



Shenzhen CTA Testing Technology Co., Ltd.

Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community, Fuhai Street, Bao'an District, Shenzhen, China

RF Exposure MPE

Report Reference No.....: CTA25011300109

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Date of issue: Feb. 24, 2025

Testing Laboratory Name.....: Shenzhen CTA Testing Technology Co., Ltd.

Address: Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community, Fuhai Street, Bao'an District, Shenzhen, China

Applicant's name.....: Shenzhen Qian feng INFORMATION Technology Co., LTD.

Address: C507, Building 86, Fifth Industrial Zone, Mashantou Community, Matian Street, Guangming District, Shenzhen, China

Standard.....: 47CFR §1.1310

47CFR §2.1091

KDB447498 D01 General RF Exposure Guidance v06

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Test item description.....: Vehicle navigation

Manufacturer.....: Shenzhen Qian feng INFORMATION Technology Co., LTD.

Trade Mark.....: N/A

Model/Type reference.....: QF9007

Rating.....: DC 12.0V From external circuit

Result.....: PASS

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TEST REPORT

Equipment under Test : Vehicle navigation

Model /Type : QF9007

Listed Models : QF9009, QF9010

Model difference : The motherboard PCB layout and Schematic of these models is the same, only the appearance, size, keys and FM PCB placement are different.

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Manufacturer : **Shenzhen Qian feng INFORMATION Technology Co., LTD.**

Address : C507, Building 86, Fifth Industrial Zone, Mashantou Community, Matian Street, Guangming District, Shenzhen, China

Test Result:	PASS
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The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

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1 TEST STANDARDS

The tests were performed according to following standards:

[ANSI C95.1-1999](#): IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.

[FCC KDB 447498 D01 General RF Exposure Guidance v06](#): Mobile and Portable Device, RF Exposure, Equipment Authorization Procedures.

[FCC CFR 47 part1 1.1310](#): Radiofrequency radiation exposure limits.

[FCC CFR 47 part2 2.1091](#): Radiofrequency radiation exposure evaluation: mobile devices

2 SUMMARY

2.1 General Remarks

Date of receipt of test sample	:	Jan. 13, 2025
Testing commenced on	:	Jan. 13, 2025
Testing concluded on	:	Feb. 24, 2025

2.2 Product Description

Bluetooth :	
Supported Type:	Bluetooth BR/EDR
Modulation:	GFSK, $\pi/4$ DQPSK, 8DPSK
Operation frequency:	2402MHz~2480MHz
Channel number:	79
Channel separation:	1MHz
Antenna type:	External antenna
Antenna gain:	0.89 dBi
Bluetooth BLE	
Supported type:	Bluetooth low Energy
Modulation:	GFSK
Operation frequency:	2402MHz to 2480MHz
Channel number:	40
Channel separation:	2 MHz
Antenna type:	External antenna
Antenna gain:	0.89 dBi
2.4GWIFI :	
Supported type:	802.11b/802.11g/802.11n(H20)/ 802.11n(H40)
Modulation:	802.11b: DSSS 802.11g/802.11n(H20)/ 802.11n(H40): OFDM
Operation frequency:	802.11b/802.11g/802.11n(H20): 2412MHz~2462MHz 802.11n(H40): 2422MHz~2452MHz
Channel number:	802.11b/802.11g/802.11n(H20): 11 802.11n(H40):7
Channel separation:	5MHz
Antenna type:	External antenna
Antenna gain:	0.89 dBi

5GWIFI				
Supported type:	20MHz system	40MHz system	80MHz system	160MHz

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				system
	802.11a 802.11n 802.11ac	802.11n 802.11ac	802.11ac	N/A
Operation frequency:	5180MHz-5240MHz 5745MHz-5825MHz	5190MHz-5230MHz 5755MHz-5795MHz	5210MHz 5775MHz	N/A
Modulation:	OFDM	OFDM	OFDM	N/A
Channel number:	9	4	2	N/A
Channel separation:	20MHz	40MHz	80MHz	N/A
Antenna type:	External antenna			
Antenna gain:	5.1GWIFI: 1.20 dBi 5.8GWIFI: 1.50 dBi			

