

RF EXPOSURE EVALUATION REPORT

Product Name: WIFI Module
Trade Mark: N/A
Model No. : PW.3.15000.0155
Add. Model No.: PW.3.15000.**** (The symbol * can be 0-9, A-Z, blank or symbol)
HVIN: PW.3.15000.0155
Report Number: 200615004RFC-5
Test Standards: FCC 47 CFR Part 1 Subpart I
 RSS-102 Issue 5
FCC ID: 2AQ5RWRTL8822BU
IC: 24301-WRTL8822BU
Test Result: PASS
Date of Issue: September 28, 2020


Prepared for:

Shenzhen KTC Commercial Display Technology CO.,LTD.
No.4023,Northern Wuhe Road,Bantian Street,Longgang District,Shenzhen City,Guangdong Province,P.R.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

Prepared by: _____


 Henry Lu
 Team Leader

Reviewed by: _____


 Kevin Liang
 Assistant Manager

Approved by: _____



Billy Li
 Technical Director

Date: _____

September 28, 2020

Shenzhen UnionTrust Quality and Technology Co., Ltd.

Version

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V1.0	September 28, 2020	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>UTTR-RF-RSS102-V1.0

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1. GENERAL INFORMATION

1.1 CLIENT INFORMATION

Applicant:	Shenzhen KTC Commercial Display Technology CO.,LTD.
Address of Applicant:	No.4023,Northern Wuhe Road,Bantian Street,Longgang District,Shenzhen City,Guangdong Province,P.R.China
Manufacturer:	Shenzhen KTC Commercial Display Technology CO.,LTD.
Address of Manufacturer:	No.4023,Northern Wuhe Road,Bantian Street,Longgang District,Shenzhen City,Guangdong Province,P.R.China

1.2 EUT INFORMATION

Product Name:	WIFI Module		
Model No.:	PW.3.15000.0155		
Add. Model No.:	PW.3.15000.**** (The symbol * can be 0-9, A-Z, blank or symbol)		
Trade Mark:	N/A		
DUT Stage:	Production Unit		
	2.4 GHz ISM Band:	IEEE 802.11b/g/n	
		Bluetooth V4.2	
	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	
Sample Received Date:	June 15, 2020		
Sample Tested Date:	June 15, 2020 to July 31, 2020		
Note: The additional model PW.3.15000.**** (The symbol * can be 0-9, A-Z, blank or symbol) is identical with the test model PW.3.15000.0155 except the model number for marketing purpose.			

1.3 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD

For BT_LE	
Frequency Band:	2400 MHz to 2483.5 MHz
Frequency Range:	2402 MHz to 2480 MHz
Bluetooth Version:	Bluetooth V4.2 LE
Type of Modulation:	GFSK
Number of Channels:	40
Channel Separation:	2 MHz
Antenna Type:	External Antenna
Antenna Gain:	2.06 dBi
Maximum Peak Power:	4.52 dBm

For BT_EDR	
Frequency Band:	2400 MHz to 2483.5 MHz
Frequency Range:	2402 MHz to 2480 MHz
Bluetooth Version:	Bluetooth EDR
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Type of Modulation:	GFSK, $\pi/4$ DQPSK, 8DPSK
Number of Channels:	79
Channel Separation:	1 MHz
Antenna Type:	External Antenna

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Fax: +86-755-28230886

E-mail: info@uttlab.com

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Antenna Gain:	2.06 dBi
Maximum Peak Power:	9.171 dBm

For 2.4 GHz ISM Band of Wi-Fi	
Frequency Band:	2400 MHz to 2483.5 MHz
Frequency Range:	2412 MHz to 2462 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: 11 IEEE 802.11g: 11 IEEE 802.11n-HT20: 11 IEEE 802.11n-HT40: 7
Channel Separation:	5 MHz
Antenna Type:	Chain 0 External Antenna Chain 1 External Antenna
Antenna Gain:	Chain 0 2.06 dBi Chain 1 2.06 dBi
Directional gain:	5.07 dBi
Maximum Peak Power:	IEEE 802.11b: 18.89 dBm IEEE 802.11g: 22.53 dBm IEEE 802.11n-HT20: 22.70dBm IEEE 802.11n-HT40: 23.01 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

