

## RF Exposure Report

**Report No.:** MFBVSW-WTW-P20110319B

**FCC ID:** W23-WMU62XX

**Test Model:** WMU6202

**Series Model:** WMU6203, WMU6204, WMU6205

**Received Date:** Dec. 05, 2022

**Date of Evaluation:** Jan. 11, 2023

**Issued Date:** Jan. 30, 2023

**Applicant:** jjPlus Corporation

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(R.O.C.)

**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch  
Lin Kou Laboratories

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**Test Location (1):** No.19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City  
33383, Taiwan

**Test Location (2):** No. 70, Wenming Rd., Guishan Dist., Taoyuan City 333, Taiwan

**FCC Registration /** 788550 / TW0003  
**Designation Number (1):**

**FCC Registration /** 281270 / TW0032  
**Designation Number(2):**



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### Release Control Record

Issue No.	Description	Date Issued
MFBVSW-WTW-P20110319B	Original Release	Jan. 30, 2023

## 1 Certificate of Conformity

**Product:** 11ac 2T2R WIFI & BT Module

**Brand:** jjPlus

**Test Model:** WMU6202

**Series Model:** WMU6203, WMU6204, WMU6205

**Sample Status:** Engineering Sample

**Applicant:** jjPlus Corporation

**Date of Evaluation:** Jan. 11, 2023

**FCC Rule Part:** FCC Part 2 (Section 2.1091)

**Standards:** 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 RF characteristics under the conditions specified in this report.

**Prepared by :** Gina Liu, **Date:** Jan. 30, 2023

Gina Liu / Specialist

**Approved by :** Jeremy Lin, **Date:** Jan. 30, 2023

Jeremy Lin / Project Engineer

## 2 General Information

This report is prepared for FCC class II permissive change. This report is issued as a supplementary report to BV CPS report no. SABAYS-WTW-P20110319A. The difference compared with original report is adding new Antennas. Due to no effect on any test item, the original calculated MPE value was kept.

## 3 RF Exposure

### 3.1 Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	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 <sup>2</sup> )*	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

### 3.2 MPE Calculation Formula

$$Pd = (Pout*G) / (4*\pi*r^2)$$

where

Pd = power density in mW/cm<sup>2</sup>

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

### 3.3 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**.

### 3.4 Antenna Gain

The antennas information is listed as below. (New antenna is marked in boldface.)

Antenna Type	Brand	Model	Antenna Gain (dBi)			Antenna Connector
			BT	2.4G	5G	
Dipole	LYNwave	AOA160-221020-000000	3.0	3.0	2.0	ipex(MHF)
	LYNwave	AOA160-221034-000000	3.0	3.0	3.0	ipex(MHF)
	LYNwave	AOA160-221050-000000	5.0	5.0	5.0	ipex(MHF)
PIFA	SINBON	A9706632	4.1	4.1	3.5	MHFI
	SINBON	A9706633	4.8	4.8	4.1	MHFI
Dipole	<b>ARISTOTLE</b>	<b>RFA-25-AP152R-70-180</b>	<b>3.42</b>	<b>3.42</b>	<b>4.33</b>	<b>ipex(MHF)</b>
	<b>ARISTOTLE</b>	<b>RFA-25-AP152R-70B360</b>	<b>2.55</b>	<b>2.55</b>	<b>2.34</b>	<b>ipex(MHF)</b>

\* Detail antenna specification please refer to antenna datasheet and/or antenna measurement report.

### 3.5 Calculation Result of Maximum Conducted Power

Band	Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
WLAN	2412-2462	26.85	6.43	20	0.423	1.00
	5180-5240	16.32	7.34	20	0.046	1.00
	5260-5320	16.30	7.34	20	0.046	1.00
	5500-5700	16.33	7.34	20	0.046	1.00
	5745-5825	16.30	7.34	20	0.046	1.00
BT	2402-2480	5.77	3.42	20	0.002	1.00

NOTE:

2.4GHz: Directional gain =  $G_{ANT} + 10 \log(N_{ANT}/N_{SS}) = 6.43 \text{ dBi}$

5.0GHz: Directional gain =  $G_{ANT} + 10 \log(N_{ANT}/N_{SS}) = 7.34 \text{ dBi}$

#### 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 + BT = 0.423/1 + 0.002/1 = 0.425**

**WLAN 5GHz + BT = 0.046/1 + 0.002/1 = 0.048**

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

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