Certificate – Сертификат – 證明書 – Certificat – 증명서

Certificate No. : HUAX240816001KC

huaxiang

Certificate of Conformity

Certificate's Holder	:	**Dongguan Yinghua Huizhi Technology Co., LTD**
Address	:	403,Building 2,NO.3 Taixing Rosd,Shigu,Tangxia Town,Dongguan City,Guangdong Province
Manufacturer	:	**Dongguan Yinghua Huizhi Technology Co., LTD**
Address	:	403,Building 2,NO.3 Taixing Rosd,Shigu,Tangxia Town,Dongguan City,Guangdong Province
Product Name	:	**Ultrasonic dog repeller**
Product Model (S)	:	QG-03, QG-01, QG-02, QG-04, QG-05, QG-06, QG-07, QG-08, QG-09, QG-10
Trade Mark	:	N/A
Related Standard(s) :		**EN IEC 55014-1: 2021** **EN IEC 55014-2: 2021**
Report No.	:	**HUAX240816001KR**

The EUT described above has been tested by us with the listed standards and found in compliance with the council EMC Directive 2014/30/EU. It is possible to use CE marking to demonstrate the compliance with this EMC Directive

CE

Shenzhen Huaxiang Testing Co., LTD. IMPARTIAL Approved

Aug. 20, 2024

Certification Manager

Shenzhen Huaxiang Testing Co., Ltd
201, Building A10, Fuhai Information Port, Xinhe Community, Fuhai Street, Bao'an District, Shenzhen City, Guangdong Province, China Web.:Http:// www.hua-x.com
E-mail: huaxiang@hua-x.com Tel.:+86-0755-23010432

EMC TEST REPORT

On Behalf of

Product Name:	Ultrasonic dog repeller
Trademark:	N/A
Model Number:	QG-03, QG-01, QG-02, QG-04, QG-05, QG-06, QG-07, QG-08, QG-09, QG-10
Prepared For:	Dongguan Yinghua Huizhi Technology Co., LTD
Address:	403,Building 2,NO.3 Taixing Rosd,Shigu,Tangxia Town,Dongguan City,Guangdong Province
Prepared By:	Shenzhen Huaxiang Testing Co , Ltd
Address:	201, Building A10, Fuhai Information Port, Fuhai Street, Bao'an District, Shenzhen City
Report No.:	HUAX240816001KR

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TEST REPORT DECLARATION

Applicant	:	**Dongguan Yinghua Huizhi Technology Co., LTD**
Address :	:	403,Building 2,NO.3 Taixing Rosd,Shigu,Tangxia Town,Dongguan City,Guangdong Province
Manufacturer:	:	**Dongguan Yinghua Huizhi Technology Co., LTD**
Address :	:	403,Building 2,NO.3 Taixing Rosd,Shigu,Tangxia Town,Dongguan City,Guangdong Province
EUT Description :	:	**Ultrasonic dog repeller**
Model Number	:	QG-03,
Test Date		Aug. 14, 2024 – Aug. 20, 2024
Date of Report		Aug. 20, 2024

Test Standards:

EN IEC 55014-1: 2021
EN IEC 55014-2: 2021

The EUT described above is tested by Huaxiang Testing Co., Ltd. EMC Laboratory to determine the maximum emissions from the EUT and ensure the EUT to be compliance with the immunity requirements of the EUT. Shenzhen Huaxiang Testing Co , Ltd. is assumed full responsibility for the accuracy of the test results. Also, this report shows that the EUT technically complies with the2014/30/EU directive and its amendment requirements.
The test report is valid for above tested sample only and shall not be reproduced in part without written approval of the laboratory.

Prepared by(Test Engineer): Kevin Su

Approved(Manager): Amy Jiang

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant:	Dongguan Yinghua Huizhi Technology Co., LTD
Address of applicant:	403,Building 2,NO.3 Taixing Rosd,Shigu,Tangxia Town,Dongguan City,Guangdong Province
Manufacturer:	Dongguan Yinghua Huizhi Technology Co., LTD
Address of manufacturer:	403,Building 2,NO.3 Taixing Rosd,Shigu,Tangxia Town,Dongguan City,Guangdong Province

General Description of E.U.T

EUT Description:	Ultrasonic dog repeller
Trade Mark:	N/A
EUT Model No.:	QG-03,
Rating:	DC 5V 1A
Test Voltage:	DC 5V

Remark:

- The test data gathered are from the production sample provided by the manufacturer.
- The length of power line is 1.8m

1.2 Test Standards

The following Declaration of Conformity report of EUT is prepared in accordance with

EN IEC 55014-1: 2021

EN IEC 55014-2: 2021

The objective of the manufacturer is to demonstrate compliance with the described standards above.

1.3 Test Summary

For the EUT described above. This apparatus is subdivided into category II according to the section 4.2 of EN IEC 55014-2: 2021. So according to section 7.2.2 of this standard, the immunity test item applicable to this EUT is listed in table 3.

Table 1: Tests Carried Out Under EN IEC 55014-1: 2021 (as amended)

Standard	Test Items	Test Result
EN IEC 55014-1: 2021	Conducted Emission, 150kHz to 30MHz	PASS
EN IEC 55014-1: 2021	Disturbance Power (30MHz To 300MHz)	N/A
EN IEC 55014-1: 2021	Click	N/A

√ Indicates that the test is applicable
× Indicates that the test is not applicable

Table 2: Tests Carried Out Under EN IEC 55014-2: 2021

Standard	Test Items	Test Result
EN 61000-4-2: 2009	Electrostatic discharge Immunity	PASS
EN 61000-4-3: 2006 +A1:2008+A2:2010	Radiated Susceptibility (80MHz to 1GHz)	N/A
EN 61000-4-4: 2004+A1:2010	Electrical Fast Transient/Burst Immunity	N/A
EN 61000-4-5: 2006	Surge Immunity	N/A
EN 61000-4-6: 2009	Conducted Susceptibility (150kHz to 230MHz)	N/A
EN 61000-4-11: 2004	Voltage Dips, Short Interruptions Immunity	N/A

√ Indicates that the test is applicable
× Indicates that the test is not applicable

1.4 Test Methodology

All measurements contained in this report were conducted with CISPR 16-1, radio disturbance and immunity measuring apparatus, and CISPR16-2, Method of measurement of disturbances and immunity.

All measurement required was performed at laboratory of Shenzhen Huaxiang Testing Co , Ltd. .

1.5 Test Facility

The test facility is recognized, certified, or accredited by the following comanizations:

EMC Lab. : Accredited by FCC (Federal Communications Commission)

The Laboratory has been assessed according to the requirements ISO/IEC 17025.

Name of Firm : Shenzhen Huaxiang Testing Co , Ltd. .

The facility also complies with the radiated and AC line conducted test site criteria set forth in CISPR 16-1, CISPR16-2.

1.6 Test Equipment List and Details

Table 1: Test Equipment for Emission Test and Harmonic Current / Flicker Test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal	Calibration Period
Ultra-Broadband Antenna	ROHDE & SCHWARZ	HL562	100015	Nov. 20, 2023	1 year
EMI Test Receiver	ROHDE & SCHWARZ	ESI 26	100009	Nov. 20, 2023	1 year
RF Test Panel	ROHDE & SCHWARZ	TS / RSP	335015/ 0017	N/A	N/A
Turntable	ETS	2088	2149	N/A	N/A
Antenna Mast	ETS	2075	2346	N/A	N/A
EMI Test Receiver	ROHDE & SCHWARZ	ESCS30	100038	Nov. 20, 2023	1 year
Artificial Mains	ROHDE & SCHWARZ	ESH2-Z5	100028	Nov. 20, 2023	1 year
Pulse Limiter	ROHDE & SCHWARZ	ESHSZ2	100044	Nov. 20, 2023	1 year
Absorbing Clamp	ROHDE & SCHWARZ	MDS-21	100011	Nov. 20, 2023	1 year
EMI In Motion	HD	KMS 560	560/385 BJ:01	N/A	N/A
Controller	HD	HD 050	050/477 BJ:01	N/A	N/A
Purified Power Source	CALIFORNIA INSTRUMENTS	HFS500	54513	Nov. 20, 2023	1 year
Harmonic And Flicker Analyzer	EM TEST	DPA503S1	0500-10	Nov. 20, 2023	1 year

Table 2: Test Equipment for Immunity Test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal	Calibration Period
ESD Simulator	EM TEST	DITOC0103Z	0301-04	Nov. 20, 2023	1 year
Signal Generator	IFR	2032	203002/100	Nov. 20, 2023	1 year
Amplifier	AR	150W1000	301584	Nov. 20, 2023	1 year
Dual Directional Coupler	AR	DC6080	301508	Nov. 20, 2023	1 year
Power Head	AR	PH2000	301193	Nov. 20, 2023	1 year
Power Meter	AR	PM2002	302799	Nov. 20, 2023	1 year
Ultra Compact Simulator	EM TEST	UCS500M6	0500-19	Nov. 20, 2023	1 year
Signal Generator	IFR	2023A	202304/060	Nov. 20, 2023	1 year
Amplifier	AR	75A250	302205	Nov. 20, 2023	1 year
Dual Directional Coupler	AR	DC2600	302389	Nov. 20, 2023	1 year
6DB Attenuator	EMTEST	ATT6/75	0010230A	Nov. 20, 2023	1 year
CDN	EMTEST	CDN M3	0802-03	Nov. 20, 2023	1 year
Ultra Compact Simulator	EM TEST	UCS500M6	0500-19	Nov. 20, 2023	1 year
Motor Driven Voltage Transformer	EM TEST	MV2616	0301-11	Nov. 20, 2023	1 year
Current Transformer	EM TEST	MC2630	D5101	Nov. 20, 2023	1 year
Magnetic Coil	EM TEST	MS100	0500-19	Nov. 20, 2023	1 year

2. SYSTEM TEST CONFIGURATION

2.1 Justification

The system was configured for testing in a typical fashion (as normally used by a typical user).

2.2 EUT Exercise Software

The EUT exercising program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use. The software offered by manufacture, can let the EUT being normal operation.

2.3 Special Accessories

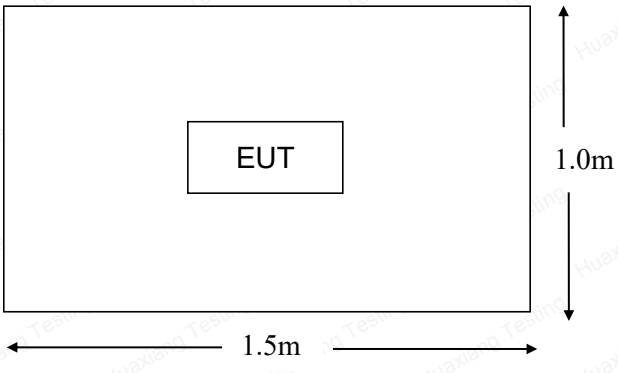
As shown in section 2.5, interface cable used for compliance testing is shielded as normally supplied by Dongguan Yinghua Huizhi Technology Co., LTD. and its respective support equipment manufacturers.

2.4 Equipment Modifications

The EUT tested was not modified by HSO.

2.5 Configuration of Test System

2.6 Test Setup Diagram



3. DISTURBANCE VOLTAGE AT THE MAINS TERMINALS

3.1 Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, and LISN.

The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is ±2.4 dB.

3.2 Limit of Disturbance Voltage At The Mains Terminals

Frequency Range (MHz)	Limits (dBuV)	
	Quasi-Peak	Average
0.150～0.500	66～56	56～46
0.500～5.000	56	46
5.000～30.00	60	50

Note: (1) The tighter limit shall apply at the edge between two frequency bands.

3.3 EUT Setup

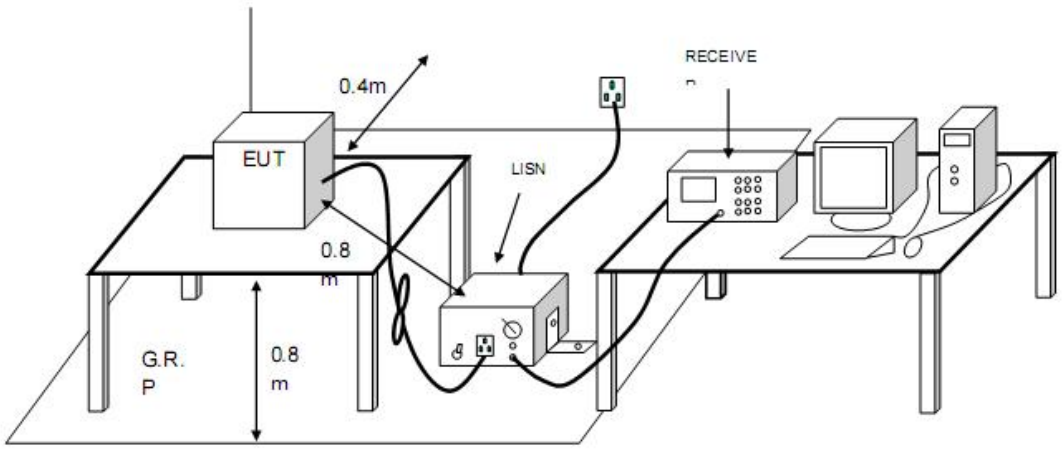
The setup of EUT is according with CISPR 16-1, CISPR16-2 measurement procedure. The specification used was the EN 55014-1 limits.

The EUT was placed center and the back edge of the test table.

The AV cables were draped along the test table and bundled to 30-40cm in the middle.

The spacing between the peripherals was 10 cm.

Maximum emission emitted from EUT was determined by manipulating the EUT, support equipment, interconnecting cables and varying the mode of operation and the levels in the final result of the test were recorded with the EUT running in the operating mode that maximum emission was emitted.



3.4 Instruments Setup

The test receiver was set with the following configurations:

Test Receiver Setting:

Frequency Range……150 KHz to 30 MHz
Detector……Peak & Quasi-Peak & Average
Sweep Speed……Auto
IF Band Width……9 KHz

3.5 Test Procedure

During the conducted emission test, the EUT power cord was connected to the auxiliary outlet of the first Artificial Mains.

Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance using all installation combination.

All data was recorded in the peak detection mode. Quasi-peak and Average readings were only performed when an emission was found to be marginal (within -10 dBμV of specification limits). Quasi-peak readings are distinguished with a "**QP**". Average readings are distinguished with a "**AV**".

3.6 Summary of Test Results

According to the data in section 3.6, the EUT complied with the EN 55014-1 Conducted margin.

3.7 Disturbance Voltage Test Data

Temperature (℃)	22~25
Humidity (%RH)	50~55
Barometric Pressure (mbar)	950~1000
EUT	Ultrasonic dog repeller
M/N	QG-03,
Operating Mode	Normal

Test data see following pages

3.8 Test Result

N/A

4. DISCONTINUOUS DISTURBANCE (CLICK)

4.1 Limit of Discontinuous Disturbance

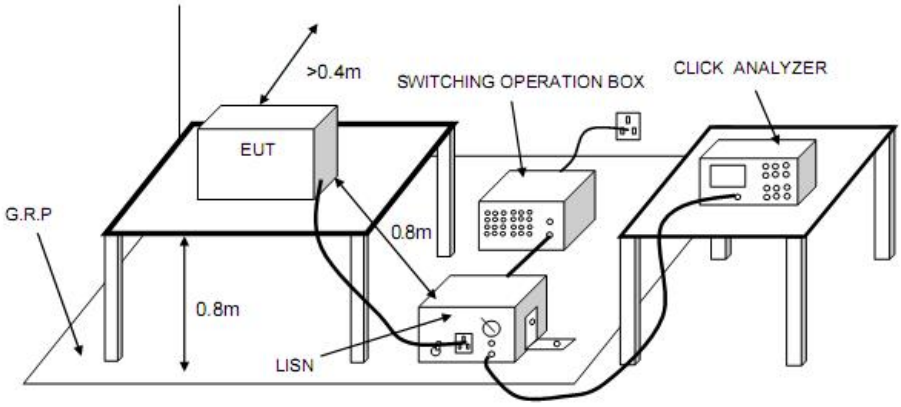
The limits for discontinuous disturbance depend mainly on the character of the disturbance and on theclick rate **N** as given in details in clause 4.2.2 and 4.2.3 of the standard of EN 55014-1: 2006+A1:2009.

