FCC REPORT
(UNII)

Applicant: Autel Robotics Co., Ltd.

Address of Applicant: 9th Floor, Bldg. B1,Zhiyuan,1001 Xueyuan Rd., Xili, Nanshan, Shenzhen 518055, China

Equipment Under Test (EUT)

Product Name: DragonFish Ground Control Station

Model No.: DFRC-2

Trade mark: AUTEL ROBOTICS

FCC ID: 2AGNTDFRC2TBA

Applicable standards: FCC CFR Title 47 Part 15 Subpart E Section 15.407

Date of sample receipt: 24 Sep., 2021

Date of Test: 24 Sep., to 20 Oct., 2021

Date of report issued: 20 Oct., 2021

Test Result: PASS*

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Bruce Zhang
Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the JYT product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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2 Version

Version No.	Date	Description
00	*20 Oct., 2021*	*Original*

Tested by: Mike.ou ***Date:*** *20 Oct., 2021*

Test Engineer

Reviewed by: Winner zhang ***Date:*** *20 Oct., 2021*

Project Engineer

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4 Test Summary

Test Item	Section in CFR 47	Test Data	Test Result
Antenna requirement	15.203 & 15.407 (a)	See Section 6.1	Pass
AC Power Line Conducted Emission	15.207	See Section 6.2	Pass
Duty Cycle	ANSI C63.10-2013	Appendix A – 5G Wi-Fi	Pass
Conducted Peak Output Power	15.407 (a) (1) (iv) & (a) (3)	Appendix A – 5G Wi-Fi	Pass
26dB Occupied Bandwidth	15.407 (a) (12)	Appendix A – 5G Wi-Fi	Pass
6dB Emission Bandwidth	15.407(e)	Appendix A – 5G Wi-Fi	Pass
Power Spectral Density	15.407 (a) (1) (iv) & (a) (3)	Appendix A – 5G Wi-Fi	Pass
Band Edge	15.407(b)	See Section 6.6	Pass
Spurious Emission	15.407 (b) & 15.205 & 15.209	See Section 6.7	Pass
Frequency Stability	15.407(g)	Appendix A – 5G Wi-Fi	Pass

Remark:

1. *Pass: The EUT complies with the essential requirements in the standard.*
2. *The cable insertion loss used by "RF Output Power" and other conduction measurement items is 0.5dB (provided by the customer).*

Test Method:	*ANSI C63.10-2013* *KDB 789033 D02 General UNII Test Procedures New Rules v02r01*

5 General Information

5.1 Client Information

Applicant:	Autel Robotics Co., Ltd.
Address:	9th Floor, Bldg. B1, Zhiyuan,1001 Xueyuan Rd., Xili, Nanshan, Shenzhen 518055, China
Manufacturer/ Factory:	Autel Robotics Co., Ltd.
Address:	9th Floor, Bldg. B1, Zhiyuan,1001 Xueyuan Rd., Xili, Nanshan, Shenzhen 518055, China

5.2 General Description of E.U.T.

Product Name:	Dragon Fish Remote Control			
Model No.:	DFRC-2			
Wi-Fi Module No:	Chip 1 & 2			
Operation Frequency:	Chip 1:			
	Band 4: 5725MHz-5825MHz			
	Chip 2:			
	Band 1: 5150MHz-5250MHz		Band 4: 5725MHz-5825MHz	
Channel numbers:	Band 1:	802.11a/802.11n/ac20: 4	802.11n/ac40: 2	802.11ac80: 1
	Band 4:	802.11a/802.11n/ac20: 5	802.11n/ac40: 2	802.11ac80: 1
Channel separation:	20MHz:	802.11a/802.11n-HT20/802.11ac-HT20		
	40MHz:	802.11n-HT40/802.11ac-HT40		
	80MHz:	802.11ac-HT80		
Modulation technology (IEEE 802.11a):	BPSK, QPSK, 16-QAM, 64-QAM			
Modulation technology (IEEE 802.11n):	BPSK, QPSK, 16-QAM, 64-QAM			
Modulation technology (IEEE 802.11ac):	BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM			
Data speed (IEEE 802.11a):	6Mbps, 9Mbps,12Mbps,18Mbps, 24Mbps, 36Mbps, 48Mbps, 54Mbps			
Data speed (IEEE 802.11n20):	MCS0: 6.5Mbps, MCS1:13Mbps,MCS2:19.5Mbps, MCS3:26Mbps, MCS4:39Mbps, MCS5:52Mbps, MCS6:58.5Mbps, MCS7:65Mbps			
Data speed (IEEE 802.11n40):	MCS0:15Mbps, MCS1:30Mbps, MCS2:45Mbps, MCS3:60Mbps, MCS4:90Mbps, MCS5:120Mbps, MCS6:135Mbps, MCS7:150Mbps			
Data speed (IEEE 802.11ac):	Up to 866.6Mbps			
Antenna Type:	ANT 1/2/3 Internal Antenna ANT 6 External Antenna			
Antenna gain:	Chip 1： ANT 3: 5.8G Wi-F：-1.4 dBi(declare by Applicant) ANT 6: 5.8G Wi-F：4.0 dBi(declare by Applicant) Chip 2： ANT 1: 5.2G Wi-Fi: 2.1 dBi, 5.8G Wi-F：2.3 dBi(declare by Applicant) ANT 2: 5.2G Wi-Fi: 2.3 dBi, 5.8G Wi-F：2.4 dBi. (declare by Applicant)			
Power supply:	Rechargeable Li-ion Battery DC11.4V-8.2Ah			
AC adapter:	Adapter 1: Model: ADS-110DL-19-1 190090G Input: AC100-240V, 50/60Hz, 1.5A			

	Output: DC 19.0V, 4.74A Adapter 2: Model: DF_CHARGER Input: AC100-240V, 50/60Hz, 4.0A Output: DC 26.4V, 7A
Test Sample Condition:	The test samples were provided in good working order with no visible defects.

Operation Frequency each of channel					
Band 1					
802.11a/802.11n/ac-HT20		802.11n/ac-HT40		802.11ac-HT80	
Channel	Frequency	Channel	Frequency	Channel	Frequency
36	5180MHz	38	5190MHz	42	5210MHz
40	5200MHz	46	5230MHz		
44	5220MHz				
48	5240MHz				
Band 4					
802.11a/802.11n/ac-HT20		802.11n/ac-HT40		802.11ac-HT80	
Channel	Frequency	Channel	Frequency	Channel	Frequency
149	5745MHz	151	5755MHz	155	5775MHz
153	5765MHz	159	5795MHz		
157	5785MHz				
161	5805MHz				
165	5825MHz				

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:

Band 1					
802.11a/802.11n/ac-HT20		802.11n/ac-HT40		802.11ac-HT80	
Channel	Frequency	Channel	Frequency	Channel	Frequency
Lowest	5180MHz	Lowest	5190MHz	Middle	5210MHz
Middle	5200MHz	Highest	5230MHz		
Highest	5240MHz				
Band 4					
802.11a/802.11n/ac-HT20		802.11n/ac-HT40		802.11ac-HT80	
Channel	Frequency	Channel	Frequency	Channel	Frequency
Lowest	5745MHz	Lowest	5755MHz	Middle	5775MHz
Middle	5785MHz	Highest	5795MHz		
Highest	5825MHz				

5.3 Test environment and mode

Operating Environment:	
Temperature:	24.0 °C
Humidity:	54 % RH
Atmospheric Pressure:	1010 mbar
Test mode:	
Continuously transmitting mode	Keep the EUT in 100% duty cycle transmitting with modulation.
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, and found the follow list were the worst case.	
Mode	Data rate
802.11a	6 Mbps
802.11n/ac20	6.5 Mbps
802.11n/ac40	13.5 Mbps
802.11ac80	29.3 Mbps

5.4 Description of Support Units

Manufacturer	Description	Model	Serial Number	FCC ID/DoC
The EUT has been tested as an independent unit.				

5.5 Measurement Uncertainty

Parameter	Expanded Uncertainty (Confidence of 95%)
Conducted Emission (9kHz ~ 150KHz) for V-AMN	3.11 dB
Conducted Emission (150kHz ~ 30MHz) for V-AMN	2.62 dB
Conducted Emission (150kHz ~ 30MHz) for AAN	3.54 dB
Radiated Emission (9kHz ~ 30MHz electric field) for 3m SAC	3.13 dB
Radiated Emission (9kHz ~ 30MHz magnetic field) for 3m SAC	3.13 dB
Radiated Emission (30MHz ~ 1GHz) for 3m SAC	4.45 dB
Radiated Emission (1GHz ~ 18GHz) for 3m SAC	5.34 dB
Radiated Emission (18GHz ~ 40GHz) for 3m SAC	5.34 dB

5.6 Additions to, deviations, or exclusions from the method

No

5.7 Related Submittal(s) / Grant (s)

This is an original grant, no related submittals and grants.

5.8 Laboratory Facility

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

- **FCC - Designation No.: CN1211**

JianYan Testing Group Shenzhen Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551.

- **ISED – CAB identifier.: CN0021**

The 3m Semi-anechoic chamber and 10m Semi-anechoic chamber JianYan Testing Group Shenzhen Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

- **A2LA - Registration No.: 4346.01**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: https://portal.a2la.org/scopepdf/4346-01.pdf

5.9 Laboratory Location

JianYan Testing Group Shenzhen Co., Ltd.
Address: No.101, Building 8, Innovation Wisdom Port, No.155 Hongtian Road, Huangpu Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, People's Republic of China.
Tel: +86-755-23118282, Fax: +86-755-23116366
Email: info-JYTee@lets.com, Website: http://www.ccis-cb.com

5.10 Test Instruments list

Radiated Emission:					
Test Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
3m SAC	ETS	RFD-100	Q1984	04-14-2021	04-13-2024
BiConiLog Antenna	SCHWARZBECK	VULB9163	9163-1246	03-07-2021	03-06-2022
Biconical Antenna	SCHWARZBECK	VUBA 9117	9117#359	06-17-2021	06-17-2022
Horn Antenna	SCHWARZBECK	BBHA9120D	912D-916	03-07-2021	03-06-2022
Broad-Band Horn Antenna	SCHWARZBECK	BBHA9170	1067	04-02-2021	04-01-2022
Broad-Band Horn Antenna	SCHWARZBECK	BBHA9170	1068	04-02-2021	04-01-2022
EMI Test Receiver	Rohde & Schwarz	ESRP7	101070	03-03-2021	03-02-2022
Spectrum analyzer	Rohde & Schwarz	FSP30	101454	03-03-2021	03-02-2022
Spectrum analyzer	Keysight	N9010B	MY60240202	11-27-2020	11-26-2021
Low Pre-amplifier	SCHWARZBECK	BBV9743B	00305	03-07-2021	03-06-2022
High Pre-amplifier	SKET	LNPA_0118G-50	MF280208233	03-07-2021	03-06-2022
Cable	Qualwave	JYT3M-1G-NN-8M	JYT3M-1	03-07-2021	03-06-2022
Cable	Qualwave	JYT3M-18G-NN-8M	JYT3M-2	03-07-2021	03-06-2022
Cable	Qualwave	JYT3M-1G-BB-5M	JYT3M-3	03-07-2021	03-06-2022
Cable	Bost	JYT3M-40G-SS-8M	JYT3M-4	04-02-2021	04-01-2022
EMI Test Software	Tonscend	TS+	Version:3.0.0.1		

