

RF EXPOSURE TEST REPORT



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Manufacturer or Supplier	Shenzhen Qianfenyi Intelligent Technology Co., LTD.
Address	Room 2101, Building 3, Nanshan i Park Chongwen, 3370 Liuxian Avenue, Nanshan District, Shenzhen, Guangdong, China
Product	HP USB-C Rechargeable MPP2.0 Tilt Pen
Brand Name	HP
Model	TPA-M005P
Additional Model & Model Difference	N/A
Date of tests	Feb. 03, 2023 ~ Feb. 10, 2023

The submitted sample of the above equipment has been tested according to the requirements of the following standard:

- 47 CFR PART 1, Subpart I, Section 1.1310
- KDB 680106 D01

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Tested by Andrew Sha Project Engineer / EMC Department	Approved by Glyn He Assistant Manager / EMC Department
	
	Date: Feb. 16, 2023

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Test Report No.: FM2301WDG0151

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
FM2301WDG0151	Original release	Feb. 16, 2023



1. GENERAL INFORMATION

1.1. GENERAL DESCRIPTION OF EUT

FCC ID	2AYOTTPA-M005P
PRODUCT	HP USB-C Rechargeable MPP2.0 Tilt Pen
MODEL NO.	TPA-M005P
ADDITIONAL MODEL	N/A
POWER SUPPLY	DC 3.7V Supplied by Li-ion Battery; USB Type-C 5V from adapter
MODULATION TECHNOLOGY	PWM
OPERATING FREQUENCY RANGE	18kHz~89kHz & 111-210kHz for penpoint TX,
ANTENNA TYPE	Integrated Antenna
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	N/A

NOTES:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. For the test results, the EUT had been tested with all conditions, but only the worst case was shown in test report.
3. Please refer to the EUT photo document (Reference No.: 2301WDG0151) for detailed product photo.

2. RF EXPOSURE MEASUREMENT

2.1 LIMITS

§ 1.1310 The criteria listed in table 1 shall be used to evaluate the environmental impact of human exposure to radiofrequency(RF) radiation as specified in § 1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of § 2.1093 of this chapter.

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*(900/f ²)	6
30–300	61.4	0.163	1.0	6
300–1500 .....	.....	.....	f/300	6
1500–100,000 .....	.....	.....	5	6
(B) 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

NOTE 1 TO TABLE 1: Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

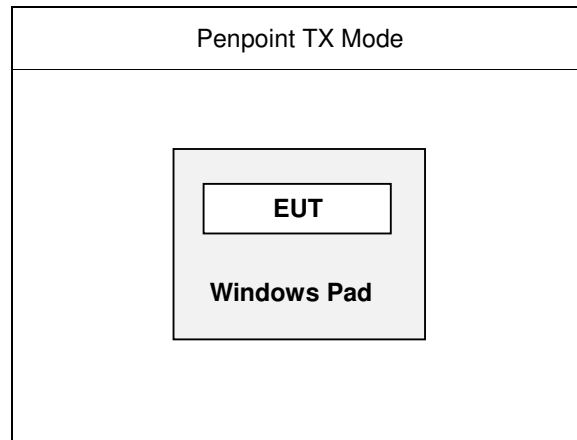
NOTE 2 TO TABLE 1: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

2.2 DESCRIPTION OF SUPPORT UNITS

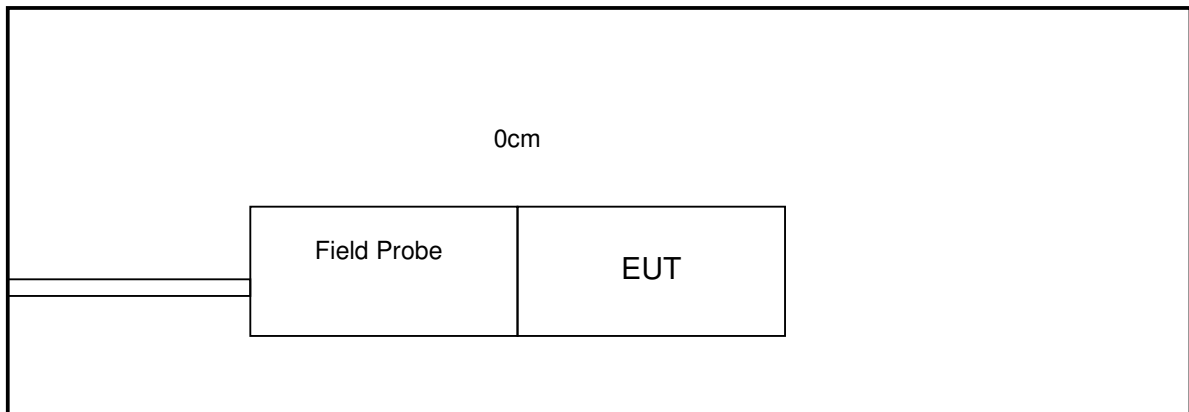
The EUT has been tested with associated equipment below