4.2 EUT Setup

The setup of EUT is according with CISPR 16-1, CISPR16-2 measurement procedure.
See following test setup figure. The specification used was the EN 55014-1 limits.

The spacing between the peripherals was 10 cm.

Maximum emission emitted from EUT was determined by manipulating the EUT, support equipment, interconnecting cables and varying the mode of operation and the levels in the final result of the test were recorded with the EUT running in the operating mode that maximum emission was emitted.



4.3 Test Procedure

During the Click test, the EUT power cord was connected to the auxiliary outlet of the first Artificial Mains Test Procedure details see clause 7.4.2 of standard EN 55014-1: 2006+A1:2009

4.4 Summary of Test Results

According to the data in section 4.3, the EUT complied with the requirement of Click test of EN 55014-1.

4.5 Disturbance Voltage Test Data

Temperature (℃)	22~25
Humidity (%RH)	50~54
Barometric Pressure (mbar)	950~1000
EUT	N/A
M/N	N/A
Operating Mode	N/A

4.6 Test Result

N/A

5. DISTURBANCE POWER

5.1 Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, and power clamp.

The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is ±2.4 dB.

5.2 Limit of Disturbance Power

Frequency Range (MHz)	Limit (dBpW)	
	Quasi-Peak	Average
30～300	45～55	35～45

Note: (1) The limit line is a linear line.

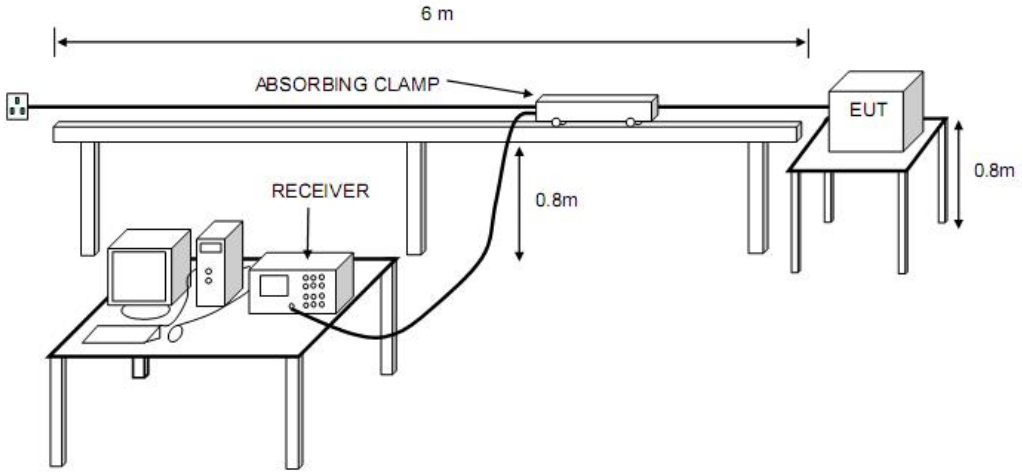
5.3 EUT Setup

The setup of EUT is according with CISPR 16-1, CISPR16-2 measurement procedure.See following test setup figure. The specification used was the EN 55014-1 limits.

The EUT was placed at the edge of the test table so as to make the end of the lead close to the EUTas short as possible between the power clamp and the EUT.

The spacing between the peripherals was 10 cm.

Maximum emission emitted from EUT was determined by manipulating the EUT, support equipment,interconnecting cables and varying the mode of operation and the levels in the final result of the testwere recorded with the EUT running in the operating mode that maximum emission was emitted



5.4 Instruments Setup

The test receiver was set with the following configurations:

Test Receiver Setting:

Frequency Range……30MHz to 300 MHz
Detector……Peak & Quasi-Peak & Average
Sweep Speed……Auto
IF Band Width……9 KHz

5.5 Test Procedure

The associated equipment under test is placed on a non-metallic table of 0.8 m of height above the floor and at least 0.4 m from other objects and from any person. The lead to be measured shall be stretched in a straight horizontal line for a length sufficient to accommodate the absorbing clamp and to permit the necessary adjustment of its position for tuning. The absorbing clamp is placed around the lead to be measured, with its current transformer towards the equipment under test, so as to measure a quantity proportional to the disturbance power on the lead.

Any other lead less than that to be measured shall either be disconnected, if mechanically and functionally possible, or fitted with ferrite rings to attenuate RF currents which may affect the measurement results. Such a lead shall be stretched away from the connected unit in a direction perpendicular to the direction of the lead to be measured.

All connectors not used shall be left un-terminated. All connectors having a connected lead shall be terminated in a manner representative of use. If the leads are screened and normally terminated in a screened unit, then the termination shall be screened.

5.6 Disturbance Power Test Data

Temperature (℃)	22~23
Humidity (%RH)	50~54
Barometric Pressure (mbar)	950~1000
EUT	Ultrasonic dog repeller
M/N	QG-03,
Operating Mode	Normal

5.7 Test Plot(s) for Disturbance Power

Plot(s) of Disturbance Power Test Data is presented hereinafter as reference.

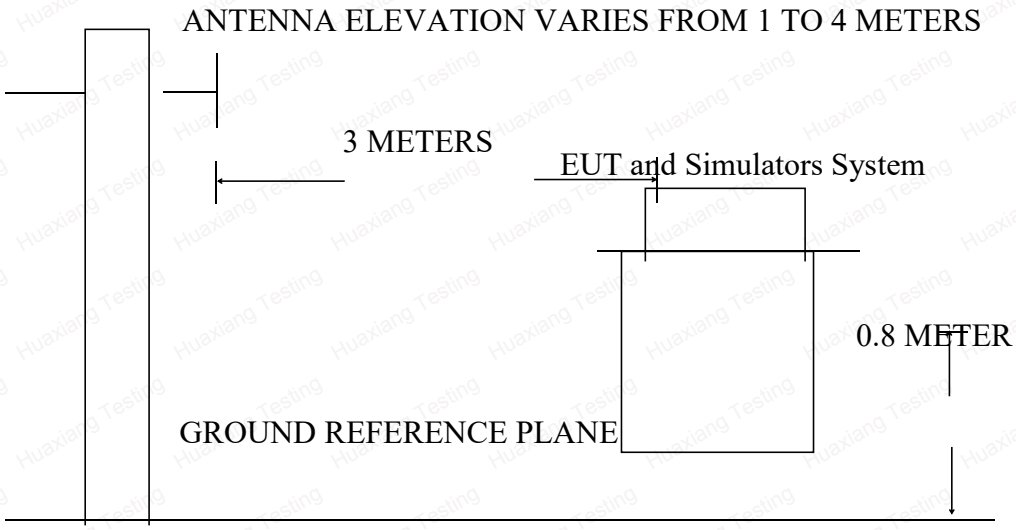
5.8 Test Result

N/A

6. RADIATED EMISSION MEASUREMENT

6.1 Block Diagram of Test

Block diagram of test setup (In chamber)



6.2 Measuring Standard

EN IEC 55014-1: 2021

6.3 Radiated Emission Limits

All emanations from a class B device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified below:

FREQUENCY (MHz)	DISTANCE (Meters)	FIELD STRENGTHS LIMIT (dBμV/m)
30 ~ 230	3	40
230 ~ 1000	3	47

Note: (1) The smaller limit shall apply at the combination point between two frequency bands.
(2) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the EUT.

6.4 EUT Configuration on Test

The EN61000-6-3 regulations test method must be used to find the maximum emission during radiated emission measurement.

6.5 Operating Condition of EUT

Turn on the power.

After that, let the EUT work in test mode (Normal) and measure it.

6.6 Test Procedure

The EUT is placed on a turn table which is 0.8 meter high above the ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Bilog antenna (calibrated by Dipole Antenna) is used as a receiving antenna. Both horizontal and vertical polarization of the antenna are set on test.

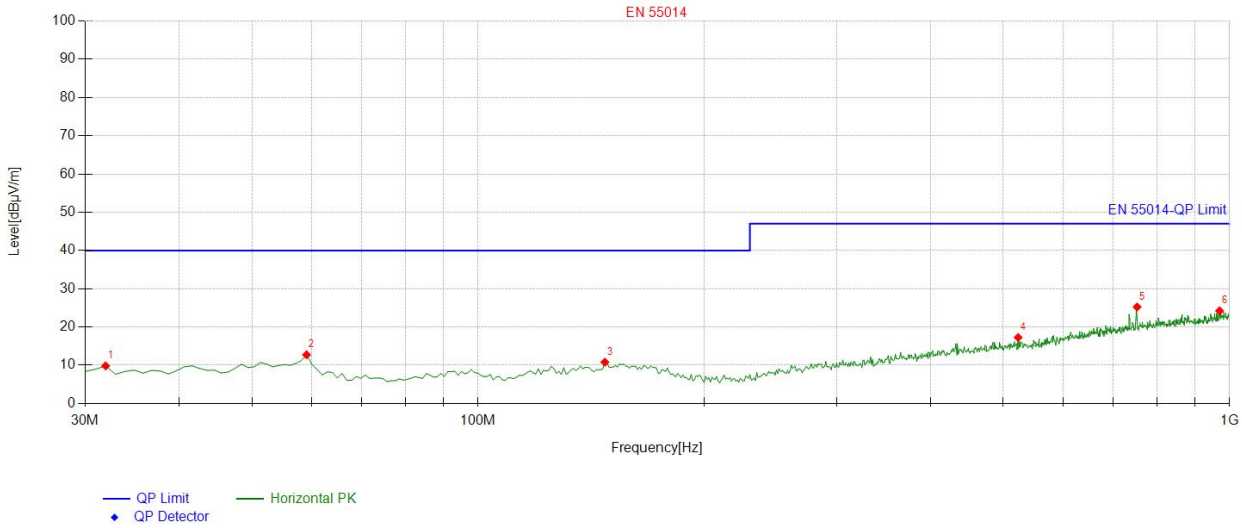
The bandwidth of the Receiver (ESCS30) is set at ES1kHz.
The frequency range from 30MHz to 1000MHz is investigated.

6.7 Measuring Results

PASS.

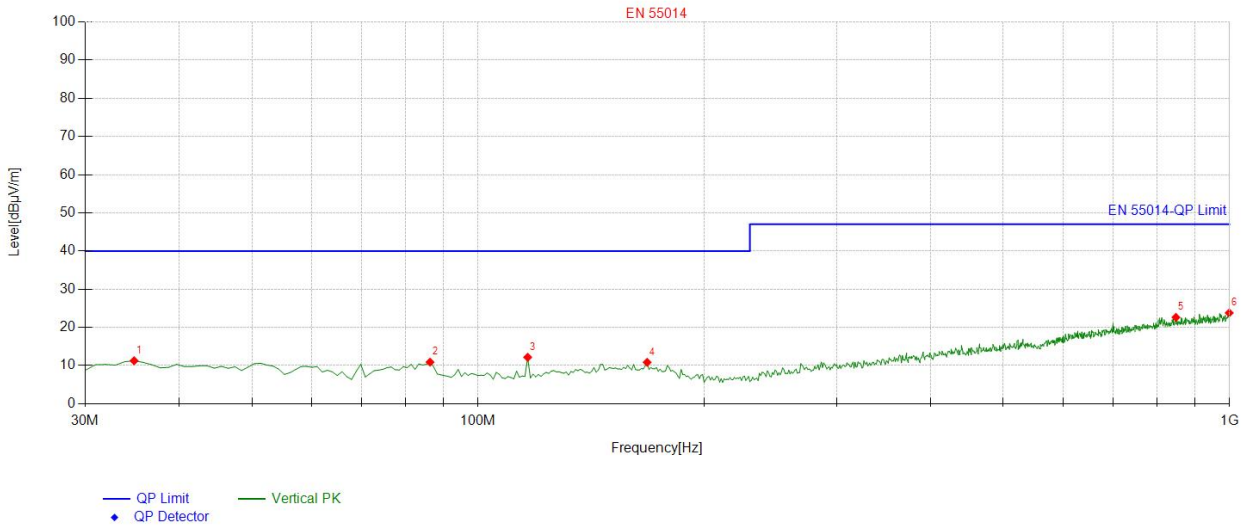
Please reference to the following pages

Standard:	EN IEC 55014-1: 2021	Polarization:	Horizontal
Test item:	Radiation Test	Date:	2024-08-15
EUT:	Ultrasonic dog repeller	Test By:	Mark
Model:	QG-03,	Distance:	3m
Note:			



Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	31.941942	-17.96	27.78	9.82	40.00	30.18	100	144	Horizontal
2	59.129129	-18.18	30.91	12.73	40.00	27.27	100	344	Horizontal
3	147.48748	-17.47	28.27	10.80	40.00	29.20	100	168	Horizontal
4	523.25325	-12.83	30.07	17.24	47.00	29.76	100	43	Horizontal
5	753.37337	-8.46	33.69	25.23	47.00	21.77	100	26	Horizontal
6	969.8999	-5.63	29.85	24.22	47.00	22.78	100	65	Horizontal

Standard:	EN IEC 55014-1: 2021	Polarization:	Vertical
Test item:	Radiation Test	Date:	2024-08-15
EUT:	Ultrasonic dog repeller	Test By:	Mark
Model:	QG-03,	Distance:	3m
Note:			



Suspected List

NO.	Freq. [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	34.854855	-17.64	28.89	11.25	40.00	28.75	100	50	Vertical
2	86.316316	-21.66	32.55	10.89	40.00	29.11	100	327	Vertical
3	116.41641	-19.65	31.81	12.16	40.00	27.84	100	113	Vertical
4	167.87787	-17.23	28.07	10.84	40.00	29.16	100	281	Vertical
5	848.52852	-7.07	29.69	22.62	47.00	24.38	100	312	Vertical
6	999.02902	-5.19	28.97	23.78	47.00	23.22	100	21	Vertical

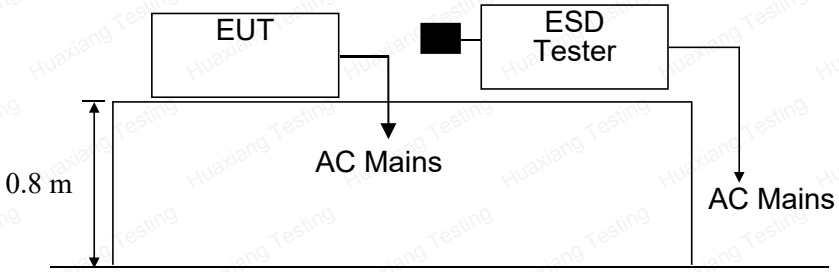
7. ELECTROSTATIC DISCHARGE IMMUNITY TEST (EN 61000-4-2)

7.1 Block Diagram of Test Setup

9.1.1 Block diagram of connection between the EUT and Load

(EUT: **Ultrasonic dog repeller**)

7.1.2 Block diagram of ESD test setup



7.2 Test Standard

EN IEC 55014-2: 2021 , (EN61000-4-2: 2009 Severity Level: 3 / Air Discharge: ±8KV Level: 2 / Contact Discharge: ±4KV)

7.3 Severity Levels and Performance Criterion

7.3.1 Severity level

Level	Test Voltage Contact Discharge (KV)	Test Voltage Air Discharge (KV)
1	±2	±2
2	±4	±4
3	±6	±8
4	±8	±15
X	Special	Special

7.3.2 Performance criterion: B

7.4 Operating Condition of EUT

7.4.1 Setup the EUT as shown on Section 8.1.

7.4.2 Turn on the power of all equipments.

7.4.3 Let the EUT work in measuring mode (Normal) and measure it.

7.5 Test Procedure

7.5.1 Air Discharge:

This test is done on a non-conductive surface. The round discharge tip of the discharge electrode shall be approached as fast as possible to touch the EUT. After each discharge, the discharge electrode shall be removed from the EUT. The generator is then re-triggered for a new single discharge and repeated 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed.

