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MPE TEST REPORT

Report No:STS2302029H01

Issued for

Sunwoda Electronic Co., Ltd.

No.2, Yihe Rd., Shilong Community, Shiyan Street, Baoan
District, Shenzhen, China

Product Name:	HP USB-C Rechargeable MPP2.0 Tilt Pen
Brand:	N/A
Model Number:	SPEN-HP-05
Series Model(s):	N/A
FCC ID:	2ABWESPEN-HP-05
Test Standard:	FCC CFR 47 part 1, 1.1310

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**TEST RESULT CERTIFICATION**

Applicant's Name: Sunwoda Electronic Co., Ltd.
Address: No.2, Yihe Rd., Shilong Community, Shiyan Street, Baoan District, Shenzhen, China
Manufacturer's Name: Sunwoda Electronic Co., Ltd.
Address: No.2, Yihe Rd., Shilong Community, Shiyan Street, Baoan District, Shenzhen, China

Product Description

Product Name: HP USB-C Rechargeable MPP2.0 Tilt Pen
Brand: N/A
Model Number.....: SPEN-HP-05
Series Model(s): N/A
Standards: FCC CFR 47 part 1, 1.1310
Test Procedure: 680106 D01 RF Exposure Wireless Charging Apps v03

This device described above has been tested by STS, the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Date of Test:
Date of receipt of test item: 07 Feb. 2023
Date of performance of tests ...: 07 Feb. 2023 ~ 16 Feb. 2023
Date of Issue: 16 Feb. 2023
Test Result.....: **Pass**

Testing Engineer :

(Chris Chen)

Technical Manager :

(Sean She)

Authorized Signatory :

(Bovey Yang)





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**Revision History**

Rev.	Issue Date	Report NO.	Effect Page	Contents
00	16 Feb. 2023	STS2302029H01	ALL	Initial Issue





1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC KDB 680106 D01 RF Exposure Wireless Charging Apps v03

FCC CFR 47			
Standard Section	Test Item	Judgment	Remark
FCC CFR 47 part1, 1.1310 KDB680106 D01v03	Electric Field Strength (E) (V/m)	PASS	
	Magnetic Field Strength (H) (A/m)	PASS	

1.1 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

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately **95 %**.

No.	Item	Uncertainly
1	H-filed	$\pm 1.2\mu T$
2	E-filed	$\pm 16\%$

1.3 GENERAL DESCRIPTION OF THE EUT

Product Name	HP USB-C Rechargeable MPP2.0 Tilt Pen
Trade Name	N/A
Model Name	SPEN-HP-05
Series Model	N/A
Model Difference	N/A
Equipemnt Category	Non-ISM frequency
Antenna Type	Please refer to the Note 2.
Operating frequency	18-89kHz & 111-210kHz
Modulation Type	PWM
Rating	Input: DC 5V, 0.24A via Type-C interface for charging DC 3.85V, 80mAh via built-in Lithium Battery
Hardware version number	N/A
Software version number	N/A
Connecting I/O Port(s)	Please refer to the Note 1.

Note:

- For a more detailed features description, please refer to the manufacturer's specifications or the User Manual.
- Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	NOTE
1	N/A	SPEN-HP-05	Integral	NA	Antenna

The EUT antenna is Integral Antenna. No antenna other than that furnished by the responsible party shall be used with the device.



1.4 EQUIPMENTS LIST FOR ALL TEST ITEMS

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Electric and Magnetic field Probe - Analyzer	Narda	EHP 200A	180ZX10220	2022.03.02	2023.03.01

1.5 DESCRIPTION OF NECESSARY ACCESSORIES AND SUPPORT UNITS

Necessary accessories

Item	Equipment	Mfr/Brand	Model/Type No.	Length	Note
N/A	N/A	N/A	N/A	N/A	N/A

Support units

Item	Equipment	Mfr/Brand	Model/Type No.	Length	Note
/	Tablet PC	Microsoft	Surface	N/A	N/A

Note:

- (1) For detachable type I/O cable should be specified the length in cm in 『Length』 column.
- (2) “YES” is means “with core”; “NO” is means “without core”.

2. MAXIMUM PERMISSIBLE EXPOSURE

2.1 MAXIMUM PERMISSIBLE EXPOSURE

Limit of Maximum Permissible Exposure

Limits for Occupational / Controlled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100,000			5	6

Limits for General Population / Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180 / f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1	30

Note 1: f = frequency in MHz ; *Plane-wave equivalent power density

Note 2: For the applicable limit, see FCC 1.1310, 680106 D01 RF Exposure Wireless Charging Apps v03

Note 3: Emissions between 100 kHz to 300 kHz should be assessed versus the limits at 300 kHz in Table 1 of Section 1.1310: 614 V/m and 1.63 A/m. A KDB inquiry is required to determine the applicable exposure limits below 100 kHz.

