RF EXPOSURE REPORT

Applicant:	Guangzhou Shikun Electronics Co., Ltd
Address:	NO.6 Liankun Road, Huangpu District, Guangzhou, China
Manufacturer:	Guangzhou Shikun Electronics Co., Ltd
Address:	NO.6 Liankun Road, Huangpu District, Guangzhou, China
Product Description:	IEEE 802.11b/g/n/a/ac 2T2R USB WiFi Module Integrated BT 2.1+EDR/4.2/5.0
Brand Name:	NA
Tested Model:	SKI.WB822CU.8
FCC ID:	2AR82-SKIWB822CU8
Report No.:	JCF240627041-005
Received Date:	Jun. 27, 2024
Tested Date:	Jun. 27, 2024 ~Jul. 18, 2024
Issued Date:	Jul. 18, 2024
Test Standards:	KDB 447498 D01 General RF Exposure Guidance v06
Test Result:	Pass

Prepared By:

Roger Li

Roger Li/Engineer **Date:** Jul. 18, 2024

Reviewed By:

Kenny Zhang

Kenny Zhang/Engineer **Date:** Jul. 18, 2024

Approved By:

Talent Zhang

Talent Zhang/Engineer **Date:** Jul. 18, 2024

Note: The test results in this report apply exclusively to the tested model / sample. Without written approval of Guangzhou Jingce Testing Technology Co., Ltd. the test report shall not be reproduced except in full.

Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Jul. 18, 2024	Original Report	/

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1. Test Report Declare

Applicant:	Guangzhou Shikun Electronics Co., Ltd
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Brand Name:	NA
Model Name:	SKI.WB822CU.8
Difference Description:	NA

We Declare:

The equipment described above is tested by Guangzhou Jingce Testing Technology Co., Ltd. and in the configuration tested the equipment complied with the standards specified above. The test results are contained in this test report and Guangzhou Jingce Testing Technology Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests except as provided information by clients.

2. Equipment Under Test

2.1. Description of EUT

EUT* Name:	IEEE 802.11b/g/n/a/ac 2T2R USB WiFi Module Integrated BT 2.1+EDR/4.2/5.0
Model Number:	SKI.WB822CU.8
EUT Function Description:	Please refer to user manual of this device
Power Supply:	DC 3.3V±0.3
Radio Specification:	Bluetooth V5.0, IEEE 802.11a/b/g/n/ac
Operation Frequency:	Bluetooth: 2402MHz-2480MHz IEEE802.11b/g/n/a/ac: 2412MHz-2462MHz, 5180MHz-5825MHz
Modulation:	Bluetooth: GFSK, π/4-DQPSK, 8DPSK IEEE 802.11b: DSSS (CCK, QPSK, BPSK) IEEE 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20, HT40: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac (HT20/40/80): OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK)
Data Rate:	Bluetooth: 1Mbps, 2Mbps, 3Mbps IEEE 802.11b: 1, 2, 5.5, 11 Mbps IEEE 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps IEEE 802.11n HT20: 14.4, 28.9, 43.3, 57.8, 86.7, 115.6, 130.0, 144.4Mbps IEEE 802.11n HT40: 30.0, 60.0, 90.0, 120.0, 180.0, 240.0, 270.0, 300.0 Mbps IEEE 802.11a: 6, 9, 12, 18, 24, 36, 48, 54Mbps IEEE 802.11ac HT20: 14.4, 28.9, 43.3, 57.8, 86.7, 115.6, 130, 144.4, 173.3 Mbps IEEE 802.11ac HT40: 30, 60, 90, 120, 180, 240, 270, 300, 360, 400 Mbps IEEE 802.11ac HT80: 65, 130, 195, 260, 390, 520, 585, 650, 780, 866.7 Mbps
Antenna Type:	Bluetooth: FPC Antenna, 5.85 dBi 2.4G WIFI: Shrapnel Antenna, 4.13 dBi 5G WIFI: Shrapnel Antenna, 4.56 dBi
Product Type:	☐Portable device ☑Mobile device ☐Fixed device

Note 1: EUT is the ab. of equipment under test.

Note 2: The antenna gain is declared by the customer and the laboratory is not responsible for the accuracy of the antenna gain.

2.2. Description of Available Antennas

Test Mode	Transmit and Receive Mode	Description
BT&BLE	☒ 1TX, 1RX	ANT 1 can be used as transmitting/receiving antenna.
2.4G WIFI	☒ 2TX, 2RX	ANT 1 and ANT2 can be used as transmitting/receiving antenna.
5G WIFI	☒ 2TX, 2RX	ANT 1 and ANT2 can be used as transmitting/receiving antenna.

3. Test Laboratory

Guangzhou Jingce Testing Technology Co., Ltd.

Add.: No.10, Hefeng No.1 street, Huangpu District, Guangzhou, Guangdong, People's Republic of China

Association for Laboratory Accreditation(A2LA). Certificate Number: 6594.03

FCC Designation Number: CN1381. Test Firm Registration Number: 486550

IC Test Firm Registration Number: 31808

Conformity Assessment Body identifier: CN0173

4. RF Exposure Measurement

4.1. 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.

4.2. 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.

4.3. 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

4.4. 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.

4.5. Conducted Power

Band	Channel Frequency (MHz)	Average Power (dBm)
BT&BLE	2441	6.49
2.4G WIFI	2422	17.29
5G WIFI	5825	14.45

5. RF Exposure Calculation

We used the maximum power between the conducted power and ERP/EIRP to perform RF exposure exemption evaluation.

Band	Channel Frequency (MHz)	Conducted Power (dBm)	EIRP (dBm)	Power Density (mW/cm^2)	Limit (mW/cm^2)	PASS/FAIL
BT&BLE	2441	6.49	10.21	0.002	1	PASS
2.4G WIFI	2422	17.29	21.22	0.026	1	PASS
5G WIFI	5825	14.45	17.25	0.011	1	PASS

Both of the WLAN and plug-in device can transmit simultaneously, the formula of calculated the MPE is:

CPD1/LPD1+CPD2/LPD2+……etc. < 1

CPD = Calculation power density

LPD = Limit of power density

Therefore the worst-case situation is 0.002/1.00+0.026/1.00+0.011/0.55=0.039, which is less than “1”, This confirmed that the device comply with FCC 1.1310 MPE limit.

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