

RF EXPOSURE EVALUATION REPORT

Product Name: WIFI Module
Trade Mark: GSD
Model No. / HVIN: WC6PA2201
Add. Model No. / HVIN: N/A
Report Number: 190222017RFC-3
Test Standards: FCC 47 CFR Part 1 Subpart I
RSS-102 Issue 5
FCC ID: 2AC23-WC6PA2201
IC: 12290A-WC6PA2201
Test Result: PASS
Date of Issue: March 25, 2019

Prepared for:

Hui Zhou Gaoshengda Technology Co.,LTD
NO.75 Zhongkai Development Area, Huizhou, Guangdong, China

Prepared by:

Shenzhen UnionTrust Quality and Technology Co., Ltd.
16/F, Block A, Building 6, Baoneng Science and Technology Park,
Qingxiang Road No.1, Longhua New District, Shenzhen, China
TEL: +86-755-2823 0888
FAX: +86-755-2823 0886

Tested by: Henry Lu
Henry Lu
Project Engineer

Reviewed by: Kevin Liang
Kevin Liang
Assistant Manager

Approved by: Billy Li
Billy Li
Technical Director

Date: March 25, 2019

Shenzhen UnionTrust Quality and Technology Co., Ltd.

Address: 16/F, Block A, Building 6, Baoneng Science and Technology Park, Qingxiang Road No.1, Longhua New District, Shenzhen, China

Tel: +86-755-28230888

Fax: +86-755-28230886

E-mail: info@uttlab.com

[Http://www.uttlab.com](http://www.uttlab.com)

Version

Version No.	Date	Description
V1.0	March 25, 2019	Original



Shenzhen UnionTrust Quality and Technology Co., Ltd.

Address: 16/F, Block A, Building 6, Baoneng Science and Technology Park, Qingxiang Road No.1, Longhua New District, Shenzhen, China

Tel: +86-755-28230888

Fax: +86-755-28230886

E-mail: info@uttlab.com

[Http://www.uttlab.com](http://www.uttlab.com)

CONTENTS

1. GENERAL INFORMATION	4
1.1 CLIENT INFORMATION	4
1.2 EUT INFORMATION	4
1.3 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD	4
1.4 OTHER INFORMATION	6
1.5 GENERAL DESCRIPTION OF APPLIED STANDARDS	7
1.6 DEVIATION FROM STANDARDS	7
1.7 ABNORMALITIES FROM STANDARD CONDITIONS	7
1.8 OTHER INFORMATION REQUESTED BY THE CUSTOMER	7
2. EQUIPMENT LIST	8
3. MPE EVALUATION	8
3.1 REFERENCE DOCUMENTS FOR EVALUATION	8
3.2 MPE COMPLIANCE REQUIREMENT	8
3.2.1 LIMITS	8
3.2.2 TEST PROCEDURE	9
3.3 MPE CALCULATION METHOD	9
3.4 MPE CALCULATION RESULTS	9
3.4.1 FOR WLAN	9
3.4.2 SIMULTANEOUS MULTI-BAND TRANSMISSION MPE ANALYSIS	13
APPENDIX 1 PHOTOS OF TEST SETUP	14
APPENDIX 2 PHOTOS OF EUT CONSTRUCTIONAL DETAILS	14

1. GENERAL INFORMATION

1.1 CLIENT INFORMATION

Applicant:	Hui Zhou Gaoshengda Technology Co.,LTD
Address of Applicant:	NO.75 Zhongkai Development Area, Huizhou, Guangdong, China
Manufacturer:	Hui Zhou Gaoshengda Technology Co.,LTD
Address of Manufacturer:	NO.75 Zhongkai Development Area, Huizhou, Guangdong, China

1.2 EUT INFORMATION

Product Name:	WIFI Module		
Model No. / HVIN:	WC6PA2201		
Add. Model No. / HVIN:	N/A		
Trade Mark:	GSD		
DUT Stage:	Identical Prototype		
EUT Supports Function:	2.4 GHz ISM Band:	IEEE 802.11b/g/n	
	5 GHz U-NII Bands:	5 150 MHz to 5 250 MHz	IEEE 802.11a/n/ac
		5 250 MHz to 5 350 MHz	IEEE 802.11a/n/ac
		5 470 MHz to 5 725 MHz	IEEE 802.11a/n/ac
		5 725 MHz to 5 850 MHz	IEEE 802.11a/n/ac
Software Version:	V1.0		
Hardware Version:	V1.0		
Sample Received Date:	February 22, 2019		
Sample Tested Date:	February 25, 2019 to March 21, 2019		

