EMC Test Report

Application No.	:	HX220803154101
Applicant	:	Guangdong Hostweigh Electronic Technology Co., Ltd.
Equipment Under Test (EUT)		
EUT Name	:	kitchen scale / coffee scale
Model No.	:	NS-CF5
Serial No.	:	See Page 3
Trademark	:	Hostweigh
Receipt Date	:	2022-08-23
Test Date	:	2022-08-23 to 2022-08-29
Issue Date	:	2022-09-22
Standards	:	EN IEC 55014-1: 2021; EN IEC 55014-2: 2021.
Conclusions	:	**PASS**

In the configuration tested, the EUT complied with the standards specified above. The EUT technically complies with the 2014/30/EU directive requirements.

Test/Witness Engineer : Tim Chen

Approved & Authorized : Andy Zhang

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in the report.

TABLE OF CONTENTS

1. General Information

1.1. Client Information

Applicant	:	Guangdong Hostweigh Electronic Technology Co., Ltd.
Address	:	Floor 2-5, Building J, Liushi Development Center, Liheng Road, Shipai Town, Dongguan City, Guangdong Province, China.
Manufacturer	:	Guangdong Hostweigh Electronic Technology Co., Ltd.
Address	:	Floor 2-5, Building J, Liushi Development Center, Liheng Road, Shipai Town, Dongguan City, Guangdong Province, China.

1.2. General Description of EUT (Equipment Under Test)

EUT Name	:	kitchen scale / coffee scale
Model No.	:	NS-CF5
Serial No.	:	NS-C1, NS-C2, NS-C3, NS-C4, NS-C5, NS-C6, NS-C7, NS-CF1, NS-CF2, NS-CF3, NS-CF4, NS-CF5, NS-CF6, NS-CF7, NS-CF8, NS-CF9, NS-CF10, NS-CF11, NS-CF12, NS-CF13, NS-CF14, NS-CF15, NS-K01, NS-K02, NS-K03, NS-K04, NS-K05, NS-K06, NS-K07, NS-K08, NS-K09, NS-K10, NS-K11, NS-K12, NS-K13, NS-K14, NS-K15, NS-K16, NS-K17, NS-K18, NS-K19, NS-K20, NS-K21, NS-K22, NS-K23, NS-K24, NS-K25, NS-K26, NS-K27, NS-K28, NS-K29, NS-K30, NS-K31, NS-K32, NS-K33, NS-K34, NS-K35, NS-K36, NS-K37, NS-K38, NS-K39, NS-K40, NS-K41, NS-K42, NS-K43, NS-K44, NS-K45, NS-K46, NS-K47, NS-K48, NS-K49, NS-K50, NS-K51, NS-K52, NS-K53, NS-K54, NS-K55, NS-K56, NS-K57, NS-K58, NS-K59, NS-K60, NS-K61, NS-K62, NS-K63, WH-B28, NS-K65, NS-K66
Trademark	:	Hostweigh
Power Supply	:	DC 3V, 1A
Remark: All above models are identical in schematic, structure and critical components except for only different appearance; therefore, EMC testing was performed with NS-CF5 only.		

1.3. Block Diagram Showing the Configuration of System Tested

1.4. Description of Support Units

The EUT has been tested as an independent unit.

1.5. Performance Criterion

Criterion A: The equipment shall continue to operate as intended without operator intervention. No degradation of performance of loss of function is allowed below a performance level specified by the manufacturer when the equipment is used as intended.

Criterion B: After the test, the equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed, after the application of the phenomena below a performance level specified by the manufacturer, when the equipment is used as intended.

Criterion C: 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.

1.6. Classification of Apparatus

Category I: Apparatus containing no electronic control circuitry.

Category II: Transformer toys, dual supply toys, mains powered motor operated appliances, tools, heating appliances and similar electric apparatus(for example-UV radiators, IR radiators and microwave ovens) containing electronic control circuitry with no internal clock frequency or oscillator frequency higher than 15MHz.

Category III: Battery powered apparatus (with built-in batteries or external batteries), which in normal use is not connected to the mains, containing an electronic control circuitry with no internal clock frequency or oscillator frequency higher than 15MHz.

