Report No.: DDT-R22112913-2E04

Issued Date: Jan. 09, 2023

RF EXPOSURE REPORT

FOR

Applicant	**:**	Ruijie Networks Co., Ltd.
Address	**:**	Building 19, Juyuanzhou Industrial Park, No. 618 Jinshan Road, Cangshan District , Fuzhou, Fujian, China
Equipment under Test	**:**	Wireless Bridge
Model No.	**:**	RG-EST310 V2
Trade Mark	**:**	Ruijie, Reyee, Ruijie | Reyee, Reyee by Ruijie, Ruijie | 睿Reyee
FCC ID	**:**	2AX5J-EST310V2
Manufacturer	**:**	Ruijie Networks Co., Ltd.
Address	**:**	Building 19, Juyuanzhou Industrial Park, No. 618 Jinshan Road, Cangshan District , Fuzhou, Fujian, China

Issued By: Dongguan Dongdian Testing Service Co., Ltd.

Add.: No. 17, Zongbu Road 2, Songshan Lake Sci&Tech, Industry Park, Dongguan City, Guangdong Province, China, 523808

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REPORT

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Test Report Declare

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Standard Used: KDB447498 D01 General RF Exposure Guidance v06

We Declare:

The equipment described above is assessed by Dongguan Dongdian Testing Service Co., Ltd and in the configuration assessed the equipment complied with the standards specified above. The assessed results are contained in this report and Dongguan Dongdian Testing Service Co., Ltd is assumed of full responsibility for the accuracy and completeness of these assess.

After evaluation, our opinion is that the equipment In Accordance with above standard.

Report No:	DDT-R22112913-2E04		
Date of Receipt:	Nov. 30, 2022	**Date of Test:**	Nov. 30, 2022 ~ Jan. 09, 2023

Prepared By: ***Approved By:***

Ella Gong

Ella Gong /Engineer ***Damon Hu/EMC Manager***

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Dongguan Dongdian Testing Service Co., Ltd.

Revision History

Rev.	Revisions	Issue Date	Revised By
---	Initial issue	Jan. 09, 2023	

1. General Information

1.1. Description of equipment

EUT* Name	:	Wireless Bridge
Model Number	:	RG-EST310 V2
EUT function description	:	Please reference user manual of this device
Power Supply	:	24 VDC non-standard PoE power supply or 12 VDC power supply from DC port
Radio Technology	:	IEEE 802.11a/n/ac
Operation frequency	:	IEEE 802.11a: 5180MHz-5240MHz, 5260MHz-5320MHz, 5500MHz-5700MHz, 5745MHz-5825MHz IEEE 802.11n HT20: 5180MHz-5240MHz, 5260MHz-5320MHz, 5500MHz-5700MHz, 5745MHz-5825MHz IEEE 802.11n HT40: 5190MHz-5230MHz, 5270MHz-5310MHz, 5510MHz-5670MHz, 5755MHz-5795MHz IEEE 802.11ac VHT20: 5180MHz-5240MHz, 5260MHz-5320MHz,5500MHz-5700MHz, 5745MHz-5825MHz IEEE 802.11ac VHT40: 5190MHz-5230MHz, 5270MHz-5310MHz, 5510MHz-5670MHz, 5755MHz-5795MHz IEEE 802.11ac VHT80: 5210MHz, 5290MHz, 5530MHz,5610MHz, 5775MHz
Modulation	:	IEEE 802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20, HT40: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK)
Transmitter rate	:	IEEE 802.11a: up to 54 Mbps IEEE 802.11n HT20: up to 144.4 Mbps IEEE 802.11n HT40: up to 300 Mbps IEEE 802.11ac VHT20: up to 173.4 Mbps IEEE 802.11ac VHT40: up to 400 Mbps IEEE 802.11ac VHT80: up to 866.6 Mbps
Antenna Type	:	Antenna 1: Directional antenna, Maximum PK gain: 11.86 dBi Antenna 2: Directional antenna, Maximum PK gain: 11.86 dBi
Sample Number	:	S22112912-02 for conductive, S22112912-03 for radiation

Antenna information		
Ant.	Antenna Type	Gain (dBi)
1	Directional antenna	11.86
2	Directional antenna	11.86

Note:
This EUT supports CDD, and antenna gains are equal,
so Directional gain = GANT+ Array Gain, where Array Gain is as follows:

For power measurements,
Array Gain = 0 dB (NANT $\leqslant$ 4), so the Directional gain=11.86.

1.2. Assess laboratory

Dongguan Dongdian Testing Service Co., Ltd.
Add.: No. 17, Zongbu Road 2, Songshan Lake Sci&Tech, Industry Park, Dongguan City, Guangdong Province, China, 523808.
Tel.: +86-0769-38826678, http://www.dgddt.com, Email: ddt@dgddt.com.

CNAS Accreditation No. L6451; A2LA Accreditation Number: 3870.01
FCC Designation Number: CN1182, Test Firm Registration Number: 540522
Innovation, Science and Economic Development Canada Site Registration Number: 10288A
Conformity Assessment Body identifier: CN0048
VCCI facility registration number: C-20087, T-20088, R-20123, R-20155, G-20118

2. RF Exposure Evaluation

2.1. Requirement

Systems operating under the provisions of FCC 47 CFR section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as mobile device whereby a distance of 0.2 m normally can be maintained between the user and the device, and below RF Permissible Exposure limit shall comply with.

Limits for General Population/Uncontrolled Exposure

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$,$\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

Note: f = frequency in MHz ; *Plane-wave equivalent power density

2.2. Calculation method

$$E(V/m) = \frac{\sqrt{30 \times P \times G}}{d} \qquad \text{Power Density: } S(mW/cm^2) = \frac{E^2}{377}$$

E = Electric field (V/m)
P = Peak RF output power (mW)
G = EUT Antenna numeric gain (numeric)=
d = Separation distance between radiator and human body (m)
The formula can be changed to

We can change the formula to:

$$S = \frac{30 \times P \times G}{377 \times d^2} \quad \text{or, } d = \sqrt{\frac{30 \times P \times G}{377 \times S}}$$

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2 m, as well as the gain of the used antenna, the RF power density can be obtained.

2.3. Estimation result

Mode	Output power (dBm)	Output power (mW)	Tune up power (dBm)	Antenna Gain (dBi)	Antenna Gain (linear)	MPE Values (mW/cm^2)	MPE Limit (mW/cm^2)
5G WIFI	23.2	208.930	24	11.86	15.346	0.767	1

Note: The estimation distance is 20 cm

Conclusion: MPE evaluation compliance of the exemption limits for RF Exposure evaluation.

END OF REPORT