7.5.2 Contact Discharge:

All the procedure shall be same as Section 8.5.1. Except that the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

7.5.3 Indirect discharge for horizontal coupling plane

At least 10 single discharges (in the most sensitive polarity) shall be applied at the front edge of each HCP opposite the center point of each unit (if applicable) of the EUT and 0.1m from the front of the EUT. The long axis of the discharge electrode shall be in the plane of the HCP and perpendicular to its front edge during the discharge.

7.5.4 Indirect discharge for vertical coupling plane

At least 10 single discharge (in the most sensitive polarity) shall be applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m X 0.5m, is placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges shall be applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.

7.6 Test Results

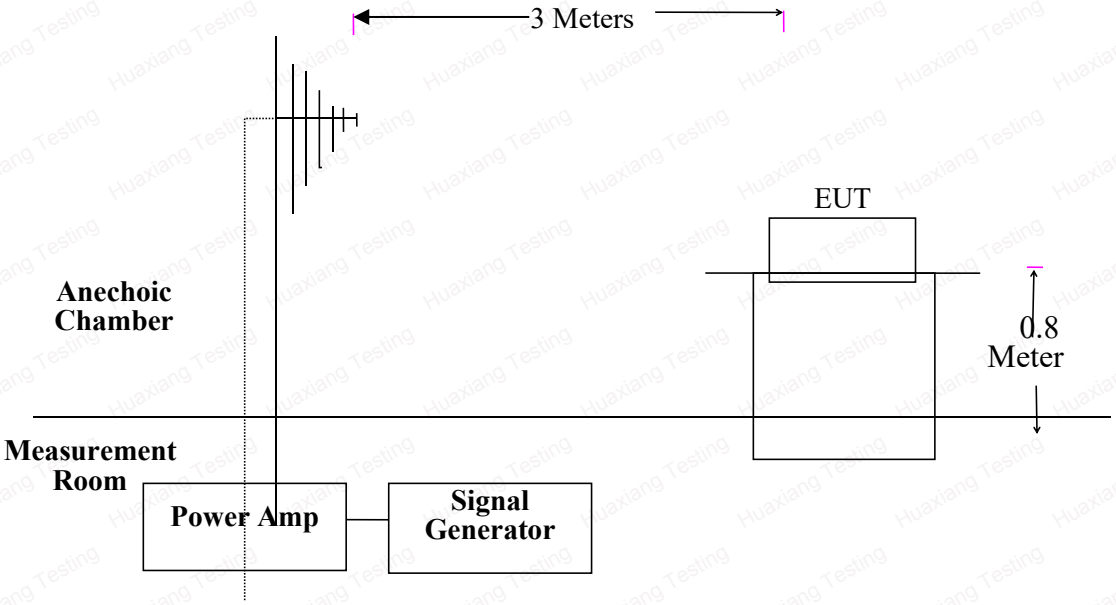
N/A

8.0 RF FIELD STRENGTH SUSCEPTIBILITY TEST

8.1 Block Diagram of Test

8.1.1 Block diagram of connection between the EUT and Load

8.1.2 Block diagram of RS test setup



8.2 Test Standard

EN IEC 55014-2: 2021

(EN61000-4-3:2006 +A1:2008+A2:2010 (Severity Level: 2, 3V / m))

8.3 Severity Levels and Performance Criterion

8.3.1 Severity Levels

Level	Field Strength V/m
1.	1
2.	3
3.	10
X	Special

8.3.2Performance Criterion : A

8.4 EUT Configuration on Test

The configuration of the EUT is same as Section 3.3.

8.5 Operating Condition of EUT

Same as radiated emission measurement which is listed in Section 3.4, except the test setup replaced as Section 8.1.

8.6 Test Procedure

The EUT are placed on a table which is 0.8 meter high above the ground. The EUT is set 3 meters away from the transmitting antenna which is mounted on an antenna tower. Both horizontal and vertical polarization of the antenna are set on test. Each of the four sides of the EUT must be faced this transmitting antenna and measured individually. In order to judge the EUT performance, a CCD camera is used to monitor its screen. All the scanning conditions are as following:

Condition of Test	Remark
1. Fielded Strength	3V/m (Severity Level 2)
2. Radiated Signal	Modulated
3. Scanning Frequency	80-1000MHz
4. Sweep time of radiated	0.0015 Decade/s
5. Dwell Time	1 Sec.

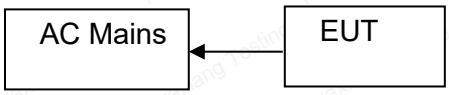
8.7 Test Results

N/A

9. ELECTRICAL FAST TRANSIENT/BURST IMMUNITY TEST (EN 61000-4-4)

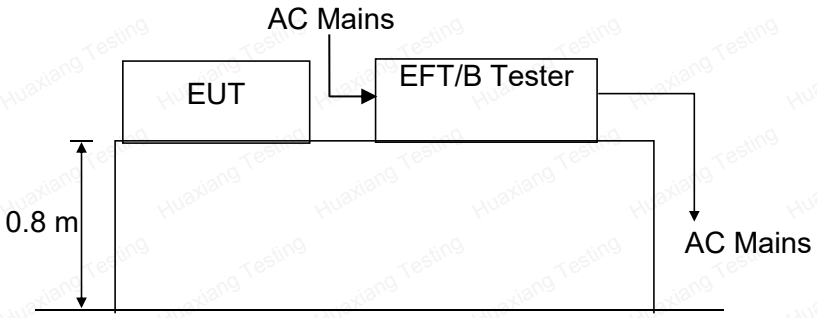
9.1 Block Diagram of Test Setup

9.1.1.Block Diagram of the EUT



(EUT: Ultrasonic dog repeller)

9.1.2. Block Diagram of the AC Mains



(EUT: Ultrasonic dog repeller)

9.2 Test Standard

EN IEC 55014-2: 2021 , (EN61000-4-4: 2004+A1: 2010, Severity Level, Level 2: 1KV)

9.3 Severity Levels and Performance Criterion

9.3.1 Severity level

Open Circuit Output Test Voltage ±10%		
Level	On Ultrasonic dog repellerLines	On I/O (Input/Output) Signal data and control lines
1	0.5 KV	0.25 KV
2	1 KV	0.5 KV
3	2 KV	1 KV
4	4 KV	2 KV
X	Special	Special

9.3.2 Performance criterion: B

9.4 Operating Condition of EUT

9.4.1 Setup the EUT as shown in Section 9.1.

9.4.2 Turn on the power of all equipments.

9.4.3 Let the EUT work in test mode (Normal) and measure it.

9.5 Test Procedure

The EUT is put on the table which is 0.8 meter high above the ground. This reference ground plane shall project beyond the EUT by at least 0.1m on all sides and the minimum distance between EUT and all other conductive structure, except the ground plane beneath the EUT, shall be more than 0.5m.

9.5.1 For input and output AC power ports:
It's unnecessary to test

9.5.2 For signal lines and control lines ports:
It's unnecessary to test.

9.5.3 For DC Input line ports:

The EUT is connected to the DC power mains by using a coupling device which couples the EFT interference signal to DC power lines. Both polarities of the test voltage should be applied during compliance test and the duration of the test is 2 mins.

9.6 Test Result

PASS

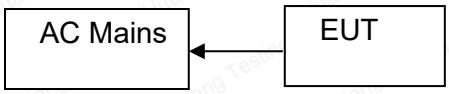
Temperature (℃)	22~23
Humidity (%RH)	50~54
Barometric Pressure (mbar)	950~1000
EUT	Ultrasonic dog repeller
M/N	QG-03,
Operating Mode	Normal

EN 61000-4-4 Test Points		Test Levels (kV)							
		+0. 5	-0. 5	+1.0	-1.0	+2.0	-2.0	+4.0	-4.0
Power Supply Power Line of EUT	L1	A	A	A	A	/	/	/	/
	N	A	A	A	A	/	/	/	/
	Earth	/	/	/	/	/	/	/	/
	L1+N	A	A	A	A	/	/	/	/
	L1 + Earth	/	/	/	/	/	/	/	/
	N+ Earth	/	/	/	/	/	/	/	/
	L1+N+Earth	/	/	/	/	/	/	/	/

10. SURGE IMMUNITY TEST (EN 61000-4-5)

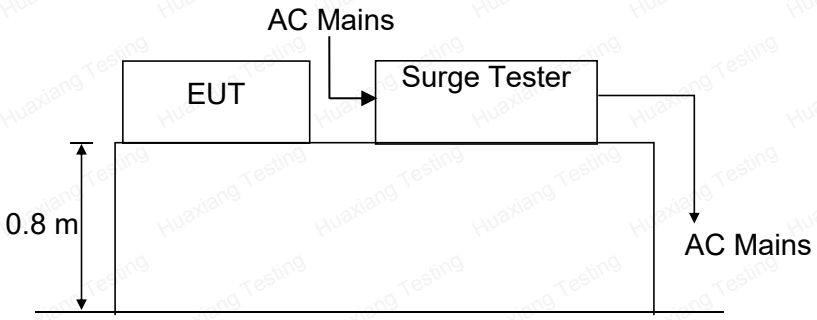
10.1 Block Diagram of Test Setup

10.1.1.Block Diagram of the EUT



(EUT: Ultrasonic dog repeller)

10.1.2. Block Diagram of the AC Mains



(EUT: Ultrasonic dog repeller)

10.2 Test Standard

EN IEC 55014-2: 2021 , (EN61000-4-5: 2006 Severity Level: Line to Line, Level 2: 1KV,Line to Earth , Level 3: 2KV)

10.3 Severity Levels and Performance Criterion

10.3.1.Severity level

Severity Level	Open-Circuit Test Voltage KV
1	0.5
2	1.0
3	2.0
4	4.0
*	Special

10.3.2 Performance criterion: B

10.4 Operating Condition of EUT

10.4.1 Setup the EUT as shown in Section 10 .1.

10.4.2.Turn on the power of all equipments.

10.4.3.Let the EUT work in test mode (Normal) and measure it.

10.5 Test Procedure

1)Set up the EUT and test generator as shown on Section 10 .1.2.

2)For DC port coupling mode, provide a 1 KV 1.2/50us voltage surge (at open-circuit condition) and 8/20us current surge to EUT selected points.

3)At least 5 positive and 5 negative (polarity) tests with a maximum 1/min repetition rate are conducted
during test.

4)Record the EUT operating situation during compliance test and decide the EUT immunity criterion for above each test.

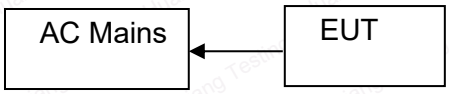
10.6 Test Result

N/A

11. CONDUCTED SUSCEPTIBILITY TEST (EN 61000-4-6)

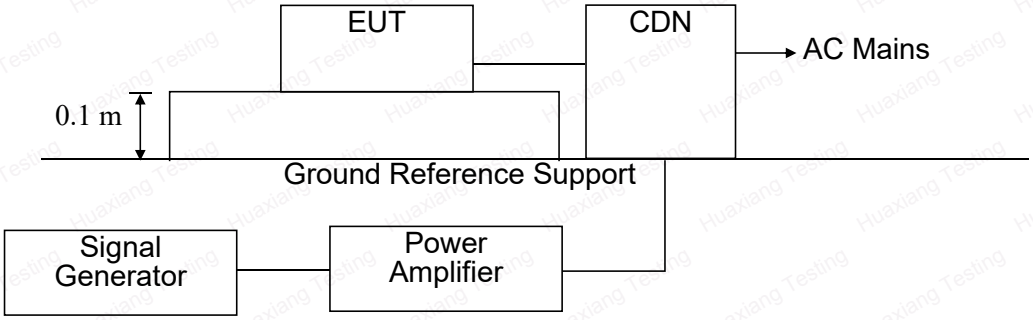
11.1 Block Diagram of Test Setup

11.1.1. Block Diagram of the EUT



(EUT: **Ultrasonic dog repeller**)

11.1.2. Block Diagram of the AC Mains



(EUT: Ultrasonic dog repeller)

11.2 Test Standard

EN IEC 55014-2: 2021 (EN61000-4-6: 2009, Severity Level 2: 3V(rms)).
(0.15MHz ~ 230MHz)

11.3 Severity Levels and Performance Criterion

11.3.1.Severity level

Level	Field Strength V(r.m.s)
1	1
2	3
3	10
X	Special

11.3.2 Performance criterion: A

11.4 Operating Condition of EUT

11.4.1 Setup the EUT as shown in Section 11 .1.

11.4.2 Turn on the power of all equipments.

11.4.3 Let the EUT work in test mode (Normal) and measure it.

11.5 Test Procedure

11.5.1 For AC Mains

It's unnecessary to test.

11.5.2 For signal lines and control lines ports:

It's unnecessary to test.

11.5.3 For DC Input line ports:

1) Set up the EUT, CDN and test generators as shown on Section 11 .1.

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 network) 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 150KHz to 230MHz using 3V signal level, and with the disturbance signal 80% amplitude modulated with a 1KHz sine wave.

7) The rate of sweep shall not exceed 1.5*10-3decades/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.

Recording the EUT operating situation during compliance testing and decide the EUT immunity criterion.

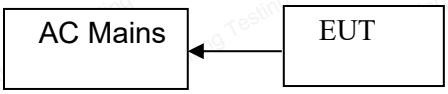
11.6 Test Results

N/A

12. VOLTAGE DIPS, SHORT INTERRUPTIONS IMMUNITY TESTS (EN61000-4-11)

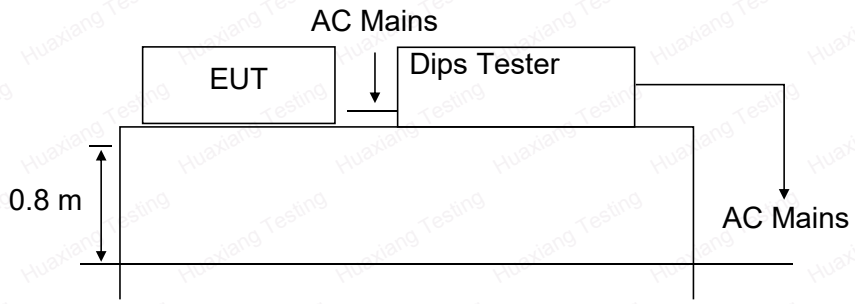
12.1 Block Diagram of Test Setup

14.1.1. Block Diagram of the EUT



(EUT: Ultrasonic dog repeller)

12.1.2. Block Diagram of the AC Mains



(EUT: Ultrasonic dog repeller)

12.2 Test Standard

EN IEC 55014-2: 2021 (EN61000-4-11: 2004)

12.3 Severity Levels and Performance Criterion

Test Level %UT	Voltage dip and short interruptions %UT	Duration (in period)
0	100	0.5 1 5 10 25 50 *
40	60	
70	30	

Performance criterion: B&C

12.4 EUT Configuration

The configuration of EUT is listed in Section 12 .4.

12.5 Operating Condition of EUT

12.5.1 Turn on the power of all equipments.

12.5.2 Let the EUT work in test mo
de (Normal) and measure it.

12.6 Test Procedure

1)Set up the EUT and test generator as shown on Section 12 .1.2.

2)The interruption is introduced at selected phase angles with specified duration.

3)Record any degradation of performance.

12.7 Test Result

N/A

13. TEST RESULTS

The following tests were performed on theDongguan Yinghua Huizhi Technology Co., LTD.'s product; model: QG-03, ; the actual test results are contained within the Test Data section of this report.

13.1 EN 61000-4-2 Electrostatic Discharge Immunity Test Configuration

The EUT was subjected to the electrostatic discharge tests required by EN 55014-2 and all lower levels specified in EN 61000-4-2.

The EUT continued to perform as intended during and after the application of the ESD. Test setup pNormalographs presented in Appendix C.

13.2 EN 61000-4-3 Electrostatic Discharge Immunity Test Configuration

The EUT was subjected to the electrostatic discharge tests required by EN 55014-2 and all lower levels specified in EN 61000-4-3.

