

RF Exposure Report

Report No.: SABFPJ-WTW-P20120001A

FCC ID: SWX-AF60HD

Test Model: AF60-HD

Received Date: 2021/7/20

Test Date: 2021/9/29

Issued Date: 2021/10/18

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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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-P20120001A	Original release.	2021/10/18

1 Certificate of Conformity

Product: airFiber 60 HD
Brand: UBIQUITI
Test Model: AF60-HD
Sample Status: Engineering sample
Applicant: Ubiquiti Inc.
Test Date: 2021/9/29
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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Phoenix Huang / Specialist

Approved by : Clark Lin , **Date:** 2021/10/18
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

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

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 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 60 cm away from the body of the user.

2.4 Antenna Gain

Antenna No.	Antenna Net Gain (dBi)	Frequency Range	Antenna Type	Connector Type
WiGig (60GHz)	35	57-71GHz	Dish	None
BT	3	2.4~2.4835GHz	internal	None

* 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.

2.5 Calculation Result

For Bluetooth data was copied from the original test report (Report No.: SABFPJ-WTW-P20120001)

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)
Bluetooth	2402-2480	4.40	2.754	3	60	0.00012	1

Operation Mode	Evaluation Frequency (MHz)	Max Avg. EIRP (mW)	Max Avg. EIRP (dBm)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
WiGig	57000-71000	38547.835	45.86	60	0.85209	1

Note:

- Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

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

$$\text{Bluetooth} + \text{WiGig} = 0.00012 / 1 + 0.85209 / 1 = 0.85221$$

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

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