

RF Exposure Evaluation Report

Report Reference No......: **MTEB24010015-H**

FCC ID.....: **2BDXV-HM-CATBOX-V2**

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Applicant's name.....: **Hangzhou Huanyu Technology Co., Ltd.**

Address: Room 204, 2nd Floor, Building 5, No. 12 Binwen Road, Binjiang
District, Hangzhou City

Test specification/ Standard: **47 CFR Part 1.1307; 47 CFR Part 1.1310**
KDB447498D01 General RF Exposure Guidance v06

TRF Originator.....: Shenzhen Most Technology Service Co., Ltd.

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Test item description: Automatic Cat Litter Box

Trade Mark: N/A

Model/Type reference.....: HM-CATBOX-V2

Listed Models: N/A

Modulation Type: b: DSSS, CCK ; g/n: BPSK, QPSK, QAM
GFSK

Operation Frequency.....: From 2412MHz~2462MHz
2402MHz to 2480MHz

Hardware Version.....: V3.0

Software Version: V3.8

Rating: DC 12V by Adapter

Result.....: **PASS**

TEST REPORT

Equipment under Test : Automatic Cat Litter Box

Model /Type : HM-CATBOX-V2

Listed Models N/A

Remark N/A

Applicant : Hangzhou Huanyu Technology Co,Ltd.

Address : Room 204, 2nd Floor, Building 5, No. 12 Binwen Road, Binjiang District, Hangzhou City

Manufacturer(1) : Hangzhou Huanyu Technology Co,Ltd.

Address : Room 204, 2nd Floor, Building 5, No. 12 Binwen Road, Binjiang District, Hangzhou City

| | |
|--------------|------|
| Test Result: | PASS |
|--------------|------|

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

1. Revision History

| Revision | Issue Date | Revisions | Revised By |
|----------|------------|---------------|------------|
| 00 | 2023-12-30 | Initial Issue | Alisa Luo |
| | | | |
| | | | |

2. SAR Evaluation

2.1 RF Exposure Compliance Requirement

2.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

2.1.2 Limits

According to FCC Part1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in part1.1307(b)

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

Friis Formula

Friis transmission 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

P_d is the limit of MPE, 1 mW/cm². If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

2.1.3 EUT RF Exposure

BLE

| GFSK | | | |
|------------------|-------------------------|-------------------------|-----------------------|
| Test channel | Peak Output Power (dBm) | Tune up tolerance (dBm) | Maximum tune-up Power |
| | | | (dBm) |
| Lowest(2402MHz) | -0.351 | -0.351 ± 1 | 0.649 |
| Middle(2440MHz) | -2.817 | -2.817 ± 1 | -1.817 |
| Highest(2480MHz) | -0.616 | -0.616 ± 1 | 0.384 |

BLE

| Worst case: GFSK | | | | | | |
|------------------|-----------------------------|----------------------------|--------------------|--|-------|--------|
| Channel | Maximum tune-up Power (dBm) | Maximum tune-up Power (MW) | Antenna Gain (dBi) | Power Density at R = 20 cm (mW/cm ²) | Limit | Result |
| Lowest(2402MHz) | 0.649 | 1.16 | 2 | 0.0004 | 1.0 | Pass |

Note: 1) Refer to report MTEB24010015-R for EUT test Max Conducted average Output Power value.

Note: 2) $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2) = (1.16 \cdot 1.58) / (4 \cdot 3.1416 \cdot 20^2) = 0.0004$

WIFI 2.4G

| 802.11b | | | |
|------------------|-------------------------|-------------------------|-----------------------|
| Test channel | Peak Output Power (dBm) | Tune up tolerance (dBm) | Maximum tune-up Power |
| | | | (dBm) |
| Lowest(2412MHz) | 11.42 | 11.42 ± 1 | 12.42 |
| Middle(2437MHz) | 11.29 | 11.29 ± 1 | 12.29 |
| Highest(2462MHz) | 11.47 | 11.47 ± 1 | 12.47 |

| 802.11g | | | |
|------------------|----------------------------|----------------------------|-----------------------|
| Test channel | Peak Output Power (dBm) | Tune up tolerance (dBm) | Maximum tune-up Power |
| | | | (dBm) |
| Lowest(2412MHz) | 12.53 | 12.53 ± 1 | 13.53 |
| Middle(2437MHz) | 12.91 | 12.91 ± 1 | 13.91 |
| Highest(2462MHz) | 12.84 | 12.84 ± 1 | 13.84 |

| 802.11n(H20) | | | |
|------------------|----------------------------|----------------------------|-----------------------|
| Test channel | Peak Output Power (dBm) | Tune up tolerance (dBm) | Maximum tune-up Power |
| | | | (dBm) |
| Lowest(2412MHz) | 11.98 | 11.98 ± 1 | 12.98 |
| Middle(2437MHz) | 12.40 | 12.40 ± 1 | 13.4 |
| Highest(2462MHz) | 12.38 | 12.38 ± 1 | 13.38 |

WIFI 2.4G

| Worst case: 802.11g | | | | | | |
|---------------------|-----------------------------------|----------------------------------|-----------------------|--|-------|--------|
| Channel | Maximum tune-up Power (dBm) | Maximum tune-up Power (MW) | Antenna Gain (dBi) | Power Density at R = 20 cm (mW/cm ²) | Limit | Result |
| Middle(2437MHz) | 13.91 | 24.60 | 2 | 0.0077 | 1.0 | Pass |

Note: 1) Refer to report MTEB24010015-R1 for EUT test Max Conducted average Output Power value.

Note: 2) $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2) = (24.60 \cdot 1.58) / (4 \cdot 3.1416 \cdot 20^2) = 0.0077$

.....THE END OF REPORT.....