RF Exposure Report

Report No.:	SABFPJ-WTW-P20090576
FCC ID:	SWX-USWMC
Contains FCC ID:	SWX-HL7800
Test Model:	USW-Mission-Critical
Received Date:	Sep. 25, 2020
Date of Evaluation:	Mar. 05, 2021
Issued Date:	Mar. 08, 2021
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 Lin Kou Laboratories
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
Test Location:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN
FCC Registration / Designation Number:	788550 / TW0003

Table of Contents

Release Control Record

Issue No.	Description	Date Issued
SABFPJ-WTW-P20090576	Original Release	Mar. 08, 2021

1 Certificate of Conformity

Product:	UniFi Network Mission Critical
Brand:	
Test Model:	USW-Mission-Critical
Sample Status:	Engineering Sample
Applicant:	Ubiquiti Inc.
Date of Evaluation:	Mar. 05, 2021
Standards:	FCC Part 2 (Section 2.1091)
References Test Guidance :	KDB 447498 D01 General RF Exposure Guidance v06 IEEE C95.3 -2002

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 RF characteristics under the conditions specified in this report.

Prepared by : Vera Huang , **Date:** Mar. 08, 2021

Vera Huang / Specialist

Approved by : , **Date:** Mar. 08, 2021

Dylan Chiou / Senior Project Engineer

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 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

2.4 Calculation Result of Maximum Conducted Power

Band	Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
LTE 2	1850-1910	24.5	3.1	20	0.114	1.00
LTE 4	1710-1755	24.5	1.5	20	0.079	1.00
LTE 12	699-716	24.5	0	20	0.056	0.47
LTE 13	777-787	24.5	1.7	20	0.083	0.52
BT LE	2402-2480	8.07	3.81	20	0.003	1.00

Note:

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible
3. Only LTE B2/4/12/13 is supported by the module (Brand: AirPrime, Model: HL7800) and evaluated for co-location. Other bands are disabled.
4. Refer to SIERRA WIRELESS MPE report (Model: HL7800, FCC ID: N7NHL78) for conducted power.

Conclusion:

Both of the LTE and BT LE can transmit simultaneously, the formula of calculated the MPE is:

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

CPD = Calculation power density

LPD = Limit of power density

LTE + BT LE = 0.083/0.52 + 0.003/1 = 0.163

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

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