

RF EXPOSURE TEST REPORT



Applicant	Lenovo (Shanghai) Electronics Technology Co., Ltd.
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Manufacturer or Supplier	Lenovo PC HK Limited
Address	23/F, Lincoln House, Taikoo Place 979 King's Road, Quarry Bay, Hong Kong, P.R.China
Product	Wireless Charging Dock for Lenovo Smart Clocks
Brand Name	Lenovo
Model	Lenovo SE-A61UW
Additional Model & Model Difference	N/A
Date of tests	May 14, 2021 ~ Jun. 23, 2021

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 Lucas Chen Project Engineer / EMC Department	Approved by Glyn He Assistant Manager / EMC Department
	
	Data: Jun. 23, 2021

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
FM2104WDG0474	Original release	Jun. 23, 2021

1. GENERAL INFORMATION

1.1. GENERAL DESCRIPTION OF EUT

FCC ID	O57SEA61UW
PRODUCT	Wireless Charging Dock for Lenovo Smart Clocks
MODEL NO.	Lenovo SE-A61UW
ADDITIONAL MODEL	N/A
SAMPLE STATUS	Engineering sample
POWER SUPPLY	Power by Lenovo Smart Clock 2 (Wireless Charging Output: 10W, Max.; USB-A Output: (DC 5V 2A, Max.); Wireless Charging Output (5W) + USB-A Output: (DC 5V 0.5A))
MODULATION TECHNOLOGY	ASK
OPERATING FREQUENCY RANGE	111KHz ~ 150KHz
ANTENNA TYPE	Coil Antenna
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	N/A

NOTES:

- For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
- For the test results, the EUT had been tested with all conditions, but only the worst case was shown in test report.
- Please refer to the EUT photo document (Reference No.: 2104WDG0474-1) for detailed product photo.
- The product is matched with two types of Smart Clock (see below list) for all the tests, but only the worst case (1# Smart Clock) was showed in test report.

Differentia (Smart Clock)	1# Smart Clock	2# Smart Clock
DDR Chips	M15T4G16256A BRAND: ESMT	MT41K256M16TW BRAND: Micron
Adapters	Made by Chenyang Electronics	Made by ACBEL ELECTRICAL

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.

Reference KDB 680106 D01 RF Exposure Wireless Charging App v03

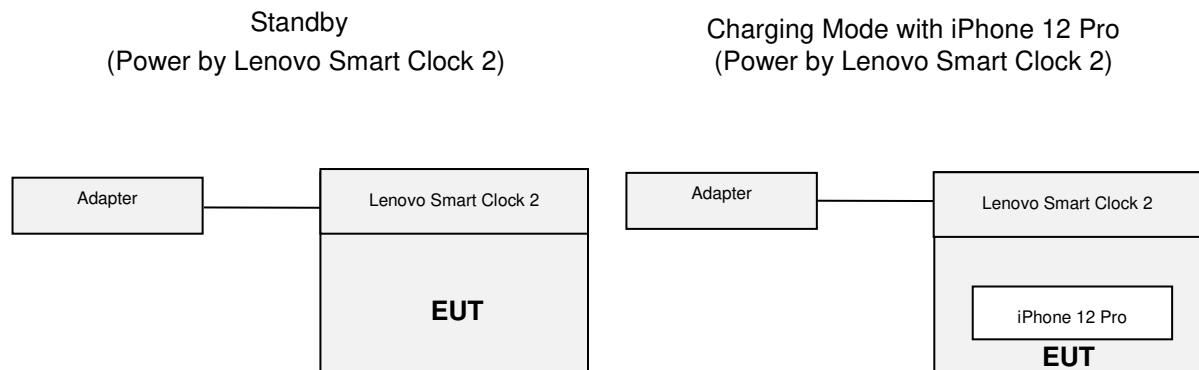
The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.

