



中国认可
国际互认
检测
TESTING
CNAS L0446



Page 1 of 84

Test Report

Verified code: 124104

Report No.: E20220613205901-1

Customer: Lumi United Technology Co., Ltd

Address: Room 801-804, Building 1, Chongwen Park, Nanshan iPark, No. 3370, Liuxian Avenue, Fuguang Community, Taoyuan Residential District, Nanshan District, Shenzhen, China

Sample Name: Smart Pet Feeder C1

Sample Model: PETC1-M01

Receive Sample Date: Jun.24,2022

Test Date: Jun.28,2022 ~ Aug.18,2022

Reference Document: EN 301 489-17 V3.2.4 (2020-09)
EN 301 489-1 V2.2.3(2019-11)

Test Result: Pass

Prepared by: *Huang lifang*

Reviewed by: *Wu Haoting*

Approved by: *Xiao liany*

GUANGZHOU GRG METROLOGY & TEST CO., LTD

Issued Date: 2022-08-26

GUANGZHOU GRG METROLOGY & TEST CO., LTD.

Address: No.163, Pingyun Road, West of Huangpu Avenue, Guangzhou, Guangdong, China
Tel: (+86) 400-602-0999 FAX: (+86) 020-38698685 Web: <http://www.grgtest.com>



Statement

1. The report is invalid without "special seal for inspection and testing"; some copies are invalid; The report is invalid if it is altered or missing; The report is invalid without the signature of the person who prepared, reviewed and approved it.
2. The sample information is provided by the client and responsible for its authenticity; The content of the report is only valid for the samples sent this time.
3. When there are reports in both Chinese and English, the Chinese version will prevail when the language problems are inconsistent.
4. If there is any objection concerning the report, please inform us within 15 days from the date of receiving the report.
5. Without the agreement of the laboratory, the client is not authorized to use the test results for unapproved propaganda.

----- The following blanks -----

TABLE OF CONTENTS

1.	TEST RESULT SUMMARY.....	6
2.	GENERAL DESCRIPTION OF EUT.....	8
2.1	APPLICANT.....	8
2.2	MANUFACTURER.....	8
2.3	FACTORY.....	8
2.4	BASIC DESCRIPTION OF EQUIPMENT UNDER TEST.....	8
2.5	TEST MODE.....	9
2.6	LOCAL SUPPORTIVE INSTRUMENTS.....	9
2.7	CONFIGURATION OF SYSTEM UNDER TEST.....	9
3.	LABORATORY.....	10
4.	ACCREDITATIONS.....	10
5.	MEASUREMENT UNCERTAINTY.....	11
6.	LIST OF USED TEST EQUIPMENT AT GRGT.....	12
6.1	LIST OF USED TEST EQUIPMENT.....	12
7.	EMISSION TEST.....	14
7.1	RADIATED EMISSION MEASUREMENT (RE).....	14
7.1.1	LIMITS.....	14
7.1.2	TEST PROCEDURE.....	15
7.1.3	TEST SETUP.....	16
7.1.4	DATA SAMPLE.....	17
7.1.5	PHOTOGRAPH OF THE TEST ARRANGEMENT.....	18
7.1.6	TEST RESULTS.....	20
7.2	CONDUCTED EMISSION MEASUREMENT (CE).....	28
7.2.1	LIMITS.....	28
7.2.2	TEST PROCEDURES.....	28
7.2.3	TEST SETUP.....	29
7.2.4	DATE SAMPLE.....	30
7.2.5	PHOTOGRAPH OF THE TEST ARRANGEMENT.....	30
7.2.6	TEST RESULTS.....	31
7.3	HARMONIC CURRENT.....	33
7.3.1	LIMITS.....	33
7.3.2	TEST PROCEDURE.....	34
7.3.3	TEST SETUP.....	34
7.3.4	PHOTOGRAPH OF THE TEST ARRANGEMENT.....	35
7.3.5	TEST RESULTS.....	36
7.4	VOLTAGE FLUCTUATIONS AND FLICKER.....	40
7.4.1	LIMITS.....	40
7.4.2	TEST PROCEDURES.....	40
7.4.3	TEST SETUP.....	40
7.4.4	PHOTOGRAPH OF THE TEST ARRANGEMENT.....	41
7.4.5	TEST RESULTS.....	42

8.	IMMUNITY TEST	43
8.1	GENERAL DESCRIPTION	43
8.2	GENERAL PERFORMANCE CRITERIA DESCRIPTION (ETSI EN 301 489-1/17).....	44
8.2.1	GENERAL PERFORMANCE CRITERIA.....	44
8.2.2	MINIMUM PERFORMANCE LEVEL.....	46
8.2.3	PERFORMANCE CRITERIA FOR CONTINUOUS PHENOMENA.....	47
8.2.4	PERFORMANCE CRITERIA FOR TRANSIENT PHENOMENA	47
8.3	ELECTROSTATIC DISCHARGE(ESD)	48
8.3.1	TEST SPECIFICATION	48
8.3.2	TEST PROCEDURE.....	48
8.3.3	TEST SETUP	49
8.3.4	PHOTOGRAPH OF THE TEST ARRANGEMENT	50
8.3.5	TEST RESULTS	51
8.4	RADIATED RADIO-FREQUENCY ELECTROMAGNETIC FIELD (RS).....	52
8.4.1	TEST SPECIFICATION	52
8.4.2	TEST PROCEDURE.....	52
8.4.3	TEST SETUP	53
8.4.4	PHOTOGRAPH OF THE TEST ARRANGEMENT	54
8.4.5	TEST RESULTS	56
8.5	ELECTRICAL FAST TRANSIENTS (EFT).....	57
8.5.1	TEST SPECIFICATION	57
8.5.2	TEST PROCEDURE.....	57
8.5.3	TEST SETUP	58
8.5.4	PHOTOGRAPH OF THE TEST ARRANGEMENT	59
8.5.5	TEST RESULTS	60
8.6	SURGES.....	61
8.6.1	TEST SPECIFICATION	61
8.6.2	TEST PROCEDURE.....	61
8.6.3	TEST SETUP	62
8.6.4	PHOTOGRAPH OF THE TEST ARRANGEMENT	63
8.6.5	TEST RESULTS	64
8.7	RADIO FREQUENCY CONTINUOUS CONDUCTED (CS)	65
8.7.1	TEST SPECIFICATION	65
8.7.2	TEST PROCEDURE.....	65
8.7.3	TEST SETUP	66
8.7.4	PHOTOGRAPH OF THE TEST ARRANGEMENT	67
8.7.5	TEST RESULTS	68
8.8	VOLTAGE DIPS & SHORT INTERRUPTIONS	69
8.8.1	TEST SPECIFICATION	69
8.8.2	TEST PROCEDURE.....	70
8.8.3	TEST SETUP	70
8.8.4	PHOTOGRAPH OF THE TEST ARRANGEMENT	71
8.8.5	TEST RESULTS	72
	APPENDIX A. PHOTOGRAPHS OF EUT	73

REPORT ISSUED HISTORY

Report Version	Report No.	Description	Compile Date
1.0	E20220613205901-1	Original Issue	2022-08-19

----- The following blanks -----

1. TEST RESULT SUMMARY

Emissions

Test Item	Test mode	Equipment test requirement	Test Method	Class / Severity	Test Result
Performance Standard: ETSI EN 301 489-17 V3.2.4 (2020-09)&ETSI EN 301 489-1 V2.2.3 (2019-11)					
Conducted Emission	Mode 1	ETSI EN 301 489-17/7.1.1 ETSI EN 301 489-1/8.4	EN 55032:2015 annex A.3	Table A.10 Class B	PASS
Asymmetric mode conducted emissions	/	ETSI EN 301 489-17/7.1.1 ETSI EN 301 489-1/8.7	EN 55032:2015 annex A.3	Table A.12 Class B	Note ¹⁾
Radiated Emission	Mode 1 Mode 2	ETSI EN 301 489-17/7.1.1 ETSI EN 301 489-1/8.2	EN 55032:2015 Table A.4 and A.5	Table A.4 Class B Table A.5 Class B	PASS
Harmonic current	Mode 1	ETSI EN 301 489-17/7.1.1 ETSI EN 301 489-1/8.5	EN 61000-3-2:2019	/	Note ²⁾
Voltage fluctuations and flicker	Mode 1	ETSI EN 301 489-17/7.1.1 ETSI EN 301 489-1/8.6	EN 61000-3-3:2013	/	PASS

Immunity

Test Item	Test mode	Equipment test requirement	Test Method	Class / Severity	Test Result
Performance Standard: ETSI EN 301 489-17 V3.2.4 (2020-09)&ETSI EN 301 489-1 V2.2.3 (2019-11)					
Electrostatic discharge (ESD)	Mode 1 Mode 2	ETSI EN 301 489-17/7.2.1 ETSI EN 301 489-1/9.3	EN 61000-4-2:2009	Test specification: ±2, ±4, ±8kV air discharge ±2, ±4kV Contact discharge Performance : Criteria B	PASS
RF electromagnetic field (RS)	Mode 1 Mode 2	ETSI EN 301 489-17/7.2.1 ETSI EN 301 489-1/9.2	EN 61000-4-3:2006+A2:2010	Test specification: Test level: For the frequency range 80MHz to 6000MHz, test level shall be 3 V/m, 80% AM(1kHz) Performance: Criteria A	PASS
Electrical fast transients(EFT)	Mode 1	ETSI EN 301 489-17/7.2.1 ETSI EN 301 489-1/9.4	EN 61000-4-4:2012	Test specification: AC power port: ±1kV, repetition rate: 5 kHz Performance: Criteria B	PASS

Surges	Mode 1	ETSI EN 301 489-17/7.2.1 ETSI EN 301 489-1/9.8	EN 61000-4-5:2014+ A1:2017	Test specification: AC power port: 1.2/50 us pulse line to line: ±1 kV; Performance : Criteria B	PASS
Radio frequency continuous conducted(CS)	Mode 1	ETSI EN 301 489-17/7.2.1 ETSI EN 301 489-1/9.5	EN 61000-4-6:2014	Test specification: AC power port 0.15~80 MHz, 3Vrms, 80% AM, 1kHz Performance: Criteria A	PASS
Voltage Dips & Short Interruptions	Mode 1	ETSI EN 301 489-17/7.2.1 ETSI EN 301 489-1/9.7	EN 61000-4-11:2004	Test specification: 1. Voltage dips: i)0% residual voltage 0.5 cycle. Performance: Criteria B; ii) 0% residual voltage 1 cycle, Performance: Criteria B; iii)70% residual voltage 25 cycle. Performance: Criteria B; 2. Voltage interruption: 0% residual voltage during 250 cycles. Performance: Criteria C;	PASS

Note ¹⁾: Not applicable, since the EUT no telecommunication port.

²⁾: Not applicable, since The EUT with a rated power of less 75 W.

----- The following blanks -----

2. GENERAL DESCRIPTION OF EUT

2.1 APPLICANT

Name: Lumi United Technology Co., Ltd
Address: Room 801-804, Building 1, Chongwen Park, Nanshan iPark, No. 3370, Liuxian Avenue, Fuguang Community, Taoyuan Residential District, Nanshan District, Shenzhen, China

2.2 MANUFACTURER

Name: Lumi United Technology Co., Ltd
Address: Room 801-804, Building 1, Chongwen Park, Nanshan iPark, No. 3370, Liuxian Avenue, Fuguang Community, Taoyuan Residential District, Nanshan District, Shenzhen, China

2.3 FACTORY

Name: Huizhou Dudu Pet Products Co.,Ltd
Address: Building C,Taiming Industrial Park,Jinglong Village,Zhenlong Town,Huiyang District,Huizhou City.

2.4 BASIC DESCRIPTION OF EQUIPMENT UNDER TEST

Product Name: Smart Pet Feeder C1
Product Model: PETC1-M01
Model difference: /
Trade Name: Aqara
Power Supply: Rated Input:5V $\overline{\text{---}}$ 1A by adapter;
4.5V dc by battery.
Frequency Band: 2405MHz to 2480MHz
Modulation Type: O-QPSK
Antenna Type: Internal antenna
Hardware Version: 35
Software Version: 0.0.0_3733
Sample submitting way: Provided by customer Sampling
Sample No: E20220613205901-0002
Note: /

2.5 TEST MODE

Mode No.	Description of the modes
1	The power supply by adapter. After the gateway is connected to the phone through the app, the EUT is associated in the sub-device options, and the feedback information of EUT feeding and the normal playback of the recording function are monitored in the EUT device logs.
2	The power supply by battery. After the gateway is connected to the phone through the app, the EUT is associated in the sub-device options, and the feedback information of EUT feeding and the normal playback of the recording function are monitored in the EUT device logs.

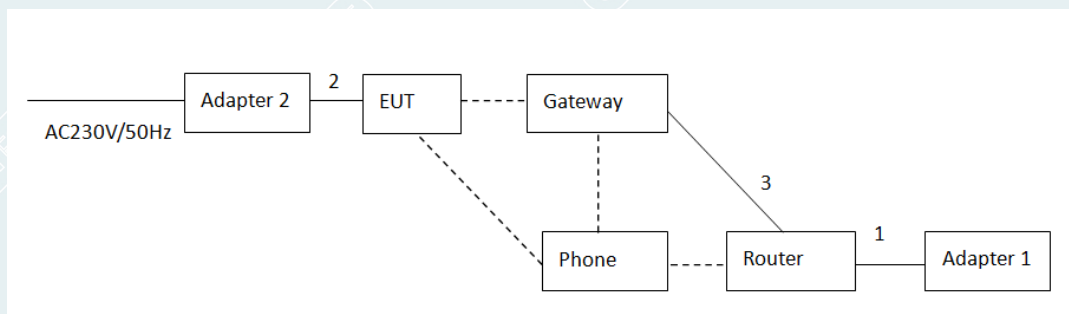
2.6 LOCAL SUPPORTIVE INSTRUMENTS

Name of Equipment	Manufacturer	Model	Serial Number	Note
Router	Fenglian	P2	100007770-30001051	/
Phone	Vivo	Vivo Y85	SZDC-2020-059	/
Gateway	Aqara	ZHWG12LM	2019DP0172	/
Adapter 1	Fenglian	NTGP1201000GB	/	/
Adapter 2	Tianyin	TPA-98B050100CU01	/	/

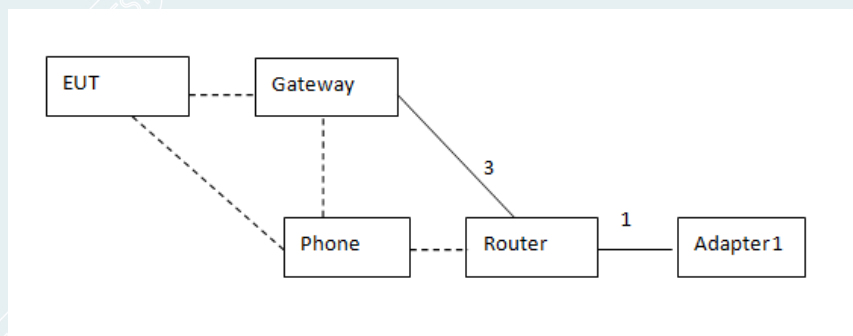
No.	Cable Type	Qty.	Shielded Type	Ferrite Core(Qty.)	Length
1	DC cable	1	No	0	1.5m
2	USB cable	1	No	0	1.48m
3	RJ45 Cable	1	No	0	1.5m

2.7 CONFIGURATION OF SYSTEM UNDER TEST

Mode 1:



Mode 2:



3. LABORATORY

The tests & measurements refer to this report were performed by Shenzhen EMC Laboratory of Guangzhou GRG Metrology & Test Co., Ltd.

Add.: No.1301 Guanguang Road Xinlan Community, Guanlan Street, Longhua District
Shenzhen, 518110, People's Republic of China.
P.C.: 518110
Tel : 0755-61180008
Fax: 0755-61180008

4. ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

USA A2LA(Certificate#:2861.01)

China CNAS(L0446)

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

Canada ISED (Company Number: 24897, CAB identifier:CN0069)

USA FCC (Registration Number: 759402, Designation Number:CN1198)

Copies of granted accreditation certificates are available for downloading from our web site,
<http://www.grgtest.com>

----- The following blanks -----

5. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Uncertainty
Conduction Emission	150kHz~30MHz	3.4 dB ¹⁾
Radiated Emission (3m)	30MHz~200MHz(H)	4.5 dB ¹⁾
	200MHz~1000MHz(H)	4.4 dB ¹⁾
	30MHz~200MHz(V)	4.5 dB ¹⁾
	200MHz~1000MHz(V)	4.4 dB ¹⁾
	1GHz~6GHz(H)	4.5 dB ¹⁾
	1GHz~6GHz(V)	4.5 dB ¹⁾
Harmonic Current	/	2)
Voltage Fluctuation and Flicks	/	2)
Electrostatic discharge	/	2)
Radio-Frequency Electromagnetic Field	/	2)
Electrical fast transient/burst	/	2)
Surge	/	2)
Conducted radio frequency disturbances	/	2)
Power frequency magnetic field	/	2)
Voltage Dip & Voltage Interruptions	/	2)

Note¹⁾: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

²⁾Tests have proved that, EMS test item equipment meet the requirements of the standard with a confidence level of not less than 95%.

----- The following blanks -----

6. LIST OF USED TEST EQUIPMENT AT GRGT

6.1 LIST OF USED TEST EQUIPMENT

Name of equipment	Manufacturer	Model	Serial number	Calibration due
Conduction Emission				
Test software	EZ	CCS-3A1-CE	/	/
Test Receiver	R&S	ESCI	100783	2022-09-13
LISN(EUT)	R&S	ENV216	101543	2022-09-14
Radiated Emission (Below 1GHz)				
Test S/W	EZ	CCS-03A1	/	/
Test Receiver	R&S	ESR7	102444	2022-09-21
Preamplifier	EMEC	EM330	I00425	2023-03-05
Bi-log Antenna	TESEQ	CBL6143A	32399	2022-11-25
Radiated Emission (Above 1GHz)				
Test S/W	Tonscend	JS32-RE	/	/
Spectrum analyzer	Agilent	N9020B	MY57120179	2022-08-08
Horn Antenna	Schwarzbeck	BBHA 9120D	02143	2022-10-22
Preamplifier	Tonscend	TAP01018048	AP20E8060075	2023-05-08
Harmonic Current, Voltage Fluctuation and Flicks				
Test S/W	/	CTS4	/	/
Power Source	SCHAFFNER	NSG1007	54789	2023-03-08
Harmonic & Flicker Tester	SCHAFFNER	CCN1000	72045	2022-09-24
Electrostatic discharge				
Dito ESD Simulator	EM Test	dito	V0809103493	2022-10-30
Radio-Frequency Electromagnetic Field				
Test S/W	Tonscend	JS35-RS	/	/
Signal generator	R&S	SMA100A	100434	2022-09-04
Switch	TOYO	BS5000	/	/
Power Meter	Keysight	N1914A	MY57090009	2022-10-11
Power Probe	Keysight	E9301A	MY57060008	2022-09-04
Log-periodic broadband antenna	Schaffner	CBL6143	5082	2023-01-08
Dual directional Coupler	AR	DC 6180A	0328212	2022-09-22

Power Amplifier	SCHAFFNER	CBA9433	3007	2022-10-29
Microwave Log.-Per. Antenna	Schwarzbeck	STLP9149	9149-163	2022-09-18
Power Amplifier	Milmega	AS1860-50	1079232	2022-10-29
Power Amplifier	TESEQ	CBA 3G-050	T44161	2023-04-06
Dual directional Coupler	AR	DC 7144A	327057	2022-09-22
Electrical fast transient/burst				
Test S/W	/	Win3025 Version 4.00	/	/
Fast Transients/Burst Generator	TESEQ	NSG 3025	26861	2022-09-04
Surge				
Combined wave lightning surge simulator	3ctest	CWS 600G	ES0381813	2022-10-29
Lightning surge coupling decoupling network	3ctest	SPN 3618T	ES0941720	2022-11-05
Conducted radio frequency disturbances				
Test S/W	Tonscend	JS35-CS	/	/
Conduction and radiation immunity testing system	TESEQ	NSG4070	25807	2023-04-06
Attenuator	Weinschel corp	40-6-34	QQ986	2022-09-04
CDN	Luthi	CDN801-M2	1897	2022-09-11
Voltage Dip & Voltage Interruptions				
Test S/W	AMETEK	AC Source CIGuiSII-500lix	2.0.0.7-No v.2006	/
Power Source	SCHAFFNER	NSG1007	54789	2023-03-08
current switchgear	TESEQ	NSG2200-1	A17820	2022-09-24
Harmonic & Flicker Tester	SCHAFFNER	CCN1000	72045	2022-09-10

Note: The calibration interval of the above test instruments is 12 months.

----- The following blanks -----

7. EMISSION TEST

7.1 RADIATED EMISSION MEASUREMENT (RE)

Test Requirement: EN 301 489-17 V3.2.4/7.1.1
EN 301 489-1 V2.2.3/8.2

Test Method: EN 55032 /annex A.2

7.1.1 LIMITS

The ancillary equipment shall meet the class B limits given in CENELEC EN 55032 [1], annex A tables A.4 and A.5.