1.3 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD

For 2.4 GHz Wi-Fi		
Frequency Band:	2400 MHz to 2483.5 MHz	
Frequency Range:	2412 MHz to 2472 MHz	
Support Standards:	IEEE 802.11b, IEEE 802.11g, IEEE 802.11n-HT20, IEEE 802.11n-HT40	
Type of Modulation:	IEEE 802.11b: DSSS(CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM(64-QAM, 16-QAM, QPSK, BPSK) IEEE 802.11n-HT20: OFDM(64-QAM, 16-QAM, QPSK, BPSK) IEEE 802.11n-HT40: OFDM(64-QAM, 16-QAM, QPSK, BPSK)	
Data Rate:	IEEE 802.11b: Up to 11 Mbps IEEE 802.11g: Up to 54 Mbps IEEE 802.11n-HT20: Up to MCS15 IEEE 802.11n-HT40: Up to MCS15	
Number of Channels:	IEEE 802.11b: 13 IEEE 802.11g: 13 IEEE 802.11n-HT20: 13 IEEE 802.11n-HT40: 9	
Channel Separation:	5 MHz	
Antenna Type:	Chain 0	PIFA Antenna
	Chain 1	PIFA Antenna
Antenna Gain:	Chain 0	2.02 dBi
	Chain 1	2.29 dBi
Directional gain:	5.17 dBi	
Maximum Peak Power:	SISO_ Chain 0	IEEE 802.11b: 19.41 dBm IEEE 802.11g: 21.14 dBm
	SISO_ Chain 1	IEEE 802.11b: 18.66 dBm

Shenzhen UnionTrust Quality and Technology Co., Ltd.

Address: 16/F, Block A, Building 6, Baoneng Science and Technology Park, Qingxiang Road No.1, Longhua New District, Shenzhen, China

Tel: +86-755-28230888

Fax: +86-755-28230886

E-mail: info@uttlab.com

[Http://www.uttlab.com](http://www.uttlab.com)

		IEEE 802.11g: 20.37 dBm
	MIMO_ Chain 0+1	IEEE 802.11n-HT20: 22.46 dBm IEEE 802.11n-HT40: 20.71 dBm

For 5 GHz U-NII Bands of Wi-Fi		
Frequency Bands:	5150 MHz to 5250 MHz (U-NII-1)	
	5250 MHz to 5350 MHz (U-NII-2A)	
	5470 MHz to 5725 MHz (U-NII-2C)	
	5 725 MHz to 5 850 MHz (U-NII-3)	
Frequency Ranges:	5180 MHz to 5240 MHz	
	5260 MHz to 5320 MHz	
	5500 MHz to 5700 MHz	
	5 745 MHz to 5 825 MHz	
Support Standards:	IEEE 802.11a/n/ac	
TPC Function:	Not Support	
DFS Operational mode:	Slave without radar Interference detection function	
Type of Modulation:	IEEE 802.11a: OFDM(64QAM, 16QAM, QPSK, BPSK)	
	IEEE 802.11n: OFDM(64QAM, 16QAM, QPSK, BPSK)	
	IEEE 802.11ac: OFDM(256QAM, 64QAM, 16QAM, QPSK, BPSK)	
Channel Spacing:	IEEE 802.11a/n-HT20/ac-VHT20: 20 MHz	
	IEEE 802.11n-HT40/ac-VHT40: 40 MHz	
	IEEE 802.11ac-VHT80: 80 MHz	
Data Rate:	IEEE 802.11a: Up to 54 Mbps	
	IEEE 802.11n-HT20: Up to MCS15	
	IEEE 802.11n-HT40: Up to MCS15	
	IEEE 802.11ac-VHT20: Up to MCS8	
	IEEE 802.11ac-VHT40: Up to MCS9	
	IEEE 802.11ac-VHT80: Up to MCS9	
Number of Channels:	5150 MHz to 5250 MHz: 4 for IEEE 802.11a/n-HT20/ac-VHT20 2 for IEEE 802.11n-HT40/ac-VHT40 1 for IEEE 802.11acVHT80	
	5250 MHz to 5350 MHz: 4 for IEEE 802.11a/n-HT20/ac-VHT20 2 for IEEE 802.11n-HT40/ac-VHT40 1 for IEEE 802.11acVHT80	
	5470 MHz to 5725 MHz: 11 for IEEE 802.11a/n-HT20/ac-VHT20 5 for IEEE 802.11n-HT40/ac-VHT40 2 for IEEE 802.11ac-VHT80	
	5725 MHz to 5850 MHz: 5 for IEEE 802.11a/n-HT20/ac-VHT20 2 for IEEE 802.11n-HT40/ac-VHT40 1 for IEEE 802.11ac-VHT80	
Antenna Type:	Chain 0	PIFA Antenna
	Chain 1	PIFA Antenna
Antenna Gain:	Chain 0	5150 MHz to 5250 MHz: 2.95 dBi
		5250 MHz to 5350 MHz: 3.26dBi
		5470 MHz to 5725 MHz: 4.52dBi

