



# TEST REPORT

Report No .....ZHT-220424001E  
 Product .....TIMER SOCKET  
 Trademark .....N/A  
 Model(s).....TM01  
   TM02, TM0202, TM03, TM04, TM0402, TM05, TM06, TM07, TM08,  
   TM09  
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 Date of Receipt..... : Apr. 24, 2022  
 Date of Test(s)..... : Apr. 24, 2022 - Apr. 28, 2022  
 Date of Issue..... : Apr. 28, 2022  
 Test Standard(s)..... : EN IEC 55014-1:2021  
   EN IEC 55014-2:2021  
   EN IEC 61000-3-2:2019  
   EN 61000 3-3:2013+A1:2019

In the configuration tested, the EUT complied with the standards specified above.

Tested by:

Reviewed by:

*Kimi Lu*

*Fandy Huang*

Kimi Lu/ Engineer

Fandy Huang/ Director



**Note:** The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This test report shall not be reproduced except in full, without prior written approval of ZHT. This document may be altered or revised by ZHT, personnel only, and shall be noted in the revision of the document.



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### 1. Revision History

Report No.	Issue Date	Description	Approved
ZHT-220424001E	Apr. 28, 2022	Original	Valid



## 2. Test Summary

Emission		
Requirement - Test	Test Method	Result
Continuous conducted disturbance voltage	CISPR 16-2-1	PASS
Discontinuous conducted disturbance voltage		N/A
Magnetic field strength	CISPR 16-2-3	N/A
Disturbance power	CISPR 16-2-2	N/A
Radiated emission	CISPR 16-2-3	PASS
Harmonic current emissions	EN 61000-3-2	N/A
Voltage changes, voltage fluctuations and flicker	EN 61000-3-3	PASS
Immunity		
Requirement - Test	Test Method	Result
Electrostatic discharges	EN 61000-4-2	PASS
Fast transients	EN 61000-4-4	PASS
Injected currents	EN 61000-4-6	PASS
Radio frequency electromagnetic fields	EN 61000-4-3	N/A
Surges	EN 61000-4-5	PASS
Voltage dips	EN 61000-4-11	PASS

Remark: N/A is abbreviation for Not Applicable.

“\*” The test was carried out in all the test modes, only the worst data are list in report.



### 3. General Information

#### 3.1. Description of EUT

Product	TIMER SOCKET
Trade Mark	N/A
Model Name	TM01 TM02, TM0202, TM03, TM04, TM0402, TM05, TM06, TM07, TM08, TM09
Model Difference	Model name
Rated Power Supply	Input: 100-240V~, 50/60Hz, 16A
Normal Testing Voltage	AC 230V
Category	<input type="checkbox"/> I <input checked="" type="checkbox"/> II <input type="checkbox"/> III <input type="checkbox"/> IV <input type="checkbox"/> V
Configuration	<input checked="" type="checkbox"/> Table-top <input type="checkbox"/> Floor-standing

Note:

#### 1. The EUT uses following adapter

Adapter	-	-
Manufacturer		
Model		
AC Input Power		
DC Output Power		
Plug Type		
Power Cord		

#### 2. Other Accessory Device List and Details

Description	Manufacturer	Model	Note
--	--	--	--

#### External I/O Cable

Cable Description	Shielded Type	Ferrite Core	Length(m)	Note
-	<input type="checkbox"/> Shielded <input type="checkbox"/> Non-shielded	<input type="checkbox"/> Yes <input type="checkbox"/> No		

3. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or the User's Manual.



### 3.2. Operating condition of EUT

Test mode	Description
1	Working mode
2	
3	
4	

### 3.3. Test conditions

Temperature: 15-35℃  
Relative Humidity: 30-60 %  
Atmospheric pressure: 800hPa-1060hPa

### 3.4. Block diagram of EUT configuration







## 4. Facilities

### 4.1. Test Facility

All measurement facilities used to collect the measurement data are located at ZHT.

