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## RADIO TEST REPORT

Report No: STS2202110H01

Issued for

Shenzhen EDUP Electronics Technology Co.,Ltd.

6 Floor, #6 Building, No.48, Kangzheng Road, Liantang  
Industrial Area, Buji Town, Longgang District, Shenzhen,  
China

<b>Product Name:</b>	Bluetooth PCI-E WiFi Card
<b>Brand Name:</b>	EDUP, EDUP HOME, EDUP LOVE, WISE TIGER, EPSKY, Card-King, Rosewill
<b>Model Name:</b>	EP-EP9651
<b>Series Model:</b>	EP-9651S, EP-9651GS, EP-9651GS Pro, EP-AX210 Pro, EP-AX210GS, EP-AX210, WT-AX210, EP-AX210S, EH-9651, EH-9651S, EH-9651GS, EH-9651GS Pro, EH-AX210 Pro, EH-AX210GS, EH-AX210, EH-AX210S, WT-AX210, WT-9651, WT-9651S, WT-9651GS, WT-9651GS Pro, WT-AX210 Pro, WT-AX210GS, WT-AX210S, KW-9651, KW-9651, KW-9651GS, KW-9651GS-Pro, KW-AX210Pro, KW-AX210GS, KW-AX210, KW-AX210S, RNX-AX5400Pro, RNX-AX5400GS
<b>FCC ID:</b>	2AHRD-EPEP9651
<b>Test Standard:</b>	FCC 47CFR §2.1091

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## Test Report Certification

**Applicant's Name** .....: Shenzhen EDUP Electronics Technology Co.,Ltd.  
**Address** .....: 6 Floor, #6 Building, No.48, Kangzheng Road, Liantang Industrial Area, Buji Town, Longgang District, Shenzhen, China  
**Manufacturer's Name** .....: Shenzhen EDUP Electronics Technology Co.,Ltd.  
**Address** .....: 6 Floor, #6 Building, No.48, Kangzheng Road, Liantang Industrial Area, Buji Town, Longgang District, Shenzhen, China

### Product Description

**Product Name** .....: Bluetooth PCI-E WiFi Card  
**Brand Name** .....: EDUP, EDUP HOME, EDUP LOVE, WISE TIGER, EPSKY, Card-King, Rosewill  
**Model Name** .....: EP-EP9651  
**Series Model** .....: EP-9651S, EP-9651GS, EP-9651GS Pro, EP-AX210 Pro, EP-AX210GS, EP-AX210, WT-AX210, EP-AX210S, EH-9651, EH-9651S, EH-9651GS, EH-9651GS Pro, EH-AX210 Pro, EH-AX210GS, EH-AX210, EH-AX210S, WT-AX210, WT-9651, WT-9651S, WT-9651GS, WT-9651GS Pro, WT-AX210 Pro, WT-AX210GS, WT-AX210S, KW-9651, KW-9651, KW-9651GS, KW-9651GS-Pro, KW-AX210Pro, KW-AX210GS, KW-AX210, KW-AX210S, RNX-AX5400Pro, RNX-AX5400GS

**Standards**.....: FCC 47CFR §2.1091

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**Date of Test**.....:

**Date of receipt of test item**.....: 23 Feb. 2022

**Date (s) of performance of tests**.....: 23 Feb. 2022 ~ 26 Feb. 2022

**Date of Issue** .....: 26 Feb. 2022

**Test Result** .....: **Pass**

Testing Engineer :

(Chris Chen)

Technical Manager :

(Sean she)

Authorized Signatory :

(Vita Li)





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**Revision History**

Rev.	Issue Date	Report No.	Effect Page	Contents
00	26 Feb. 2022	STS2202110H01	ALL	Initial Issue