LTE	
Operation Band:	E-UTRA Band 5 E-UTRA Band 7 E-UTRA Band 38 E-UTRA Band 41
Support Bandwidth:	Band 5: 1.4MHz, 3MHz, 5MHz,10MHz, Band 7: 5MHz,10MHz,15MHz,20MHz, Band 38: 5MHz,10MHz,15MHz,20MHz, Band 41: 5MHz,10MHz,15MHz,20MHz,
TX/RXFrequency Range:	E-UTRA Band 5(824 MHz -849MHz) E-UTRA Band 7(2500 MHz -2570MHz) E-UTRA Band 38(2570 MHz -2620MHz) E-UTRA Band 41(2535 MHz -2655MHz)
Modulation Type:	QPSK, 16QAM
Release Version:	Release 9
Antenna Type:	External antenna
Antenna Gain:	Band 5/7/38/41: 2 dBi

2.3 Special Accessories

The following is the EUT test of the auxiliary equipment provided by the laboratory:

Description	Manufacturer	Model	Technical Parameters	Certificate	Provided by
/	/	/	/	/	/

2.4 Modifications

No modifications were implemented to meet testing criteria.

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3 TEST ENVIRONMENT

3.1 Address of the test laboratory

Shenzhen CTA Testing Technology Co., Ltd.

Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community,
Fuhai Street, Bao'an District, Shenzhen, China

3.2 Test Facility

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

FCC-Registration No.: 517856 Designation Number: CN1318

Shenzhen CTA Testing Technology Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

A2LA-Lab Cert. No.: 6534.01

Shenzhen CTA Testing Technology Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.

The 3m-Semi anechoic test site fulfils CISPR 16-1-4 according to ANSI C63.10 and CISPR 16-1-4:2010.

3.3 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01 "Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 2" and is documented in the Shenzhen CTA Testing Technology Co., Ltd. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen CTA Testing Technology Co., Ltd. :

Test	Range	Measurement Uncertainty	Notes
Radiated Emission	9KHz~30MHz	3.02 dB	(1)
Radiated Emission	30~1000MHz	4.06 dB	(1)
Radiated Emission	1~18GHz	5.14 dB	(1)
Radiated Emission	18-40GHz	5.38 dB	(1)
Conducted Disturbance	0.15~30MHz	2.14 dB	(1)
Output Peak power	30MHz~18GHz	0.55 dB	(1)
Power spectral density	/	0.57 dB	(1)
Spectrum bandwidth	/	1.1%	(1)
Radiated spurious emission (30MHz-1GHz)	30~1000MHz	4.10 dB	(1)
Radiated spurious emission (1GHz-18GHz)	1~18GHz	4.32 dB	(1)
Radiated spurious emission (18GHz-40GHz)	18-40GHz	5.54 dB	(1)

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4 Test limit

4.1 Requirement

Limits for Maximum Permissible Exposure (MPE)/Controlled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm ²)	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	(100) *	6
3.0 – 30	1842/f	4.89/f	(900/f ²)*	6
30 – 300	61.4	0.163	1.0	6
300 – 1500	/	/	f/300	6
1500 – 100,000	/	/	5	6

Limits for Maximum Permissible Exposure (MPE)/Uncontrolled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm ²)	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	(100) *	30
3.0 – 30	824/f	2.19/f	(180/f ²)*	30
30 – 300	27.5	0.073	0.2	30
300 – 1500	/	/	f/1500	30
1500 – 100,000	/	/	1.0	30

F=frequency in MHz

*=Plane-wave equivalent power density

4.2 MPE Calculation Method

Predication of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

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

Where: S=power density

P=power input to antenna

G=power gain of the antenna in the direction of interest relative to an isotropic radiator

R=distance to the center of radiation of the antenna

4.3 Conducted Power Results

Type	Channel	Output power (dBm)
GFSK 1Mbps	00	-2.51
	19	-3.13
	39	-3.37
GFSK 2Mbps	00	-2.57
	19	-3.18

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	39	-3.46
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Type	Channel	Output power (dBm)
GFSK	00	0.78
	39	0.22
	78	0.11
$\pi/4$ DQPSK	00	0.05
	39	-0.54
	78	-0.64
8DPSK	00	0.02
	39	-0.53
	78	-0.69