This category includes apparatus provided with rechargeable batteries which can be charged by connecting the apparatus to the mains power. However, this apparatus shall also be tested as an apparatus in category III while it is connected to the mains network.

Category IV: All other apparatus covered by the scope of this standard.

1.7. Test Facility

The testing report were performed by the The testing report were performed by the Shenzhen HX Detect Certification Co., Ltd., in their facilities located at 101, building B12, Yintian Industrial Zone, Yantian community, Xixiang street, Bao'an District, Shenzhen.

2. Test Results Summary

EMISSION		
Description of test items	**Standards**	**Results**
Conducted disturbance at mains terminals	EN IEC 55014-1: 2021	N/A
Disturbance Power	EN IEC 55014-1: 2021	N/A
Click measurement	EN IEC 55014-1: 2021	N/A
Radiated disturbance	EN IEC 55014-1: 2021	Pass
Harmonic current emissions	EN IEC 61000-3-2: 2019/A1: 2021	N/A
Voltage fluctuation and flicker	EN 61000-3-3: 2013+A1:2019	N/A
IMMUNITY		
Description of test items	**Basic Standards**	**Results**
Electrostatic Discharge (ESD)	EN 61000-4-2: 2009	Pass
Radio-frequency, Continuous Radiated Disturbance	EN IEC 61000-4-3: 2020	Pass
EFT/B Immunity	EN 61000-4-4: 2012	N/A
Surge Immunity	EN 61000-4-5: 2014/A1:2017	N/A
Conducted RF Immunity	EN 61000-4-6: 2014	N/A
Voltage dips, 40% reduction	EN IEC 61000-4-11: 2020	N/A
Voltage dips, 70% reduction		
Voltage interruptions		
Note: N/A is an abbreviation for Not Applicable.		

3. Test Equipment Used

3.1. Test Equipment Used to Measure Conducted Emission					
No.	**Equipment**	**Manufacturer**	**Model No.**	**Last Cal.**	**Cal. Interval**
HX-EMC001	EMI Test Receiver	Rohde & Schwarz	ESCS30	Dec. 30, 2021	1 Year
HX-EMC002	AMN	Rohde & Schwarz	ENV216	Dec. 30, 2021	1 Year
HX-EMC003	AMN	SCHWARZBECK	NNBL 8226	Dec. 30, 2021	1 Year
3.2. Test Equipment Used to Measure Disturbance Power					
No.	**Equipment**	**Manufacturer**	**Model No.**	**Last Cal.**	**Cal. Interval**
HX-EMC001	EMI Test Receiver	Rohde & Schwarz	ESCS30	Dec. 30, 2021	1 Year
HX-EMC028	Power Clamp	Luthi	MDS-21	Dec. 30, 2021	1 Year
3.3. Test Equipment UseTest Equipment Used to Measure Radiated Emission					
No.	**Equipment**	**Manufacturer**	**Model No.**	**Last Cal.**	**Cal. Interval**
HX-EMC004	EMI Test Receiver	Rohde & Schwarz	ESI26	Dec. 30, 2021	1 Year
HX-EMC005	Bilog Antenna	SCHWARZBECK	VULB9163	Dec. 30, 2021	1 Year
HX-EMC006	Positioning Controller	C&C	CC-C-1F	N/A	N/A
3.4. Test Equipment Used to Measure Harmonic Current/ Voltage Fluctuation and Flicker					
No.	**Equipment**	**Manufacturer**	**Model No.**	**Last Cal.**	**Cal. Interval**
HX-EMC007	Harmonic Flicker Test System	CI	5001ix-CTS-40	Dec. 30, 2021	1 Year
3.5. Test Equipment Used to Measure Electrostatic Discharge Immunity					
No.	**Equipment**	**Manufacturer**	**Model No.**	**Last Cal.**	**Cal. Interval**
HX-EMC008	ESD Tester	TESEQ	NSG437	Dec. 30, 2021	1 Year
3.6. Test Equipment Used to Measure Conducted Immunity					
HX-EMC009	RF Generator	FRANKONIA	CIT-10/75	Dec. 30, 2021	1 Year
HX-EMC010	Attenuator	FRANKONIA	59-6-33	Dec. 30, 2021	1 Year
HX-EMC011	M-CDN	LUTHI	M2/M3	Dec. 30, 2021	1 Year
HX-EMC012	CDN	LUTHI	AF2	Dec. 30, 2021	1 Year
HX-EMC013	EM Injection Clamp	LUTHI	EM101	Dec. 30, 2021	1 Year