The EUT continued to perform as intended during and after the application of the ESD. Test setup pNormalographs presented in Appendix C.

13.3 EN 61000-4-4 Electrical Fast Transient/Burst Immunity Test Configuration

The EUT was subjected to the electrical fast transient tests required by EN 55014-2 and all lower levels specified in EN 61000-4-4.

The EUT continued to perform as intended during and after the application of the EFT/B. Test setup pNormalographs presented in Appendix C.

13.4 EN 61000-4-5 Surge Immunity Test Configuration

The EUT was subjected to the Surge Immunity tests required by EN 55014-2 and all lower levels specified in EN 61000-4-5.

The EUT continued to perform as intended during and after the application of the Surge Immunity Test.

13.5 EN 61000-4-6 Conducted Susceptibility Test Configuration

The EUT was subjected to the Conducted Susceptibility tests required by EN 55014-2 and all lower levels specified in EN 61000-4-6.

The EUT continued to perform as intended during and after the application of the Conducted Susceptibility Test.

13.6 EN 61000-4-11 Voltage Dips, Short Interruptions Immunity Tests Configuration

The EUT was subjected to the Voltage Dips/Interruptions tests required by EN 55014-2 and all lower levels specified in EN 61000-4-11.

The EUT continued to perform as intended during and after the application of the Voltage Dips/Interruptions Test.

Appendix A - Product Labeling

CE Mark Label Specification

Specification: Text is Black or white in color and is left justified. Labels are printed in indelible ink on permanent adhesive backing and shall be affixed at a conspicuous location on the EUT or Silk-screened onto the EUT.

Appendix B- EUT PHOTOGRAPHS

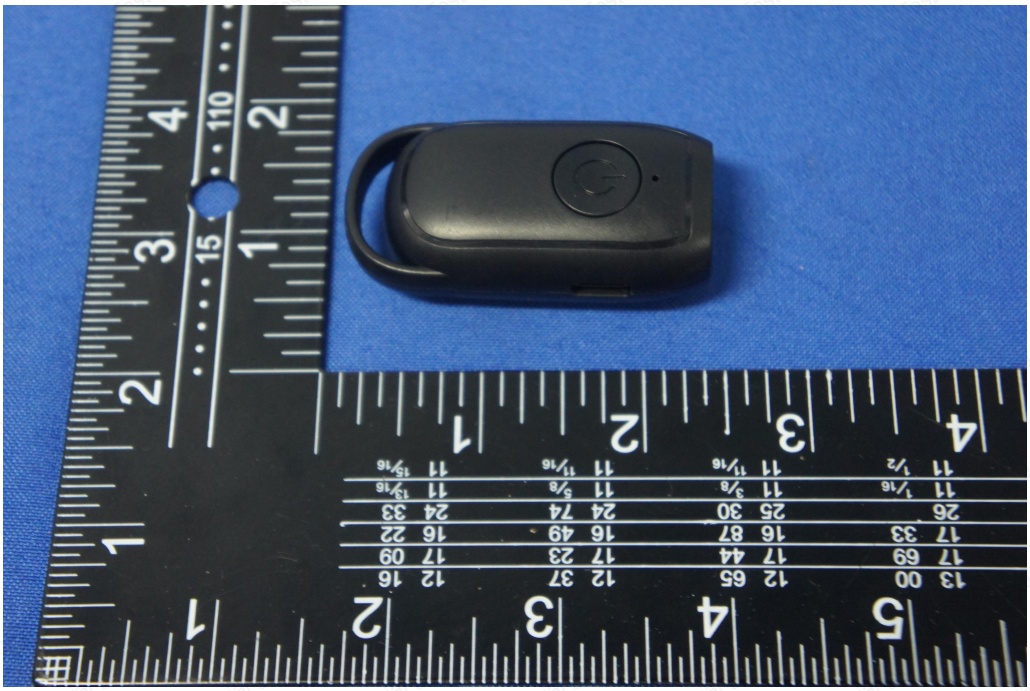


Photo 1

Photo 2

Photo 3

Photo 4

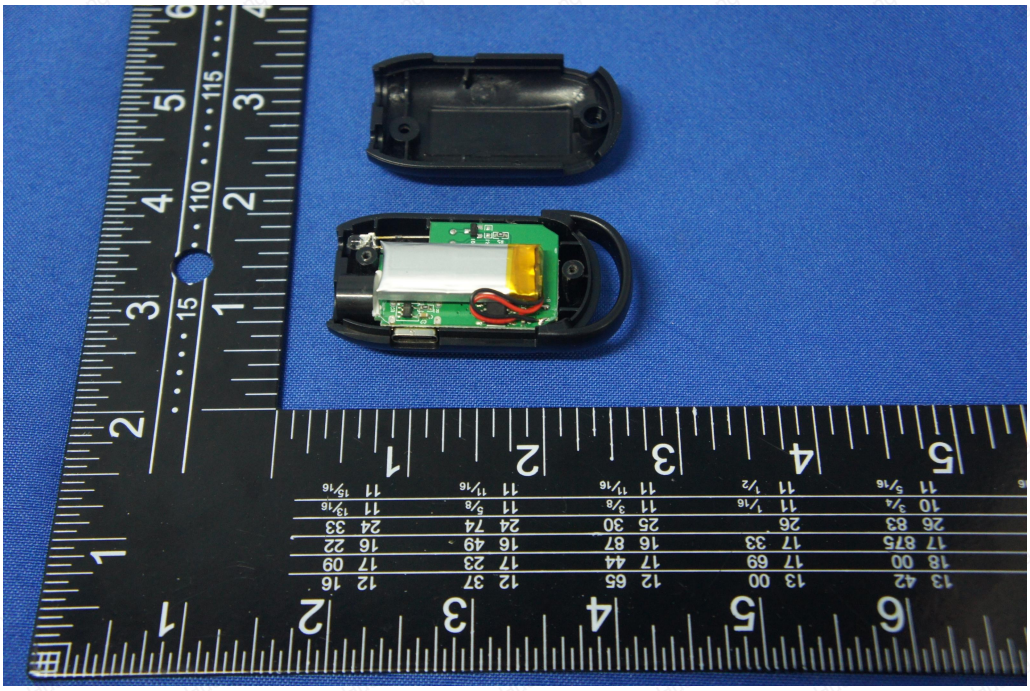


Photo 5

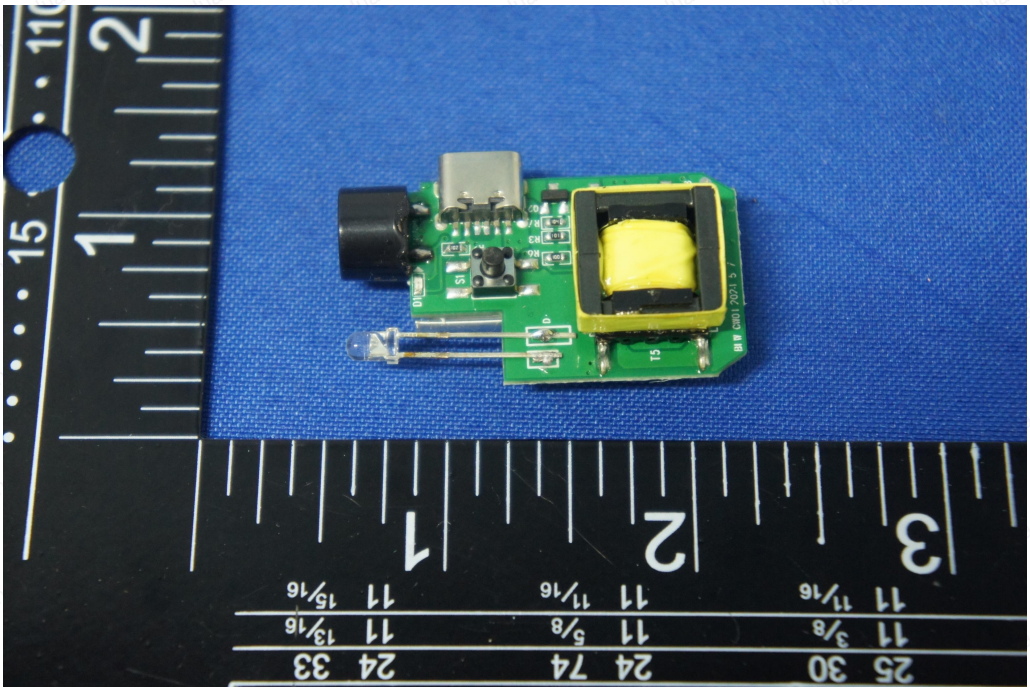


Photo 6

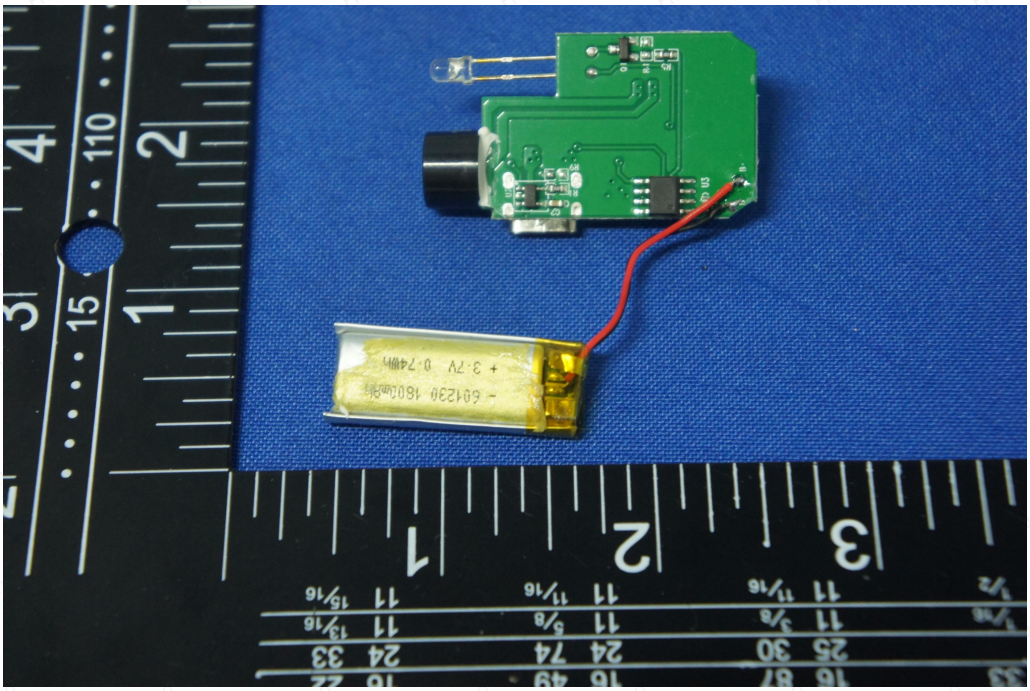


Photo 7

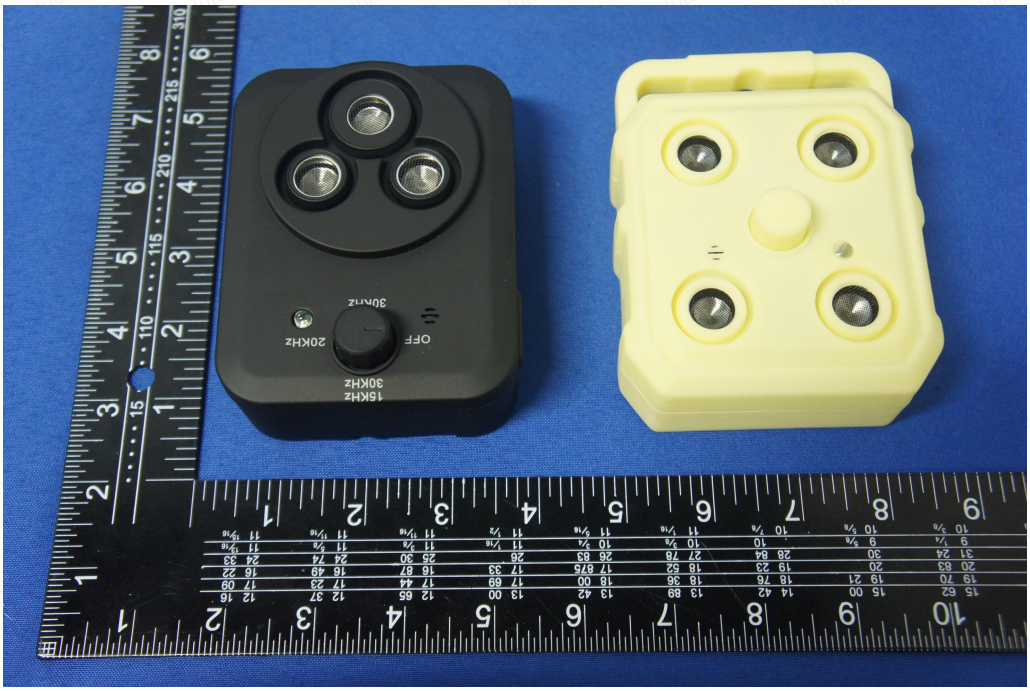


Photo 8

Photo 9

**********END OF THE REPORT**********

Certificate – Сертификат – 證明書 – Certificat – 증명서

Certificate No. : HUAX240816002KC

huaxiang

Certificate of Conformity

Certificate's Holder	:	**Dongguan Yinghua Huizhi Technology Co., LTD**
Address	:	403,Building 2,NO.3 Taixing Rosd,Shigu,Tangxia Town,Dongguan City,Guangdong Province
Manufacturer	:	**Dongguan Yinghua Huizhi Technology Co., LTD**
Address	:	403,Building 2,NO.3 Taixing Rosd,Shigu,Tangxia Town,Dongguan City,Guangdong Province
Product Name	:	**Ultrasonic dog repeller**
Product Model (S)	:	QG-03, QG-01, QG-02, QG-04, QG-05, QG-06, QG-07, QG-08, QG-09, QG-10
Trade Mark	:	N/A
Related Standard(s)	:	**IEC62321-3-1:2013,IEC62321-5:2013, IEC62321-4:2013+A1:2017, IEC62321-7-1:2015, IEC 62321-7-2:2017, IEC 62321-6:2015, IEC 62321-8:2017**
Report No.	:	**HUAX240816002KR**

The product described above has been consolidated by us and found in compliance with the council RoHS 2.0 Directive 2011/65/EU Annex II (EU) 2015/863 as last amended by Directive (EU) 2017/2102. It is only valid in connection with the test report

Green Product RoHS

Shenzhen Huaxiang Testing Co., LTD. IMPARTIAL Approved

Aug. 20, 2024

Certification Manager

Shenzhen Huaxiang Testing Co., Ltd
201, Building A10, Fuhai Information Port, Xinhe Community, Fuhai Street, Bao'an District, Shenzhen City, Guangdong Province, China Web.:Http:// www.hua-x.com
E-mail: huaxiang@hua-x.com Tel.:+86-0755-23010432

TEST REPORT

Applicant	:	Dongguan Yinghua Huizhi Technology Co., LTD
Address	:	403,Building 2,NO.3 Taixing Rosd,Shigu,Tangxia Town,Dongguan City,Guangdong Province

Report on the submitted sample said to be:

Sample name	:	Ultrasonic dog repeller
Trade Mark	:	N/A
Model	:	QG-03, QG-01, QG-02, QG-04, QG-05, QG-06, QG-07, QG-08, QG-09, QG-10
Manufacturer	:	Dongguan Yinghua Huizhi Technology Co., LTD
Address	:	403,Building 2,NO.3 Taixing Rosd,Shigu,Tangxia Town,Dongguan City,Guangdong Province
Laboratory name	:	Shenzhen Huaxiang Testing Co , Ltd
Testing address:	:	Building B2, Junfeng Zhongcheng Intelligent Manufacturing Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen City, Guangdong Province
Sample received date	:	Aug. 14, 2024
Testing period	:	Aug. 14, 2024- Aug. 20, 2024

Test Requested:	**Conclusion :.**
The test results comply with the limits of RoHS 20 Directive (EU) 2015/863and (EU)2017/2102 amending Annex II to Directive 2011/65/EU — Lead, Cadmium, Mercury, Hexavalent Chromium, PBBs and PBDEs Content —Di-(2-ethylhexyl) phthalate(DEHP), Benzylbutyl phthalate(BBP), Dibutyl phthalate (DBP), Diisobutyl phthalate(DIBP) Content	Pass

Shenzhen Huaxiang Testing Co., Ltd

Drafted By: ---------- (Kevin su)

Approved By: ---------- LAB Manager：**Amy jiang**

Date： Aug. 20, 2024

Test Part Description:.

