

RF Exposure Evaluation Report

APPLICANT : Veea Inc.
EQUIPMENT : Wireless Edge Server
BRAND NAME : VeeaHub
MODEL NAME : VHC25-5G
FCC ID : 2ARXK-VHC25-5G
STANDARD : 47 CFR Part 2.1091
FCC KDB 447498 D01 v06

The product evaluation date was started from Sep. 14, 2024 and completed on Sep. 14, 2024. We, Sporton International Inc. (Shenzhen), would like to declare that the device has been evaluated in accordance with 47 CFR Part 2.1091 and FCC KDB 447498 D01 v06, and pass the limit. Without written approval of Sporton International Inc. (Shenzhen), the test report shall not be reproduced except in full.



Approved by: Si Zhang

Sporton International Inc. (Shenzhen)

1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055

People's Republic of China



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Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA452231	Rev. 01	Initial issue of report.	Sep. 20, 2024



1. Administration Data

1.1. Testing Laboratory

Sporton International Inc. (Shenzhen) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

Testing Laboratory			
Test Firm	Sporton International Inc. (Shenzhen)		
Test Site Location	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China TEL: +86-755-86379589 FAX: +86-755-86379595		
Test Site No.	Sporton Site No.	Sporton Site No.	Sporton Site No.
	SAR01-SZ	SAR01-SZ	SAR01-SZ

Applicant	
Company Name	Veea Inc.
Address	164 E 83rd Street, NEW YORK, United States 10028

Manufacturer	
Company Name	Veea Inc.
Address	164 E 83rd Street, NEW YORK, United States 10028



2. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	Wireless Edge Server
Brand Name	Veeahub
Model Name	VHC25-5G
FCC ID	2ARXK-VHC25-5G
Wireless Technology and Frequency Range	WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band IV: 1710 MHz ~ 1755 MHz WCDMA Band V: 824 MHz ~ 849 MHz LTE Band 2 : 1850 MHz ~ 1910 MHz LTE Band 4 : 1710 MHz ~ 1755 MHz LTE Band 5 : 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 12 : 699 MHz ~ 716 MHz LTE Band 13 : 777 MHz ~ 787 MHz LTE Band 14: 788 MHz ~ 798 MHz LTE Band 17: 704 MHz ~ 716 MHz LTE Band 25 : 1850 MHz ~ 1915 MHz LTE Band 26 : 814 MHz ~ 849 MHz LTE Band 30 : 2305 MHz ~ 2315 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 42: 3450 MHz ~ 3550 MHz LTE Band 48: 3550 MHz ~ 3700 MHz LTE Band 66 : 1710 MHz ~ 1780 MHz LTE Band 71: 663 MHz ~ 698 MHz 5G NR n2 : 1850 MHz ~ 1910 MHz 5G NR n5 : 824 MHz ~ 849 MHz 5G NR n7 : 2500 MHz ~ 2570 MHz 5G NR n12 : 699 MHz ~ 716 MHz 5G NR n13 : 777 MHz ~ 787 MHz 5G NR n14 : 788 MHz ~ 798 MHz 5G NR n25 : 1850 MHz ~ 1915 MHz 5G NR n26 : 814 MHz ~ 849 MHz 5G NR n30 : 2305 MHz ~ 2315 MHz 5G NR n38 : 2570 MHz ~ 2620 MHz 5G NR n41 : 2496 MHz ~ 2690 MHz 5G NR n48 : 3550 MHz ~ 3700 MHz 5G NR n66 : 1710 MHz ~ 1780 MHz 5G NR n70 : 1695 MHz ~ 1710 MHz 5G NR n71 : 663 MHz ~ 698 MHz 5G NR n77 : 3450 MHz ~ 3550 MHz; 3700 MHz ~ 3980 MHz; 5G NR n78 : 3450 MHz ~ 3550 MHz; 3700 MHz ~ 3800 MHz; WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz WLAN 5.3GHz Band: 5260 MHz ~ 5320 MHz WLAN 5.5GHz Band: 5500 MHz ~ 5720 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz ZigBee: 2405 MHz ~ 2480 MHz
Mode	RMC 12.2Kbps HSDPA HSUPA DC-HSDPA HSPA+(16QAM uplink is not supported) LTE: QPSK, 16QAM, 64QAM, 256QAM 5G NR : CP-OFDM / DFT-s-OFDM, PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM WLAN 2.4GHz 802.11b/g WLAN 2.4GHz 802.11n HT20/HT40 WLAN 2.4GHz 802.11ac VHT20/VHT40