3.7. Test Equipment Used to Measure Radio Frequency Electromagnetic Fields Immunity					
No.	**Equipment**	**Manufacturer**	**Model No.**	**Last Cal.**	**Cal. Interval**
HX-EMC014	Signal Generator	Rohde & Schwarz	SMT03	Dec. 30, 2021	1 Year
HX-EMC015	Power Meter	Rohde & Schwarz	NRVD	Dec. 30, 2021	1 Year
HX-EMC016	Voltage Probe	Rohde & Schwarz	URV5-Z2	Dec. 30, 2021	1 Year
HX-EMC017	Voltage Probe	Rohde & Schwarz	URV5-Z2	Dec. 30, 2021	1 Year
HX-EMC018	Power Amplifier	AR	150W1000	Dec. 30, 2021	1 Year
HX-EMC019	Bilog Antenna	Chase	CBL6111C	Dec. 30, 2021	1 Year
3.8. Test Equipment Used to Measure Electrical Fast Transient/Burst Immunity					
No.	**Equipment**	**Manufacturer**	**Model No.**	**Last Cal.**	**Cal. Interval**
HX-EMC020	Simulator	EMTEST	UCS500N5	Dec. 30, 2021	1 Year
HX-EMC021	Auto-transformer	EMTEST	V4780S2	Dec. 30, 2021	1 Year
3.9. Test Equipment Used to Measure Surge Immunity					
No.	**Equipment**	**Manufacturer**	**Model No.**	**Last Cal.**	**Cal. Interval**
HX-EMC022	Simulator	EMTEST	UCS500N5	Dec. 30, 2021	1 Year
HX-EMC023	Coupling Clamp	EMTEST	HFK	Dec. 30, 2021	1 Year
3.10. Test Equipment Used to Measure Voltage Dips and Interruptions Immunity					
No.	**Equipment**	**Manufacturer**	**Model No.**	**Last Cal.**	**Cal. Interval**
HX-EMC022	Simulator	EMTEST	UCS500N5	Dec. 30, 2021	1 Year
HX-EMC023	Coupling Clamp	EMTEST	HFK	Dec. 30, 2021	1 Year

4. Radiated Emission Test

4.1. Test Standard and Limit

4.1.1. Test Standard

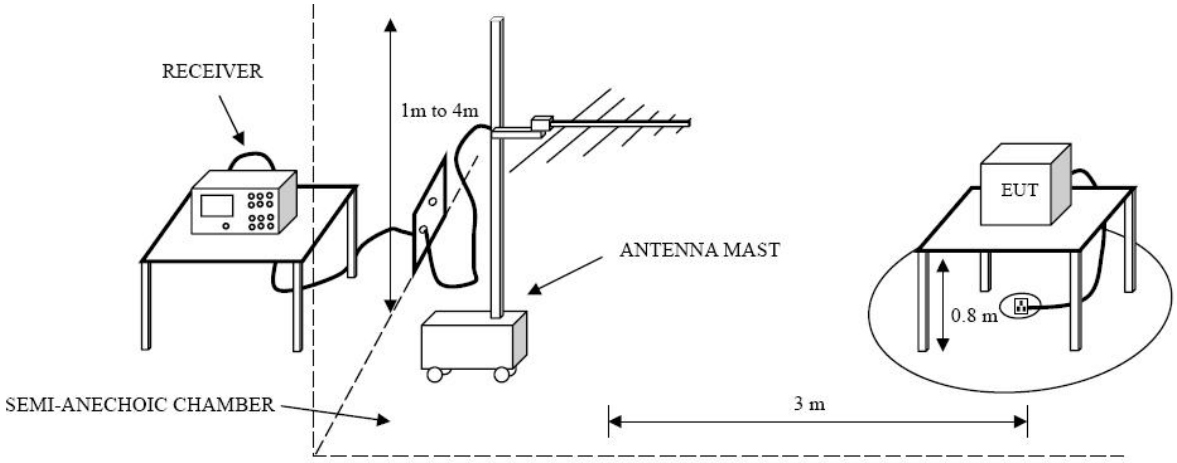
EN IEC 55014-1: 2021.