Type	Channel	Output power PK (dBm)
802.11b	01	14.97
	06	13.68
	11	13.84
802.11g	01	13.72
	06	12.94
	11	12.67
802.11n(HT20)	01	13.75
	06	12.80
	11	12.58
802.11n(HT40)	03	12.80
	06	12.32
	09	13.30

U-NII 1

Type	Channel	Output Average power (dBm)
802.11a	36	13.34
	44	13.07
	48	12.55
802.11n(HT20)	36	13.61
	44	12.93
	48	13.33
802.11n(HT40)	38	11.53

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	46	12.35
802.11ac(HT20)	36	13.51
	44	12.88
	48	13.20
802.11ac(HT40)	38	12.03
	46	11.98
802.11ac(HT80)	42	12.99

U-NII 3

Type	Channel	Output Average power (dBm)
802.11a	149	10.93
	157	10.36
	165	10.78
802.11n(HT20)	149	11.33
	157	10.82
	165	10.65
802.11n(HT40)	151	10.23
	159	9.63
802.11ac(HT20)	149	11.17
	157	10.34
	165	10.91
802.11ac(HT40)	151	10.04
	159	8.69
802.11ac(HT80)	155	9.36

LTE Band 5						
BW (MHz)	Modulation	RB Size	RB Offset	Channel/Frequency(MHz)		
				20450	20525	20600
				829	836.5	844
10	QPSK	1	0	23.22	23.84	23.47
10	QPSK	1	25	23.20	23.61	23.59
10	QPSK	1	49	23.19	23.72	23.07
10	QPSK	25	0	22.20	22.18	22.42
10	QPSK	25	12	22.30	22.10	22.17
10	QPSK	25	25	22.27	22.23	22.19
10	QPSK	50	0	22.50	22.04	22.14
10	16QAM	1	0	22.45	22.50	22.51
10	16QAM	1	25	22.32	22.58	22.43
10	16QAM	1	49	22.43	22.38	22.05
10	16QAM	25	0	21.20	21.44	21.46

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10	16QAM	25	12	21.32	21.15	21.60
10	16QAM	25	25	21.32	21.28	21.61
10	16QAM	50	0	21.60	21.73	21.44
BW (MHz)	Modulation	RB Size	RB Offset	Channel/Frequency(MHz)		
				20425	20525	20625
				826.5	836.5	846.5
5	QPSK	1	0	23.47	23.37	23.18
5	QPSK	1	12	23.36	23.64	23.43
5	QPSK	1	24	23.12	23.22	23.14
5	QPSK	12	0	22.38	22.18	22.44
5	QPSK	12	7	22.37	22.09	21.95
5	QPSK	12	13	22.41	22.38	22.10
5	QPSK	25	0	22.09	22.10	22.24
5	16QAM	1	0	22.21	22.42	22.21
5	16QAM	1	12	22.19	22.35	22.48
5	16QAM	1	24	22.41	21.86	22.10
5	16QAM	12	0	21.71	21.19	21.20
5	16QAM	12	7	21.22	21.25	21.09
5	16QAM	12	13	21.54	21.65	21.57
5	16QAM	25	0	21.32	21.63	21.18

LTE Band 5						
BW (MHz)	Modulation	RB Size	RB Offset	Channel/Frequency(MHz)		
				20450	20525	20600
				829	836.5	844
10	QPSK	1	0	23.31	23.92	23.48
10	QPSK	1	25	23.31	23.70	23.75
10	QPSK	1	49	23.19	23.81	23.09
10	QPSK	25	0	22.09	22.28	22.33
10	QPSK	25	12	22.60	22.36	22.16
10	QPSK	25	25	22.27	22.33	22.32
10	QPSK	50	0	22.23	22.21	22.21
10	16QAM	1	0	22.38	22.51	22.52
10	16QAM	1	25	22.42	22.45	22.14
10	16QAM	1	49	22.50	22.49	22.08
10	16QAM	25	0	21.30	21.40	21.49
10	16QAM	25	12	21.40	21.22	21.53
10	16QAM	25	25	21.22	21.32	21.46
10	16QAM	50	0	21.46	21.48	21.46
BW (MHz)	Modulation	RB Size	RB Offset	Channel/Frequency(MHz)		
				20425	20525	20625
				826.5	836.5	846.5
5	QPSK	1	0	23.52	23.17	23.18
5	QPSK	1	12	23.40	23.82	23.53
5	QPSK	1	24	22.97	23.20	23.21
5	QPSK	12	0	22.29	22.39	22.35
5	QPSK	12	7	22.44	22.19	22.15
5	QPSK	12	13	22.44	22.31	22.07
5	QPSK	25	0	22.13	22.14	22.35
5	16QAM	1	0	22.49	22.31	22.18
5	16QAM	1	12	21.96	22.43	22.29
5	16QAM	1	24	22.34	22.06	22.33