**Table A.4 – Requirements for radiated emissions at frequencies up to 1 GHz
for class B equipment**

Frequency range(MHz)	Distance (m)	Bandwidth	Limits (dBuV/m)		
			Peak (PK)	Quasi-peak (QP)	Average (Avg)
30 to 230	10	120kHz	/	30	/
230 to 1000	10	120kHz	/	37	/

**Table A.5 – Requirements for radiated emissions at frequencies above 1 GHz
for class B equipment**

Frequency range(MHz)	Distance (m)	Bandwidth	Limits (dBuV/m)		
			Peak (PK)	Quasi-peak (QP)	Average (Avg)
1000~3000	3	1MHz	70	/	50
3000~6000	3	1MHz	74	/	54

7.1.2 TEST PROCEDURE

(1) Procedure of Preliminary Test

Radiated emission tests shall be made with the receive or transmit antenna located at a horizontal distance of 3m or 10m plus half of the maximum width of the EUT being tested, measured from the centre of the EUT. The tests shall be performed with the equipment configured as closely as possible to its typical, practical operation. Unless stated otherwise, cables and wiring shall be as specified by the manufacturer and the equipment shall be in its housing (or cabinet) with all covers and access panels in place. Any deviation from normal EUT operating conditions shall be included in the test report.

The EUT (on a non-conductive support structure, where applicable) shall be placed on a remotely operated turntable, to allow the EUT to be rotated. The height of the EUT above the ground plane shall be according to the following requirements.

-- Table-top equipment is placed on a non-conductive set-up table with height $0.8\text{ m} \pm 0.01\text{ m}$, CISPR 16-1-4 specifies the method to determine the impact of the non-conductive set-up table on test results.

-- Floor-standing equipment is placed on a non-conductive support, as specified in the applicable product standard. If there are no EUT height placement requirements in the product standard, the EUT shall be placed on a non-conductive support at a height of 5 cm to 15 cm above the ground plane.

Note: This is Floor-standing equipment.

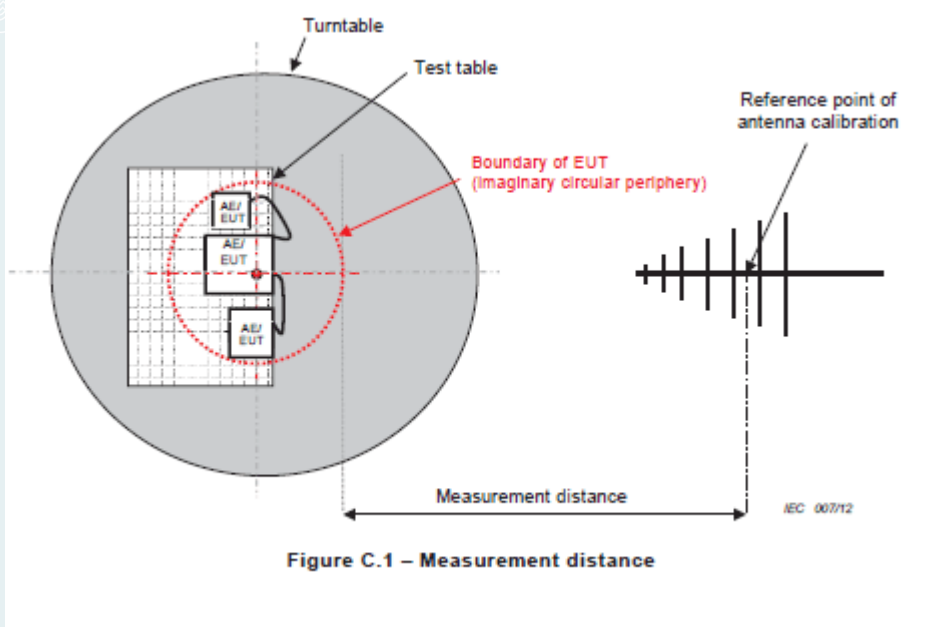
Interface cables, loads, and devices should be connected to at least one of each type of the interface ports of the EUT and, where practical, each cable shall be terminated in a device typical for its actual use. Where there are multiple interface ports of the same type, a typical number of these devices shall be connected to devices or loads. It is sufficient to connect only one of the loads, provided that it can be shown, for example by preliminary testing, that the connection of further ports would not significantly increase the level of disturbance (that is, more than 2 dB) or significantly degrade the immunity level.

The test mode(s) were scanned during the preliminary test. After the preliminary scan, we found the test mode producing the highest emission level. The EUT and cable configuration, antenna position, polarization and turntable position of the above highest emission level were recorded for the final test.

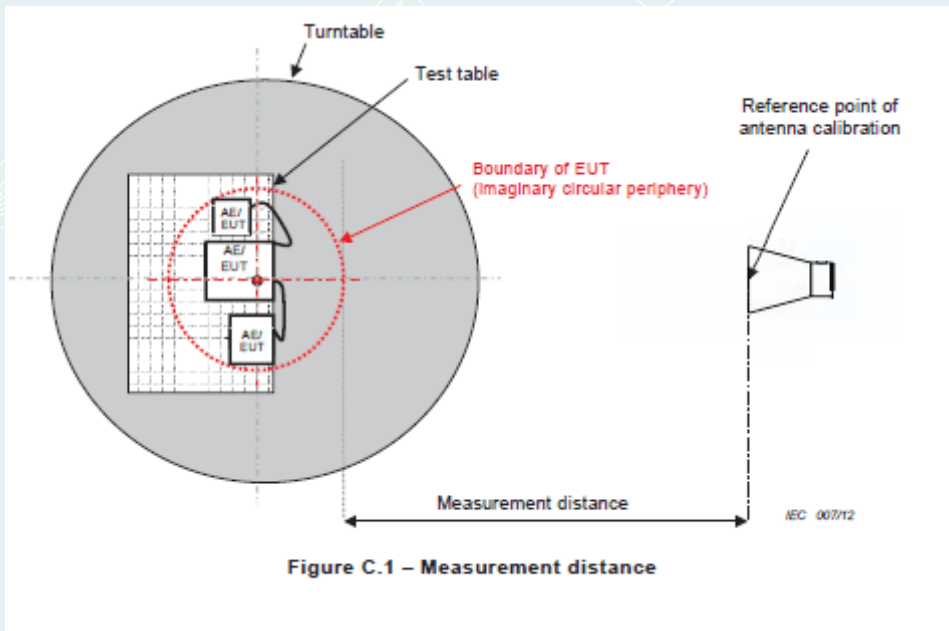
(2) Procedure of Final Test

EUT and support equipment were set up on the turntable as per the configuration with highest emission level in the preliminary test. The Analyzer/ Receiver scanned from 30MHz to 1000MHz and 1000MHz to 6000MHz. Emissions were scanned and measured rotating the EUT to 360 degrees, varying cable placement and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level. Record at least six highest emissions. Emission frequency, amplitude, antenna position, polarization and turntable position were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit and for 30MHz~1000MHz only QP reading is presented, for 1000MHz~6000 MHz Peak and AVG reading is presented.

7.1.3 TEST SETUP



Below the frequency of 1GHz



Above the frequency of 1GHz(1GHz-6GHz)

7.1.4 DATA SAMPLE

Below 1GHz

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over (dB)	Remark
XXXX	53.74	-31.44	22.30	30	-7.70	QP

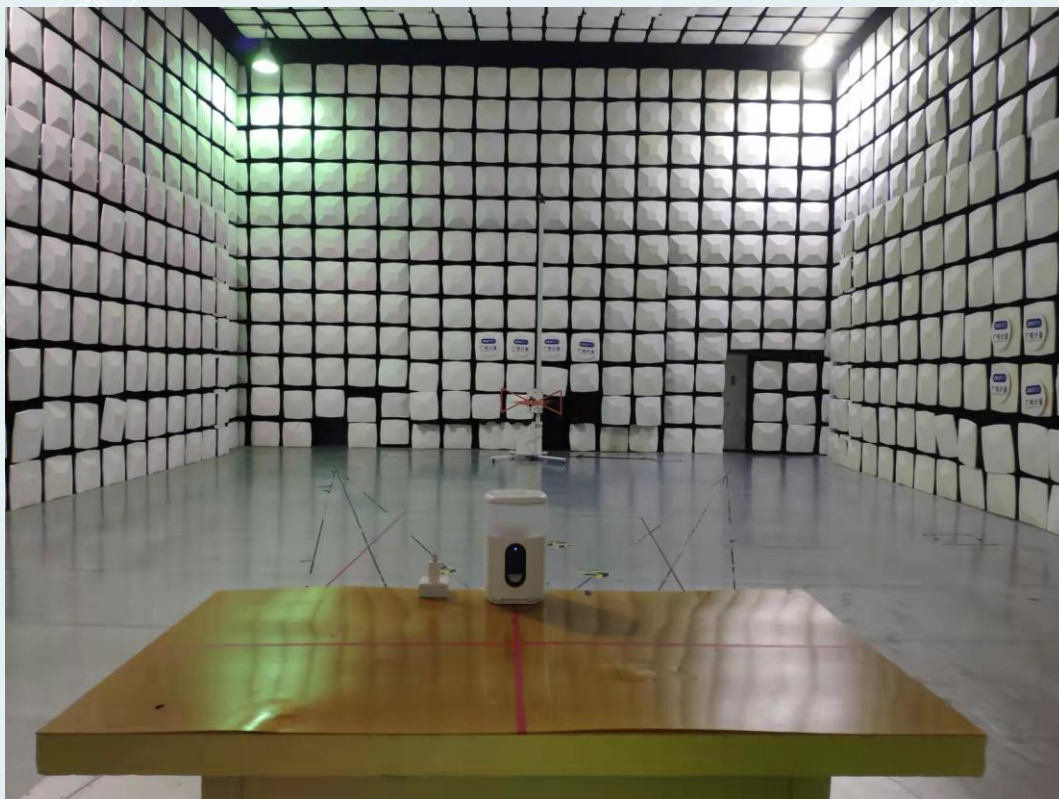
- Frequency (MHz) = Emission frequency in MHz
- Reading (dBuV) = Uncorrected Analyzer / Receiver reading
- Correct Factor (dB/m) = Antenna factor + Cable loss – Amplifier gain
- Result (dBuV/m) = Reading (dBuV) + Corr. Factor (dB/m)
- Limit (dBuV/m) = Limit stated in standard
- Over (dB) = Result (dBuV/m) – Limit(dBuV/m)
- QP = Quasi-peak Reading

Above 1GHz

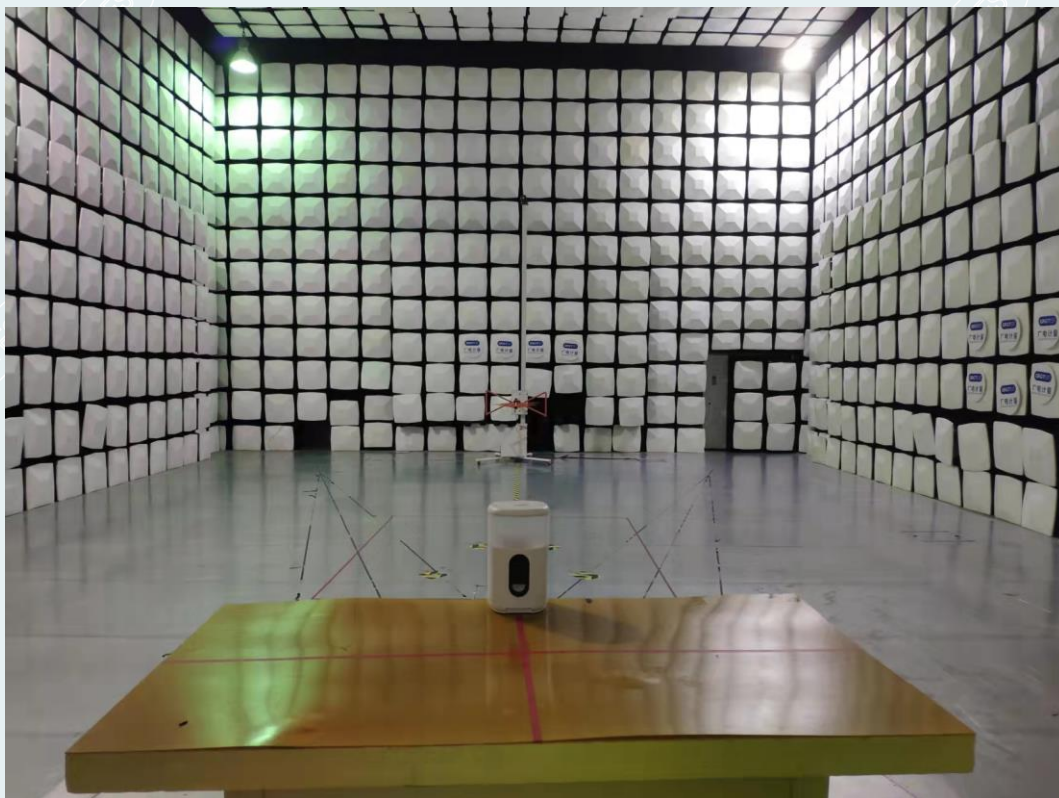
Frequency (MHz)	Reading (dBuV)	Level (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Remark
XXXX	56.70	34.18	-22.52	74	39.82	Peak
XXXX	46.34	23.80	-22.54	54	30.20	AVG

- Frequency (MHz) = Emission frequency in MHz
- Reading (dBuV) = Uncorrected Analyzer / Receiver reading
- Correction Factor (dB/m) = Antenna factor + Cable loss – Amplifier gain
- Result (dBuV/m) = Reading (dBuV) + Correction Factor (dB/m)
- Limit (dBuV/m) = Limit stated in standard
- Margin (dB) =Limit(dBuV/m)- Level(dBuV/m)
- Peak = Peak Reading
- AVG = Average Reading

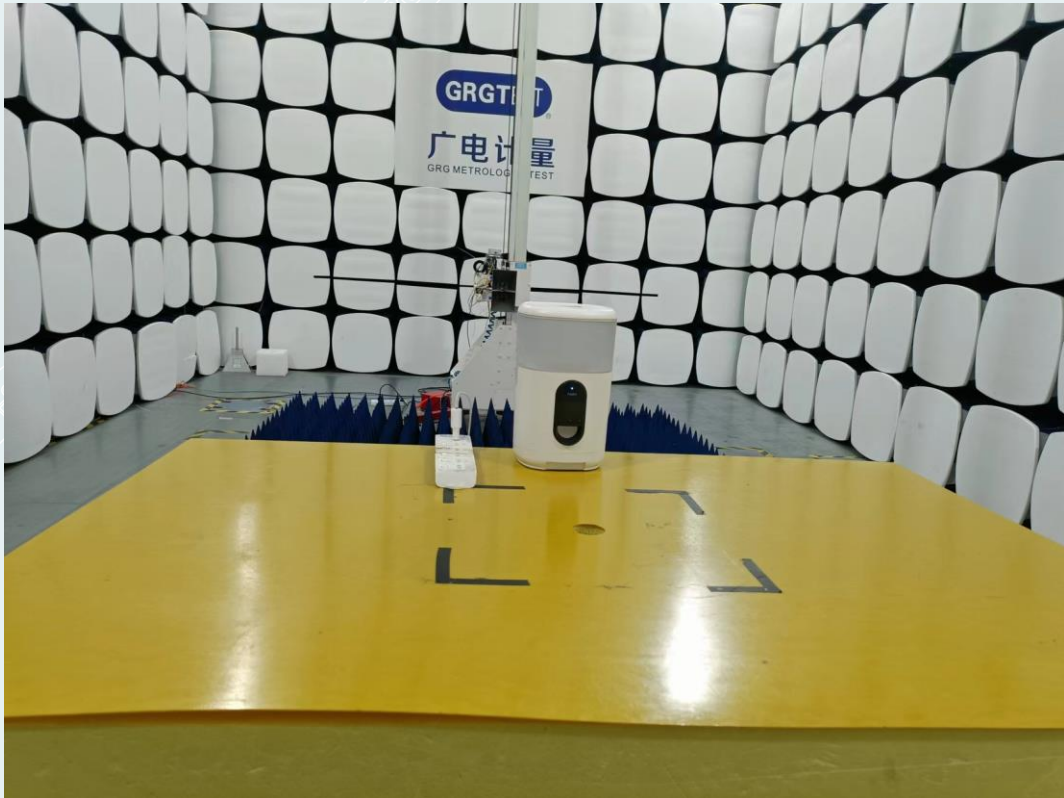
7.1.5 PHOTOGRAPH OF THE TEST ARRANGEMENT



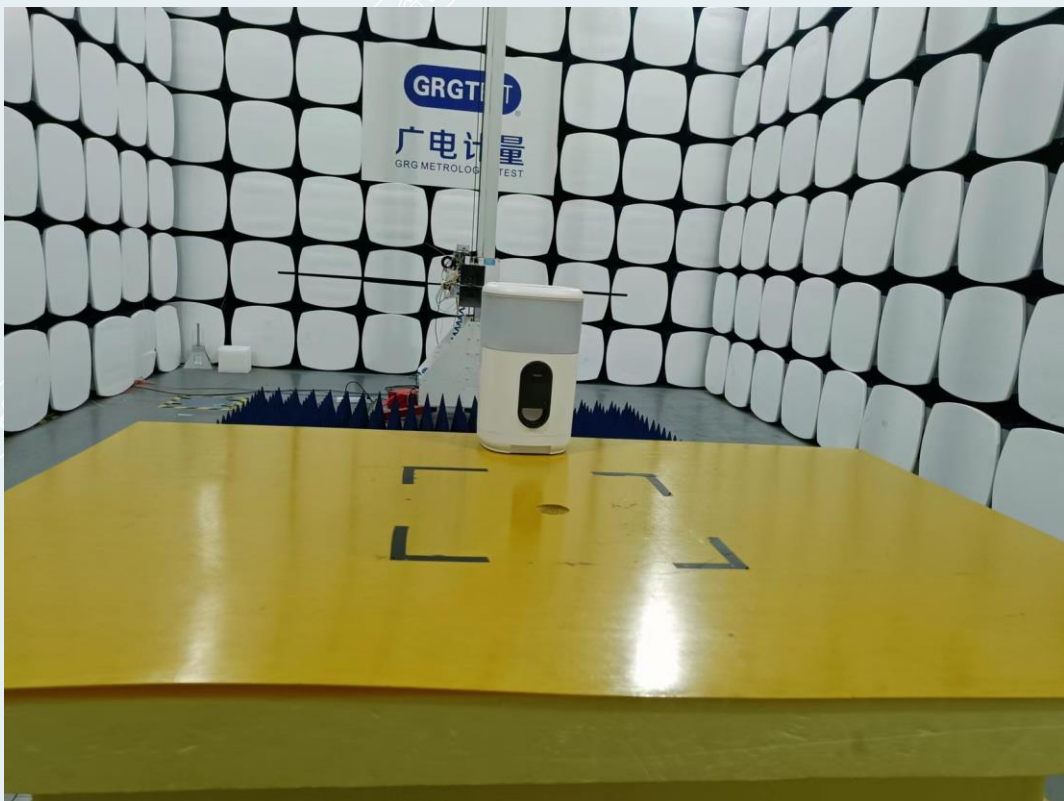
Below 1GHz (Mode 1)



Below 1GHz (Mode 2)



Above 1GHz (Mode 1)



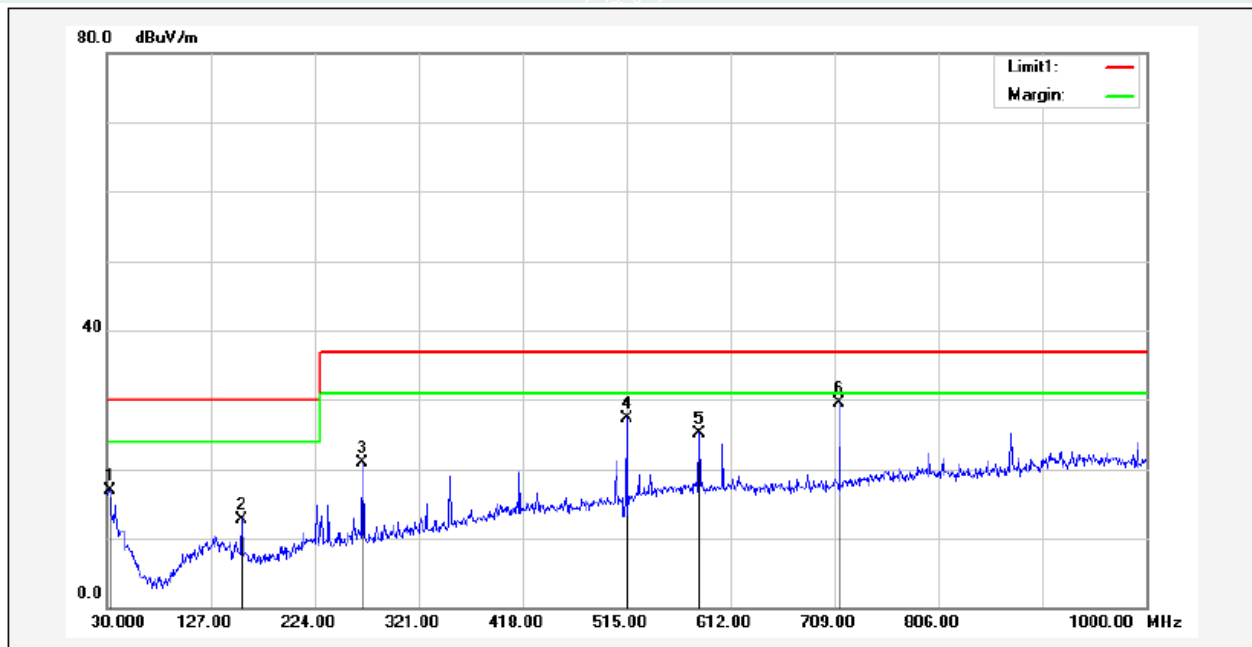
Above 1GHz (Mode 2)

