

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
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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 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 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 ²)	Limit (mW/cm ²)
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 ²)	Limit (mW/cm ²)
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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