Specimen No.	Description.
01	Shell
02	Button
03	Fuse
04	Interface
05	Indicator light
06	Plastic
07	Battery
08	Wire core
09	Resistance
10	PCB
11	Black
12	Yellow
13	Orange
14	Orange
15	Black

TEST RESULT:

1.Lead, Cadmium, Mercury, Hexavalent Chromium, PBBs and PBDEs—RoHS Directive (EU) 2015/863.

Test Items	Unit	Test Method	Result					MDL	Limit
			01	02	03	04	05		
Lead (Pb)	mg/kg	IEC 62321-5:2013, ICP-OES	N.D.	N.D.	N.D.	N.D.	N.D.	2	1000
Mercury (Hg)	mg/kg	IEC62321-4:2013+A1:2017*, ICP-OES	N.D.	N.D.	N.D.	N.D.	N.D.	2	1000
Cadmium(Cd)	mg/kg	IEC 62321-5:2013, ICP-OES	N.D.	N.D.	N.D.	N.D.	N.D.	2	100
Hexavalent Chromium (CrVI)	$\mu g/cm^2$	IEC 62321-7-1:2015, UV-VIS	N.D.	N.D.	N.D.	N.D.	N.D.	0.10	0.10
Monobromobiphenyl	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Dibromobiphenyl	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Tribromobiphenyl	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Tetrabromobiphenyl	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Pentabromobiphenyl	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Hexabromobiphenyl	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Heptabromobiphenyl	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Octabromobiphenyl	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Nonabromobiphenyl	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Decabromobiphenyl	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Sum of PBBs	mg/kg	-	N.D.	N.D.	N.D.	N.D.	N.D.	-	1000
Monobromodiphenyl ether	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Dibromodiphenyl ether	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Tribromodiphenyl ether	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Tetrabromodiphenyl ether	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Pentabromodiphenyl ether	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Hexabromodiphenyl ether	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Heptabromodiphenyl ether	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Octabromodiphenyl ether	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Nonabromodiphenyl ether	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Decabromodiphenyl ether	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Sum of PBDEs	mg/kg	-	N.D.	N.D.	N.D.	N.D.	N.D.	-	1000

Test Items	Unit	Test Method	Result					MDL	Limit
			06	07	08	09	10		
Lead (Pb)	mg/kg	IEC 62321-5:2013, ICP-OES	N.D.	N.D.	N.D.	N.D.	N.D.	2	1000
Mercury (Hg)	mg/kg	IEC62321-4:2013+A1:2017*, ICP-OES	N.D.	N.D.	N.D.	N.D.	N.D.	2	1000
Cadmium(Cd)	mg/kg	IEC 62321-5:2013, ICP-OES	N.D.	N.D.	N.D.	N.D.	N.D.	2	100
Hexavalent Chromium (CrVI)	$\mu g/cm^2$	IEC 62321-7-1:2015, UV-VIS	N.D.	N.D.	N.D.	N.D.	N.D.	0.10	0.10
Monobromobiphenyl	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Dibromobiphenyl	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Tribromobiphenyl	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Tetrabromobiphenyl	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Pentabromobiphenyl	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Hexabromobiphenyl	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Heptabromobiphenyl	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Octabromobiphenyl	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Nonabromobiphenyl	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Decabromobiphenyl	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Sum of PBBs	mg/kg	-	N.D.	N.D.	N.D.	N.D.	N.D.	-	1000
Monobromodiphenyl ether	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Dibromodiphenyl ether	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Tribromodiphenyl ether	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Tetrabromodiphenyl ether	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Pentabromodiphenyl ether	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Hexabromodiphenyl ether	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Heptabromodiphenyl ether	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Octabromodiphenyl ether	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Nonabromodiphenyl ether	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Decabromodiphenyl ether	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Sum of PBDEs	mg/kg	-	N.D.	N.D.	N.D.	N.D.	N.D.	-	1000

Test Items	Unit	Test Method	Result					MDL	Limit
			11	12	13	14	15		
Lead (Pb)	mg/kg	IEC 62321-5:2013, ICP-OES	N.D.	N.D.	N.D.	N.D.	N.D.	2	1000
Mercury (Hg)	mg/kg	IEC62321-4:2013+A1:2017*, ICP-OES	N.D.	N.D.	N.D.	N.D.	N.D.	2	1000
Cadmium(Cd)	mg/kg	IEC 62321-5:2013, ICP-OES	N.D.	N.D.	N.D.	N.D.	N.D.	2	100
Hexavalent Chromium (CrVI)	μg/cm^2	IEC 62321-7-1:2015, UV-VIS	N.D.	N.D.	N.D.	N.D.	N.D.	0.10	0.10
Monobromobiphenyl	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Dibromobiphenyl	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Tribromobiphenyl	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Tetrabromobiphenyl	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Pentabromobiphenyl	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Hexabromobiphenyl	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Heptabromobiphenyl	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Octabromobiphenyl	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Nonabromobiphenyl	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Decabromobiphenyl	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Sum of PBBs	mg/kg	-	N.D.	N.D.	N.D.	N.D.	N.D.	-	1000
Monobromodiphenyl ether	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Dibromodiphenyl ether	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Tribromodiphenyl ether	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Tetrabromodiphenyl ether	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Pentabromodiphenyl ether	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Hexabromodiphenyl ether	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Heptabromodiphenyl ether	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Octabromodiphenyl ether	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Nonabromodiphenyl ether	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Decabromodiphenyl ether	mg/kg	IEC 62321-6:2015, GC-MS	N.D.	N.D.	N.D.	N.D.	N.D.	5	-
Sum of PBDEs	mg/kg	-	N.D.	N.D.	N.D.	N.D.	N.D.	-	1000

Note:

1. mg/kg = milligram per kilogram = ppm
2. N.D. = Not Detected (< MDL)
3. MDL = Method Detection Limit
4. "-" = Not Regulated
5. Boiling-water-extraction:
   Negative = Absence of Cr(VI) coating / surface layer: the detected concentration in boiling-water-extraction solution is less than 0.10μg with 1cm^2 sample surface area.
   Positive = Presence of Cr(VI) coating / surface layer: the detected concentration in boiling-water-extraction solution is greater than 0.13μg with 1cm^2 sample surface area.
   Inconclusive =the detected concentration in boiling-water-extraction solution is greater than 0.10μg and less than 0.13μg with 1cm^2 sample surface area.
6. Positive = result be regarded as not comply with RoHS requirement
7. Negative = result be regarded as comply with RoHS requiremen

2. Di-(2-ethylhexyl) phthalate(DEHP), Benzylbutyl phthalate(BBP), Dibutyl phthalate (DBP), Diisobutyl phthalate (DIBP) Content—RoHS Directive (EU) 2015/863.

Test method: With reference to IEC 62321-8:2017*, analysis was performed by GC-MS.

Test Items	Unit	Result					MDL	Limit
		01	02	03	04	05		
Di-(2-ethylhexyl) phthalate (DEHP)	mg/kg	N.D.	N.D.	N.D.	N.D.	N.D.	50	1000
Benzylbutyl phthalate (BBP)	mg/kg	N.D.	N.D.	N.D.	N.D.	N.D.	50	1000
Dibutyl phthalate (DBP)	mg/kg	N.D.	N.D.	N.D.	N.D.	N.D.	50	1000
Diisobutyl phthalate(DIBP)	mg/kg	N.D.	N.D.	N.D.	N.D.	N.D.	50	1000

Test Items	Unit	Result					MDL	Limit
		06	07	08	09	10		
Di-(2-ethylhexyl) phthalate (DEHP)	mg/kg	N.D.	N.D.	N.D.	N.D.	N.D.	50	1000
Benzylbutyl phthalate (BBP)	mg/kg	N.D.	N.D.	N.D.	N.D.	N.D.	50	1000
Dibutyl phthalate (DBP)	mg/kg	N.D.	N.D.	N.D.	N.D.	N.D.	50	1000
Diisobutyl phthalate(DIBP)	mg/kg	N.D.	N.D.	N.D.	N.D.	N.D.	50	1000

Test Items	Unit	Result					MDL	Limit
		11	12	13	14	15		
Di-(2-ethylhexyl) phthalate (DEHP)	mg/kg	N.D.	N.D.	N.D.	N.D.	N.D.	50	1000
Benzylbutyl phthalate (BBP)	mg/kg	N.D.	N.D.	N.D.	N.D.	N.D.	50	1000
Dibutyl phthalate (DBP)	mg/kg	N.D.	N.D.	N.D.	N.D.	N.D.	50	1000
Diisobutyl phthalate(DIBP)	mg/kg	N.D.	N.D.	N.D.	N.D.	N.D.	50	1000

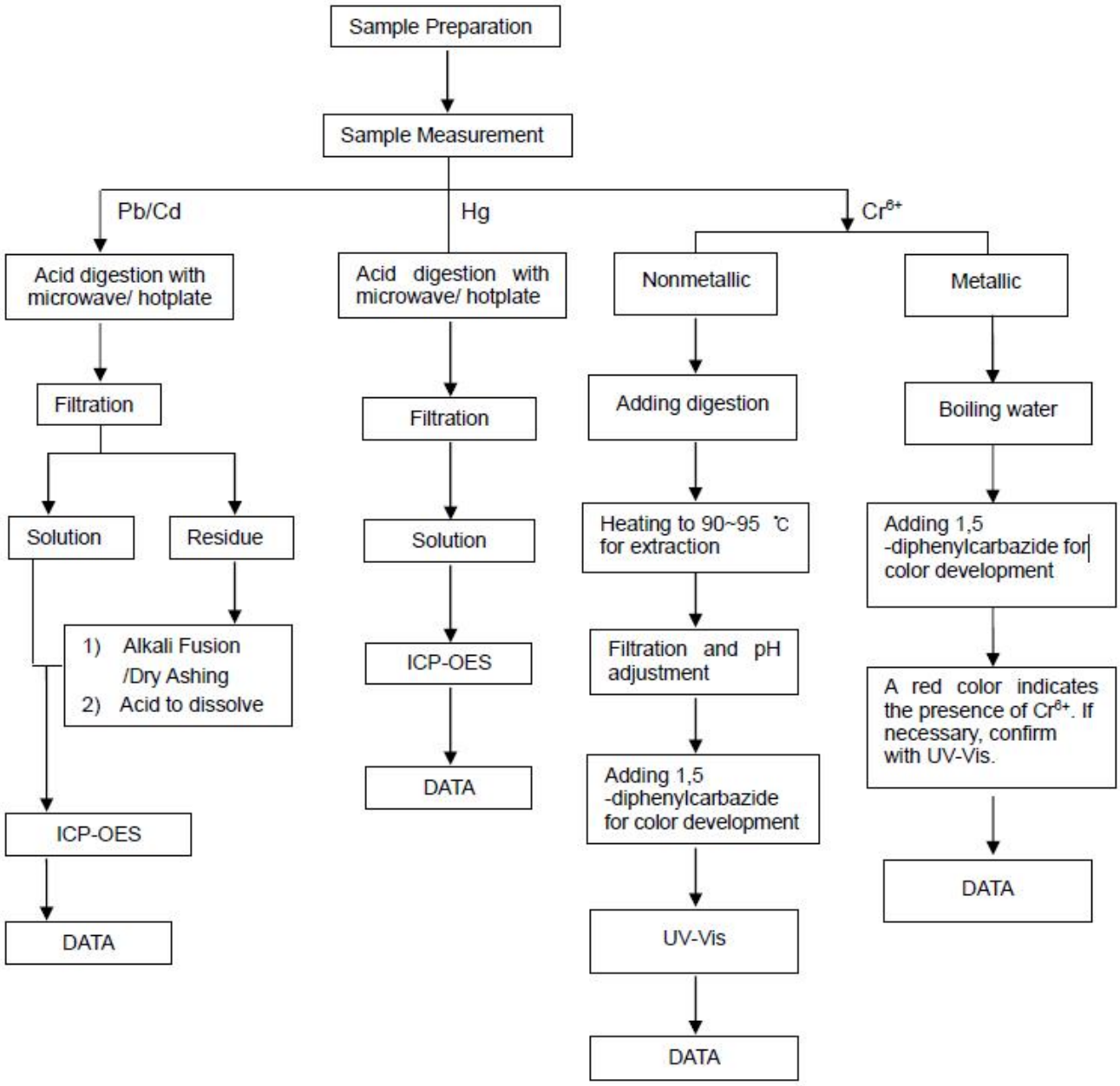
Note:

1. mg/kg = milligram per kilogram = ppm
2. N.D. = Not Detected (<MDL)
3. MDL = Method detection limit
4. “*”=The test method of Phthalates is not authorized by CNAS

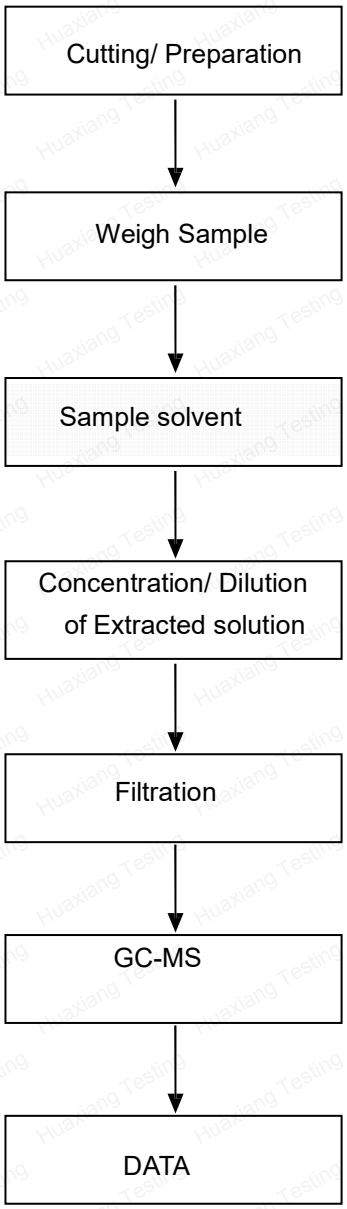
FLOW CHART FOR ROHS TESTING:

Pb/Cd/Hg/Cr6+ Testing Flow Chart

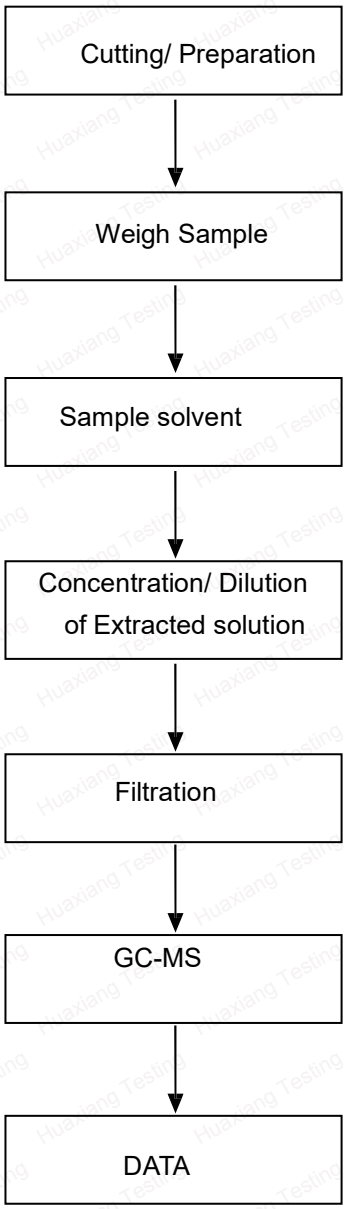
1) These samples were dissolved totally by pre-conditioningmethod according to below flow chart (Cr^{6+} test method excluded)



