01-R, WIT01-P
Trade Mark:	**Accsoon**
Operation Frequency:	Band 1: 5180 MHz -5240 MHz Band 3: 5745 MHz -5825 MHz
Channel Bandwidth:	802.11n: 20MHz
Modulation Technology:	Orthogonal Frequency Division Multiplexing(OFDM)
Modulation Type	64QAM, 16QAM, BPSK, QPSK
Antenna Type:	Internal Antenna
Antenna Gain:	ANT0: 2.5dBi ANT1: 2.5dBi
Power Supply:	Rechargeable Li-ion battery DC 3.6V
Remark:	All models above are identical in interior structure, electrical circuits and components, and just appearance colors and sales areas are different for the marketing requirement

Test Frequency each of channel

Band 1

20MHz	
Channel	Frequency
36	5180
40	5200
48	5240

Band 3

20MHz	
Channel	Frequency
149	5745
157	5785
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:

Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

4. General 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%)
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
802.11n(HT20)	6.5 Mbps
Final Test Mode:	
Operation mode:	Keep the EUT in continuous transmitting with modulation

Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

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
/	/	/	/	/

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

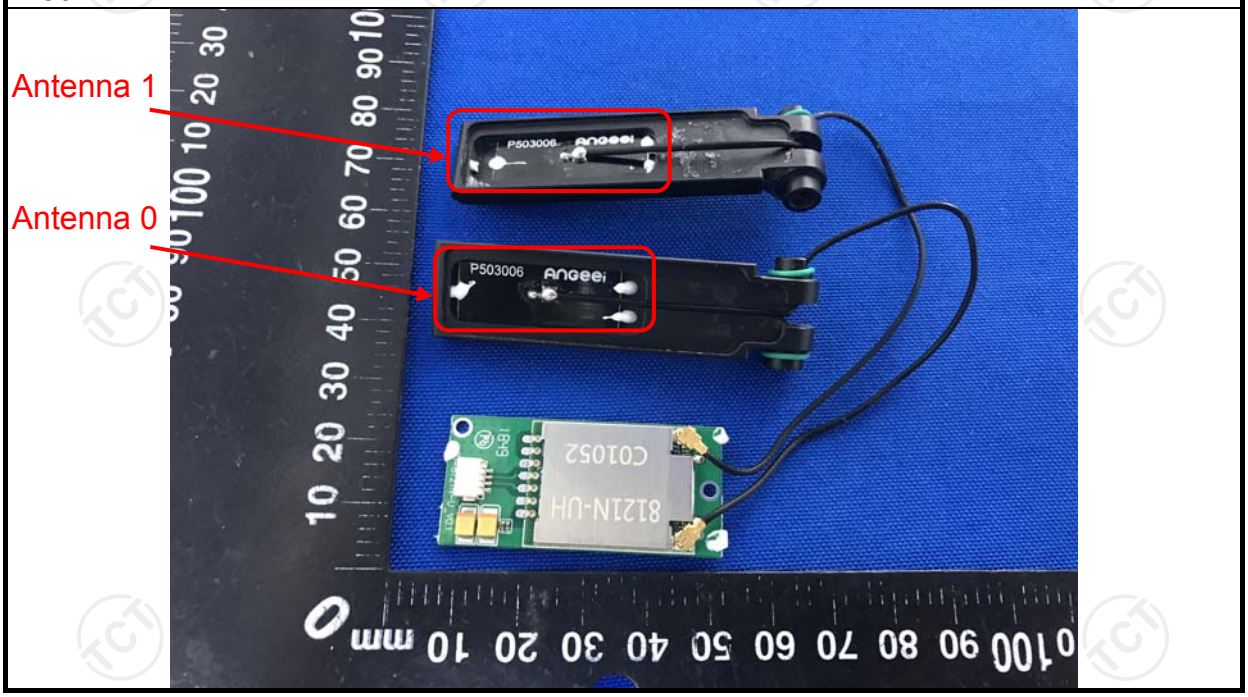
The reported uncertainty of measurement y ± U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

No.	Item	MU
1	Conducted Emission	±2.56dB
2	RF power, conducted	±0.12dB
3	Spurious emissions, conducted	±0.11dB
4	All emissions, radiated(<1G)	±3.92dB
5	All emissions, radiated(>1G)	±4.28dB
6	Temperature	±0.1°C
7	Humidity	±1.0%

6. Test Results and Measurement Data

6.1. Antenna requirement

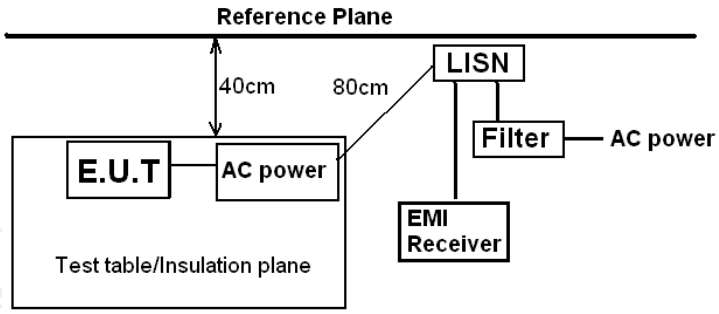
Standard requirement:	FCC Part15 C Section 15.203 /247(c)
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique 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.	
E.U.T Antenna:	
The EUT has two internal antennas, and the best case gains of the both antennas are 2.5dBi.	



Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

6.2. Conducted Emission

6.2.1. Test Specification

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.207</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10:2013</td></tr>
<tr><td>Frequency Range:</td><td>150 kHz to 30 MHz</td></tr>
<tr><td>Receiver setup:</td><td>RBW=9 kHz, VBW=30 kHz, Sweep time=auto</td></tr>
<tr><td>Limits:</td><td>
<table>
<tr><td rowspan="2">Frequency range (MHz)</td><td colspan="2">Limit (dBuV)</td></tr>
<tr><td>Quasi-peak</td><td>Average</td></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>
</td></tr>
<tr><td>Test Setup:</td><td>


Remark:
E.U.T: Equipment Under Test
LISN: Line Impedence Stabilization Network
Test table height=0.8m
</td></tr>
<tr><td>Test Mode:</td><td>Tx Mode</td></tr>
<tr><td>Test Procedure:</td><td>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.</td></tr>
<tr><td>Test Result:</td><td>PASS</td></tr>
</table>

6.2.2. Test Instruments

Conducted Emission Shielding Room Test Site (843)				
Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Test Receiver	R&S	ESPI	101402	Jul. 17, 2019
LISN	Schwarzbeck	NSLK 8126	8126453	Sep. 20, 2019
Coax cable (9KHz-30MHz)	TCT	CE-05	N/A	Sep. 16, 2019
EMI Test Software	Shurple Technology	EZ-EMC	N/A	N/A

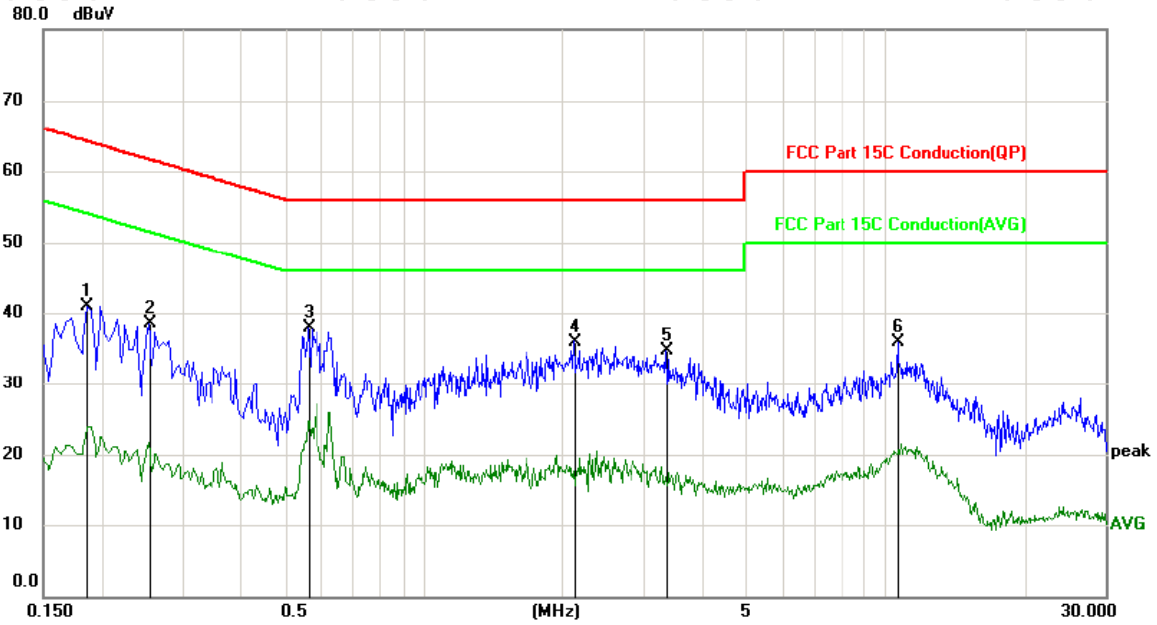
Note: *The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).*

Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

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)



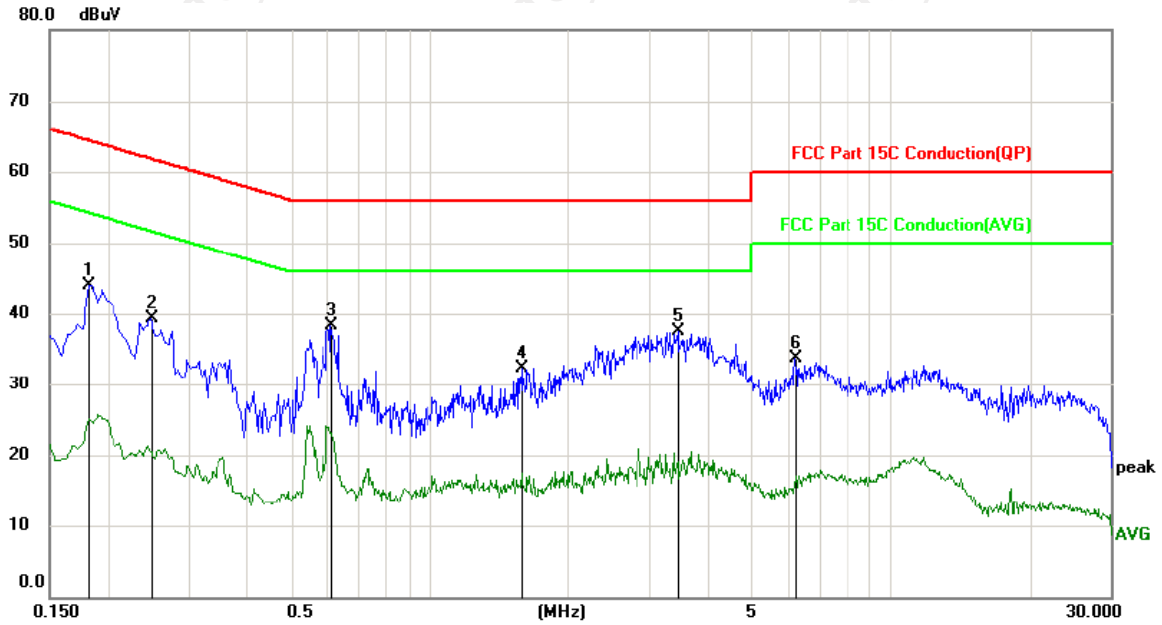
Site	Phase: *L1*	Temperature: 25
Limit: FCC Part 15C Conduction(QP)	Power:	Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1860	30.76	10.12	40.88	64.21	-23.33	peak	
2		0.2535	28.46	10.13	38.59	61.64	-23.05	peak	
3	*	0.5639	27.70	10.13	37.83	56.00	-18.17	peak	
4		2.1165	25.88	10.12	36.00	56.00	-20.00	peak	
5		3.3495	24.58	10.13	34.71	56.00	-21.29	peak	
6		10.6755	25.73	10.15	35.88	60.00	-24.12	peak	

Note:

Freq. = Emission frequency in MHz
Reading level (dBµV) = Receiver reading
Corr. Factor (dB) = LISN factor + Cable loss
Measurement (dBµV) = Reading level (dBµV) + Corr. Factor (dB)
Limit (dBµV) = Limit stated in standard
Margin (dB) = Measurement (dBµV) – Limits (dBµV)
Q.P. =Quasi-Peak
AVG =average
Any value more than 10dB below limit have not been specifically reported.
** 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: | Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1815	33.76	10.12	43.88	64.42	-20.54	peak	
2		0.2490	29.22	10.13	39.35	61.79	-22.44	peak	
3	*	0.6134	28.10	10.13	38.23	56.00	-17.77	peak	
4		1.5809	22.25	10.12	32.37	56.00	-23.63	peak	
5		3.4575	27.30	10.13	37.43	56.00	-18.57	peak	
6		6.2025	23.64	10.13	33.77	60.00	-26.23	peak	

Note:

Freq. = Emission frequency in MHz

Reading level (dBμV) = Receiver reading

Corr. Factor (dB) = LISN factor + Cable loss

Measurement (dBμV) = Reading level (dBμV) + Corr. Factor (dB)

Limit (dBμV) = Limit stated in standard

Margin (dB) = Measurement (dBμV) – Limits (dBμV)

Q.P. =Quasi-Peak

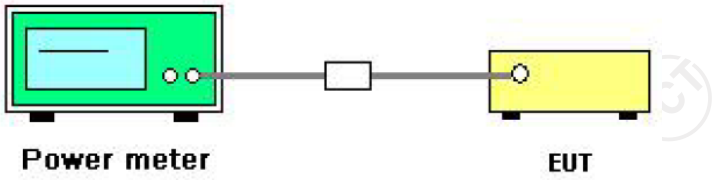
AVG =average

Any value more than 10dB below limit have not been specifically reported.

