Prüfbericht-Nr.: *Test report no.:*	**CN2384IS 001**	**Auftrags-Nr.:** *Order no.:*	168416067	**Seite 1 von 16** *Page 1 of 16*
Kunden-Referenz-Nr.: *Client reference no.:*	**N/A**	**Auftragsdatum:** *Order date:*	2023-03-05	
Auftraggeber: *Client:*	**Beijing Kitten&Puppy Technology Co., Ltd.** Room Q-101, Floor 2, Q Area, Anning Zhuang Back Street, Haidian District, Beijing, China			
Prüfgegenstand: *Test item:*	**PAWBBY Smart Self-cleaning Cat Litter Box**			
Bezeichnung / Typ-Nr.: *Identification / Type no.:*	MG-CLB001-US			
Auftrags-Inhalt: *Order content:*	Test Report			
Prüfgrundlage: *Test specification:*	CFR47 FCC Part 15: Subpart C Section 15.247 FCC KDB 558074 D01 15.247 Meas Guidance v05r02			
Wareneingangsdatum: *Date of sample receipt:*	2023-03-06			
Prüfmuster-Nr.: *Test sample no:*	A003427359-001 A003427355-001			
Prüfzeitraum: *Testing period:*	2023-03-13 - 2023-03-19			
Ort der Prüfung: *Place of testing:*	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: *Test result*:*	Pass			

geprüft von: *tested by:*	X Breeze Jiang Signed by: Breeze Jiang	**genehmigt von:** *authorized by:*	X Lin Lin Signed by: Lin Lin
Datum: *Date:* 2023-05-05		**Ausstellungsdatum:** *Issue date:* 2023-05-05	
Stellung */ Position:*	Assistant Project Manager	**Stellung** */ Position:*	Reviewer

Sonstiges */ Other:*

FCC ID: 2AZYM-MGCLB001US
This report is conformity assessment of the combination of that radio product with a non-radio product. Only Radiated Emissions were applied to above model.
The certified radio module WBR3 is integrated into above model. Refer to reports with number 708881974877-00 and 708881974888-00 which issued by TÜV SÜD Certification and testing (China) Co., Ltd.. The module with FCC ID: 2ANDL-WBR3 which granted on 01/15/2020.

Zustand des Prüfgegenstandes bei Anlieferung: Prüfmuster vollständig und unbeschädigt
Condition of the test item at delivery: *Test item complete and undamaged*

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhaft
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
** Legend:*	*1 = very good*	*2 = good*	*3 = satisfactory*	*4 = sufficient*	*5 = poor*
	P(ass) = passed a.m. test specification(s)		*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.
This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.
V05

Test Summary

5.1.1 MAXIMUM PEAK CONDUCTED OUTPUT POWER
RESULT: Pass

5.1.2 RADIATED SPURIOUS EMISSION
RESULT: Pass

5.1.3 CONDUCTED EMISSION
RESULT: Pass

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1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Photographs of the Test Set-up

Appendix B: Test Results of Wi-Fi 2.4G and Bluetooth Low Energy

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Shenzhen) Co., Ltd.
No. 362 Huanguan Road Middle, Longhua District, 518110, Shenzhen, P. R. China.

FCC Registration No.: 694916

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Unwanted Emission Testing (TS9975)				
Equipment	**Manufacturer**	**Model**	**Serial No.**	**Cal. until**
EMI Test Receiver	R&S	ESR 7	102021	2023-08-02
Signal Analyzer	R&S	FSV 40	101439	2023-08-01
System Controller Interface	R&S	SCI-100	S10010038	N/A
Filterbank	R&S	Wlan	100759	2023-08-01
OSP	R&S	OSP 120	102040	N/A
Pre-amplifier	R&S	SCU08F1	08320031	2023-08-02
Amplifier	R&S	SCU-18F	180070	2023-08-02
Amplifier	R&S	SCU40A	100475	2023-08-02
Trilog Broadband Antenna (30 MHz - 7 GHz)	Schwarzbeck	VULB 9162	193	2024-08-06
Double-Ridged Antenna (1 -18 GHz)	ETS-LINDGREN	3117	00218717	2024-08-06
Wideband Ridged Horn Antenna (18-40 GHz)	Steatite	QMS-00880	19067	2023-08-02
Active Loop Antenna	Schwarzbeck	FMZB 1513	302	2024-06-08
Test software	R&S	EMC32 (V10.60.10)	N/A	N/A
Control PC	Dell	OptiPlex 7050	36NV9P2	N/A
3m Semi-Anechoic Chamber	Albatross	SAC-3m	APC17151-SAC	2024-06-22