Conducted Emission:					
Test Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Date (mm-dd-yy)**	**Cal. Due date (mm-dd-yy)**
EMI Test Receiver	Rohde & Schwarz	ESCI 3	101189	03-03-2021	03-02-2022
LISN	Rohde & Schwarz	ENV432	101602	04-06-2021	04-05-2022
LISN	Rohde & Schwarz	ESH3-Z5	843862/010	06-18-2020	06-17-2022
RF Switch	TOP PRECISION	RSU0301	N/A	03-03-2021	03-02-2022
Cable	Bost	JYTCE-1G-NN-2M	JYTCE-1	03-03-2021	03-02-2022
Cable	Bost	JYTCE-1G-BN-3M	JYTCE-2	03-03-2021	03-02-2022
EMI Test Software	AUDIX	E3	Version: 6.110919b		

Conducted method:					
Test Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Date (mm-dd-yy)**	**Cal. Due date (mm-dd-yy)**
Spectrum Analyzer	Keysight	N9010B	MY60240202	11-27-2020	11-26-2021
Vector Signal Generator	Keysight	N5182B	MY59101009	11-27-2020	11-26-2021
Analog Signal Generator	Keysight	N5173B	MY59100765	11-27-2020	11-26-2021
Power Detector Box	MWRF-test	MW100-PSB	MW201020JYT	11-27-2020	11-26-2021
Simulated Station	Rohde & Schwarz	CMW270	102335	11-27-2020	11-26-2021
RF Control Box	MWRF-test	MW100-RFCB	MW200927JYT	N/A	N/A
PDU	MWRF-test	XY-G10	N/A	N/A	N/A
DC Power Supply	Keysight	E3642A	MY60296194	11-27-2020	11-26-2021
Temperature Humidity Chamber	ZhongZhi	CZ－C－150D	ZH16491	11-01-2020	10-31-2021
Test Software	MWRF-tes	MTS 8310	Version: 2.0.0.0		

6 Test results and Measurement Data

6.1 Antenna requirement

Standard requirement:	FCC Part15 E Section 15.203 /407(a)

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.
This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, § 15.213, § 15.217, § 15.219, or § 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with § 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

E.U.T Antenna:

The Wi-Fi antenna cannot replace by end-user, the best case gain of the antenna as bllow:

ANT No	ANT Gain	
	Band 1	Band 4
ANT 3	/	-1.4dBi
ANT 6	/	4.8dBi
ANT 1	2.1dBi	2.3dBi
ANT 2	2.3dBi	2.4dBi

6.2 Conducted Emission

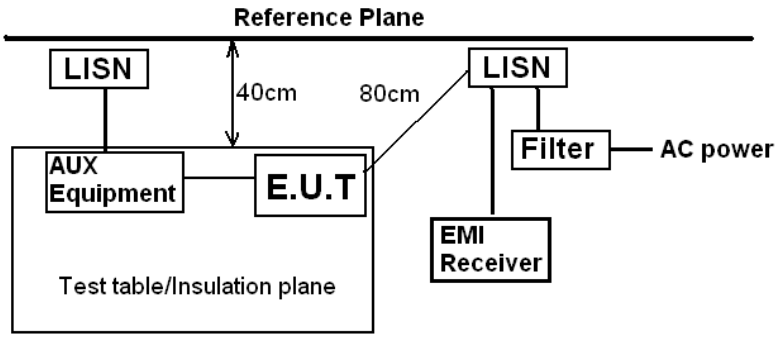
Test Requirement:	FCC Part15 C Section 15.207
Test Frequency Range:	150kHz to 30MHz
Class / Severity:	Class B
Receiver setup:	RBW=9kHz, VBW=30kHz
Limit:	

Frequency range (MHz)	Limit (dBuV)	
	Quasi-peak	
0.15-0.5	66 to 56*	0.15-0.5
0.5-5	56	0.5-5
5-30	60	5-30
* Decreases with the logarithm of the frequency.		

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.). It 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(latest version) on conducted measurement.

Test setup:



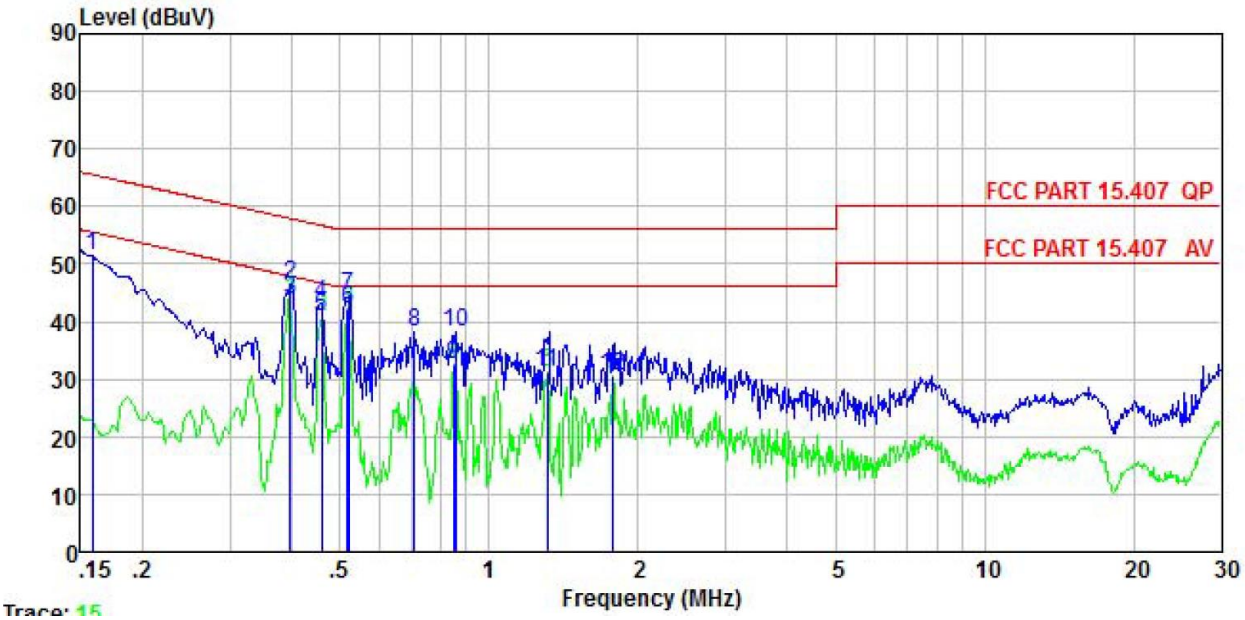
Remark:
E.U.T: Equipment Under Test
LISN: Line Impedence Stabilization Network
Test table height=0.8m

Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details.
Test results:	Passed
Remark:	During the test, pre-scan Adapter 1 and Adapter 2, found Adapter 1 was worse case mode. The report only reflects the worst mode.

Measurement Data:

Chip 1:

Product name:	Dragon Fish Remote Control	**Product model:**	DFRC-2
Test by:	Mike	**Test mode:**	5G Wi-Fi Tx mode
Test frequency:	150 kHz ~ 30 MHz	**Phase:**	Line
Test voltage:	AC 120 V/60 Hz	**Environment:**	Temp: 22.5℃ Huni: 55%

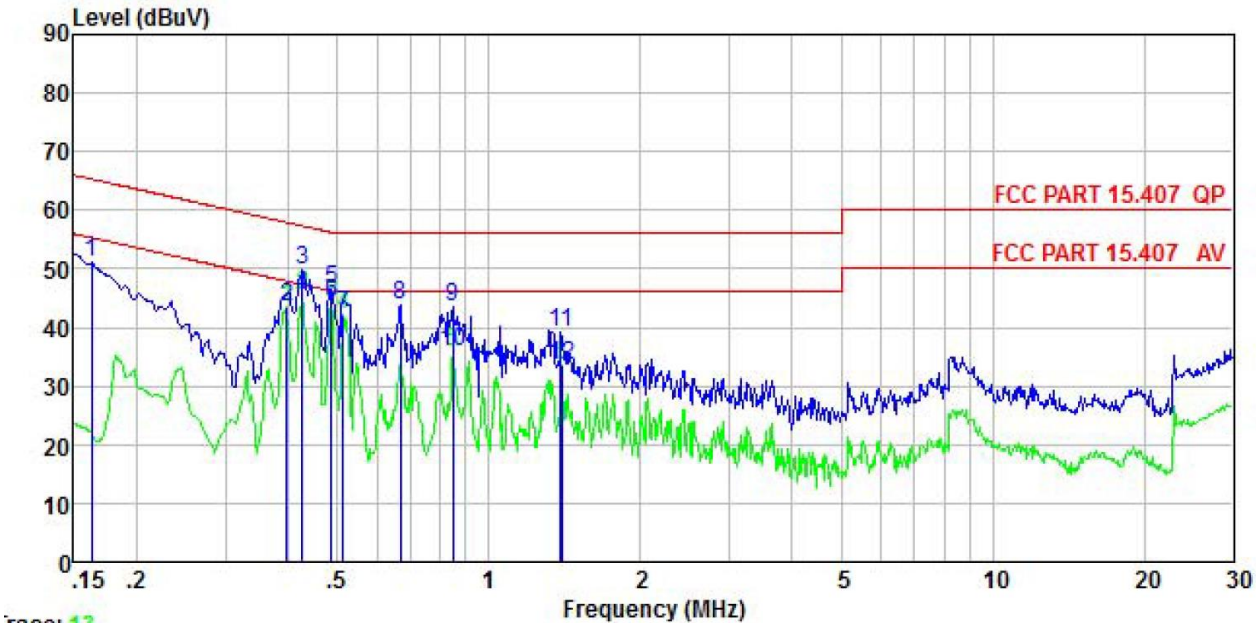


	Freq	Read Level	LISN Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.158	41.37	10.22	0.00	0.01	51.60	65.56	-13.96	QP
2	0.398	36.08	10.28	0.00	0.04	46.40	57.90	-11.50	QP
3	0.398	33.44	10.28	0.00	0.04	43.76	47.90	-4.14	Average
4	0.459	32.93	10.29	0.00	0.03	43.25	56.71	-13.46	QP
5	0.459	30.42	10.29	0.00	0.03	40.74	46.71	-5.97	Average
6	0.518	31.93	10.29	0.00	0.03	42.25	46.00	-3.75	Average
7	0.521	34.33	10.29	0.00	0.03	44.65	56.00	-11.35	QP
8	0.708	27.79	10.30	0.00	0.03	38.12	56.00	-17.88	QP
9	0.848	22.17	10.31	0.00	0.04	32.52	46.00	-13.48	Average
10	0.857	27.91	10.31	0.00	0.04	38.26	56.00	-17.74	QP
11	1.310	20.73	10.32	0.00	0.11	31.16	46.00	-14.84	Average
12	1.781	20.04	10.33	0.00	0.18	30.55	46.00	-15.45	Average

Notes:

1. *An initial pre-scan was performed on the line and neutral lines with peak detector.*
2. *Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.*
3. *Final Level =Receiver Read level + LISN Factor + Aux Factor + Cable Loss.*

Product name:	Dragon Fish Remote Control	**Product model:**	DFRC-2
Test by:	Mike	**Test mode:**	5G Wi-Fi Tx mode
Test frequency:	150 kHz ~ 30 MHz	**Phase:**	Neutral
Test voltage:	AC 120 V/60 Hz	**Environment:**	Temp: 22.5℃ Huni: 55%



