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.
Address:	685 Third Avenue, New York, New York 10017 USA
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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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.

Prepared by : Vivian Huang , **Date:** 2022/3/1

Vivian Huang / Specialist

Approved by : , **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^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/cm^2

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^2)	Limit (mW/cm^2)	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^2)	Limit (mW/cm^2)	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 + ……etc. < 1

CPD = Calculation power density

LPD = Limit of power density

Simultaneously transmission condition:

WLAN 5GHz + Bluetooth + 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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