

## RF Exposure Report

**Report No.:** SABFPJ-WTW-P20110897A

**FCC ID:** SWX-UBBXG

**Test Model:** UBB-XG

**Received Date:** 2021/7/20

**Test Date:** 2021/8/25

**Issued Date:** 2022/3/1

**Applicant:** Ubiquiti Inc.

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

**Lab Address:** E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,  
Taiwan

**Test Location:** E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,  
Taiwan

**FCC Registration /  
Designation Number:** 723255 / TW2022

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## Table of Contents

<b>Release Control Record .....</b>	<b>3</b>
<b>1     Certificate of Conformity .....</b>	<b>4</b>
<b>2     RF Exposure .....</b>	<b>5</b>
2.1   Limits for Maximum Permissible Exposure (MPE) .....	5
2.2   MPE Calculation Formula .....	5
2.3   Classification .....	5
2.4   Calculation Result .....	6

### Release Control Record

Issue No.	Description	Date Issued
SABFPJ-WTW-P20110897A	Original release.	2022/3/1

## 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:** 2021/8/25

**Standards:** FCC Part 2 (Section 2.1091)

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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Vivian Huang / Specialist

**Approved by :** Clark Lin , **Date:** 2022/3/1  
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

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

where

Pd = power density in mW/cm<sup>2</sup>

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 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\_045, TR5712\_UBB-XG\_15.407\_UNII-3\_045, TR5694\_UBB-XG\_FCC\_15.247\_BLE\_034)

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> )	Result
WLAN 5GHz	5180-5240 5745-5825	22.70	186.208	14.00	32	0.36349	1	PASS
Bluetooth	2402-2480	5.80	3.802	2.50	32	0.00053	1	PASS

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> )	Result
WiGig 60GHz (BW: 4320MHz)	57000-71000	38.18	6576.578	32	0.51108	1	PASS

### 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:

$$\text{WLAN 5GHz} + \text{Bluetooth} + \text{WiGig 60GHz} = 0.36349 / 1 + 0.00053 / 1 + 0.51108 / 1 = 0.87510$$

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

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