Shenzhen UnionTrust Quality and Technology Co., Ltd.

Address: 16/F, Block A, Building 6, Baoneng Science and Technology Park, Qingxiang Road No.1, Longhua New District, Shenzhen, China

Tel: +86-755-28230888

Fax: +86-755-28230886

E-mail: info@uttlab.com

[Http://www.uttlab.com](http://www.uttlab.com)

		5725 MHz to 5850 MHz: 4.56dBi					
	Chain 1	5150 MHz to 5250 MHz: 4.60dBi					
		5250 MHz to 5350 MHz: 4.06dBi					
		5470 MHz to 5725 MHz: 4.60dBi					
		5725 MHz to 5850 MHz: 4.32dBi					
Maximum (dBm):	EIRP	SISO_Chain 0		U-NII-1			
		IEEE 802.11a:		14.48			
		SISO_Chain 1		U-NII-1			
		IEEE 802.11a:		14.79			
		MIMO_Chain 0+1		U-NII-1			
		IEEE 802.11n-HT20:		17.08			
		IEEE 802.11n-HT40:		17.41			
		IEEE 802.11ac-VHT20:		17.56			
		IEEE 802.11ac-VHT40:		16.99			
		IEEE 802.11ac-VHT80:		14.41			
Maximum conducted output power (dBm):		SISO_Chain 0		U-NII-1	U-NII-2A	U-NII-2C	U-NII-3
		IEEE 802.11a:		11.53	11.57	9.84	12.76
		SISO_Chain 1		U-NII-1	U-NII-2A	U-NII-2C	U-NII-3
		IEEE 802.11a:		10.19	10.51	9.24	10.73
		MIMO_Chain 0+1		U-NII-1	U-NII-2A	U-NII-2C	U-NII-3
		IEEE 802.11n-HT20:		13.43	14.05	14.41	14.67
		IEEE 802.11n-HT40:		13.80	13.90	14.56	13.72
		IEEE 802.11ac-VHT20:		13.89	13.70	14.23	13.91
		IEEE 802.11ac-VHT40:		13.35	13.65	14.20	13.90
		IEEE 802.11ac-VHT80:		10.76	10.96	10.80	11.62
Normal Test Voltage:		3.3 Vdc					

1.4 OTHER INFORMATION

Test channels for 2.4 GHz ISM Band of Wi-Fi						
Mode	Tx/Rx Frequency	Test RF Channel Lists				
		Lowest(L)	Middle(M)	Highest(H11)	Highest(H12)	Highest(H13)
IEEE 802.11b	2412 MHz to 2472 MHz	Channel 1	Channel 7	Channel 11	Channel 12	Channel 13
		2412 MHz	2437 MHz	2462 MHz	2467 MHz	2472 MHz
IEEE 802.11g	2412 MHz to 2472 MHz	Channel 1	Channel 7	Channel 11	Channel 12	Channel 13
		2412 MHz	2437 MHz	2462 MHz	2467 MHz	2472 MHz
IEEE 802.11n-HT20	2412 MHz to 2472 MHz	Channel 1	Channel 7	Channel 11	Channel 12	Channel 13
		2412 MHz	2437 MHz	2462 MHz	2467 MHz	2472 MHz
Mode	Tx/Rx Frequency	Test RF Channel Lists				
		Lowest(L)	Middle(M)	Highest(H9)	Highest(H10)	Highest(H11)
IEEE 802.11n-HT40	2422 MHz to 2462 MHz	Channel 3	Channel 7	Channel 9	Channel 10	Channel 11
		2422 MHz	2437 MHz	2452 MHz	2457 MHz	2462 MHz