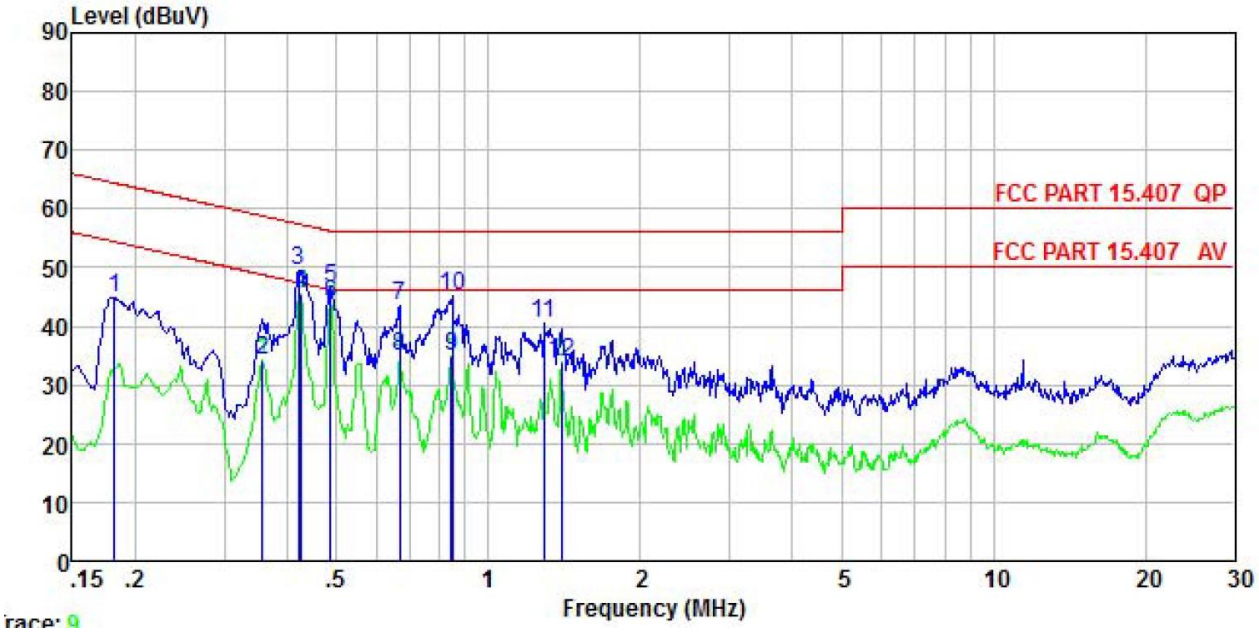
	Freq	Read Level	LISN Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.162	40.83	10.20	0.00	0.01	51.04	65.34	-14.30	QP
2	0.398	33.22	10.27	0.00	0.04	43.53	47.90	-4.37	Average
3	0.426	39.41	10.27	0.00	0.03	49.71	57.33	-7.62	QP
4	0.426	35.29	10.27	0.00	0.03	45.59	47.33	-1.74	Average
5	0.486	36.16	10.28	0.00	0.03	46.47	56.23	-9.76	QP
6	0.486	33.87	10.28	0.00	0.03	44.18	46.23	-2.05	Average
7	0.513	31.91	10.28	0.00	0.03	42.22	46.00	-3.78	Average
8	0.668	33.55	10.30	0.00	0.03	43.88	56.00	-12.12	QP
9	0.848	33.25	10.31	0.00	0.04	43.60	56.00	-12.40	QP
10	0.848	25.64	10.31	0.00	0.04	35.99	46.00	-10.01	Average
11	1.388	28.70	10.31	0.00	0.13	39.14	56.00	-16.86	QP
12	1.396	23.02	10.31	0.00	0.13	33.46	46.00	-12.54	Average

Notes:

1. *An initial pre-scan was performed on the line and neutral lines with peak detector.*
2. *Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.*
3. *Final Level =Receiver Read level + LISN Factor + Aux Factor + Cable Loss.*

Chip 2:

Product name:	Dragon Fish Remote Control	**Product model:**	DFRC-2
Test by:	Mike	**Test mode:**	5G Wi-Fi Tx mode
Test frequency:	150 kHz ~ 30 MHz	**Phase:**	Line
Test voltage:	AC 120 V/60 Hz	**Environment:**	Temp: 22.5℃ Huni: 55%

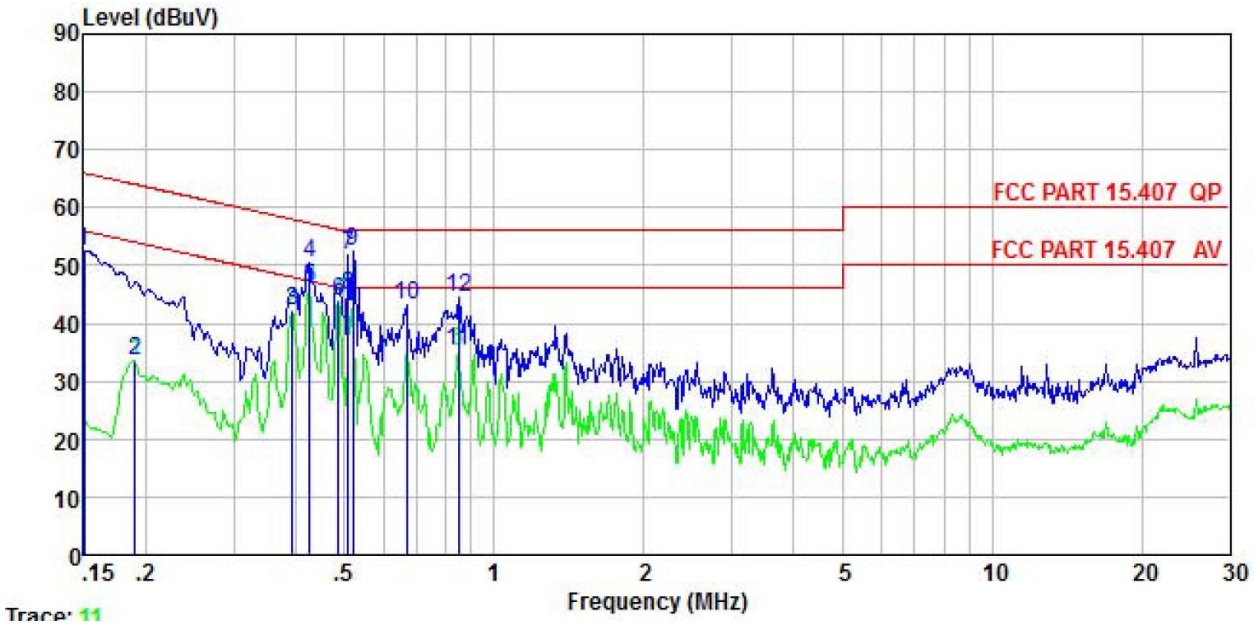


	Freq	Read Level	LISN Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.182	34.61	10.23	0.00	0.01	44.85	64.42	-19.57	QP
2	0.358	23.79	10.27	0.00	0.02	34.08	48.78	-14.70	Average
3	0.421	39.13	10.28	0.00	0.04	49.45	57.42	-7.97	QP
4	0.426	35.07	10.28	0.00	0.03	45.38	47.33	-1.95	Average
5	0.486	36.08	10.29	0.00	0.03	46.40	56.23	-9.83	QP
6	0.486	33.54	10.29	0.00	0.03	43.86	46.23	-2.37	Average
7	0.668	33.27	10.30	0.00	0.03	43.60	56.00	-12.40	QP
8	0.668	24.52	10.30	0.00	0.03	34.85	46.00	-11.15	Average
9	0.844	24.56	10.31	0.00	0.04	34.91	46.00	-11.09	Average
10	0.848	34.85	10.31	0.00	0.04	45.20	56.00	-10.80	QP
11	1.289	29.94	10.32	0.00	0.11	40.37	56.00	-15.63	QP
12	1.396	23.42	10.32	0.00	0.13	33.87	46.00	-12.13	Average

Notes:

1. *An initial pre-scan was performed on the line and neutral lines with peak detector.*
2. *Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.*
3. *Final Level =Receiver Read level + LISN Factor + Aux Factor + Cable Loss.*

Product name:	Dragon Fish Remote Control	**Product model:**	DFRC-2
Test by:	Mike	**Test mode:**	5G Wi-Fi Tx mode
Test frequency:	150 kHz ~ 30 MHz	**Phase:**	Neutral
Test voltage:	AC 120 V/60 Hz	**Environment:**	Temp: 22.5℃ Huni: 55%

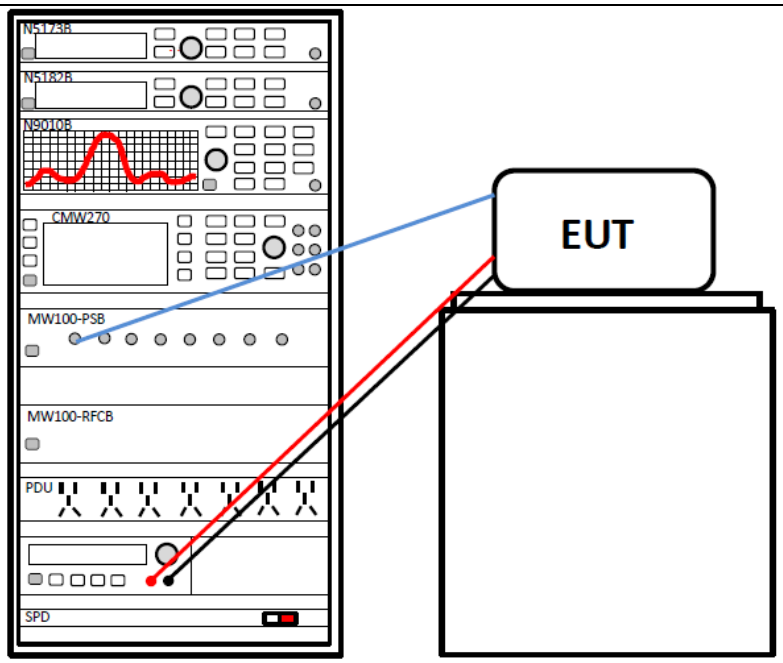


	Freq	Read Level	LISN Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.150	42.35	10.19	0.00	0.01	52.55	66.00	-13.45	QP
2	0.190	23.43	10.21	0.00	0.03	33.67	54.02	-20.35	Average
3	0.393	31.93	10.27	0.00	0.04	42.24	47.99	-5.75	Average
4	0.426	40.19	10.27	0.00	0.03	50.49	57.33	-6.84	QP
5	0.426	35.72	10.27	0.00	0.03	46.02	47.33	-1.31	Average
6	0.486	33.37	10.28	0.00	0.03	43.68	46.23	-2.55	Average
7	0.510	41.54	10.28	0.00	0.03	51.85	56.00	-4.15	QP
8	0.510	34.54	10.28	0.00	0.03	44.85	46.00	-1.15	Average
9	0.521	42.26	10.28	0.00	0.03	52.57	56.00	-3.43	QP
10	0.668	32.70	10.30	0.00	0.03	43.03	56.00	-12.97	QP
11	0.848	24.97	10.31	0.00	0.04	35.32	46.00	-10.68	Average
12	0.853	34.11	10.31	0.00	0.04	44.46	56.00	-11.54	QP