7.1.6 TEST RESULTS

Below 1GHz

EUT Name	Smart Pet Feeder C1	Model:	PETC1-M01
Environmental Conditions	25.5°C/48%RH/101.0kPa	Test Mode	Mode 1
Power supply	DC 5V supply by adapter (AC 230V/50Hz)	Tested By	Tang Shenghui
Test Date	2022-08-17	Sample No.	E20220613205901-0002

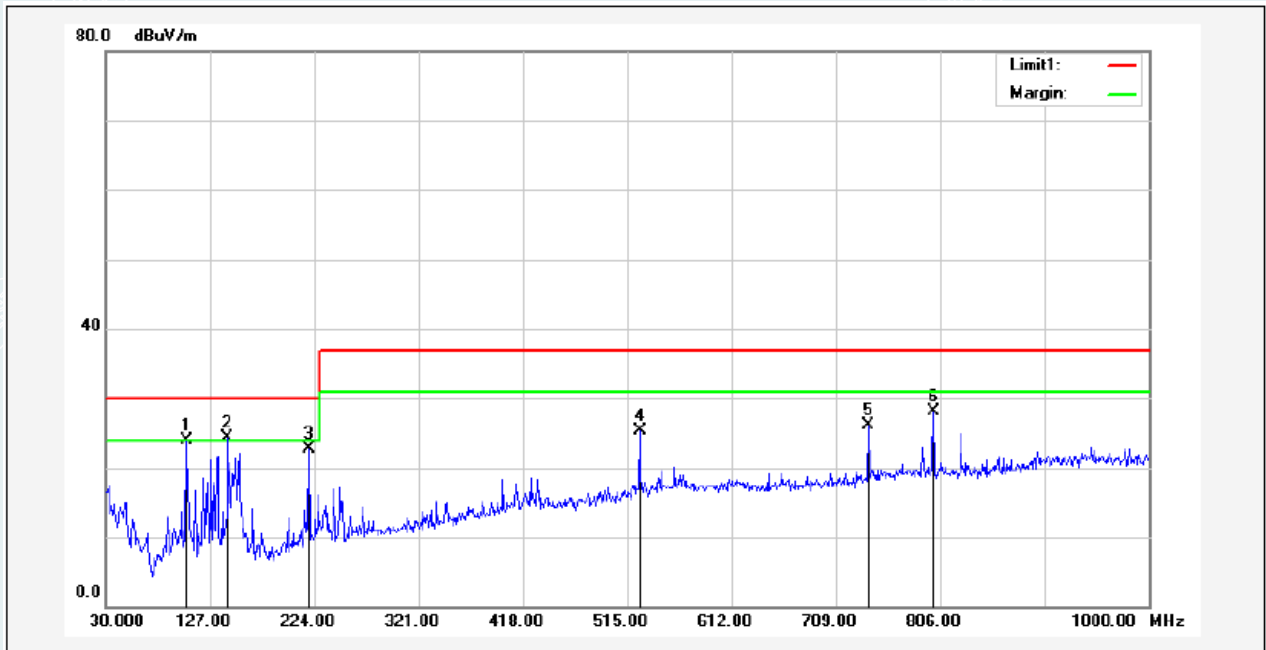
Polarity: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over (dB)	Degree (deg.)	Height (cm)	Remark
1	32.9100	35.30	-18.34	16.96	30.00	-13.04	340	199	QP
2	156.1000	40.12	-27.51	12.61	30.00	-17.39	0	255	QP
3	268.6200	46.24	-25.42	20.82	37.00	-16.18	0	290	QP
4	515.0000	46.85	-19.59	27.26	37.00	-9.74	326	199	QP
5	582.9000	43.46	-18.26	25.20	37.00	-11.80	301	199	QP
6*	713.8500	46.95	-17.46	29.49	37.00	-7.51	34	100	QP

EUT Name	Smart Pet Feeder C1	Model:	PETC1-M01
Environmental Conditions	25.5°C/48%RH/101.0kPa	Test Mode	Mode 1
Power supply	DC 5V supply by adapter (AC 230V/50Hz)	Tested By	Tang Shenghui
Test Date	2022-08-17	Sample No.	E20220613205901-0002

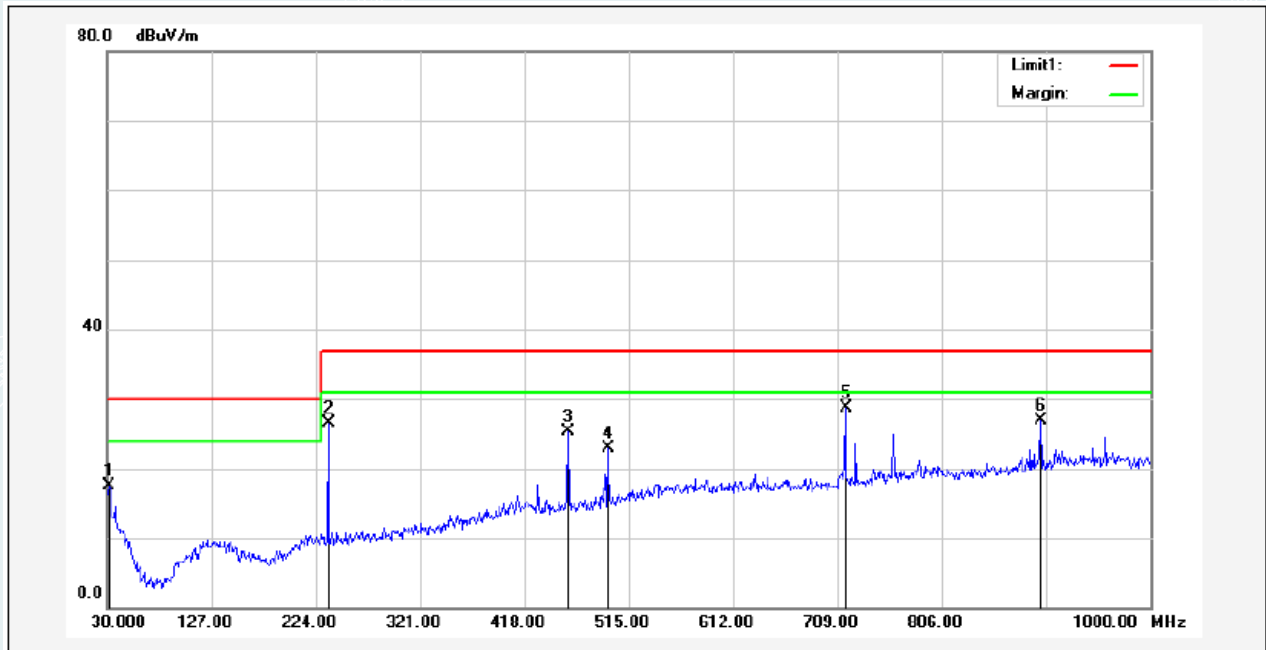
Polarity: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over (dB)	Degree (deg.)	Height (cm)	Remark
1	105.6600	51.99	-28.10	23.89	30.00	-6.11	96	400	QP
2*	143.4900	51.12	-26.77	24.35	30.00	-5.65	253	100	QP
3	219.1500	48.58	-25.88	22.70	30.00	-7.30	109	200	QP
4	526.6400	44.56	-19.19	25.37	37.00	-11.63	131	200	QP
5	739.0700	42.97	-16.93	26.04	37.00	-10.96	231	200	QP
6	800.1800	44.21	-16.20	28.01	37.00	-8.99	57	200	QP

EUT Name	Smart Pet Feeder C1	Model:	PETC1-M01
Environmental Conditions	25.5°C/48%RH/101.0kPa	Test Mode	Mode 2
Power supply	DC 4.5V supply by battery	Tested By	Tang Shenghui
Test Date	2022-08-17	Sample No.	E20220613205901-0002

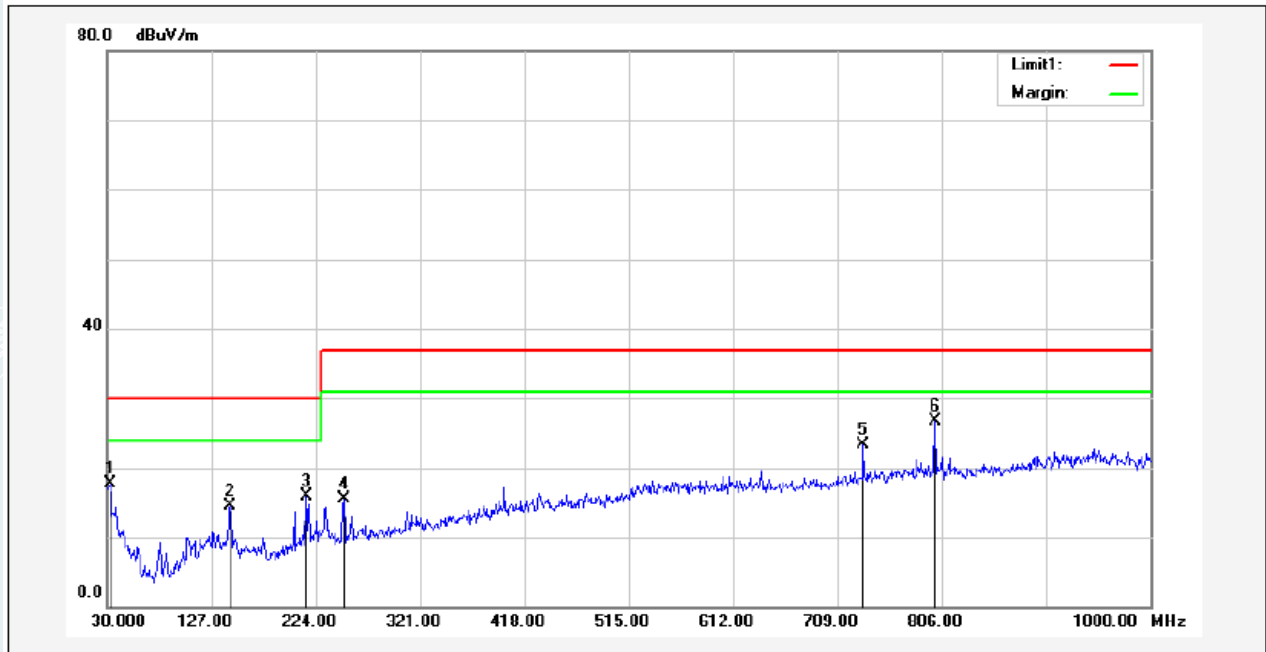
Polarity: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over (dB)	Degree (deg.)	Height (cm)	Remark
1	31.9400	35.31	-17.86	17.45	30.00	-12.55	28	399	QP
2	235.6400	52.69	-26.14	26.55	37.00	-10.45	285	199	QP
3	458.7400	46.17	-20.87	25.30	37.00	-11.70	112	199	QP
4	495.6000	43.07	-20.18	22.89	37.00	-14.11	194	199	QP
5*	716.7600	46.15	-17.40	28.75	37.00	-8.25	34	100	QP
6	898.1500	42.61	-15.62	26.99	37.00	-10.01	23	300	QP

EUT Name	Smart Pet Feeder C1	Model:	PETC1-M01
Environmental Conditions	25.5°C/48%RH/101.0kPa	Test Mode	Mode 2
Power supply	DC 4.5V supply by battery	Tested By	Tang Shenghui
Test Date	2022-08-17	Sample No.	E20220613205901-0002

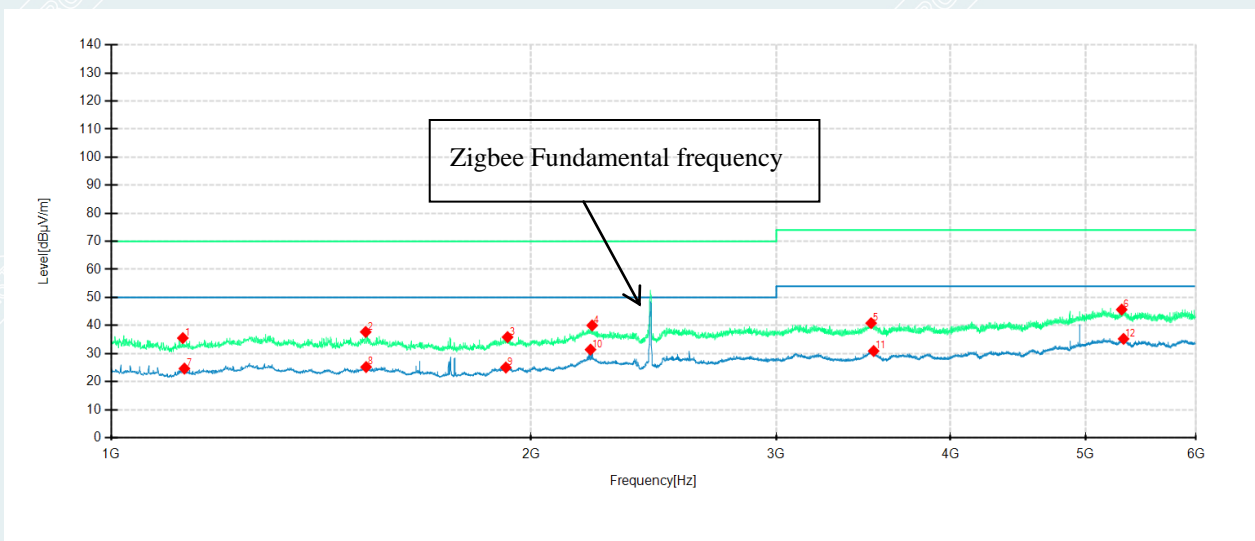
Polarity: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over (dB)	Degree (deg.)	Height (cm)	Remark
1	32.9100	36.07	-18.34	17.73	30.00	-12.27	359	224	QP
2	144.4600	41.41	-26.82	14.59	30.00	-15.41	0	195	QP
3	215.2700	42.01	-26.19	15.82	30.00	-14.18	214	200	QP
4	250.1900	41.39	-25.83	15.56	37.00	-21.44	0	164	QP
5	733.2500	40.27	-17.06	23.21	37.00	-13.79	0	198	QP
6*	800.1800	42.89	-16.20	26.69	37.00	-10.31	275	200	QP

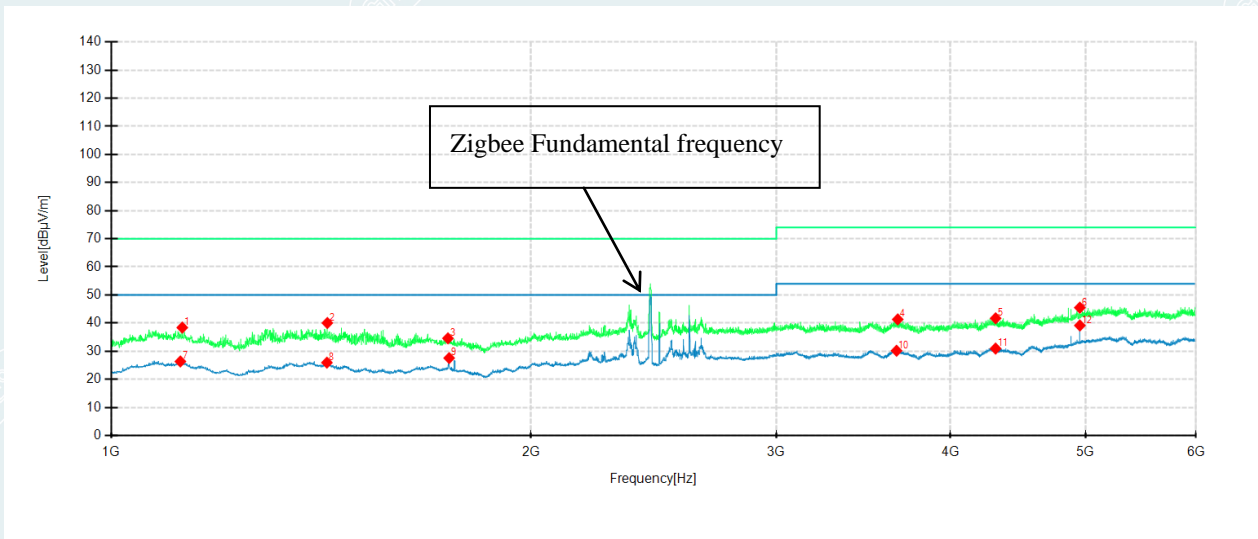
Above 1GHz

EUT Name	Smart Pet Feeder C1	Model:	PETC1-M01
Environmental Conditions	22.9°C/61%RH/101.0kPa	Test Mode	Mode 1
Power supply	DC 5V supply by adapter (AC 230V/50Hz)	Tested By	Jiang Tao
Test Date	2022-08-18	Sample No.	E20220613205901-0002



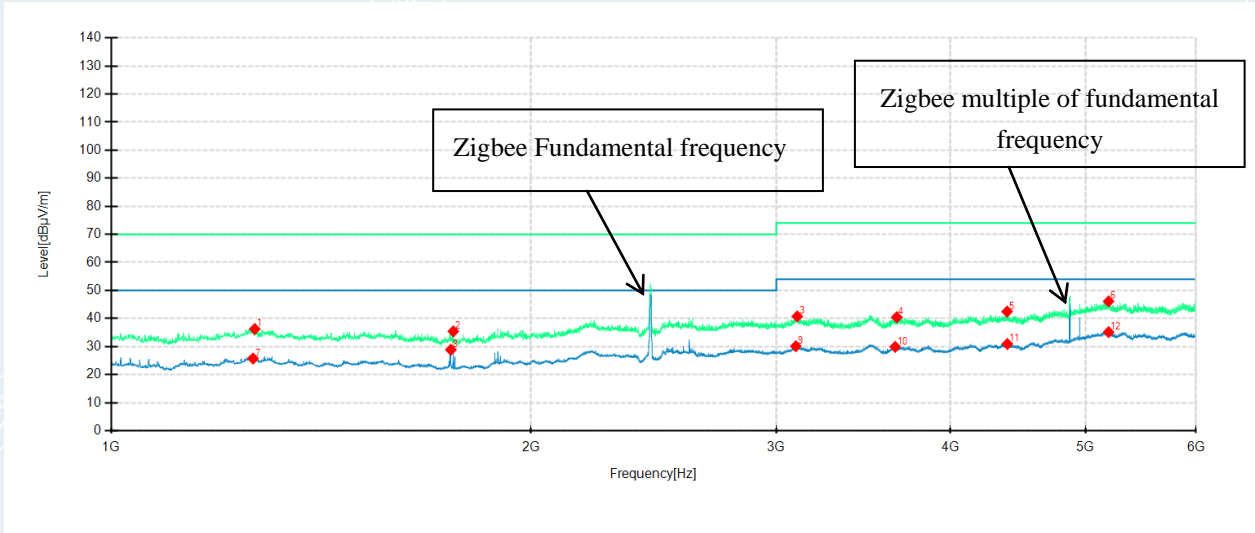
Suspected Data List									
NO.	Freq. [MHz]	Reading [dBµV/m]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1125.5	60.30	35.50	-24.80	70.00	34.50	100	247	Horizontal
2	1522.5	60.06	37.69	-22.37	70.00	32.31	100	346	Horizontal
3	1924.5	56.45	35.85	-20.60	70.00	34.15	200	197	Horizontal
4	2213	58.00	40.01	-17.99	70.00	29.99	200	219	Horizontal
5	3508.5	55.68	40.82	-14.86	74.00	33.18	100	10	Horizontal
6	5307	53.88	45.65	-8.23	74.00	28.35	100	94	Horizontal
7	1128.5	49.39	24.62	-24.77	50.00	25.38	100	225	Horizontal
8	1523.5	47.55	25.18	-22.37	50.00	24.82	200	4	Horizontal
9	1919	45.61	25.01	-20.60	50.00	24.99	100	217	Horizontal
10	2207	49.29	31.39	-17.90	50.00	18.61	200	226	Horizontal
11	3523	46.00	30.89	-15.11	54.00	23.11	200	26	Horizontal
12	5323.5	43.31	35.22	-8.09	54.00	18.78	200	204	Horizontal

EUT Name	Smart Pet Feeder C1	Model:	PETC1-M01
Environmental Conditions	22.9°C/61%RH/101.0kPa	Test Mode	Mode 1
Power supply	DC 5V supply by adapter (AC 230V/50Hz)	Tested By	Jiang Tao
Test Date	2022-08-18	Sample No.	E20220613205901-0002



