

RF EXPOSURE REPORT

Applicant	Lenovo (Shanghai) Electronics Technology Co., Ltd.
Address	Section 304-305, Building No. 4, # 222, Meiyue Road, China (Shanghai) Pilot Free Trade Zone

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	Lenovo Smart Clock 2
Brand Name	Lenovo
Model	Lenovo CD-24502F
Additional Model & Model Difference	N/A
Date of tests	Mar. 15, 2021 ~ Apr. 25, 2021

- ☒ FCC Part 2 (Section 2.1091)
- ☒ KDB 447498 D01
- ☒ IEEE C95.1

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
	
	Date: May 24, 2021

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TABLE OF CONTENTS

RELEASE CONTROL RECORD	3
1. CERTIFICATION.....	4
2. RF EXPOSURE LIMIT	5
3. MPE CALCULATION FORMULA.....	5
4. CLASSIFICATION	5
5. ANTENNA GAIN	6
6. CALCULATION RESULT OF MAXIMUM CONDUCTED POWER.....	6



Test Report No.: FM2103WDG0047

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
FM2103WDG0047	Original release	May 24, 2021



Test Report No.: FM2103WDG0047

1. CERTIFICATION

PRODUCT: Lenovo Smart Clock 2

BRAND NAME: Lenovo

MODEL NO.: Lenovo CD-24502F

ADDITIONAL MODEL: N/A

FCC ID: O57CD24502F

TEST SAMPLE: ENGINEERING SAMPLE

APPLICANT: Lenovo (Shanghai) Electronics Technology Co., Ltd.

TESTED DATES: Mar. 15, 2021 ~ Apr. 25, 2021

STANDARDS: FCC Part 2 (Section 2.1091)
KDB 447498 D01
IEEE C95.1

2. RF EXPOSURE LIMIT

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

FREQUENCY RANGE (MHz)	ELECTRIC FIELD STRENGTH (V/m)	MAGNETIC FIELD STRENGTH (A/m)	POWER DENSITY (mW/cm ²)	AVERAGE TIME (minutes)
LIMITS FOR GENERAL POPULATION / UNCONTROLLED EXPOSURE				
300-1500	...	...	F/1500	30
1500-100,000	...	...	1.0	30

F = Frequency in MHz

3. MPE CALCULATION FORMULA

$$P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot r^2)$$

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = distance between observation point and center of the radiator in cm

4. CLASSIFICATION

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**.

5. ANTENNA GAIN

The antennas provided to the EUT, please refer to the following table:

Frequency Band	Antenna Gain (dBi)	Antenna Type
BT	2.72	FPCB Antenna
Wi-Fi 2.4GHz	2.72	FPCB Antenna

6. CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

The tuned conducted Average Power (declared by client)

Mode	Frequency (MHz)	Target Power (dBm)	Tolerance (dBm)	Lower Tolerance (dBm)	Upper Tolerance (dBm)
BT (GFSK)	2402-2480MHz	4	+1	3	5
BT (8DPSK)	2402-2480MHz	3	+1	2	4
BT-LE (GFSK)	2402-2480MHz	4	+1	3	5
802.11b	2412-2462MHz	18	+1	17	19
802.11g	2412-2462MHz	16	+1	15	17
802.11n HT20	2412-2462MHz	16	+1	15	17

The measured conducted Average Power

Mode	Frequency (MHz)	Averaged Power (dBm)
BT (GFSK)	2402	4.47
BT (8DPSK)	2402	3.05
BT-LE (GFSK)	2402	4.29
802.11b	2462	17.57
802.11g	2462	15.84
802.11n HT20	2462	15.31

FREQUENCY BAND (MHz)	MAX AVERAGE POWER (dBm)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
BT	5	2.72	20	0.001177	1.0
Wi-Fi 2.4GHz	19	2.72	20	0.029562	1.0

CONCLUSION:

The BT and Wi-Fi can transmit simultaneously, the formula of calculated the MPE is:

$$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$$

CPD = Calculation power density

LPD = Limit of power density

$$(0.001177/1) + (0.029562/1) = 0.030739 < 1, \text{ which is less than the "1" limit.}$$

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