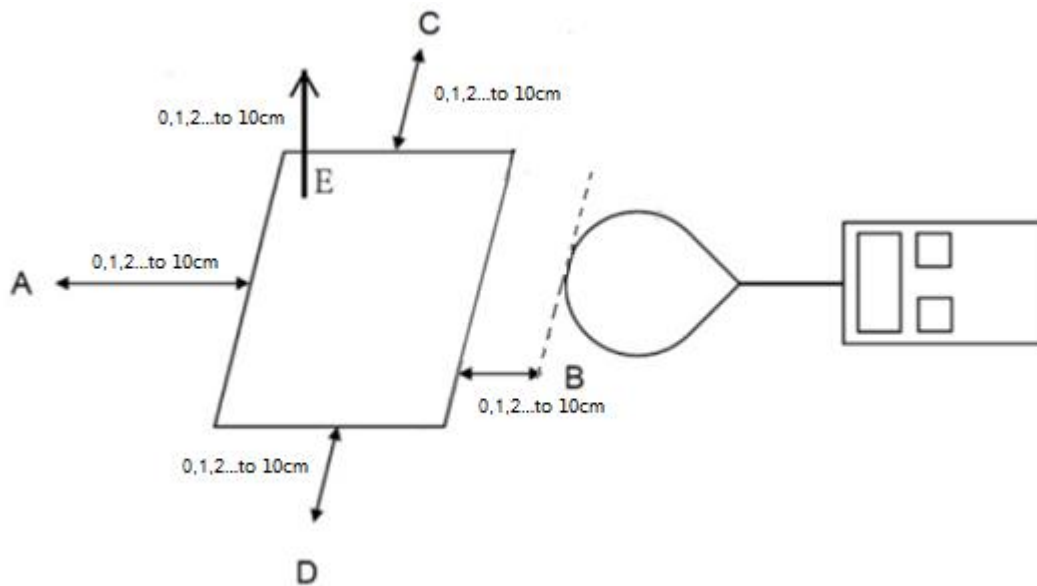
Note 4: The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.

2.2 TEST PROCEDURE

- 1) The RF exposure test was performed in an echoic chamber;
- 2) In addition to what is described in KDB 680106 D01, please measure and provide magnetic and electrical field strength at a distance 10cm to 1cm at 1cm iteration, i.e. at a distance of 10cm, 9cm, 8cm, 1cm. Which is between the edge of the charger and the edge of of probe
- 3) The highest emission level was recorded and compared with limit as soon as measurement of each points (A,B, C,D, E) were completed;
- 4) The EUT was measured according to the dictates of KDB680106D01v03; And KDB Tracking Number 671578 ; TCB Workshop, October 2018, 5.2 RF Exposure Procedures

Remark : The EUT' s test position A, B,C, D and E is valid for the E and H field measurements.

2.3 TEST SETUP



Remark: The E300 probe antenna diameter is 11.5cm.

2.4 MAXIMUM PERMISSIBLE EXPOSURE

E-Filed Strength at (distance 10cm to 0cm at 1cm iteration, i.e. at a distance of 10cm, 9cm, 8cm, 0cm, Which is between the edge of the charger and the edge of of probe,) surrounding the EUT (V/m)

Test distance (cm)	Test Position A(V/m)	Test Position B(V/m)	Test Position C(V/m)	Test Position D(V/m)	Test Position E(V/m)	Limits (V/m)
0	5.210	5.180	5.202	5.164	5.225	614
1	5.200	5.170	5.201	5.163	5.224	614
2	5.179	5.167	5.112	5.068	5.146	614
3	5.116	5.145	5.028	5.064	5.090	614
4	5.033	5.057	4.978	5.053	5.022	614
5	4.959	5.002	4.969	4.955	4.979	614
6	4.914	5.001	4.922	4.891	4.972	614
7	4.913	4.944	4.902	4.829	4.896	614
8	4.814	4.845	4.874	4.811	4.895	614
9	4.721	4.797	4.851	4.766	4.872	614
10	4.687	4.775	4.816	4.668	4.806	614

H-Filed Strength at (distance 10cm to 0cm at 1cm iteration, i.e. at a distance of 10cm, 9cm, 8cm, 0cm, Which is between the edge of the charger and the edge of of probe,) surrounding the EUT (A/m)

Test distance (cm)	Test Position A(A/m)	Test Position B(A/m)	Test Position C(A/m)	Test Position D(A/m)	Test Position E(A/m)	Limits (A/m)
0	1.462	1.466	1.455	1.491	1.504	1.63
1	1.461	1.465	1.435	1.482	1.494	1.63
2	1.364	1.397	1.361	1.487	1.438	1.63
3	1.342	1.377	1.347	1.411	1.389	1.63
4	1.304	1.280	1.347	1.344	1.307	1.63
5	1.259	1.203	1.257	1.263	1.224	1.63
6	1.211	1.131	1.215	1.246	1.129	1.63
7	1.211	1.058	1.148	1.236	1.092	1.63
8	1.153	0.998	1.141	1.192	1.052	1.63
9	1.128	0.967	1.115	1.131	0.981	1.63
10	1.100	0.938	1.081	1.069	0.925	1.63

Note:

- Both the mode with AC power and the internal battery operating mode have been tested. The worst case is the internal battery operating mode, only report the worst case.