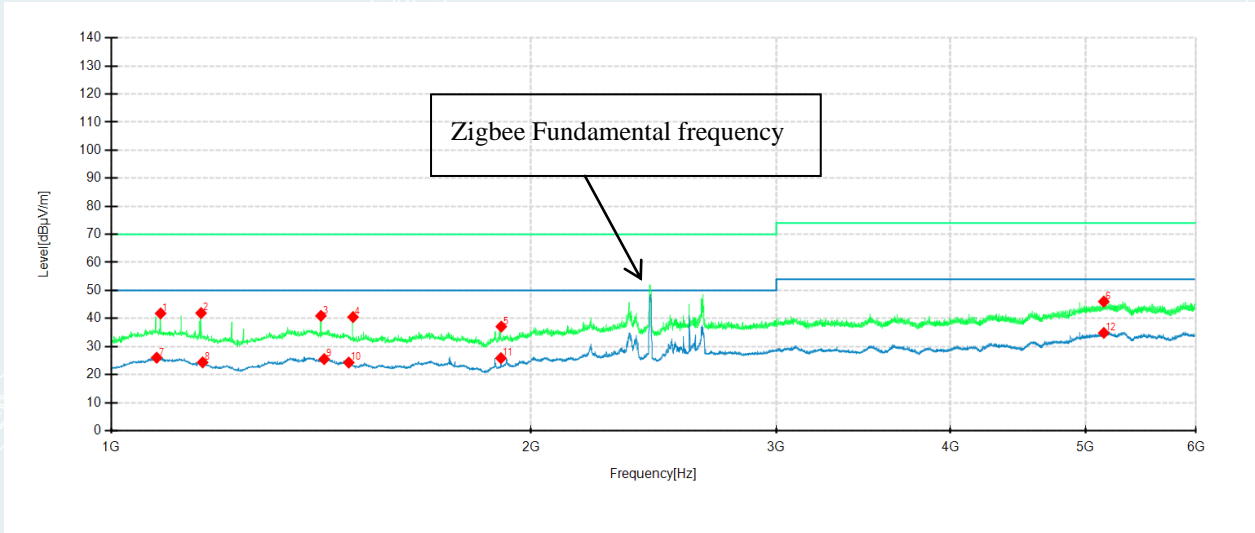
Suspected Data List									
NO.	Freq. [MHz]	Reading [dBµV/m]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1124.5	61.03	38.40	-22.63	70.00	31.60	100	152	Vertical
2	1429	61.85	40.03	-21.82	70.00	29.97	100	175	Vertical
3	1744	56.05	34.57	-21.48	70.00	35.43	200	70	Vertical
4	3666	56.14	41.31	-14.83	74.00	32.69	100	182	Vertical
5	4309.5	54.65	41.71	-12.94	74.00	32.29	100	343	Vertical
6	4952.5	55.28	45.48	-9.80	74.00	28.52	100	175	Vertical
7	1121	48.84	26.34	-22.50	50.00	23.66	100	137	Vertical
8	1428	47.73	25.92	-21.81	50.00	24.08	200	208	Vertical
9	1747.5	49.02	27.54	-21.48	50.00	22.46	100	283	Vertical
10	3659	44.99	30.15	-14.84	54.00	23.85	200	154	Vertical
11	4309	43.87	30.93	-12.94	54.00	23.07	100	351	Vertical
12	4953	48.94	39.15	-9.79	54.00	14.85	100	168	Vertical

EUT Name	Smart Pet Feeder C1	Model:	PETC1-M01
Environmental Conditions	22.9°C/61%RH/101.0kPa	Test Mode	Mode 2
Power supply	DC 4.5V supply by battery	Tested By	Jiang Tao
Test Date	2022-08-18	Sample No.	E20220613205901-0002



Suspected Data List									
NO.	Freq. [MHz]	Reading [dBµV/m]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1267.5	58.30	36.24	-22.06	70.00	33.76	200	351	Horizontal
2	1759.5	58.06	35.41	-22.65	70.00	34.59	100	359	Horizontal
3	3105.5	56.81	40.72	-16.09	74.00	33.28	200	0	Horizontal
4	3660	55.86	40.44	-15.42	74.00	33.56	100	80	Horizontal
5	4391.5	55.16	42.45	-12.71	74.00	31.55	100	227	Horizontal
6	5193.5	54.64	46.10	-8.54	74.00	27.90	100	64	Horizontal
7	1264	47.75	25.71	-22.04	50.00	24.29	100	227	Horizontal
8	1752.5	51.51	28.84	-22.67	50.00	21.16	100	313	Horizontal
9	3098	46.18	30.11	-16.07	54.00	23.89	200	29	Horizontal
10	3650.5	45.42	29.88	-15.54	54.00	24.12	100	102	Horizontal
11	4393.5	43.58	30.90	-12.68	54.00	23.10	200	205	Horizontal
12	5193.5	43.69	35.15	-8.54	54.00	18.85	200	59	Horizontal

EUT Name	Smart Pet Feeder C1	Model:	PETC1-M01
Environmental Conditions	22.9°C/61%RH/101.0kPa	Test Mode	Mode 2
Power supply	DC 4.5V supply by battery	Tested By	Jiang Tao
Test Date	2022-08-18	Sample No.	E20220613205901-0002



Suspected Data List									
NO.	Freq. [MHz]	Reading [dBµV/m]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1085	63.89	41.81	-22.08	70.00	28.19	100	343	Vertical
2	1160	65.73	41.92	-23.81	70.00	28.08	100	334	Vertical
3	1414	62.56	40.95	-21.61	70.00	29.05	100	350	Vertical
4	1491	63.56	40.50	-23.06	70.00	29.50	100	343	Vertical
5	1904.5	59.05	37.10	-21.95	70.00	32.90	200	160	Vertical
6	5152.5	54.11	46.01	-8.10	74.00	27.99	200	151	Vertical
7	1078	48.26	26.01	-22.25	50.00	23.99	100	274	Vertical
8	1163	48.22	24.35	-23.87	50.00	25.65	100	212	Vertical
9	1421.5	47.22	25.50	-21.72	50.00	24.50	100	143	Vertical
10	1480.5	47.11	24.29	-22.82	50.00	25.71	100	0	Vertical
11	1903.5	47.82	25.86	-21.96	50.00	24.14	100	311	Vertical
12	5153	42.97	34.86	-8.11	54.00	19.14	100	175	Vertical

Remark: The fundamental frequency or multiple of fundamental frequency's limit is controlled to the standard of Radio frequency.

7.2 CONDUCTED EMISSION MEASUREMENT (CE)

Test Requirement:	EN 301 489-17 V3.2.4/7.1.1 EN 301 489-1 V2.2.3/8.4
Test Method:	EN 55032 /annex A.3

7.2.1 LIMITS

Frequency (MHz)	Quasi-peak (dB μ V)	Average (dB μ V)
0.15 ~ 0.5	66~56	56~46
0.5 ~ 5	56	46
5 ~ 30	60	50

NOTE: (1) The lower limit shall apply at the transition frequencies.

(2) The limit decreases in line with the logarithm of the frequency in the range of 0.15~0.5 MHz.

7.2.2 TEST PROCEDURES

The test method shall be in accordance with CENELEC EN 55032 [1] annex A.3 and the Artificial Mains Networks (AMNs) shall be connected to the AC mains power source.

The measurement frequency range extends from 150kHz to 30MHz. When the EUT is a transmitter operating at frequencies below 30MHz, then the exclusion band for transmitters applies for measurements in the transmit mode of operation.

(1) Procedure of Preliminary Test

For measurement of the disturbance voltage the equipment under test (EUT) is connected to the power supply mains and any other extended network via one or more artificial network(s). A EUT, whether intended to be grounded or not, and which is to be used on a table is configured as follows:

--Either the bottom or the rear of the EUT shall be at a controlled distance of 40cm from a reference ground plane. This ground plane is normally the wall or floor of a shielded room. It may also be a grounded metal plane of at least 2m by 2m. This is physically accomplished as follows:

- 1) Place the EUT on a table of non-conducting material which is at least 80cm high. Place the EUT so that it is 40 cm from the wall of the shielded room, or
- 2) Place the EUT on a table of non-conducting material which is 40cm high so that the bottom of the EUT is 40 cm above the ground plane.

-- All other conductive surfaces of the EUT shall be at least 80 cm from the reference ground plane.

-- The AANs are placed on the floor that one side of the AAN housings is 40cm from the vertical reference ground plane and other metallic parts.

-- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth forming a bundle 30cm to 40cm long, hanging approximately in the middle between the ground plane and the table.

-- I/O cables that are connected to a peripheral shall be bundled in the centre. The end of the cable may be terminated if required using correct terminating impedance. The total length shall not exceed 1 m.

The test mode(s) were scanned during the preliminary test. After the preliminary scan, we found the test mode producing the highest emission level. The EUT configuration and cable configuration of the above highest emission levels were recorded for reference of the final test.

(2) Procedure of Final Test

EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test. A scan was taken on both power lines, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit.

7.2.3 TEST SETUP

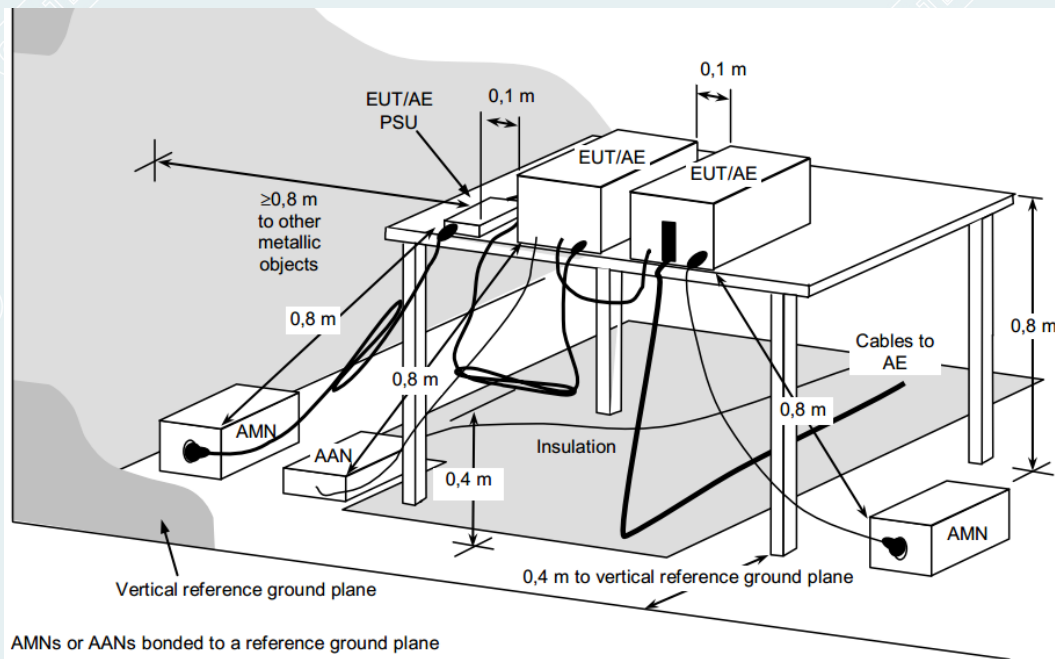


Figure 7.2-1: Test arrangement for Conducted emission measurement

----- The following blanks -----

7.2.4 DATE SAMPLE

Frequency (MHz)	QuasiPeak Reading (dBuV)	Average Reading (dBuV)	Correction Factor (dB)	QuasiPeak Result (dBuV)	Average Result (dBuV)	QuasiPeak Limit (dBuV)	Average Limit (dBuV)	QuasiPeak Margin (dB)	Average Margin (dB)
X.XXXX	32.69	25.65	11.52	44.21	37.17	65.78	55.79	-21.57	-18.62

- Factor = Insertion loss of LISN + Cable Loss
- Result = Quasi-peak Reading/ Average Reading + Factor
- Limit = Limit stated in standard
- Margin = Result (dBuV) – Limit (dBuV)

7.2.5 PHOTOGRAPH OF THE TEST ARRANGEMENT

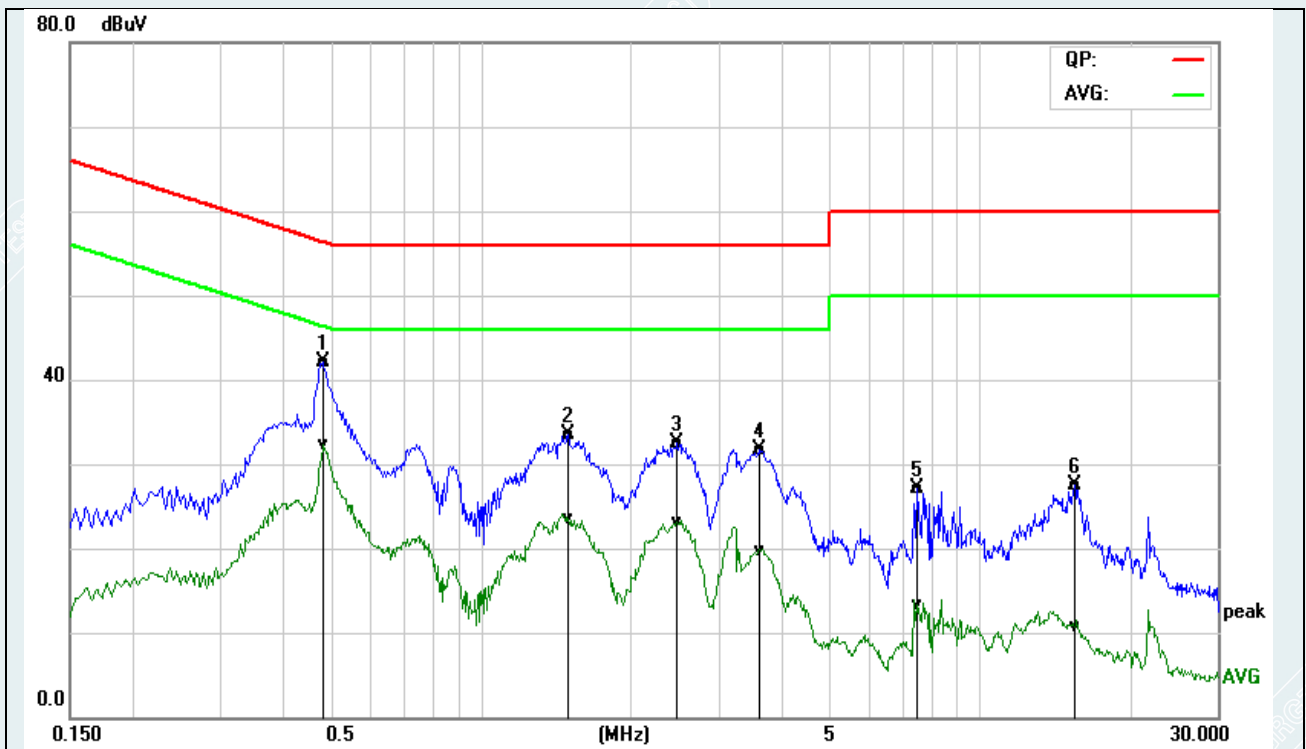


----- The following blanks -----

7.2.6 TEST RESULTS

EUT Name	Smart Pet Feeder C1	Model:	PETC1-M01
Environmental Conditions	25.5°C/57%RH/101.0kPa	Test Mode	Mode 1
Power supply	DC 5V supply by adapter (AC 230V/50Hz)	Tested By	Jiang Tao
Test Date	2022-08-16	Sample No.	E20220613205901-0002

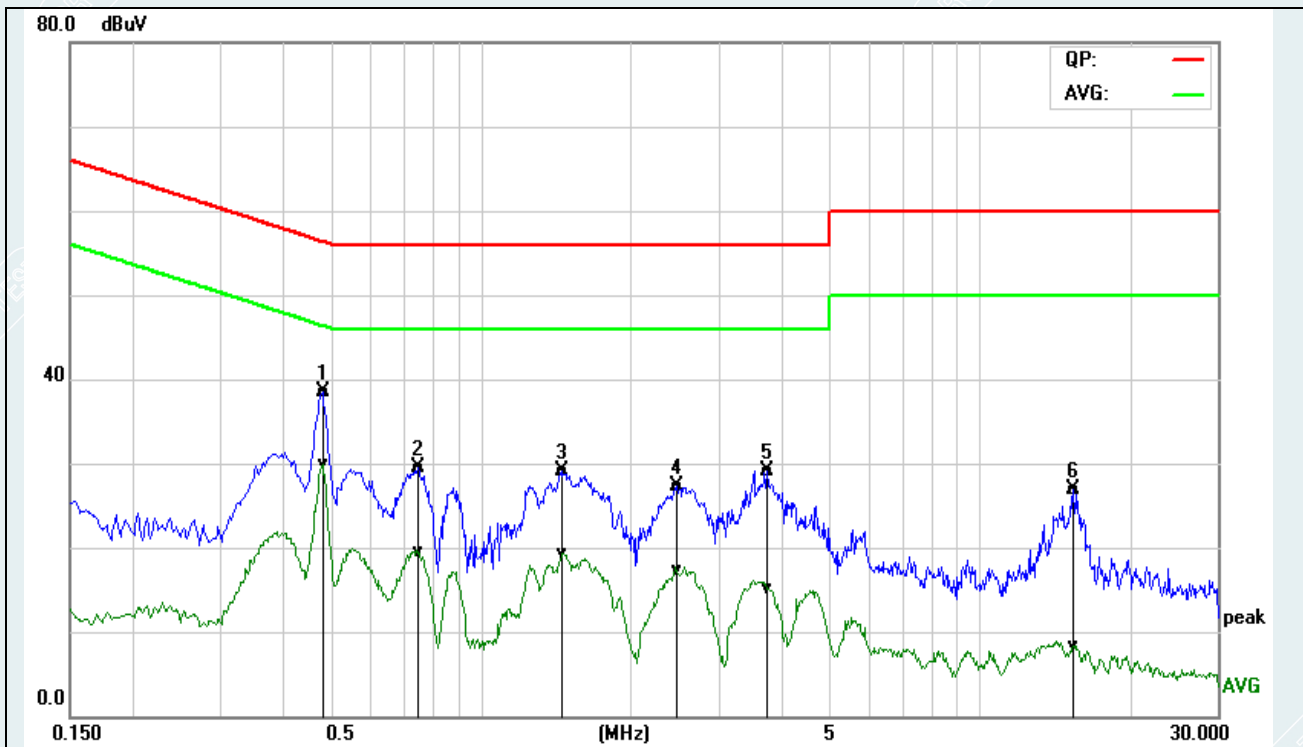
Line: L1



No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1*	0.4820	32.54	22.68	9.57	42.11	32.25	56.30	46.30	-14.19	-14.05	Pass
2	1.5020	23.85	13.91	9.59	33.44	23.50	56.00	46.00	-22.56	-22.50	Pass
3	2.4739	22.88	13.55	9.61	32.49	23.16	56.00	46.00	-23.51	-22.84	Pass
4	3.6180	22.01	10.16	9.64	31.65	19.80	56.00	46.00	-24.35	-26.20	Pass
5	7.5100	17.34	3.63	9.74	27.08	13.37	60.00	50.00	-32.92	-36.63	Pass
6	15.5060	17.57	0.80	9.85	27.42	10.65	60.00	50.00	-32.58	-39.35	Pass

EUT Name	Smart Pet Feeder C1	Model:	PETC1-M01
Environmental Conditions	25.5°C/57%RH/101.0kPa	Test Mode	Mode 1
Power supply	DC 5V supply by adapter (AC 230V/50Hz)	Tested By	Jiang Tao
Test Date	2022-08-16	Sample No.	E20220613205901-0002

Line: N



No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1*	0.4820	28.90	20.30	9.69	38.59	29.99	56.30	46.30	-17.71	-16.31	Pass
2	0.7500	19.80	9.79	9.65	29.45	19.44	56.00	46.00	-26.55	-26.56	Pass
3	1.4620	19.55	9.76	9.61	29.16	19.37	56.00	46.00	-26.84	-26.63	Pass
4	2.4739	17.69	7.76	9.60	27.29	17.36	56.00	46.00	-28.71	-28.64	Pass
5	3.7580	19.50	5.40	9.63	29.13	15.03	56.00	46.00	-26.87	-30.97	Pass
6	15.4340	17.06	-1.50	9.89	26.95	8.39	60.00	50.00	-33.05	-41.61	Pass

7.3 HARMONIC CURRENT

Test Requirement: ETSI EN 301 489-17 V3.2.4/7.1.1
ETSI EN 301 489-1 V2.2.3/8.5

Test Method: EN 61000-3-2:2019

7.3.1 LIMITS

Limits for Class A equipment		Limits for Class D equipment		
Harmonics Order (n)	Max. permissible harmonics current (A)	Harmonics Order (n)	Max. permissible harmonics current per watt (mA/W)	Max. permissible harmonics current (A)
Odd harmonics		Odd Harmonics only		
3	2.30	3	3.4	2.30
5	1.14	5	1.9	1.14
7	0.77	7	1.0	0.77
9	0.40	9	0.5	0.40
11	0.33	11	0.35	0.33
13	0.21	13	0.30	0.21
15≤n≤39	0.15x15/n	15≤n≤39	3.85/n	0.15x15/n
Even harmonics				
2	1.08			
4	0.43			
6	0.30			
8≤n≤40	0.23x8/n			

Note:

1. Class A and Class D are classified according to item 7.3.2.
2. According to section 7 of EN 61000-3-2, the above limits for all equipment except for lighting equipment having an active input power > 75 W and no limits apply for equipment with an active input power up to and including 75 W.

7.3.2 TEST PROCEDURE

The EUT was placed on the top of a wooden table 0.8 meters above the ground and operated to produce the maximum harmonic components under normal operating conditions for each successive harmonic component in turn.

The classification of EUT is according to section 5 of EN 61000-3-2.

The EUT is classified as follows:

Class A: Balanced three-phase equipment, Household appliances excluding equipment as Class D, Tools excluding portable tools, Dimmers for incandescent lamps, audio equipment, equipment not specified in one of the three other classes.