Conducted Emission				
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Until**
EMI Test Receiver	R&S	ESR3	102428	2023-07-31
Artificial Mains Network	R&S	ENV216	102333	2023-08-01
EMC32 test software	R&S	EMC32(Ver.10.50.00)	N/A	N/A

2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basics using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table.

Parameter	Uncertainty (k=2)
All emissions, radiated	± 4.17 dB
Conducted Emission, (9kHz to 150kHz)/(150kHz to 30MHz)	± 3.70 dB / ± 3.30 dB

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A & B of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) Co., Ltd. file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

The TÜV Rheinland (Shenzhen) Co., Ltd. Test facility located at No. 362 Huanguan Road Middle, Longhua District, 518110, Shenzhen, P. R. China. is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3 General Product Information

3.1 Product Function and Intended Use

The EUTs is a Smart Self-cleaning Cat Litter Box, which support Wi-Fi 2.4G and Bluetooth Low Energy technology.

For details refer to the User Manual, Technical Description and Circuit Diagram.

3.2 Ratings and System Details

Table 2: Technical Specification of EUT

General Information of EUT	**Value**
Kind of Equipment:	PAWBBY Smart Self-cleaning Cat Litter Box
Type Designation:	MG-CLB001-US
FCC ID:	2AZYM-MGCLB001US
Operating Voltage:	AC 100~240V, 50Hz/60Hz by adapter
Operating Temperature Range:	4 °C ~ +40 °C
Power Adapter:	Model: YJS018Z37-1201500U Input: AC 100-240V~50/60Hz, 0.6A Output: DC 12.0V, 1.5A
Technical Specification of Wi-Fi 2.4G	
Characteristic	**Description**
Frequency Range:	2400 MHz to 2483.5 MHz
Type of Modulation:	DSSS(DBPSK/DQPSK/CCK) OFDM(BPSK/QPSK/16QAM/64QAM)
Data Rate:	1/2/5.5/11 Mbps for 802.11b 6/9/12/18/24/36/48/54 Mbps for 802.11g MCS0 ~ MCS7 for 802.11n(HT20)
Channel Number:	11 channels for 802.11b/g/n(HT20)
Channel Separation:	5 MHz
Antenna Type:	Integral Antenna
Antenna Gain:	2.5 dBi
Technical Specification of Bluetooth (Low Energy)	
Characteristic	**Description**
Frequency Range:	2400 MHz to 2483.5 MHz
Type of Modulation:	GFSK
Channel Number:	40 channels
Channel Separation:	2MHz
Antenna Type:	Integral Antenna
Antenna Gain:	2.5 dBi

Identities and difference:
They have the same circuit diagram and structure. The models have two types of color, such as white and blue.

Table 3: RF Channel and Frequency of Wi-Fi 2.4G

RF Channel	802.11 b/g/n(HT20)
	Frequency (MHz)
01	**2412**
02	2417
03	2422
04	2427
05	2432
06	**2437**
07	2442
08	2447
09	2452
10	2457
11	**2462**

Test frequencies are lowest channel: 2412 MHz, middle channel: 2437 MHz and highest channel: 2462 MHz for 802.11b/g/n(HT20)

Table 4: RF Channel and Frequency of Bluetooth (Low Energy)

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
0	**2402**	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	**19**	**2440**	29	2460	**39**	**2480**

Test frequencies are lowest channel: 2402 MHz, middle channel: 2440 MHz and highest channel: 2480 MHz for Bluetooth (Low Energy)

3.3 Independent Operation Modes

The basic operation modes are:

A. On, Wi-Fi b/g/n transmitting mode
   1) Low Channel
   2) Middle Channel
   3) High Channel

B. On, Wi-Fi b/g/n connecting mode

C. On, Bluetooth transmitting mode (Bluetooth Low Energy mode)
   1) Low Channel
   2) Middle Channel
   3) High Channel

D. On, Bluetooth (Low Energy) connecting mode

E. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- Application Form
- Operation Description
- Schematics
- PCB Layout
- User Manual
- Block Diagram
- Rating Label
- Parts List

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Radio Spectrum: The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All tests were performed according to the procedures in ANSI C63.10: 2013.

According to clause 3.2, all tests were performed on model MG-CLB001-US in this report.

This testing was carried out on all operation modes, but only the worst case was presented in this report.

4.3 Special Accessories and Auxiliary Equipment

Table 5: Auxiliary Equipment Used during Test

Description	Manufacturer	Model	S/N
Laptop	Lenovo	T480	PF-16A6N8

4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

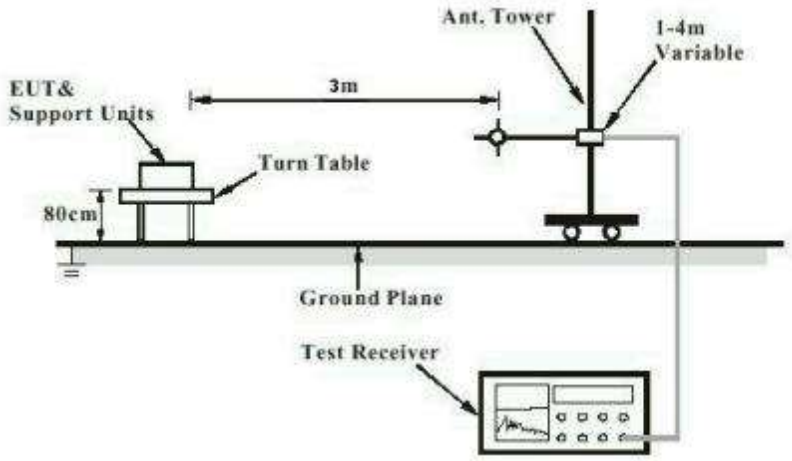


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

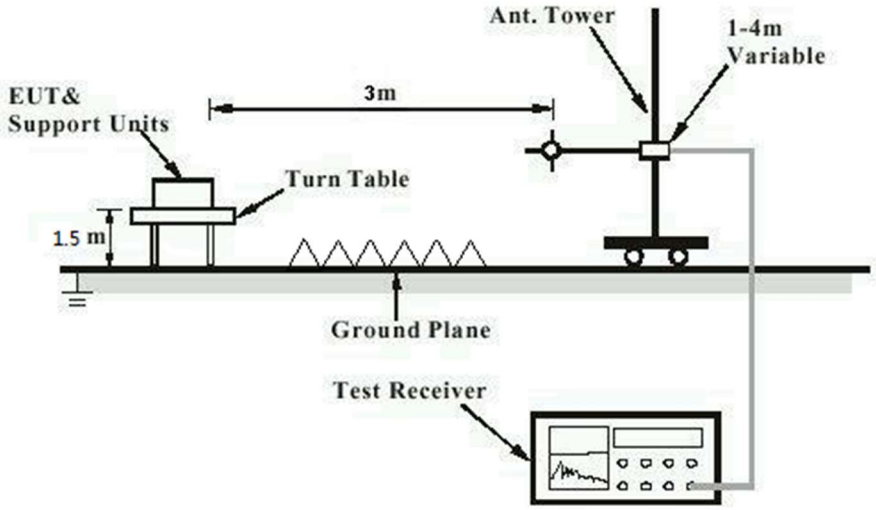


Diagram of Measurement Configuration for Mains Conduction Measurement

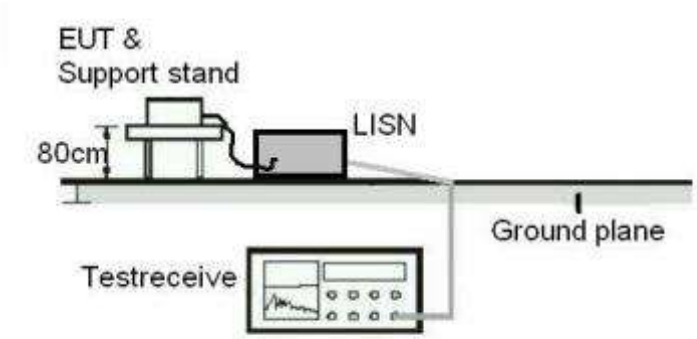
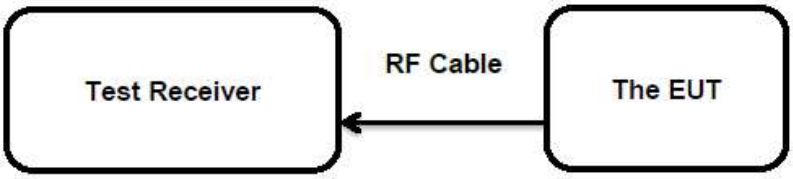


Diagram of Measurement Configuration for Conducted Transmitter Measurement



5 Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Maximum Conducted Output Power

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(b)(3)
Basic standard	:	ANSI C63.10: 2013
Limits	:	1.0 Watts
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2021-04-23
Input voltage	:	DC 12V
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	24.3 ℃
Relative humidity	:	46 %
Atmospheric pressure	:	101 kPa

Table 6: Test Result of Maximum Conducted Output Power

Test Mode	Test Channel (MHz)	Measured Power		Module Power		Limit (W)