### 4.2. Test Instruments

Conducted emissions Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Receiver	R&S	ESR	102075	Aug. 10, 2021	Aug. 09, 2022
LISN	R&S	ENV216	101375	Aug. 10, 2021	Aug. 09, 2022
ISN	HPX	ISN T800	S1509001	Aug. 10, 2021	Aug. 09, 2022

Radiated emissions Test (966 chamber)					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
966 chamber	ChengYu	966 Room	966	Aug. 10, 2021	Aug. 09, 2022
Receiver	R&S	ESRP	101154	Aug. 10, 2021	Aug. 09, 2022
Amplifier	Schwarzbeck	BBV9718	9718-309	Aug. 10, 2021	Aug. 09, 2022
Amplifier	Schwarzbeck	BBV9744	9744-0037	Aug. 10, 2021	Aug. 09, 2022
TRILOG Broadband Antenna	schwarzbeck	VULB 9163	VULB9163-9 42	Aug. 10, 2021	Aug. 09, 2022
Horn Antenna	SCHWARZBECK	BBHA9120D	1201	Aug. 10, 2021	Aug. 09, 2022

Flicker Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Harmonic & Flicker Tester	LAPLAEC	AC2000A	439263	Aug. 10, 2021	Aug. 09, 2022
AC Power Supply	LAPLAEC	PCR4000 M	631589	Aug. 10, 2021	Aug. 09, 2022

Electrostatic discharge Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
ESD Tester	3C TEST	EDS 30V	ES0121614	Aug. 10, 2021	Aug. 09, 2022
ESD Tester	KIKISUI	KES4201A	UH002321	Aug. 10, 2021	Aug. 09, 2022



Continuous RF electromagnetic field disturbances Test (SMQ --- site)					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Signal Generator	HP	8648A	3625U00573	Aug. 10, 2021	Aug. 09, 2022
Amplifier	A&R	500A100	17034	Aug. 10, 2021	Aug. 09, 2022
Amplifier	A&R	100W/1000M1	17028	Aug. 10, 2021	Aug. 09, 2022
Audio Analyzer (20Hz~1GHz)	Panasonic	2023B	202301/428	Aug. 10, 2021	Aug. 09, 2022
Isotropic Field Probe	A&R	FP2000	16755	Aug. 10, 2021	Aug. 09, 2022
Antenna	EMCO	3108	9507-2534	Aug. 10, 2021	Aug. 09, 2022
Log-periodic Antenna	A&R	AT1080	16812	Aug. 10, 2021	Aug. 09, 2022

EFT and Surge and Voltage dips and interruptions Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Compact Generator	TRANSIENT	TRA2000	646	Aug. 10, 2021	Aug. 09, 2022
Coupling Clamp	PARTNER	CN-EFT1000	CN-EFT100 0-1624	Aug. 10, 2021	Aug. 09, 2022

Continuous induced RF disturbances Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
C/S Test System	SCHLODER	CDG-6000-75	126B1405/20 16	Aug. 10, 2021	Aug. 09, 2022
Attenuator	SCHLODER	6DB DC-1G	HA1630	Aug. 10, 2021	Aug. 09, 2022
CDN	SCHLODER	CDN M2/M3	A2210389/20 16	Aug. 10, 2021	Aug. 09, 2022
Injection Clamp	SCHLOBER	EMCL-20	132A1272/20 16	Aug. 10, 2021	Aug. 09, 2022

#### 4.3. Measurement uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Test item	Value (dB)
Conducted Emission (150kHz-30MHz)	3.20
Radiated Emission(30MHz~1GHz)	4.80
Radiated Emission(1GHz~6GHz)	4.90





## 5. Emission

### 5.1. Continuous conducted disturbance voltage

#### 5.1.1. Limits

Disturbance voltage limits for induction cooking appliances

Frequency range	Appliances which are 1000 V rated and without an earth connection		All other appliances	
	Quasi-peak	Average	Quasi-peak	Average
0,009 to 0,050	122	-	110	-
0,050 to 0,150	Decreasing linearly with logarithm of frequency from 102 to 92		Decreasing linearly with logarithm of frequency from 90 to 80	
0,150 to 0,5	Decreasing linearly with logarithm of frequency from			
	72 to 62	60 to 52	66 to 56	56 to 46
0,5 to 5	56	46	56	46
5 to 30	60	50	60	50

The lower limit applies at the transition frequencies.

