RF Exposure Report

Report No.: SA191230C15

FCC ID: RX3-WBU053LGA

Test Model: WBU053-LGA

Received Date: Dec. 30, 2019

Date of Evaluation: Feb. 19, 2020

Issued Date: Feb. 21, 2020

Applicant: Hon Hai Precision Industry Co., Ltd.

Address: No.151, Sec. 1, Nankan Rd., Lujhu Dist., Taoyuan County 33859, Taiwan (R.O.C.)

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

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Release Control Record

Issue No.	Description	Date Issued
SA191230C15	Original Release	Feb. 21, 2020

1   Certificate of Conformity

Product: Wireless Module

Brand: Foxconn

Test Model: WBU053-LGA

Sample Status: Engineering Sample

Applicant: Hon Hai Precision Industry Co., Ltd.

Date of Evaluation: Feb. 19, 2020

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 : _Lena Wang_ , **Date:** Feb. 21, 2020

Lena Wang / Specialist

Approved by : , **Date:** Feb. 21, 2020

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/cm²)	Limit (mW/cm²)
WLAN	2412-2462	23.34	6.17	20	0.178	1.00
	5180-5240	14.50	4.87	20	0.017	1.00
	5260-5320	14.19	4.87	20	0.016	1.00
	5500-5700	14.71	5.57	20	0.021	1.00
	5745-5825	14.90	4.57	20	0.018	1.00

Note:

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

2. 2.4GHz: Directional gain = $10\log[(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2 / N_{ANT}]$ = 6.17 dBi

   5.0GHz:

   For U-NII-1 Band, For U-NII-2A, U-NII-2C Band:

   Directional gain = $10\log[(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2 / N_{ANT}]$ = 4.87 dBi.

   U-NII-2C Band:

   Directional gain = $10\log[(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2 / N_{ANT}]$ = 5.57 dBi .

   For U-NII-3 Band:

   Directional gain = $10\log[(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2 / N_{ANT}]$ = 4.57

Conclusion:

The formula of calculated the MPE is:

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

CPD = Calculation power density

LPD = Limit of power density

WLAN 2.4GHz + WLAN 5GHz = 0.178/1 + 0.021/1 = 0.199

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

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