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5	16QAM	12	0	21.56	21.29	21.14
5	16QAM	12	7	21.34	21.06	21.15
5	16QAM	12	13	21.60	21.46	21.67
5	16QAM	25	0	21.35	21.74	21.37

LTE Band 7						
BW (MHz)	Modulation	RB Size	RB Offset	Channel/Frequency(MHz)		
				20850	21100	21350
				2510	2535	2560
20	QPSK	1	0	23.41	23.08	23.37
20	QPSK	1	49	23.22	23.10	23.30
20	QPSK	1	99	23.62	23.65	22.79
20	QPSK	50	0	21.72	22.33	21.93
20	QPSK	50	24	22.13	22.21	22.04
20	QPSK	50	50	22.07	22.14	22.06
20	QPSK	100	0	22.09	22.16	21.91
20	16QAM	1	0	22.00	21.94	22.09
20	16QAM	1	49	22.27	22.09	22.17
20	16QAM	1	99	21.93	22.14	22.09
20	16QAM	50	0	21.12	20.96	21.13
20	16QAM	50	24	21.25	21.06	21.39
20	16QAM	50	50	21.27	21.05	21.24
20	16QAM	100	0	21.17	21.31	21.19
BW (MHz)	Modulation	RB Size	RB Offset	Channel/Frequency(MHz)		
				20825	21100	21375
				2507.5	2535	2562.5
15	QPSK	1	0	23.34	23.34	23.58
15	QPSK	1	37	23.22	23.20	23.34
15	QPSK	1	74	22.82	23.45	22.97
15	QPSK	36	0	22.11	21.87	21.78
15	QPSK	36	20	22.19	22.05	21.81
15	QPSK	36	39	22.18	21.84	21.84
15	QPSK	75	0	21.89	22.00	22.29
15	16QAM	1	0	22.07	22.19	22.32
15	16QAM	1	37	21.85	22.01	22.31
15	16QAM	1	74	22.16	22.32	22.22
15	16QAM	36	0	21.15	21.42	21.47
15	16QAM	36	20	21.08	21.16	21.17
15	16QAM	36	39	21.01	21.15	21.21
15	16QAM	75	0	21.15	21.18	21.22

BW (MHz)	Modulation	RB Size	RB Offset	Channel/Frequency(MHz)		
				20800	21100	21400
				2505	2535	2565
10	QPSK	1	0	23.20	23.55	23.08
10	QPSK	1	25	23.22	23.51	23.15
10	QPSK	1	49	23.10	22.96	23.57
10	QPSK	25	0	22.31	22.13	22.01
10	QPSK	25	12	22.15	22.20	21.91
10	QPSK	25	25	22.09	22.08	22.16
10	QPSK	50	0	22.32	22.25	21.88
10	16QAM	1	0	22.12	22.17	22.15
10	16QAM	1	25	21.99	22.06	22.18
10	16QAM	1	49	22.05	21.96	21.94
10	16QAM	25	0	21.38	20.99	20.95
10	16QAM	25	12	21.21	21.42	21.12
10	16QAM	25	25	21.05	21.05	21.08
10	16QAM	50	0	21.44	21.40	21.20

