

RF Exposure Report

Report No.: SA200707E04

FCC ID: SWX-GBEPLUS

Test Model: GBE-Plus

Received Date: July 07, 2020

Test Date: Aug. 20, 2020

Issued Date: Aug. 27, 2020

Applicant: Ubiquiti Inc.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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**FCC Registration /
Designation Number:** 723255 / TW2022

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Release Control Record

Issue No.	Description	Date Issued
SA200707E04	Original release.	Aug. 27, 2020

1 Certificate of Conformity

Product: GigaBeam Plus

Brand: UBIQUITI

Test Model: GBE-Plus

Sample Status: ENGINEERING SAMPLE

Applicant: Ubiquiti Inc.

Test Date: Aug. 20, 2020

Standards: FCC Part 2 (Section 2.1091)

IEEE C95.3 -2002

References Test Guidance: 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 EMC characteristics under the conditions specified in this report.

Prepared by :


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Date:

Aug. 27, 2020

Approved by :


Clark Lin / Technical Manager

Date:

Aug. 27, 2020

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

$$P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot r^2)$$

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 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 85 cm away from the body of the user.

2.4 Calculation Result

For WLAN and Bluetooth data was copied from the original test report (Report No.: FR073101AC R02 and FR073101AE)

Operation Mode	Evaluation Frequency (MHz)	Max. Avg. Power (dBm)	Max .Avg. Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
WLAN 2.4GHz	2437	20.21	104.954	2	85	0.00183	1
Bluetooth	2480	9.27	8.453	2	85	0.00015	1

Operation Mode	Evaluation Frequency (MHz)	Max.Avg. EIRP (dBm)	Max. EIRP (mW)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
802.11ad	64800	49.11	81470.4284	85	0.89733	1

Conclusion:

The formula of calculated the MPE is:

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

CPD = Calculation power density

LPD = Limit of power density

Simultaneously transmission condition:

$$WLAN\ 2.4GHz + 802.11ad = 0.00183 / 1 + 0.89733 / 1 = 0.89916$$

$$Bluetooth + 802.11ad = 0.00015 / 1 + 0.89733 / 1 = 0.89748$$

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

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