	WLAN 2.4GHz 802.11ax HE20/HE40 WLAN 5GHz 802.11a WLAN 5GHz 802.11n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80 WLAN 5GHz 802.11ax HE20/HE40/HE80 Bluetooth BR/EDR/LE ZigBee: O-QPSK
Antenna Type	WWAN: PIFA Antenna WLAN/Bluetooth/ ZigBee: PIFA Antenna
HW Version	1.0
SW Version	2.33.1-0.mfg.alpha.4.0.7
EUT Stage	Identical Prototype

Remark:

1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
2. 5GNR n2/5/7/12/13/14/25/26/30/38/41/48/66/70/71/77/78 supports SA mode and NSA mode.
3. The intra-band/inter-band ULCA, UL MIMO and EN-DC mode combination could be referred to the product spec.
4. This device supports intra-band ULCA, due to intra-band ULCA and non-CA power is same, so non-CA MPE analysis can represent ULCA SAR-Based Exemption analysis.
5. This device supports HPUE mode for LTE Band 38/41/42/43 and 5GNR n38/40/41/77/78 with class 2, so HPUE mode has been performed to do MPE analysis.
6. 5GNR n38/n41/n48/n77/n78 support SISO/MIMO mode, only MIMO tune up power was chosen to perform MPE calculation conservatively for MIMO power is higher.
7. Chose the maximum RF output tune up power and the maximum antenna gain of all antennas among same frequency WLAN bands to perform MPE calculation conservatively.
8. WLAN2.4GHz/WLAN5GHz all support SISO and MIMO mode, MIMO tune up power was chosen to perform MPE calculation conservatively.
9. The device supports Tx Beamforming mode for WLAN 2.4GHz 802.11 n/ac/ax and WLAN 5GHz (UNII-1/UNII-3) 802.11 n/ac/ax.
10. For WLAN CDD & Tx Beamforming mode, the MPE calculation performed separately.

Comments and Explanations:

1. The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.
2. The maximum RF output tune up power, antenna gain also the safe distance used for evaluate RF exposure were declared by manufacturer.

Antenna Gain:

WLAN	Maximum Antenna Gain (dBi)				
	Ant.1	Ant.2	Ant.3	Ant.4	Beamforming
WLAN2.4GHz	/	2.2	/	1.8	5.01
WLAN5.2GHz	3.6	/	3.5	/	6.56
WLAN5.3GHz	3.5	/	3.5	/	/
WLAN5.5GHz	/	3.2	/	2.7	/
WLAN5.8GHz	/	3.3	/	3.4	6.36
Bluetooth BR/EDR	2.3	/	/	/	/
Bluetooth LE	/	/	1.9	/	/
ZigBee	/	/	1.9	/	/

3. Maximum RF average output tune up power among production units

<WCDMA>

Mode		Maximum Average power(dBm)
WCDMA	Band II	25.00
	Band IV	25.00
	Band V	25.00