2.2 DESCRIPTION OF SUPPORT UNITS

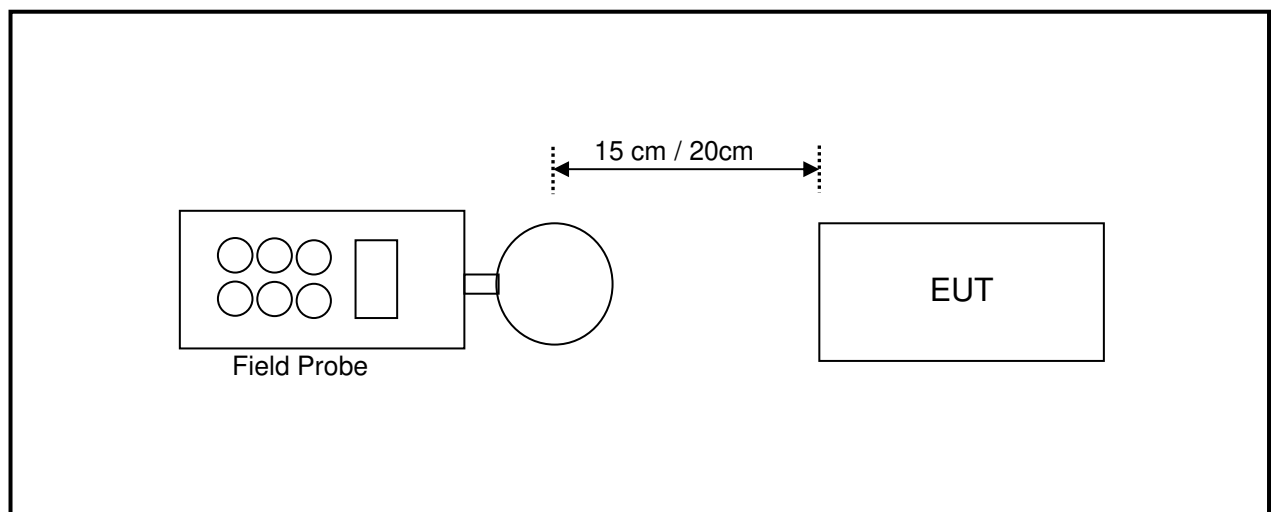
The EUT has been tested with associated equipment below

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	iPhone 12 Pro	Apple	A2408	N/A	N/A
2	1# Smart Clock	Lenovo	Lenovo CD-24502F	N/A	N/A
3	2# Smart Clock	Lenovo	Lenovo CD-24502F	N/A	N/A
4	ADAPTER 1	Lenovo (chenyang)	AD18W2002	N/A	N/A
5	ADAPTER 2	Lenovo (Acbel)	AD18W2002	N/A	N/A

2.3 CONFIGURATION OF SYSTEM UNDER TEST



2.4 TEST SETUP FOR WPT



Note: Measurements should be made from all sides and the top of the primary/client pair, with the 15 cm or 20 cm measured from the center of the probe(s) to the edge of the device.

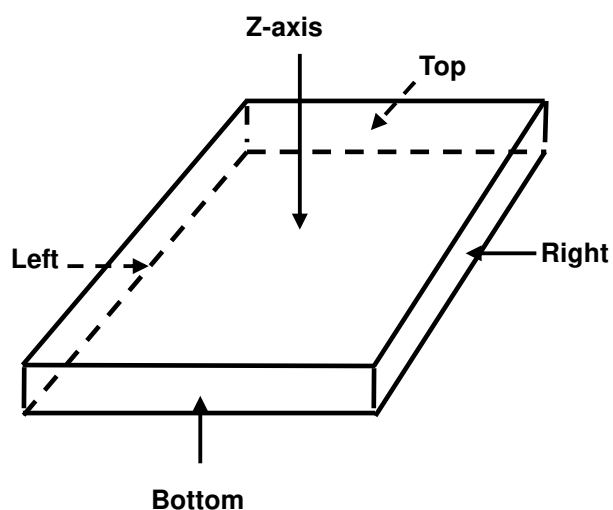
The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

2.5 EQUIPMENTS USED DURING TEST

Item	Test Equipment	Manufacturer	Model No.	Frequency Range	Next Cal.
1	3m Semi-Anechoic Chamber	ETS-LINDGREN	7m*4m*3m	NSEMC003	2022-03-19
2	Narda Broadband Field Meter	Narda	NBM-520	100KHz-90GHz	2021-12-23
3	E-Field probe	Narda	EF0691	100KHz-6GHz	2021-12-23
4	Exposure Level Tester	Narda	ELT-400	1Hz-400KHz	2021-12-23

NOTES: 1. The test was performed in RS chamber.
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.