Test channels for 5 GHz U-NII Bands of Wi-Fi				
Mode	Tx/Rx Frequency	Test RF Channel Lists		
		Lowest(L)	Middle(M)	Highest(H)
IEEE 802.11a IEEE 802.11n-HT20 IEEE 802.11ac-VHT20	5150 MHz to 5250 MHz	Channel 36	Channel 44	Channel 48
		5180 MHz	5220 MHz	5240 MHz
	5250 MHz to 5350 MHz	Channel 52	Channel 60	Channel 64
		5260 MHz	5300 MHz	5320 MHz
	5470 MHz to 5725 MHz	Channel 100	Channel 116	Channel 140
		5500 MHz	5580 MHz	5700 MHz
	5725 MHz to 5850 MHz	Channel 149	Channel 157	Channel 165
		5745 MHz	5785 MHz	5825 MHz
IEEE 802.11n-HT40 IEEE 802.11ac-VHT40	5150 MHz to 5250 MHz	Channel 38	--	Channel 46
		5190 MHz	--	5230 MHz
	5250 MHz to 5350 MHz	Channel 54	--	Channel 62
		5270 MHz	--	5310 MHz
	5470 MHz to 5725 MHz	Channel 102	Channel 110	Channel 134
		5510 MHz	5550 MHz	5670 MHz
	5725 MHz to 5850 MHz	Channel 151	--	Channel 159
		5755 MHz	--	5795 MHz
IEEE 802.11ac-VHT80	5150 MHz to 5250 MHz	--	Channel 42	--
		--	5210 MHz	--
	5250 MHz to 5350 MHz	--	Channel 58	--
		--	5290 MHz	--
	5470 MHz to 5725 MHz	Channel 106	--	--
		5530 MHz	--	--
	5725 MHz to 5850 MHz	--	Channel 155	--
		--	5775 MHz	--

1.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product, according to the specifications of the manufacturers. It must comply with the requirements of the following standards:

FCC 47 CFR Part 1 Subpart I
RSS-102 Issue 5

All test items have been performed and recorded as per the above standards

1.6 DEVIATION FROM STANDARDS

None.

1.7 ABNORMALITIES FROM STANDARD CONDITIONS

None.

1.8 OTHER INFORMATION REQUESTED BY THE CUSTOMER

None.

Shenzhen UnionTrust Quality and Technology Co., Ltd.

Address: 16/F, Block A, Building 6, Baoneng Science and Technology Park, Qingxiang Road No.1, Longhua New District, Shenzhen, China

Tel: +86-755-28230888

Fax: +86-755-28230886

E-mail: info@uttlab.com

[Http://www.uttlab.com](http://www.uttlab.com)

2. EQUIPMENT LIST

Please refer to the RF test report.

3. MPE EVALUATION

3.1 REFERENCE DOCUMENTS FOR EVALUATION

No.	Identity	Document Title
1	FCC 47 CFR Part 1 Subpart I	PROCEDURES IMPLEMENTING THE NATIONAL ENVIRONMENTAL POLICY ACT OF 1969
2	RSS-102 Issue 5	Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands)
3	KDB 447498 D01 General RF Exposure Guidance v06	RF EXPOSURE PROCEDURES AND EQUIPMENT AUTHORIZATION POLICIES FOR MOBILE AND PORTABLE DEVICES

3.2 MPE COMPLIANCE REQUIREMENT

3.2.1 Limits

3.2.1.1 FCC 47 CFR Part 1 Subpart I

According to §1.1307(b)(1), system operating under the provisions of this section shall be operating in a manner that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure.