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BW (MHz)	Modulation	RB Size	RB Offset	Channel/Frequency(MHz)		
				20775	21100	21425
				2502.5	2535	2567.5
5	QPSK	1	0	23.28	23.26	22.95
5	QPSK	1	12	23.59	23.45	23.49
5	QPSK	1	24	23.25	23.64	23.23
5	QPSK	12	0	21.91	21.79	21.95
5	QPSK	12	7	22.25	22.40	22.12
5	QPSK	12	13	21.82	22.18	22.08
5	QPSK	25	0	22.02	21.91	22.34
5	16QAM	1	0	22.05	22.37	22.16
5	16QAM	1	12	22.27	22.35	21.95
5	16QAM	1	24	22.30	21.88	22.14
5	16QAM	12	0	21.34	21.37	21.20
5	16QAM	12	7	21.49	21.10	21.30
5	16QAM	12	13	21.21	21.39	21.11
5	16QAM	25	0	21.29	21.16	21.30

LTE Band 38						
BW (MHz)	Modulation	RB Size	RB Offset	Channel/Frequency(MHz)		
				37850	38000	38150
				2580	2595	2610
20	QPSK	1	0	23.20	23.19	23.20
20	QPSK	1	49	23.31	23.63	23.03
20	QPSK	1	99	23.25	23.16	22.96
20	QPSK	50	0	22.41	22.24	21.86
20	QPSK	50	24	22.16	22.11	22.19
20	QPSK	50	50	22.00	22.34	22.05
20	QPSK	100	0	22.31	22.23	22.37
20	16QAM	1	0	22.20	22.16	22.18
20	16QAM	1	49	22.03	22.03	22.04
20	16QAM	1	99	22.28	22.01	21.83
20	16QAM	50	0	21.38	21.15	21.49
20	16QAM	50	24	21.19	21.29	21.21
20	16QAM	50	50	21.37	21.01	21.26
20	16QAM	100	0	21.14	21.06	21.44
BW (MHz)	Modulation	RB Size	RB Offset	Channel/Frequency(MHz)		
				37825	38000	38175
				2577.5	2595	2612.5
15	QPSK	1	0	23.31	23.51	23.32
15	QPSK	1	37	23.41	22.87	23.13
15	QPSK	1	74	23.10	22.90	23.41
15	QPSK	36	0	22.29	21.95	22.25
15	QPSK	36	20	22.06	22.16	21.92
15	QPSK	36	39	22.29	22.10	22.00
15	QPSK	75	0	22.28	21.82	22.31
15	16QAM	1	0	22.15	22.41	22.20
15	16QAM	1	37	22.09	22.04	21.98
15	16QAM	1	74	21.99	22.12	21.97
15	16QAM	36	0	21.26	21.26	21.41
15	16QAM	36	20	21.44	21.26	21.08
15	16QAM	36	39	21.11	21.30	21.02
15	16QAM	75	0	21.26	21.21	21.27

BW (MHz)	Modulation	RB Size	RB Offset	Channel/Frequency(MHz)		
				37800	38000	38200
				2575	2595	2615
10	QPSK	1	0	23.64	23.46	23.48
10	QPSK	1	25	23.39	23.27	23.20
10	QPSK	1	49	22.94	23.62	22.96

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10	QPSK	25	0	22.33	21.90	22.30
10	QPSK	25	12	22.37	22.18	22.24
10	QPSK	25	25	22.08	22.26	22.31
10	QPSK	50	0	22.20	22.00	21.89
10	16QAM	1	0	22.39	22.36	22.12
10	16QAM	1	25	22.12	22.16	22.26
10	16QAM	1	49	22.10	21.94	22.22
10	16QAM	25	0	21.27	21.31	21.32
10	16QAM	25	12	21.11	21.28	21.12
10	16QAM	25	25	21.35	21.28	21.05
10	16QAM	50	0	21.45	21.00	21.13
BW (MHz)	Modulation	RB Size	RB Offset	Channel/Frequency(MHz)		
				37775	38000	38225
				2572.5	2595	2617.5
5	QPSK	1	0	23.57	23.33	23.23
5	QPSK	1	12	22.96	23.41	23.01
5	QPSK	1	24	23.18	23.57	22.91
5	QPSK	12	0	22.28	22.42	22.15
5	QPSK	12	7	22.04	21.96	22.26
5	QPSK	12	13	22.23	22.13	22.40
5	QPSK	25	0	22.14	22.23	21.96
5	16QAM	1	0	22.23	22.02	22.08
5	16QAM	1	12	22.12	22.25	21.95
5	16QAM	1	24	22.00	22.14	21.91
5	16QAM	12	0	21.09	21.30	21.45
5	16QAM	12	7	21.25	21.09	21.21
5	16QAM	12	13	21.13	21.11	21.54
5	16QAM	25	0	21.16	21.17	21.34