4.1.2. Test Limit

Radiated Disturbance Test Limit

Frequency	Limit (dBμV/m)
	Quasi-peak Level
30MHz~230MHz	40
230MHz~1000MHz	47
Remark: 1. The lower limit shall apply at the transition frequency. 2. The test distance is 3m.	

4.2. Test Setup



4.3. Test Procedure

The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3m. The table was rotated 360 degrees to determine the position of the highest radiation.

The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

The initial step in collecting radiated emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range.

If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.

4.4. Test Condition

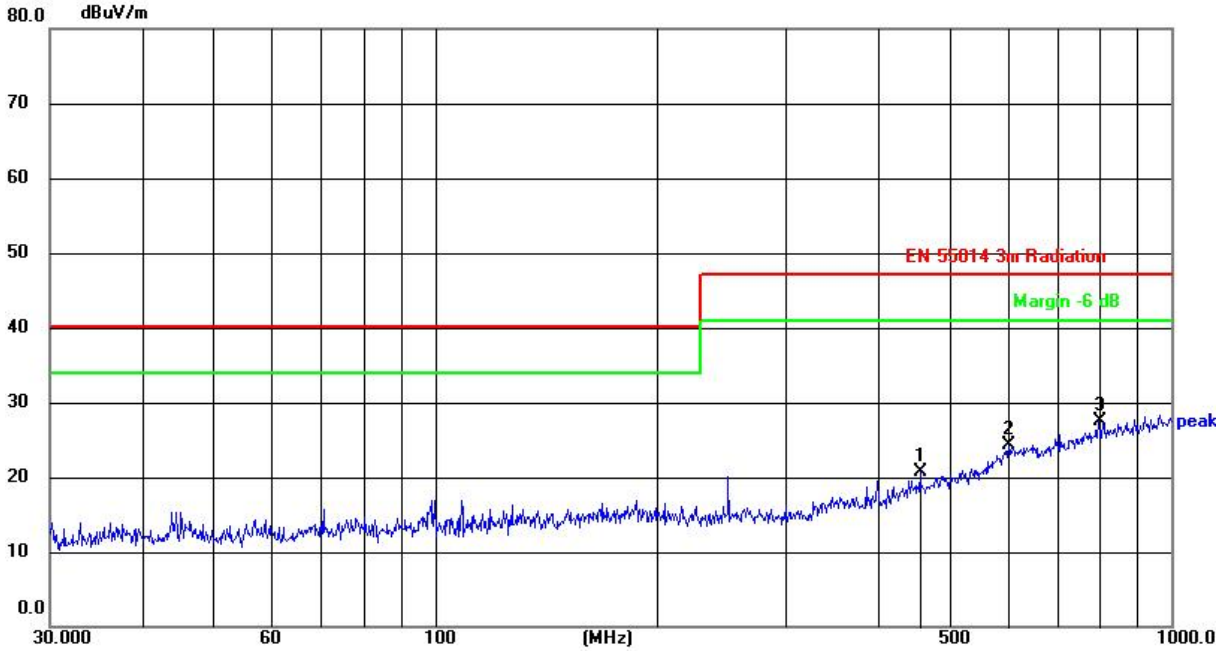
Temperature	:	23 ℃
Relative Humidity	:	52 %
Pressure	:	1010 hPa
Test Power	:	DC 3V

4.5. Test Data

Please refer to the following pages.