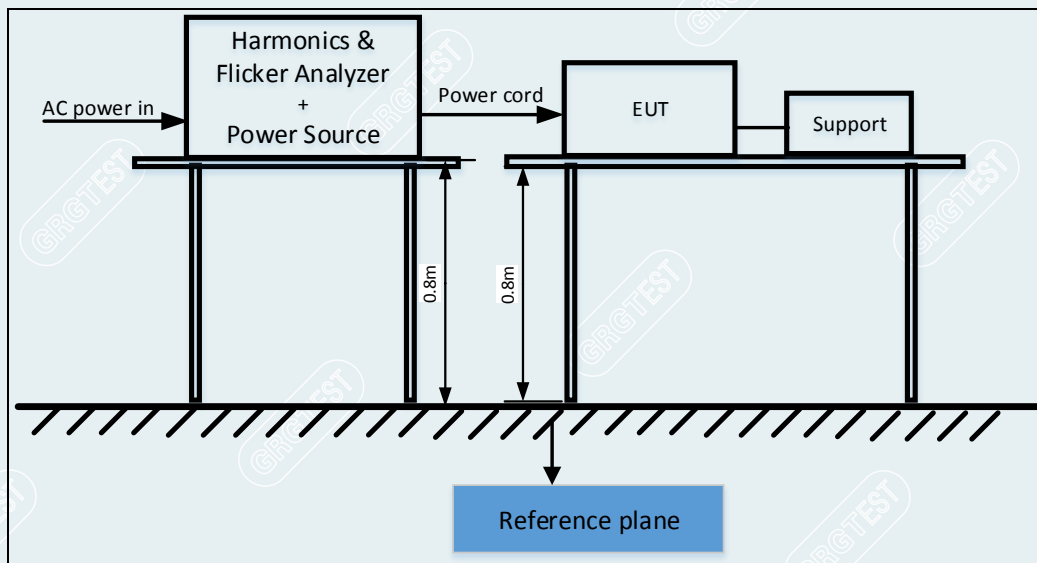
Class B: Portable tools; Arc welding equipment which is not professional equipment.

Class C: Lighting equipment.

Class D: Equipment having a specified power less than or equal to 600 W of the following types: Personal computers and personal computer monitors and television receivers.

The correspondent test program of test instrument to measure the current harmonics emanated from EUT is chosen. The measure time shall be not less than the time necessary for the EUT to be exercised.

7.3.3 TEST SETUP



7.3.4 PHOTOGRAPH OF THE TEST ARRANGEMENT



----- The following blanks -----

7.3.5 TEST RESULTS

EUT Name	Smart Pet Feeder C1	Model:	PETC1-M01
Environmental Conditions	22.5°C/45%RH/101.0kPa	Test Mode	Mode 1
Power supply	DC 5V supply by adapter (AC 230V/50Hz)	Tested By	Wang Xinyuan
Test Date	2022-08-15	Sample No.	E20220613205901-0002

Test category: Class-A (European limits)

Test Margin: 100

Test date: 2022/8/15

Start time: 15:54:53

End time: 15:57:35

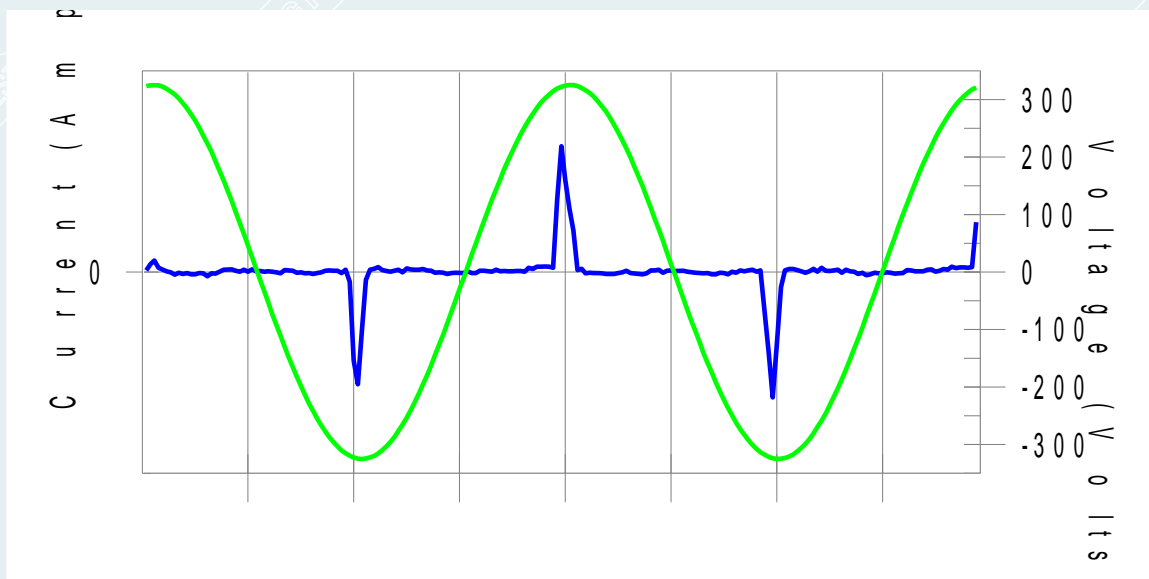
Test duration (min): 2.5

Data file name: H-000337.cts_data

Test Result: Pass

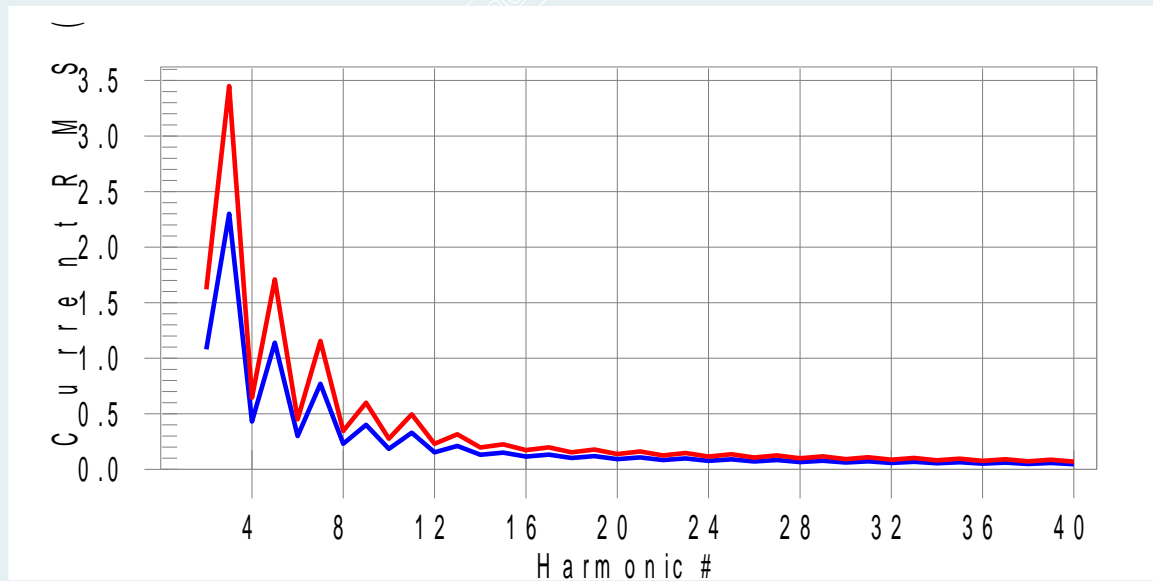
Source qualification: Normal

Current & voltage waveforms



Harmonics and Class A limit line

European Limits



Test result: Pass Worst harmonics H0-0.0% of 150% limit, H0-0% of 100% limit

----- The following blanks -----

Current Test Result Summary (Run time)

Test category: Class-A (European limits) Test Margin: 100
 Test date: 2022/8/15 Start time: 15:54:53 End time: 15:57:35
 Test duration (min): 2.5 Data file name: H-000337.cts_data

Test Result: Pass Source qualification: Normal
 THC(A): 0.005 I-THD(%): 211.0 POHC(A): 0.002 POHC Limit(A): 0.251

Highest parameter values during test:

V_RMS (Volts): 230.05 Frequency(Hz): 50.00
 I_Peak (Amps): 0.148 I_RMS (Amps): 0.013
 I_Fund (Amps): 0.002 Crest Factor: 15.799
 Power (Watts): 0.6 Power Factor: 0.325

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.001	1.080	N/A	0.001	1.620	N/A	Pass
3	0.002	2.300	N/A	0.003	3.450	N/A	Pass
4	0.001	0.430	N/A	0.001	0.645	N/A	Pass
5	0.002	1.140	N/A	0.002	1.710	N/A	Pass
6	0.000	0.300	N/A	0.000	0.450	N/A	Pass
7	0.002	0.770	N/A	0.002	1.155	N/A	Pass
8	0.000	0.230	N/A	0.000	0.345	N/A	Pass
9	0.002	0.400	N/A	0.002	0.600	N/A	Pass
10	0.000	0.184	N/A	0.000	0.276	N/A	Pass
11	0.002	0.330	N/A	0.002	0.495	N/A	Pass
12	0.000	0.153	N/A	0.000	0.230	N/A	Pass
13	0.001	0.210	N/A	0.002	0.315	N/A	Pass
14	0.000	0.131	N/A	0.000	0.197	N/A	Pass
15	0.001	0.150	N/A	0.002	0.225	N/A	Pass
16	0.000	0.115	N/A	0.000	0.173	N/A	Pass
17	0.001	0.132	N/A	0.002	0.198	N/A	Pass
18	0.000	0.102	N/A	0.000	0.153	N/A	Pass
19	0.001	0.118	N/A	0.002	0.178	N/A	Pass
20	0.000	0.092	N/A	0.000	0.138	N/A	Pass
21	0.001	0.107	N/A	0.001	0.161	N/A	Pass
22	0.000	0.084	N/A	0.000	0.125	N/A	Pass
23	0.001	0.098	N/A	0.001	0.147	N/A	Pass
24	0.000	0.077	N/A	0.000	0.115	N/A	Pass
25	0.001	0.090	N/A	0.001	0.135	N/A	Pass
26	0.000	0.071	N/A	0.000	0.107	N/A	Pass
27	0.001	0.083	N/A	0.001	0.125	N/A	Pass
28	0.000	0.066	N/A	0.000	0.099	N/A	Pass
29	0.001	0.078	N/A	0.001	0.116	N/A	Pass
30	0.000	0.061	N/A	0.000	0.092	N/A	Pass
31	0.001	0.073	N/A	0.001	0.109	N/A	Pass
32	0.000	0.058	N/A	0.000	0.086	N/A	Pass
33	0.000	0.068	N/A	0.001	0.102	N/A	Pass
34	0.000	0.054	N/A	0.000	0.081	N/A	Pass
35	0.000	0.064	N/A	0.000	0.096	N/A	Pass
36	0.000	0.051	N/A	0.000	0.077	N/A	Pass
37	0.000	0.061	N/A	0.000	0.091	N/A	Pass
38	0.000	0.048	N/A	0.000	0.073	N/A	Pass
39	0.000	0.058	N/A	0.000	0.087	N/A	Pass
40	0.000	0.046	N/A	0.000	0.069	N/A	Pass

Voltage Source Verification Data (Run time)

Test category: Class-A (European limits) **Test Margin: 100**
Test date: 2022/8/15 **Start time: 15:54:53** **End time: 15:57:35**
Test duration (min): 2.5 **Data file name: H-000337.cts_data**

Test Result: Pass **Source qualification: Normal**

Highest parameter values during test:

Voltage (Vrms): 230.05	Frequency(Hz): 50.00
I_Peak (Amps): 0.148	I_RMS (Amps): 0.013
I_Fund (Amps): 0.002	Crest Factor: 15.799
Power (Watts): 0.6	Power Factor: 0.325

Harm#	Harmonics V-rms	Limit V-rms	% of Limit	Status
2	0.166	0.460	36.18	OK
3	0.427	2.070	20.62	OK
4	0.073	0.460	15.95	OK
5	0.051	0.920	5.58	OK
6	0.031	0.460	6.69	OK
7	0.023	0.690	3.34	OK
8	0.022	0.460	4.83	OK
9	0.021	0.460	4.50	OK
10	0.023	0.460	4.90	OK
11	0.015	0.230	6.68	OK
12	0.020	0.230	8.82	OK
13	0.013	0.230	5.85	OK
14	0.012	0.230	5.13	OK
15	0.011	0.230	4.71	OK
16	0.013	0.230	5.45	OK
17	0.014	0.230	6.21	OK
18	0.015	0.230	6.39	OK
19	0.009	0.230	3.72	OK
20	0.011	0.230	4.98	OK
21	0.009	0.230	3.88	OK
22	0.007	0.230	2.99	OK
23	0.008	0.230	3.42	OK
24	0.006	0.230	2.68	OK
25	0.009	0.230	3.87	OK
26	0.010	0.230	4.20	OK
27	0.008	0.230	3.32	OK
28	0.008	0.230	3.51	OK
29	0.005	0.230	2.28	OK
30	0.007	0.230	3.15	OK
31	0.004	0.230	1.80	OK
32	0.006	0.230	2.62	OK
33	0.007	0.230	2.97	OK
34	0.003	0.230	1.35	OK
35	0.004	0.230	1.52	OK
36	0.004	0.230	1.68	OK
37	0.004	0.230	1.56	OK
38	0.003	0.230	1.36	OK
39	0.004	0.230	1.56	OK
40	0.005	0.230	2.16	OK

7.4 VOLTAGE FLUCTUATIONS AND FLICKER

Test Requirement: ETSI EN 301 489-17 V3.2.4/7.1.1
 ETSI EN 301 489-1 V2.2.3/8.6

Test Method: EN 61000-3-3:2013

7.4.1 LIMITS

Test Item	Limit	Remark
P_{st}	1.0	P_{st} means short-term flicker indicator.
P_{lt}	0.65	P_{lt} means long-term flicker indicator.
T_{dt} (ms)	500	T_{dt} means maximum time that dt exceeds 3 %.
d_{max} (%)	4%	d_{max} means maximum relative voltage change.
dc (%)	3.3%	dc means relative steady-state voltage change

7.4.2 TEST PROCEDURES

The EUT was placed on the top of a wooden table 0.8 meters above the ground and operated to produce the most unfavorable sequence of voltage changes under normal operating conditions.

During the flick measurement, the measure time shall include that part of whole operation cycle in which the EUT produce the most unfavorable sequence of voltage changes. The observation period for short-term flicker indicator is 10 minutes and the observation period for long-term flicker indicator is 2 hours.

7.4.3 TEST SETUP

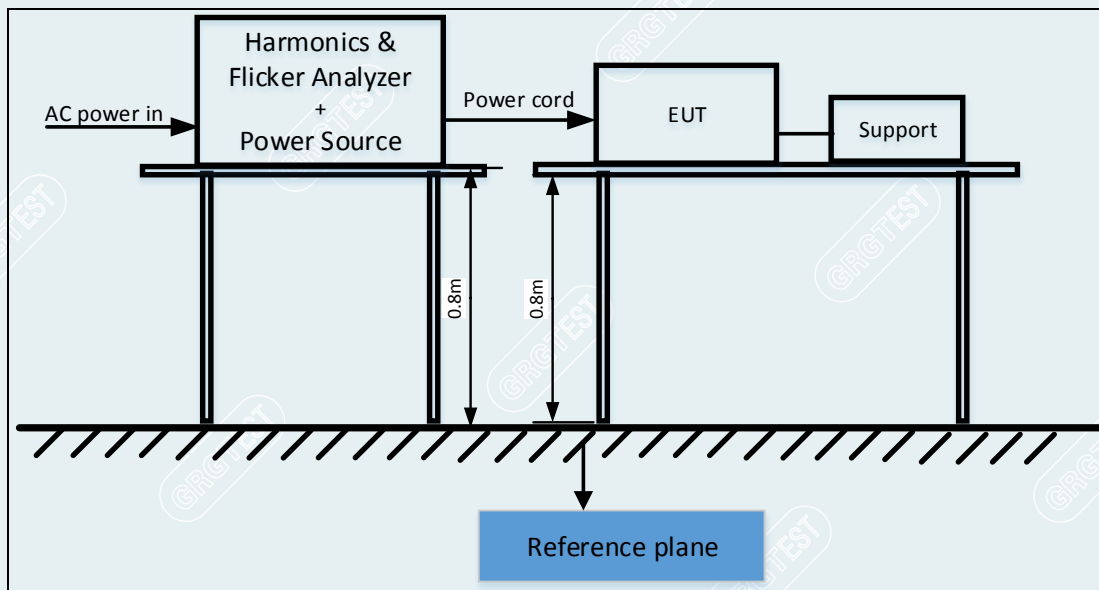


Figure 7.4-1: Test arrangement for Voltage fluctuations and flicker measurement.

7.4.4 PHOTOGRAPH OF THE TEST ARRANGEMENT

Mode 1



----- The following blanks -----

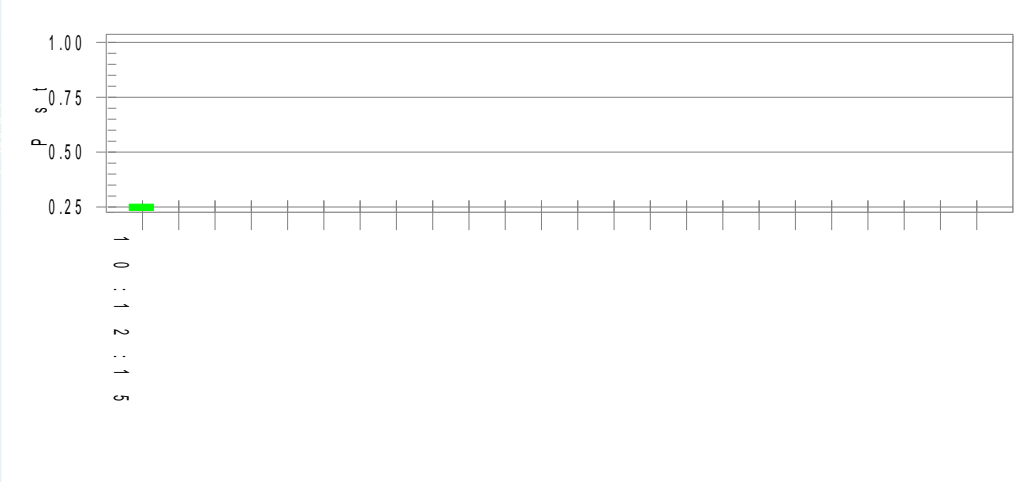
7.4.5 TEST RESULTS

EUT Name	Smart Pet Feeder C1	Model:	PETC1-M01
Environmental Conditions	25.5°C/57%RH/101.0kPa	Test Mode	Mode 1
Power supply	DC 5V supply by adapter (AC 230V/50Hz)	Tested By	Wang Xinyuan
Test Date	2022-08-17	Sample No.	E20220613205901-0002

Test category: All parameters (European limits) **Test Margin: 100**
Test date: 2022/8/17 **Start time: 10:01:54** **End time: 10:12:22**
Test duration (min): 10 **Data file name: F-000350.cts_data**

Test Result: Pass **Status: Test Completed**

Pst_i and limit line European Limits



Plt and limit line



Parameter values recorded during the test:

Vrms at the end of test (Volt):	230.04		
Highest dt (%):		Test limit (%):	
T-max (mS):	0	Test limit (mS):	500.0 Pass
Highest dc (%):	0.00	Test limit (%):	3.30 Pass
Highest dmax (%):	0.00	Test limit (%):	4.00 Pass
Highest Pst (10 min. period):	0.263	Test limit:	1.000 Pass
Highest Plt (2 hr. period):	0.115	Test limit:	0.650 Pass

8. IMMUNITY TEST

8.1 GENERAL DESCRIPTION

EMC Immunity					
ETSI EN 301 489-17 V3.2.4&ETSI EN 301 489-1 V2.2.3					
Item	Application port	Basic Standard	Test method	Performance Criterion	Result
Electrostatic discharge (ESD)	Enclosure port	ETSI EN 301 489-17 V3.2.4 /7.2.1 ETSI EN 301 489-1 V2.2.3/9.3	EN 61000-4-2:2009	Test specification: ±2, ±4, ±8kV air discharge ±2, ±4kV Contact discharge Performance : Criteria B	PASS
Radiated radio-frequency electromagnetic (RS)	Enclosure port	ETSI EN 301 489-1 V2.2.3/9.2 ETSI EN 301 489-17 V3.2.4 /7.2.1	EN 61000-4-3:2006 +A2:2010	Test specification: Test level: For the frequency range 80MHz to 6000MHz, test level shall be 3 V/m, 80% AM(1kHz) Performance: Criteria A	PASS
Electrical fast transients(EFT)	AC mains power input port	EN 301 489-17 V3.2.2 /7.2.1 EN 301 489-1 V2.2.3 /9.4	EN 61000-4-4:2012	Test specification: AC power Port: ±1kV repetition rate: 5 kHz Performance: Criteria B	PASS
Surge	AC mains power input port	EN 301 489-17 V3.2.4 /7.2.1 EN 301 489-1 V2.2.3 /9.8	EN 61000-4-5:2014 +A1:2017	Test specification: AC Power Port: 1.2/50 us pulse line to line: ±1kV; Performance : Criteria B	PASS
Radio frequency continuous conducted(CS)	AC mains power input port	EN 301 489-17 V3.2.4 /7.2.1 EN 301 489-1 V2.2.3 /9.5	EN 61000-4-6:2014	Test specification: AC power port 0.15~80 MHz, 3Vrms, 80% AM, 1kHz Performance: Criteria A	PASS
Voltage Dips & Short Interruptions	AC mains power input port	EN 301 489-17 V3.2.4 /7.2.1 EN 301 489-1 V2.2.3 /9.7	EN 61000-4-11:2004	Test specification: 1. Voltage dips: i)0% residual voltage 0.5 cycle. Performance: Criteria B; ii) 0% residual voltage 1 cycle, Performance: Criteria B; iii)70% residual voltage 25 cycle. Performance: Criteria B; 2. Voltage interruption: 0% residual voltage during 250 cycles. Performance: Criteria C;	PASS

8.2 GENERAL PERFORMANCE CRITERIA DESCRIPTION (ETSI EN 301 489-1/17)

8.2.1 GENERAL PERFORMANCE CRITERIA

The performance criteria are:

- Performance criteria A for immunity tests with phenomena of a continuous nature;
- Performance criteria B for immunity tests with phenomena of a transient nature;
- Performance criteria C for immunity tests with power interruptions exceeding a certain time.