#### General limits

Frequency range	Mains ports		Associated ports			
	Disturbance voltage		Disturbance voltage		Disturbance current	
MHz	Quasi-peak dB $\mu$ V	Average dB $\mu$ V	Quasi-peak dB $\mu$ V	Average dB $\mu$ V	Quasi-peak dB $\mu$ A	Average dB $\mu$ A
0,15 to 0,50	Decreasing linearly with the logarithm of the frequency from: 66 to 56 / 59 to 46		80	70	Decreasing linearly with the logarithm of the frequency from: 40 to 30 / 30 to 20	
0,50 to 5	56	46	74	64	30	20
5 to 30	60	50	74	64		

The lower limit applies at the transition frequencies.  
The test report shall state which test method was used and which limits were applied.

#### Limits for mains port of tools

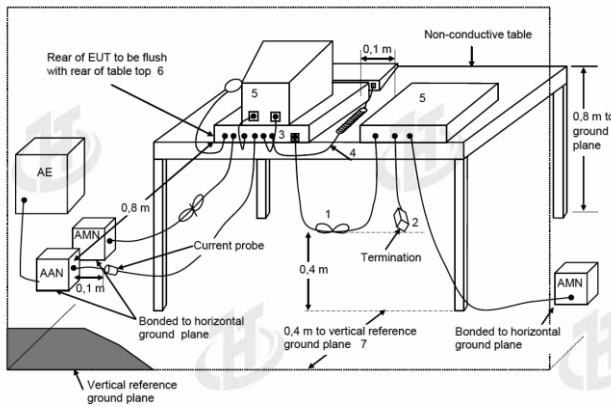
Frequency range	$P \leq 700$ W		$700$ W < $P \leq 1\ 000$ W		$P > 1\ 000$ W	
	Quasi-peak dB $\mu$ V	Average dB $\mu$ V	Quasi-peak dB $\mu$ V	Average dB $\mu$ V	Quasi-peak dB $\mu$ V	Average dB $\mu$ V
0,15 to 0,35	Decreasing linearly with the logarithm of the frequency from:					
	66 to 59	59 to 49	70 to 63	63 to 53	76 to 69	69 to 59
0,35 to 5	59	49	63	53	69	59
5 to 30	64	54	68	58	74	64

The lower limit applies at the transition frequencies.  
**Key**  
P = rated power of the motor only.

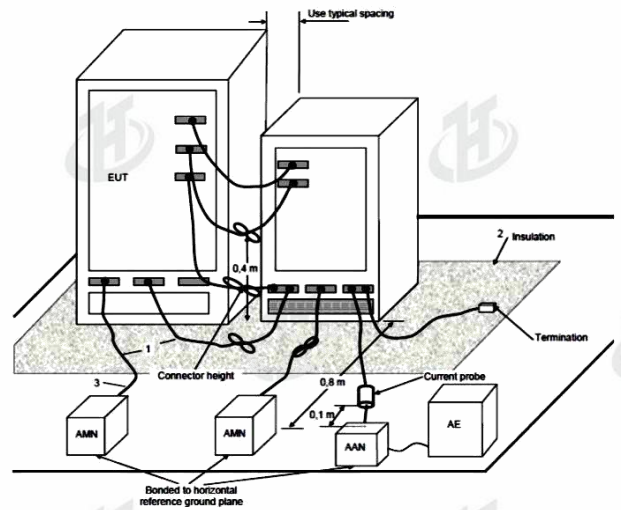


### 5.1.2. Test setup

For table-top equipment



For floor standing equipment



### 5.1.3. Test procedure

Measurement was performed in shielded room, and instruments used were followed CISPR 16-2-1 clause 7.

Detailed test procedure was following clause 7 of CISPR 16-2-1.

Frequency range 9kHz – 150kHz was checked and EMI receiver measurement bandwidth was set to 200Hz.

Frequency range 150kHz – 30MHz was checked and EMI receiver measurement bandwidth was set to 9 kHz.