** 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

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 E Section 15.407(a)</td></tr>
<tr><td>Test Method:</td><td>KDB662911 D01 Multiple Transmitter Output v02r01
KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section E</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><td>Frequency Band (MHz)</td><td>Limit</td></tr>
<tr><td>5180 - 5240</td><td>24dBm(250mW) for client device</td></tr>
<tr><td>5260 - 5320</td><td>24dBm(250mW) or 11 dBm + 10 log B, B is the 26 dB emission bandwidth in megahertz</td></tr>
<tr><td>5470 - 5725</td><td>24dBm(250mW) or 11 dBm + 10 log B, B is the 26 dB emission bandwidth in megahertz</td></tr>
<tr><td>5745 - 5825</td><td>30dBm(1W)</td></tr>
</table>
</td></tr>
<tr><td>Test Setup:</td><td> 
</td></tr>
<tr><td>Test Mode:</td><td>Transmitting mode with modulation</td></tr>
<tr><td>Test Procedure:</td><td>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.</td></tr>
<tr><td>Test Result:</td><td>PASS</td></tr>
<tr><td>Remark:</td><td>Conducted output power= measurement power +10log(1/x) X is duty cycle=1, so 10log(1/1)=0
Conducted output power= measurement power</td></tr>
</table>

6.3.2. Test Instruments

RF Test Room				
Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	N9020A	MY49100619	Sep. 20, 2019
Power Meter	Agilent	E4418B	GB43312526	Sep. 16, 2019
Power Sensor	Agilent	E9301A	MY41497725	Sep. 16, 2019
RF Cable (9KHz-40GHz)	TCT	RE-03	N/A	Sep. 20, 2019
Antenna Connector	TCT	RFC-03	N/A	Sep. 20, 2019

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

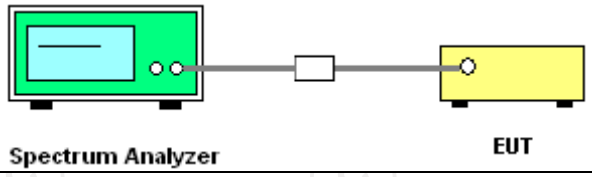
6.3.3. Test Data

Configuration Band 1 (5180 - 5240 MHz) / Antenna 0+Antenna 1						
Mode	Test channel	Maximum Conducted (Average) Output Power (dBm)			Limit (dBm)	Result
		Ant0	Ant1	Total		
11n(HT20)	CH36	13.05	11.88	15.51	24	PASS
11n(HT20)	CH40	12.67	12.54	15.62	24	PASS
11n(HT20)	CH48	12.78	12.77	15.79	24	PASS

Configuration Band 3 (5745 - 5825 MHz) / Antenna 0+Antenna 1						
Mode	Test channel	Maximum Conducted (Average) Output Power (dBm)			Limit (dBm)	Result
		Ant0	Ant1	Total		
11n(HT20)	CH149	12.73	11.12	15.01	30	PASS
11n(HT20)	CH157	11.95	11.25	14.62	30	PASS
11n(HT20)	CH165	12.88	12.82	15.86	30	PASS

6.4. 6dB Emission Bandwidth

6.4.1. Test Specification

Test Requirement:	FCC CFR47 Part 15 Section 15.407(e)
Test Method:	KDB662911 D01 Multiple Transmitter Output v02r01 KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section C
Limit:	>500kHz
Test Setup:	
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

6.4.2. Test Instruments

RF Test Room				
Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	N9020A	MY49100619	Sep. 20, 2019
RF Cable (9KHz-40GHz)	TCT	RE-03	N/A	Sep. 20, 2019
Antenna Connector	TCT	RFC-03	N/A	Sep. 20, 2019

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 (5745 - 5825 MHz)					
Mode	Test channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (MHz)	Result
11n(HT20)	CH149	5745	15.18	0.5	PASS
11n(HT20)	CH157	5785	15.19	0.5	PASS
11n(HT20)	CH165	5825	15.16	0.5	PASS

ANT 1

Band 3 (5745 - 5825 MHz)					
Mode	Test channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (MHz)	Result
11n(HT20)	CH149	5745	15.14	0.5	PASS
11n(HT20)	CH157	5785	15.13	0.5	PASS
11n(HT20)	CH165	5825	15.18	0.5	PASS

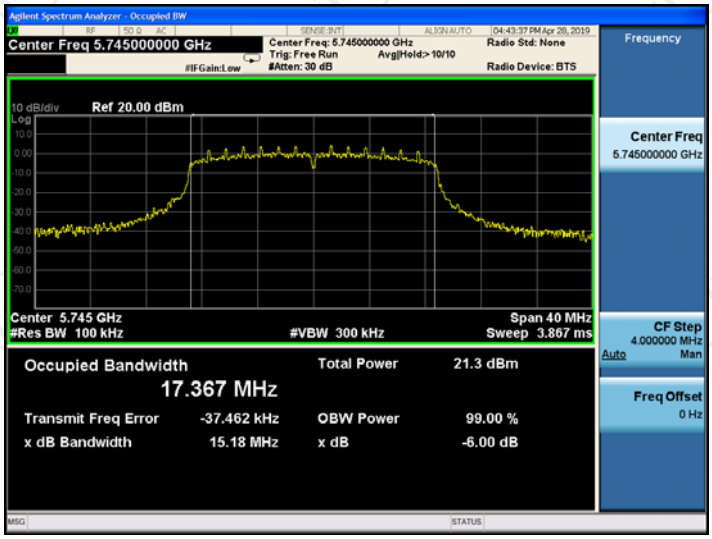
Test plots as follows:

Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

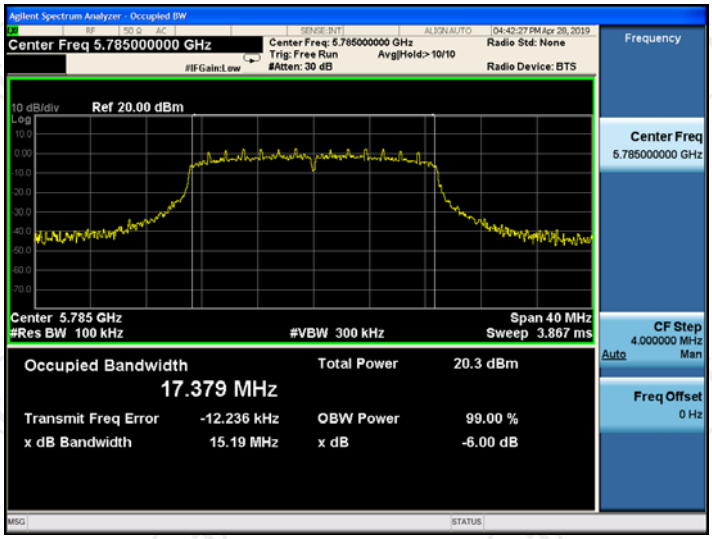
ANT 0

Band 3 (5725 – 5850 MHz)

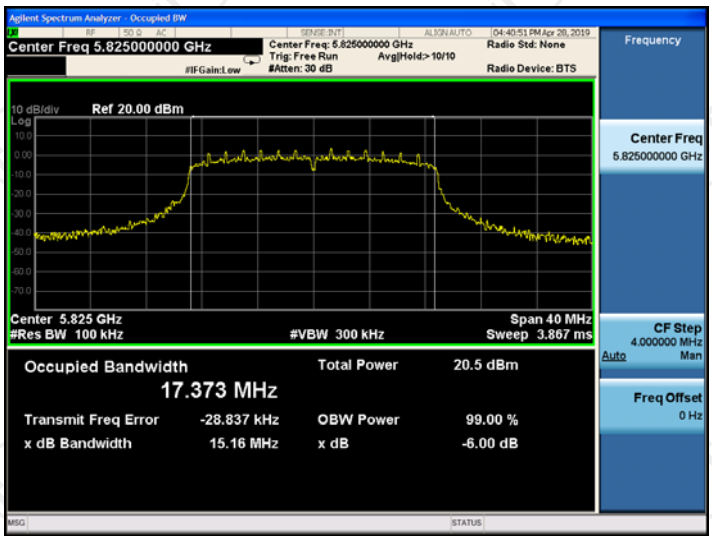
11n(HT20) CH149



CH157



CH165

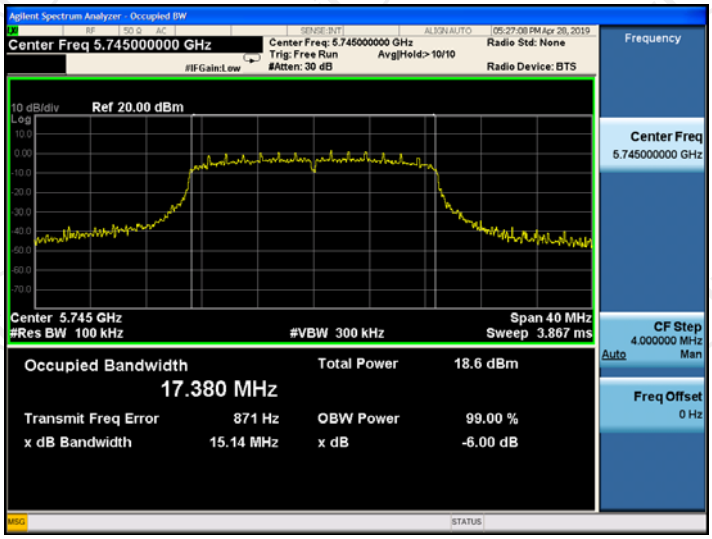


ANT 1

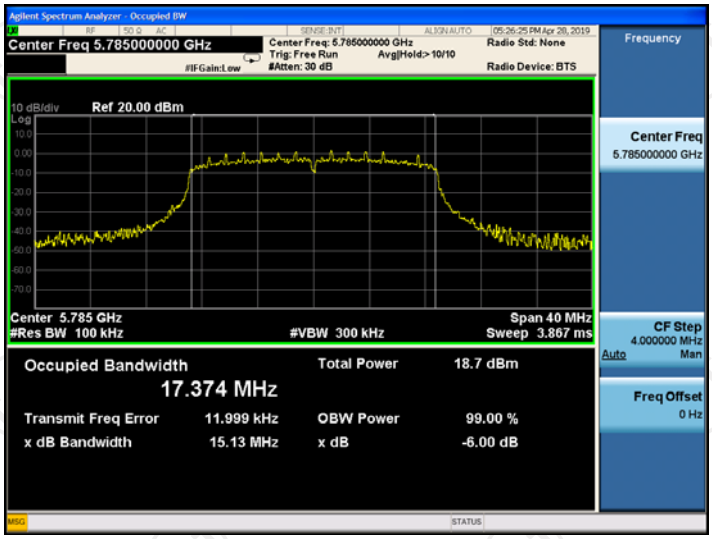
Band 3 (5725 – 5850 MHz)

11n(HT20)

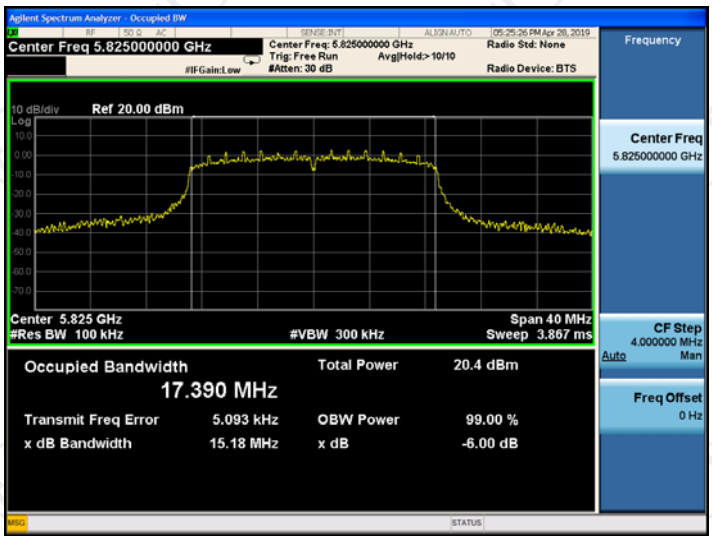
CH149



CH157



CH165



6.5. 26dB Bandwidth and 99% Occupied Bandwidth

6.5.1. Test Specification

Test Requirement:	47 CFR Part 15C Section 15.407 (a)
Test Method:	KDB662911 D01 Multiple Transmitter Output v02r01 KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section D
Limit:	No restriction limits
Test Setup:	
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section D 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. 4. Measure and record the results in the test report.
Test Result:	PASS

6.5.2. Test Instruments

RF Test Room				
Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	N9020A	MY49100619	Sep. 20, 2019
RF Cable (9KHz-26.5GHz)	TCT	RE-06	N/A	Sep. 20, 2019
Antenna Connector	TCT	RFC-01	N/A	Sep. 20, 2019

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

6.5.3. Test data

ANT 0
Band 1

Mode	Test channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
11n(HT20)	CH36	5180	20.28	17.413
11n(HT20)	CH40	5200	20.49	17.418
11n(HT20)	CH48	5240	20.75	17.409

Band 3

Mode	Test channel	Frequency (MHz)	99% Bandwidth (MHz)
11n(HT20)	CH149	5745	17.409
11n(HT20)	CH157	5785	17.389
11n(HT20)	CH165	5825	17.406

ANT 1
Band 1

Mode	Test channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
11n(HT20)	CH36	5180	19.83	17.416
11n(HT20)	CH40	5200	19.82	17.416
11n(HT20)	CH48	5240	20.06	17.391

Band 3

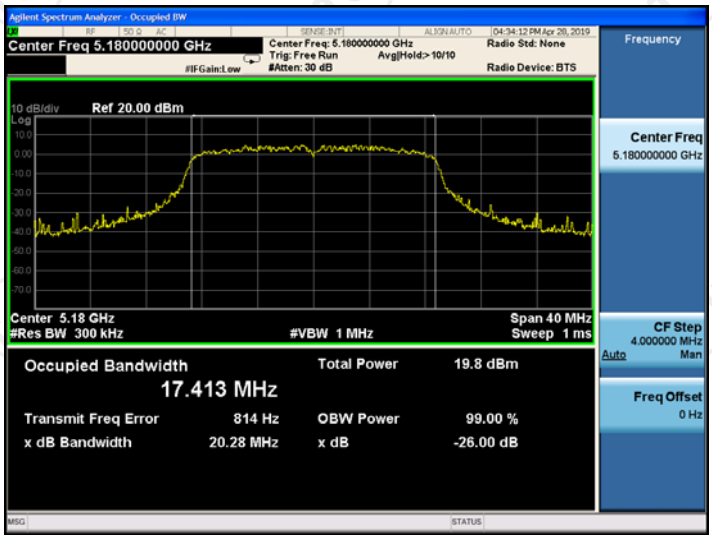
Mode	Test channel	Frequency (MHz)	99% Bandwidth (MHz)
11n(HT20)	CH149	5745	17.431
11n(HT20)	CH157	5785	17.409
11n(HT20)	CH165	5825	17.414

Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

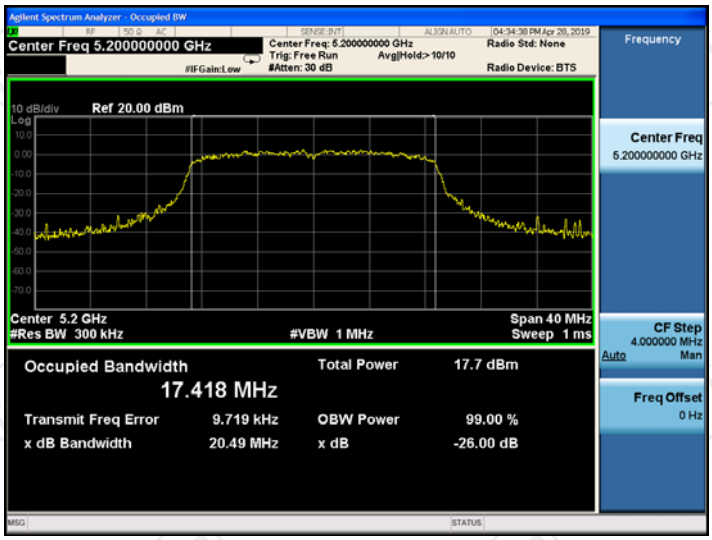
Test plots as follows:

ANT 0 Band 1 (5180-5240 MHz)

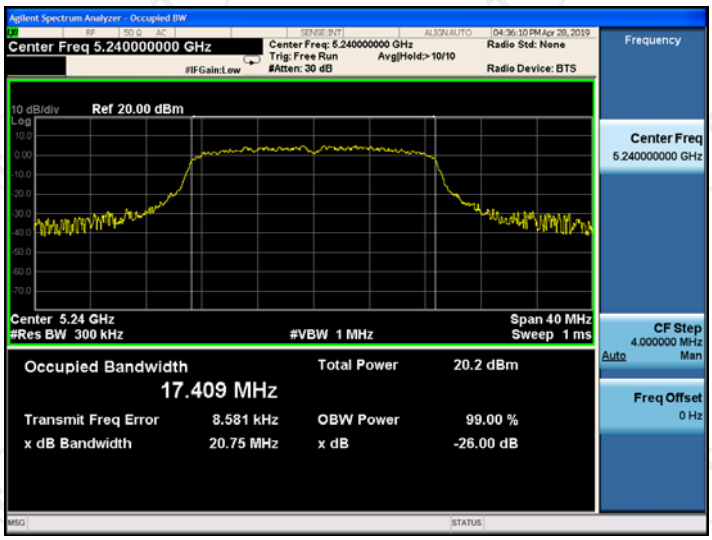
11n(HT20) CH36



CH40

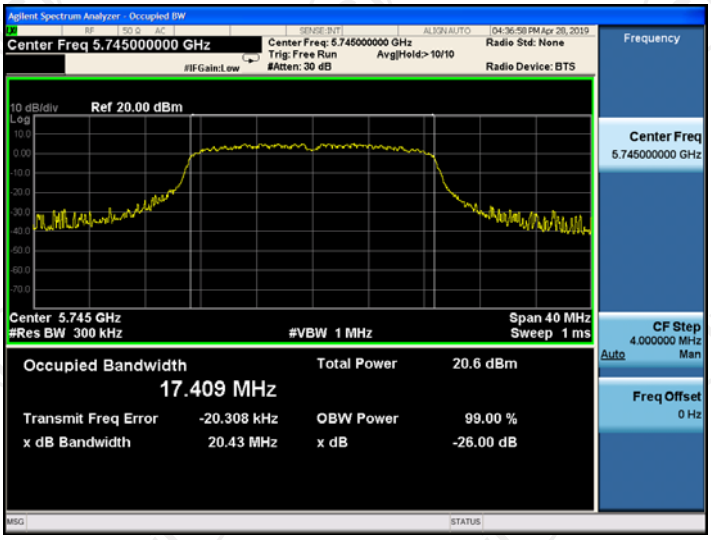


CH48

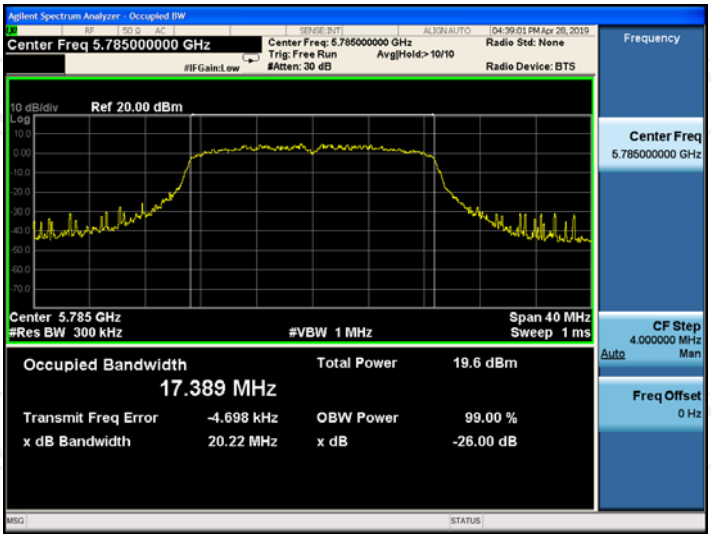


Band 3(5745-5825MHz)