PBBs/PBDEs Testing Flow Chart



Phthalates Testing Flow Chart



PHOTOGRAPH OF SAMPLE:

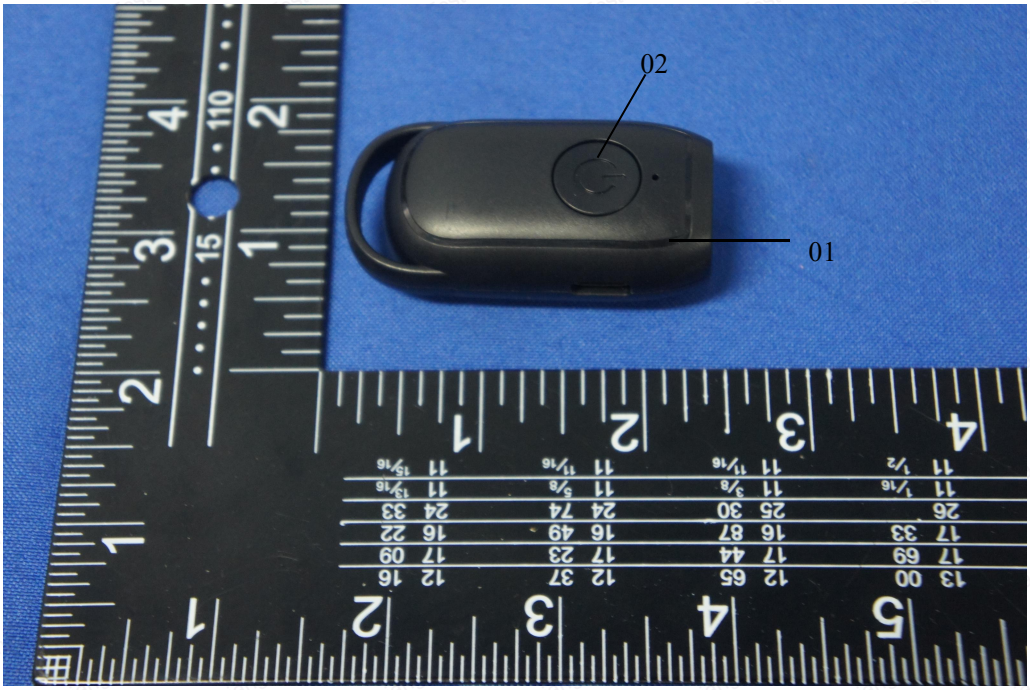


Photo 1

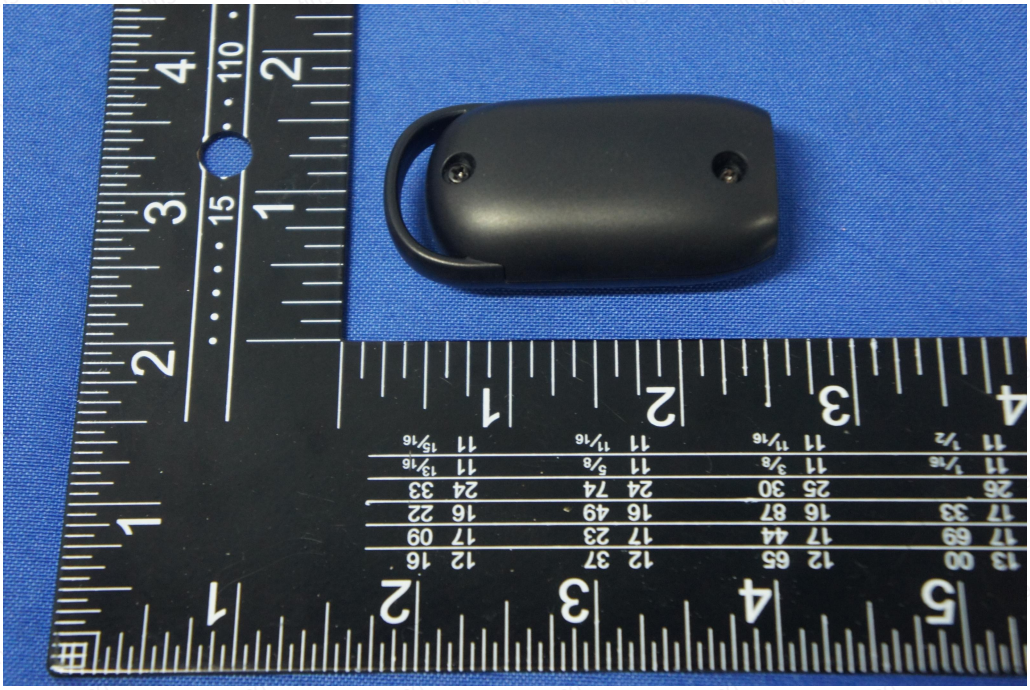


Photo 2

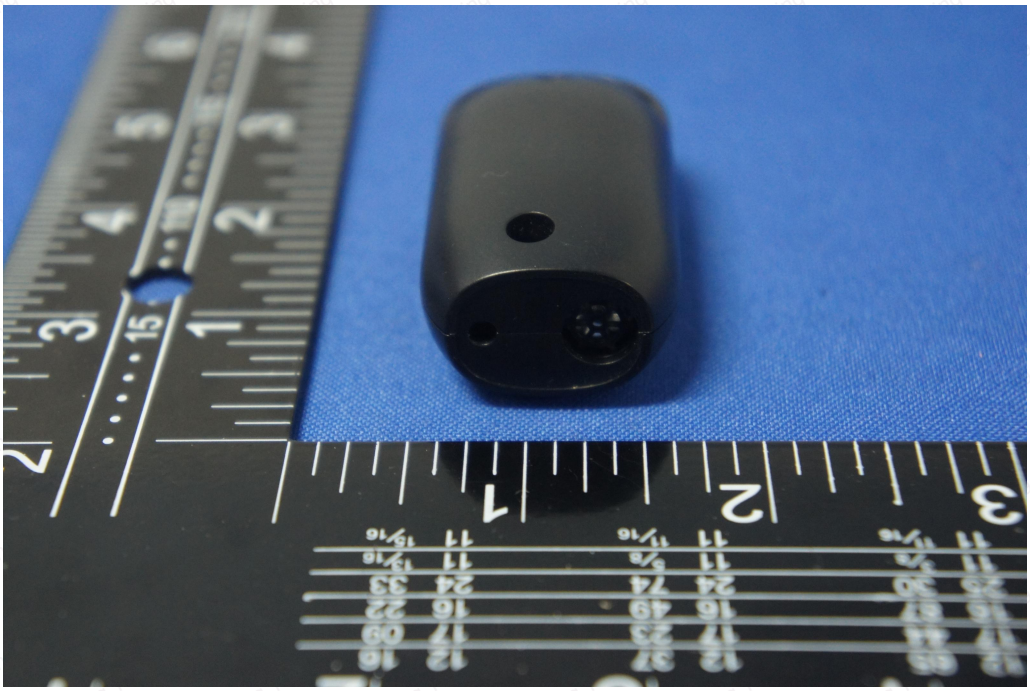


Photo 3

Photo 4

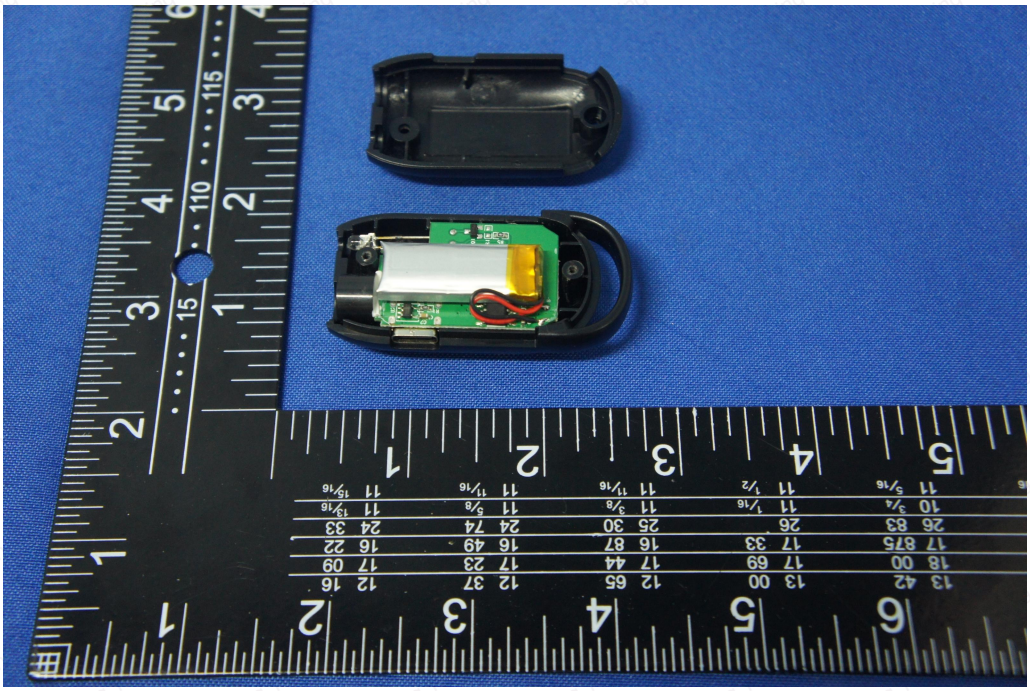


Photo 5

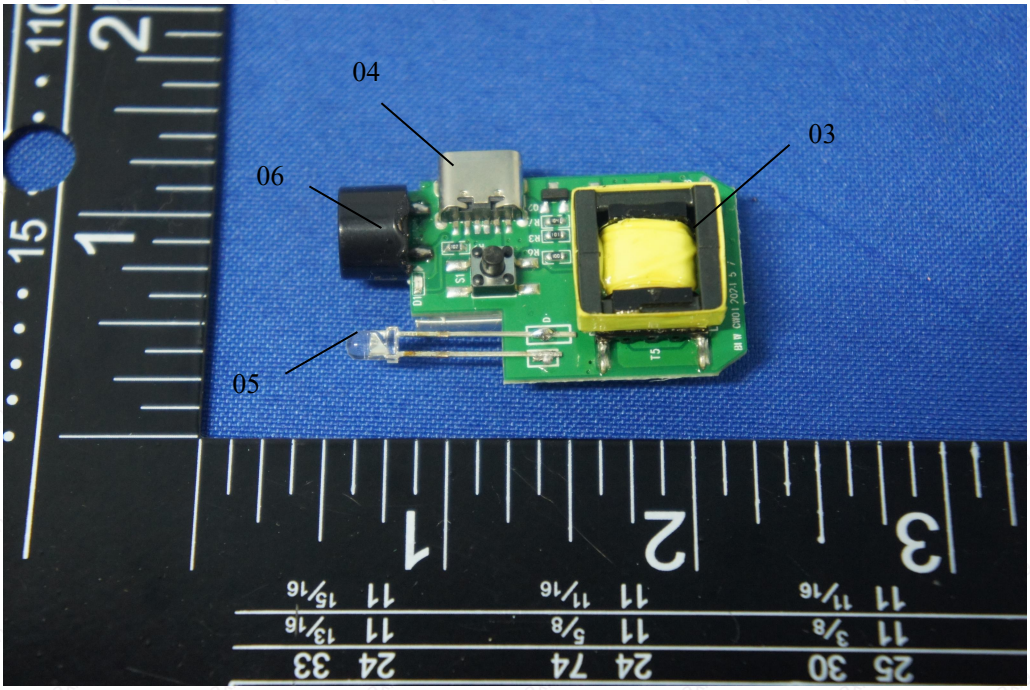


Photo 6

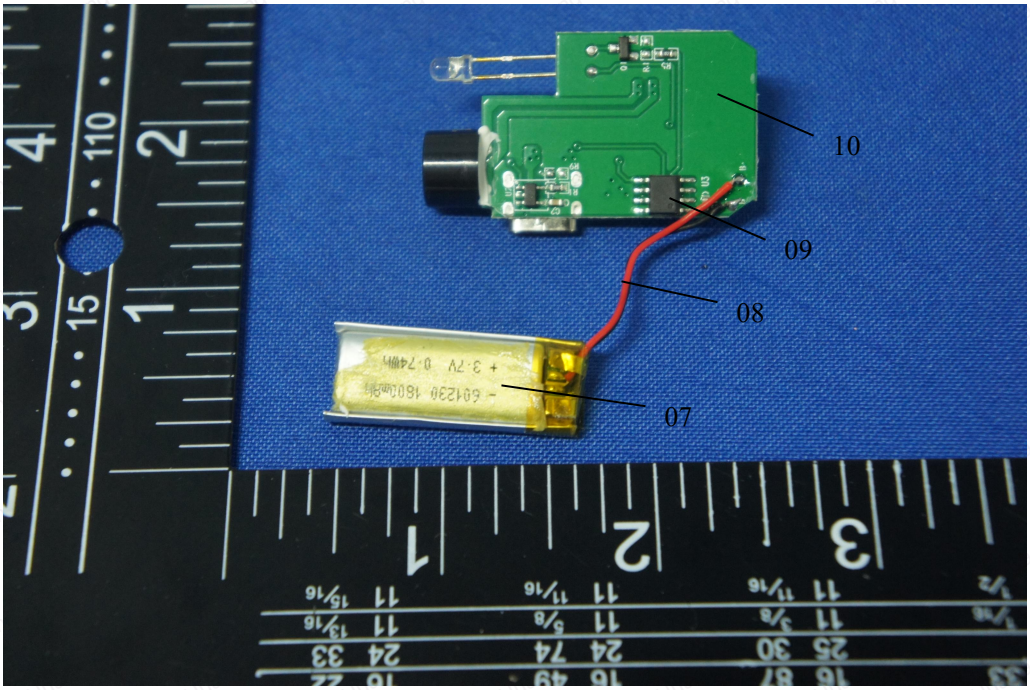


Photo 7

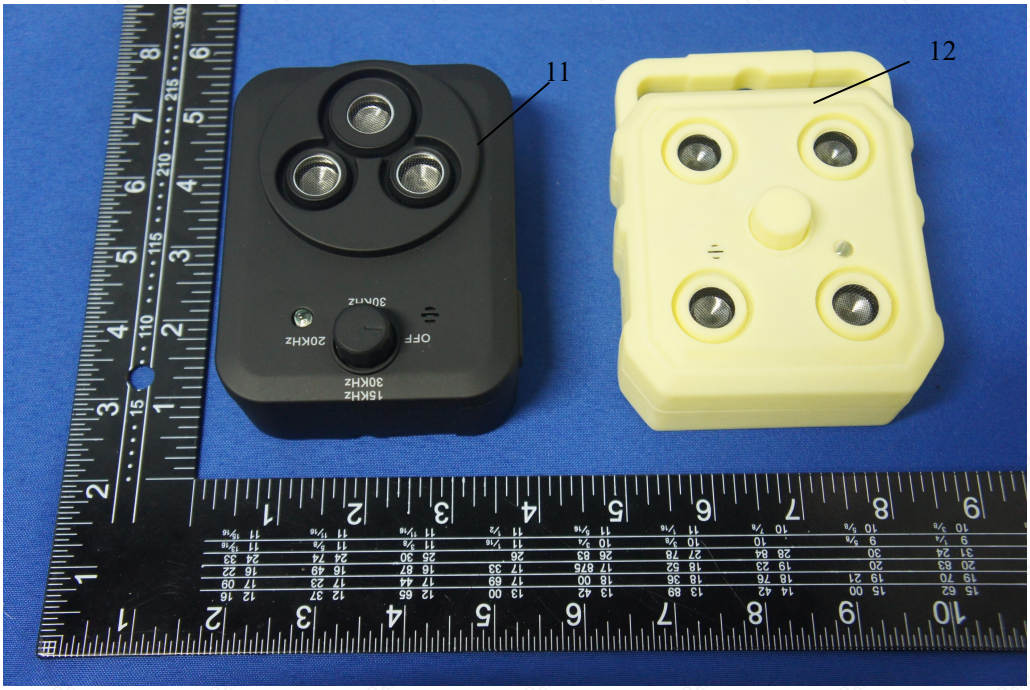


Photo 8

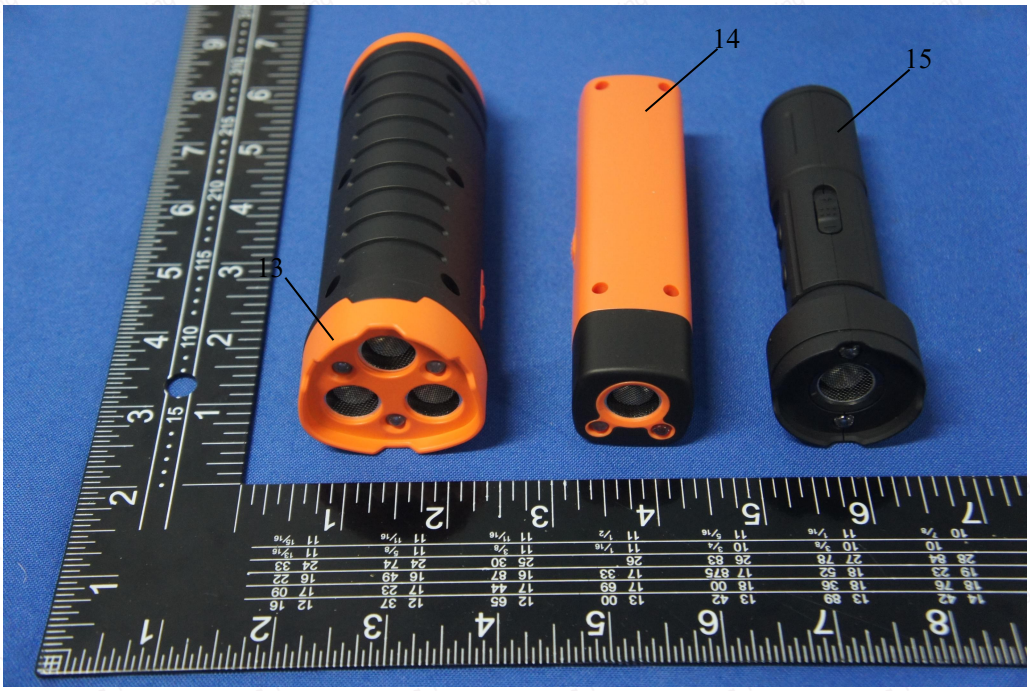


Photo 9

※※※※※※ THE END ※※※※※※

Certificate – Сертификат – 證明書 – Certificat – 증명서

Certificate No. : HUAX240816003KC

Supplier's Declaration of Conformity

Certificate's Holder	:	**Dongguan Yinghua Huizhi Technology Co., LTD**
Address	:	403,Building 2,NO.3 Taixing Rosd,Shigu,Tangxia Town,Dongguan City,Guangdong Province
Manufacturer	:	**Dongguan Yinghua Huizhi Technology Co., LTD**
Address	:	403,Building 2,NO.3 Taixing Rosd,Shigu,Tangxia Town,Dongguan City,Guangdong Province
Product Name	:	**Ultrasonic dog repeller**
Product Model (S)	:	QG-03, QG-01, QG-02, QG-04, QG-05, QG-06, QG-07, QG-08, QG-09, QG-10
Trade Mark	:	N/A
Related Standard(s)	:	**FCC Part 15 subpart B Class B(2017). Measurement Procedure ANSI C63.4:2014.**
Report No.	:	**HUAX240816003KR**

This is the results of test that was carried out from the submittedtype-sample of a product in conformity with the specification of the respective standards. The certificate holder has the right to fix the FCC-mark for EMI on the product complying with the inspection sample

Aug. 20, 2024

Certification Manager

Shenzhen Huaxiang Testing Co., Ltd
201, Building A10, Fuhai Information Port, Xinhe Community, Fuhai Street, Bao'an District, Shenzhen City, Guangdong Province, China Web.:Http:// www.hua-x.com
E-mail: huaxiang@hua-x.com Tel.:+86-0755-23010432

FCC TEST REPORT

On Behalf of

Product Name:	Ultrasonic dog repeller
Trademark:	N/A
Model Number:	QG-03, QG-01, QG-02, QG-04, QG-05, QG-06, QG-07, QG-08, QG-09, QG-10
Prepared For:	Dongguan Yinghua Huizhi Technology Co., LTD
Address:	403,Building 2,NO.3 Taixing Rosd,Shigu,Tangxia Town,Dongguan City,Guangdong Province
Prepared By:	Shenzhen Huaxiang Testing Co , Ltd
Address:	201, Building A10, Fuhai Information Port, Fuhai Street, Bao'an District, Shenzhen City
Report No.:	HUAX240816003KR

TABLE OF CONTENTS

TEST REPORT DECLARATION

Applicant	:	**Dongguan Yinghua Huizhi Technology Co., LTD**
Address :	:	403,Building 2,NO.3 Taixing Rosd,Shigu,Tangxia Town,Dongguan City,Guangdong Province
Manufacturer:	:	**Dongguan Yinghua Huizhi Technology Co., LTD**
Address :	:	403,Building 2,NO.3 Taixing Rosd,Shigu,Tangxia Town,Dongguan City,Guangdong Province
EUT Description :	:	**Ultrasonic dog repeller**
Model Number	:	QG-03
Rating(s)	:	DC 5V 1A
Test Date	:	Aug. 14, 2024 - Aug. 20, 2024
Date of Report	:	Aug. 20, 2024

Test Standards:

FCC Part 15 subpart B Class B（2017）

The EUT described above is tested by US to determine the maximum emission levels emanating from the EUT, the maximum emission levels are compared to the FCC Part 15 limits. The measurement results are contained in this test report. and Shenzhen Huaxiang Testing Co , Ltd. is assumed of full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT is to be technically compliant with the FCC requirements

This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Huaxiang Testing Co , Ltd.

Prepared by(Test Engineer): Kevin Su

Approved(Manager): Amy Jiang

1 GENERAL INFORMATION

1.1.Description of Device (EUT)

EUT	:	Ultrasonic dog repeller
Model Number	:	QG-03
Supplementary Model	:	QG-01, QG-02, QG-04, QG-05, QG-06, QG-07, QG-08, QG-09, QG-10
Test Voltage	:	DC 5V
Applicant	:	Dongguan Yinghua Huizhi Technology Co., LTD
Address	:	403,Building 2,NO.3 Taixing Rosd,Shigu,Tangxia Town,Dongguan City,Guangdong Province
Manufacturer	:	Dongguan Yinghua Huizhi Technology Co., LTD
Address	:	403,Building 2,NO.3 Taixing Rosd,Shigu,Tangxia Town,Dongguan City,Guangdong Province

1.2.Description of test facility

All measurement required was performed at laboratory of Shenzhen Huaxiang Testing Co , Ltd at 201, Building A10, Fuhai Information Port, Fuhai Street, Bao'an District, Shenzhen City

Shenzhen Huaxiang Testing Co , Ltd EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission.

1.3.Test Standards

The following Declaration of Conformity report of EUT is prepared in accordance with 47CFR Part 15(2014): Radio Frequency Device: Subpart B; Unintentional radiators Class B

ANSI C63.4 (2019): Interim Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9KHz to 40GHz.