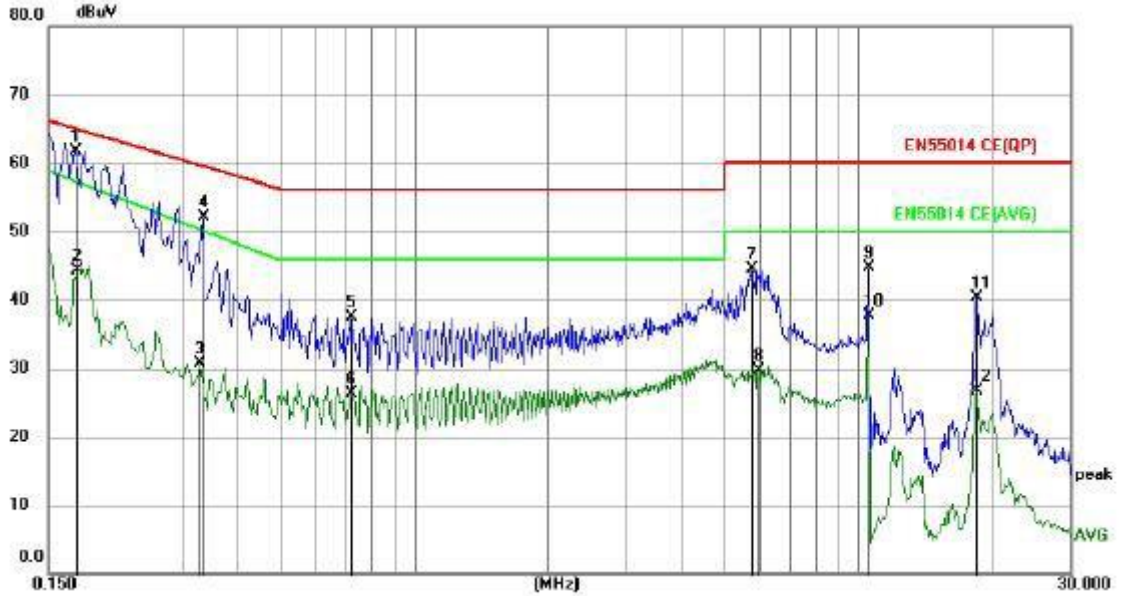
### 5.1.4. Test results

**PASS**

Please refer to the following page.