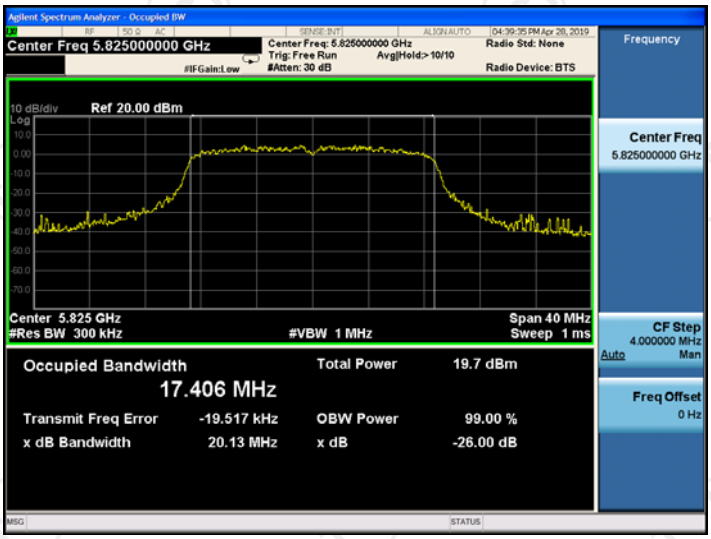
11n(HT20) CH149



CH157



CH165

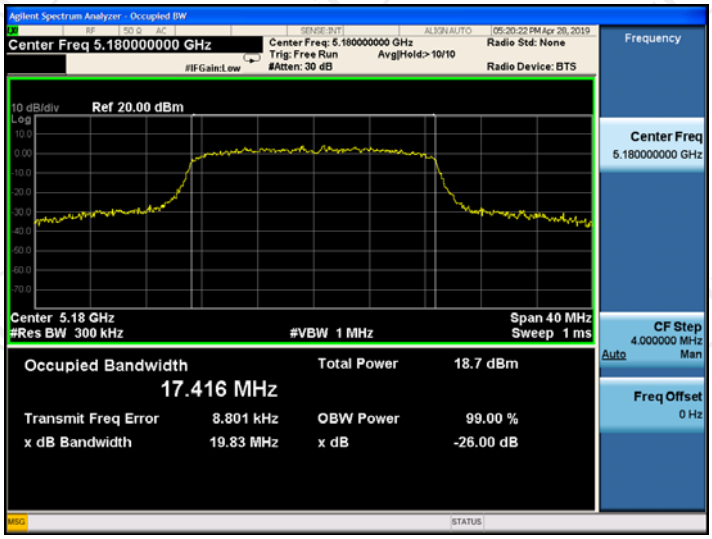


ANT 1

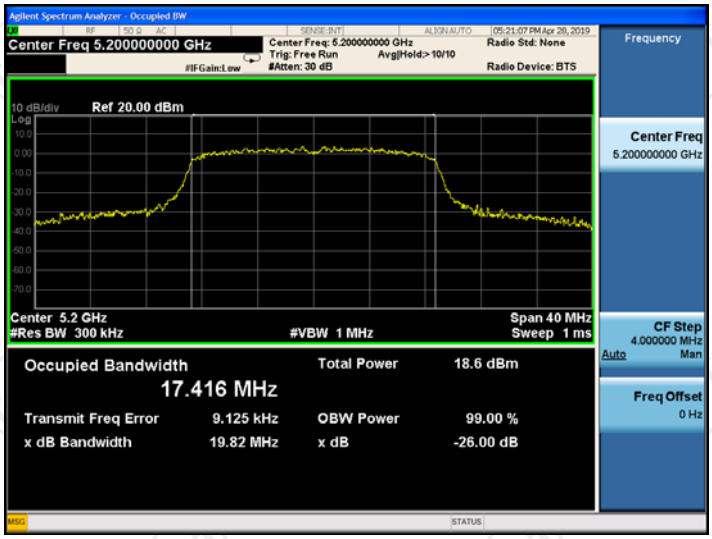
Band1 (5180-5240MHz)

11n(HT20)

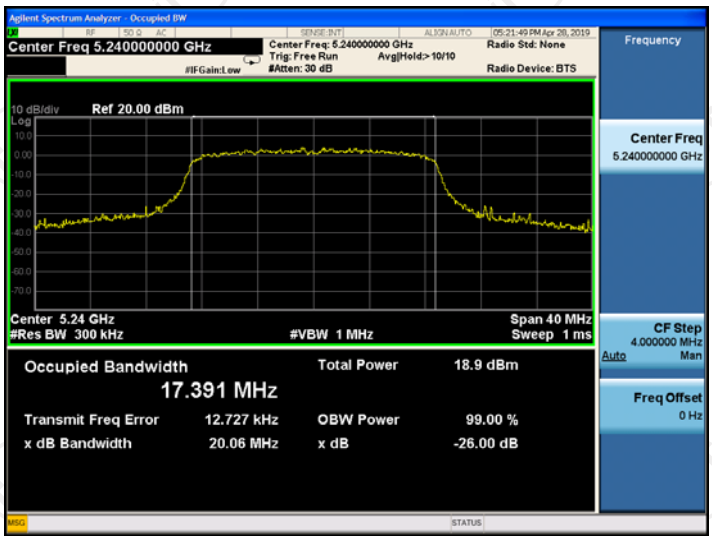
CH36



CH40

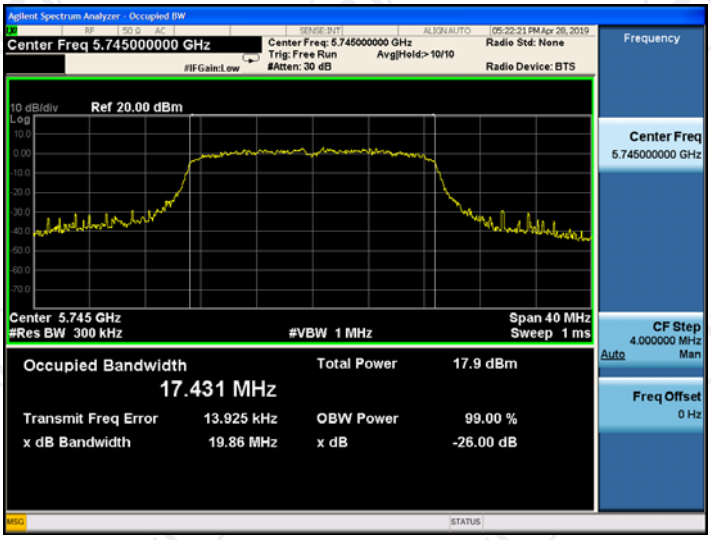


CH48

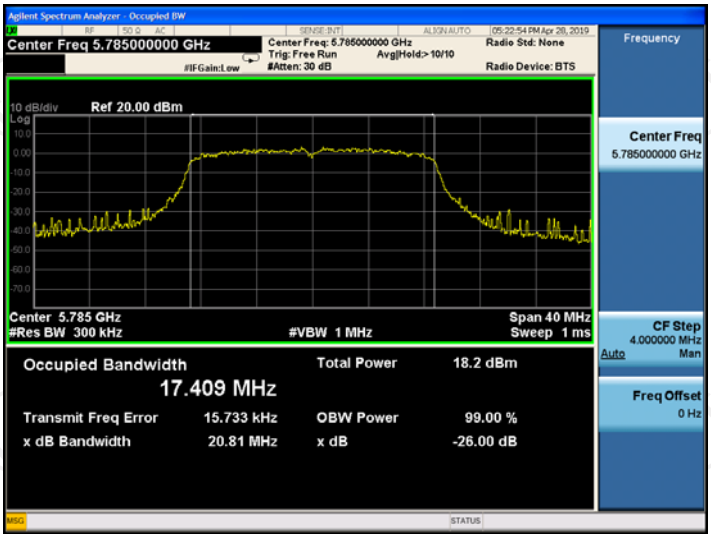


Band 3 (5745-5825MHz)

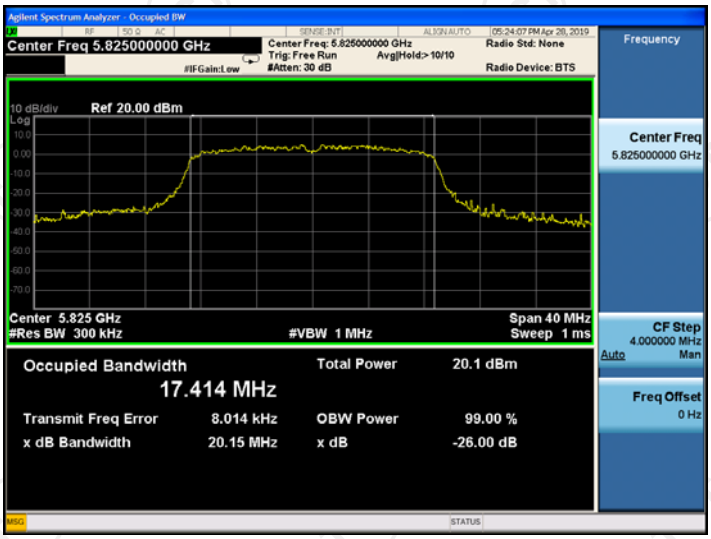
11n(HT20) CH149



CH157



CH165



6.6. Power Spectral Density

6.6.1. Test Specification

Test Requirement:	FCC Part15 E Section 15.407 (a)
Test Method:	KDB662911 D01 Multiple Transmitter Output v02r01 KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section F
Limit:	≤11.00dBm/MHz for Band 1 5180MHz-5240MHz(client device) ≤11.00dBm/MHz for Band 2A&2C 5240-5350&5470-5725 ≤30.00dBm/500KHz for Band 3 5725MHz-5850MHz The e.i,r,p spectral density for Band 1 5180MHz – 5240 MHz should not exceed 10dBm/MHz
Test Setup:	
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. Set the spectrum analyzer or EMI receiver span to view the entire emission bandwidth. 1. Set RBW = 510 kHz/1 MHz, VBW ≥ 3*RBW, Sweep time = Auto, Detector = RMS. 2. Allow the sweeps to continue until the trace stabilizes. 3. Use the peak marker function to determine the maximum amplitude level. 4. The E.I.R.P spectral density used radiated test method. At a test site that has been validated using the procedures of ANSI C63.4 or the latest CISPR 16-1-4 for measurements above 1 GHz, so as to simulate a near free-space environment.
Test Result:	PASS

6.6.2. Test Instruments

RF Test Room				
Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	N9020A	MY49100619	Sep. 20, 2019
RF Cable (9KHz-40GHz)	TCT	RE-03	N/A	Sep. 20, 2019
Antenna Connector	TCT	RFC-03	N/A	Sep. 20, 2019

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

6.6.3. Test data

Configuration Band 1 (5180-5240 MHz) / Antenna 0+Antenna 1						
Mode	Test channel	Power Spectral Density			Limit (dBm/MHz)	Result
		Ant0	Ant1	Total		
11n(HT20)	CH36	2.060	0.896	4.527	11	PASS
11n(HT20)	CH40	2.094	1.782	4.951	11	PASS
11n(HT20)	CH48	1.960	1.325	4.664	11	PASS

Note: 1. All antennas have the same gain. G_{ANT}=2.5dBi, Array Gain=10log(N_{ANT}/N_{SS})=3.01dBi

Directional Gain=G_{ANT}+ Array Gain=5.51dBi, 5.51dBi <6dBi so limit=11dBm/MHz

2. The total PSD method used the sum spectra maxima across the outputs.

Configuration Band 3(5745-5825MHz) / Antenna 0+Antenna 1						
Mode	Test channel	Power Spectral Density			Limit (dBm/MHz)	Result
		Ant0	Ant1	Total		
11n(HT20)	CH52	2.070	1.510	4.809	30	PASS
11n(HT20)	CH60	1.485	0.267	3.929	30	PASS
11n(HT20)	CH64	2.323	0.578	4.548	30	PASS

Note: 1. All antennas have the same gain. G_{ANT}=2.5dBi, Array Gain=10log(N_{ANT}/N_{SS})=3.01dBi

Directional Gain=G_{ANT}+ Array Gain=5.51dBi, 5.51dBi <6dBi so limit=30dBm/MHz

2. The total PSD method used the sum spectra maxima across the outputs.

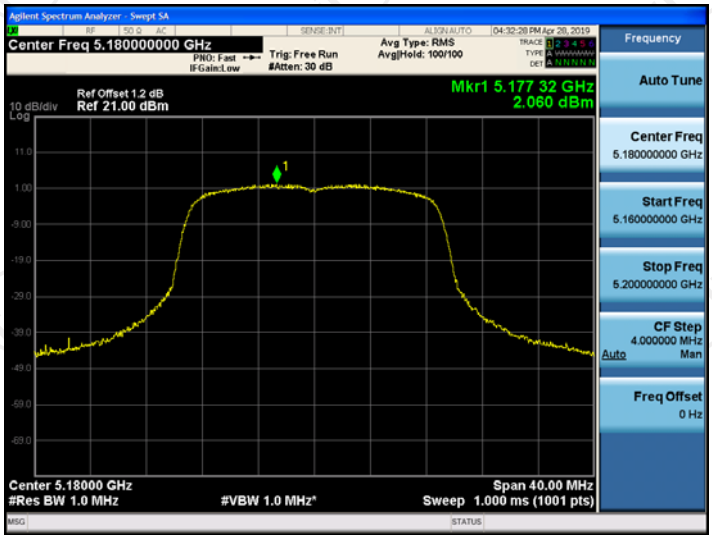
Test plots as follows:

Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

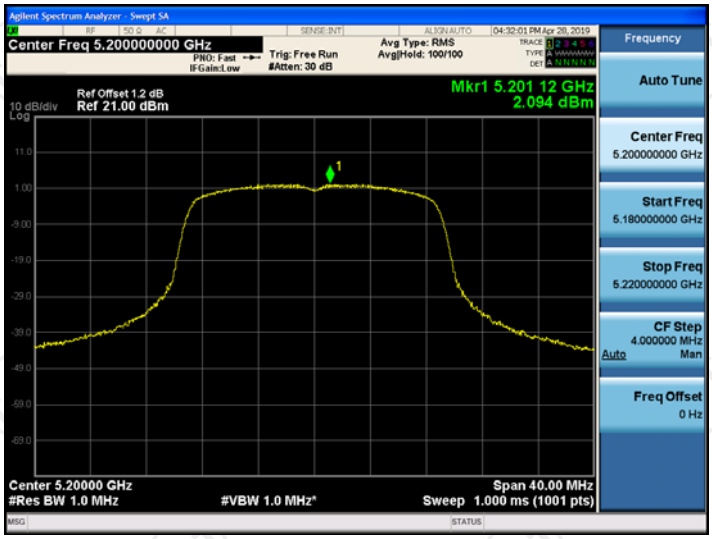
ANT 0

Band1 (5180-5240 MHz)