1.4.Test Summary

TEST ITEMS	RESULT	NOTE
Disturbance voltage at a.c. mains terminal	PASS	
Radiated emission	PASS	

Notes:N/A=Not Applicable

1.5.Measurement Uncertainty

Radiation Uncertainty : Ur = ±3.84dB

Conduction Uncertainty : Uc = ±2.72dB

2. POWER LINE CONDUCTED MEASUREMENT

2.1.Test Equipment

The following test equipments are used during the power line conducted measurement:

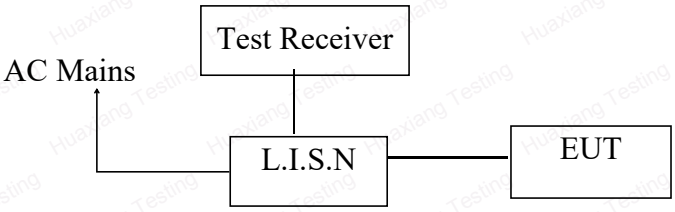
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESCS30	8289851018	Nov. 20, 2023	1 Year
2.	L.I.S.N.	Rohde & Schwarz	ESH2-Z5	834549/005	Nov. 20, 2023	1 Year
3.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100006	Nov. 20, 2023	1 Year
4.	RF Cable	FUJIKURA	RG-55/U	LISN Cable	Nov. 20, 2023	1 Year

2.2.Block Diagram of Test Setup

2.2.1 Block diagram of connection between the EUT and simulators

(EUT: Ultrasonic dog repeller)

2.2.2 Block diagram of test setup



(EUT: Ultrasonic dog repeller)

2.3.Power Line Conducted Emission Measurement Limits (Class B)

Frequency MHz	Limits dB(μV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66 ~ 56*	56 ~ 46*
0.50 ~ 5.00	56	46
5.00 ~ 30.00	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

2.4.Configuration of EUT on Measurement

The following equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner, which tends to maximize its emission characteristics in a normal application.

EUT : Ultrasonic dog repeller

Model Number : QG-03

2.5.Operating Condition of EUT

2.5.1.Setup the EUT and simulator as shown as Section 2.2.
2.5.2.Turn on the power of all equipment.
2.5.3.Let the EUT work in test mode (Normal) and measure it.

2.6.Test Procedure

The EUT system is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides 50ohm-coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC/ANSI C63.4-2009 on Conducted Emission Measurement.

The bandwidth of test receiver (R & S ESCS30) is set at 9KHz.

The frequency range from 150KHz to 30MHz is checked.

The test result is reported on Section 2.7.

The frequency range from 150KHz to 30 MHz is investigated.

2.7.Power Line Conducted Emission Measurement Results

N/A

3. RADIATED EMISSION MEASUREMENT

3.1.Test Equipment

The following test equipments are used during the radiated emission measurement:

3.1.1.For Anechoic Chamber

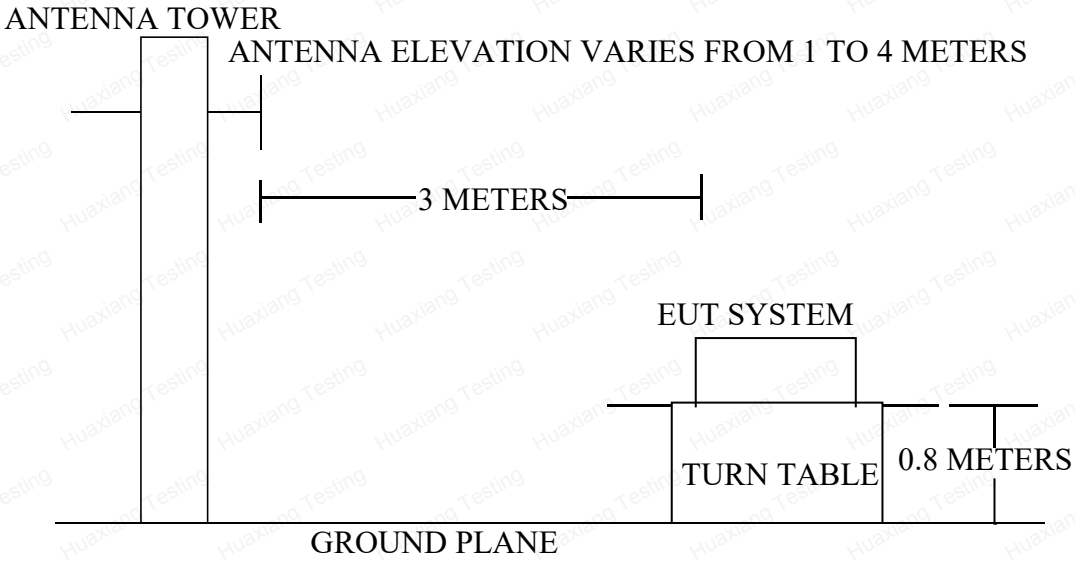
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	ANRITSU	MS2661C	6200140915	Nov. 20, 2023	1 Year
2.	Test Receiver	Rohde & Schwarz	ESCS30	828985/018	Nov. 20, 2023	1 Year
3.	Bilog Antenna	Schwarzbeck	VULB9163	142	Nov. 20, 2023	1 Year
4.	50 Coaxial Switch	Anritsu Corp	MP59B	6100237248	Nov. 20, 2023	1 Year
5.	Cable	Schwarzbeck	AK9513(1m)	CR RX2	Nov. 20, 2023	1 Year
6.	Cable	Schwarzbeck	AK9513(10m)	AC RX1	Nov. 20, 2023	1 Year
7.	Cable	Rosenberger	N/A(6m)	CR RX1	Nov. 20, 2023	1 Year
8.	Cable	Rosenberger	N/A(10m)	FP2RX2	Nov. 20, 2023	1 Year
9.	DC Power Filter	MPE	23872C	N/A	Nov. 20, 2023	1 Year
10.	Single Phase Power Line Filter	MPE	23332C	N/A	Nov. 20, 2023	1 Year
11.	3 Phase Power Line Filter	MPE	23333C	N/A	Nov. 20, 2023	1 Year
12.	Signal Generator	HP	8648A	3625U00573	Nov. 20, 2023	1 Year

3.2.Block Diagram of Test Setup

3.2.1.Block diagram of connection between the EUT and simulators

(EUT: Ultrasonic dog repeller)

3.2.2.Anechoic Chamber Test Setup Diagram



(EUT: Ultrasonic dog repeller)

3.3.Radiated Emission Limit (Class B)

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		μV/m	dB(μV)/m
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0

Remark： (1) Emission level (dB)μV = 20 log Emission level μV/m
(2) The smaller limit shall apply at the cross point between two frequency bands.
(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

3.4.EUT Configuration on Measurement

The following equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

Ultrasonic dog repeller(EUT)

Model Number : QG-03

3.5. Operating Condition of EUT

1. Setup the EUT as shown in Section 3.2.
2. Let the EUT work in test mode (Normal) and measure it.

3.6. Test Procedure

EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4-2009on radiated emission measurement. The bandwidth of the EMI test receiver (R&S ESCS30) is set at 120KHz.

The frequency range from 30MHz to 1000MHz is investigated.

3.7. Radiated Emission Measurement Results

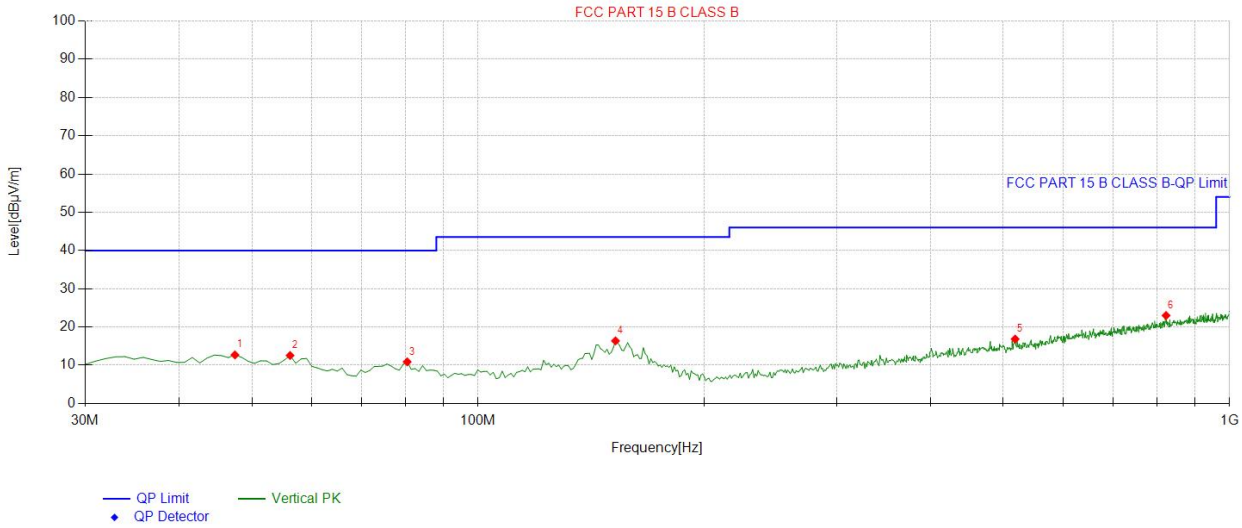
PASS

Please reference to the following pages

Radiated emissions were conducted in charging mode and discharging mode and the worst case (discharging mode) was reported only.

