RF EXPOSURE EVALUATION REPORT

Product Name:	WIFI+BT Module
Trade Mark:	GSD
Model No.:	WCT6LA2701
HVIN:	WCT6PA2201
Report Number:	171227005RFC-5
Test Standards:	FCC 47 CFR Part 1 Subpart I RSS-102 Issue 5
FCC ID:	2AC23-WCT6LA2701
IC:	12290A-WCT6LA2701
Test Result:	PASS
Date of Issue:	February 2, 2018

Prepared for:

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UnionTrust Laboratories * Certified *

Version

Version No.	Date	Description
V1.0	February 2, 2018	Original

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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+BT Module		
Model No.:	WCT6LA2701		
Add. Model No.:	N/A		
Trade Mark:	GSD		
DUT Stage:	Identical Prototype		
EUT Supports Function:	2.4 GHz ISM Band:	IEEE 802.11b/g/n	
		Bluetooth: V3.0+EDR & V4.1 LE	
	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

1.3 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD

For BT_LE	
Frequency Range:	2400 MHz to 2483.5 MHz
Bluetooth Version:	Bluetooth V4.1 LE
Type of Modulation:	GFSK
Number of Channels:	40
Channel Separation:	2 MHz
Antenna Type:	PIFA Antenna
Antenna Gain:	2.02 dBi
Maximum Peak Power:	0.50 dBm
Maximum EIRP:	2.52 dBm

For BT_EDR	
Frequency Range:	2400 MHz to 2483.5 MHz
Bluetooth Version:	Bluetooth V3.0+EDR
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Type of Modulation:	GFSK, π/4DQPSK, 8DPSK
Number of Channels:	79
Channel Separation:	1 MHz
Antenna Type:	PIFA Antenna
Antenna Gain:	1.72 dBi
Maximum Peak Power:	8.07 dBm
Maximum EIRP:	10.09 dBm

For 2.4 GHz ISM Band of Wi-Fi		
Frequency Range:	2400 MHz to 2483.5 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: 19.92 dBm IEEE 802.11g: 22.97 dBm IEEE 802.11n-HT20: 18.52 dBm IEEE 802.11n-HT40: 18.59 dBm
	SISO_ Chain 1	IEEE 802.11b: 20.49 dBm IEEE 802.11g: 22.82 dBm IEEE 802.11n-HT20: 17.33 dBm IEEE 802.11n-HT40: 17.26 dBm
	MIMO_ Chain 0+1	IEEE 802.11n-HT20: 20.71 dBm IEEE 802.11n-HT40: 20.90 dBm
Maximum EIRP:	SISO_ Chain 0	IEEE 802.11b: 21.94 dBm IEEE 802.11g: 24.99 dBm IEEE 802.11n-HT20: 20.54 dBm IEEE 802.11n-HT40: 20.61 dBm
	SISO_ Chain 1	IEEE 802.11b: 22.78 dBm IEEE 802.11g: 25.11 dBm IEEE 802.11n-HT20: 19.62 dBm IEEE 802.11n-HT40: 19.55 dBm
	MIMO_ Chain 0+1	IEEE 802.11n-HT20: 22.84 dBm IEEE 802.11n-HT40: 23.03 dBm

For 5 GHz U-NII Bands of Wi-Fi		
Frequency Range:	5150 MHz to 5250 MHz	
	5250 MHz to 5350 MHz	
	5470 MHz to 5725 MHz	
	5 725 MHz to 5 850 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 5850 MHz: 2.95 dBi
		5250 MHz to 5350 MHz: 3.26 dBi
		5470 MHz to 5725 MHz: 4.52 dBi
		5725 MHz to 5850 MHz: 4.56 dBi
	Chain 1	5150 MHz to 5850 MHz: 4.06 dBi
		5250 MHz to 5350 MHz: 4.06 dBi
		5470 MHz to 5725 MHz: 4.60 dBi
		5725 MHz to 5850 MHz: 4.32 dBi
Directional gain:	5150 MHz to 5850 MHz:	6.53 dBi
	5250 MHz to 5350 MHz:	6.68 dBi

