

RF Exposure Report

Report No.: SABGTL-WTW-P20100274

FCC ID: RX3-WBU053LGABT

Test Model: WBU053-LGABT

Received Date: Dec. 30, 2019

Date of Evaluation: Feb. 19, 2020
Oct. 31 ~ Nov. 10, 2020

Issued Date: Nov. 11, 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
SABGTL-WTW-P20100274	Original Release	Nov. 11, 2020

1 Certificate of Conformity

Product: 802.11a/b/g/n 2T2R with Bluetooth combo wireless module

Brand: Foxconn

Test Model: WBU053-LGABT

Sample Status: Engineering Sample

Applicant: Hon Hai Precision Industry Co., Ltd.

Date of Evaluation: Feb. 19, 2020

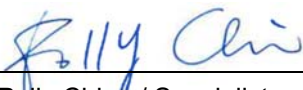
Oct. 31 ~ Nov. 10, 2020

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 :


Polly Chien / Specialist

Date: Nov. 11, 2020

Approved by :


Bruce Chen / Senior Project Engineer

Date: Nov. 11, 2020

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

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

where

Pd = power density in mW/cm²

P_{out} = 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 20 cm 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 AV. Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
WLAN	2412-2462	17.21	6.17	20	0.043	1.00
	5180-5240	14.30	4.87	20	0.016	1.00
	5260-5320	14.19	4.87	20	0.016	1.00
	5500-5720	14.69	5.57	20	0.021	1.00
	5745-5825	14.67	4.57	20	0.017	1.00
BT EDR	2402-2480	8.85	2.42	20	0.003	1.00
BT LE	2402-2480	8.61	2.42	20	0.003	1.00

Note:

- Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
- 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
- 2.4GHz: Directional gain = $10\log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}] = 6.17$ dBi

5.0GHz:

For U-NII-1 Band:

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

For U-NII-2A:

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

For U-NII-2C Band:

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

For U-NII-3 Band:

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

2.4GHz: BT Antenna gain = 2.42 dBi.

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

$WLAN + BT = 0.043/1 + 0.003/1 = 0.046$

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

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