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Windows Pad	Microsoft	1724	N/A	N/A

2.3 CONFIGURATION OF SYSTEM UNDER TEST



2.4 TEST SETUP



2.5 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT:

Tabulated list of the error components and uncertainty values contributing to the total measurement uncertainty

Combined standard uncertainty and expanded uncertainty (for $k \geq 2$) of each measurement

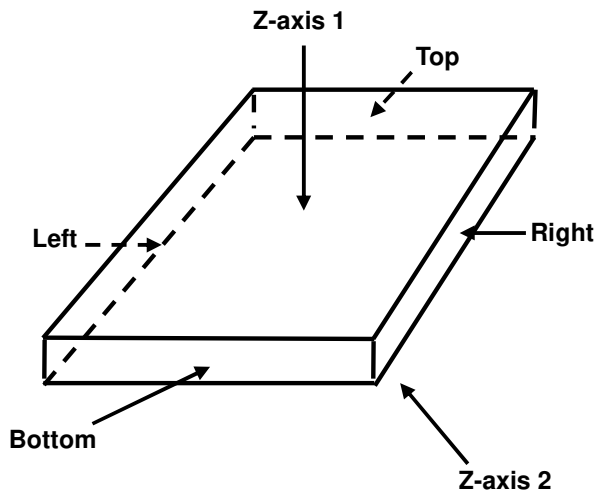
PARAMETER	UNCERTAINTY
E-Field Measurement	± 0.003 V/m
H-Field Measurement	± 0.001 dB

2.6 EQUIPMENTS USED DURING TEST

Item	Test Equipment	Manufacturer	Model No.	S/No	Due date.
1	3m Semi-Anechoic Chamber	ETS-LINDGREN	8m*4m*4m	NSEMC003	Mar. 19, 23
2	Electric and Magnetic Field Probe-Analyzer	Narda	EHP-200A	180ZX10216	Mar. 17, 23
3	Test Software	Narda	EHP200-TS	V1.94	N/A

- NOTE:**
1. The test was performed in RS chamber. (Chenwu)
 2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
 3. The diameter of the probe is 8 cm.

2.7 TEST POINT DESCRIPTION



Notes:

1. Z-axis 1, It means the load surface.
2. Z-axis 2, It means the back of the load surface.



2.8 TEST RESULTS

Penpoint TX Mode:

E-Field Measurement						
EUT Side	Left	Right	Top	Down	Z-axis 1	Z-axis 2
Max E-Field(V/m)	8.82	6.35	7.65	6.3	4.69	5.06
Limit(V/m)	614	614	614	614	614	614
Margin (V/m)	-605.18	-607.65	-606.35	-607.7	-609.31	-608.94
50% Limit (V/m)	307	307	307	307	307	307
50% Margin (V/m)	-298.18	-300.65	-299.35	-300.7	-302.31	-301.94

H-Field Measurement						
EUT Side	Left	Right	Top	Down	Z-axis 1	Z-axis 2
Max H-Field(uT)	0.238	0.25	0.241	0.231	0.242	0.241
Max H-Field(A/m)	0.189	0.199	0.192	0.184	0.193	0.192
Limit(A/m)	1.63	1.63	1.63	1.63	1.63	1.63
Margin (A/m)	-1.441	-1.431	-1.438	-1.446	-1.437	-1.438
50% Limit (A/m)	0.815	0.815	0.815	0.815	0.815	0.815
50% Margin (A/m)	-0.626	-0.616	-0.623	-0.631	-0.622	-0.623

Measurements was made from all sides and the top of the primary/client pair, with the 0 cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.



3. PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (FCC MPE Test Photos)

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