LTE Band 41								
BW (MHz)	Modulation	RB Size	RB Offset	Channel/Frequency(MHz)				
				40140	40365	40590	40865	41140
				2545	2567.5	2590	2617.5	2645
20	QPSK	1	0	23.27	23.18	23.42	23.37	23.34
20	QPSK	1	49	23.35	23.01	22.80	22.86	23.24
20	QPSK	1	99	23.56	23.47	23.37	23.28	23.02
20	QPSK	50	0	21.86	21.92	22.40	22.25	22.37
20	QPSK	50	24	21.99	22.05	22.31	22.10	21.79
20	QPSK	50	50	22.20	21.82	21.92	21.87	21.95
20	QPSK	100	0	22.24	22.18	22.02	21.95	22.17
20	16QAM	1	0	22.34	22.12	22.24	22.13	22.38
20	16QAM	1	49	22.14	21.89	22.11	22.03	22.26
20	16QAM	1	99	21.81	21.95	21.90	22.10	21.97
20	16QAM	50	0	21.18	21.13	21.36	21.02	21.07
20	16QAM	50	24	21.40	21.32	21.13	21.33	21.32
20	16QAM	50	50	21.20	21.06	21.12	20.98	21.08
20	16QAM	100	0	21.02	21.19	21.33	21.19	21.21
BW (MHz)	Modulation	RB Size	RB Offset	Channel/Frequency(MHz)				
				40115	40350	40590	40875	41165
				2542.5	2566	2590	2618.5	2647.5
15	QPSK	1	0	23.51	23.48	23.56	23.16	23.06
15	QPSK	1	37	22.98	23.29	23.35	22.99	22.76
15	QPSK	1	74	22.97	23.03	23.48	23.54	23.46
15	QPSK	36	0	21.96	21.94	21.93	22.01	22.23
15	QPSK	36	20	21.92	21.94	21.84	21.79	21.95
15	QPSK	36	39	21.90	21.94	21.86	21.89	21.86
15	QPSK	75	0	22.36	21.95	21.81	21.77	22.13
15	16QAM	1	0	22.20	22.00	21.91	21.84	21.87

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15	16QAM	1	37	22.16	21.88	22.07	22.15	22.34
15	16QAM	1	74	22.07	21.99	21.92	21.96	21.91
15	16QAM	36	0	21.19	21.04	21.22	21.20	21.21
15	16QAM	36	20	20.97	21.12	21.27	21.27	21.34
15	16QAM	36	39	21.00	20.92	21.20	21.20	21.11
15	16QAM	75	0	21.10	21.11	21.49	21.31	21.20