	5470 MHz to 5725 MHz:	7.57 dBi			
	5725 MHz to 5850 MHz:	7.45 dBi			
Maximum conducted output power (dBm):	**SISO_Chain 0**	**U-NII-1**	**U-NII-2A**	**U-NII-2C**	**U-NII-3**
	IEEE 802.11a:	14.70	15.80	16.08	14.78
	IEEE 802.11n-HT20:	11.20	11.66	11.94	11.37
	IEEE 802.11n-HT40:	11.06	11.56	12.00	10.84
	IEEE 802.11ac-VHT80:	9.82	10.38	10.31	8.95
	SISO_Chain 1	**U-NII-1**	**U-NII-2A**	**U-NII-2C**	**U-NII-3**
	IEEE 802.11a:	14.29	14.17	13.69	14.05
	IEEE 802.11n-HT20:	10.37	11.29	10.81	9.34
	IEEE 802.11n-HT40:	10.12	11.32	9.29	9.01
	IEEE 802.11ac-VHT80:	8.15	10.40	10.51	7.24
	MIMO_Chain 0+1	**U-NII-1**	**U-NII-2A**	**U-NII-2C**	**U-NII-3**
	IEEE 802.11n-HT20:	13.82	14.44	14.42	13.48
	IEEE 802.11n-HT40:	13.63	14.45	13.86	13.03
	IEEE 802.11ac-VHT80:	12.08	13.40	13.42	11.19
Maximum EIRP (dBm):	**U-NII-1**				
		SISO_Chain 0	**SISO_Chain 1**	**MIMO_Chain 0+1**	
	IEEE 802.11a:	17.65	18.35	N/A	
	IEEE 802.11n-HT20:	14.15	14.43	17.30	
	IEEE 802.11n-HT40:	14.01	14.18	17.11	
	IEEE 802.11ac-VHT80:	12.77	12.21	15.51	

1.4 OTHER INFORMATION

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

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

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.

RF Field Strength Limits for Devices Used by the General Public (Uncontrolled Environment)

Frequency range (MHz)	Electric Field (E) (V/m rms)	Magnetic Field (H) (A/m rms)	Power Density (S) (W/m²)	Reference Period H |² or S (minutes)
0.003-10[21]	83	90	-	Instantaneous*
0.1-10	-	0.73/ f	-	6**
1.1-10	87/ $f^{0.5}$	-	-	6**
10-20	27.46	0.0728	2	6
20-48	58.07/ $f^{0.25}$	0.1540/ $f^{0.25}$	8.944/ $f^{0.5}$	6
48-300	22.06	0.05852	1.291	6
300-6000	3.142 $f^{0.3417}$	0.008335 $f^{0.3417}$	**0.02619$f^{0.6834}$**	6
6000-15000	61.4	0.163	10	6
15000-150000	61.4	0.163	10	616000/ $f^{1.2}$
150000-300000	0.158 $f^{0.5}$	4.21 x 10^{-4} $f^{0.5}$	6.67 x 10^{-5} f	616000/ $f^{1.2}$

Note: f is frequency in MHz.
*Based on nerve stimulation (NS).
** Based on specific absorption rate (SAR).

RF Field Strength Limits for Controlled Use Devices (Controlled Environment)

Frequency range (MHz)	Electric Field (E) (V/m rms)	Magnetic Field (H) (A/m rms)	Power Density (S) (W/m²)	Reference Period H |² or S (minutes)
0.003-10[23]	170	180	-	Instantaneous*
1-10	-	1.6/ f	-	6**
1.29-10	193/ $f^{0.5}$	-	-	6**
10-20	61.4	0.163	10	6
20-48	129.8/ $f^{0.25}$	0.3444/ $f^{0.25}$	44.72/ $f^{0.5}$	6
48-100	49.33	0.1309	6.455	6
100-6000	15.60 $f^{0.25}$	0.04138 $f^{0.25}$	0.6455$f^{0.5}$	6
6000-15000	137	0.364	50	6
15000-150000	137	0.364	50	616000/ $f^{1.2}$
150000-300000	0.354 $f^{0.5}$	9.40 x 10^{-4} $f^{0.5}$	3.33 x 10^{-4} f	616000/ $f^{1.2}$

Note: f is frequency in MHz.
*Based on nerve stimulation (NS).
** Based on specific absorption rate (SAR).

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

3.3.1 FCC 47 CFR Part 1 Subpart I

S = PG/4πR^2= EIRP/4πR^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)

3.3.2 RSS-102 Issue 5

S = PG/4πR^2= EIRP/4πR^2
S = power density (in appropriate units, e.g., w/m2)
P = power input to the antenna (in appropriate units, e.g., w)
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., m)

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 5725 MHz to 5850 MHz for IEEE802.11a/n/ac.

3.4.1.1 Antenna Type:

Chain 0: PIFA Antenna
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: 4.06 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 can be used alone. The transmit signals are correlated with each other.