Limits for Occupational / Controlled Exposure

Frequency range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Times E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f)*	6
30-300	61.4	0.163	1.0	6
300-1500	/	/	F/300	6
1500-100000	/	/	5	6

Limits for General Population / Uncontrolled Exposure

Frequency range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Times E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	F/1500	30
1500-100000	/	/	1	30

Note: f = frequency in MHz: * = Plane-wave equivalents power density.

3.2.1.2 RSS-102 Issue 5

According to RSS-102 Issue 5, system operating under the provisions of this section shall be operating in a manner that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure.

According to RSS-102 Issue 5, system operating under the provisions of this section shall be operating in a manner that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure.

RF exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm, except when the device operates as follows:

- below 20 MHz⁶ and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 1 W (adjusted for tune-up tolerance);
- at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $4.49/f^{0.5}$ W (adjusted for tune-up tolerance), where f is in MHz;
- at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance);
- at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $1.31 \times 10^{-2} f^{0.6834}$ W (adjusted for tune-up tolerance), where f is in MHz;
- at or above 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 5 W (adjusted for tune-up tolerance).

In these cases, the information contained in the RF exposure technical brief may be limited to information that demonstrates how the e.i.r.p. was derived.

3.2.2 Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

3.3 MPE CALCULATION METHOD

FCC 47 CFR Part 1 Subpart I

$$S = PG/4\pi R^2 = EIRP/4\pi R^2$$

S = power density (in appropriate units, e.g., mw/cm²)

P = power input to the antenna (in appropriate units, e.g., mw)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor is normally numeric gain.

R = distance to the center of radiation of the antenna (in appropriate units, e.g., cm)

3.4 MPE CALCULATION RESULTS

Note: For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.

3.4.1 For WLAN

For Wi-Fi function, operating at 2412MHz to 2472 MHz for IEEE802.11b/g/n and
operating at 5150 MHz to 5250 MHz for IEEE802.11a/n/ac and
operating at 5250 MHz to 5350 MHz for IEEE802.11a/n/ac and
operating at 5470 MHz to 5725 MHz for IEEE802.11a/n/ac and
operating at 5725 MHz to 5850 MHz for IEEE802.11a/n/ac.

3.4.1.1 Antenna Type:

Chain 0/ Chain 1: PIFA Antenna

3.4.1.2 Antenna Gain:

Chain 0:	Chain 1:
2412MHz to 2472 MHz: 2.02 dBi	2412MHz to 2472 MHz: 2.29 dBi
5150 MHz to 5250 MHz: 2.95 dBi	5150 MHz to 5250 MHz: 4.60 dBi
5250 MHz to 5350 MHz: 3.26 dBi	5250 MHz to 5350 MHz: 4.06 dBi
5470 MHz to 5725 MHz: 4.52 dBi	5470 MHz to 5725 MHz: 4.60 dBi
5725 MHz to 5850 MHz: 4.56 dBi	5725 MHz to 5850 MHz: 4.32 dBi

For MIMO mode (2Tx/2Rx), there are two transmission antennas. Both Chain 0 and Chain 1 used at the same time and antenna ports have uniform output powers. The Chain 0 and Chain 1 antenna ports cannot be used alone. The transmit signals are correlated with each other.

For 2.4 GHz WIFI & 5 GHz WIFI (IEEE 802.11n/ac)

$$\text{Directional gain} = 10 \log[(10^{G_1/10} / 20 + 10^{G_2/10} / 20 + \dots + 10^{G_N/10} / 20)^2 / N] \text{ dBi}$$

[Note the "20"s in the denominator of each exponent and the square of the sum of terms; the object is to combine the signal levels coherently.]