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Fax: +86-755-28230886

E-mail: info@uttlab.com

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	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	External Antenna			
	Chain 1	External Antenna			
Antenna Gain:	Chain 0	5150 MHz to 5250 MHz: 1.67 dBi			
		5250 MHz to 5350 MHz: 1.75dBi			
		5470 MHz to 5725 MHz: 2.8 dBi			
		5725 MHz to 5850 MHz: 1.12 dBi			
	Chain 1	5150 MHz to 5250 MHz: 1.67 dBi			
		5250 MHz to 5350 MHz: 1.75 dBi			
		5470 MHz to 5725 MHz: 2.8 dBi			
		5725 MHz to 5850 MHz: 1.12dBi			
Maximum EIRP (dBm):	SISO_Chain 0	U-NII-1			
	IEEE 802.11a:	11.03			
	SISO_Chain 1	U-NII-1			
	IEEE 802.11a:	11.48			
	MIMO_Chain 0+1	U-NII-1			
	IEEE 802.11n-HT20:	12.88			
	IEEE 802.11n-HT40:	12.80			
	IEEE 802.11ac-VHT20:	11.84			
	IEEE 802.11ac-VHT40:	11.96			
	IEEE 802.11ac-VHT80:	11.64			
Maximum conducted output power (dBm):	SISO_Chain 0	U-NII-1	U-NII-2A	U-NII-2C	U-NII-3
	IEEE 802.11a:	9.36	8.45	8.23	9.02
	SISO_Chain 1	U-NII-1	U-NII-2A	U-NII-2C	U-NII-3
	IEEE 802.11a:	9.81	9.16	9.43	9.52
	MIMO_Chain 0+1	U-NII-1	U-NII-2A	U-NII-2C	U-NII-3
	IEEE 802.11n-HT20:	11.31	10.61	11.49	11.47
	IEEE 802.11n-HT40:	11.23	10.97	11.77	11.71
	IEEE802.11ac-VHT20:	10.30	10.07	10.97	10.65

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Tel: +86-755-28230888

Fax: +86-755-28230886

E-mail: info@uttlab.com

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	IEEE802.11ac-VHT40:	10.41	10.44	11.18	10.95
	IEEE802.11ac-VHT80:	10.11	10.16	7.91	10.56

1.4 OTHER INFORMATION

Test channels for BT_LE				
Type of Modulation	Tx/Rx Frequency	Test RF Channel Lists		
GFSK	2402 MHz to 2480 MHz	Lowest(L)	Middle(M)	Highest(H)
		Channel 0	Channel 19	Channel 39
		2402 MHz	2440 MHz	2480 MHz

Test channels for BT_EDR				
Mode	Tx/Rx Frequency	Test RF Channel Lists		
GFSK (DH1, DH3, DH5)	2402 MHz to 2480 MHz	Lowest(L)	Middle(M)	Highest(H)
		Channel 0	Channel 39	Channel 78
π /4QPSK (DH1, DH3, DH5)	2402 MHz to 2480 MHz	2402 MHz	2441 MHz	2480 MHz
		Channel 0	Channel 39	Channel 78
8DPSK (DH1, DH3, DH5)	2402 MHz to 2480 MHz	2402 MHz	2441 MHz	2480 MHz
		Channel 0	Channel 39	Channel 78

Test channels for 2.4 GHz ISM Band of Wi-Fi				
Mode	Tx/Rx Frequency	Test RF Channel Lists		
IEEE 802.11b	2412 MHz to 2462 MHz	Lowest(L)	Middle(M)	Highest(H)
		Channel 1	Channel 6	Channel 11
IEEE 802.11g	2412 MHz to 2462 MHz	2412 MHz	2437 MHz	2462 MHz
		Channel 1	Channel 6	Channel 11
IEEE 802.11n-HT20	2412 MHz to 2462 MHz	2412 MHz	2437 MHz	2462 MHz
		Channel 1	Channel 6	Channel 11
IEEE 802.11n-HT40	2422 MHz to 2452 MHz	2422 MHz	2437 MHz	2452 MHz
		Channel 3	Channel 6	Channel 9

Test channels for 5 GHz U-NII Bands of Wi-Fi				
Mode	Tx/Rx Frequency	Test RF Channel Lists		
IEEE 802.11a IEEE 802.11n-HT20 IEEE 802.11ac-VHT20	5150 MHz to 5250 MHz	Lowest(L)	Middle(M)	Highest(H)
		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

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E-mail: info@uttlab.com

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		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.