<LTE>

Mode		Maximum Average power(dBm)
LTE	Band 2	25.00
	Band 4	25.00
	Band 5	25.00
	Band 7	25.00
	Band 12	25.00
	Band 13	25.00
	Band 14	25.00
	Band 17	25.00
	Band 25	25.00
	Band 26	25.00
	Band 30	19.50
	Band 38	25.00
	Band 38 HPUE	28.00
	Band 41	25.00
	Band 41 HPUE	28.00
	Band 42	25.00
	Band 42 HPUE	26.00
	Band 48	19.50
	Band 66	25.00
	Band 71	25.00

<5GNR>

Mode		Maximum Average power(dBm)
5GNR	n2	25.00
	n5	25.00
	n7	25.00
	n12	25.00
	n13	25.00
	n14	25.00
	n25	25.00
	n26	25.00
	n30	19.50
	n38	25.00
	n38 HPUE	28.00
	n41	25.00
	n41 HPUE	28.00
	n66	25.00
	n70	25.00
	n71	25.00
	n77	25.00
	n77 HPUE	26.00
	n78	25.00
	n78 HPUE	26.00

Mode		Maximum Average power(dBm)
5GNR	n48 Ant 0	19.77
	n48 Ant 2	20.00

<5GNR MIMO>

Mode		Maximum Average power(dBm)
5GNR	n38	28.00
	n41	28.00
	n48	19.77
	n77	26.00
	n78	26.00

Note: WWAN support SISO/MIMO mode, only MIMO tune up power was chosen to perform MPE calculation conservatively for MIMO power is higher.

< Bluetooth >

Mode	Maximum Average Power (dBm)
	Ant.1
Bluetooth BR/EDR	8.00
Mode	Ant.3
	Ant.3
Bluetooth LE	16.00

< ZigBee >

Mode		Maximum Average power(dBm)
		Ant.3
2.4GHz	ZigBee	16.0

< For CDD/MIMO Mode >

< 2.4GHz WLAN >

Mode		Maximum Average Power (dBm)
		Ant.2+4
2.4GHz	802.11b	24.00
	802.11g	24.00
	802.11n-HT20	23.00
	802.11n-HT40	23.00
	802.11ac-VHT20	23.00
	802.11ac-VHT40	23.00
	802.11ax-HE20	23.00
	802.11ax-HE40	23.00

< 5GHz WLAN >

Mode		Maximum Average Power (dBm)
		Ant.1+3
5.2GHz	802.11a	23.00
	802.11n-HT20	23.00
	802.11n-HT40	23.00
	802.11ac-VHT20	23.00
	802.11ac-VHT40	23.00
	802.11ac-VHT80	23.00
	802.11ax-HE20	23.00
	802.11ax-HE40	23.00
	802.11ax-HE80	23.00
5.3GHz	802.11a	22.00
	802.11n-HT20	23.00
	802.11n-HT40	23.00
	802.11ac-VHT20	23.00
	802.11ac-VHT40	23.00
	802.11ac-VHT80	22.00
	802.11ax-HE20	23.00
	802.11ax-HE40	23.00
	802.11ax-HE80	22.00



Mode		Maximum Average Power (dBm)
		Ant.2+4
5.5GHz	802.11a	23.00
	802.11n-HT20	23.00
	802.11n-HT40	23.00
	802.11ac-VHT20	23.00
	802.11ac-VHT40	23.00
	802.11ac-VHT80	23.00
	802.11ax-HE20	23.00
	802.11ax-HE40	23.00
	802.11ax-HE80	23.00
5.8GHz	802.11a	23.00
	802.11n-HT20	23.00
	802.11n-HT40	23.00
	802.11ac-VHT20	23.00
	802.11ac-VHT40	23.00
	802.11ac-VHT80	23.00
	802.11ax-HE20	23.00
	802.11ax-HE40	23.00
	802.11ax-HE80	23.00

Note: WLAN2.4GHz /WLAN5GHz all support SISO/MIMO mode, MIMO tune up power was chosen to perform MPE calculation conservatively for MIMO power is higher.