The equipment shall meet the minimum performance criteria as specified in the following clauses.

Performance table

Criteria	During Test	After test (i.e. as a result of the application of the test)
A	Shall operate as intended. (See note). Shall be no loss of function. Shall be no unintentional transmissions.	Shall operate as intended. Shall be no degradation of performance. Shall be no loss of function. Shall be no loss of critical stored data.
B	May be loss of function.	Functions shall be self-recoverable. Shall operate as intended after recovering. Shall be no loss of critical stored data.
C	May be loss of function.	Functions shall be recoverable by the operator. Shall operate as intended after recovering. Shall be no loss of critical stored data.

NOTE: Operate as intended during the test allows a level of degradation in accordance with clause 6.2.2.

Performance Criteria	Description
Performance criteria for continuous phenomena applied to transmitters and receivers	If no further details are given in the relevant part of EN 301 489 series [i.13] dealing with the particular type of radio equipment, the following general performance criteria for continuous phenomena shall apply. During and after the test, the apparatus shall continue to operate as intended. No degradation of performance or loss of function is allowed below a permissible performance level specified by the manufacturer when the apparatus is used as intended. In some cases this permissible performance level may be replaced by a permissible loss of performance. During the test the EUT shall not unintentionally transmit or change its actual operating state and stored data. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be deduced from the product description and documentation and what the user may reasonably expect from the apparatus if used as intended.
Performance criteria for transient phenomena applied to transmitters and receivers	If no further details are given in the relevant part of EN 301 489 series [i.13] dealing with the particular type of radio equipment, the following general performance criteria for transient phenomena shall apply. For surges applied to symmetrically operated wired network ports intended to be connected directly to outdoor lines the following criteria applies: <ul style="list-style-type: none"> • For products with only one symmetrical port intended for connection to outdoor lines, loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions. A SW reboot is not allowed.

	<p>Information stored in non-volatile memory, or protected by a battery backup, shall not be lost.</p> <ul style="list-style-type: none"> • For products with more than one symmetrical port intended for connection to outdoor lines, loss of function on the port under test is allowed, provided the function is self-recoverable. A SW reboot is not allowed. Information stored in non-volatile memory, or protected by a battery backup, shall not be lost. <p>For all other ports the following applies:</p> <ul style="list-style-type: none"> • After the test, the equipment shall continue to operate as intended. No degradation of performance or loss of function is allowed below a permissible performance level specified by the manufacturer, when the equipment is used as intended. In some cases this permissible performance level may be replaced by a permissible loss of performance. • During the EMC exposure to an electromagnetic phenomenon, a degradation of performance is, however, allowed. No change of the actual mode of operation (e.g. unintended transmission) or stored data is allowed. • If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be deduced from the product description and documentation and what the user may reasonably expect from the equipment if used as intended.
<p>Performance criteria for equipment which does not provide a continuous communication link</p>	<p>For radio equipment which does not provide a continuous communication link, the performance criteria described in clauses 6.1 and 6.2 are not appropriate, in these cases the manufacturer shall declare, for inclusion in the test report, his own specification for an acceptable level of performance or degradation of performance during and/or after the immunity tests. The performance specification shall be included in the product description and documentation. The related specifications set out in clause 5.3 have also to be taken into account. The performance criteria specified by the manufacturer shall give the same degree of immunity protection as called for in clauses 6.1 and 6.2.</p>
<p>Performance criteria for ancillary equipment tested on a stand alone basis</p>	<p>If ancillary equipment is intended to be tested on a stand alone basis, the performance criteria described in clauses 6.1 and 6.2 are not appropriate, in these cases the manufacturer shall declare, for inclusion in the test report, his own specification for an acceptable level of performance or degradation of performance during and/or after the immunity tests. The performance specification shall be included in the product description and documentation. The related specifications set out in clause 5.3 have also to be taken into account. The performance criteria specified by the manufacturer shall give the same degree of immunity protection as called for in clauses 6.1 and 6.2.</p>

Performance Criteria	Description
CT	The performance criteria A shall apply. Tests shall be repeated with the EUT in standby mode (if applicable) to ensure that unintentional transmission does not occur. In systems using acknowledgement signals, it is recognized that an ACKnowledgement (ACK) or Not ACKnowledgement (NACK) transmission may occur, and steps should be taken to ensure that any transmission resulting from the application of the test is correctly interpreted.
TT	The performance criteria B shall apply, except for voltage dips of 100 ms and voltage interruptions of 5 000 ms duration, for which performance criteria C shall apply. Tests shall be repeated with the EUT in standby mode (if applicable) to ensure that unintentional transmission does not occur. In systems using acknowledgement signals, it is recognized that an acknowledgement (ACK) or not-acknowledgement (NACK) transmission may occur, and steps should be taken to ensure that any transmission resulting from the application of the test is correctly interpreted.
CR	The performance criteria A shall apply. Where the EUT is a transceiver, under no circumstances, shall the transmitter operate unintentionally during the test. In systems using acknowledgement signals, it is recognized that an ACK or NACK transmission may occur, and steps should be taken to ensure that any transmission resulting from the application of the test is correctly interpreted.
TR	The performance criteria B shall apply, except for voltage dips of 100 ms and voltage interruptions of 5 000 ms duration for which performance criteria C shall apply. Where the EUT is a transceiver, under no circumstances, shall the transmitter operate unintentionally during the test. In systems using acknowledgement signals, it is recognized that an ACK or NACK transmission may occur, and steps should be taken to ensure that any transmission resulting from the application of the test is correctly interpreted.

Note:

Criterion A applies for immunity tests with phenomena of a continuous nature. (CT, CR)

Criterion B applies for immunity tests with phenomena of a transient nature. (TT, TR)

Criterion C for immunity tests with power interruptions exceeding a certain time.

8.2.2 MINIMUM PERFORMANCE LEVEL

For equipment that supports a PER or FER, the minimum performance level shall be a PER or FER less than or equal to 10 %.

For equipment that does not support a PER or a FER, the minimum performance level shall be no loss of the wireless transmission function needed for the intended use of the equipment.

8.2.3 PERFORMANCE CRITERIA FOR CONTINUOUS PHENOMENA

The performance criteria A shall apply.

Where the EUT is a transmitter in standby mode, unintentional transmission shall not occur during the test.

Where the EUT is a transceiver in receive mode, unintentional transmission shall not occur during the test.

8.2.4 PERFORMANCE CRITERIA FOR TRANSIENT PHENOMENA

The performance criteria B shall apply, except for voltage dips greater than or equal to 100 ms and voltage interruptions of 5 000 ms duration, for which performance criteria C shall apply.

Where the EUT is a transmitter in standby mode, unintentional transmission shall not occur as a result of the application of the test.

Where the EUT is a transceiver in receive mode, unintentional transmission shall not occur as a result of the application of the test.

----- The following blanks -----

8.3 ELECTROSTATIC DISCHARGE(ESD)

8.3.1 TEST SPECIFICATION

Test Requirement:	ETSI EN 301 489-17 V3.2.4 /7.2.1 ETSI EN 301 489-1 V2.2.3/9.3
Test Method:	EN 61000-4-2
Discharge Impedance:	330 ohm / 150 pF
Discharge Voltage:	Air Discharge : ± 2 kV, ± 4 kV, ± 8 kV; Contact Discharge: ± 2 kV, ± 4 kV
Polarity:	Positive & Negative
Number of Discharge:	10 times at each test point
Discharge Mode:	Single Discharge 1 second

8.3.2 TEST PROCEDURE

The basic test procedure was in accordance with EN 61000-4-2:

The test generator necessary to perform direct and indirect application of discharges to the EUT in the following manner:

- (1) The test shall be performed with single discharges. On each pre-selected point at least 10 single discharges (in the most sensitive polarity) shall be applied.

NOTE 1 The minimum number of discharges applied is depending on the EUT; for products with synchronized circuits the number of discharges should be larger.

For the time interval between successive single discharges an initial value of 1 s is recommended. Longer intervals may be necessary to determine whether a system failure has occurred.

NOTE 2 The points to which the discharges should be applied may be selected by means of an exploration carried out at a repetition rate of 20 discharges per second, or more.

Vertical Coupling Plane (VCP):

The coupling plane, of dimensions 0.5m x 0.5m, is placed parallel to, and positioned at a distance 0.1m from, the EUT, with the Discharge Electrode touching the coupling plane.

The four faces of the EUT will be performed with electrostatic discharge.

Horizontal Coupling Plane (HCP):

The coupling plane is placed under to the EUT. The generator shall be positioned vertically at a distance of 0.1m from the EUT, with the Discharge Electrode touching the coupling plane.

The four faces of the EUT will be performed with electrostatic discharge.

- (2) Air discharges at insulation surfaces of the EUT.

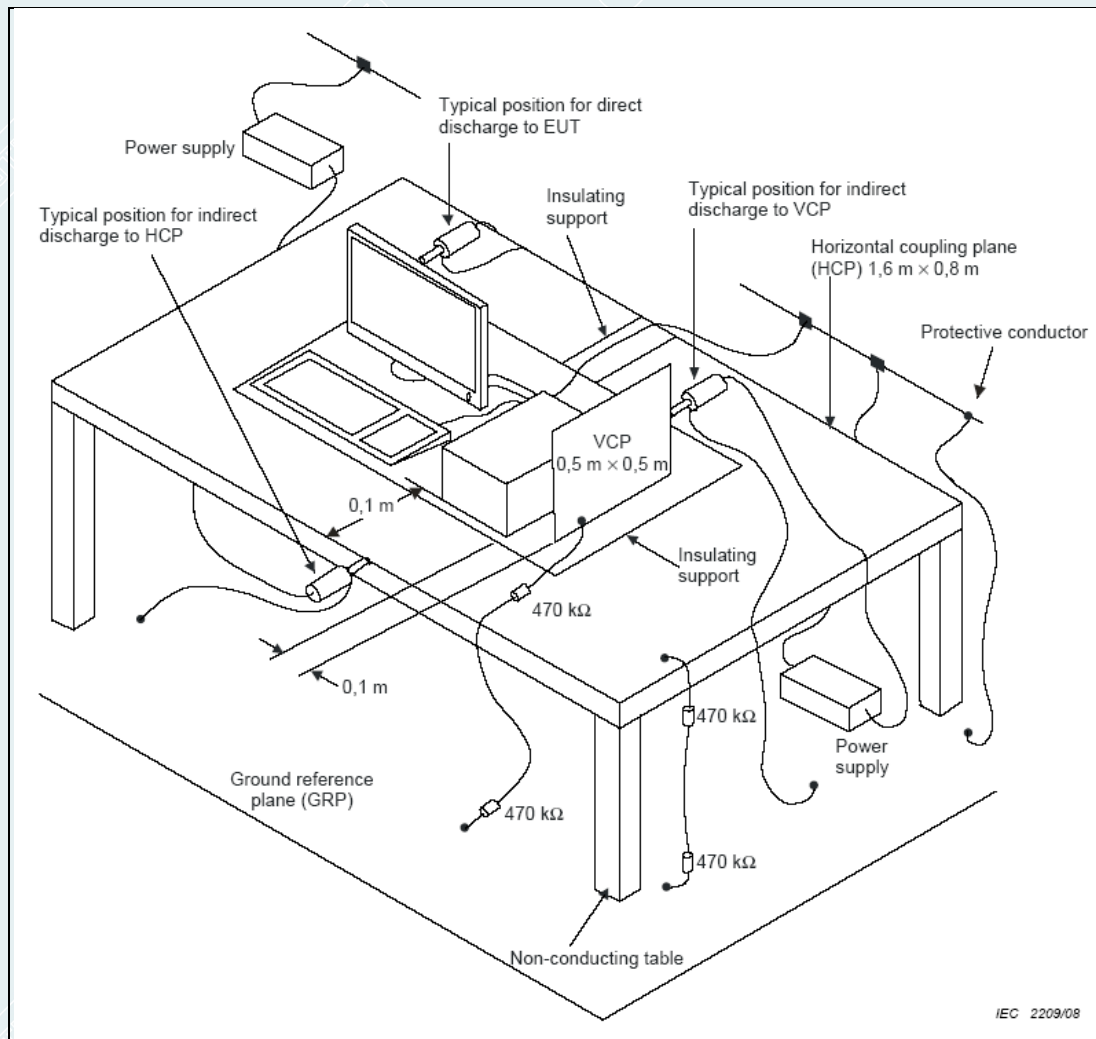
It was at least ten single discharges with positive and negative at the same selected point.

- (3) For TABLE-TOP equipment:

The configuration consisted of a wooden table 0.8 meters high standing on the Ground Reference Plane. The GRP consisted of a sheet of aluminum at least 0.25mm thick, and 2.5 meters square connected to the protective grounding system. A Horizontal Coupling Plane (1.6m x 0.8m) was placed on the table and attached to the GRP

by means of a cable with 940k total impedance. The equipment under test was installed in a representative system as described in EN 61000-4-2, and its cables were placed on the HCP and isolated by an insulating support of 0.5mm thickness. A distance of 1-meter minimum was provided between the EUT and the walls of the laboratory and any other metallic structure.

8.3.3 TEST SETUP



8.3.4 PHOTOGRAPH OF THE TEST ARRANGEMENT



Mode 1



Mode 2

8.3.5 TEST RESULTS

EUT Name	Smart Pet Feeder C1	Model	PETC1-M01
Environmental Conditions	25.5 °C/57%RH/101.0kPa	Test Mode	Mode 1
Power supply	DC 5V supply by adapter (AC 230V/50Hz)	Tested By	Jiang Tao
Test Date	2022-08-16	Sample No.	E20220613205901-0002

Discharge point	Discharge voltage	C-Conduct A-Air	Required Performance	Actual performance	Result
Vertical coupling plane	±2kV, ±4kV	C	Criterion B	Criterion A ¹⁾	PASS
Horizontal coupling plane	±2kV, ±4kV	C	Criterion B	Criterion A ¹⁾	PASS
Shell gaps	±2kV, ±4kV, ±8kV	A	Criterion B	Criterion A ¹⁾	PASS
Charging port	±2kV, ±4kV, ±8kV	A	Criterion B	Criterion A ¹⁾	PASS
Indicator light	±2kV, ±4kV, ±8kV	A	Criterion B	Criterion A ¹⁾	PASS
Keypad	±2kV, ±4kV, ±8kV	A	Criterion B	Criterion A ¹⁾	PASS
NOTE: ¹⁾ Before test, during the test, and after test, the EUT function is normal, Zigbee connection communication is normal, the recording is played properly.					

EUT Name	Smart Pet Feeder C1	Model	PETC1-M01
Environmental Conditions	25.5 °C/57%RH/101.0kPa	Test Mode	Mode 2
Power supply	DC 4.5V supply by battery	Tested By	Jiang Tao
Test Date	2022-08-16	Sample No.	E20220613205901-0002

Discharge point	Discharge voltage	C-Conduct A-Air	Required Performance	Actual performance	Result
Vertical coupling plane	±2kV, ±4kV	C	Criterion B	Criterion A ¹⁾	PASS
Horizontal coupling plane	±2kV, ±4kV	C	Criterion B	Criterion A ¹⁾	PASS
Shell gaps	±2kV, ±4kV, ±8kV	A	Criterion B	Criterion A ¹⁾	PASS
Charging port	±2kV, ±4kV, ±8kV	A	Criterion B	Criterion A ¹⁾	PASS
Indicator light	±2kV, ±4kV, ±8kV	A	Criterion B	Criterion A ¹⁾	PASS
Keypad	±2kV, ±4kV, ±8kV	A	Criterion B	Criterion A ¹⁾	PASS
NOTE: ¹⁾ Before test, during the test, and after test, the EUT function is normal, Zigbee connection communication is normal, the recording is played properly.					

8.4 RADIATED RADIO-FREQUENCY ELECTROMAGNETIC FIELD (RS)

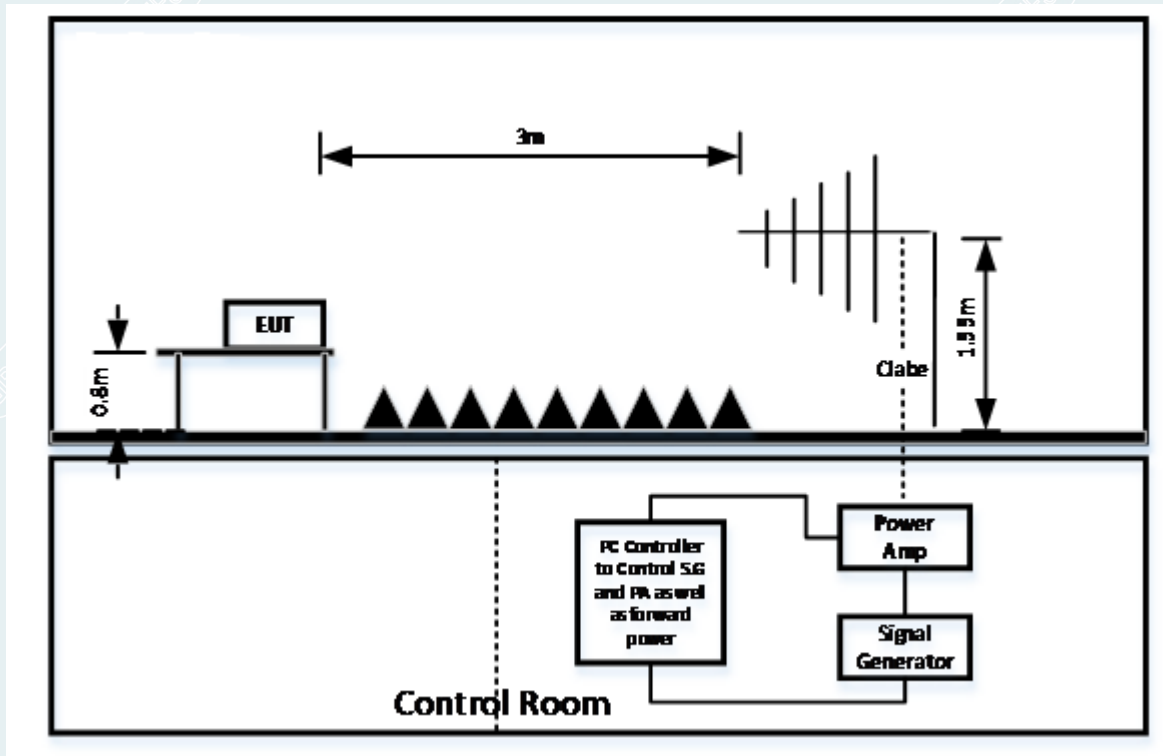
8.4.1 TEST SPECIFICATION

Test Requirement:	ETSI EN 301 489-17 V3.2.4 /7.2.1 ETSI EN 301 489-1 V2.2.3/9.2
Test Method:	EN 61000-4-3
Frequency Range:	ETSI EN 301 489-17, ETSI EN 301 489-1: 80MHz ~ 6000MHz
Field Strength:	3 V/m
Modulation:	1kHz Sine Wave, 80%, AM Modulation
Polarity of Antenna:	Horizontal and Vertical
Test Distance:	3 m
Antenna Height:	1.55m

8.4.2 TEST PROCEDURE

- (1) The testing is performed in a fully anechoic chamber. The transmit antenna was located at a distance of 3 meters from the EUT.
- (2) The frequency range is swept from 80 MHz ~6000 MHz, with the signal 80% amplitude modulated with a 1 kHz sine-wave. The rate of sweep did not exceed 1.5×10^{-3} decade/s, where the frequency range is swept incrementally; the step size is 1% of preceding frequency value.
- (3) The dwell time at each frequency shall be not less than the time necessary for the EUT to be able to respond.
- (4) The test is performed with the EUT exposed to both vertically and horizontally polarized fields on each of the four sides.

8.4.3 TEST SETUP



NOTE:

(1) Table-top equipment

The EUT installed in a representative system as described in section 7.1 of EN 61000-4-3 was placed on a non-conductive table 0.8 meters in height. The system under test was connected to the power and signal wire according to relevant installation instructions.

(2) Floor-standing equipment

The EUT installed in a representative system as described in section 7.2 of EN 61000-4-3 was placed on a non-conductive wood support 0.1 meters in height. The system under test was connected to the power and signal wire according to relevant installation instructions.

Note: the EUT is a Floor-standing equipment.