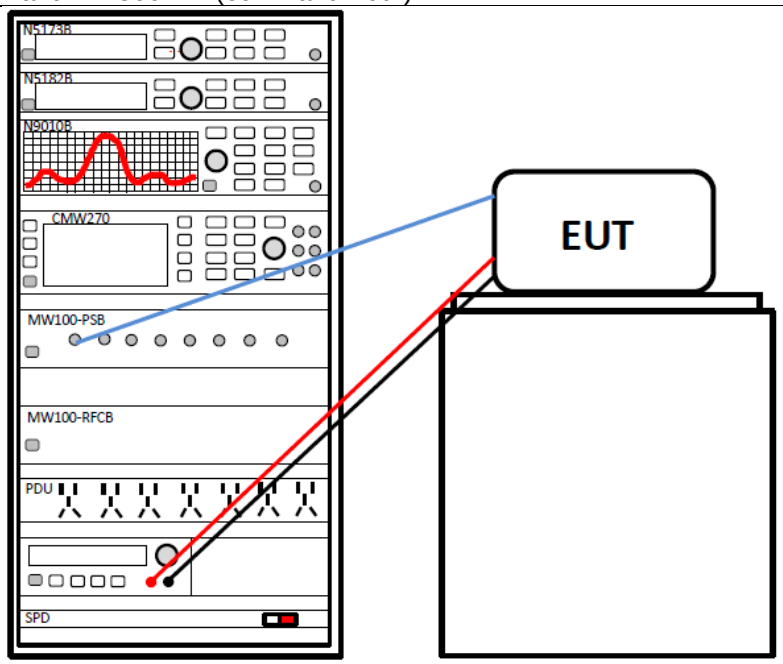
Notes:

1. *An initial pre-scan was performed on the line and neutral lines with peak detector.*
2. *Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.*
3. *Final Level =Receiver Read level + LISN Factor + Aux Factor + Cable Loss.*

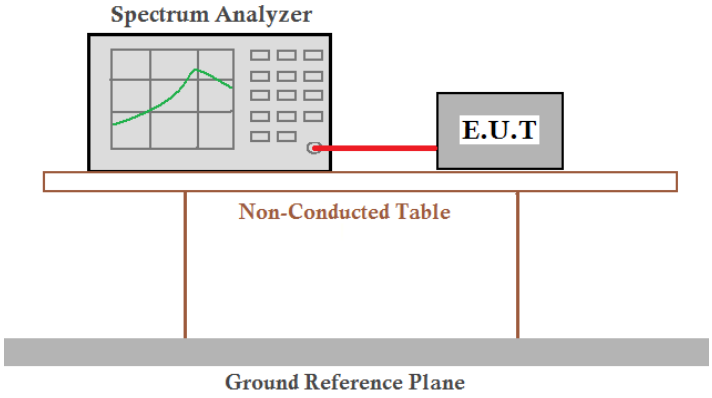
6.3 Conducted Output Power

Test Requirement:	FCC Part15 E Section 15.407 (a) (1) (iv) & (a) (3)
Limit:	Band 1: 24dBm Band 4: 30dBm
Test setup:	
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed
Measurement Data:	**Refer to Appendix A - 5G WIFI**

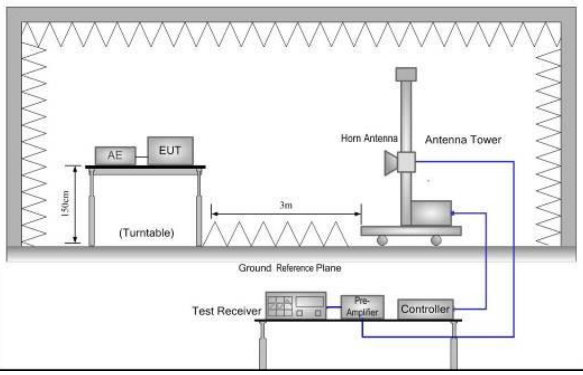
6.4 Occupy Bandwidth

Test Requirement:	FCC Part15 E Section 15.407 (a) (12) and Section 15.407 (e)
Limit:	Band 1/4: N/A (26dB Emission Bandwidth and 99% Occupy Bandwidth) Band 4: >500kHz (6dB Bandwidth)
Test setup:	
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed
Measurement Data:	**Refer to Appendix A - 5G WIFI**

6.5 Power Spectral Density

Test Requirement:	FCC Part15 E Section 15.407 (a) (1) (iv) & (a)(3)
Limit:	Band 1: 11 dBm/MHz Band 4: 30 dBm/500kHz
Test setup:	
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed
Measurement Data:	**Refer to Appendix A - 5G WIFI**

6.6 Band Edge

Test Requirement:	FCC Part 15 E Section 15.407 (b)			
Receiver setup:	Detector	RBW	VBW	Remark
	Quasi-peak	120kHz	300kHz	Quasi-peak Value
	RMS	1MHz	3MHz	Average Value
Limit:	Band	Limit (dBuV/m @3m)		Remark
	Band 1	68.20		Peak Value
		54.00		Average Value
	Band 4 limit: For transmitters operating in the 5.725-5.85 GHz band: All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasinglinearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge. Remark: 1. Band 1 limit: E[dBμV/m] = EIRP[dBm] + 95.2=68.2 dBuV/m, for EIPR[dBm]=-27dBm. 2. Band 4 limit: E[dBμV/m] = EIRP[dBm] + 95.2=68.2 dBuV/m, for EIPR[dBm]=-27dBm. E[dBμV/m] = EIRP[dBm] + 95.2=105.2 dBuV/m, for EIPR[dBm]=10dBm. E[dBμV/m] = EIRP[dBm] + 95.2=110.8 dBuV/m, for EIPR[dBm]=15.6dBm. E[dBμV/m] = EIRP[dBm] + 95.2=122.2 dBuV/m, for EIPR[dBm]=27dBm.			
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 rotatable 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, quasi-peak or average method as specified and then reported in a data sheet.			
Test setup:				
Test Instruments:	Refer to section 5.10 for details			
Test mode:	Refer to section 5.3 for details			
Test results:	Passed			

Measurement Data (worst case):

Chip 1:

Band 4:

Band 4 – 802.11a – ANT3						
Test channel: Lowest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5650.00	58.38	18.87	77.25	68.20	-9.05	Horizontal
5700.00	59.88	19.05	78.93	105.20	26.27	Horizontal
5720.00	62.92	19.00	81.92	110.80	28.88	Horizontal
5725.00	72.11	18.99	91.10	122.20	31.10	Horizontal
5650.00	40.29	18.87	59.16	68.20	9.04	Vertical
5700.00	39.64	19.05	58.69	105.20	46.51	Vertical
5720.00	39.19	19.00	58.19	110.80	52.61	Vertical
5725.00	45.03	18.99	64.02	122.20	58.18	Vertical
Test channel: Highest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5850.00	38.48	19.10	57.58	122.20	64.62	Horizontal
5855.00	39.74	19.12	58.86	110.80	51.94	Horizontal
5875.00	39.54	19.23	58.77	105.20	46.43	Horizontal
5925.00	39.85	19.39	59.24	68.20	8.96	Horizontal
5850.00	38.78	19.10	57.88	122.20	64.32	Vertical
5855.00	40.00	19.12	59.12	110.80	51.68	Vertical
5875.00	38.85	19.23	58.08	105.20	47.12	Vertical
5925.00	39.32	19.39	58.71	68.20	9.49	Vertical

Remark:

1. *Final Level = Receiver Read level + Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Band 4 – 802.11a – ANT6						
Test channel: Lowest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5650.00	39.65	18.87	58.52	68.20	9.68	Horizontal
5700.00	41.45	19.05	60.50	105.20	44.70	Horizontal
5720.00	44.53	19.00	63.53	110.80	47.27	Horizontal
5725.00	48.08	18.99	67.07	122.20	55.13	Horizontal
5650.00	40.39	18.87	59.26	68.20	8.94	Vertical
5700.00	40.57	19.05	59.62	105.20	45.58	Vertical
5720.00	40.27	19.00	59.27	110.80	51.53	Vertical
5725.00	46.10	18.99	65.09	122.20	57.11	Vertical
Test channel: Highest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5850.00	37.65	19.10	56.75	122.20	65.45	Horizontal
5855.00	38.99	19.12	58.11	110.80	52.69	Horizontal
5875.00	39.67	19.23	58.90	105.20	46.30	Horizontal
5925.00	39.62	19.39	59.01	68.20	9.19	Horizontal
5850.00	40.71	19.10	59.81	122.20	62.39	Vertical
5855.00	40.79	19.12	59.91	110.80	50.89	Vertical
5875.00	39.59	19.23	58.82	105.20	46.38	Vertical
5925.00	39.50	19.39	58.89	68.20	9.31	Vertical

Remark:

3. Final Level = Receiver Read level + Factor.

4. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Band 4 – 802.11n(HT20) - MIMO						
Test channel: Lowest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5650.00	40.49	18.87	59.36	68.20	8.84	Horizontal
5700.00	40.90	19.05	59.95	105.20	45.25	Horizontal
5720.00	47.55	19.00	66.55	110.80	44.25	Horizontal
5725.00	53.07	18.99	72.06	122.20	50.14	Horizontal
5650.00	40.13	18.87	59.00	68.20	9.20	Vertical
5700.00	39.96	19.05	59.01	105.20	46.19	Vertical
5720.00	46.38	19.00	65.38	110.80	45.42	Vertical
5725.00	53.97	18.99	72.96	122.20	49.24	Vertical
Test channel: Highest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5850.00	39.40	19.10	58.50	122.20	63.70	Horizontal
5855.00	39.64	19.12	58.76	110.80	52.04	Horizontal
5875.00	39.50	19.23	58.73	105.20	46.47	Horizontal
5925.00	39.91	19.39	59.30	68.20	8.90	Horizontal
5850.00	42.71	19.10	61.81	122.20	60.39	Vertical
5855.00	39.60	19.12	58.72	110.80	52.08	Vertical
5875.00	38.73	19.23	57.96	105.20	47.24	Vertical
5925.00	39.17	19.39	58.56	68.20	9.64	Vertical

Remark:

1. *Final Level = Receiver Read level + Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Band 4 – 802.11n(HT40) - MIMO						
Test channel: Lowest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5650.00	39.93	18.87	58.80	68.20	9.40	Horizontal
5700.00	40.41	19.05	59.46	105.20	45.74	Horizontal
5720.00	47.14	19.00	66.14	110.80	44.66	Horizontal
5725.00	49.83	18.99	68.82	122.20	53.38	Horizontal
5650.00	40.47	18.87	59.34	68.20	8.86	Vertical
5700.00	40.68	19.05	59.73	105.20	45.47	Vertical
5720.00	43.99	19.00	62.99	110.80	47.81	Vertical
5725.00	49.16	18.99	68.15	122.20	54.05	Vertical
Test channel: Highest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5850.00	40.09	17.55	57.64	122.20	64.56	Horizontal
5855.00	39.82	17.55	57.37	110.80	53.43	Horizontal
5875.00	39.41	17.57	56.98	105.20	48.22	Horizontal
5925.00	39.00	17.37	56.37	68.20	11.83	Horizontal
5850.00	39.35	17.55	56.90	122.20	65.30	Vertical
5855.00	39.37	17.55	56.92	110.80	53.88	Vertical
5875.00	39.06	17.57	56.63	105.20	48.57	Vertical
5925.00	39.27	17.37	56.64	68.20	11.56	Vertical

Remark:

1. *Final Level = Receiver Read level + Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Band 4 – 802.11ac(HT20) - MIMO						
Test channel: Lowest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5650.00	40.92	18.87	59.79	68.20	8.41	Horizontal
5700.00	40.56	19.05	59.61	105.20	45.59	Horizontal
5720.00	47.69	19.00	66.69	110.80	44.11	Horizontal
5725.00	53.10	18.99	72.09	122.20	50.11	Horizontal
5650.00	40.47	18.87	59.34	68.20	8.86	Vertical
5700.00	39.64	19.05	58.69	105.20	46.51	Vertical
5720.00	46.82	19.00	65.82	110.80	44.98	Vertical
5725.00	54.37	18.99	73.36	122.20	48.84	Vertical
Test channel: Highest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5850.00	39.12	19.10	58.22	122.20	63.98	Horizontal
5855.00	40.13	19.12	59.25	110.80	51.55	Horizontal
5875.00	39.24	19.23	58.47	105.20	46.73	Horizontal
5925.00	39.62	19.39	59.01	68.20	9.19	Horizontal
5850.00	42.71	19.10	61.81	122.20	60.39	Vertical
5855.00	39.54	19.12	58.66	110.80	52.14	Vertical
5875.00	38.41	19.23	57.64	105.20	47.56	Vertical
5925.00	39.62	19.39	59.01	68.20	9.19	Vertical

Remark:

1. *Final Level = Receiver Read level + Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Band 4 – 802.11ac(HT40) - MIMO						
Test channel: Lowest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5650.00	39.86	18.87	58.73	68.20	9.47	Horizontal
5700.00	40.78	19.05	59.83	105.20	45.37	Horizontal
5720.00	47.46	19.00	66.46	110.80	44.34	Horizontal
5725.00	50.07	18.99	69.06	122.20	53.14	Horizontal
5650.00	40.94	18.87	59.81	68.20	8.39	Vertical
5700.00	40.76	19.05	59.81	105.20	45.39	Vertical
5720.00	43.51	19.00	62.51	110.80	48.29	Vertical
5725.00	49.14	18.99	68.13	122.20	54.07	Vertical
Test channel: Highest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5850.00	39.94	19.10	59.04	122.20	63.16	Horizontal
5855.00	39.46	19.12	58.58	110.80	52.22	Horizontal
5875.00	38.96	19.23	58.19	105.20	47.01	Horizontal
5925.00	39.08	19.39	58.47	68.20	9.73	Horizontal
5850.00	39.11	19.10	58.21	122.20	63.99	Vertical
5855.00	39.83	19.12	58.95	110.80	51.85	Vertical
5875.00	38.92	19.23	58.15	105.20	47.05	Vertical
5925.00	39.19	19.39	58.58	68.20	9.62	Vertical

Remark:

1. *Final Level = Receiver Read level + Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Band 4 – 802.11ac(HT80) - MIMO						
Test channel: Lowest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5650.00	40.61	18.87	59.48	68.20	8.72	Horizontal
5700.00	44.62	19.05	63.67	105.20	41.53	Horizontal
5720.00	48.57	19.00	67.57	110.80	43.23	Horizontal
5725.00	50.16	18.99	69.15	122.20	53.05	Horizontal
5650.00	40.37	18.87	59.24	68.20	8.96	Vertical
5700.00	42.62	19.05	61.67	105.20	43.53	Vertical
5720.00	46.13	19.00	65.13	110.80	45.67	Vertical
5725.00	46.71	18.99	65.70	122.20	56.50	Vertical
Test channel: Highest channel						
Detector: Peak Value						
5850.00	43.45	19.10	62.55	122.20	59.65	Polarization
5855.00	42.65	19.12	61.77	110.80	49.03	Horizontal
5875.00	40.38	19.23	59.61	105.20	45.59	Horizontal
5925.00	39.20	19.39	58.59	68.20	9.61	Horizontal
5850.00	44.65	19.10	63.75	122.20	58.45	Horizontal
5855.00	41.53	19.12	60.65	110.80	50.15	Vertical
5875.00	39.00	19.23	58.23	105.20	46.97	Vertical
5925.00	38.60	19.39	57.99	68.20	10.21	Vertical
5850.00	43.45	19.10	62.55	122.20	59.65	Vertical

Remark:

1. *Final Level = Receiver Read level + Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Chip 2:

Band 1:

Band 1 – 802.11a - ANT1							
Test channel: Lowest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Polarity
5150.00	43.54	15.49	59.03	68.20	9.17	Horizontal	Peak
5150.00	39.37	15.49	54.86	68.20	13.34	Vertical	Peak
5150.00	34.36	15.49	49.85	54.00	4.15	Horizontal	Average
5150.00	31.90	15.49	47.39	54.00	6.61	Vertical	Average
Test channel: Highest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Polarity
5350.00	40.06	16.44	56.50	68.20	11.70	Horizontal	Peak
5350.00	40.10	16.44	56.54	68.20	11.66	Vertical	Peak
5350.00	32.58	16.44	49.02	54.00	4.98	Horizontal	Average
5350.00	32.04	16.44	48.48	54.00	5.52	Vertical	Average

Band 1 – 802.11a – ANT2							
Test channel: Lowest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Polarity
5150.00	39.73	15.49	55.22	68.20	12.98	Horizontal	Peak
5150.00	41.27	15.49	56.76	68.20	11.44	Vertical	Peak
5150.00	32.81	15.49	48.30	54.00	5.70	Horizontal	Average
5150.00	32.99	15.49	48.48	54.00	5.52	Vertical	Average
Test channel: Highest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Polarity
5350.00	39.73	16.44	56.17	68.20	12.03	Horizontal	Peak
5350.00	39.99	16.44	56.43	68.20	11.77	Vertical	Peak
5350.00	31.89	16.44	48.33	54.00	5.67	Horizontal	Average
5350.00	32.45	16.44	48.89	54.00	5.11	Vertical	Average

Remark:

1. *Final Level = Receiver Read level + Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Band 1 – 802.11n(HT20) - MIMO							
Test channel: Lowest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Polarity
5150.00	40.99	15.49	56.48	68.20	11.72	Horizontal	Peak
5150.00	40.47	15.49	55.96	68.20	12.24	Vertical	Peak
5150.00	32.62	15.49	48.11	54.00	5.89	Horizontal	Average
5150.00	32.33	15.49	47.82	54.00	6.18	Vertical	Average
Test channel: Highest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Polarity
5350.00	39.53	16.44	55.97	68.20	12.23	Horizontal	Peak
5350.00	39.61	16.44	56.05	68.20	12.15	Vertical	Peak
5350.00	32.30	16.44	48.74	54.00	5.26	Horizontal	Average
5350.00	31.83	16.44	48.27	54.00	5.73	Vertical	Average

Band 1 – 802.11n(HT40) - MIMO							
Test channel: Lowest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Polarity
5150.00	43.38	15.49	58.87	68.20	9.33	Horizontal	Peak
5150.00	40.28	15.49	55.77	68.20	12.43	Vertical	Peak
5150.00	35.47	15.49	50.96	54.00	3.04	Horizontal	Average
5150.00	33.72	15.49	49.21	54.00	4.79	Vertical	Average
Test channel: Highest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Polarity
5350.00	39.50	16.44	55.94	68.20	12.26	Horizontal	Peak
5350.00	38.78	16.44	55.22	68.20	12.98	Vertical	Peak
5350.00	31.74	16.44	48.18	54.00	5.82	Horizontal	Average
5350.00	31.36	16.44	47.80	54.00	6.20	Vertical	Average

Remark:

1. Final Level = Receiver Read level + Factor.

2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Band 1 – 802.11ac(HT20) - MIMO							
Test channel: Lowest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Polarity
5150.00	41.20	15.49	56.69	68.20	11.51	Horizontal	Peak
5150.00	40.09	15.49	55.58	68.20	12.62	Vertical	Peak
5150.00	32.94	15.49	48.43	54.00	5.57	Horizontal	Average
5150.00	32.60	15.49	48.09	54.00	5.91	Vertical	Average
Test channel: Highest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Polarity
5350.00	39.84	16.44	56.28	68.20	11.92	Horizontal	Peak
5350.00	39.13	16.44	55.57	68.20	12.63	Vertical	Peak
5350.00	32.49	16.44	48.93	54.00	5.07	Horizontal	Average
5350.00	32.29	16.44	48.73	54.00	5.27	Vertical	Average

Band 1 – 802.11ac(HT40) - MIMO							
Test channel: Lowest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Polarity
5150.00	43.51	15.49	59.00	68.20	9.20	Horizontal	Peak
5150.00	40.15	15.49	55.64	68.20	12.56	Vertical	Peak
5150.00	35.61	15.49	51.10	54.00	2.90	Horizontal	Average
5150.00	33.29	15.49	48.78	54.00	5.22	Vertical	Average
Test channel: Highest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Polarity
5350.00	39.25	16.44	55.69	68.20	12.51	Horizontal	Peak
5350.00	38.81	16.44	55.25	68.20	12.95	Vertical	Peak
5350.00	31.31	16.44	47.75	54.00	6.25	Horizontal	Average
5350.00	31.27	16.44	47.71	54.00	6.29	Vertical	Average

Remark:

1. Final Level = Receiver Read level + Factor.

2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Band 1 – 802.11ac(HT80) - MIMO							
Test channel: Lowest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Polarity
5150.00	42.32	15.49	57.81	68.20	10.39	Horizontal	Peak
5150.00	40.37	15.49	55.86	68.20	12.34	Vertical	Peak
5150.00	33.85	15.49	49.34	54.00	4.66	Horizontal	Average
5150.00	32.82	15.49	48.31	54.00	5.69	Vertical	Average
Test channel: Highest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Polarity
5350.00	39.43	16.44	55.87	68.20	12.33	Horizontal	Peak
5350.00	39.23	16.44	55.67	68.20	12.53	Vertical	Peak
5350.00	32.24	16.44	48.68	54.00	5.32	Horizontal	Average
5350.00	31.85	16.44	48.29	54.00	5.71	Vertical	Average

Remark:

1. Final Level = Receiver Read level + Factor.

2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Band 4:

Band 4 – 802.11a – ANT1						
Test channel: Lowest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5650.00	39.51	18.87	58.38	68.20	9.82	Horizontal
5700.00	40.83	19.05	59.88	105.20	45.32	Horizontal
5720.00	43.92	19.00	62.92	110.80	47.88	Horizontal
5725.00	53.12	18.99	72.11	122.20	50.09	Horizontal
5650.00	40.91	18.87	59.78	68.20	8.42	Vertical
5700.00	39.64	19.05	58.69	105.20	46.51	Vertical
5720.00	41.08	19.00	60.08	110.80	50.72	Vertical
5725.00	45.03	18.99	64.02	122.20	58.18	Vertical
Test channel: Highest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5850.00	40.54	19.10	59.64	122.20	62.56	Horizontal
5855.00	39.74	19.12	58.86	110.80	51.94	Horizontal
5875.00	39.54	19.23	58.77	105.20	46.43	Horizontal
5925.00	39.85	19.39	59.24	68.20	8.96	Horizontal
5850.00	38.78	19.10	57.88	122.20	64.32	Vertical
5855.00	40.00	19.12	59.12	110.80	51.68	Vertical
5875.00	38.85	19.23	58.08	105.20	47.12	Vertical
5925.00	39.32	19.39	58.71	68.20	9.49	Vertical

Remark:

1. *Final Level = Receiver Read level + Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Band 4 – 802.11a – ANT2						
Test channel: Lowest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5650.00	39.65	18.87	58.52	68.20	9.68	Horizontal
5700.00	41.45	19.05	60.50	105.20	44.70	Horizontal
5720.00	44.53	19.00	63.53	110.80	47.27	Horizontal
5725.00	48.08	18.99	67.07	122.20	55.13	Horizontal
5650.00	40.39	18.87	59.26	68.20	8.94	Vertical
5700.00	40.57	19.05	59.62	105.20	45.58	Vertical
5720.00	42.62	19.00	61.62	110.80	49.18	Vertical
5725.00	46.10	18.99	65.09	122.20	57.11	Vertical
Test channel: Highest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5850.00	39.66	19.10	58.76	122.20	63.44	Horizontal
5855.00	38.99	19.12	58.11	110.80	52.69	Horizontal
5875.00	39.67	19.23	58.90	105.20	46.30	Horizontal
5925.00	39.62	19.39	59.01	68.20	9.19	Horizontal
5850.00	39.04	19.10	58.14	122.20	64.06	Vertical
5855.00	40.79	19.12	59.91	110.80	50.89	Vertical
5875.00	39.59	19.23	58.82	105.20	46.38	Vertical
5925.00	39.50	19.39	58.89	68.20	9.31	Vertical

Remark:

1. *Final Level = Receiver Read level + Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Band 4 – 802.11n(HT20) - MIMO						
Test channel: Lowest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5650.00	40.49	18.87	59.36	68.20	8.84	Horizontal
5700.00	39.41	19.05	58.46	105.20	46.74	Horizontal
5720.00	50.75	19.00	69.75	110.80	41.05	Horizontal
5725.00	56.23	18.99	75.22	122.20	46.98	Horizontal
5650.00	39.94	18.87	58.81	68.20	9.39	Vertical
5700.00	39.96	19.05	59.01	105.20	46.19	Vertical
5720.00	46.38	19.00	65.38	110.80	45.42	Vertical
5725.00	53.97	18.99	72.96	122.20	49.24	Vertical
Test channel: Highest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5850.00	39.16	19.10	58.26	122.20	63.94	Horizontal
5855.00	39.64	19.12	58.76	110.80	52.04	Horizontal
5875.00	39.50	19.23	58.73	105.20	46.47	Horizontal
5925.00	39.91	19.39	59.30	68.20	8.90	Horizontal
5850.00	41.66	19.10	60.76	122.20	61.44	Vertical
5855.00	39.60	19.12	58.72	110.80	52.08	Vertical
5875.00	38.73	19.23	57.96	105.20	47.24	Vertical
5925.00	39.17	19.39	58.56	68.20	9.64	Vertical

Remark:

1. Final Level = Receiver Read level + Factor.

2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Band 4 – 802.11n(HT40) - MIMO						
Test channel: Lowest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5650.00	39.93	18.87	58.80	68.20	9.40	Horizontal
5700.00	40.41	19.05	59.46	105.20	45.74	Horizontal
5720.00	47.75	19.00	66.75	110.80	44.05	Horizontal
5725.00	44.86	18.99	63.85	122.20	58.35	Horizontal
5650.00	40.47	18.87	59.34	68.20	8.86	Vertical
5700.00	40.68	19.05	59.73	105.20	45.47	Vertical
5720.00	47.24	19.00	66.24	110.80	44.56	Vertical
5725.00	47.05	18.99	66.04	122.20	56.16	Vertical
Test channel: Highest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5850.00	40.09	17.55	57.64	122.20	64.56	Horizontal
5855.00	39.82	17.55	57.37	110.80	53.43	Horizontal
5875.00	39.41	17.57	56.98	105.20	48.22	Horizontal
5925.00	39.00	17.37	56.37	68.20	11.83	Horizontal
5850.00	39.35	17.55	56.90	122.20	65.30	Vertical
5855.00	39.37	17.55	56.92	110.80	53.88	Vertical
5875.00	39.06	17.57	56.63	105.20	48.57	Vertical
5925.00	39.27	17.37	56.64	68.20	11.56	Vertical

Remark:

1. Final Level = Receiver Read level + Factor.

2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Band 4 – 802.11ac(HT20) - MIMO						
Test channel: Lowest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5650.00	40.88	18.87	59.75	68.20	8.45	Horizontal
5700.00	38.99	19.05	58.04	105.20	47.16	Horizontal
5720.00	51.10	19.00	70.10	110.80	40.70	Horizontal
5725.00	56.30	18.99	75.29	122.20	46.91	Horizontal
5650.00	39.84	18.87	58.71	68.20	9.49	Vertical
5700.00	39.69	19.05	58.74	105.20	46.46	Vertical
5720.00	46.37	19.00	65.37	110.80	45.43	Vertical
5725.00	54.16	18.99	73.15	122.20	49.05	Vertical
Test channel: Highest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5850.00	39.34	19.10	58.44	122.20	63.76	Horizontal
5855.00	39.64	19.12	58.76	110.80	52.04	Horizontal
5875.00	39.26	19.23	58.49	105.20	46.71	Horizontal
5925.00	40.39	19.39	59.78	68.20	8.42	Horizontal
5850.00	41.94	19.10	61.04	122.20	61.16	Vertical
5855.00	40.05	19.12	59.17	110.80	51.63	Vertical
5875.00	38.69	19.23	57.92	105.20	47.28	Vertical
5925.00	39.14	19.39	58.53	68.20	9.67	Vertical

Remark:

1. Final Level = Receiver Read level + Factor.

2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Band 4 – 802.11ac(HT40) - MIMO						
Test channel: Lowest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5650.00	39.94	18.87	58.81	68.20	9.39	Horizontal
5700.00	40.51	19.05	59.56	105.20	45.64	Horizontal
5720.00	47.85	19.00	66.85	110.80	43.95	Horizontal
5725.00	45.03	18.99	64.02	122.20	58.18	Horizontal
5650.00	40.14	18.87	59.01	68.20	9.19	Vertical
5700.00	41.13	19.05	60.18	105.20	45.02	Vertical
5720.00	46.98	19.00	65.98	110.80	44.82	Vertical
5725.00	46.66	18.99	65.65	122.20	56.55	Vertical
Test channel: Highest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5850.00	40.29	19.10	59.39	122.20	62.81	Horizontal
5855.00	39.97	19.12	59.09	110.80	51.71	Horizontal
5875.00	39.00	19.23	58.23	105.20	46.97	Horizontal
5925.00	39.33	19.39	58.72	68.20	9.48	Horizontal
5850.00	39.42	19.10	58.52	122.20	63.68	Vertical
5855.00	39.57	19.12	58.69	110.80	52.11	Vertical
5875.00	38.93	19.23	58.16	105.20	47.04	Vertical
5925.00	39.14	19.39	58.53	68.20	9.67	Vertical

Remark:

1. Final Level = Receiver Read level + Factor.

2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Band 4 – 802.11ac(HT80) - MIMO						
Test channel: Lowest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5650.00	40.61	18.87	59.48	68.20	8.72	Horizontal
5700.00	44.62	19.05	63.67	105.20	41.53	Horizontal
5720.00	48.57	19.00	67.57	110.80	43.23	Horizontal
5725.00	45.90	18.99	64.89	122.20	57.31	Horizontal
5650.00	40.37	18.87	59.24	68.20	8.96	Vertical
5700.00	42.62	19.05	61.67	105.20	43.53	Vertical
5720.00	46.13	19.00	65.13	110.80	45.67	Vertical
5725.00	46.71	18.99	65.70	122.20	56.50	Vertical
Test channel: Highest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5850.00	40.65	19.10	59.75	122.20	62.45	Horizontal
5855.00	42.65	19.12	61.77	110.80	49.03	Horizontal
5875.00	40.38	19.23	59.61	105.20	45.59	Horizontal
5925.00	39.20	19.39	58.59	68.20	9.61	Horizontal
5850.00	44.65	19.10	63.75	122.20	58.45	Vertical
5855.00	41.53	19.12	60.65	110.80	50.15	Vertical
5875.00	39.00	19.23	58.23	105.20	46.97	Vertical
5925.00	38.60	19.39	57.99	68.20	10.21	Vertical

Remark:

1. Final Level = Receiver Read level + Factor.

2. The emission levels of other frequencies are very lower than the limit and not show in test report.

6.7 Spurious Emission

6.7.1 Restricted Band

Test Requirement:	FCC Part15 E Section 15.407(b)
Test Frequency Range:	4.5 GHz to 5.15 GHz and 5.35GHz to 5.46GHz
Test site:	Measurement Distance: 3m

Receiver setup:

Frequency	Detector	RBW	VBW	Remark
Above 1GHz	Peak	1MHz	3MHz	Peak Value
	RMS	1MHz	3MHz	Average Value

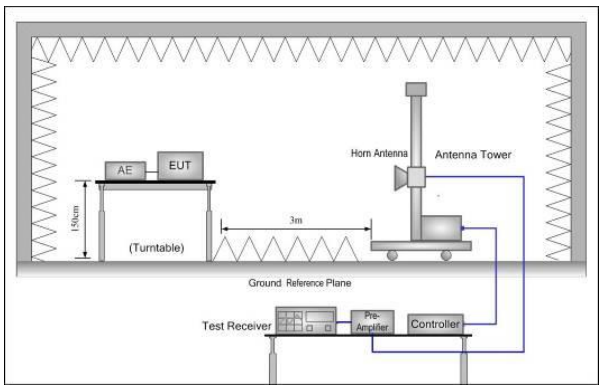
Limit:

Frequency	Limit (dBuV/m @3m)	Remark
Above 1GHz	74.00	Peak Value
	54.00	Average Value

Test Procedure:

1. The EUT was placed on the top of a rotating table 1.5 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, quasi-peak or average method as specified and then reported in a data sheet.

Test setup:



Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed(Refer to section 6.6)

6.7.2 Unwanted Emissions out of the Restricted Bands

Test Requirement:	FCC Part 15 C Section 15.209 and 15.205
Test Frequency Range:	9kHz to 40GHz
Test Distance:	3m

Receiver setup:

Frequency	Detector	RBW	VBW	Remark
30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value
Above 1GHz	Peak	1MHz	3MHz	Peak Value
	RMS	1MHz	3MHz	Average Value

Limit:

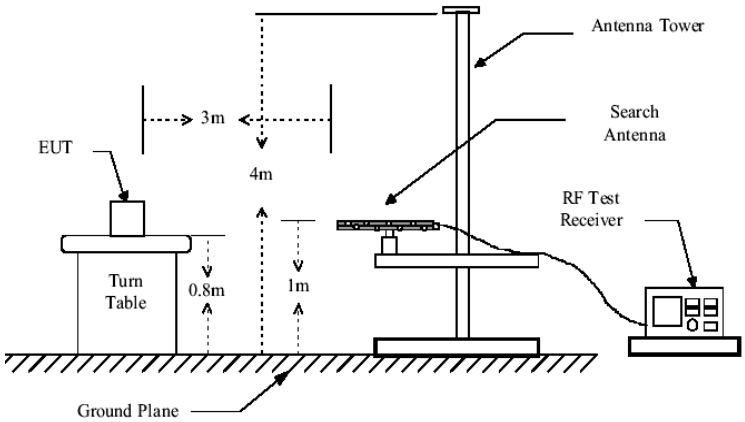
Frequency	Limit (dBuV/m @3m)	Remark
30MHz-88MHz	40.0	Quasi-peak Value
88MHz-216MHz	43.5	Quasi-peak Value
216MHz-960MHz	46.0	Quasi-peak Value
960MHz-1GHz	54.0	Quasi-peak Value
Above 1GHz	54.0	Average Value
	74.0	Peak Value

Test Procedure:

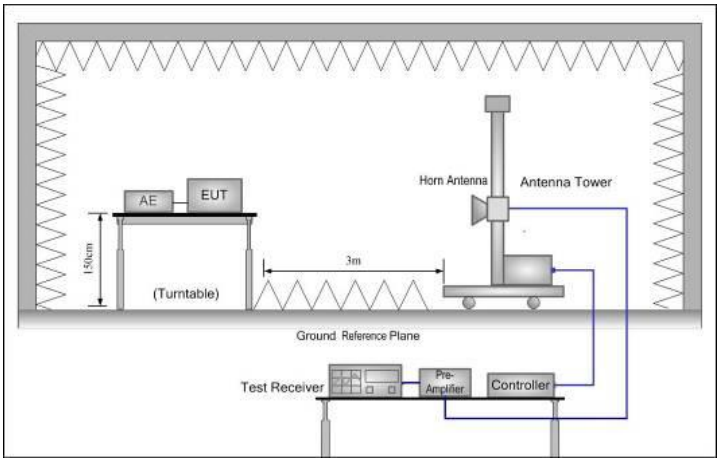
1. The EUT was placed on the top of a rotating table 0.8m(below 1GHz)/1.5m(above 1GHz) above the ground at a 3 meter chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted 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, quasi-peak or average method as specified and then reported in a data sheet.