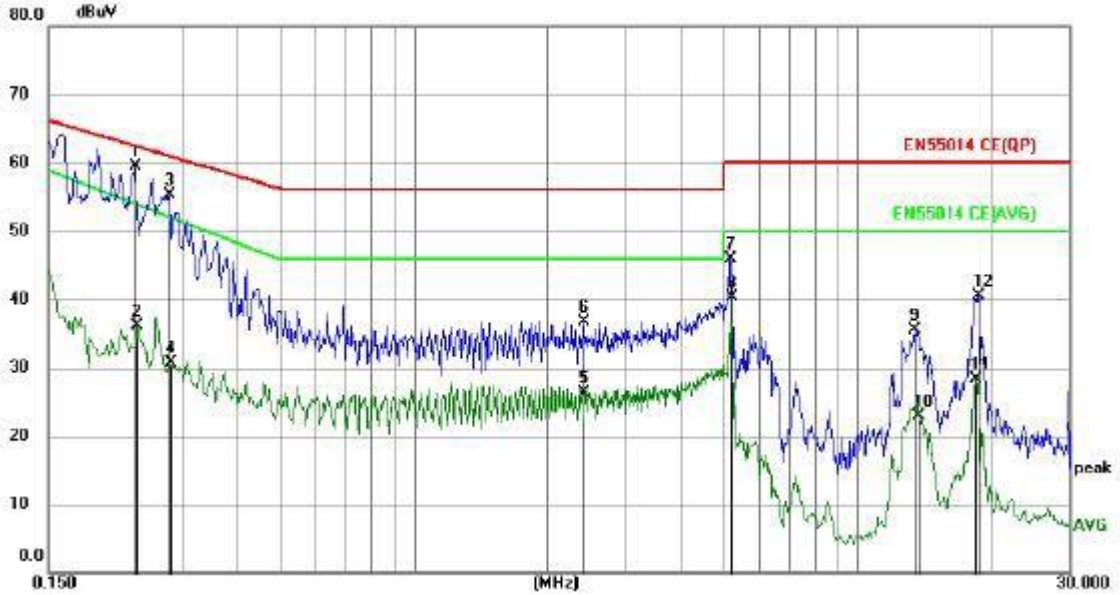
Phase: L



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1725	49.25	12.51	61.76	64.84	-3.08	peak	P	
2	0.1749	31.75	12.46	44.21	57.34	-13.13	AVG	P	
3	0.3300	19.30	11.32	30.62	50.49	-19.87	AVG	P	
4	0.3345	40.74	11.30	52.04	59.34	-7.30	peak	P	
5	0.7170	26.98	10.50	37.48	56.00	-18.52	peak	P	
6	0.7215	15.73	10.50	26.23	46.00	-19.77	AVG	P	
7	5.7210	35.85	8.62	44.47	60.00	-15.53	peak	P	
8	5.9415	21.12	8.61	29.73	50.00	-20.27	AVG	P	
9	10.5270	36.13	8.53	44.66	60.00	-15.34	peak	P	
10	10.5270	29.22	8.53	37.75	50.00	-12.25	AVG	P	
11	18.5100	30.72	9.65	40.37	60.00	-19.63	peak	P	
12	18.5100	16.97	9.65	26.62	50.00	-23.38	AVG	P	



Phase: N



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.2355	47.75	11.75	59.50	62.25	-2.75	peak	P	
2	0.2378	24.34	11.74	36.08	54.02	-17.94	AVG	P	
3	0.2805	43.69	11.55	55.24	60.80	-5.56	peak	P	
4	0.2818	19.09	11.55	30.64	52.19	-21.55	AVG	P	
5	2.4000	16.28	10.09	26.37	46.00	-19.63	AVG	P	
6	2.4135	26.59	10.09	36.68	56.00	-19.32	peak	P	
7	5.1630	37.28	8.64	45.92	60.00	-14.08	peak	P	
8	5.1945	31.76	8.64	40.40	50.00	-9.60	AVG	P	
9	13.4565	26.64	8.94	35.58	60.00	-24.42	peak	P	
10	13.7400	13.94	8.98	22.92	50.00	-27.08	AVG	P	
11	18.4965	18.60	9.65	28.25	50.00	-21.75	AVG	P	
12	18.6270	30.93	9.67	40.60	60.00	-19.40	peak	P	

Note: Level=Reading+Factor  
Margin=Level-Limit

## 5.2. Radiated emission – 30 MHz to 1 000 MHz

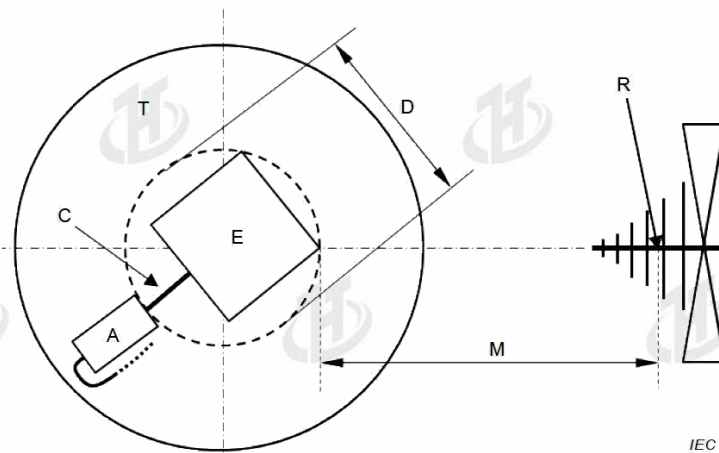
### 5.2.1. Limits

Table 2 - Radiated disturbance limits and testing methods – 30 MHz to 1 000 MHz

Testing method	Basic standard	Frequency range MHz	Limit <sup>a</sup> Quasi-peak dB $\mu$ V/m	Remarks
SAC	CISPR 16-2-3	30 to 230	40	Measurement distance 3 m
		230 to 1000	47	

<sup>a</sup> The lower limit is applies at the transition frequency.

### 5.2.2. Test setup



A Common Mode Absorption Device

D Diameter of the circle enclosing the EUT including the cables

M Measuring Distance 3m

T Turntable

C Cable(s) leaving the EUT and within the test volume of diameter D

E EUT

R Antenna Reference Point

### 5.2.3. Test procedure

The measurement was performed in a semi-anechoic chamber.

The distance from EUT to receiving antenna is 3 meters.

Measurement was performed according to clause 7.3 of CISPR 16-2-3.