Operating Condition: Normal

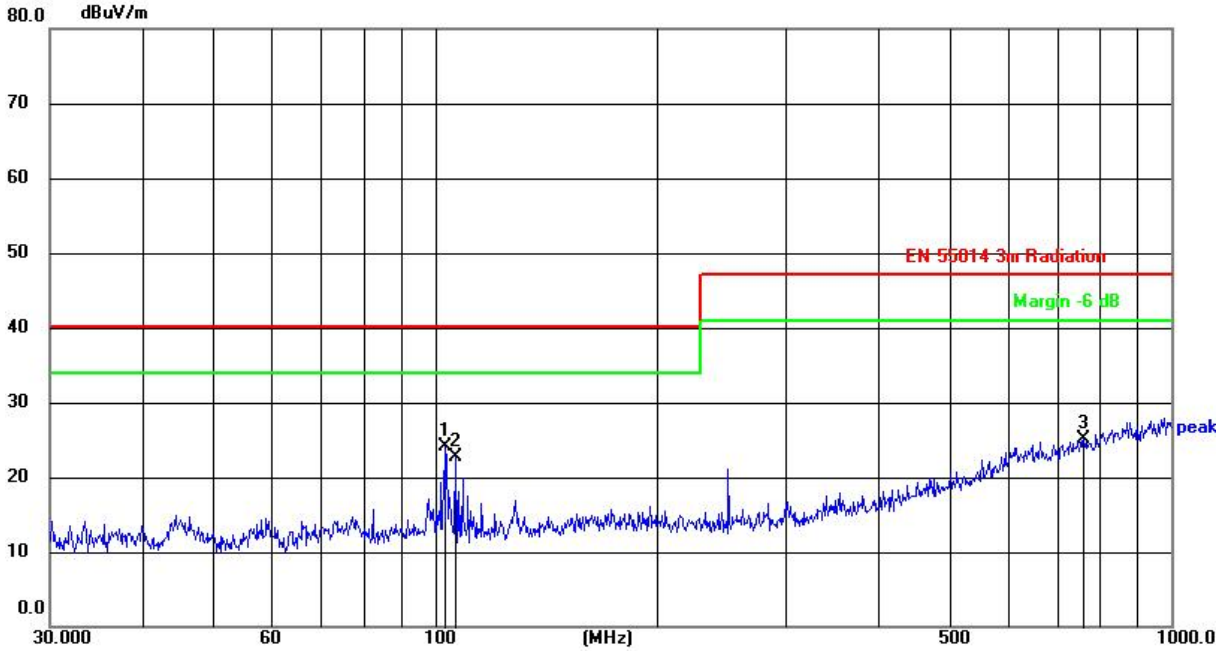
Test Specification: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	455.9058	35.27	-14.64	20.63	47.00	-26.37	peak				
2	601.4265	34.47	-10.15	24.32	47.00	-22.68	peak				
3	796.1830	34.91	-7.49	27.42	47.00	-19.58	peak				

Operating Condition: Normal

Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	103.4421	43.93	-19.92	24.01	40.00	-15.99	peak				
2	106.7587	42.62	-19.88	22.74	40.00	-17.26	peak				
3	760.7035	33.18	-8.02	25.16	47.00	-21.84	peak				

5. Electrostatic Discharge Immunity Test

5.1. Test Requirements

5.1.1. Test Standard

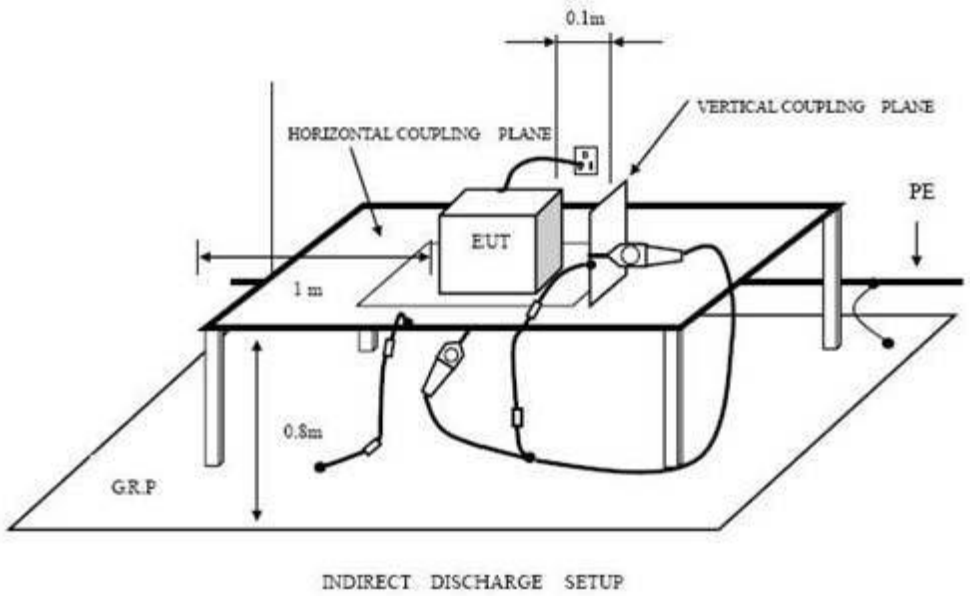
EN IEC 55014-2: 2021 (EN 61000-4-2:2009)