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 equivalent 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 2462 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: External Antenna

Chain 1: External Antenna

3.4.1.2 Antenna Gain:

- Chain 0:** 2412MHz to 2462 MHz: 2.06 dBi
- 5150 MHz to 5250 MHz: 1.67 dBi
- 5250 MHz to 5350 MHz: 1.75 dBi
- 5470 MHz to 5725 MHz: 2.8 dBi
- 5725 MHz to 5850 MHz: 1.12 dBi

Chain 1: Same as chain 0

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 can be used alone. The transmit signals are correlated with each other.

$$\text{The directional gain} = G_{\text{ANT}} + 10 \log(N_{\text{ANT}}) \text{ dBi}$$

For SISO mode (1Tx/1Rx), 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

$$\text{The antenna gain} = \text{Chain 0 or Chain 1}$$

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/cm ²)	
IEEE 802.11b	2412	18	1	2.06	21.06	127.6439	1	0.0254
	2437	18	1	2.06	21.06	127.6439	1	0.0254
	2462	18	1	2.06	21.06	127.6439	1	0.0254
IEEE 802.11g	2412	21	1.5	2.56	24.56	285.7591	1	0.0568
	2437	21	1.5	2.56	24.56	285.7591	1	0.0568
	2462	21	1.5	2.56	24.56	285.7591	1	0.0568
SISO IEEE 802.11a	5180	9	1	1.67	11.67	14.6893	1	0.0029
	5220	9	1	1.67	11.67	14.6893	1	0.0029
	5240	9	1	1.67	11.67	14.6893	1	0.0029
	5260	9	1	1.75	11.75	14.9624	1	0.0029
	5300	9	1	1.75	11.75	14.9624	1	0.0029
	5320	9	1	1.75	11.75	14.9624	1	0.0029
	5500	7	3	2.8	12.8	19.0546	1	0.0038
	5580	7	3	2.8	12.8	19.0546	1	0.0038
	5700	7	3	2.8	12.8	19.0546	1	0.0038
	5745	9	1	1.12	11.12	12.9420	1	0.0026
	5785	9	1	1.12	11.12	12.9420	1	0.0026
5805	9	1	1.12	11.12	12.9420	1	0.0026	

For MIMO (2TX/2RX) 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)							
IEEE 802.11n-HT20	2412	22	1	2.06	25.06	320.6269	1	0.0638
	2437	22	1	2.06	25.06	320.6269	1	0.0638
	2462	22	1	2.06	25.06	320.6269	1	0.0638
IEEE 802.11n-HT40	2422	23	1	2.06	26.06	403.6454	1	0.0803
	2437	23	1	2.06	26.06	403.6454	1	0.0803
	2452	23	1	2.06	26.06	403.6454	1	0.0803
IEEE 802.11n-HT20 IEEE 802.11ac-VHT20	5180	10	1.5	1.67	13.17	20.7491	1	0.0041
	5220	10	1.5	1.67	13.17	20.7491	1	0.0041
	5240	10	1.5	1.67	13.17	20.7491	1	0.0041
	5260	10	1	1.75	12.75	18.8365	1	0.0037
	5300	10	1	1.75	12.75	18.8365	1	0.0037
	5320	10	1	1.75	12.75	18.8365	1	0.0037
	5500	10	2	2.8	14.8	30.1995	1	0.0060
	5580	10	2	2.8	14.8	30.1995	1	0.0060
	5700	10	2	2.8	14.8	30.1995	1	0.0060
	5745	11	1	1.12	13.12	20.5116	1	0.0041
	5785	11	1	1.12	13.12	20.5116	1	0.0041
5805	11	1	1.12	13.12	20.5116	1	0.0041	
IEEE 802.11n-HT40 IEEE 802.11ac-VHT40	5190	10	1.5	1.67	13.17	20.7491	1	0.0041
	5230	10	1.5	1.67	13.17	20.7491	1	0.0041
	5270	10	1	1.75	12.75	18.8365	1	0.0037
	5310	10	1	1.75	12.75	18.8365	1	0.0037
	5510	10	2	2.8	14.8	30.1995	1	0.0060
	5550	10	2	2.8	14.8	30.1995	1	0.0060
	5670	10	2	2.8	14.8	30.1995	1	0.0060
	5755	11	1	1.12	13.12	20.5116	1	0.0041
	5795	11	1	1.12	13.12	20.5116	1	0.0041
IEEE 802.11ac-VHT80	5210	10	1	1.67	12.67	18.4927	1	0.0037
	5290	10	1	1.75	12.75	18.8365	1	0.0037
	5530	8	1	2.8	11.8	15.1356	1	0.0030
	5775	10	1	1.12	12.12	16.2930	1	0.0032