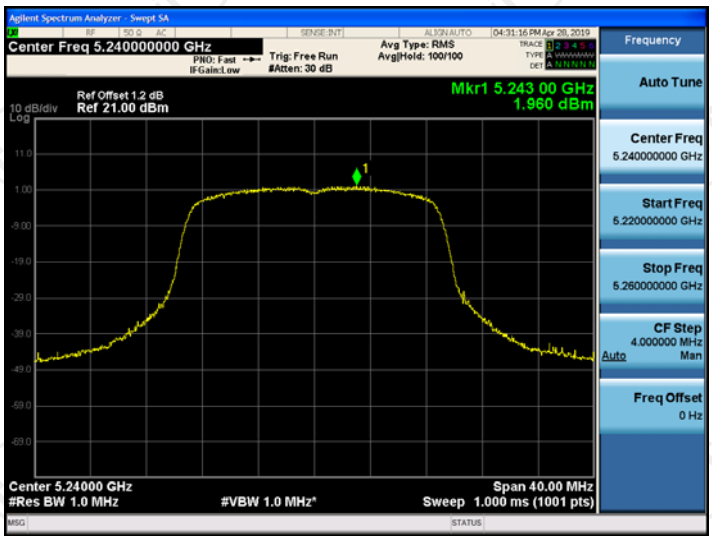
11n(HT20) CH36



CH40

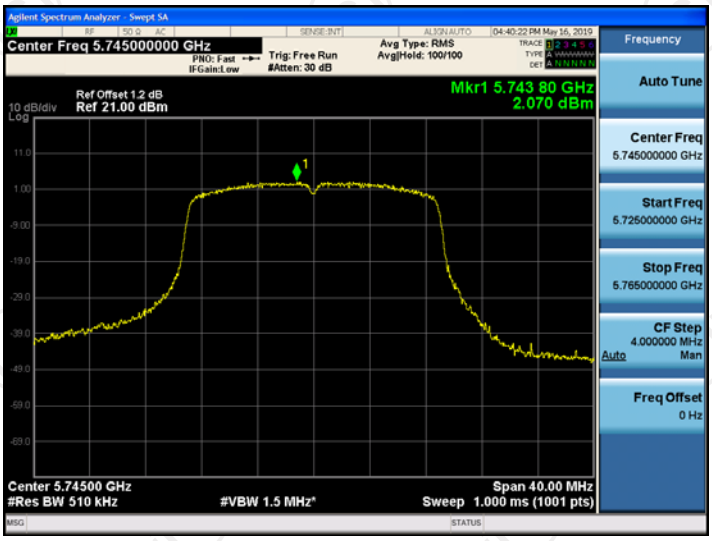


CH48

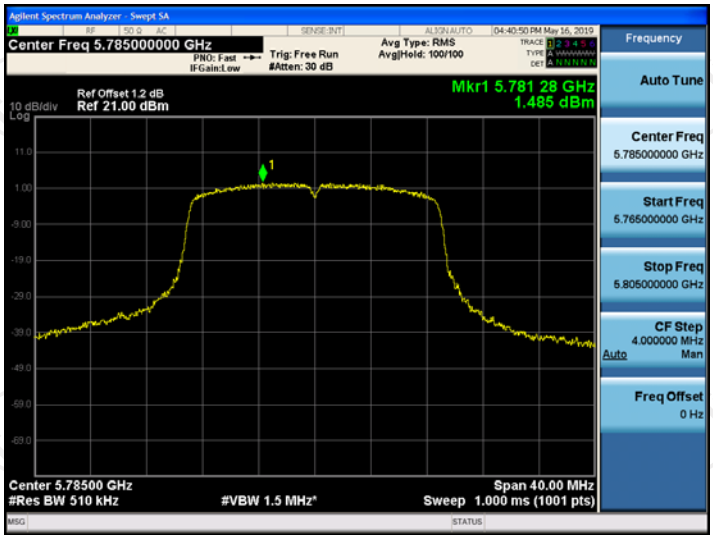


Band 3 (5745-5825MHz)

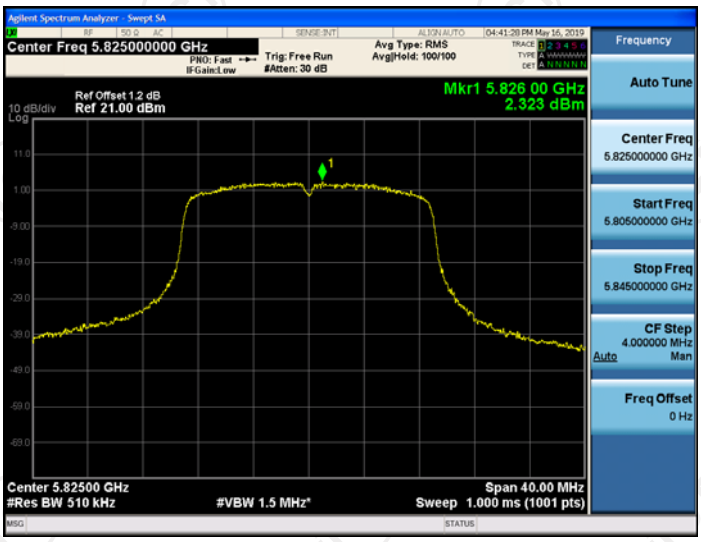
11n(HT20) CH149



CH157



CH165

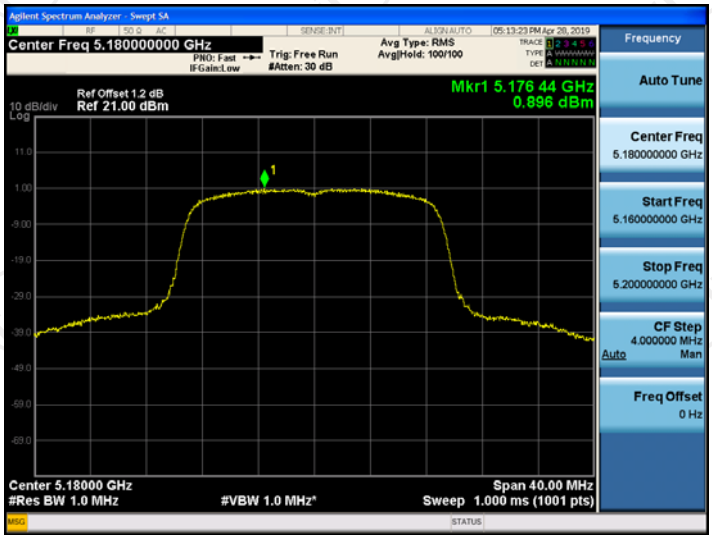


ANT 1

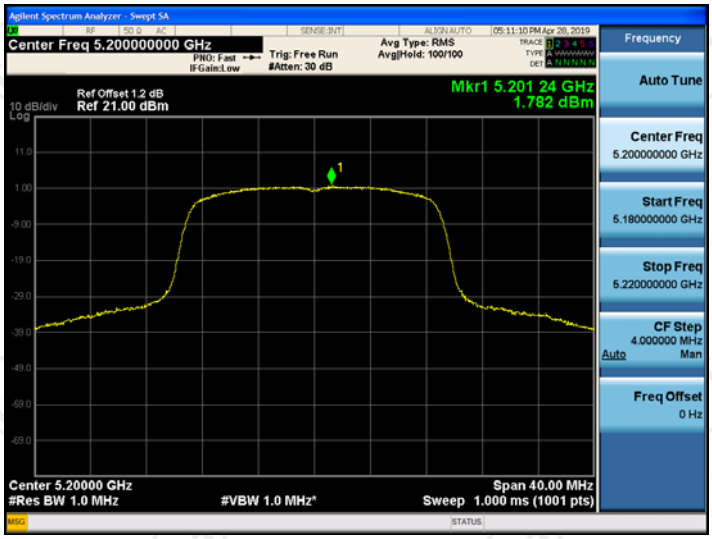
Band 1 (5180-5240 MHz)

11n(HT20)

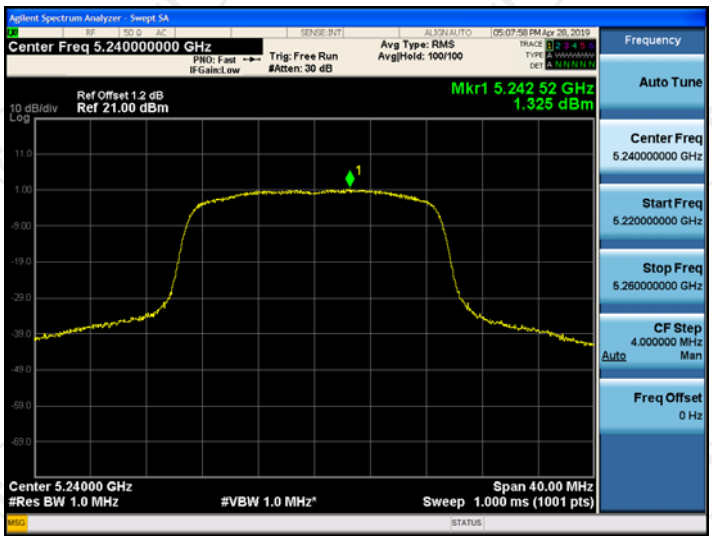
CH36



CH40

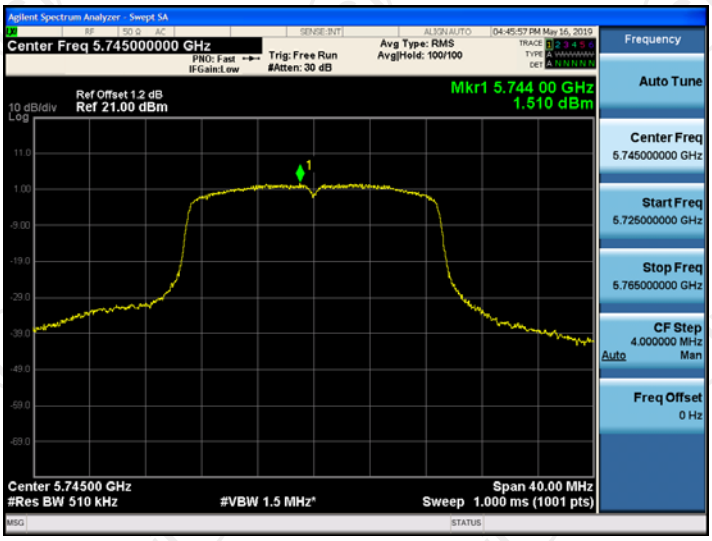


CH48

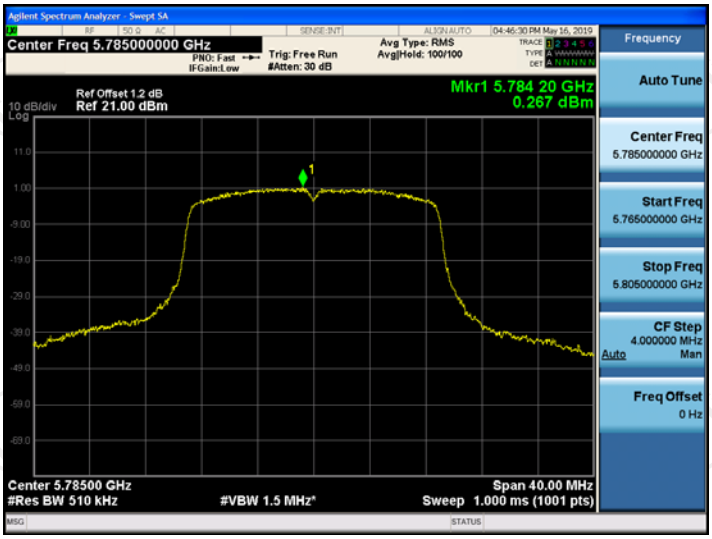


Band 3 (5745-5825MHz)

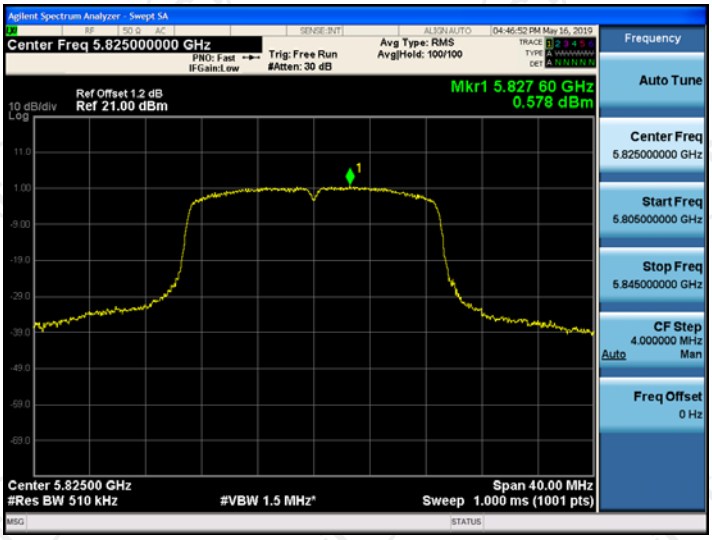
11n(HT20) CH149



CH157

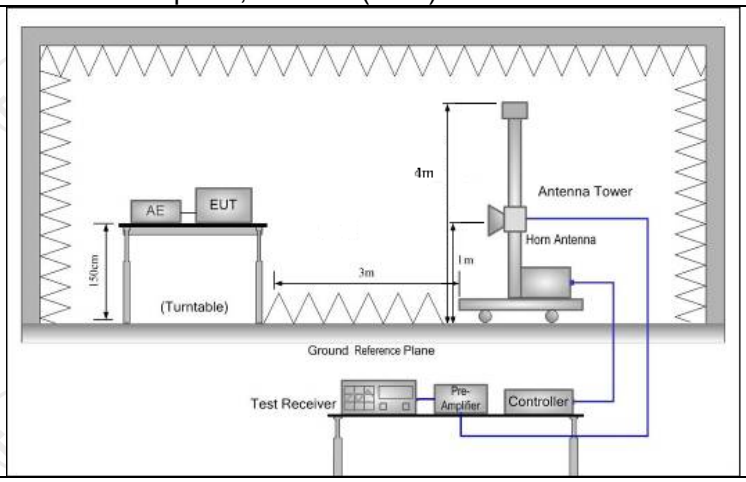


CH165



6.7. Band edge

6.7.1. Test Specification

Test Requirement:	FCC CFR47 Part 15E Section 15.407
Test Method:	ANSI C63.10 2013
Limit:	For Band 1&2A&2C: E[dBμV/m] = EIRP[dBm] + 95.2=68.2 dBμV/m, for EIRP(dBm)= **-27dBm** For Band 3(5715-5725MHz&5850-5860MHz): E[dBμV/m] = EIRP[dBm] + 95.2=78.2 dBμV/m, for EIRP(dBm)= **-17dBm;** For Band 3(other un-restricted band):E[dBμV/m] = EIRP[dBm] + 95.2=68.2 dBμV/m, for EIRP(dBm)= **-27dBm**
Test Setup:	
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was

	10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasipeak or average method as specified and then reported in a data sheet.
Test Result:	PASS