8.4.4 PHOTOGRAPH OF THE TEST ARRANGEMENT

80MHz~1000MHz (Mode 1)



1000MHz~6000MHz (Mode 1)



80MHz~1000MHz (Mode 2)



1000MHz~6000MHz (Mode 2)



8.4.5 TEST RESULTS

EUT Name	Smart Pet Feeder C1	Model	PETC1-M01
Environmental Conditions	24.5 °C/45%RH/101.0kPa	Test Mode	Mode 1
Power supply	DC 5V supply by adapter (AC 230V/50Hz)	Tested By	Wang Xinyuan
Test Date	2022-08-18	Sample No.	E20220613205901-0002

Frequency (MHz)	Field strength (V/m)	EUT orientation	Antenna polarization	Required criterion	Actual performance	Result
80~6000	3	Front	H	Criterion A	Criterion A ¹⁾	pass
			V	Criterion A	Criterion A ¹⁾	pass
		Left	H	Criterion A	Criterion A ¹⁾	pass
			V	Criterion A	Criterion A ¹⁾	pass
		Right	H	Criterion A	Criterion A ¹⁾	pass
			V	Criterion A	Criterion A ¹⁾	pass
Rear	H	Criterion A	Criterion A ¹⁾	pass		
	V	Criterion A	Criterion A ¹⁾	pass		

NOTE:¹⁾ Before test, during the test, and after test, the EUT function is normal,Zigbee connection communication is normal, the recording is played properly.

EUT Name	Smart Pet Feeder C1	Model	PETC1-M01
Environmental Conditions	24.5 °C/45%RH/101.0kPa	Test Mode	Mode 2
Power supply	DC 4.5V supply by battery	Tested By	Wang Xinyuan
Test Date	2022-08-18	Sample No.	E20220613205901-0002

Frequency (MHz)	Field strength (V/m)	EUT orientation	Antenna polarization	Required criterion	Actual performance	Result
80~6000	3	Front	H	Criterion A	Criterion A ¹⁾	pass
			V	Criterion A	Criterion A ¹⁾	pass
		Left	H	Criterion A	Criterion A ¹⁾	pass
			V	Criterion A	Criterion A ¹⁾	pass
		Right	H	Criterion A	Criterion A ¹⁾	pass
			V	Criterion A	Criterion A ¹⁾	pass
Rear	H	Criterion A	Criterion A ¹⁾	pass		
	V	Criterion A	Criterion A ¹⁾	pass		

NOTE:¹⁾ Before test, during the test, and after test, the EUT function is normal,Zigbee connection communication is normal, the recording is played properly.

8.5 ELECTRICAL FAST TRANSIENTS (EFT)

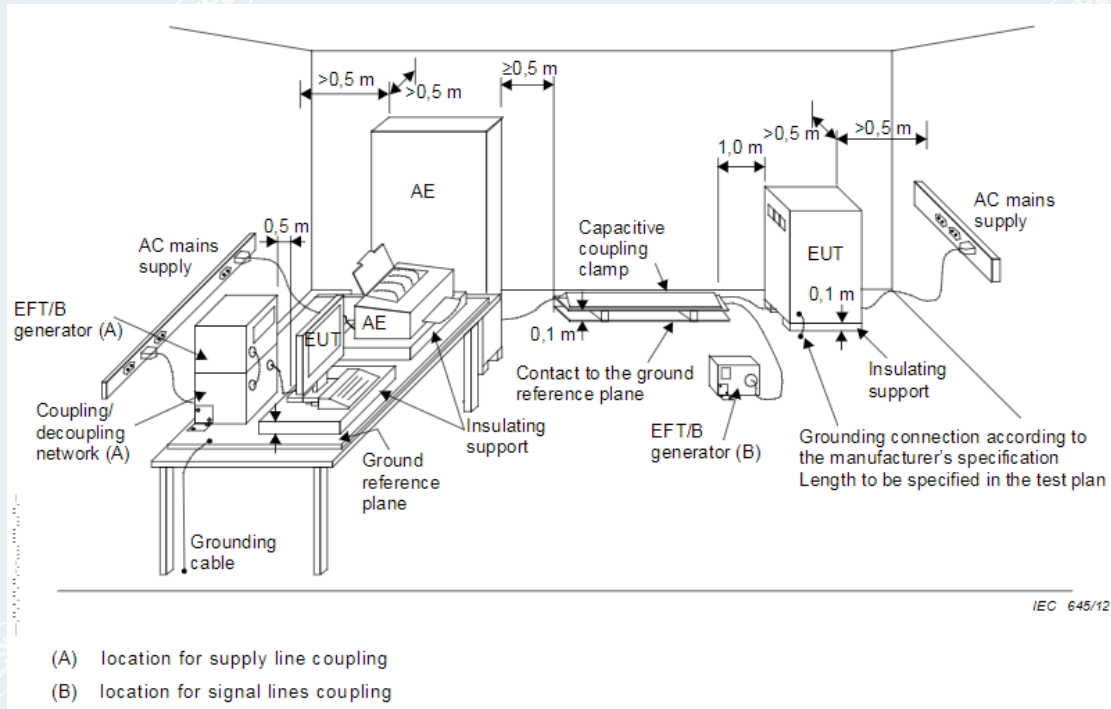
8.5.1 TEST SPECIFICATION

Test Requirement:	ETSI EN 301 489-17 V3.2.4 /7.2.1 ETSI EN 301 489-1 V2.2.3/9.4
Test Method:	EN 61000-4-4
Test Voltage:	AC power Port: ± 1 kV
Polarity:	Positive and Negative
Impulse Frequency:	5 kHz
Impulse Wave-shape:	5 ns/50ns for voltage
Burst Duration:	15 ms
Burst Period:	300 ms
Test Duration:	1 min for each polarity

8.5.2 TEST PROCEDURE

- (1) EUTs, whether stationary floor-mounted or table top, and equipment designed to be mounted in other configurations, shall be placed on a ground reference plane and shall be insulated from it by an insulating support $0.1 \text{ m} \pm 0.01 \text{ m}$ thick. The test generator and the coupling/ decoupling network shall be placed directly on, and bonded to, the ground reference plane.
- (2) The minimum distance between the EUT and all other conductive structures (e.g. the walls of a shielded room), except the ground reference plane shall be more than 0.5 m. If the manufacturer provides a non-detachable supply cable more than $0.5 \text{ m} \pm 0.05 \text{ m}$ long with the equipment, the excess length of this cable shall be folded to avoid a flat coil and situated at a distance of 0,1 m above the ground reference plane.
- (3) For input and AC power ports:
The EUT is connected to the power mains by using a coupling device which couples the EFT interference signal to AC power lines. Both polarities of the test voltage should be applied during compliance test and the duration of the test can't less than 1min.
- (4) The transient/burst waveform was in accordance with EN 61000-4-4, 5/50ns.

8.5.3 TEST SETUP



----- The following blanks -----

8.5.4 PHOTOGRAPH OF THE TEST ARRANGEMENT



Mode 1

----- The following blanks -----

8.5.5 TEST RESULTS

EUT Name	Smart Pet Feeder C1	Model	PETC1-M01
Environmental Conditions	25.5°C/57%RH/101.0kPa	Test Mode	Mode 1
Power supply	DC 5V supply by adapter (AC 230V/50Hz)	Tested By	Jiang Tao
Test Date	2022-08-16	Sample No.	E20220613205901-0002

Test Point	Polarity	Test Level (kV)	Required Performance	Actual performance	Result
L	+	1	Criterion B	Criterion A ¹⁾	PASS
	-	1	Criterion B	Criterion A ¹⁾	PASS
N	+	1	Criterion B	Criterion A ¹⁾	PASS
	-	1	Criterion B	Criterion A ¹⁾	PASS
L-N	+	1	Criterion B	Criterion A ¹⁾	PASS
	-	1	Criterion B	Criterion A ¹⁾	PASS

NOTE: ¹⁾ Before test, during the test, and after test, the EUT function is normal,Zigbee connection communication is normal, the recording is played properly.

----- The following blanks -----

8.6 SURGES

8.6.1 TEST SPECIFICATION

Test Requirement:	ETSI EN 301 489-17 V3.2.4 /7.2.1 ETSI EN 301 489-1 V2.2.3/9.8
Test Method:	EN 61000-4-5
Wave-Shape:	AC power supply port: 1.2/50(8/20) Tr/Th μ s combination wave
Test Voltage:	AC Port: line to line: ± 1 kV Performance Criterion B
Generator Source Impedance:	AC power supply port: Line to line 2ohm, Line to PE 12ohm
Polarity:	Positive and Negative
Phase Angle:	ETSI EN 301 489-17/ETSI EN 301 489-1: 0 °, 90 °, 180 °, 270 °
Pulse Repetition Rate:	1 minute
Number of tests:	5 positive and 5 negative at the selected points

8.6.2 TEST PROCEDURE

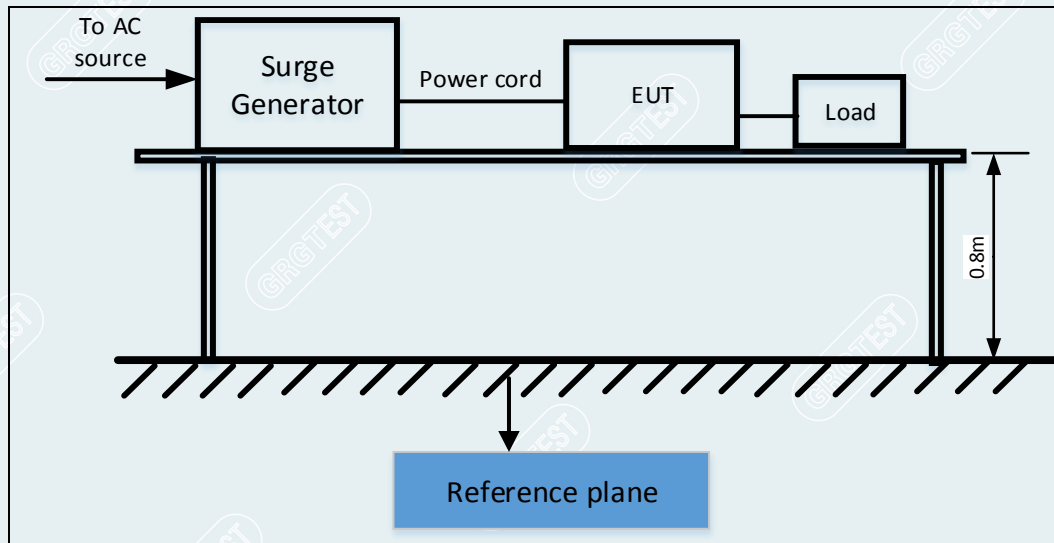
(1) For EUT power supply:

The surge is applied to the EUT power supply terminals via the capacitive coupling network. Decoupling networks are required in order to avoid possible adverse effects on equipment not under test that may be powered by the same lines, and to provide sufficient decoupling impedance to the surge wave. The power cord between the EUT and the coupling/decoupling networks was shorter than 2 meters in length.

(2) For test applied to unshielded un-symmetrically operated interconnection lines of EUT: The surge was applied to the lines via the capacitive coupling. The coupling / decoupling networks didn't influence the specified functional conditions of the EUT. The interconnection line between the EUT and the coupling/decoupling networks was shorter than 2 meters in length.

(3) For test applied to unshielded symmetrically operated interconnection / telecommunication lines of EUT: The surge was applied to the lines via gas arrestors coupling. Test levels below the ignition point of the coupling arrestors were not specified. The interconnection line between the EUT and the coupling/decoupling networks was shorter than 2 meters in length.

8.6.3 TEST SETUP



----- The following blanks -----

8.6.4 PHOTOGRAPH OF THE TEST ARRANGEMENT



Mode 1

----- The following blanks -----

8.6.5 TEST RESULTS

EUT Name	Smart Pet Feeder C1	Model	PETC1-M01
Environmental Conditions	25.5°C/57%RH/101.0kPa	Test Mode	Mode 1
Power supply	DC 5V supply by adapter (AC 230V/50Hz)	Tested By	Jiang Tao
Test Date	2022-08-16	Sample No.	E20220613205901-0002

Test port	Polarity	Test Level	Phase	Required Performance	Actual performance	Result
L-N	+/-	1kV	0°	Criterion B	Criterion A ¹⁾	PASS
	+/-	1kV	90°	Criterion B	Criterion A ¹⁾	PASS
	+/-	1kV	180°	Criterion B	Criterion A ¹⁾	PASS
	+/-	1kV	270°	Criterion B	Criterion A ¹⁾	PASS

NOTE: ¹⁾ Before test, during the test, and after test, the EUT function is normal,Zigbee connection communication is normal, the recording is played properly.

----- The following blanks -----

8.7 RADIO FREQUENCY CONTINUOUS CONDUCTED (CS)

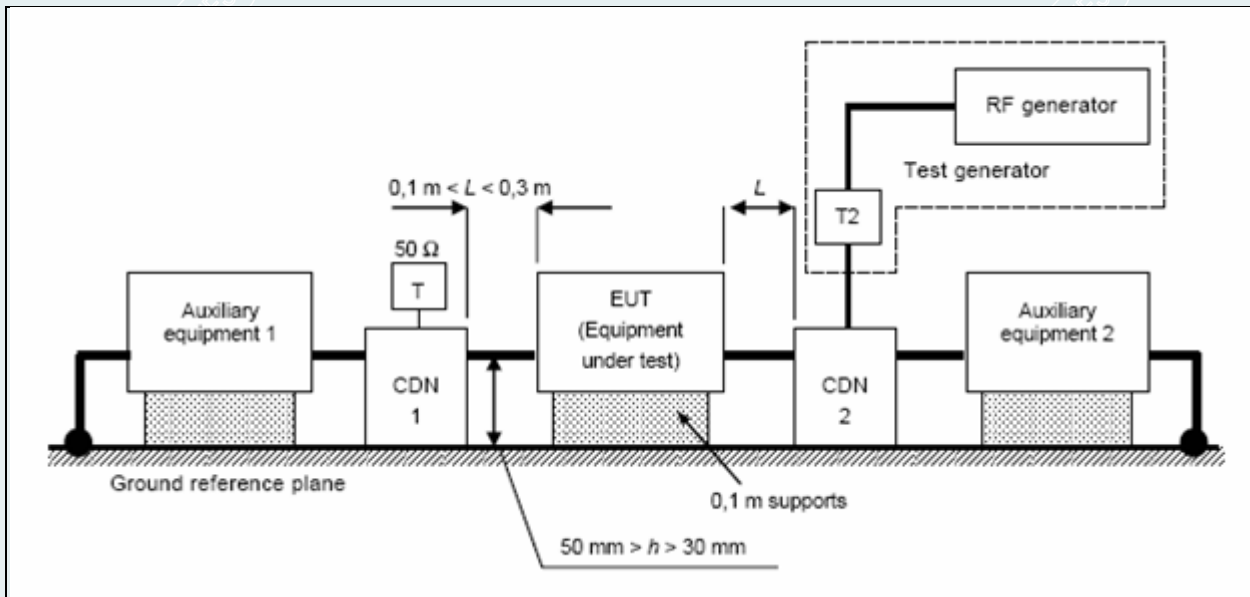
8.7.1 TEST SPECIFICATION

Test Requirement:	ETSI EN 301 489-17 V3.2.4 /7.2.1 ETSI EN 301 489-1 V2.2.3/9.5
Test Method:	EN 61000-4-6
Frequency Range:	0.15 MHz~80 MHz
Field Strength:	EN 301 489-1/ EN 301 489-17: 3V (r.m.s), 80%, 1kHz
Modulation:	1 kHz, 80% AM
Frequency Step:	1% of the preceding frequency value
Dwell Time:	2s

8.7.2 TEST PROCEDURE

- (1) Set up the EUT, CDN and Injection clamp as shown on Section 8.7.3
- (2) Let the EUT work in test mode and measure it.
- (3) The EUT are placed on an insulating support 0.1m high above a ground reference plane. CDN (coupling and decoupling device) is placed on the ground plane about 0.3m from EUT. Cables between CDN and EUT are as short as possible, and their height above the ground reference plane shall be between 30 and 50 mm (where possible).
- (4) The disturbance signal described below is injected to EUT through CDN.
- (5) The EUT operates within its operational mode(s) under intended climatic conditions after power on.
- (6) The frequency range is swept from 150 kHz to 80MHz using 3V signal level, and with the disturbance signal 80% amplitude modulated with a 1 kHz sine wave.
- (7) The rate of sweep shall not exceed 1.5×10^{-3} decades/s. Where the frequency is swept incrementally, the step size shall not exceed 1% of the start and thereafter 1% of the preceding frequency value.
- (8) Recording the EUT operating situation during compliance testing and decide the EUT immunity criterion.

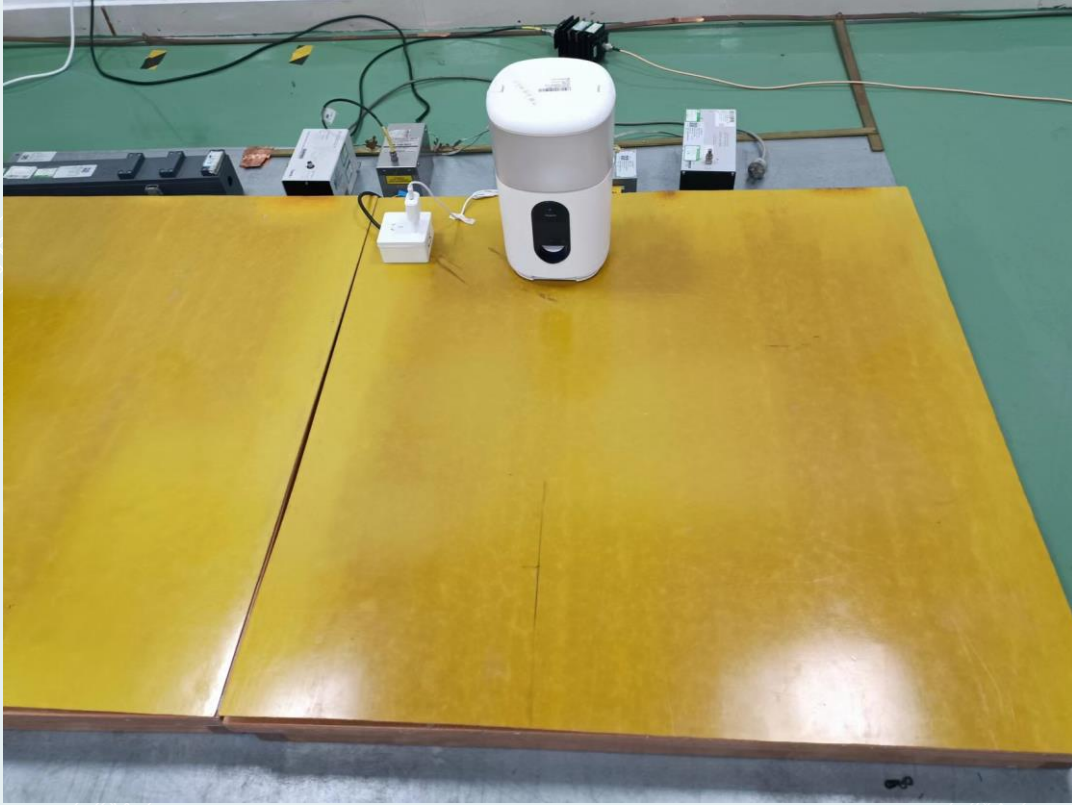
8.7.3 TEST SETUP



----- The following blanks -----

8.7.4 PHOTOGRAPH OF THE TEST ARRANGEMENT

Mode 1



----- The following blanks -----

8.7.5 TEST RESULTS

EUT Name	Smart Pet Feeder C1	Model	PETC1-M01
Environmental Conditions	25.5°C/57%RH/101.0kPa	Test Mode	Mode 1
Power supply	DC 5V supply by adapter (AC 230V/50Hz)	Tested By	Jiang Tao
Test Date	2022-08-16	Sample No.	E20220613205901-0002

Test Ports	Frequency Band(MHz)	Field Strength (Vrms)	Injection Method	Required Performance	Actual performance	Result
Power port	0.15~80	3	CDN	Criterion A	Criterion A ¹⁾	Pass

NOTE: ¹⁾ Before test, during the test, and after test, the EUT function is normal,Zigbee connection communication is normal, the recording is played properly.

----- The following blanks -----

8.8 VOLTAGE DIPS & SHORT INTERRUPTIONS

8.8.1 TEST SPECIFICATION

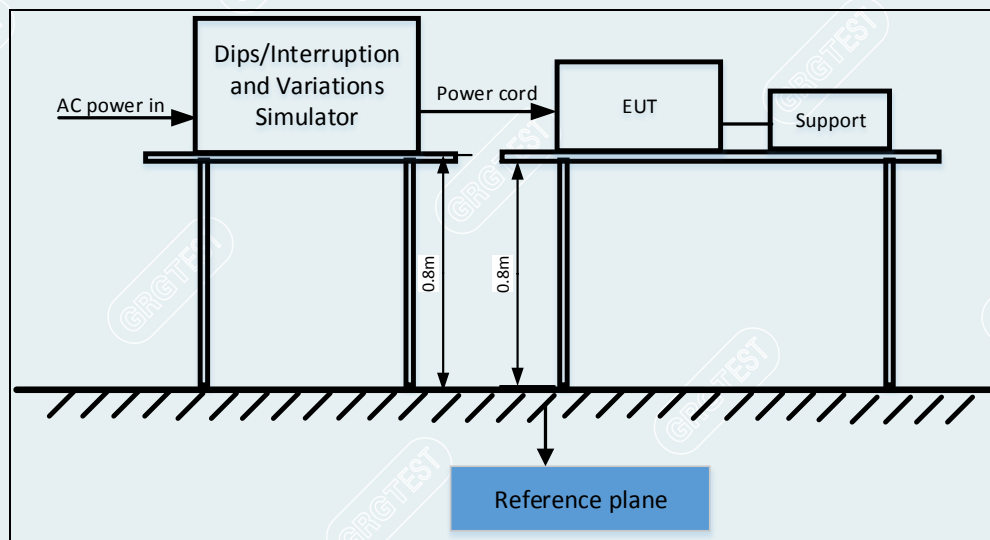
Test Requirement:	ETSI EN 301 489-17 V3.2.4 /7.2.1 ETSI EN 301 489-1 V2.2.3/9.7
Test Method:	EN 61000-4-11
Test duration time:	ETSI EN 301 489-17/ETSI EN 301 489-1 Test specification: 1. Voltage dips: i)0% residual voltage 0.5 cycle. Performance: Criteria B; ii) 0% residual voltage 1 cycle, Performance: Criteria B; iii)70% residual voltage 25 cycle. Performance: Criteria B; 2. Voltage interruption: 0% residual voltage during 250 cycles. Performance: Criteria C;
Interval between event:	10s for each dips at each test angle
Phase Angle:	EN 301 489-1/ EN 301 489-17: 0°, 180°
Test cycle:	3

----- The following blanks -----

8.8.2 TEST PROCEDURE

- (1) The EUT and test generator were setup as shown on Section
- (2) The interruption is introduced at selected phase angles with specified duration.
- (3) Record any degradation of performance.