<For Tx Beamforming Mode>**<2.4GHz WLAN >**

Mode		Maximum Average Power (dBm)
		Ant.2+4
2.4GHz	802.11n-HT20	20.00
	802.11n-HT40	20.00
	802.11ac-VHT20	20.00
	802.11ac-VHT40	20.00
	802.11ax-HE20	20.00
	802.11ax-HE40	20.00

<5GHz WLAN >

Mode		Maximum Average Power (dBm)
		Ant.1+3
5.2GHz	802.11n-HT20	23.00
	802.11n-HT40	23.00
	802.11ac-VHT20	23.00
	802.11ac-VHT40	23.00
	802.11ac-VHT80	23.00
	802.11ax-HE20	23.00
	802.11ax-HE40	23.00
	802.11ax-HE80	23.00

Mode		Maximum Average Power (dBm)
		Ant.2+4
5.8GHz	802.11n-HT20	23.00
	802.11n-HT40	23.00
	802.11ac-VHT20	23.00
	802.11ac-VHT40	23.00
	802.11ac-VHT80	23.00
	802.11ax-HE20	23.00
	802.11ax-HE40	23.00
	802.11ax-HE80	23.00

Note: The device supports TX Beamforming mode for WLAN 2.4GHz 802.11 n/ac/ax and WLAN 5GHz (UNII-1/UNII-3) 802.11 n/ac/ax.

4. RF Exposure Exemption

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
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
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	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

The MPE was calculated at 29 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$S = \frac{PG}{4\pi R^2}$$

Where:

S = Power Density

P = Output Power at Antenna Terminals

G = Gain of Transmit Antenna (linear gain)