BW (MHz)	Modulation	RB Size	RB Offset	Channel/Frequency(MHz)				
				40090	40340	40590	40890	41190
				2540	2565	2590	2620	2650
10	QPSK	1	0	23.47	23.26	23.18	23.11	23.07
10	QPSK	1	25	23.65	23.53	23.46	23.35	23.72
10	QPSK	1	49	23.05	23.02	23.35	23.51	23.60
10	QPSK	25	0	21.98	22.10	22.09	21.81	21.76
10	QPSK	25	12	22.17	22.03	22.19	22.27	22.32
10	QPSK	25	25	21.82	22.05	21.92	22.18	22.18
10	QPSK	50	0	22.08	22.06	22.08	22.01	22.31
10	16QAM	1	0	22.29	22.05	22.17	21.90	22.01
10	16QAM	1	25	21.79	21.93	22.17	22.17	22.22
10	16QAM	1	49	22.01	22.02	21.89	21.97	21.83
10	16QAM	25	0	21.07	21.12	21.42	21.15	20.96
10	16QAM	25	12	21.21	21.32	21.18	21.16	21.05
10	16QAM	25	25	21.12	21.18	21.14	21.15	21.21
10	16QAM	50	0	21.43	21.46	21.31	21.16	21.05
BW (MHz)	Modulation	RB Size	RB Offset	Channel/Frequency(MHz)				
				40065	40325	40590	40900	41215
				2537.5	2563.5	2590	2621	2652.5
5	QPSK	1	0	23.19	23.63	23.49	23.48	23.60
5	QPSK	1	12	23.44	23.54	23.45	22.99	22.98
5	QPSK	1	24	23.39	23.42	23.37	23.47	23.33
5	QPSK	12	0	21.99	21.76	21.98	21.89	22.02
5	QPSK	12	7	22.08	21.80	21.75	22.08	22.23
5	QPSK	12	13	21.89	22.11	22.39	22.21	21.99
5	QPSK	25	0	21.92	21.88	21.80	22.14	22.26
5	16QAM	1	0	22.27	22.12	21.93	22.11	22.02
5	16QAM	1	12	21.82	21.76	22.00	21.94	22.05
5	16QAM	1	24	21.84	21.82	22.15	21.93	21.90
5	16QAM	12	0	20.89	21.04	21.10	21.05	21.15
5	16QAM	12	7	21.00	21.24	21.37	21.17	21.11
5	16QAM	12	13	21.03	20.95	20.98	20.89	21.17
5	16QAM	25	0	21.13	21.05	21.35	21.27	21.37

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4.4 Manufacturing tolerance

Mode	Max. Peak Conducted Output Power (dBm)	Max. tune-up
BT	0.78	1.0 ± 1
BLE	-2.51	-2.0 ± 1
2.4GWIFI	14.97	15.0 ± 1
Mode	Max. Average Conducted Output Power (dBm)	Max. tune-up
5.2GWIFI	13.61	13.0 ± 1
5.8GWIFI	11.33	12.0 ± 1

LTE	Conducted Power(dBm)	Target (dBm)	Tolerance $\pm$ (dB)
Band5	23.92	23.0	1.0
Band7	23.65	23.0	1.0
Band38	23.64	23.0	1.0
Band41	23.72	23.0	1.0

4.5 Standalone MPE Result

As declared by the Applicant, the EUT is a wireless device used in a fix application, at least 20 cm from any body part of the user or nearby persons; from the maximum EUT RF output power, the minimum separation distance, $r = 20\text{cm}$, as well as the gain of the used antenna is refer to section 2.2, the RF power density can be obtained.

Modulation Type	Output power		Antenna Gain (dBi)	Antenna Gain (linear)	MPE (mW/cm^2)	MPE Limits (mW/cm^2)
	dBm	mW				
BT	2.0	1.5849	0.89	1.2274	0.0004	1.00
BLE	-1.0	0.7943	0.89	1.2274	0.0002	1.00
2.4GWIFI	16.0	39.8107	0.89	1.2274	0.0097	1.00
5.2GWIFI	14.0	25.1189	1.20	1.3183	0.0066	1.00
5.8GWIFI	13.0	19.9526	1.50	1.4125	0.0056	1.00
LTE Band 5	24.0	251.1886	2.0	1.5849	0.0792	0.55
LTE Band 7	24.0	251.1886	2.0	1.5849	0.0792	1.00
LTE Band 38	24.0	251.1886	2.0	1.5849	0.0792	1.00
LTE Band 41	24.0	251.1886	2.0	1.5849	0.0792	1.00

Remark:

1. Output power (Peak) including turn-up tolerance;
2. MPE evaluate distance is 20cm from user manual provide by manufacturer.

4.6 Simultaneous Transmission for MPE Result

2.4GWIFI MPE (Ratio)	LTE Band 5 MPE (Ratio)	simultaneous MPE (Ratio)	MPE Limits (Ratio)
0.0097	0.144	0.1537	1.0000

The sample support one BT/WiFi modular and LTE modular, they supports difference antenna, support simultaneous transmission

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5 Conclusion

The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure of mobile device Threshold per KDB 447498 D01v06

***** End of Report *****

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