For SISO mode (1Tx/1Rx), there are two transmission antennas. The Chain 0 and Chain 1 antenna ports can be used alone

For 2.4 GHz WIFI & 5 GHz WIFI (IEEE 802.11b/g/a)

The antenna gain = Chain 0 or Chain 1

3.4.1.3 Results for FCC 47 CFR Part 1 Subpart I

For SISO (1TX/1RX) Mode

Operating Mode		Freq.	Declared maximum conducted average output power	Max. positive tolerance according manufacturer	Antenna Gain	Calculated maximum EIRP	Declared maximum EIRP	MPE Limit	MPE Value
		(MHz)	(dBm)		(dBi)	(dBm)	(mW)	(mW/cm²)	
SISO Chain 0	IEEE 802.11b	2412-2462	17	2	2.02	21.02	126.4736	1	0.0252
		2467	17	2	2.02	21.02	126.4736	1	0.0252
		2472	14	2	2.02	18.02	63.3870	1	0.0126
	IEEE 802.11g	2412-2462	14	2	2.02	18.02	63.3870	1	0.0126
		2467	14	2	2.02	18.02	63.3870	1	0.0126
		2472	12	2	2.02	16.02	39.9945	1	0.0080
	IEEE 802.11a	5180-5240	12	2	2.95	16.95	49.5450	1	0.0099
		5260-5320	12	2	3.26	17.26	53.2108	1	0.0106
		5500-5700	11	2	4.52	17.52	56.4937	1	0.0112
		5745-5825	12	2	4.56	18.56	71.7794	1	0.0143
SISO Chain 1	IEEE 802.11b	2412-2462	17	2	2.29	21.29	134.5860	1	0.0268
		2467	17	2	2.29	21.29	134.5860	1	0.0268
		2472	17	2	2.29	21.29	134.5860	1	0.0268
	IEEE 802.11g	2412-2462	14	2	2.29	18.29	67.4528	1	0.0134
		2467	14	2	2.29	18.29	67.4528	1	0.0134
		2472	14	2	2.29	18.29	67.4528	1	0.0134
	IEEE 802.11a	5180-5240	11	2	4.60	17.6	57.5440	1	0.0114
		5260-5320	11	2	4.06	17.06	50.8159	1	0.0101
		5500-5700	11	2	4.60	17.6	57.5440	1	0.0114
		5745-5825	12	2	4.32	18.32	67.9204	1	0.0135

For MIMO (2TX/2RX) Mode

Operating Mode		Freq.	Declared maximum conducted average output power	Max. positive Tolerance according manufacturer	Directional Gain	Calculated maximum EIRP	Declared maximum EIRP	MPE Limit	MPE Value
		(MHz)	(dBm)		(dBi)	(dBm)	(mW)	(mW/cm ²)	
MIMO (2TX/2RX)	IEEE 802.11n-HT20	2412-2462	16	2	5.17	23.17	207.4914	1	0.0413
		2467	16	2	5.17	23.17	207.4914	1	0.0413
		2472	8	2	5.17	15.17	32.8852	1	0.0065
	IEEE 802.11n-HT40	2422-2452	14	2	5.17	21.17	130.9182	1	0.0260
		2457	14	2	5.17	21.17	130.9182	1	0.0260
		2462	8	2	5.17	15.17	32.8852	1	0.0065
	IEEE 802.11n-HT20/ac-VHT20	5180-5240	14	2	6.82	22.82	191.4256	1	0.0381
		5260-5320	14	2	6.68	22.68	185.3532	1	0.0369
		5500-5700	14	2	7.57	23.57	227.5097	1	0.0453
		5745-5825	14	2	7.45	23.45	221.3095	1	0.0440
	IEEE 802.11n-HT40/ac-VHT40	5190-5230	14	2	6.82	22.82	191.4256	1	0.0381
		5270-5310	14	2	6.68	22.68	185.3532	1	0.0369
		5510-5670	14	2	7.57	23.57	227.5097	1	0.0453
		5755-5795	14	2	7.45	23.45	221.3095	1	0.0440
	IEEE 802.11ac-VHT80	5210	11	2	6.82	19.82	95.9401	1	0.0191
		5290	11	2	6.68	19.68	92.8966	1	0.0185
		5530	11	2	7.57	20.57	114.0250	1	0.0227
		5775	11	2	7.45	20.45	110.9175	1	0.0221

