

RF Exposure Report

Report No.: SA180502E08

FCC ID: XCNUBC1310

Test Model: UBC1310

Received Date: May 02, 2018

Test Date: May 29 to 30, 2018

Issued Date: June 26, 2018

Applicant: Ubee Interactive Corp.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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Test Location: E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.

FCC Registration / Designation Number: 723255 / TW2022



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Release Control Record

Issue No.	Description	Date Issued
SA180502E08	Original release.	June 26, 2018

1 Certificate of Conformity

Product: Cable modem

Brand: Ubee

Test Model: UBC1310

Applicant: Ubee Interactive Corp.

Test Date: May 29 to 30, 2018

Standards: FCC Part 2 (Section 2.1091)

KDB 447498 D01 General RF Exposure Guidance v06

IEEE C95.1-1992

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 EMC characteristics under the conditions specified in this report.

Prepared by : Wendy Wu, **Date:** June 26, 2018

Wendy Wu / Specialist

Approved by : May Chen, **Date:** June 26, 2018

May Chen / Manager

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/cm²

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 30cm away from the body of the user.

So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

Antenna Set.	Chain No.	Brand	Model No.	Antenna Net Gain (dBi)	Frequency Range (GHz)	Antenna Type	Connector Type	Cable Length (mm)	
1	0	WHA YU	C107-511273-A	3.9	2.4~2.5	PCB	i-pex(MHF)	45+-3	
				3.6	5.05~5.825				
	1		C107-511272-A	4.1	2.4~2.5	PCB	i-pex(MHF)	45+-3	
				3.1	5.05~5.825				
	2		C107-511271-A	3.3	2.4~2.5	PCB	i-pex(MHF)	80+-3	
				3.4	5.05~5.825				

2.5 Calculation Result of Maximum Conducted Power

Operation Mode	Evaluation Frequency (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
WLAN 2.4GHz	2437	532.874	8.54	30	0.33664	1
WLAN UNII-1	5200	603.7	8.14	30	0.34783	1
WLAN UNII-3	5795	947.881	8.14	30	0.54614	1

NOTE:

2.4GHz: Directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20})^2 / 3] = 8.54 \text{ dBi}$

5GHz: Directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20})^2 / 3] = 8.14 \text{ dBi}$

Conclusion:

The formula of calculated the MPE is:

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

CPD = Calculation power density

LPD = Limit of power density

WLAN 2.4GHz + WLAN 5GHz = 0.33664 / 1 + 0.54614 / 1 = 0.88278

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

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