R = Distance from Transmitting Antenna



5. RF Exposure Exemption

5.1. Standalone Power Density Calculation

Band	Frequency (MHz)	Maximum Power (dBm)	MPE evaluation distance (cm)	FCC ERP/EIRP Limit (W)	Power Density for Max Gain to meet FCC ERP/EIRP and MPE limit (mW/cm ²)	Power Density for Max gain allowed (mW/cm ²)	FCC MPE Limit (mW)/cm ²	FCC MPE Result / FCC MPE Limit Ratio	Ant Gain to meet FCC MPE limit (dBi)	Ant Gain to meet FCC ERP/EIRP limit (dBi)	Max Gain to meet FCC ERP/EIRP and MPE limit (dBi)	Max Gain to consider same Frequency with LTE or EN-DC /ULCA Active	Max gain allowed (dBi)
WCDMA Band 2	1850.0	25.00	29.00	2.000	0.189	0.189	1.000	0.189	15.2	8.0	8.0	8.0	8.0
WCDMA Band 4	1710.0	25.00	29.00	1.000	0.095	0.095	1.000	0.095	15.2	5.0	5.0	5.0	5.0
WCDMA Band 5	824.0	25.00	29.00	7.000	0.545	0.189	0.549	0.344	12.6	13.4	12.6	8.0	8.0
LTE Band 2	1850.0	25.00	29.00	2.000	0.189	0.189	1.000	0.189	15.2	8.0	8.0	8.0	8.0
LTE Band 4	1710.0	25.00	29.00	1.000	0.095	0.095	1.000	0.095	15.2	5.0	5.0	5.0	5.0
LTE Band 5	824.0	25.00	29.00	7.000	0.545	0.189	0.549	0.344	12.6	13.4	12.6	8.0	8.0
LTE Band 7	2500.0	25.00	29.00	2.000	0.189	0.060	1.000	0.060	15.2	8.0	8.0	3.0	3.0
LTE Band 12	699.0	25.00	29.00	3.000	0.279	0.168	0.466	0.361	11.9	9.7	9.7	7.5	7.5
LTE Band 13	777.0	25.00	29.00	3.000	0.279	0.168	0.518	0.325	12.3	9.7	9.7	7.5	7.5
LTE Band 14	788.0	25.00	29.00	3.000	0.279	0.168	0.525	0.320	12.4	9.7	9.7	7.5	7.5
LTE Band 17	704.0	25.00	29.00	3.000	0.279	0.168	0.469	0.359	11.9	9.7	9.7	7.5	7.5
LTE Band 25	1850.0	25.00	29.00	2.000	0.189	0.189	1.000	0.189	15.2	8.0	8.0	8.0	8.0
LTE Band 26	814.0	25.00	29.00	7.000	0.532	0.189	0.543	0.348	12.5	13.4	12.5	8.0	8.0
LTE Band 30	2305.0	19.50	29.00	0.250	0.023	0.023	1.000	0.023	20.7	4.4	4.4	4.4	4.4
LTE Band 38	2570.0	25.00	29.00	2.000	0.189	0.060	1.000	0.060	15.2	8.0	8.0	3.0	3.0
LTE Band 38-HPUE	2570.0	28.00	29.00	2.000	0.189	0.119	1.000	0.119	12.2	5.0	5.0	3.0	3.0
LTE Band 41	2496.0	25.00	29.00	2.000	0.189	0.060	1.000	0.060	15.2	8.0	8.0	3.0	3.0
LTE Band 41-HPUE	2496.0	28.00	29.00	2.000	0.189	0.119	1.000	0.119	12.2	5.0	5.0	5.0	5.0
LTE Band 42	3450.0	25.00	29.00	1.000	0.095	0.095	1.000	0.095	15.2	5.0	5.0	5.0	5.0
LTE Band 42-HPUE	3450.0	26.00	29.00	1.000	0.095	0.095	1.000	0.095	14.2	4.0	4.0	4.0	4.0
LTE Band 48	3550.0	19.50	29.00	0.200	0.019	0.019	1.000	0.019	20.7	3.5	3.5	3.5	3.5
LTE Band 66	1710.0	25.00	29.00	1.000	0.095	0.095	1.000	0.095	15.2	5.0	5.0	5.0	5.0
LTE Band 71	663.0	25.00	29.00	3.000	0.279	0.150	0.442	0.339	11.6	9.7	9.7	7.0	7.0
5G NR n2	1850.0	25.00	29.00	2.000	0.189	0.189	1.000	0.189	15.2	8.0	8.0	8.0	8.0
5G NR n5	824.0	25.00	29.00	7.000	0.545	0.168	0.549	0.306	12.6	13.4	12.6	7.5	7.5
5G NR n7	2500.0	25.00	29.00	2.000	0.189	0.189	1.000	0.189	15.2	8.0	8.0	8.0	8.0
5G NR n12	699	25.00	29.00	3.000	0.279	0.168	0.466	0.361	11.9	9.7	9.7	7.5	7.5
5G NR n13	777	25.00	29.00	3.000	0.279	0.168	0.518	0.325	12.3	9.7	9.7	7.5	7.5
5G NR n14	788.0	25.00	29.00	3.000	0.279	0.168	0.525	0.320	12.4	9.7	9.7	7.5	7.5
5G NR n25	1850.0	25.00	29.00	2.000	0.189	0.189	1.000	0.189	15.2	8.0	8.0	8.0	8.0
5G NR n26	814.0	25.00	29.00	7.000	0.532	0.189	0.543	0.348	12.5	13.4	12.5	8.0	8.0
5G NR n30	2305.0	19.50	29.00	0.250	0.023	0.023	1.000	0.023	20.7	4.4	4.4	4.4	4.4
5G NR n38	3570.00	25.00	29.00	2.000	0.189	0.060	1.000	0.060	15.2	8.0	8.0	3.0	3.0
5G NR n38-HPUE	3570.00	28.00	29.00	2.000	0.189	0.119	1.000	0.119	12.2	5.0	5.0	3.0	3.0
5G NR n38-MIMO	3570.00	28.00	29.00	2.000	0.189	0.119	1.000	0.119	12.2	5.0	5.0	3.0	3.0
5G NR n41	2496.00	25.00	29.00	2.000	0.189	0.060	1.000	0.060	15.2	8.0	8.0	3.0	3.0
5G NR n41-HPUE	2496.00	28.00	29.00	2.000	0.189	0.119	1.000	0.119	12.2	5.0	5.0	3.0	3.0
5G NR n41-MIMO	2496.00	28.00	29.00	2.000	0.189	0.119	1.000	0.119	12.2	5.0	5.0	3.0	3.0
5G NR n48 Ant0	3550.0	19.77	29.00	0.200	0.019	0.019	1.000	0.019	20.4	3.24	3.24	3.24	3.24
5G NR n48 Ant2	3550.0	20.00	29.00	0.200	0.019	0.019	1.000	0.019	20.2	3.00	3.00	3.00	3.00
5G NR n48 MIMO	3550.0	19.77	29.00	0.200	0.019	0.019	1.000	0.019	20.4	3.24	3.24	3.24	3.24
5G NR n66	1710.0	25.00	29.00	1.000	0.095	0.095	1.000	0.095	15.2	5.0	5.0	5.0	5.0
5G NR n70	1695.0	25.00	29.00	1.000	0.095	0.095	1.000	0.095	15.2	5.0	5.0	5.0	5.0
5G NR n71	663.0	25.00	29.00	3.000	0.279	0.150	0.442	0.339	11.6	9.7	9.7	7.0	7.0
5G NR n77	3450.0	25.00	29.00	1.000	0.095	0.095	1.000	0.095	15.2	5.0	5.0	5.0	5.0



