

## RF Exposure Report

**Report No.:** SABFPJ-WTW-P20110897

**FCC ID:** SWX-UBBXG

**Test Model:** UBB-XG

**Received Date:** Dec. 02, 2020

**Test Date:** Jan. 15, 2021

**Issued Date:** Jan. 21, 2021

**Applicant:** Ubiquiti Inc.

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**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch  
Hsin Chu Laboratory

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Taiwan

**Test Location:** E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,  
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**FCC Registration /  
Designation Number:** 723255 / TW2022

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### Release Control Record

Issue No.	Description	Date Issued
SABFPJ-WTW-P20110897	Original release.	Jan. 21, 2021

## 1 Certificate of Conformity

**Product:** UniFi Network Building Bridge XG

**Brand:** UBIQUITI

**Test Model:** UBB-XG

**Sample Status:** Engineering sample

**Applicant:** Ubiquiti Inc.

**Test Date:** Jan. 15, 2021

**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.

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Joyce Kuo / Specialist

**Approved by :** Clark Lin , **Date:** Jan. 21, 2021  
Clark Lin / Technical 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 <sup>2</sup> )	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 <sup>2</sup> )*	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/cm<sup>2</sup>

$P_{out}$  = 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 32 cm away from the body of the user.

## 2.4 Calculation Result

The maximum power of WLAN 5GHz and Bluetooth was refer to the FCC test reports. (Report No.: TR5712\_UBB-XG\_15.407\_UNII-1\_01, TR5712\_UBB-XG\_15.407\_UNII-3\_01, TR5694\_UBB-XG\_FCC\_15.247\_BLE\_01)

Operation Mode	Evaluation Frequency (MHz)	Max. Avg. Power (dBm)	Max .Avg. Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
WLAN 5GHz	5180-5825	22.80	190.546	14.00	32	0.37195	1
Bluetooth	2402-2480	5.80	3.802	2.50	32	0.00053	1

Operation Mode	Evaluation Frequency (MHz)	Max. Avg. EIRP (dBm)	Max. EIRP (mW)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
802.11ad	57000-71000	38.28	6729.767	32	0.52299	1

### Conclusion:

The formula of calculated the MPE is:

$$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$$

CPD = Calculation power density

LPD = Limit of power density

### Simultaneously transmission condition:

$$WLAN\ 5GHz + Bluetooth + 802.11ad = 0.37195 / 1 + 0.00053 / 1 + 0.52299 / 1 = 0.89547$$

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

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