6.7.2. Test Instruments

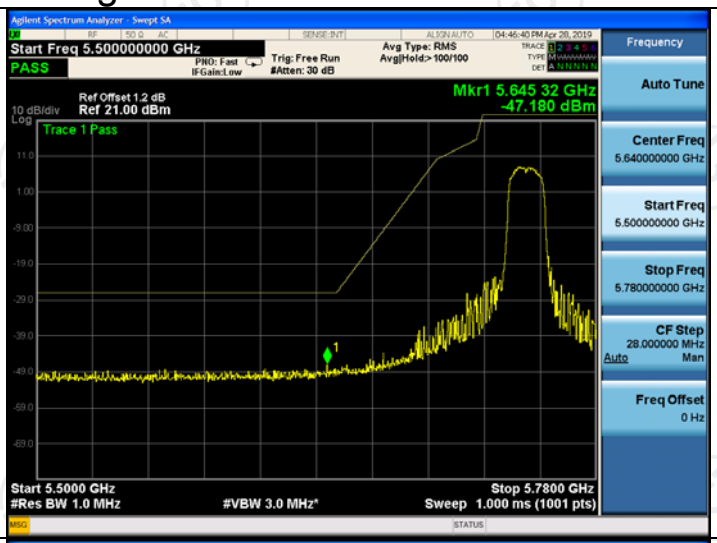
Radiated Emission Test Site (966)				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Test Receiver	ROHDE&SCHWARZ	ESIB7	100197	Jul. 17, 2019
Spectrum Analyzer	ROHDE&SCHWARZ	FSQ40	200061	Sep. 20, 2019
Spectrum Analyzer	ROHDE&SCHWARZ	FSP40	100056	Sep. 20, 2019
Spectrum Analyzer	Agilent	N9020A	MY49100619	Sep. 20, 2019
Pre-amplifier	EM Electronics Corporation CO.,LTD	EM30265	07032613	Sep. 16, 2019
Pre-amplifier	HP	8447D	2727A05017	Sep. 16, 2019
Loop antenna	ZHINAN	ZN30900A	12024	Oct. 20, 2019
Broadband Antenna	Schwarzbeck	VULB9163	340	Sep. 02, 2019
Horn Antenna	Schwarzbeck	BBHA 9120D	631	Oct. 20, 2019
Horn Antenna	A-INFO	LB-180400-KF	J211020657	Sep. 16, 2019
Coax cable (9KHz-1GHz)	TCT	RE-low-01	N/A	Sep. 16, 2019
Coax cable (9KHz-40GHz)	TCT	RE-high-02	N/A	Sep. 16, 2019
Coax cable (9KHz-1GHz)	TCT	RE-low-03	N/A	Sep. 16, 2019
Coax cable (9KHz-40GHz)	TCT	RE-high-04	N/A	Sep. 16, 2019
Antenna Mast	Keleto	RE-AM	N/A	N/A
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).*

6.7.3. Test Data

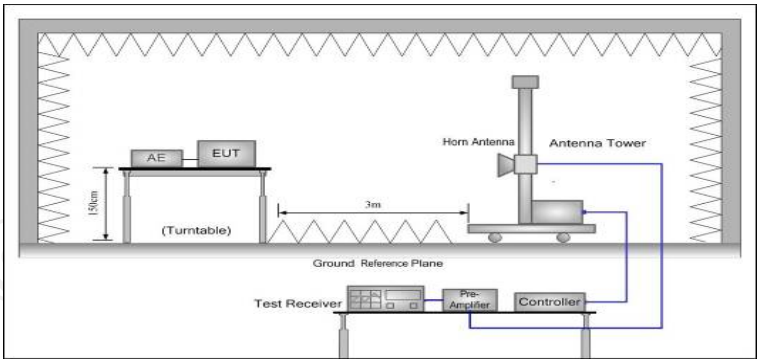
802.11 n HT20	CH	Freq. (MHz)	Read_level (dBuV/m)	Factor (dB)	Peak (dBuV/m)	Limit (dBuV/m) (Peak)	Limit (dBuV/m) (Avg)	Over	Ant. Pol. H/V
Band 1	Lowest	5150	42.53	6.37	48.90	68.2	54	-5.10	H
		5150	36.75	6.37	43.12	68.2	54	-10.88	V
	Highest	5350	40.36	8.36	48.72	68.2	54	-5.28	H
		5350	34.47	8.36	42.83	68.2	54	-11.17	V
Band 3	Lowest	5725	43.73	8.21	50.69	122.2	54	-3.31	H
		5725	43.18	8.21	50.14	122.2	54	-3.86	V
	Highest	5850	42.45	8.87	50.66	122.2	54	-3.34	H
		5850	40.61	8.87	48.82	122.2	54	-5.18	V
Remark: Factor(dB)=Ant. Factor+Cable Loss-Amp. Factor									

Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

Band 3 Band-edge for RF Conducted Emissions			
802.11n HT20 / LCH			
802.11n HT20 / HCH			

6.8. Spurious Emission

6.8.1.1. Test Specification

<table>
<tr><td>Test Requirement:</td><td>FCC CFR47 Part 15 Section 15.407 & 15.209 & 15.205</td></tr>
<tr><td>Test Method:</td><td>KDB 789033 D02 v02r01</td></tr>
<tr><td>Frequency Range:</td><td>Band 1 & 2A: 4.5 GHz to 5.15 GHz and 5.35GHz to 5.46GHz
Band 2C &3: 5.35 GHz to 5.46 GHz</td></tr>
<tr><td>Measurement Distance:</td><td>3 m</td></tr>
<tr><td>Antenna Polarization:</td><td>Horizontal & Vertical</td></tr>
<tr><td>Operation mode:</td><td>Transmitting mode with modulation</td></tr>
<tr><td>Receiver Setup:</td><td>
<table>
<tr><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td>RMS</td><td>1MHz</td><td>3MHz</td><td>Average Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><td>Frequency</td><td>Limit (dBuV/m @3m)</td><td>Remark</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>74</td><td>Peak Value</td></tr>
<tr><td>54</td><td>Average Value</td></tr>
</table>
</td></tr>
<tr><td>Test setup:</td><td>Above 1GHz
 
</td></tr>
<tr><td>Test Procedure:</td><td>1. The testing follows FCC KDB Publication No. 789033 D02 General UNII Test Procedures New Rules v02r01. Section G) Unwanted emissions measurement.
2. For the radiated emission test below 1GHz:
The EUT was placed on a turntable with 0.8 meter above ground. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower. 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</td></tr>
</table>

	reading. A pre-amp and a high PASS filter are used for the test in order to get better signal level. For the radiated emission test above 1GHz: Place the measurement antenna on a turntable with 1.5 meter above ground, which is away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane. 3. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level 4. For measurement below 1GHz, 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. Use the following spectrum analyzer settings: (1) Span shall wide enough to fully capture the emission being measured; (2) Set RBW=100 kHz for f < 1 GHz; VBW ≥RBW; Sweep = auto; Detector function = peak; Trace = max hold; (3) Set RBW = 1 MHz, VBW= 3MHz for f＞1 GHz for peak measurement. For average measurement: VBW = 10 Hz, when duty cycle is no less than 98 percent. VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation. (4) A 5.8GHz high –PASS filter is used druing radiated emissions above 1GHz measurement.
Test results:	PASS

Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

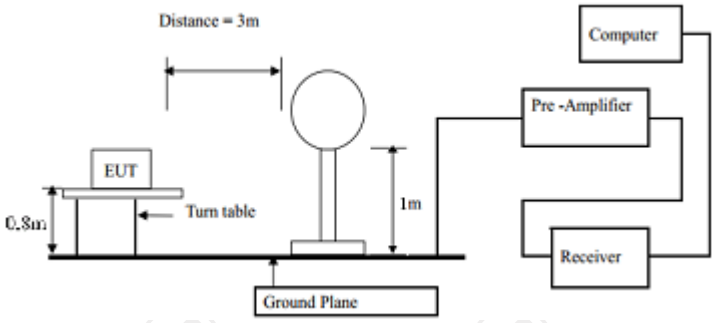
6.8.1.2. Test Instruments

Radiated Emission Test Site (966)				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Test Receiver	ROHDE&SCHWARZ	ESIB7	100197	Jul. 17, 2019
Spectrum Analyzer	ROHDE&SCHWARZ	FSQ40	200061	Sep. 20, 2019
Spectrum Analyzer	ROHDE&SCHWARZ	FSP40	100056	Sep. 20, 2019
Spectrum Analyzer	Agilent	N9020A	MY49100619	Sep. 20, 2019
Pre-amplifier	EM Electronics Corporation CO.,LTD	EM30265	07032613	Sep. 16, 2019
Pre-amplifier	HP	8447D	2727A05017	Sep. 16, 2019
Loop antenna	ZHINAN	ZN30900A	12024	Oct. 20, 2019
Broadband Antenna	Schwarzbeck	VULB9163	340	Sep. 02, 2019
Horn Antenna	Schwarzbeck	BBHA 9120D	631	Oct. 20, 2019
Horn Antenna	A-INFO	LB-180400-KF	J211020657	Sep. 16, 2019
Coax cable (9KHz-1GHz)	TCT	RE-low-01	N/A	Sep. 16, 2019
Coax cable (9KHz-40GHz)	TCT	RE-high-02	N/A	Sep. 16, 2019
Coax cable (9KHz-1GHz)	TCT	RE-low-03	N/A	Sep. 16, 2019
Coax cable (9KHz-40GHz)	TCT	RE-high-04	N/A	Sep. 16, 2019
Antenna Mast	Keleto	CC-A-4M	N/A	N/A
EMI Test Software	Shurple Technology	EZ-EMC	N/A	N/A

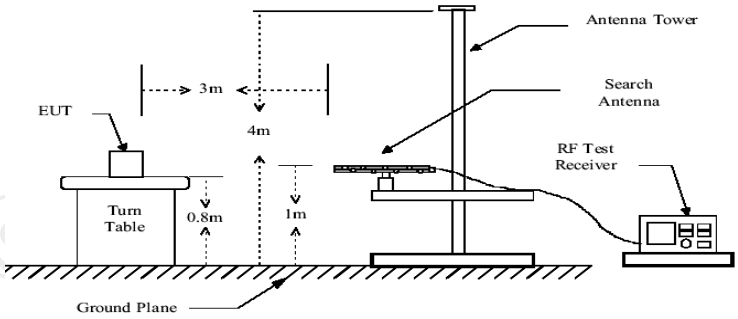
Note: *The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).*

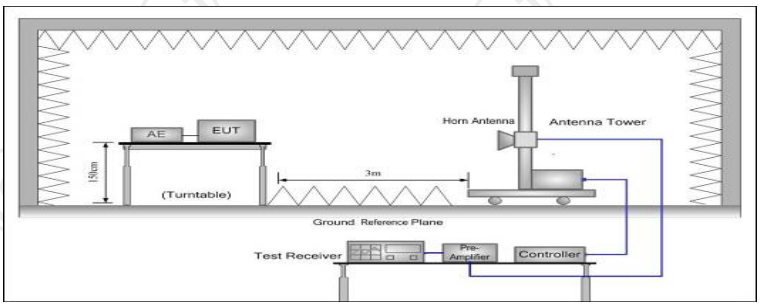
6.8.2. Unwanted Emissions out of the Restricted Bands

6.8.2.1. Test Specification

<table>
<tr><td>Test Requirement:</td><td>FCC CFR47 Part 15 Section 15.407 & 15.209 & 15.205</td></tr>
<tr><td>Test Method:</td><td>KDB 789033 D02 v02r01</td></tr>
<tr><td>Frequency Range:</td><td>9kHz to 40GHz</td></tr>
<tr><td>Measurement Distance:</td><td>3 m</td></tr>
<tr><td>Antenna Polarization:</td><td>Horizontal & Vertical</td></tr>
<tr><td>Operation mode:</td><td>Transmitting mode with modulation</td></tr>
<tr><td>Receiver Setup:</td><td>
<table>
<tr><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr>
<tr><td>9kHz- 150kHz</td><td>Quasi-peak</td><td>200Hz</td><td>1kHz</td><td>Quasi-peak Value</td></tr>
<tr><td>150kHz-30MHz</td><td>Quasi-peak</td><td>9kHz</td><td>30kHz</td><td>Quasi-peak Value</td></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>120KHz</td><td>300KHz</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td>Peak</td><td>1MHz</td><td>10Hz</td><td>Average Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>Unwanted spurious emissions fallen in restricted bands per FCC Part15.205 shall comply with the general field strength limits set forth in § 15.209 as below table,
<table>
<tr><td>Frequency</td><td>Field Strength (microvolts/meter)</td><td>Measurement Distance (meters)</td></tr>
<tr><td>0.009-0.490</td><td>2400/F(KHz)</td><td>300</td></tr>
<tr><td>0.490-1.705</td><td>24000/F(KHz)</td><td>30</td></tr>
<tr><td>1.705-30</td><td>30</td><td>30</td></tr>
<tr><td>30-88</td><td>100</td><td>3</td></tr>
<tr><td>88-216</td><td>150</td><td>3</td></tr>
<tr><td>216-960</td><td>200</td><td>3</td></tr>
<tr><td>Above 960</td><td>500</td><td>3</td></tr>
</table>
<table>
<tr><td>Frequency</td><td>Limit (dBuV/m @3m)</td><td>Detector</td></tr>
<tr><td rowspan="2">Above 1G</td><td>74.0</td><td>Peak</td></tr>
<tr><td>54.0</td><td>Average</td></tr>
</table>
</td></tr>
<tr><td>Test setup:</td><td>For radiated emissions below 30MHz


30MHz to 1GHz</td></tr>
</table>

<table>
<tr><td></td><td> 

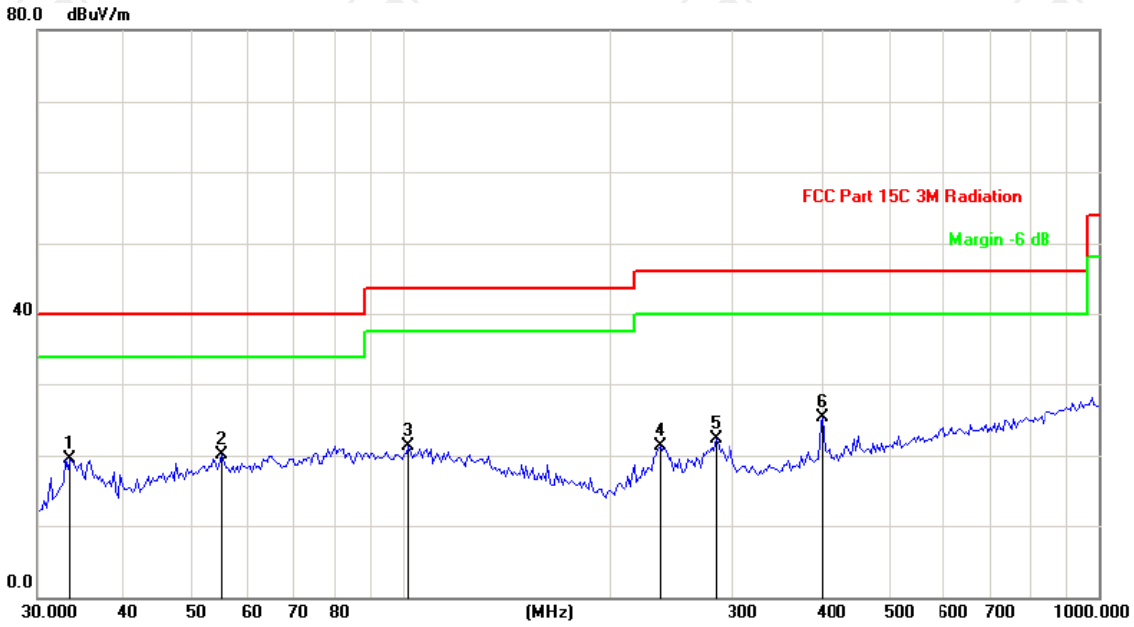
Above 1GHz

</td></tr>
<tr><td>Test Procedure:</td><td>1. The EUT was placed on the top of a rotating table 0.8 meters above the groundat a 3 meter camber. The table was rotated 360 degrees todetermine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, whichwas mounted on the top of a variable-height antenna tower.
3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and thenthe antenna was tuned to heights from 1 meter to 4 meters and the rotatablewas turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and SpecifiedBandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limitspecified, then testing could be stopped and the peak values of the EUT wouldbe reported. Otherwise the emissions that did not have 10dB margin would bere-tested one by one using peak, quasi-peak or average method as specified andthen reported in a data sheet.</td></tr>
<tr><td>Test results:</td><td>PASS</td></tr>
</table>

6.8.3. Test Data

Please refer to following diagram for individual

Below 1GHz

Horizontal:



Site

Limit: FCC Part 15C 3M Radiation

Polarization: *Horizontal*

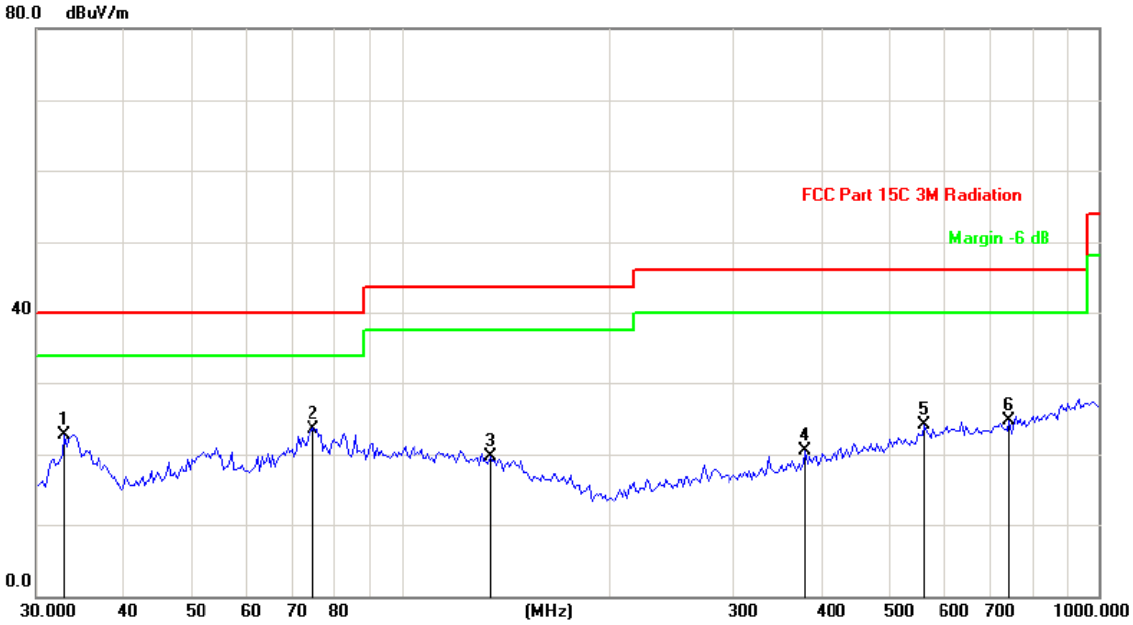
Power:

Temperature: 25

Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		33.3349	30.61	-11.02	19.59	40.00	-20.41	peak
2	*	55.2883	31.33	-11.27	20.06	40.00	-19.94	peak
3		101.8932	29.54	-8.17	21.37	43.50	-22.13	peak
4		235.1346	34.32	-13.00	21.32	46.00	-24.68	peak
5		282.2702	33.72	-11.51	22.21	46.00	-23.79	peak
6		401.1050	34.17	-8.94	25.23	46.00	-20.77	peak

Vertical:



Site

Limit: FCC Part 15C 3M Radiation

Polarization: *Vertical*

Power:

Temperature: 25

Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		32.8697	33.65	-11.02	22.63	40.00	-17.37	peak
2	*	74.7934	39.76	-16.16	23.60	40.00	-16.40	peak
3		134.0194	35.31	-15.68	19.63	43.50	-23.87	peak
4		379.1780	29.74	-9.25	20.49	46.00	-25.51	peak
5		562.0143	30.76	-6.70	24.06	46.00	-21.94	peak
6		744.4265	29.33	-4.58	24.75	46.00	-21.25	peak

Note: *1.The low frequency, which started from 9KHz~30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported*

2. Measurements were conducted in all three channels (high, middle, low) and all modulation (802.11n(HT20)),and the worst case Mode (Lowest channel and 802.11n(HT20)) was submitted only.

Modulation Type: Band 1									
11n(HT20) CH36: 5180MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10360	H	41.64	---	8.02	49.66	---	74	54	-4.34
15540	H	42.38	---	9.87	52.25	---	74	54	-1.75
---	H	---	---	---	---	---	---	---	---
10360	V	41.46	---	8.02	49.48	---	74	54	-4.52
15540	V	39.92	---	9.87	49.79	---	74	54	-4.21
---	V	---	---	---	---	---	---	---	---

11n(HT20) CH40: 5200MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10400	H	40.05	---	7.97	48.02	---	74	54	-5.98
15600	H	41.73	---	9.83	51.56	---	74	54	-2.44
---	H	---	---	---	---	---	---	---	---
10400	V	43.27	---	7.97	51.24	---	74	54	-2.76
15600	V	40.51	---	9.83	50.34	---	74	54	-3.66
---	V	---	---	---	---	---	---	---	---

11n(HT20) CH48: 5240MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10480	H	40.19	---	7.97	48.16	---	74	54	-5.84
15720	H	39.80	---	9.83	49.63	---	74	54	-4.37
---	H	---	---	---	---	---	---	---	---
10480	V	41.26	---	7.97	49.23	---	74	54	-4.77
15720	V	40.65	---	9.83	50.48	---	74	54	-3.52
---	V	---	---	---	---	---	---	---	---

Note:

1. *Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier*
2. *Margin (dB) = Emission Level (Peak) (dBμV/m)-Average limit (dBμV/m)*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
4. *Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency. The highest test frequency is 40GHz.*
5. *Data of measurement shown "---"in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.*

Modulation Type: Band 3									
11n(HT20) CH151: 5745MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11510	H	41.08	---	8.09	49.17	---	74	54	-4.83
17265	H	40.62	---	9.67	50.29	---	74	54	-3.71
---	H	---	---	---	---	---	---	---	---
11510	V	42.74	---	8.09	50.83	---	74	54	-3.17
17265	V	40.27	---	9.67	49.94	---	74	54	-4.06
---	V	---	---	---	---	---	---	---	---

11n(HT20) CH157: 5785MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11570	H	41.93	---	8.10	50.03	---	74	54	-3.97
17355	H	42.46	---	9.65	52.11	---	74	54	-1.89
---	H	---	---	---	---	---	---	---	---
11570	V	40.65	---	8.10	48.75	---	74	54	-5.25
17355	V	40.81	---	9.65	50.46	---	74	54	-3.54
---	V	---	---	---	---	---	---	---	---

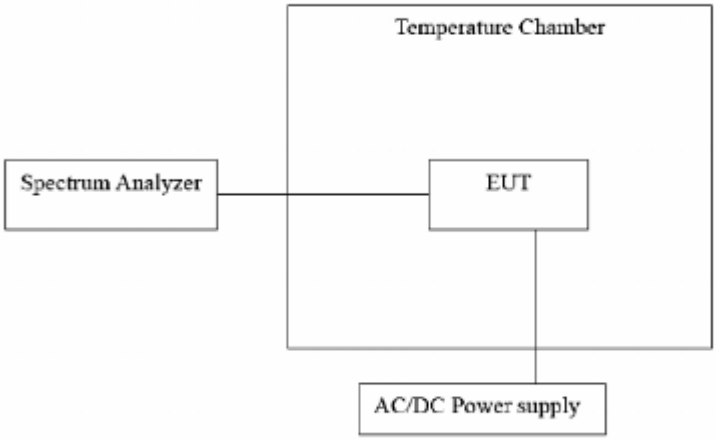
11n(HT20) CH165: 5825MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11650	H	40.19	---	8.12	48.31	---	74	54	-5.69
17475	H	39.30	---	9.62	48.92	---	74	54	-5.08
---	H	---	---	---	---	---	---	---	---
11650	V	43.04	---	8.12	51.16	---	74	54	-2.84
17475	V	41.28	---	9.62	50.90	---	74	54	-3.10
---	V	---	---	---	---	---	---	---	---

Note:

1. *Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier*
2. *Margin (dB) = Emission Level (Peak) (dBμV/m)-Average limit (dBμV/m)*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
4. *Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency. The highest test frequency is 40GHz.*
5. *Data of measurement shown "---"in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.*

6.9. Frequency Stability Measurement

6.9.1. Test Specification

Test Requirement:	FCC Part15 Section 15.407(g)
Test Method:	ANSI C63.10: 2013
Limit:	The frequency tolerance shall be maintained within the band of operation frequency over a temperature variation of 0 degrees to 45 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C.
Test Setup:	
Test Procedure:	The EUT was placed inside the environmental test chamber and powered by nominal AC/DC voltage. b. Turn the EUT on and couple its output to a spectrum analyzer. c. Turn the EUT off and set the chamber to the highest temperature specified. d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize. e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature. f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.
Test Result:	PASS
Remark:	Pre-scan was performed at Antenna 0 and Antenna 1, the worst case was found. Only the test data of Antenna 0 was shown in this report.

Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

Test plots as follows:

Test mode:	802.11n(HT20)	Frequency(MHz):	5180
Temperature (°C)	Voltage(DC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.6V	5180.0092	9200	PASS
35		5180.0064	6400	PASS
25		5179.9878	-12200	PASS
15		5179.9983	-1700	PASS
5		5180.0038	3800	PASS
0		5180.0042	4200	PASS
20	3.2	5179.9831	-16900	PASS
	3.6	5180.0034	3400	PASS
	4.2	5179.9825	-17500	PASS

Test mode:	802.11n(HT20)	Frequency(MHz):	5200
Temperature (°C)	Voltage(DC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.6V	5200.0090	9000	PASS
35		5200.0089	8900	PASS
25		5200.0078	7800	PASS
15		5200.0043	4300	PASS
5		5199.9980	-2000	PASS
0		5199.9879	-12100	PASS
20	3.2	5199.9957	-4300	PASS
	3.6	5200.0031	3100	PASS
	4.2	5200.0053	5300	PASS

Test mode:	802.11n(HT20)	Frequency(MHz):	5240
Temperature (°C)	Voltage(DC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.6V	5240.0043	4300	PASS
35		5240.0029	2900	PASS
25		5240.0024	2400	PASS
15		5239.9991	-900	PASS
5		5239.9983	-1700	PASS
0		5239.9979	-2100	PASS
20	3.2	5240.0035	3500	PASS
	3.6	5240.0010	1000	PASS
	4.2	5239.9985	-1500	PASS

Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

Test mode:	802.11n(HT20)	Frequency(MHz):	5745

Temperature (°C)	Voltage(DC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.6V	5745.0012	1200	PASS
35		5745.0014	1400	PASS
25		5744.9960	-4000	PASS
15		5744.9955	-4500	PASS
5		5745.0033	3300	PASS
0		5745.0041	4100	PASS
20	3.2	5745.0076	7600	PASS
	3.6	5745.0071	7100	PASS
	4.2	5745.0021	2100	PASS

Test mode:	802.11n(HT20)	Frequency(MHz):	5785

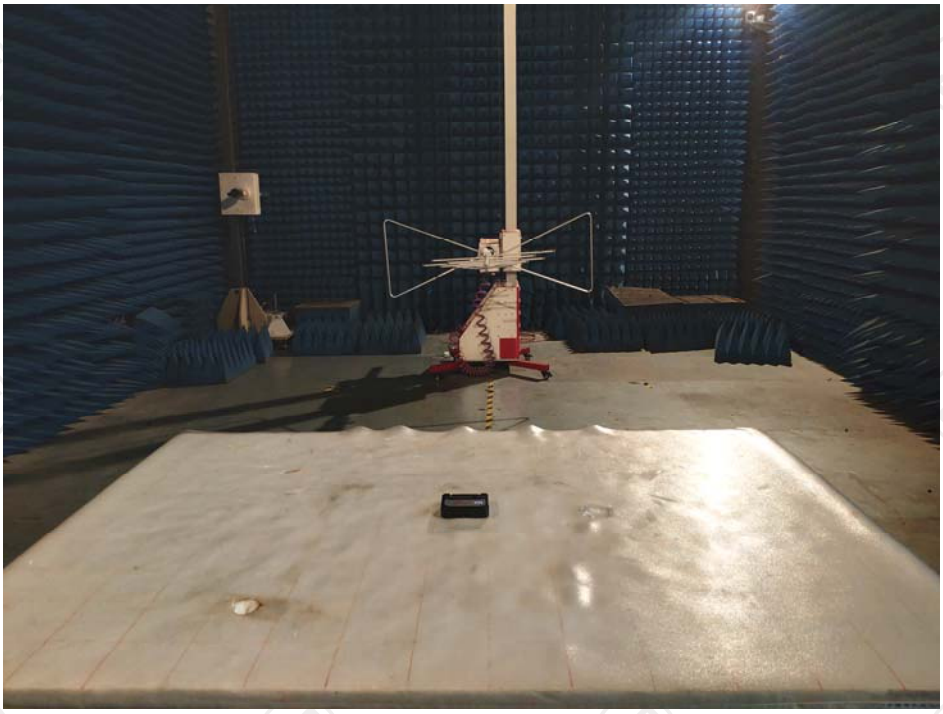
Temperature (°C)	Voltage(DC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.6V	5785.0083	8300	PASS
35		5785.0030	3000	PASS
25		5785.0028	2800	PASS
15		5785.0008	800	PASS
5		5785.0025	2500	PASS
0		5785.0043	4300	PASS
20	3.2	5785.0057	5700	PASS
	3.6	5785.0026	2600	PASS
	4.2	5784.9975	-2500	PASS

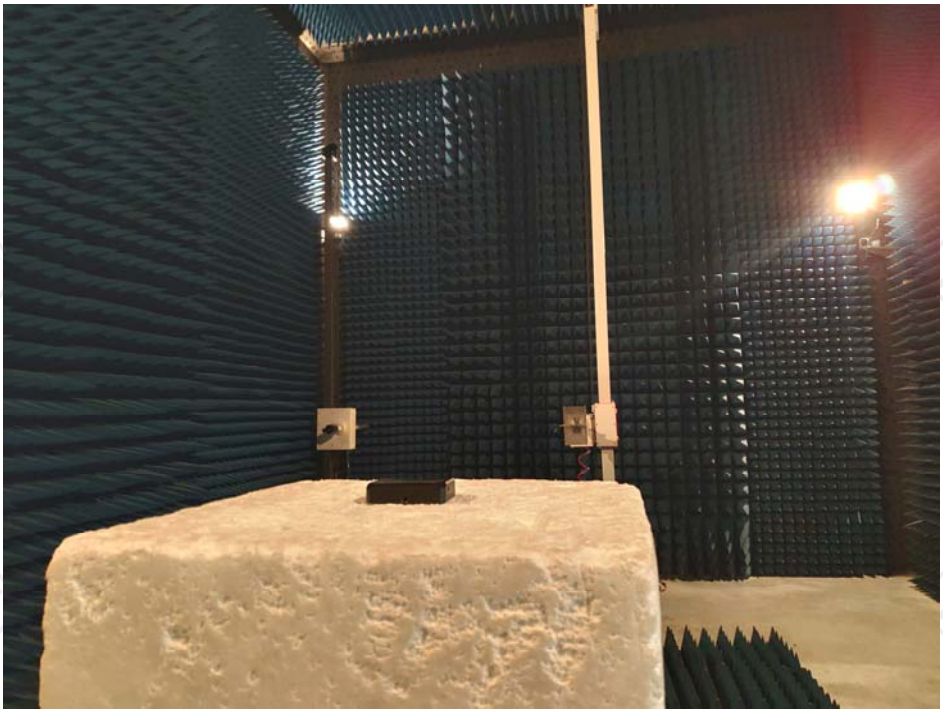
Test mode:	802.11n(HT20)	Frequency(MHz):	5825

Temperature (°C)	Voltage(DC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.6V	5824.9813	-18700	PASS
35		5825.0081	8100	PASS
25		5824.9953	-4700	PASS
15		5824.9985	-1500	PASS
5		5825.0015	1500	PASS
0		5825.0046	4600	PASS
20	3.2	5825.0042	4200	PASS
	3.6	5824.9987	-1300	PASS
	4.2	5825.0024	2400	PASS