## 1. GENERAL INFORMATION

### 1.1 GENERAL DESCRIPTION OF THE EUT

Product Name	Bluetooth PCI-E WiFi Card		
Brand Name	EDUP, EDUP HOME, EDUP LOVE, WISE TIGER, EPSKY, Card-King, Rosewill		
Model Name	EP-EP9651		
Series Model	EP-9651S, EP-9651GS, EP-9651GS Pro, EP-AX210 Pro, EP-AX210GS, EP-AX210, WT-AX210, EP-AX210S, EH-9651, EH-9651S, EH-9651GS, EH-9651GS Pro, EH-AX210 Pro, EH-AX210GS, EH-AX210, EH-AX210S, WT-AX210, WT-9651, WT-9651S, WT-9651GS, WT-9651GS Pro, WT-AX210 Pro, WT-AX210GS, WT-AX210S, KW-9651, KW-9651, KW-9651GS, KW-9651GS-Pro, KW-AX210Pro, KW-AX210GS, KW-AX210, KW-AX210S, RNX-AX5400Pro, RNX-AX5400GS		
Model Difference	Different appearance size and shape		
Product Description	The EUT is Bluetooth PCI-E WiFi Card		
	Operation Frequency:	Bluetooth: 2402 – 2480 MHz 2.4G WLAN: 802.11b/g/n 20: 2412~2462 MHz 802.11n(40MHz):2422~2452MHz 5G WLAN: IEEE 802.11a/ n(HT20)/ac(VHT20)/ax(HE20): 5.180GHz-5.240GHz IEEE 802.11n(HT40)/ac(VHT40)/ax(HE40): 5.190GHz-5.230GHz IEEE 802.11ac(VHT80) /ax(HE80): 5.210GHz IEEE 802.11a/ n(HT20)/ac(VHT20)/ax(HE20): 5.745GHz-5.825GHz IEEE 802.11n(HT40)/ac(VHT40)/ax(HE40): 5.755GHz-5.795GHz IEEE 802.11ac(VHT80)/ax(HE80): 5.775GHz	
	Modulation Type:	Bluetooth: GFSK(1Mbps), $\pi/4$ -DQPSK(2Mbps), 8DPSK(3Mbps) BLE: GFSK 2.4G WLAN: 802.11b(DSSS):CCK,DQPSK,DBPSK 802.11g(OFDM):BPSK,QPSK,16-QAM,64-QAM 802.11n(OFDM):BPSK,QPSK,16-QAM,64-QAM 5G WLAN: BPSK,QPSK,16-QAM,64-QAM 802.11n(OFDM): BPSK,QPSK,16-QAM,64-QAM 802.11ac(OFDM): BPSK,QPSK,16-QAM,64-QAM,256-QAM	
	Antenna gain:	BT/BLE: 5dBi 2.4G WLAN/5G WLAN: ANT A: 5 dBi ANT B: 5 dBi MIMO A+B: 8.01 dBi	
	Antenna Designation:	Dipole	



Rating	Input: AC 120V/60Hz
Hardware Version	V1.0
Software Version	V22.0

## 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 <sup>2</sup> )
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:  $P_d = (P_{out} * G) / (4 * \pi * r^2)$

Where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = 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
2.4G Wi-Fi	AV	15±1dBm
5G Wi-Fi	AV	18±1dBm

### ANT Gain (G)

BT/BLE/2.4G WLAN/5G WLAN: 5dBi (gain of antenna in linear scale=3.16)

Protocol	Max Turn up Power (dBm)	Max Turn up Power (mW)	ANT Gain(gain of antenna in linear scale)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/c m <sup>2</sup> )	Ratio	Result
BT	3	1.995	3.162	0.001	1	0.001	Pass
BLE	4	2.512	3.162	0.002	1	0.002	Pass
2.4G Wi-Fi	16	39.811	3.162	0.025	1	0.025	Pass
5G Wi-Fi	19	79.433	3.162	0.050	1	0.050	Pass

\*\*\*\*\*END OF THE REPORT\*\*\*\*\*