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)
IEEE 802.11b	2412	18	1	2.06	21.06	0.1276	2.6840
	2437	18	1	2.06	21.06	0.1276	
	2462	18	1	2.06	21.06	0.1276	
IEEE 802.11g	2412	21	1.5	2.56	24.56	0.2858	2.6840
	2437	21	1.5	2.56	24.56	0.2858	
	2462	21	1.5	2.56	24.56	0.2858	
IEEE 802.11a	5180	9	1	1.67	11.67	0.0147	4.5253
	5220	9	1	1.67	11.67	0.0147	
	5240	9	1	1.67	11.67	0.0147	
	5260	9	1	1.75	11.75	0.0150	4.5729
	5300	9	1	1.75	11.75	0.0150	
	5320	9	1	1.75	11.75	0.0150	
	5500	7	3	2.8	12.8	0.0169	4.7145
	5580	7	3	2.8	12.8	0.0169	
	5700	7	3	2.8	12.8	0.0169	
	5745	9	1	1.12	11.12	0.0129	4.8570
	5785	9	1	1.12	11.12	0.0129	
	5805	9	1	1.12	11.12	0.0129	

For MIMO (2TX/2RX) 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)	(mW)	(W)
IEEE 802.11n-HT20	2412	22	1	2.06	25.06	0.3206	2.6840
	2437	22	1	2.06	25.06	0.3206	
	2462	22	1	2.06	25.06	0.3206	
IEEE 802.11n-HT40	2422	23	1	2.06	26.06	0.4036	2.6916
	2437	23	1	2.06	26.06	0.4036	
	2452	23	1	2.06	26.06	0.4036	
IEEE 802.11n-HT20 IEEE 802.11ac-VHT20	5180	10	1.5	1.67	13.17	0.0207	4.5253
	5220	10	1.5	1.67	13.17	0.0207	
	5240	10	1.5	1.67	13.17	0.0207	
	5260	10	1	1.75	12.75	0.0188	4.5729
	5300	10	1	1.75	12.75	0.0188	
	5320	10	1	1.75	12.75	0.0188	
	5500	10	2	2.8	14.8	0.0302	4.7145
	5580	10	2	2.8	14.8	0.0302	
	5700	10	2	2.8	14.8	0.0302	
	5745	11	1	1.12	13.12	0.0205	4.8570
5785	11	1	1.12	13.12	0.0205		
5805	11	1	1.12	13.12	0.0205		
IEEE 802.11n-HT40 IEEE 802.11ac-VHT40	5190	10	1.5	1.67	13.17	0.0207	4.5312
	5230	10	1.5	1.67	13.17	0.0207	

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>

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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)	(mW)	(W)
	5270	10	1	1.75	12.75	0.0188	4.5789
	5310	10	1	1.75	12.75	0.0188	
	5510	10	2	2.8	14.8	0.0302	4.7204
	5550	10	2	2.8	14.8	0.0302	
	5670	10	2	2.8	14.8	0.0302	
	5755	11	1	1.12	13.12	0.0205	4.8628
	5795	11	1	1.12	13.12	0.0205	
IEEE 802.11ac-VHT80	5210	10	1	1.67	12.67	0.0185	4.5432
	5290	10	1	1.75	12.75	0.0188	4.5907
	5530	8	1	2.8	11.8	0.0151	4.7321
	5775	10	1	1.12	12.12	0.0163	4.8743

3.4.2 For BT

For BT_LE function, operating at 2402MHz to 2480 MHz for GFSK and

For BT_EDR function, operating at 2402MHz to 2480 MHz for GFSK, $\pi/4$ DQPSK, 8DPSK

3.4.2.1 Antenna Type:

Chain 0: External Antenna

3.4.2.2 Antenna Gain:

Chain 0: 2402MHz to 2480 MHz: 2.06dBi

3.4.2.3 Results for FCC 47 CFR Part 1 Subpart I

Operating Mode	Freq.	Declared maximum conducted output power	Max. positive tolerance according manufacturer	Antenna Gain	Calculated maximum EIRP	Declared maximum EIRP	MPE Limit	MPE Value
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(mW)	(mW/cm ²)	
LE	2402-2480	3	2	2.06	7.06	5.0816	1	0.0010
EDR	2402-2480	8	2	2.06	12.06	16.0694	1	0.0032

3.4.2.4 Results for RSS-102 Issue 5

Operating Mode	Freq.	Declared maximum conducted output power	Max. positive tolerance according manufacturer	Antenna Gain	Calculated maximum EIRP	Declared maximum EIRP	Limit
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(W)	(W)
LE	2402-2480	3	2	2.06	7.06	0.0051	2.6764
EDR	2402-2480	8	2	2.06	12.06	0.0161	2.6764

3.4.3 Simultaneous Multi-band Transmission MPE Analysis**3.4.4.1 List of Mode for Simultaneous Multi-band Transmission**

No.	Configurations	Support/Not Support
1	2.4G_WLAN + BT	Not Support
2	5G_WLAN + BT	Not Support



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 ***

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