Appendix A: Photographs of Test Setup

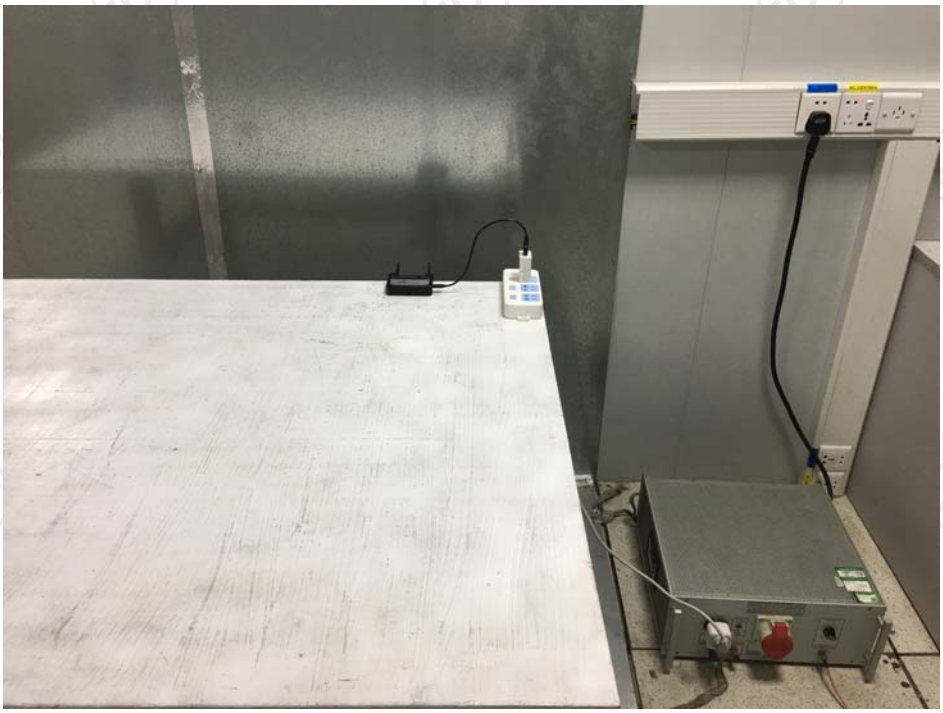
Product: 5G Wireless Video Transmitter
Model: WIT01
Radiated Emission





Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

Conducted Emission



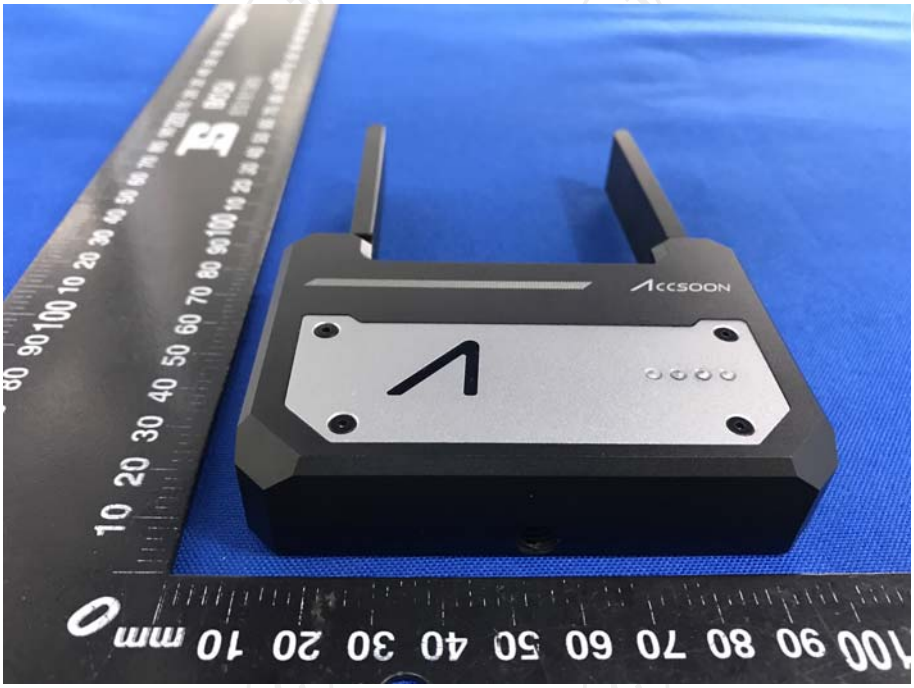
Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

Appendix B: Photographs of EUT

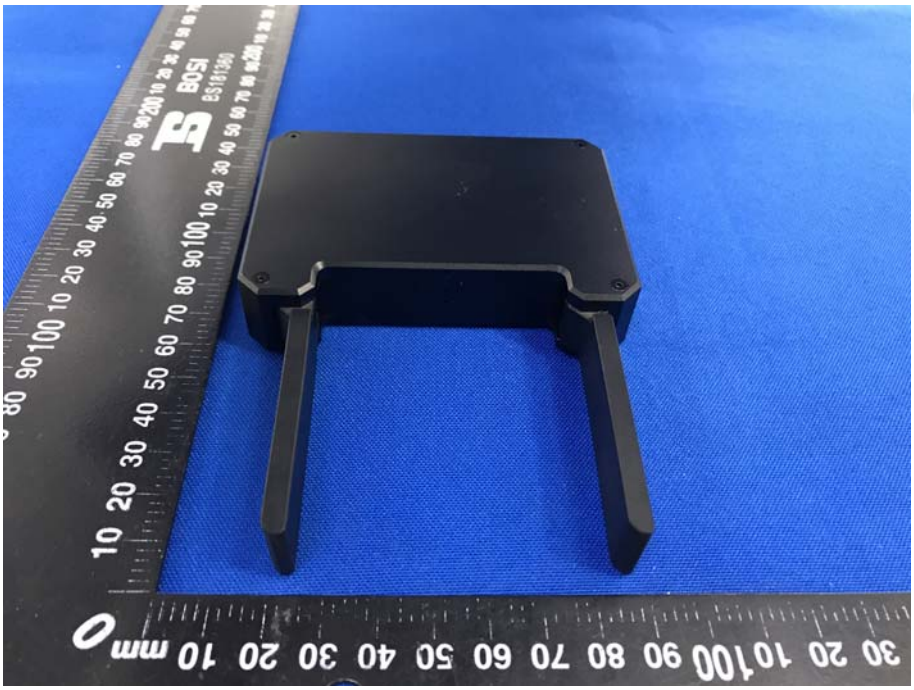
Product: 5G Wireless Video Transmitter

Model: WIT01

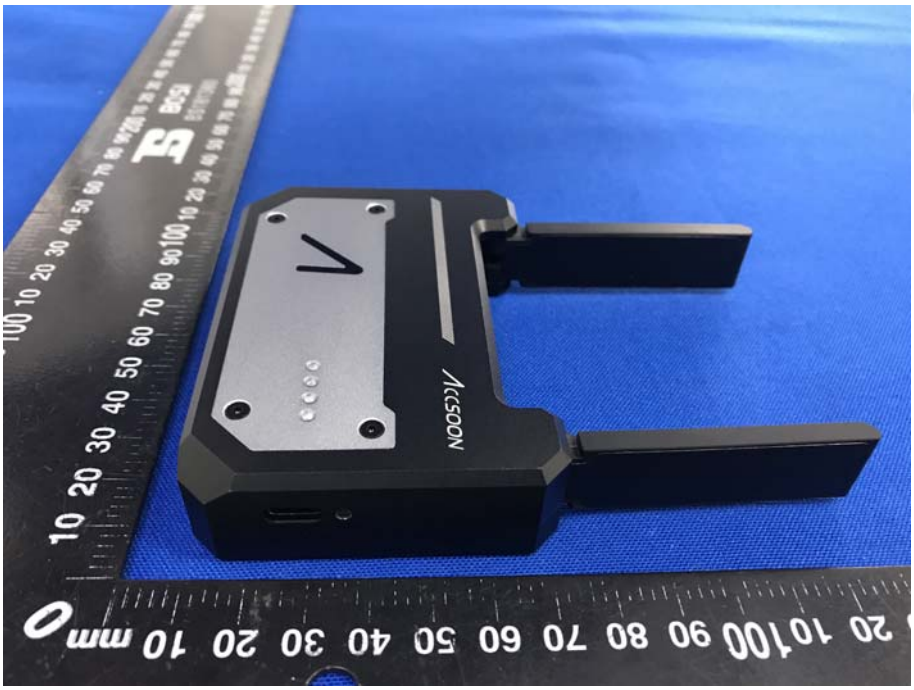
External Photos



Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

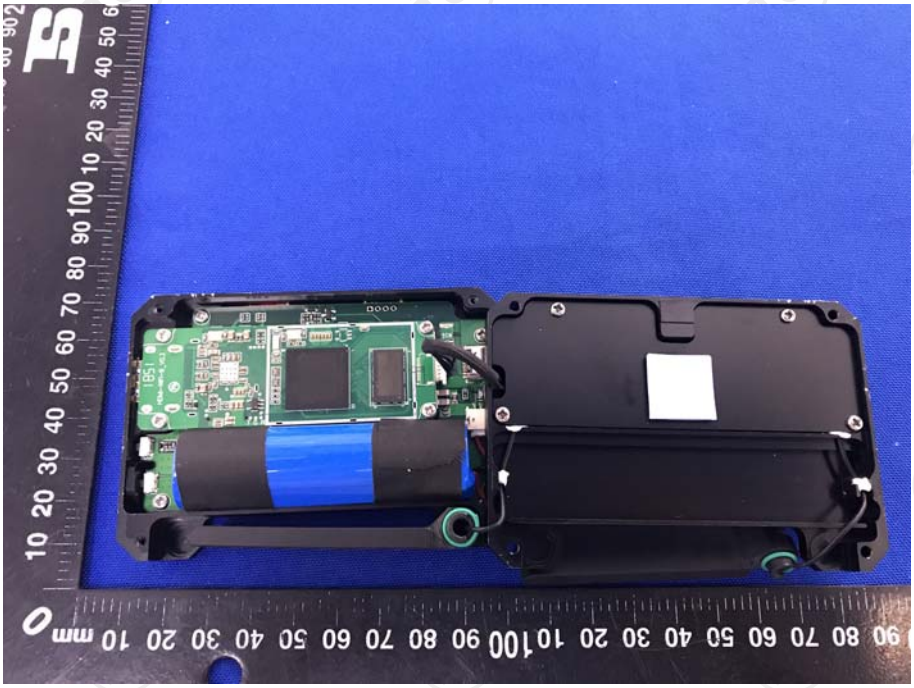


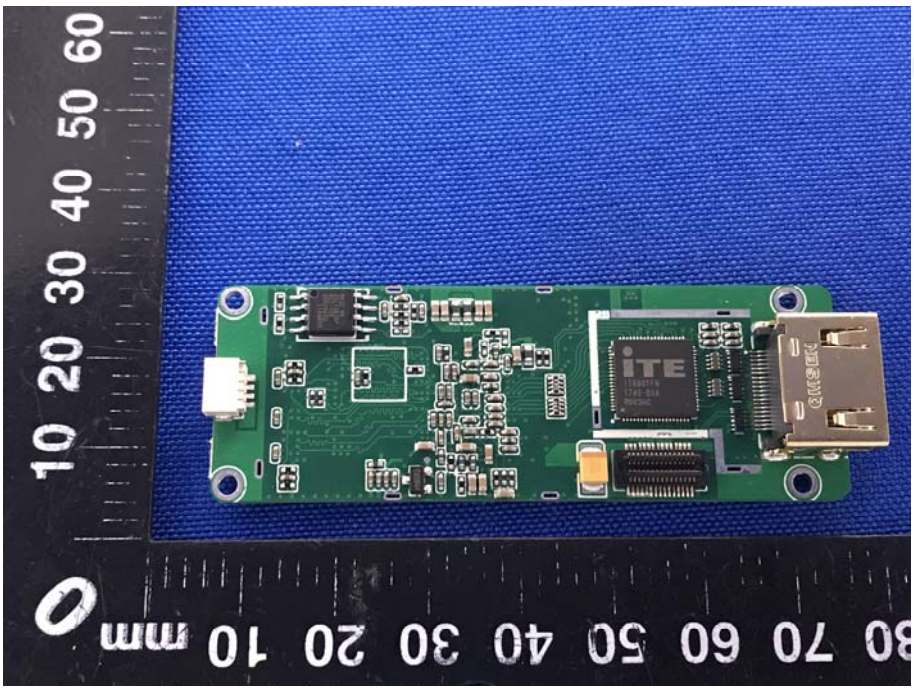
Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com



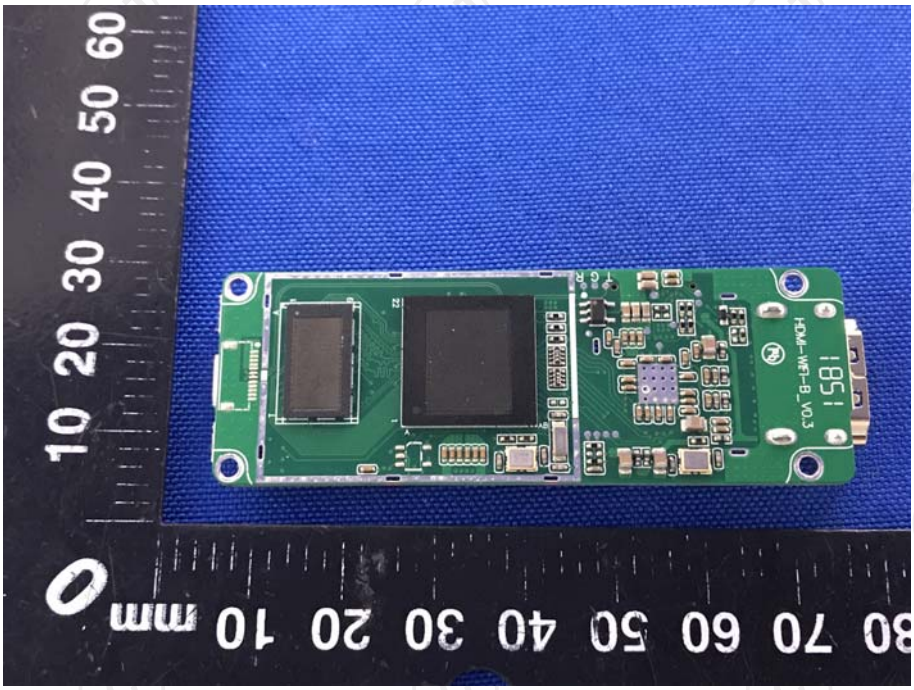
Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

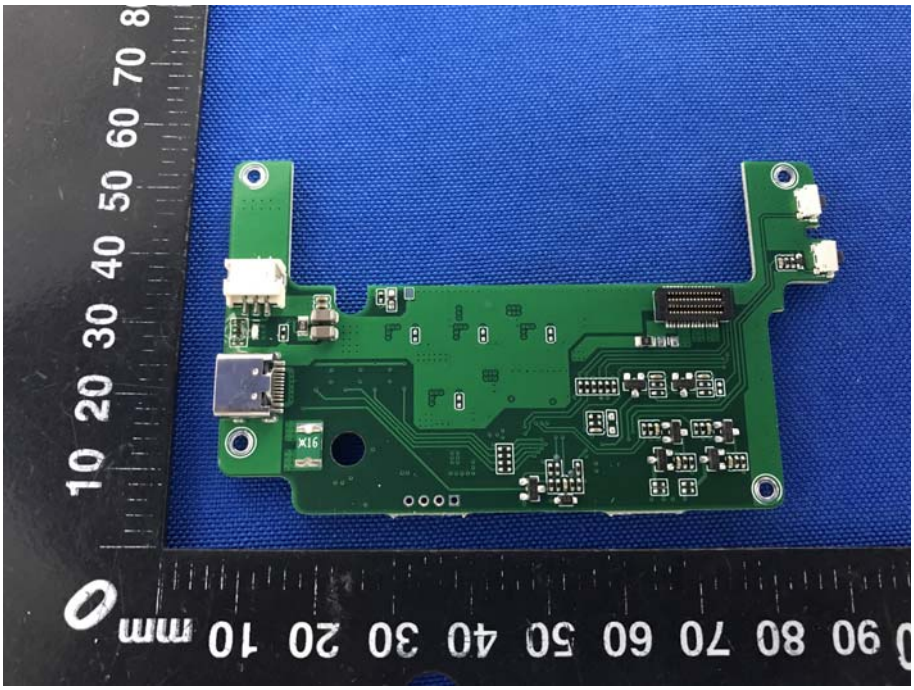
Product: 5G Wireless Video Transmitter
Model: WIT01
Internal Photos