5.1.2. Test Level

Level	Test Voltage Contact Discharge (KV)	Test Voltage Air Discharge (KV)
1.0	±2	±2
2.0	±4	±4
3.0	±6	±8
4.0	±8	±15
X	Special	Special

5.1.3. Performance criterion: B

5.2. Test Setup



INDIRECT DISCHARGE SETUP

5.3. Test Procedure

5.3.1. 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.

5.3.2. Contact Discharge:

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

5.3.3. 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.

5.3.4. Indirect discharge for vertical coupling plane

At least 10 single discharges (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.

5.4. Test Data

Please refer to the following page.

Electrostatic Discharge Test Result

EUT	:	kitchen scale / coffee scale	M/N	:	NS-CF5
Temperature	:	22℃	Humidity	:	50%
Power supply	:	DC 3V	Test Mode	:	Normal

Criterion: B

Air Discharge: ±8kV Contact Discharge: ±4kV

For each point positive 10 times and negative 10 times discharge.

Location	**Kind** A-Air Discharge C-Contact Discharge	**Result**
Nonconductive Enclosure	A	PASS
Button	A	PASS
Conductive Enclosure	C	PASS
HCP	C	PASS
VCP of front	C	PASS
VCP of rear	C	PASS
VCP of left	C	PASS
VCP of right	C	PASS

Remark:

6. Radiated Electromagnetic Field Immunity test

6.1. Test Requirements

6.1.1. Test Standard

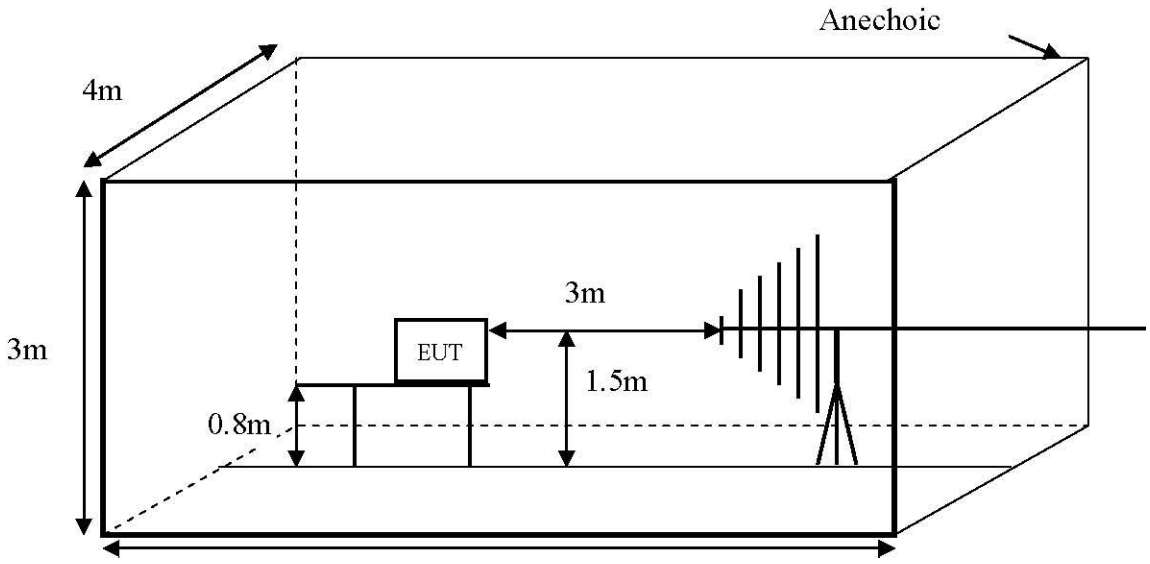
EN IEC 55014-2: 2021 (EN IEC 61000-4-3: 2020)

6.1.2. Test Level

Level	Field Strength V/m
1.0	1
2.0	3
3.0	10
X	Special

6.1.3. Performance criterion: A

6.2. Test Setup



6.3. 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 is 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 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.

