RADIO TEST REPORT

Report No: STS2112190H01

Issued for

Guangzhou Shikun Electronics Co., Ltd

NO.6 Liankun Road, Huangpu District, Guangzhou, China

Product Name:	IEEE 802.11b/g/n/ax 1T1R USB Wi-Fi Module Integrated Bluetooth 2.1+EDR/3.0/4.x/5.0
Brand Name:	N/A
Model Name:	SKI.WB800D.2
Series Model:	N/A
FCC ID:	2AR82-SKIWB800D21
Test Standard:	FCC 47CFR §2.1091

Shenzhen STS Test Services Co., Ltd.
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Test Report Certification

Applicant's Name ..... :	Guangzhou Shikun Electronics Co., Ltd
Address ..... :	NO.6 Liankun Road, Huangpu District, Guangzhou, China
Manufacturer's Name ..... :	/
Address ..... :	/
Product Description	
Product Name ..... :	IEEE 802.11b/g/n/ax 1T1R USB Wi-Fi Module Integrated Bluetooth 2.1+EDR/3.0/4.x/5.0
Brand Name ..... :	N/A
Model Name ..... :	SKI.WB800D.2
Series Model ..... :	N/A
Standards ..... :	FCC 47CFR §2.1091

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Date of Test ..... :	
Date of receipt of test item ..... :	22 Dec. 2021
Date (s) of performance of tests ..... :	22 Dec. 2021 ~ 30 Dec. 2021
Date of Issue ..... :	30 Dec. 2021
Test Result ..... :	**Pass**

Testing Engineer : Chris Chen

(Chris Chen)

Technical Manager : Sean She

(Sean she)

Authorized Signatory : Vita Li

(Vita Li)

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Revision History

Rev.	Issue Date	Report No.	Effect Page	Contents
00	30 Dec. 2021	STS2112190H01	ALL	Initial Issue

1. GENERAL INFORMATION

1.1 GENERAL DESCRIPTION OF THE EUT

Product Name	IEEE 802.11b/g/n/ax 1T1R USB Wi-Fi Module Integrated Bluetooth 2.1+EDR/3.0/4.x/5.0
Brand Name	N/A
Model Name	SKI.WB800D.2
Series Model	N/A
Model Difference	N/A
Product Description	The EUT is IEEE 802.11b/g/n/ax 1T1R USB Wi-Fi Module Integrated Bluetooth 2.1+EDR/3.0/4.x/5.0 Operation Frequency: Bluetooth:2402 – 2480 MHz WLAN:802.11b/g/n/ax 20: 2412~2462 MHz 802.11n/ax (40MHz):2422~2452MHz Modulation Type: GMSK, 8PSK, QPSK, 16QAM, DSSS-OQPSK, OFDM,DBPSK,DAPSK Antenna gain: 1.79 dBi Antenna Designation: PIFA
Rating	Input: DC 3.3V 600mA
Hardware Version	SKI.WB800D.2
FVIN	/

1.2 TEST FACTORY

SHENZHEN STS TEST SERVICES CO., LTD
Add. : A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ, Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China

FCC test Firm Registration Number: 625569

IC test Firm Registration Number: 12108A

A2LA Certificate No.: 4338.01

2. FCC 47CFR §2.1091 REQUIREMENT

2.1 TEST STANDARDS

The limit for Maximum Permissible Exposure (MPE) specified in FCC 1.1310 is followed. The gain of the antennas used in the product is extracted from the Antenna data sheets provided and also the maximum total power input to the antenna is measured. Through the Friis transmission formula and the maximum gain of the antenna, we can calculate the distance, away from the product, where the limit of MPE is reached.
Although the Friis Transmission formula is far field assumption, the calculated result of that is an over-prediction for near field power density. It is taken as worst case to specify the safety range.

2.2 LIMIT

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environmental impact of the human exposure to radio-frequency (RF) radiation as specified in 1.1307 (b)

Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)
Limits for Occupational / controlled Exposures			
300 - 1500	--	--	F/300
1500 – 100000	--	--	5.0
Limits for General population / Uncontrolled Exposure			
300 - 1500	--	--	F/1500
1500 – 100000	--	--	1.0

F= Frequency in MHz

Friss Formula

Friss Transmission 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 the center of radiator in cm

If we know the maximum gain of the antenna and the total output power to the antenna, through calculation, we will know MPE value at distance 20cm.

2.3 EUT OPERATION CONDITION

EUT was enabled to transmit and receive at lowest, middle and highest channels.

2.4 CLASSIFICATION

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. Warning statement to the user for keeping at least 20cm or more separation distance from the antenna should be included in the User manual. So, this device is classified as Mobile device.

2.5 TEST RESULT

Turn up

Mode	Detector	Turn up Power
BT	AV	2±1dBm
BLE	AV	3±1dBm
WLAN	AV	17±1dBm

ANT Gain (G)

BT: 1.79dBi (gain of antenna in linear scale=1.510)

BLE: 1.79dBi (gain of antenna in linear scale=1.510)

WLAN: 1.79dBi (gain of antenna in linear scale=1.510)

Protocol	**Max Turn up Power (dBm)**	**Max Turn up Power (mW)**	**ANT Gain(gain of antenna in linear scale)**	**Power Density (mW/cm²)**	**Limit (mW/cm²)**	**Ratio**	**Result**
BT	3	1.995	1.510	0.0006	1	0.0006	Pass
BLE	4	2.512	1.510	0.00075	1	0.0008	Pass
WLAN	18	63.096	1.510	0.01896	1	0.0190	Pass

Note: The Bluetooth and WLAN can’t simultaneous transmission at the same time.

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