

RF EXPOSURE REPORT

Applicant	Ningbo Lingzhu Technology CO., Ltd.
Address	No.578, Building 7, No.535 Kangqiao South Road, Jiangbei District, Ningbo, PRC



Manufacturer or Supplier	Ningbo Lingzhu Technology CO., Ltd.
Address	No.578, Building 7, No.535 Kangqiao South Road, Jiangbei District, Ningbo, PRC
Product	Smart Bluetooth Gateway Pro
Brand Name	N/A
Model	THP10-B-V2
Additional Model & Model Difference	N/A
Date of tests	Apr. 24, 2023 ~ Jun. 02, 2023

☒ **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 Niko Zhang Project Engineer / EMC Department	Approved by Glyn He Assistant Manager / EMC Department
	 Date: Jul. 17, 2023

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Test Report No.: FM2304WDG0057

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
FM2304WDG0057	Original release	Jul. 17, 2023

1. CERTIFICATION

FCC ID:	2A789THP10-B-V2
PRODUCT:	Smart Bluetooth Gateway Pro
BRAND NAME:	N/A
MODEL NO.:	THP10-B-V2
ADDITIONAL NO.:	N/A
TEST SAMPLE:	Engineering Sample
APPLICANT:	Ningbo Lingzhu Technology CO., Ltd.
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:

Mode	Peak Gain (dBi)	Antenna Type
BT-LE	3.48	FPC Antenna
WIFI	2.03	FPC 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-LE (GFSK)	2402-2480	17	+2	15	19
802.11b	2412-2462	17	+2	15	19
802.11g	2412-2462	15	+2	13	17
802.11n(HT20)	2412-2462	14	+2	12	16

The measured conducted Average Power

Mode	Frequency (MHz)	Averaged Power (dBm)
BT-LE (GFSK)	2402	17.13
802.11b	2462	17.30
802.11g	2437	14.71
802.11n(HT20)	2437	14.17

FREQUENCY BAND (MHz)	MAX AVERAGE POWER (dBm)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
BT-LE 2402-2480	19	3.48	20	0.035215	1.0
WiFi 2412-2462	19	2.03	20	0.025219	1.0

CONCLUSION:

WIFI and BT can transmit simultaneously, the formula of calculated the exposure is:

$$CPD1 / LPD1 + CPD2 / LPD2 +etc. < 1$$

CPD = Calculation power density

LPD = Limit of power density

Worst situation is $(0.035215/1) + (0.025219/1) = 0.060434 < 1$, which is less than the "1" limit.

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