		(dBm)	(W)	(dBm)	(W)	
BLE 1 Mbps	2402	6.1	0.0041	6.25	0.0042	< 1.0
	2440	5.9	0.0039	6.01	0.0040	
	2480	5.7	0.0037	5.71	0.0037	
WiFi 2.4G 11B	2412	16.9	0.0490	17.86	0.0611	
	2437	16.9	0.0490	18.31	0.0678	
	2462	16.8	0.0479	18.47	0.0703	
WiFi 2.4G 11G	2412	22.1	0.1622	24.05	0.2541	
	2437	21.9	0.1549	24.33	0.2710	
	2462	20.9	0.1230	24.02	0.2523	
WiFi 2.4G 11N20	2412	22.1	0.1622	24.16	0.2606	
	2437	21.2	0.1318	21.01	0.1262	
	2462	20.7	0.1175	21.25	0.1334	
Maximum Measured Value		22.1	0.1622	24.33	0.2710	

Note:
1) The cable loss is taken into account in results.
2) Antenna gain(G): 2.5 dBi,

5.1.2 Radiated Spurious Emission

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(d) & FCC Part 15.205
Basic standard	:	ANSI C63.10: 2013
Limits	:	Refer to 15.209(a) of FCC part 15.247(d)
Kind of test site	:	3m Semi-anechoic Chamber

Test Setup

Date of testing	:	2023-03-13 to 2023-03-19
Input voltage	:	AC 120V, 60Hz
Operation mode	:	A, C
Test channel	:	Low / Middle / High
Ambient temperature	:	Refer to test result
Relative humidity	:	Refer to test result
Atmospheric pressure	:	101101 kPa

Remark:
Testing was carried out within frequency range 9kHz to the tenth harmonics. Only the worst case spurious emissions configuration of the each mode were reported.

For the measurement records, refer to the appendix B.

5.1.3 Conducted Emission

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.207(a)
Basic standard	:	ANSI C63.10: 2013
Frequency range	:	0.15 – 30MHz
Limits	:	FCC Part 15.207(a)
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2023-03-13 to 2023-03-19
Input voltage	:	AC 120V, 60Hz
Operation mode	:	B, D
Earthing	:	Not connected
Ambient temperature	:	Refer to test result
Relative humidity	:	Refer to test result
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix B.

6 Photographs of the Test Set-Up

For photographs of the test set-up, refer to the appendix A.

7 List of Tables

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