8.8.3 TEST SETUP



----- The following blanks -----

8.8.4 PHOTOGRAPH OF THE TEST ARRANGEMENT



----- The following blanks -----

8.8.5 TEST RESULTS

EUT Name	Smart Pet Feeder C1	Model	PETC1-M01
Environmental Conditions	25.5 °C/57%RH/101.0kPa	Test Mode	Mode 1
Power supply	DC 5V supply by adapter (AC 230V/50Hz)	Tested By	Jiang Tao
Test Date	2022-08-16	Sample No.	E20220613205901-0002

Voltage(%Residual)		Duration (Period)	Angle	Required Performance	Actual performance	Result
Voltage dips	0	0.5	0 °, 180 °	Criterion B	Criterion A ¹⁾	PASS
	0	1	0 °, 180 °	Criterion B	Criterion A ¹⁾	PASS
	70	25	0 °, 180 °	Criterion B	Criterion A ¹⁾	PASS
Voltage interruptions	0	250	0 °, 180 °	Criterion C	Criterion B ²⁾	PASS

NOTE: ¹⁾ Before test, during the test, and after test, the EUT function is normal,Zigbee connection communication is normal, the recording is played properly.

²⁾Before the test, and after test, the the EUT function is normal. Zigbee connection communication is normal,During the test, the power is interrupted. And it can restore normally by itself.

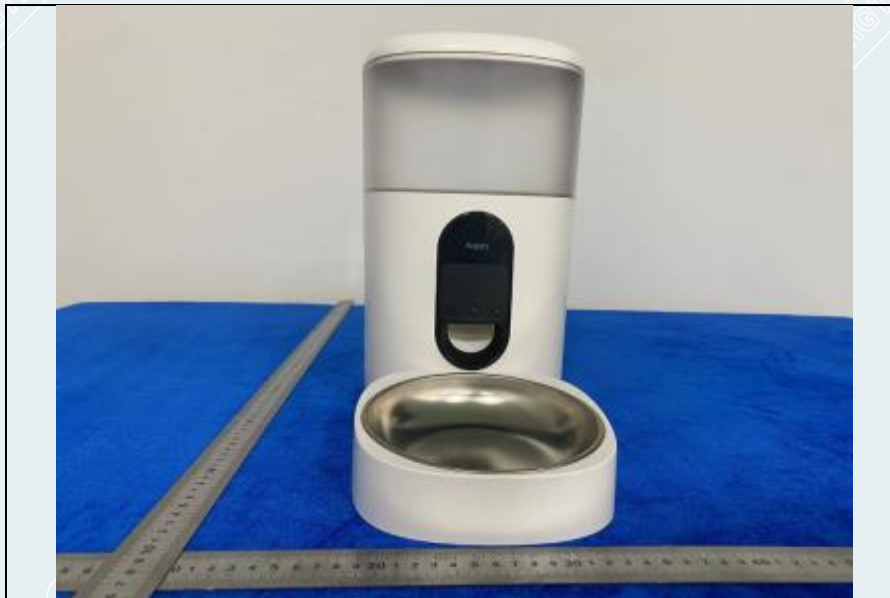
----- The following blanks -----

APPENDIX A. PHOTOGRAPHS OF EUT

External Photos of EUT



EUT-1



EUT-2



EUT-3



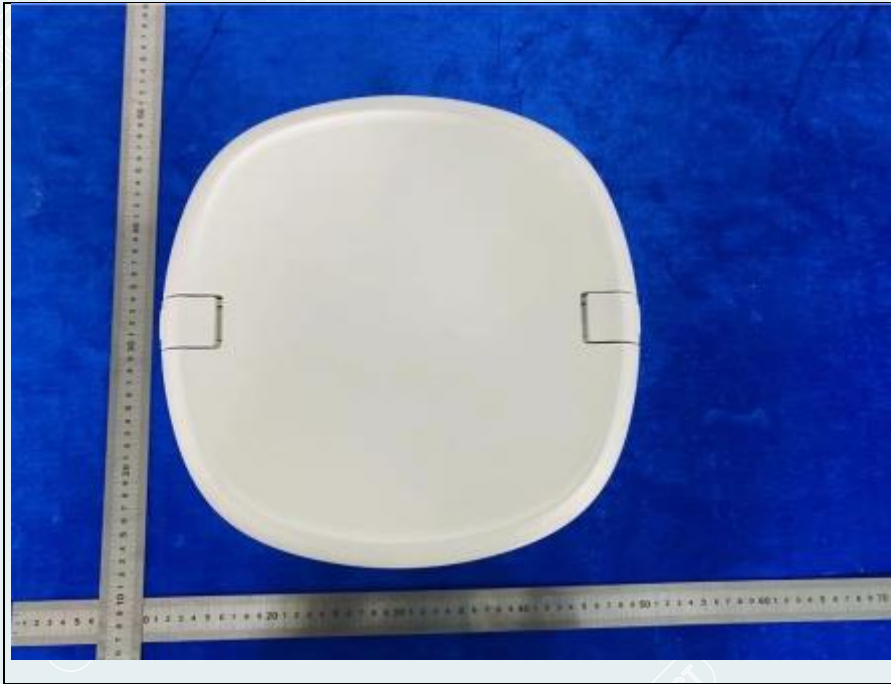
EUT-4



EUT-5



EUT-6



EUT-7



EUT-8



EUT-9



EUT-10



EUT-11



EUT-12

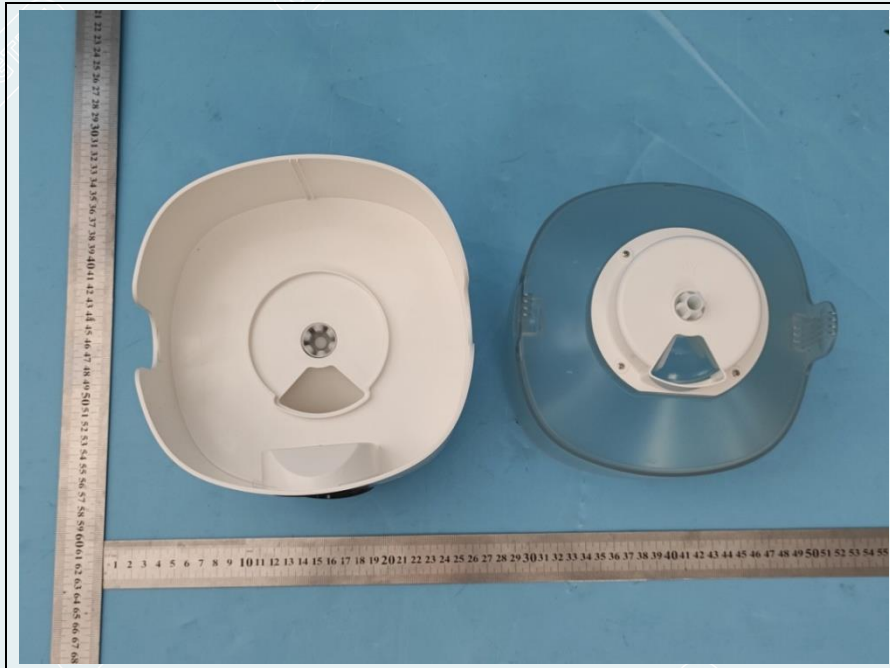
Internal Photos of EUT



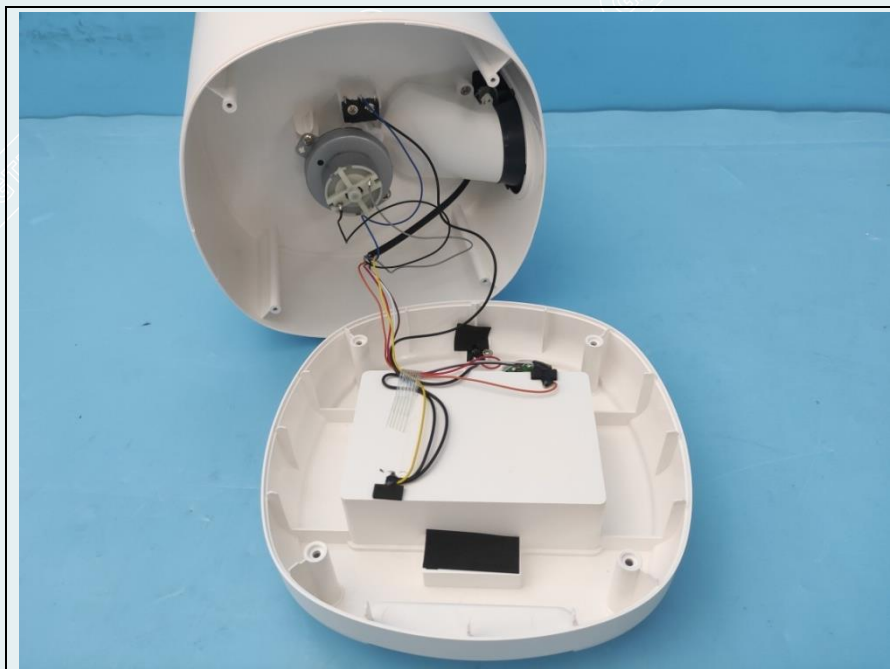
EUT-1



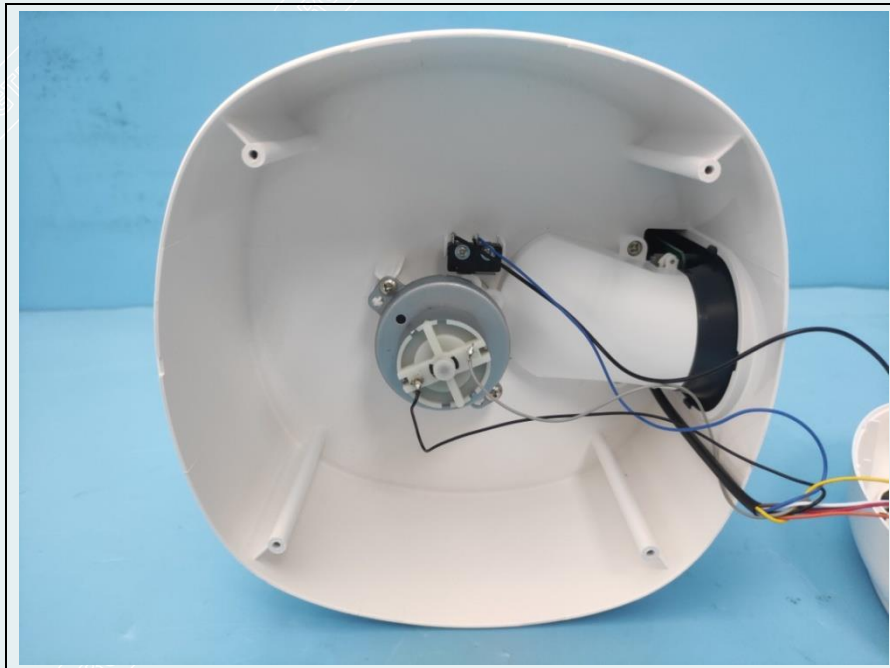
EUT-2



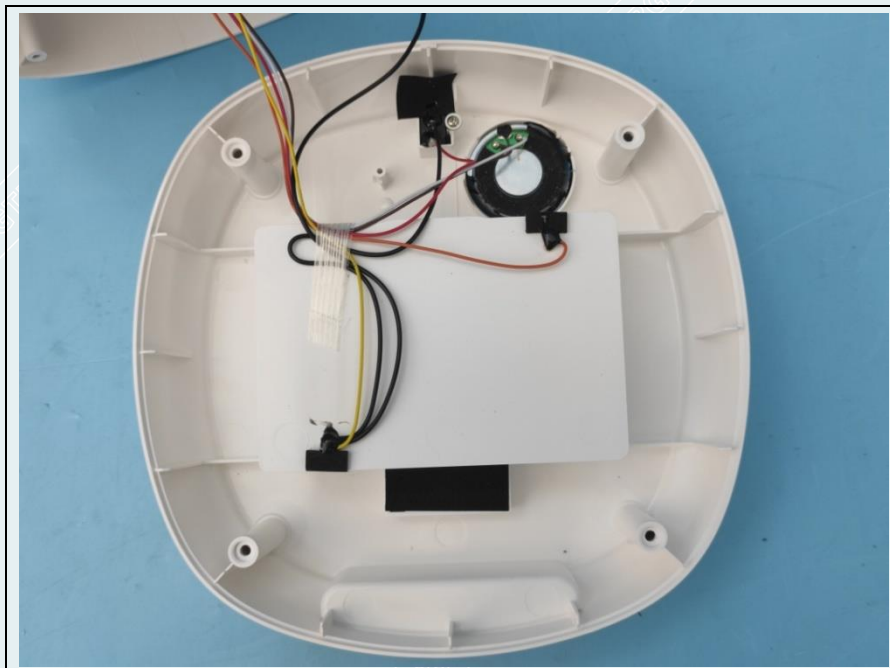
EUT-3



EUT-4



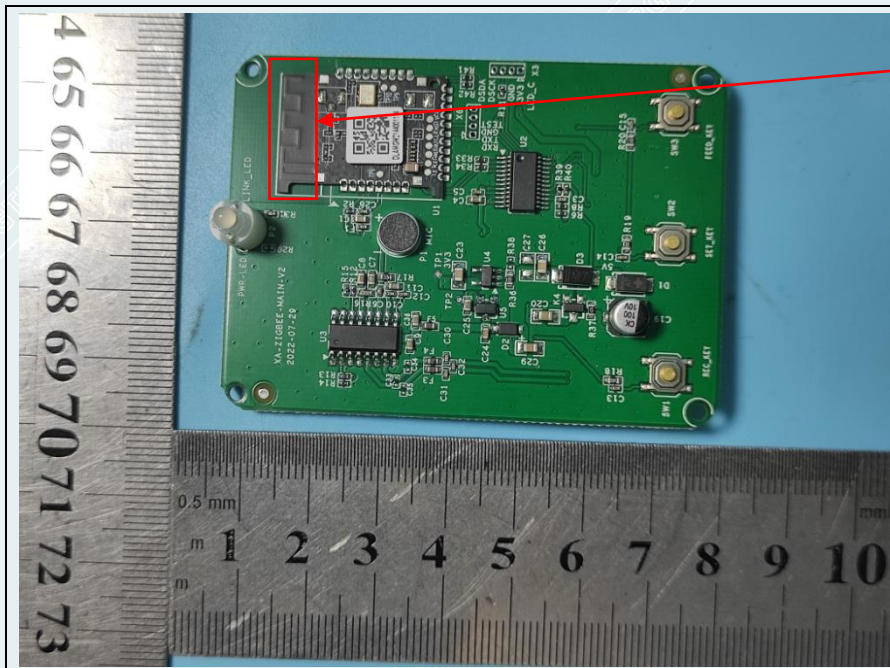
EUT-5



EUT-6

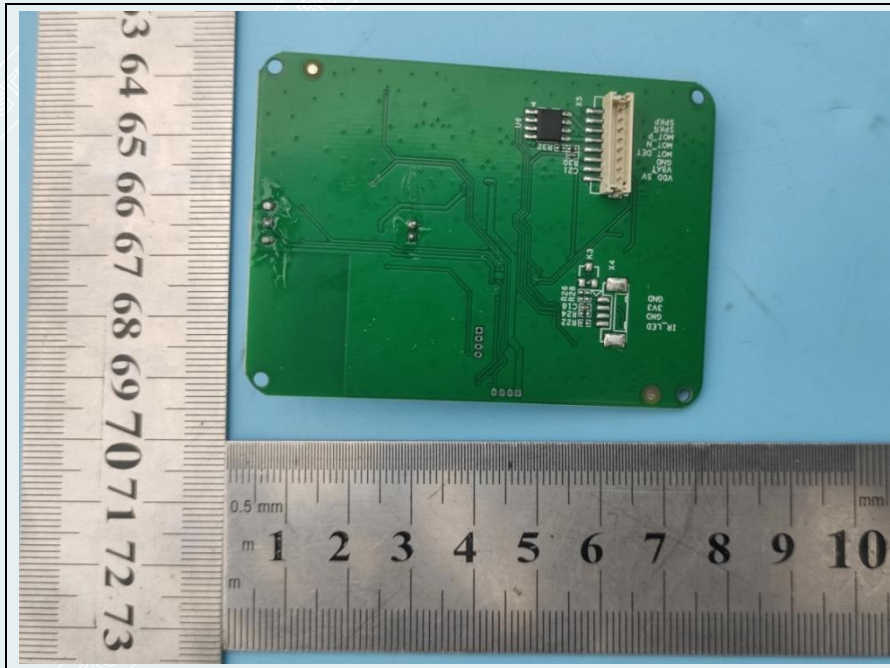


EUT-7

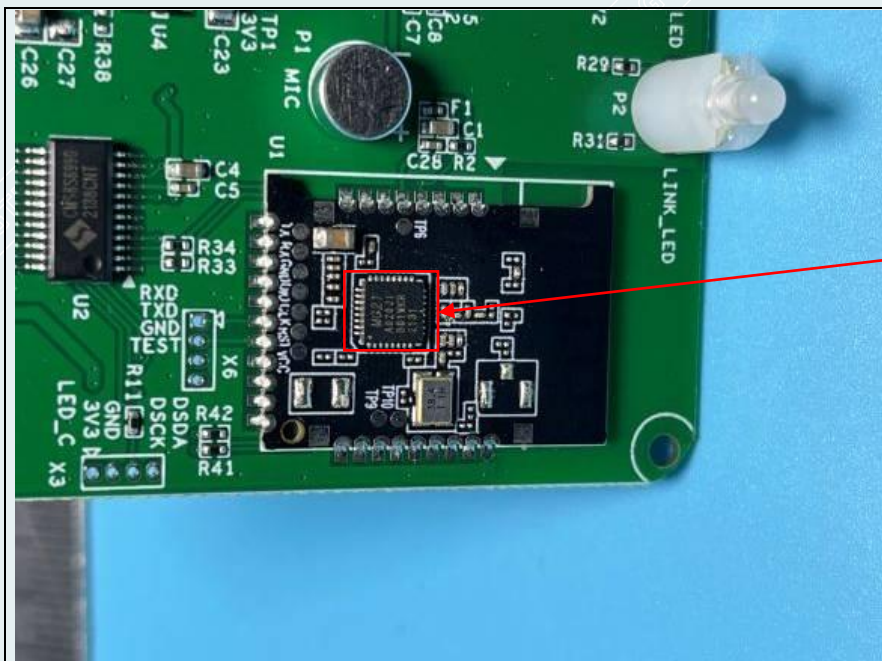


Zigbee antenna

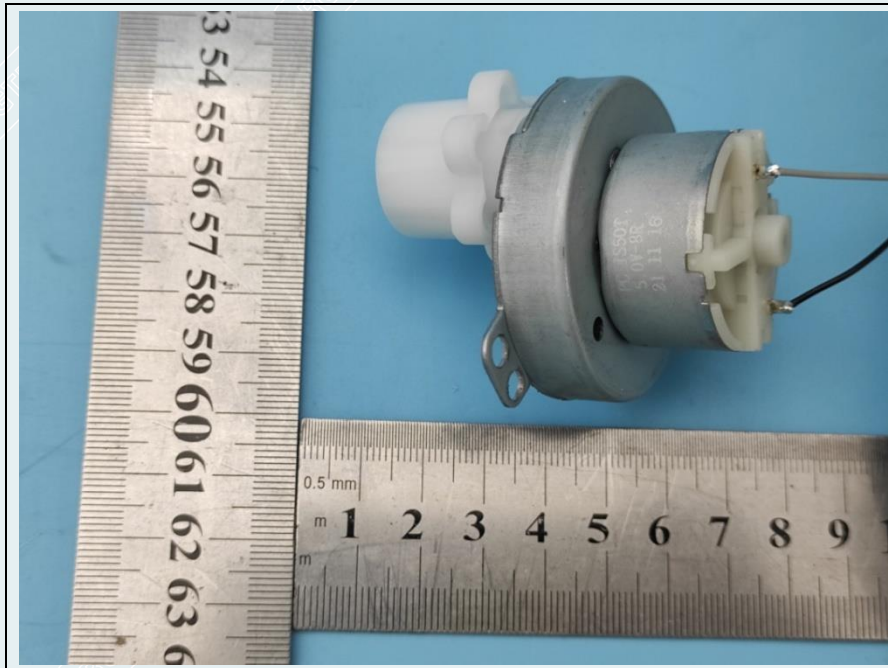
EUT-8



EUT-9



EUT-10



EUT-11

----- End of Report -----

