RF Exposure Report

Report No.:	MFBEMV-WTW-P22040202
FCC ID:	XCNUBC1338
Test Model:	UBC1338
Received Date:	Apr. 26, 2022
Date of Evaluation:	May 16 ~ May 25, 2022
Issued Date:	Jul. 15, 2022

Applicant:	Ubee Interactive Corp.
Address:	10F-1, No. 5, Taiyuan 1st St. Zhubei City, Hsinchu County 302, Taiwan, R.O.C.
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
Test Location:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, Taiwan
FCC Registration / Designation Number:	788550 / TW0003

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Release Control Record

Issue No.	Description	Date Issued
MFBEMV-WTW-P22040202	Original Release	Jul. 15, 2022

1   Certificate of Conformity

Product:	Wireless eMTA
Brand:	Ubee
Test Model:	UBC1338
Sample Status:	Engineering sample
Applicant:	Ubee Interactive Corp.
Date of Evaluation:	May 16 ~ May 25, 2022
FCC Rule Part:	FCC Part 2 (Section 2.1091)
Standards:	KDB 447498 D01 General RF Exposure Guidance v06

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

Prepared by : _Pettie Chen_ , **Date:** Jul. 15, 2022

Pettie Chen / Senior Specialist

Approved by : _Jeremy. Lin_ , **Date:** Jul. 15, 2022

Jeremy Lin / Project Engineer

2 RF Exposure

2.1 Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Average Time (minutes)
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

f = Frequency in MHz; *Plane-wave equivalent power density

2.2 MPE Calculation Formula

Pd = (Pout*G) / (4*pi*r^2)
where
Pd = power density in mW/cm^2
Pout = output power to antenna in mW
G = gain of antenna in linear scale
pi = 3.1416
r = distance between observation point and center of the radiator in cm

2.3 Classification

The antenna of this product, under normal use condition, is at least 25cm away from the body of the user. So, this device is classified as **Mobile Device**.

3 Calculation Result of Maximum Conducted Power

Frequency Band (MHz)	Max AV Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
CDD Mode					
2412-2462	29.10	3.97	25	0.258	1
5180-5240	28.17	4.15	25	0.217	1
5745-5825	29.13	4.78	25	0.313	1
Beamforming Mode					
2412-2462	26.12	9.74	25	0.491	1
5180-5240	26.27	9.69	25	0.502	1
5745-5825	26.35	9.29	25	0.467	1

Note:
1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

2412-2462MHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4] = 9.74$dBi

5180-5240MHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4] = 9.69$dBi.

5745-5825MHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4] = 9.29$dBi.

Conclusion:

Both of the WLAN 2.4G & WLAN 5G can transmit simultaneously, the formula of calculated the MPE is:

CPD1 / LPD1 + CPD2 / LPD2 + ……etc. < 1

CPD = Calculation power density

LPD = Limit of power density

2.4G + 5G = 0.491 / 1 + 0.502 / 1 = 0.993

Therefore the maximum calculations of above situations are less than the "1" limit.

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