3.4.1.4 Results for RSS-102 Issue 5

For SISO (1TX/1RX) Mode

Operating Mode		Freq.	Declared maximum conducted average output power	Max. positive tolerance according manufacturer	Antenna Gain	Calculated maximum EIRP	Declared maximum EIRP	Limit
		(MHz)	(dBm)		(dBi)	(dBm)	(W)	(W)
SISO Chain 0	IEEE 802.11g	2412-2462	17	2	2.02	21.02	0.1265	2.6840
		2467	17	2	2.02	21.02	0.1265	2.7257
		2472	14	2	2.02	18.02	0.0634	2.7295
	IEEE 802.11b	2412-2462	14	2	2.02	18.02	0.0634	2.6840
		2467	14	2	2.02	18.02	0.0634	2.7257
		2472	12	2	2.02	16.02	0.0400	2.7295
	IEEE 802.11a	5180-5240	12	2	2.95	16.95	0.0495	4.5253
		5260-5320	12	2	3.26	17.26	0.0532	4.5729
		5500-5700	11	2	4.52	17.52	0.0565	4.7145
		5745-5825	12	2	4.56	18.56	0.0718	4.8570
SISO Chain 1	IEEE 802.11g	2412-2462	17	2	2.29	21.29	0.1346	2.6840
		2467	17	2	2.29	21.29	0.1346	2.7257
		2472	17	2	2.29	21.29	0.1346	2.7295
	IEEE 802.11b	2412-2462	14	2	2.29	18.29	0.0675	2.6840
		2467	14	2	2.29	18.29	0.0675	2.7257
		2472	14	2	2.29	18.29	0.0675	2.7295
	IEEE 802.11a	5180-5240	11	2	4.60	17.6	0.0575	4.5253
		5260-5320	11	2	4.06	17.06	0.0508	4.5729
		5500-5700	11	2	4.60	17.6	0.0575	4.7145
		5745-5825	12	2	4.32	18.32	0.0679	4.8570

For MIMO (2TX/2RX) Mode

Operating Mode		Freq.	Declared maximum conducted average output power	Max. positive Tolerance according manufacturer	Direction al Gain	Calculated maximum EIRP	Declared maximum EIRP	Limit
		(MHz)	(dBm)		(dBi)	(dBm)	(W)	(W)
MIMO (2TX/2RX)	IEEE 802.11n-HT20	2412-2462	16	2	5.17	23.17	0.2075	2.6840
		2467	16	2	5.17	23.17	0.2075	2.7257
		2472	8	2	5.17	15.17	0.0329	2.7295
	IEEE 802.11n-HT40	2422-2452	14	2	5.17	21.17	0.1309	2.6840
		2457	14	2	5.17	21.17	0.1309	2.7257
		2462	8	2	5.17	15.17	0.0329	2.7295
	IEEE 802.11n-HT20/ac-VHT20	5180-5240	14	2	6.82	22.82	0.1914	4.5253
		5260-5320	14	2	6.68	22.68	0.1854	4.5729
		5500-5700	14	2	7.57	23.57	0.2275	4.7145
		5745-5825	14	2	7.45	23.45	0.2213	4.8570
	IEEE 802.11n-HT40/ac-VHT40	5190-5230	14	2	6.82	22.82	0.1914	4.5312
		5270-5310	14	2	6.68	22.68	0.1854	4.5789
		5510-5670	14	2	7.57	23.57	0.2275	4.7204
		5755-5795	14	2	7.45	23.45	0.2213	4.8628
	IEEE 802.11ac-VHT80	5210	11	2	6.82	19.82	0.0959	4.5432
		5290	11	2	6.68	19.68	0.0929	4.5907
		5530	11	2	7.57	20.57	0.1140	4.7321
		5775	11	2	7.45	20.45	0.1109	4.8743

3.4.2 Simultaneous Multi-band Transmission MPE Analysis

3.4.2.1 List of Mode for Simultaneous Multi-band Transmission

No.	Configurations	Support/Not Support
1	2.4G_SISO_WLAN + 5G_SISO_WLAN	Not Support
2	5G_SISO_WLAN + 2.4G_SISO_WLAN	Not Support

3.4.2.2 Results for transmit simultaneously

Not Applicable



APPENDIX 1 PHOTOS OF TEST SETUP

N/A

APPENDIX 2 PHOTOS OF EUT CONSTRUCTIONAL DETAILS

Refer to Appendix 2 for EUT external and internal Photos.

*** End of Report ***

The test report is effective only with both signature and specialized stamp. The result(s) shown in this report refer only to the sample(s) tested. Without written approval of UnionTrust, this report can't be reproduced except in full.
