RADIO TEST REPORT

Report No: STS2202080H01

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

Product Name:	1200M Wireless Adapter with Bluetooth Function
Brand Name:	EDUP, EDUP HOME, EDUP LOVE, WISE TIGER, EPSKY, Card-King
Model Name:	EP-AC1681
Series Model:	EP-AC1681S, EP-AC1681-Pro, EP-1681, EP-1681S, EP-1681GS, EP-AC1680, EH-AC1681, EH-AC1681S, EH-AC1681-Pro, EH-1681, EH-1681S, EH-1681GS, EH-AC1680, WT-AC1681,WT-AC1681S, WT-AC1681-Pro, WT-1681, WT-1681S, WT-1681GS，WT-AC1680, KW-AC1681, KW-AC1681-Pro, KW-1681, KW-1681S, KW-1681GS, KW-AC1680, KW-AC1681S
FCC ID:	2AHRD-EPAC1681
Test Standard:	FCC 47CFR §2.1091

Shenzhen STS Test Services Co., Ltd.
A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ, Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China
TEL: +86-755 3688 6288 FAX: +86-755 3688 6277 E-mail:sts@stsapp.com

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
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Standards:	FCC 47CFR §2.1091

Date of Test:	
Date of receipt of test item:	21 Feb. 2022
Date (s) of performance of tests:	21 Feb. 2022 ~ 25 Feb. 2022
Date of Issue:	25 Feb. 2022
Test Result:	**Pass**

Testing Engineer : Chris chen

(Chris Chen)

Technical Manager : Sean She

(Sean she)

Authorized Signatory : Vita Li

(Vita Li)

TABLE OF CONTENTS

Revision History

Rev.	Issue Date	Report No.	Effect Page	Contents
00	25 Feb. 2022	STS2202080H01	ALL	Initial Issue

1. GENERAL INFORMATION

1.1 GENERAL DESCRIPTION OF THE EUT

<table>
<tr><td>Product Name</td><td>1200M Wireless Adapter with Bluetooth Function</td></tr>
<tr><td>Brand Name</td><td>EDUP, EDUP HOME, EDUP LOVE, WISE TIGER, EPSKY, Card-King</td></tr>
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<tr><td>Model Difference</td><td>Different appearance size and shape</td></tr>
<tr><td>Product Description</td><td>The EUT is 1200M Wireless Adapter with Bluetooth Function
<table>
<tr><td>Operation Frequency:</td><td>BT/BLE: 2402~2480 MHz
2.4G WLAN:
802.11b/g/n 20: 2412~2462 MHz
802.11n(40MHz): 2422~2452MHz
5G WLAN:
802.11a/ n(HT20)/ac(VHT20): 5.745GHz-5.825GHz
802.11n(HT40)/ac(VHT40): 5.755GHz-5.795GHz
802.11ac(VHT80): 5.775GHz</td></tr>
<tr><td>Modulation Type:</td><td>BT: GFSK(1Mbps), π/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:
802.11a(OFDM):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</td></tr>
<tr><td>Antenna gain:</td><td>BT/BLE: 2dBi
2.4G/5G WLAN: Ant. A: 2dBi, Ant. B: 2dBi,
MIMO A+B: 5.01dBi</td></tr>
<tr><td>Antenna Designation:</td><td>PCB Antenna</td></tr>
</table></td></tr>
<tr><td>Rating</td><td>Input: DC 5V</td></tr>
<tr><td>Hardware version number</td><td>V1.0</td></tr>
<tr><td>Software versionnumber</td><td>V6.08</td></tr>
</table>

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			
0.3-3.0	614	1.63	*(100)
3.0-30	1842/f	4.89/f	*($900/f^2$)
30-300	61.4	0.163	1.0
300 - 1500	--	--	F/300
1500 – 100000	--	--	5.0
Limits for General population / Uncontrolled Exposure			
0.3-1.34	614	1.63	*(100)
1.34-30	824/f	2.19/f	*($180/f^2$)
30-300	27.5	0.073	0.2
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(dBm)
BT	AV	4±1dBm
BLE	AV	0±1dBm
2.4G WLAN	AV	16±1dBm
5G WLAN	AV	15±1dBm

ANT Gain (G)

2402-2483.5MHz: 2dBi (gain of antenna in linear scale=1.585)

5725-5850 MHz: 2dBi (gain of antenna in linear scale=1.585)

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	5	3.1623	1.585	0.0010	1	0.0010	Pass
BLE	1	1.2589	1.585	0.0004	1	0.0004	Pass
2.4G WLAN	17	50.1187	1.585	0.0158	1	0.0158	Pass
5G WLAN	16	39.8107	1.585	0.0126	1	0.0126	Pass

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

※※※※※END OF THE REPORT※※※※※