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5G NR n77-HPUE	3450.0	26.00	29.00	1.000	0.095	0.095	1.000	0.095	14.2	4.0	4.0	4.0	4.0
5G NR n77-MIMO	3450.0	26.00	29.00	1.000	0.095	0.095	1.000	0.095	14.2	4.0	4.0	4.0	4.0
5G NR n78	3450.0	25.00	29.00	1.000	0.095	0.095	1.000	0.095	15.2	5.0	5.0	5.0	5.0
5G NR n78-HPUE	3450.0	26.00	29.00	1.000	0.095	0.095	1.000	0.095	14.2	4.0	4.0	4.0	4.0
5G NR n78-MIMO	3450.0	26.00	29.00	1.000	0.095	0.095	1.000	0.095	14.2	4.0	4.0	4.0	4.0

<For CDD/MIMO Mode>

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Average EIRP (mW)	Power Density at 29cm (mW/cm ²)	Limit (mW/cm ²)	Power Density / Limit
2.4GHz WLAN	2412.0	2.20	24.00	26.200	416.869	0.039	1.000	0.039
5.2GHz WLAN	5180.0	3.60	23.00	26.600	457.088	0.043	1.000	0.043
5.3GHz WLAN	5260.0	3.50	23.00	26.500	446.684	0.042	1.000	0.042
5.5GHz WLAN	5500.0	3.20	23.00	26.200	416.869	0.039	1.000	0.039
5.8GHz WLAN	5745.0	3.40	23.00	26.400	436.516	0.041	1.000	0.041
Bluetooth BR/EDR	2402.0	2.30	8.00	10.300	10.715	0.001	1.000	0.001
Bluetooth LE	2402.0	1.90	16.00	17.900	61.660	0.006	1.000	0.006
ZigBee	2405.0	1.90	16.00	17.900	61.660	0.006	1.000	0.006

<For Beamforming mode>

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Average EIRP (mW)	Power Density at 29cm (mW/cm ²)	Limit (mW/cm ²)	Power Density / Limit
2.4GHz WLAN	2412.0	5.01	20.00	25.010	316.957	0.030	1.000	0.030
5.2GHz WLAN	5180.0	6.56	23.00	29.560	903.649	0.086	1.000	0.086
5.8GHz WLAN	5745.0	6.36	23.00	29.360	862.979	0.082	1.000	0.082

Note:

1. For conservativeness, the lowest frequency of each band is used to determine the MPE limit of that band.
2. WLAN2.4GHz and WLAN5GHz chose the higher SISO gain as MIMO gain to perform MPE calculation.
3. The gain calculation method of WLAN beamforming mode is referenced to KDB 662911.
4. Chose the maximum RF output tune up power and the maximum antenna gain of all antennas among same frequency WLAN band to perform MPE calculation conservatively.