Test setup:

Below 1GHz



Above 1GHz

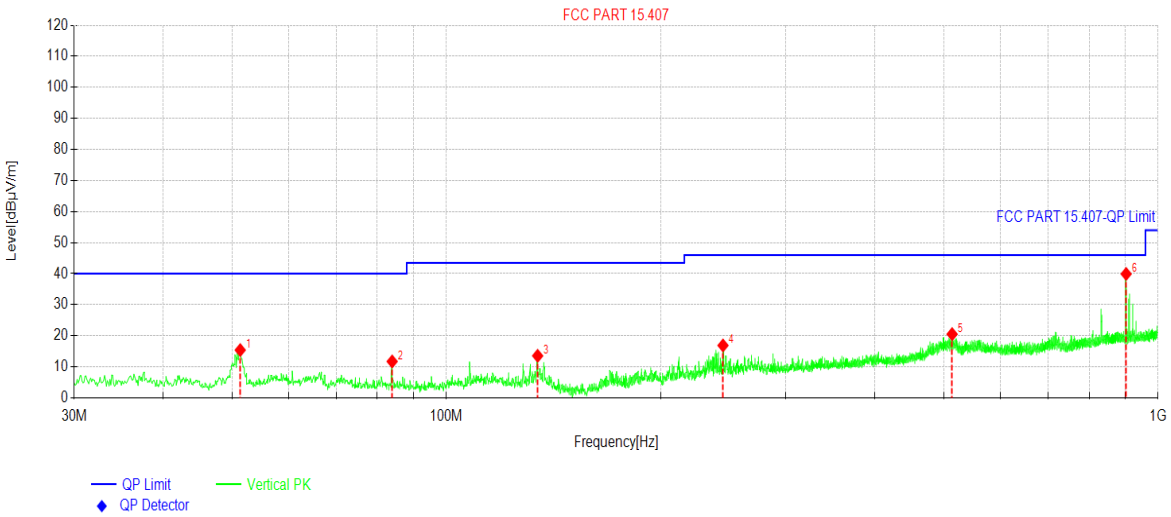
	
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed
Remark:	1. Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis is the worst case. 2. 9 kHz to 30MHz is lower than the limit 20dB, so only shows the data of above 30MHz in this report.

Measurement Data (worst case):

Chip 1:

Below 1GHz

Product Name:	Dragon Fish Remote Control	**Product Model:**	DFRC-2
Test By:	Mike	**Test mode:**	5G Wi-Fi Tx mode
Test Frequency:	30 MHz ~ 1 GHz	**Polarization:**	Vertical
Test Voltage:	DC 11.4V	**Environment:**	Temp: 24℃ Huni: 57%



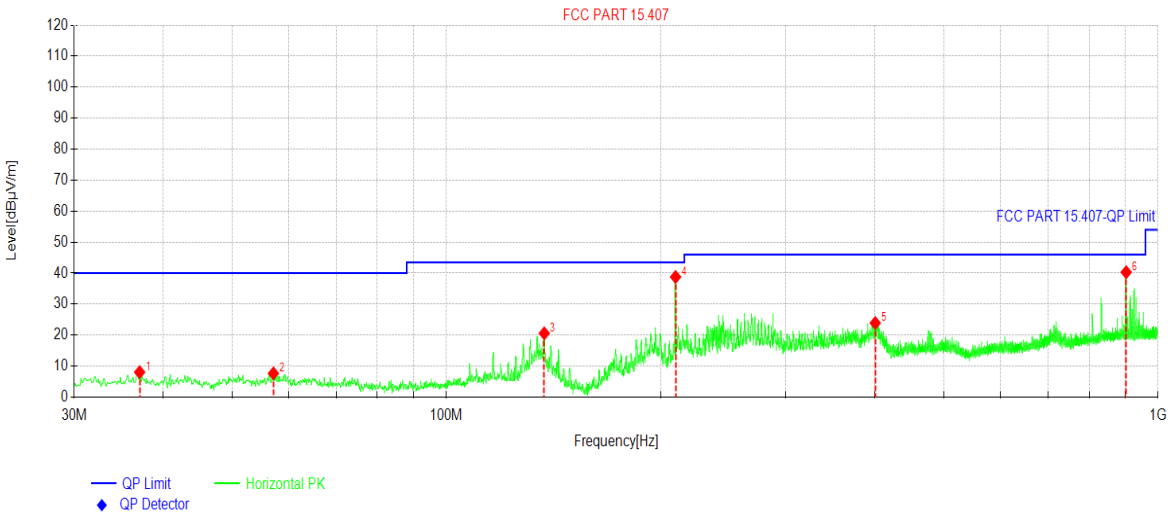
Suspected Data List

NO.	Freq. [MHz]	Reading[dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Trace	Polarity
1	51.3421	32.46	15.39	-17.07	40.00	24.61	PK	Vertical
2	83.9374	31.29	11.73	-19.56	40.00	28.27	PK	Vertical
3	134.382	33.16	13.54	-19.62	43.50	29.96	PK	Vertical
4	244.779	32.47	16.88	-15.59	46.00	29.12	PK	Vertical
5	513.690	29.99	20.53	-9.46	46.00	25.47	PK	Vertical
6	902.020	43.85	39.91	-3.94	46.00	6.09	PK	Vertical

Remark:

1. *Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Product Name:	Dragon Fish Remote Control	**Product Model:**	DFRC-2
Test By:	Mike	**Test mode:**	5G Wi-Fi Tx mode
Test Frequency:	30 MHz ~ 1 GHz	**Polarization:**	Horizontal
Test Voltage:	DC 11.4V	**Environment:**	Temp: 24℃ Huni: 57%



Suspected Data List

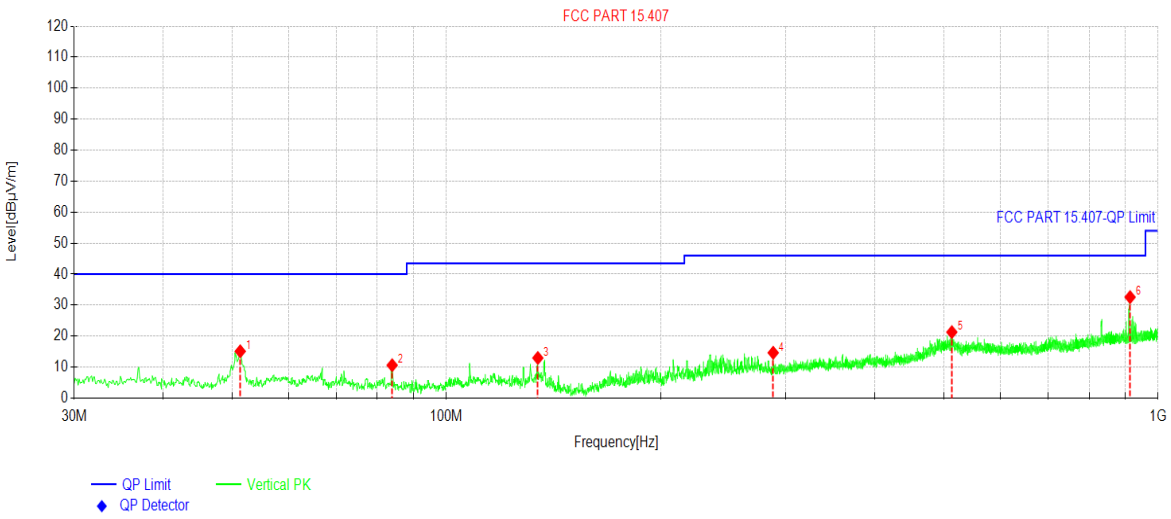
NO.	Freq. [MHz]	Reading[dBµV/m]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Trace	Polarity
1	37.0817	25.16	8.05	-17.11	40.00	31.95	PK	Horizontal
2	57.1627	24.69	7.64	-17.05	40.00	32.36	PK	Horizontal
3	137.292	40.34	20.58	-19.76	43.50	22.92	PK	Horizontal
4	209.953	56.01	38.77	-17.24	43.50	4.73	PK	Horizontal
5	400.577	36.31	23.91	-12.40	46.00	22.09	PK	Horizontal
6	902.117	44.25	40.31	-3.94	46.00	5.69	PK	Horizontal

Remark:

1. *Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Chip 2:
Below 1GHz

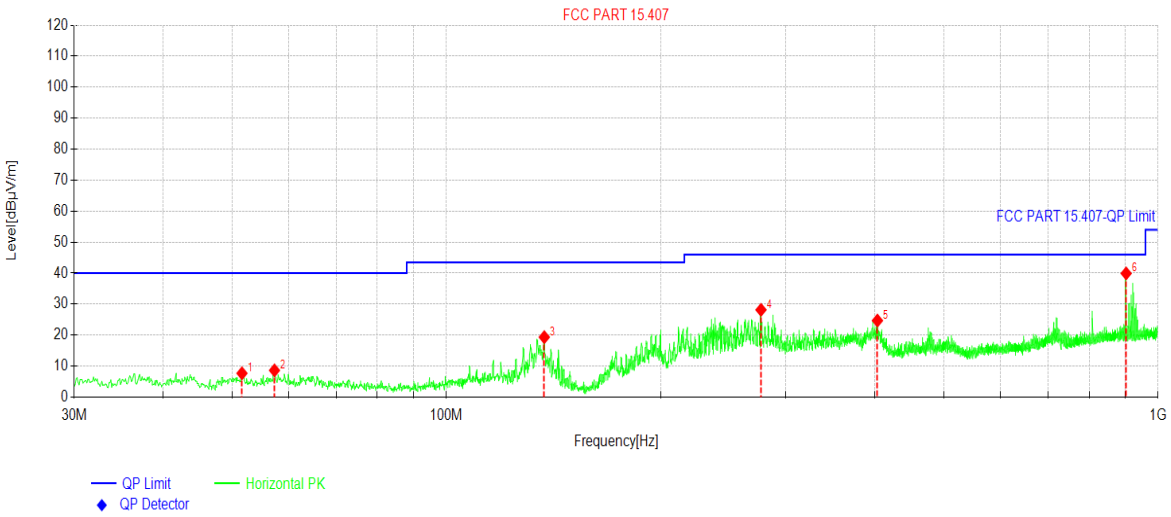
Product Name:	Dragon Fish Remote Control	**Product Model:**	DFRC-2
Test By:	Mike	**Test mode:**	5G Wi-Fi Tx mode
Test Frequency:	30 MHz ~ 1 GHz	**Polarization:**	Vertical
Test Voltage:	DC 11.4V	**Environment:**	Temp: 24℃ Huni: 57%