For 2.4 GHz WIFI & 5 GHz WIFI

Directional gain = 10 log[(10^G1 /20 + 10^G2 /20 + … + 10^GN /20)^2 /NANT] 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. 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

For 2.4 GHz WIFI & 5 GHz WIFI

The antenna gain = Chain 0 or Chain 1 = 1.72 dBi

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)	
SISO Chain 0	IEEE 802.11b IEEE 802.11g	2412-2462	17	2	2.02	21.02	126.4736	1	0.0252
	IEEE 802.11b IEEE 802.11g	2467-2472	12	2	2.02	16.02	39.9945	1	0.0080
	IEEE 802.11a	5180-5240	14	2	2.95	18.95	78.5236	1	0.0156
		5260-5320	15	2	3.26	20.26	106.1696	1	0.0211
		5500-5700	15	2	4.52	21.52	141.9058	1	0.0282
		5745-5825	14	2	4.56	20.56	113.7627	1	0.0226
SISO Chain 1	IEEE 802.11b IEEE 802.11g	2412-2462	17	2	2.02	21.02	126.4736	1	0.0252
	IEEE 802.11b IEEE 802.11g	2467-2472	12	2	2.02	16.02	39.9945	1	0.0080
	IEEE 802.11a	5180-5240	14	2	2.95	18.95	78.5236	1	0.0156
		5260-5320	15	2	3.26	20.26	106.1696	1	0.0211
		5500-5700	15	2	4.52	21.52	141.9058	1	0.0282
		5745-5825	14	2	4.56	20.56	113.7627	1	0.0226

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/cm²)	
MIMO (2TX/2RX)	IEEE 802.11n-HT20	2412-2462	11	2	5.17	18.17	65.6145	1	0.0131
		2467-2472	10	2	5.17	17.17	52.1195	1	0.0104
	IEEE 802.11n-HT40	2422-2452	11	2	5.17	18.17	65.6145	1	0.0131
		2457-2462	10	2	5.17	17.17	52.1195	1	0.0104
	IEEE 802.11n-HT20	5180-5240	10	2	6.53	18.53	71.2853	1	0.0142
		5260-5320	11	2	6.68	19.68	92.8966	1	0.0185
		5500-5700	11	2	7.57	20.57	114.0250	1	0.0227
		5745-5825	10	2	7.45	19.45	88.1049	1	0.0175
	IEEE 802.11n-HT40	5190-5230	10	2	6.53	18.53	71.2853	1	0.0142
		5270-5310	10	2	6.68	18.68	73.7904	1	0.0147
		5510-5670	10	2	7.57	19.57	90.5733	1	0.0180
		5755-5795	10	2	7.45	19.45	88.1049	1	0.0175
	IEEE 802.11ac-VHT20	5180-5240	9	2	6.53	17.53	56.6239	1	0.0113
		5260-5320	9	2	6.68	17.68	58.6138	1	0.0117
		5500-5700	9	2	7.57	18.57	71.9449	1	0.0143
		5745-5825	9	2	7.45	18.45	69.9842	1	0.0139
	IEEE 802.11ac-VHT40	5190-5230	9	2	7.45	18.45	69.9842	1	0.0139
		5270-5310	9	2	6.68	17.68	58.6138	1	0.0117
		5510-5670	9	2	7.57	18.57	71.9449	1	0.0143
		5755-5795	9	2	7.45	18.45	69.9842	1	0.0139
	IEEE 802.11ac-VHT80	5210	9	2	6.53	17.53	56.6239	1	0.0113
		5290	9	2	6.68	17.68	58.6138	1	0.0117
		5530	9	2	7.57	18.57	71.9449	1	0.0143
		5775	9	2	7.45	18.45	69.9842	1	0.0139

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	MPE Limit	MPE Value
		(MHz)	(dBm)		(dBi)	(dBm)	(W)	(W/m^2)	
SISO Chain 0	IEEE 802.11b IEEE 802.11g	2412-2462	17	2	2.02	0.0016	5.35	0.0032	5.3468
	IEEE 802.11b IEEE 802.11g	2467-2472	12	2	2.02	0.0016	5.35	0.0032	5.3468
	IEEE 802.11a	5180-5240	14	2	2.95	0.0020	9.01	0.0039	9.0061
		5260-5320	15	2	3.26	0.0021	9.01	0.0042	9.0058
		5500-5700	15	2	4.52	0.0028	9.01	0.0056	9.0044
		5745-5825	14	2	4.56	0.0029	9.01	0.0057	9.0043
SISO Chain 1	IEEE 802.11b IEEE 802.11g	2412-2462	17	2	2.02	0.0016	5.35	0.0032	5.3468
	IEEE 802.11b IEEE 802.11g	2467-2472	12	2	2.02	0.0016	5.35	0.0032	5.3468
	IEEE 802.11a	5180-5240	14	2	2.95	0.0020	9.01	0.0039	9.0061
		5260-5320	15	2	3.26	0.0021	9.01	0.0042	9.0058
		5500-5700	15	2	4.52	0.0028	9.01	0.0056	9.0044
		5745-5825	14	2	4.56	0.0029	9.01	0.0057	9.0043