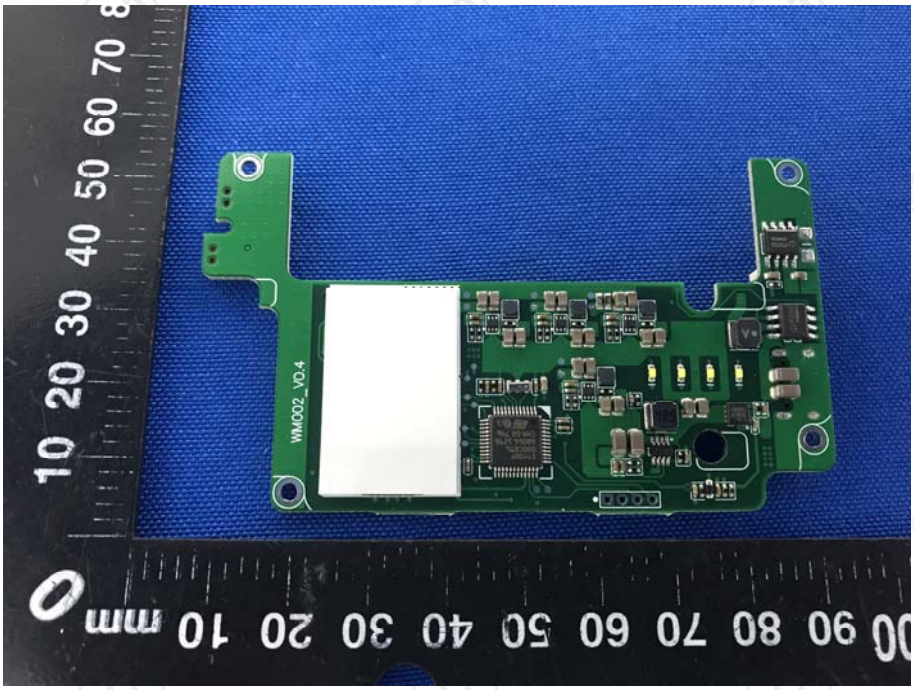


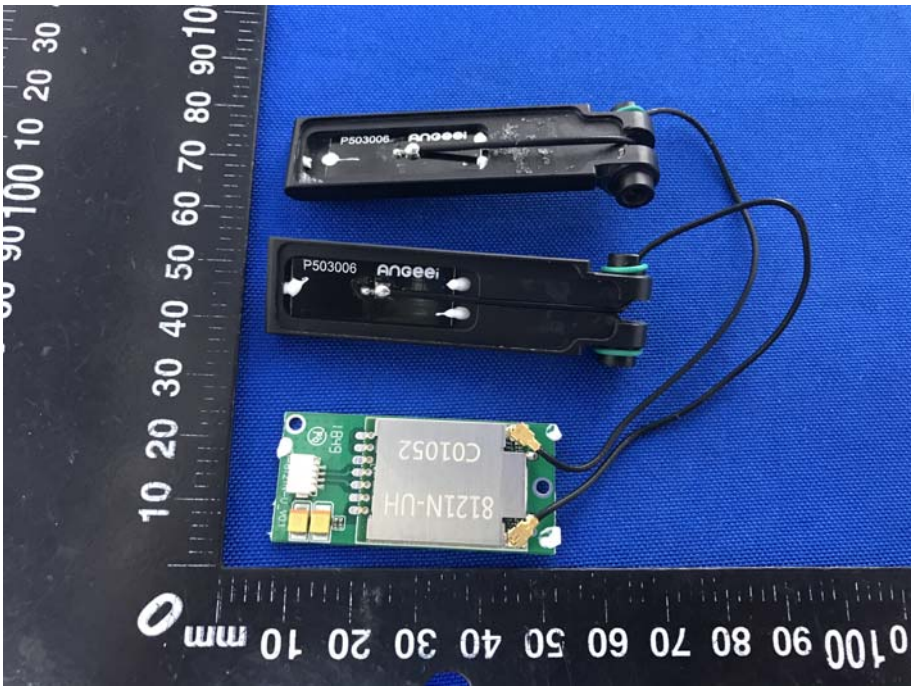
Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com



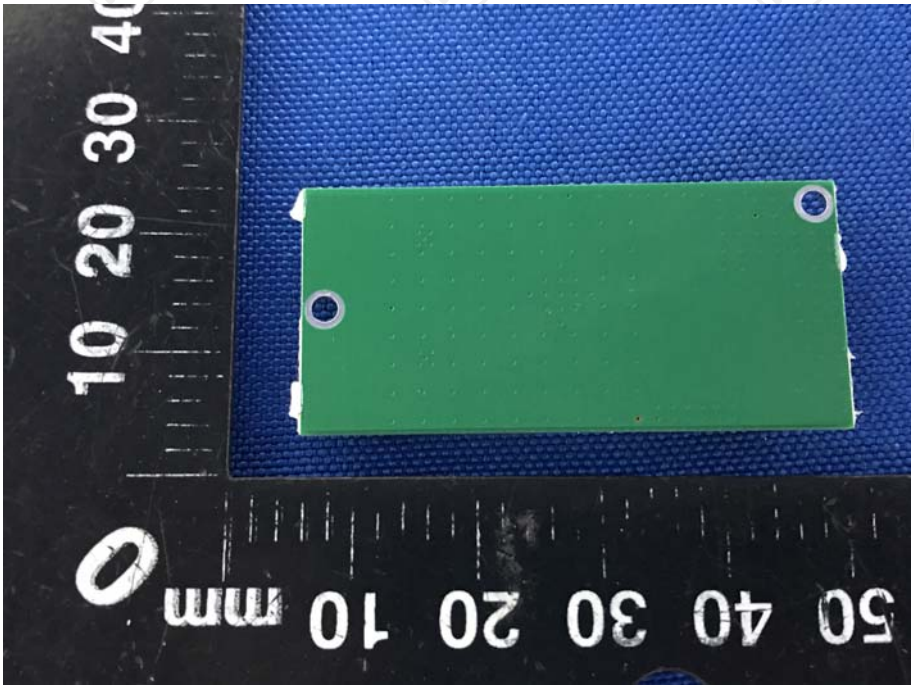


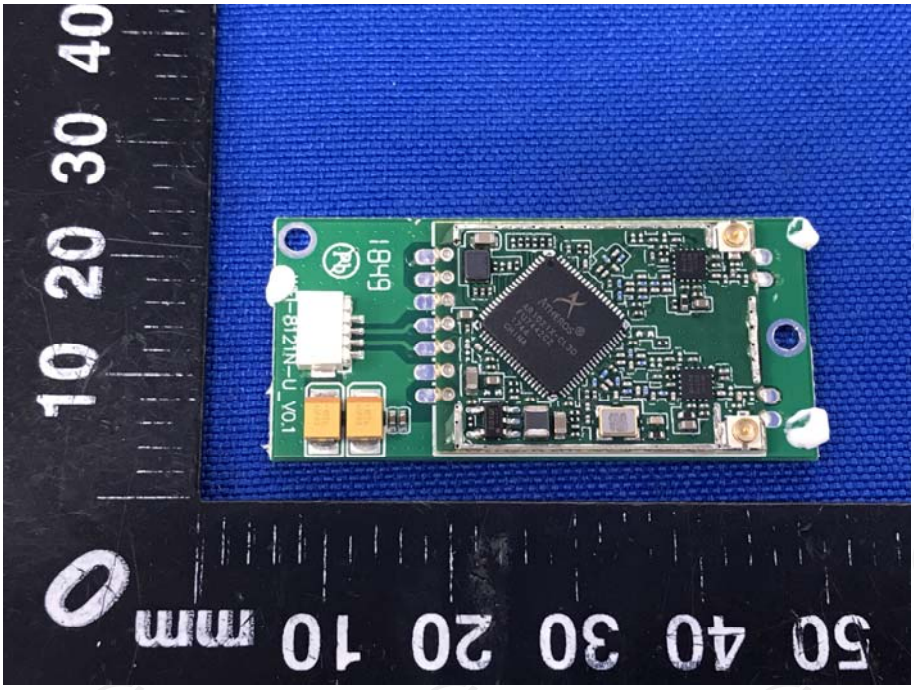
Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com


WM002_V0.4

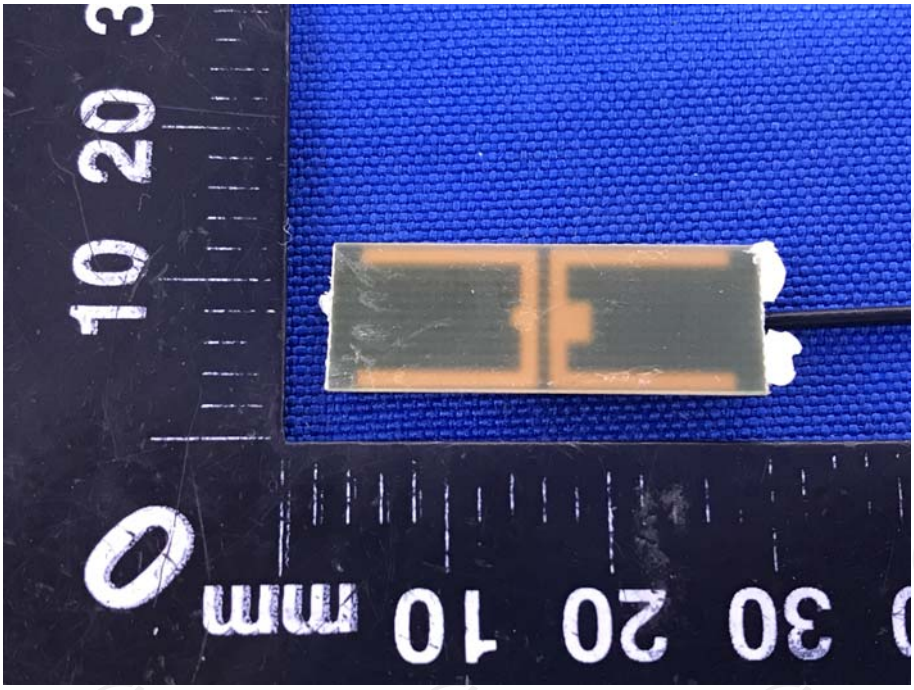

P503006
ANGEEI
P503006
ANGEEI
C01052
8121N-UH

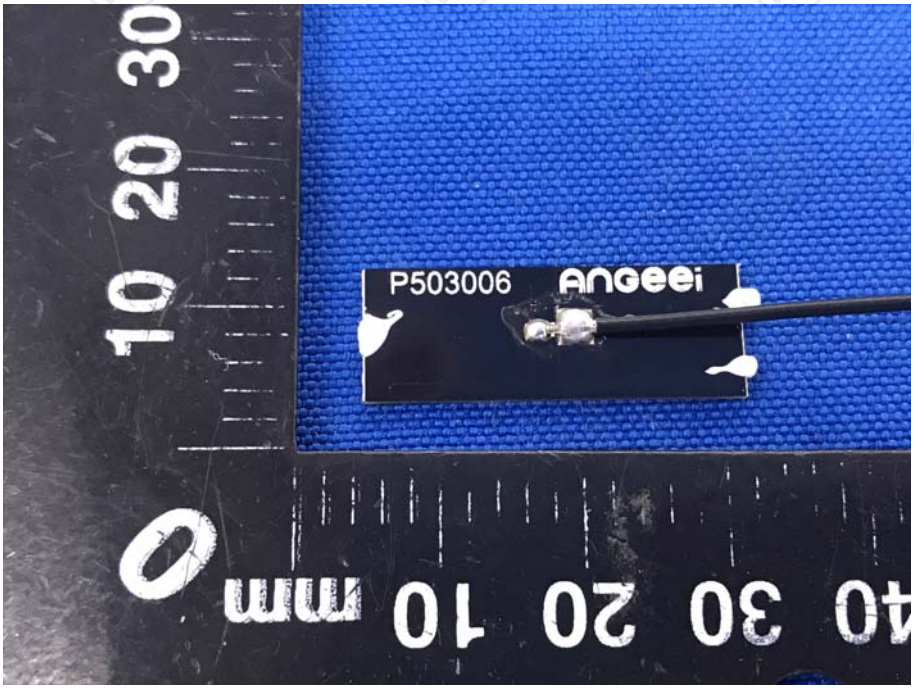

8121N-UH
C01052



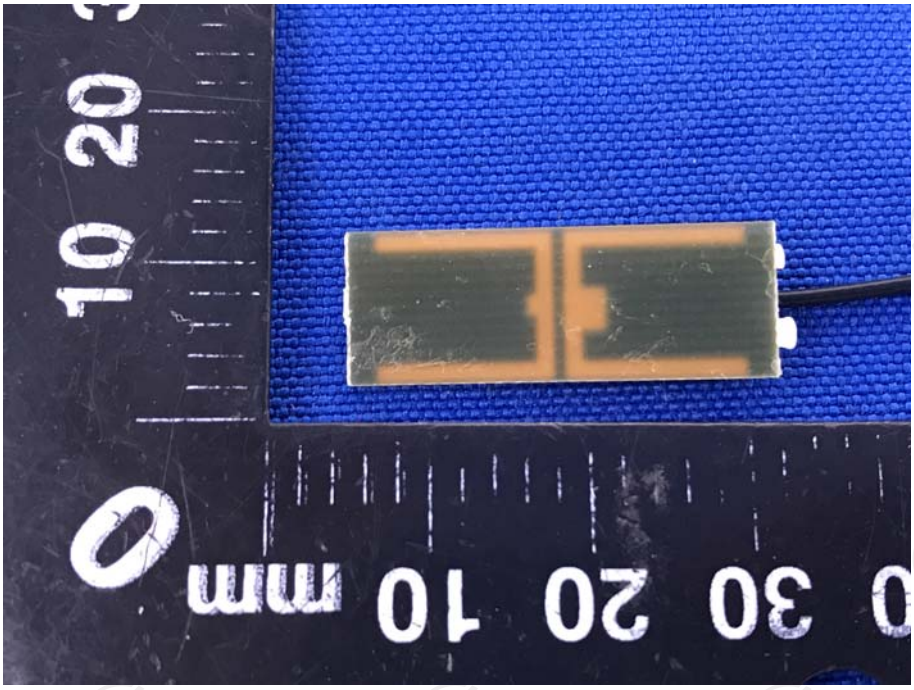


Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

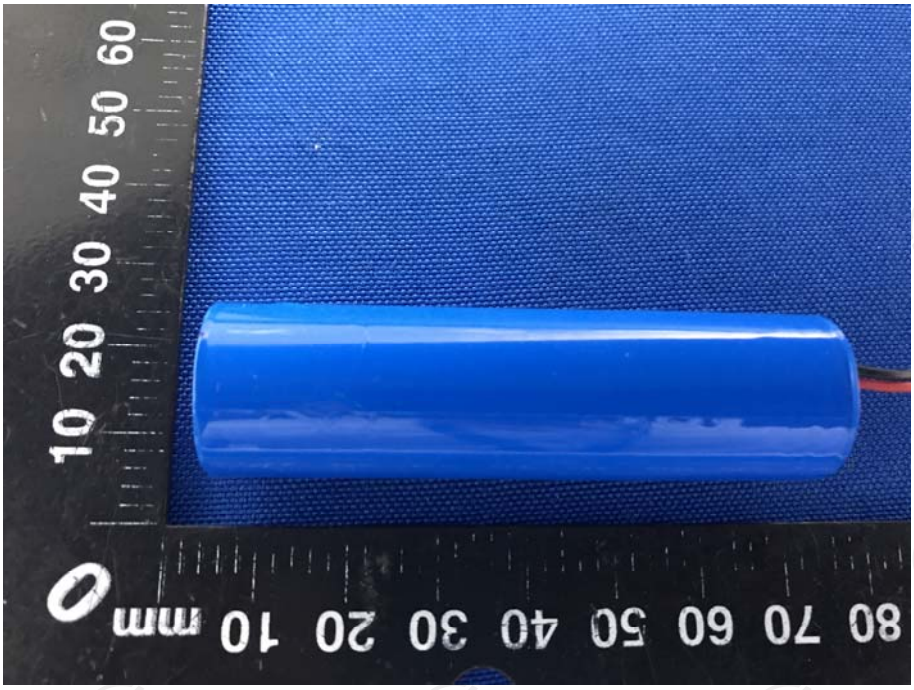




Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com


10 20
0
mm 10 20 30 0


10 20 30 40 50 60 7
0
mm 10 20 30 40 50 60 70 80



*******END OF REPORT*******

Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com