Radiated Emission Test Data

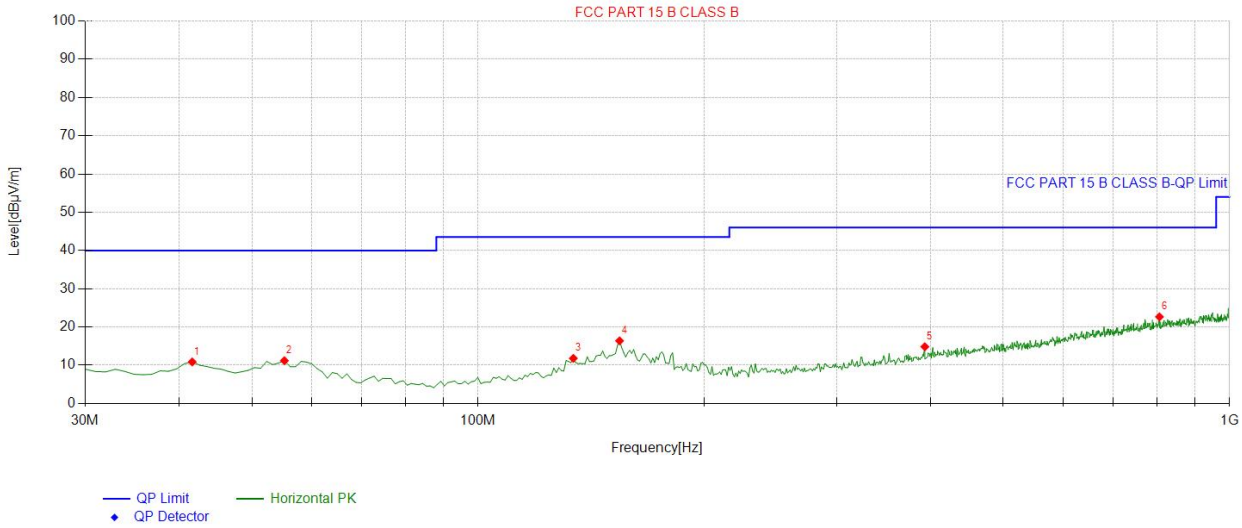
EUT: Ultrasonic dog repeller
M/N: QG-03
Operating Condition: Normal work
Test Site: 3m CHAMBER
Operator: Mark
Test Specification: /
Comment: Polarization: Vertical



Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	47.477477	-17.23	29.92	12.69	40.00	27.31	100	140	Vertical
2	56.216216	-17.85	30.39	12.54	40.00	27.46	100	90	Vertical
3	80.49049	-21.61	32.49	10.88	40.00	29.12	100	64	Vertical
4	152.34234	-17.07	33.43	16.36	43.50	27.14	100	86	Vertical
5	518.39839	-13.04	29.88	16.84	46.00	29.16	100	239	Vertical
6	823.28328	-7.32	30.31	22.99	46.00	23.01	100	136	Vertical

Radiated Emission Test Data

EUT:	Ultrasonic dog repeller
M/N:	QG-03
Operating Condition:	Normal work
Test Site:	3m CHAMBER
Operator:	Mark
Test Specification:	/
Comment:	Polarization: Horizontal



Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	41.651652	-17.03	27.89	10.86	40.00	29.14	100	13	Horizontal
2	55.245245	-17.73	28.91	11.18	40.00	28.82	100	335	Horizontal
3	133.89389	-18.10	29.89	11.79	43.50	31.71	100	186	Horizontal
4	154.28428	-16.91	33.29	16.38	43.50	27.12	100	349	Horizontal
5	393.14314	-15.33	30.16	14.83	46.00	31.17	100	13	Horizontal
6	806.77677	-7.55	30.20	22.65	46.00	23.35	100	6	Horizontal

APPENDIX I
(PHOTOS OF EUT)

FIGURE
GENERAL APPEARANCE OF EUT

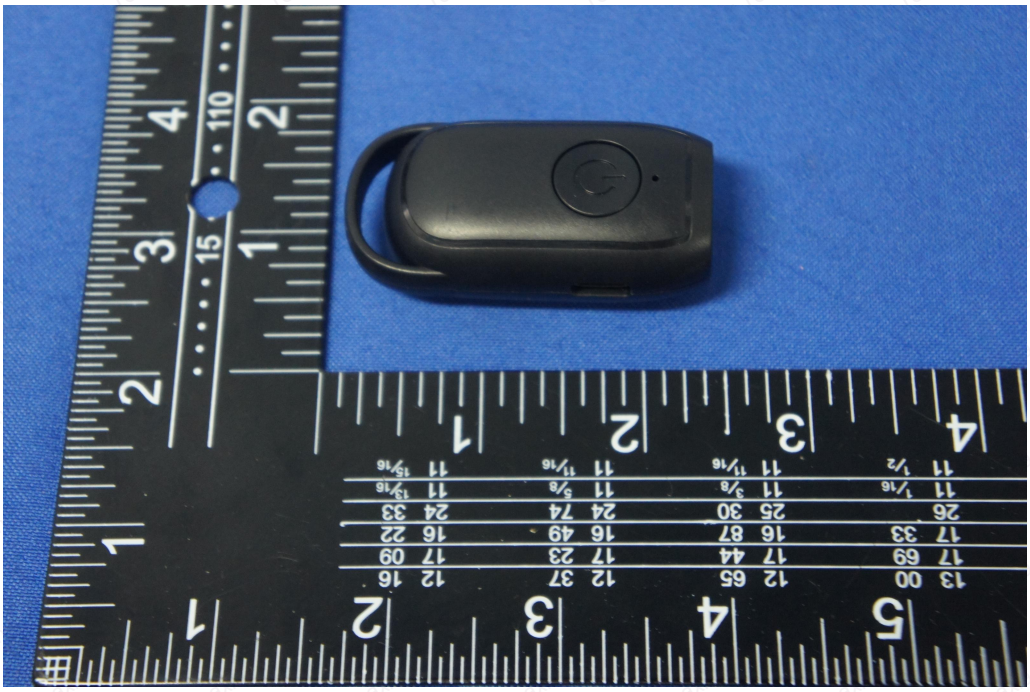


Photo 1

Photo 2

Photo 3

Photo 4

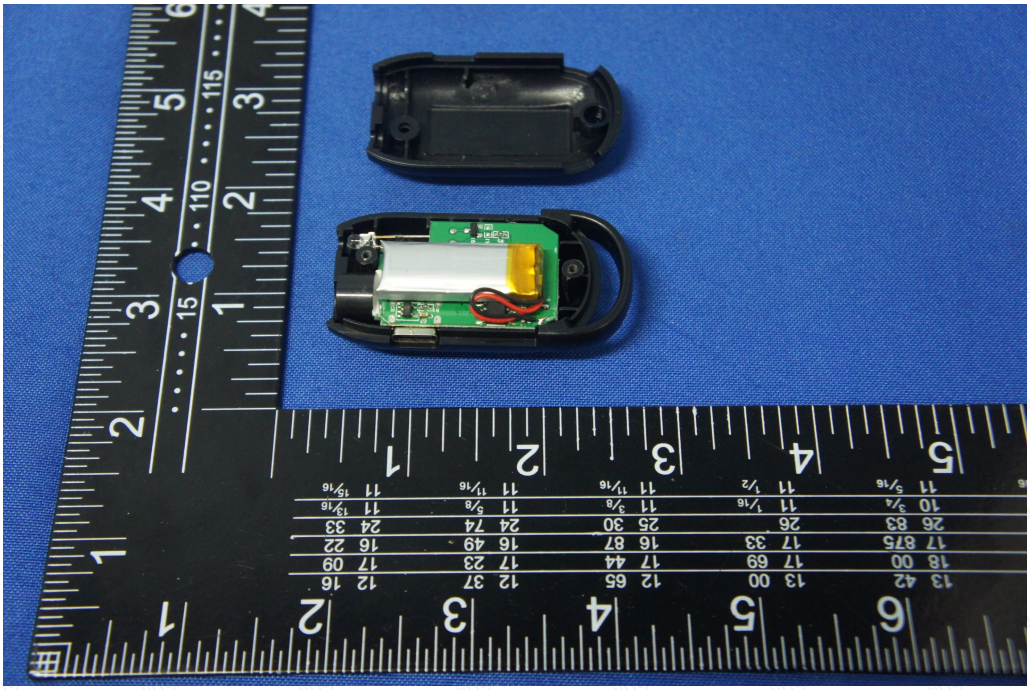


Photo 5

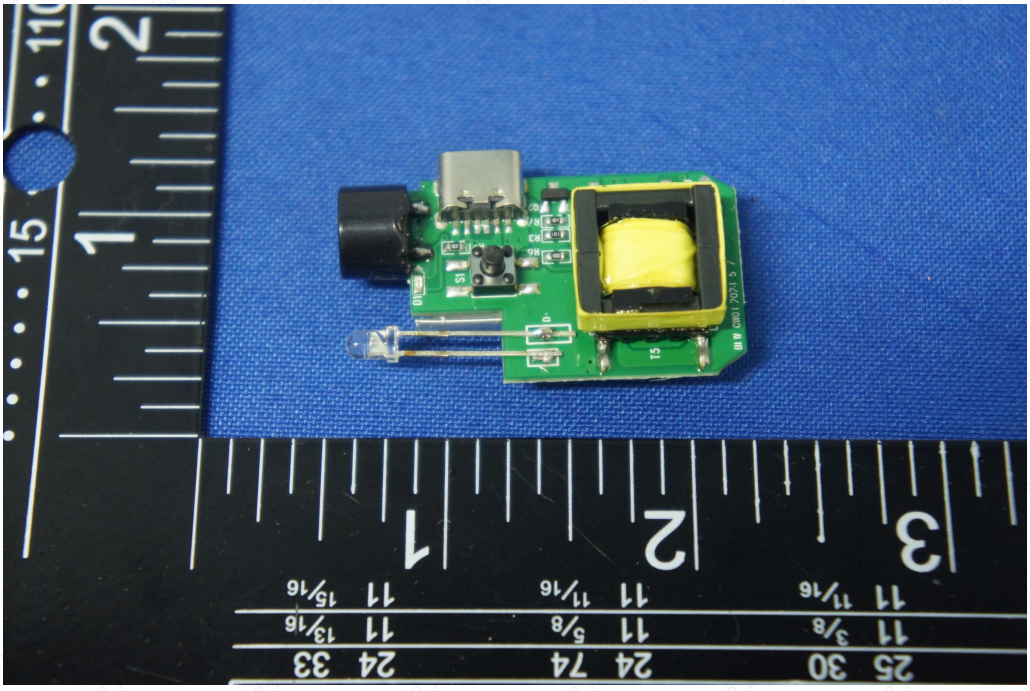


Photo 6

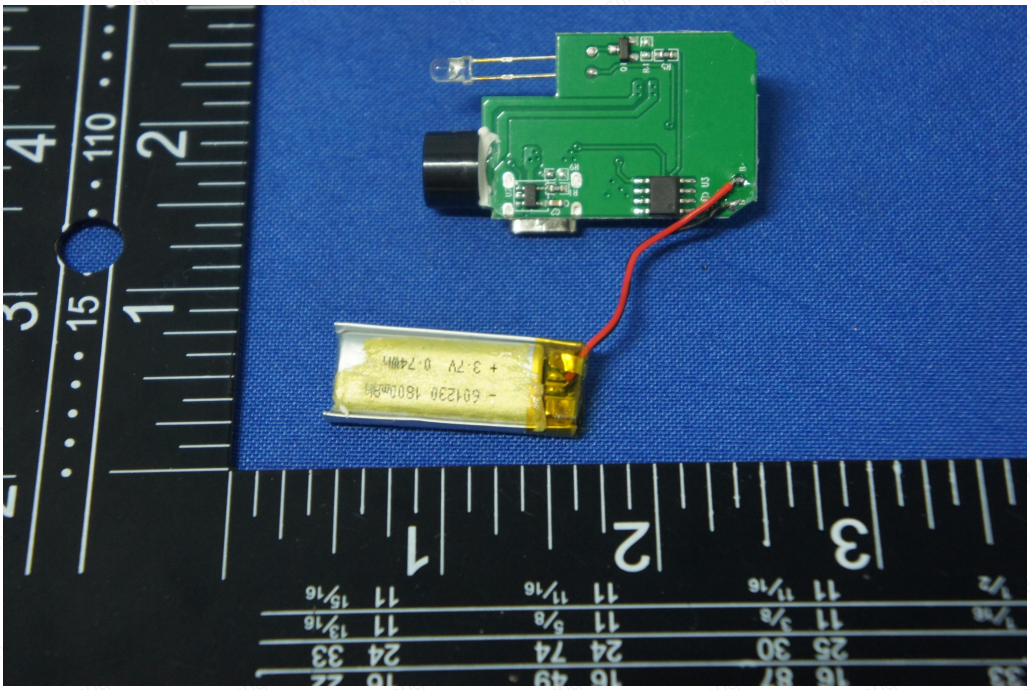


Photo 7

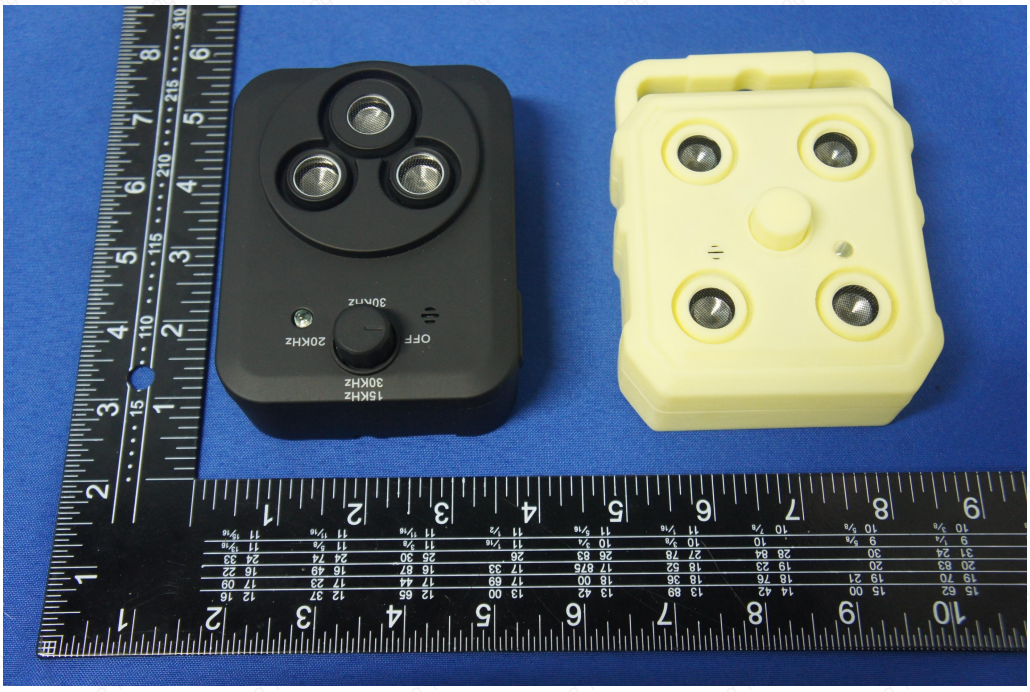


Photo 8

Photo 9

****************************THE END OF REPORT***************************