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)	(W)	(W/m^2)	
MIMO (2TX/2RX)	IEEE 802.11n-HT20	2412-2462	11	2	5.17	0.0033	5.35	0.0065	5.3435
		2467-2472	10	2	5.17	0.0033	5.35	0.0065	5.3435
	IEEE 802.11n-HT40	2422-2452	11	2	5.17	0.0033	5.35	0.0065	5.3435
		2457-2462	10	2	5.17	0.0033	5.35	0.0065	5.3435
	IEEE 802.11n-HT20	5180-5240	10	2	6.53	0.0045	9.01	0.0089	9.0011
		5260-5320	11	2	6.68	0.0047	9.01	0.0093	9.0007
		5500-5700	11	2	7.57	0.0057	9.01	0.0114	8.9986
		5745-5825	10	2	7.45	0.0056	9.01	0.0111	8.9989
	IEEE 802.11n-HT40	5190-5230	10	2	6.53	0.0045	9.01	0.0089	9.0011
		5270-5310	10	2	6.68	0.0047	9.01	0.0093	9.0007
		5510-5670	10	2	7.57	0.0057	9.01	0.0114	8.9986
		5755-5795	10	2	7.45	0.0056	9.01	0.0111	8.9989
	IEEE 802.11ac-VHT20	5180-5240	9	2	6.53	0.0045	9.01	0.0089	9.0011
		5260-5320	9	2	6.68	0.0047	9.01	0.0093	9.0007
		5500-5700	10	2	7.57	0.0057	9.01	0.0114	8.9986
		5745-5825	10	2	7.45	0.0056	9.01	0.0111	8.9989
	IEEE 802.11ac-VHT40	5190-5230	9	2	6.53	0.0045	9.01	0.0089	9.0011
		5270-5310	9	2	6.68	0.0047	9.01	0.0093	9.0007
		5510-5670	9	2	7.57	0.0057	9.01	0.0114	8.9986
		5755-5795	9	2	7.45	0.0056	9.01	0.0111	8.9989
	IEEE 802.11ac-VHT80	5210	9	2	6.53	0.0045	9.01	0.0089	9.0011
		5290	9	2	6.68	0.0047	9.01	0.0093	9.0007
		5530	9	2	7.57	0.0057	9.01	0.0114	8.9986
		5775	9	2	7.45	0.0056	9.01	0.0111	8.9989

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, π/4 DQPSK, 8DPSK

3.4.2.1 Antenna Type:

Chain 0: PIFA Antenna

3.4.2.2 Antenna Gain:

Chain 0: 2402MHz to 2480 MHz: 2.02 dBi

3.4.2.3 Results for FCC 47 CFR Part 1 Subpart I

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)	(dBm)	(dBm)	(dBm)	(mW)	(mW/cm^2)	
LE	2402-2480	0	2	2.02	4.02	2.5235	1	0.0005
EDR	2402-2480	8	2	2.02	12.02	15.9221	1	0.0032

3.4.2.4 Results for RSS-102 Issue 5

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)	(dBm)	(dBm)	(dBm)	(W)	(W/m^2)	
LE	2402-2480	0	2	2.02	0.0016	5.35	0.0032	5.3468
EDR	2402-2480	8	2	2.02	0.0016	5.35	0.0032	5.3468

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_SISO_WLAN + BT	Not Support
2	2.4G_MIMO_WLAN + BT	Not Support
3	5G_SISO_WLAN + BT	Not Support
4	5G_MIMO_WLAN + BT	Not Support

3.4.4.2 Results for transmit simultaneously

Not Applicable

APPENDIX 1 PHOTOGRAPHS OF TEST SETUP

N/A

APPENDIX 2 PHOTOGRAPHS OF EUT CONSTRUCTIONAL DETAILS

Refer to Appendix 2 for EUT external and internal photographs.

*** End of Report ***

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