2.6 TEST POINT DESCRIPTION



2.7 TEST RESULTS

Mode 1 Standby

E-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max E-field (V/m)	0.56	0.48	0.72	0.65	0.58
Limit (V/m)	614	614	614	614	614
Margin (V/m)	-613.44	-613.52	-613.28	-613.35	-613.42
50% Limit (V/m)	307	307	307	307	307
50% Margin (V/m)	-306.44	-306.52	-306.28	-306.35	-306.42

H-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max H-field (uT)	0.223	0.226	0.228	0.226	0.224
Max H-field (A/m)	0.178	0.180	0.182	0.180	0.178
Limit (A/m)	1.63	1.63	1.63	1.63	1.63
Margin (A/m)	-1.452	-1.450	-1.448	-1.450	-1.452
50% Limit (A/m)	0.815	0.815	0.815	0.815	0.815
50% Margin (A/m)	-0.637	-0.635	-0.633	-0.635	-0.637

Measurements was made from all sides and the top of the primary/client pair, with the 15 cm or 20 cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.

Mode 2: Operating with iPhone 12 10% Charger

E-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max E-field (V/m)	0.96	0.85	1.04	0.49	1.34
Limit (V/m)	614	614	614	614	614
Margin (V/m)	-613.04	-613.15	-612.96	-613.51	-612.66
50% Limit (V/m)	307	307	307	307	307
50% Margin (V/m)	-306.04	-306.15	-305.96	-306.51	-305.66

H-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max H-field (uT)	0.231	0.228	0.233	0.227	0.231
Max H-field (A/m)	0.184	0.182	0.186	0.181	0.184
Limit (A/m)	1.63	1.63	1.63	1.63	1.63
Margin (A/m)	-1.446	-1.448	-1.444	-1.449	-1.446
50% Limit (A/m)	0.815	0.815	0.815	0.815	0.815
50% Margin (A/m)	-0.631	-0.633	-0.629	-0.634	-0.631

Measurements was made from all sides and the top of the primary/client pair, with the 15 cm or 20 cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.

Mode 3: Operating with iPhone 12 50% Charger

E-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max E-field (V/m)	0.91	0.95	1.12	0.79	0.95
Limit (V/m)	614	614	614	614	614
Margin (V/m)	-613.09	-613.05	-612.88	-613.21	-613.05
50% Limit (V/m)	307	307	307	307	307
50% Margin (V/m)	-306.09	-306.05	-305.88	-306.21	-306.05

H-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max H-field (uT)	0.228	0.228	0.232	0.227	0.233
Max H-field (A/m)	0.182	0.182	0.185	0.181	0.186
Limit (A/m)	1.63	1.63	1.63	1.63	1.63
Margin (A/m)	-1.448	-1.448	-1.445	-1.449	-1.444
50% Limit (A/m)	0.815	0.815	0.815	0.815	0.815
50% Margin (A/m)	-0.633	-0.633	-0.630	-0.634	-0.629

Measurements was made from all sides and the top of the primary/client pair, with the 15 cm or 20 cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.

Mode 4: Operating with iPhone 12 90% Charger

E-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max E-field (V/m)	0.89	0.86	0.94	0.88	1.29
Limit (V/m)	614	614	614	614	614
Margin (V/m)	-613.11	-613.14	-613.06	-613.12	-612.71
50% Limit (V/m)	307	307	307	307	307
50% Margin (V/m)	-306.11	-306.14	-306.06	-306.12	-305.71

H-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max H-field (uT)	0.232	0.229	0.231	0.228	0.229
Max H-field (A/m)	0.185	0.182	0.184	0.182	0.182
Limit (A/m)	1.63	1.63	1.63	1.63	1.63
Margin (A/m)	-1.445	-1.448	-1.446	-1.448	-1.448
50% Limit (A/m)	0.815	0.815	0.815	0.815	0.815
50% Margin (A/m)	-0.630	-0.633	-0.631	-0.633	-0.633

Measurements was made from all sides and the top of the primary/client pair, with the 15 cm or 20 cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.



Test Report No.: FM2104WDG0474

3. PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (FCC MPE Test Photo).

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