6.4. Test Data

Please refer to the following page.

RF Field Strength Susceptibility Test Results

EUT	:	kitchen scale / coffee scale	M/N	:	NS-CF5
Temperature	:	22℃	Humidity	:	50%
Power supply	:	DC 3V	Test Mode	:	Normal

Criterion: A

Modulation: Unmodulated

Pulse: AM 1KHz 80%

	Frequency Range 1		Frequency Range 2	
	80~1000MHz		/	
	Horizontal	Vertical	Horizontal	Vertical
Front	PASS	PASS	/	/
Right	PASS	PASS	/	/
Rear	PASS	PASS	/	/
Left	PASS	PASS	/	/

7. Photographs - Constructional Details

Photo 1 Appearance of EUT

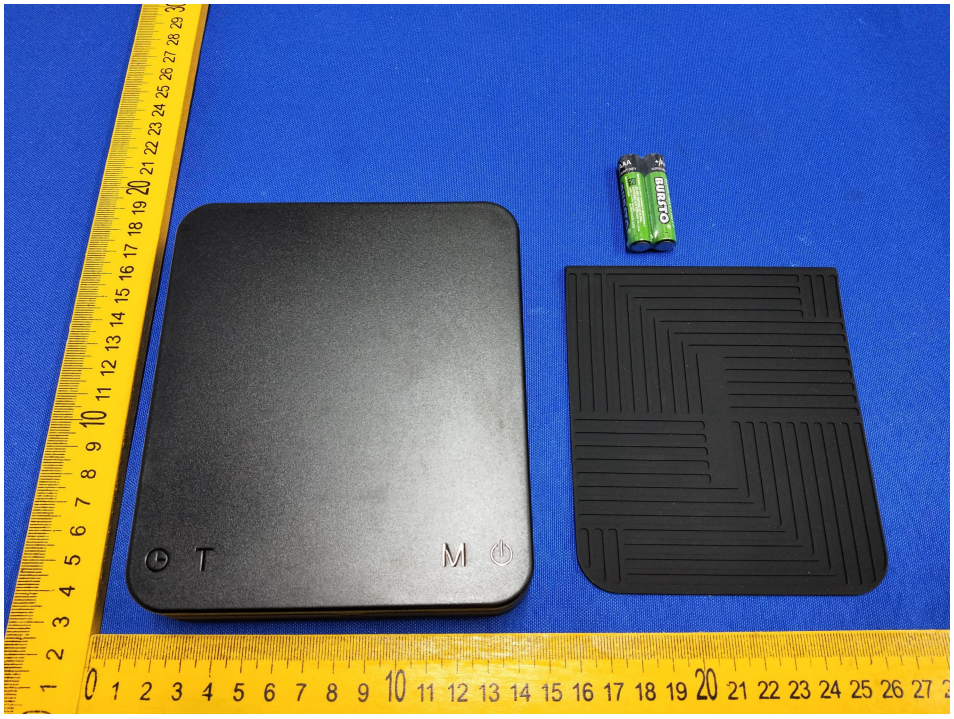


Photo 2 Appearance of EUT

Photo 3 Inside of EUT

Photo 4 Appearance of PCB

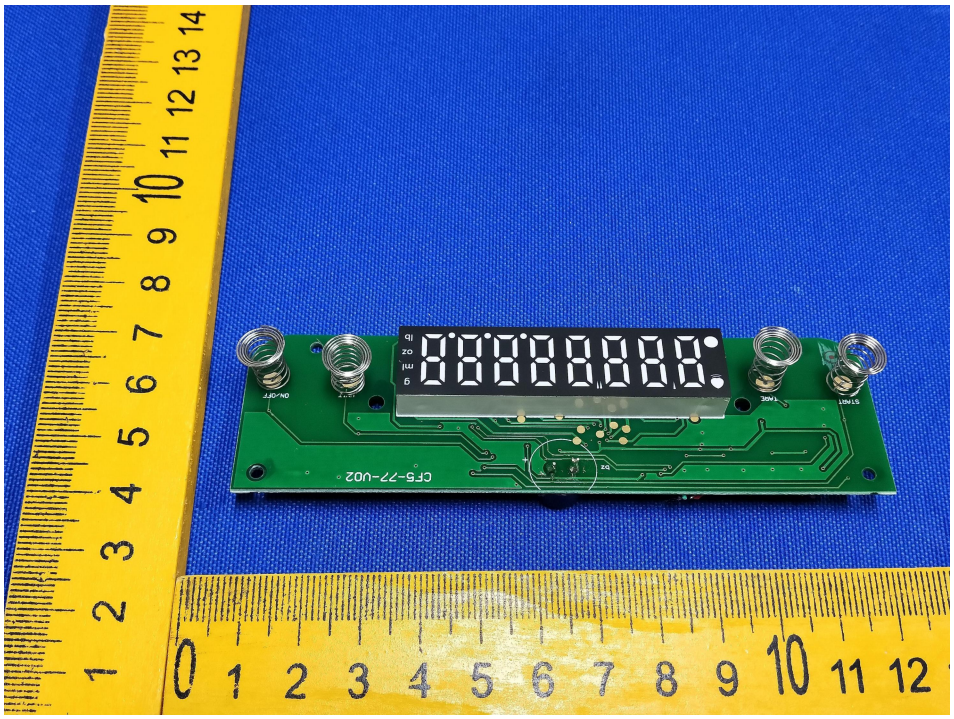


Photo 5 Appearance of PCB

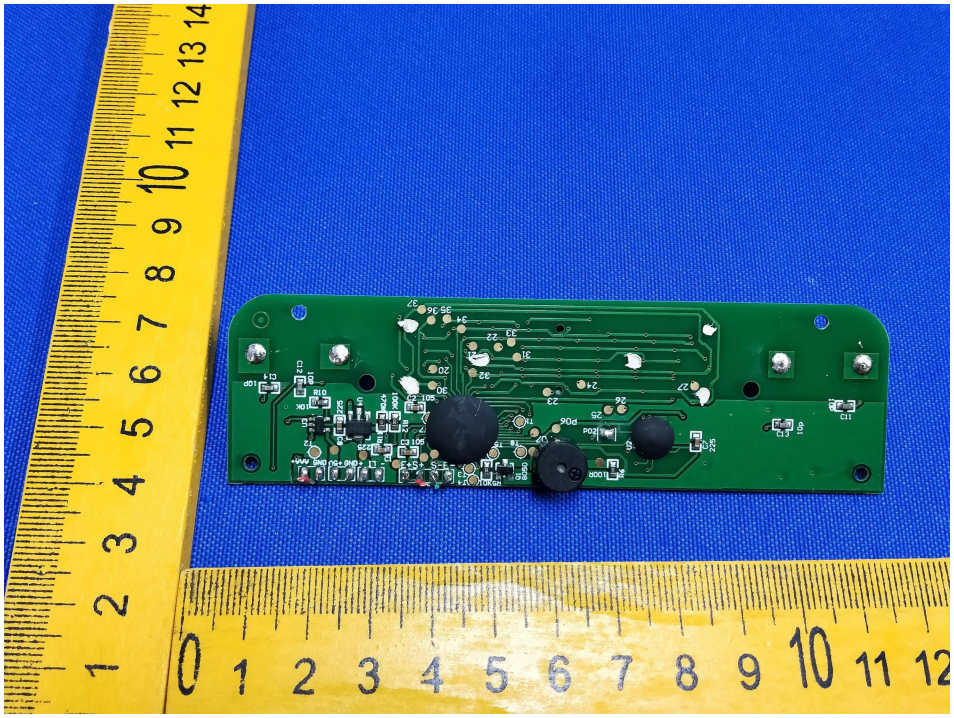


Photo 6 Additional models

Photo 7 Additional models

END OF REPORT