




RF EXPOSURE REPORT

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|-----------------------------|---|
| 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: | IEEE802.11a/b/g/n/ac 2T2R USB Wi-Fi Module Integrated Bluetooth 2.1/3.0/4.2/5.0 |
| Brand Name: | NA |
| Tested Model: | SKI.WB822CU.2 |
| FCC ID: | 2AR82-SKIWB822CU2 |
| Report No.: | JCF240223021-005 |
| Received Date: | Feb. 23, 2024 |
| Tested Date: | Feb. 23, 2024 ~ Mar. 22, 2024 |
| Issued Date: | Mar. 22, 2024 |
| Test Standards: | KDB 447498 D01 General RF Exposure Guidance v06 |
| Test Result: | Pass |

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| Prepared By:  <u>Roger Li/Engineer</u> | Date: Mar. 22, 2024 |
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| Reviewed By:  <u>Kennys Zhang/Engineer</u> | Date: Mar. 22, 2024 |
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| Approved By:  <u>Talent Zhang/Engineer</u> | Date: Mar. 22, 2024 |
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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 | / | Mar. 22, 2024 | Original Report | / |

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1. Test Report Declare

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| Manufacturer: | Guangzhou Shikun Electronics Co., Ltd |
| Address: | NO.6 Liankun Road, Huangpu District, Guangzhou, China |
| Product Name | IEEE802.11a/b/g/n/ac 2T2R USB Wi-Fi Module Integrated Bluetooth 2.1/3.0/4.2/5.0 |
| Brand Name: | NA |
| Model Name: | SKI.WB822CU.2 |
| 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: | IEEE802.11a/b/g/n/ac 2T2R USB Wi-Fi Module Integrated Bluetooth 2.1/3.0/4.2/5.0 |
| Model Number: | SKI.WB822CU.2 |
| EUT Function Description: | Please refer to usual manual |
| Power Supply: | DC 3.3V+/-0.3 |
| Hardware Version: | NA |
| Software Version: | NA |
| Radio Specification: | Bluetooth V5.0, IEEE802.11b/g/n/ac |
| Operation Frequency: | Bluetooth: 2402MHz-2480MHz IEEE802.11b/g/n/a/ac: 2412MHz-2462MHz, 5180MHz-5825MHz |
| Modulation: | Bluetooth: GFSK, $\pi/4$ -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, 11Mbps IEEE 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps IEEE 802.11n HT20: 6.5, 13, 19.5, 26, 39, 52, 58.5, 65Mbps IEEE 802.11n HT40: 13.5, 27, 40.5, 54, 81, 108, 121.5, 135Mbps IEEE 802.11a: 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, 144.4 Mbps IEEE 802.11n HT40: 30, 60, 90, 120, 180, 240, 270, 300 Mbps IEEE 802.11ac HT20: 14.4, 28.8, 43.4, 57.8, 86.6, 115.6, 130, 144.4, 173.4 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, 866.6 Mbps |
| Antenna Type: | BT&BLE: Shrapnel Antenna, MAX. Gain: 3.32dBi; 2.4GHz WLAN: Shrapnel Antenna, MAX. Gain:4.58dBi 5GHz RLAN: Shrapnel Antenna, MAX. Gain:4.89dBi |
| Product Type: | <input type="checkbox"/> Portable device <input checked="" type="checkbox"/> Mobile device <input type="checkbox"/> 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 | <input checked="" type="checkbox"/> 1TX, 1RX | ANT 1 can be used as transmitting/receiving antenna. |
| 2.4G WIFI | <input checked="" type="checkbox"/> 2TX, 2RX | ANT 1 and ANT2 can be used as transmitting/receiving antenna. |
| 5G WIFI | <input checked="" type="checkbox"/> 2TX, 2RX | ANT 1 and ANT2 can be used as transmitting/receiving antenna. |

3. Test Laboratory

Guangzhou Jingce Testing Technology Co., Ltd.

Add.: No.192, Kezhu Road, Huangpu District, Guangzhou, Guangdong, China

Association for Laboratory Accreditation(A2LA). Certificate Number: 6594.01

FCC Designation Number: CN1331. Test Firm Registration Number: 360543

IC Test Firm Registration Number: 28796

Conformity Assessment Body identifier: CN0138

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

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

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 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 | 2480 | 7.22 |
| 2.4G WIFI | 2437 | 18.53 |
| 5G WIFI | 5510 | 12.89 |

Note: The Average Power reference reports: "ESTE-R2112272", "ESTE-R2112273", "ESTE-R2112274" and "ESTE-R2112275"

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) | Antenna Gain (dBi) | Power Density (mW/cm ²) | Limit (mW/cm ²) | PASS/FAIL |
|-----------|-------------------------|-----------------------|--------------------|-------------------------------------|-----------------------------|-----------|
| BT&BLE | 2480 | 7.22 | 3.32 | 0.028 | 1 | PASS |
| 2.4G WIFI | 2437 | 18.53 | 4.58 | 0.512 | 1 | PASS |
| 5G WIFI | 5510 | 12.89 | 4.89 | 0.150 | 1 | PASS |

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

$$CPD1/LPD1 + CPD2/LPD2 + \dots \text{etc.} < 1$$

CPD = Calculation power density

LPD = Limit of power density

Therefore the worst-case situation is $0.028/1.00 + 0.512/1.00 + 0.150/1.00 = 0.690$, which is less than "1", This confirmed that the device comply with FCC 1.1310 MPE limit.

--END--