Suspected Data List								
NO.	Freq. [MHz]	Reading[dBµV/m]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Trace	Polarity
1	51.3421	32.17	15.10	-17.07	40.00	24.90	PK	Vertical
2	83.9374	30.17	10.61	-19.56	40.00	29.39	PK	Vertical
3	134.479	32.58	12.95	-19.63	43.50	30.55	PK	Vertical
4	287.948	28.94	14.63	-14.31	46.00	31.37	PK	Vertical
5	513.205	30.75	21.29	-9.46	46.00	24.71	PK	Vertical
6	913.564	36.38	32.58	-3.80	46.00	13.42	PK	Vertical

Remark:
1. *Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Product Name:	Dragon Fish Remote Control	**Product Model:**	DFRC-2
Test By:	Mike	**Test mode:**	5G Wi-Fi Tx mode
Test Frequency:	30 MHz ~ 1 GHz	**Polarization:**	Horizontal
Test Voltage:	DC 11.4V	**Environment:**	Temp: 24℃ Huni: 57%



Suspected Data List

NO.	Freq. [MHz]	Reading[dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Trace	Polarity
1	51.6332	24.75	7.69	-17.06	40.00	32.31	PK	Horizontal
2	57.3567	25.68	8.62	-17.06	40.00	31.38	PK	Horizontal
3	137.292	39.10	19.34	-19.76	43.50	24.16	PK	Horizontal
4	276.792	42.79	28.15	-14.64	46.00	17.85	PK	Horizontal
5	403.390	37.05	24.70	-12.35	46.00	21.30	PK	Horizontal
6	902.020	43.85	39.91	-3.94	46.00	6.09	PK	Horizontal

Remark:

1. *Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Above 1GHz:
Chip 1:
Band 4:

Band 4 – 802.11a – ANT3							
Test channel: Lowest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
11490.00	51.50	7.62	59.12	74.00	-14.88	Vertical	Peak
11490.00	52.44	7.62	60.06	74.00	-13.94	Horizontal	Peak
11490.00	44.84	7.62	52.46	54.00	-1.54	Vertical	Average
11490.00	44.21	7.62	51.83	54.00	-2.17	Horizontal	Average
Test channel: Middle channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
11570.00	51.95	7.44	59.39	74.00	-14.61	Vertical	Peak
11570.00	52.81	7.44	60.25	74.00	-13.75	Horizontal	Peak
11570.00	45.26	7.44	52.70	54.00	-1.30	Vertical	Average
11570.00	43.76	7.44	51.20	54.00	-2.80	Horizontal	Average
Test channel: Highest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
11650.00	51.62	7.69	59.31	74.00	-14.69	Vertical	Peak
11650.00	52.48	7.69	60.17	74.00	-13.83	Horizontal	Peak
11650.00	45.20	7.69	52.89	54.00	-1.11	Vertical	Average
11650.00	43.40	7.69	51.09	54.00	-2.91	Horizontal	Average
Band 4 – 802.11a – ANT6							
Test channel: Lowest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
11490.00	51.95	7.62	59.57	74.00	-14.43	Vertical	Peak
11490.00	52.17	7.62	59.79	74.00	-14.21	Horizontal	Peak
11490.00	44.75	7.62	52.37	54.00	-1.63	Vertical	Average
11490.00	43.72	7.62	51.34	54.00	-2.66	Horizontal	Average
Test channel: Middle channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
11570.00	52.28	7.44	59.72	74.00	-14.28	Vertical	Peak
11570.00	52.28	7.44	59.72	74.00	-14.28	Horizontal	Peak
11570.00	44.83	7.44	52.27	54.00	-1.73	Vertical	Average
11570.00	43.95	7.44	51.39	54.00	-2.61	Horizontal	Average
Test channel: Highest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
11650.00	52.16	7.69	59.85	74.00	-14.15	Vertical	Peak
11650.00	52.12	7.69	59.81	74.00	-14.19	Horizontal	Peak
11650.00	44.63	7.69	52.32	54.00	-1.68	Vertical	Average
11650.00	44.19	7.69	51.88	54.00	-2.12	Horizontal	Average

Remark:
1. *Final Level = Receiver Read level + Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Band 4 – 802.11n(HT20) - MIMO							
Test channel: Lowest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
11490.00	52.02	7.62	59.64	74.00	-14.36	Vertical	Peak
11490.00	51.83	7.62	59.45	74.00	-14.55	Horizontal	Peak
11490.00	43.61	7.62	51.23	54.00	-2.77	Vertical	Average
11490.00	45.09	7.62	52.71	54.00	-1.29	Horizontal	Average
Test channel: Middle channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
11570.00	51.67	7.44	59.11	74.00	-14.89	Vertical	Peak
11570.00	52.14	7.44	59.58	74.00	-14.42	Horizontal	Peak
11570.00	43.84	7.44	51.28	54.00	-2.72	Vertical	Average
11570.00	45.56	7.44	53.00	54.00	-1.00	Horizontal	Average
Test channel: Highest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
11650.00	51.44	7.69	59.13	74.00	-14.87	Vertical	Peak
11650.00	52.19	7.69	59.88	74.00	-14.12	Horizontal	Peak
11650.00	44.32	7.69	52.01	54.00	-1.99	Vertical	Average
11650.00	45.33	7.69	53.02	54.00	-0.98	Horizontal	Average

Band 4 – 802.11n(HT40) - MIMO							
Test channel: Lowest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
11510.00	53.61	7.64	61.25	74.00	-12.75	Vertical	Peak
11510.00	52.08	7.64	59.72	74.00	-14.28	Horizontal	Peak
11510.00	45.61	7.64	53.25	54.00	-0.75	Vertical	Average
11510.00	44.76	7.64	52.40	54.00	-1.60	Horizontal	Average
Test channel: Highest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
11590.00	53.49	7.37	60.86	74.00	-13.14	Vertical	Peak
11590.00	52.42	7.37	59.79	74.00	-14.21	Horizontal	Peak
11590.00	45.86	7.37	53.23	54.00	-0.77	Vertical	Average
11590.00	44.84	7.37	52.21	54.00	-1.79	Horizontal	Average

Remark:
1. *Final Level = Receiver Read level + Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Band 4 – 802.11ac(HT20) - MIMO							
Test channel: Lowest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
11490.00	52.25	7.62	59.87	74.00	-14.13	Vertical	Peak
11490.00	51.69	7.62	59.31	74.00	-14.69	Horizontal	Peak
11490.00	43.87	7.62	51.49	54.00	-2.51	Vertical	Average
11490.00	44.72	7.62	52.34	54.00	-1.66	Horizontal	Average
Test channel: Middle channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
11570.00	52.29	7.44	59.73	74.00	-14.27	Vertical	Peak
11570.00	51.79	7.44	59.23	74.00	-14.77	Horizontal	Peak
11570.00	43.60	7.44	51.04	54.00	-2.96	Vertical	Average
11570.00	44.61	7.44	52.05	54.00	-1.95	Horizontal	Average
Test channel: Highest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
11650.00	52.07	7.69	59.76	74.00	-14.24	Vertical	Peak
11650.00	51.29	7.69	58.98	74.00	-15.02	Horizontal	Peak
11650.00	43.46	7.69	51.15	54.00	-2.85	Vertical	Average
11650.00	45.02	7.69	52.71	54.00	-1.29	Horizontal	Average

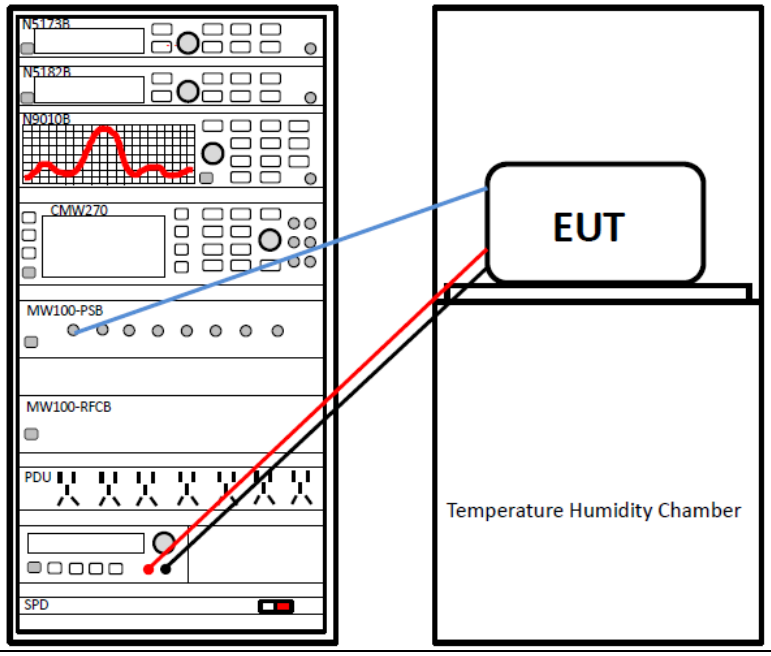
Band 4 – 802.11ac(HT40) - MIMO							
Test channel: Lowest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
11510.00	53.76	7.64	61.40	74.00	-12.60	Vertical	Peak
11510.00	51.64	7.64	59.28	74.00	-14.72	Horizontal	Peak
11510.00	46.02	7.64	53.66	54.00	-0.34	Vertical	Average
11510.00	44.43	7.64	52.07	54.00	-1.93	Horizontal	Average
Test channel: Highest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
11590.00	53.02	7.37	60.39	74.00	-13.61	Vertical	Peak
11590.00	52.76	7.37	60.13	74.00	-13.87	Horizontal	Peak
11590.00	45.78	7.37	53.15	54.00	-0.85	Vertical	Average
11590.00	44.80	7.37	52.17	54.00	-1.83	Horizontal	Average

Remark:
1. *Final Level = Receiver Read level + Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Band 4 – 802.11ac(HT80) - MIMO							
Test channel: Middle channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
11550.00	51.72	7.51	59.23	74.00	-14.77	Vertical	Peak
11550.00	51.71	7.51	59.22	74.00	-14.78	Horizontal	Peak
11550.00	43.37	7.51	50.88	54.00	-3.12	Vertical	Average
11550.00	43.25	7.51	50.76	54.00	-3.24	Horizontal	Average

Remark:
1. *Final Level = Receiver Read level + Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

6.8 Frequency stability

Test Requirement:	FCC Part15 E Section 15.407 (g)
Limit:	Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.
Test setup:	
Test procedure:	1. The EUT is installed in an environment test chamber with external power source. 2. Set the chamber to operate at 50 centigrade and external power source to output at nominal voltage of EUT. 3. A sufficient stabilization period at each temperature is used prior to each frequency measurement. 4. When temperature is stabled, measure the frequency stability. 5. The test shall be performed under -30 to 50 centigrade and 85 to 115 percent of the nominal voltage. Change setting of chamber and external power source to complete all conditions.
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	**Refer to Appendix A - 5G WIFI**