5.2. Simultaneous Transmission with SAR-based Test Exemption

Maximum WWAN Power Density / Limit	WLAN 2.4GHz Power Density / Limit	WLAN 5GHz Low Band Power Density / Limit	WLAN 5GHz High Band Power Density / Limit	Bluetooth Power Density / Limit	ZigBee or BLE Power Density / Limit	Σ (Power Density / Limit) of WWAN+WLAN2.4GHz + WLAN 5GHz Low Band + WLAN5GHz High Band + Bluetooth BR/EDR+ Bluetooth LE/ZigBee
0.361	0.039	0.086	0.082	0.001	0.006	0.575

<LTE inter-band ULCA >

LTE Power Density / Limit	LTE Power Density / Limit	WLAN 2.4GHz Power Density / Limit	WLAN 5GHz Low Band Power Density / Limit	WLAN 5GHz High Band Power Density / Limit	Bluetooth Power Density / Limit	ZigBee or BLE Power Density / Limit	Σ (Power Density / Limit) of LTE + LTE +WLAN2.4GHz + WLAN 5GHz Low Band + WLAN5GHz High Band + Bluetooth BR/EDR+ Bluetooth LE/ZigBee
0.361	0.361	0.039	0.086	0.082	0.001	0.006	0.936

<EN-DC>

LTE Power Density / Limit	5G NR Power Density / Limit	WLAN 2.4GHz Power Density / Limit	WLAN 5GHz Low Band Power Density / Limit	WLAN 5GHz High Band Power Density / Limit	Bluetooth Power Density / Limit	ZigBee or BLE Power Density / Limit	Σ (Power Density / Limit) of LTE +5G NR +WLAN2.4GHz + WLAN 5GHz Low Band + WLAN5GHz High Band + Bluetooth BR/EDR+ Bluetooth LE/ZigBee
0.361	0.361	0.039	0.086	0.082	0.001	0.006	0.936

Note:

1. According to the EUT characteristic, WLAN 2.4GHz and WLAN5GHz/Bluetooth/Bluetooth BLE/ZigBee can transmit simultaneously, and Bluetooth BLE and ZigBee cannot transmit simultaneously
2. According to the EUT characteristic, Bluetooth BR/EDR and WLAN5GHz/BLE/ZigBee can transmit simultaneously.
3. According to the EUT characteristic, WLAN 5GHz Low Band and WLAN5GHz High Band can transmit simultaneously.
4. Always chose the worst evaluation value of Bluetooth BLE and ZigBee to do analysis.
5. For colocation analysis, choose the highest (power density/limit) among WLAN 2.4GHz/5GHz MIMO mode and Beamforming mode respectively.
6. Σ (Power Density / Limit): This is a summation of [(power density for each transmitter/antenna included in the simultaneous transmission)/ (corresponding MPE limit)], for WWAN/Inter-band ULCA/EN-DC + WLAN 2.4GHz + WLAN 5GHz Low Band + WLAN5GHz High Band + Bluetooth BR/EDR+ Bluetooth LE/ZigBee.
7. Considering all transmitter of the EIRP performance listed in the table above, the aggregated (power density /limit) is smaller than 1.

Conclusion:

According to 47 CFR §2.1091, the equipment at least **29 cm** to show compliance with the power density limit, the RF exposure analysis concludes that the RF Exposure is FCC compliant.

-----THE END-----