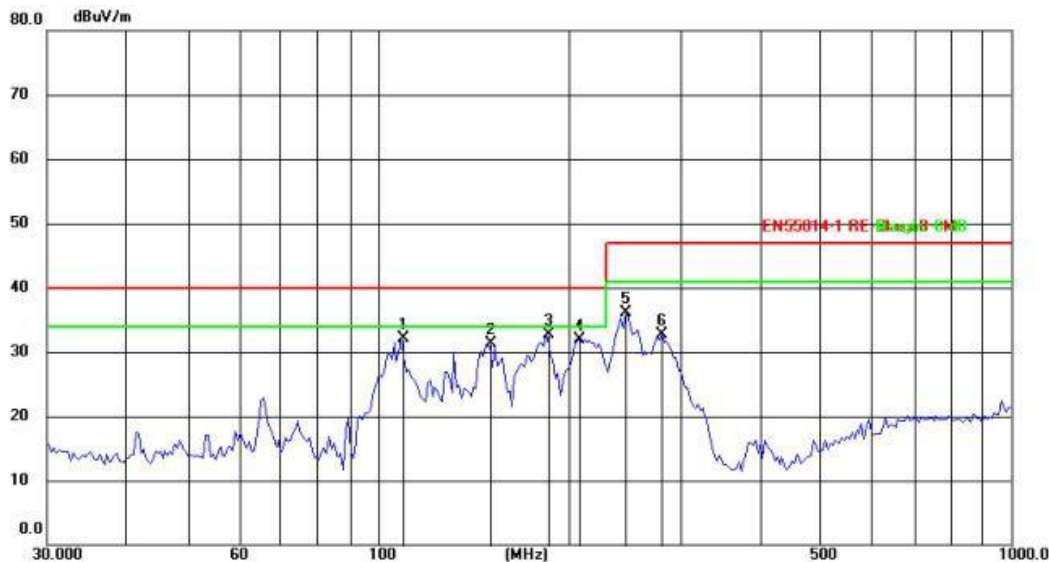
### 5.2.4. Test results

**PASS.**

Please refer to the following page.



Polarization: H

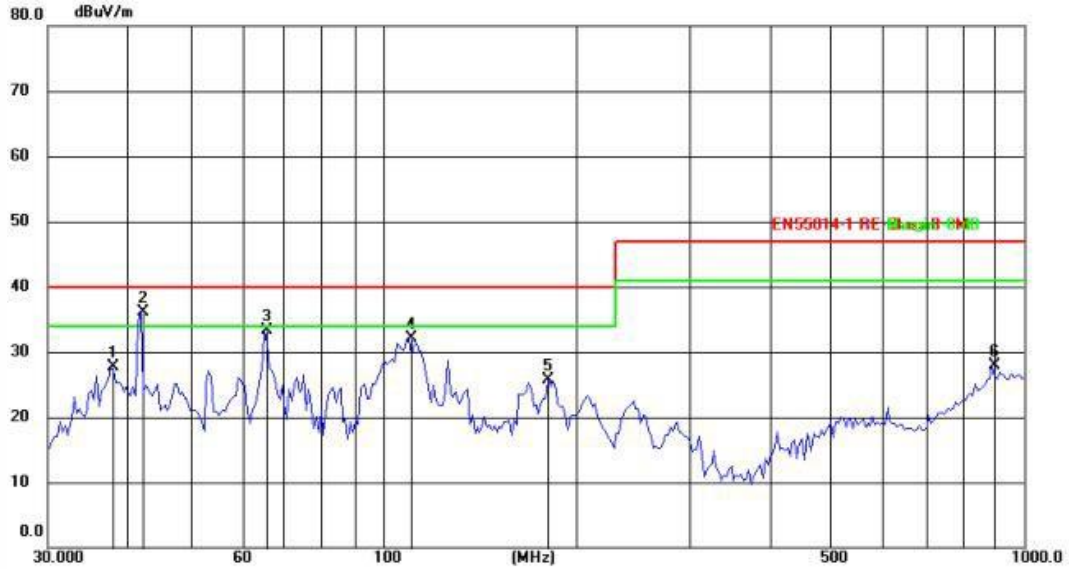


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	108.8377	51.48	-19.36	32.12	40.00	-7.88	QP				
2	149.2239	48.43	-17.08	31.35	40.00	-8.65	QP				
3	184.1667	51.67	-18.88	32.79	40.00	-7.21	QP				
4	208.2148	51.45	-19.46	31.99	40.00	-8.01	QP				
5	245.9509	53.57	-17.51	36.06	47.00	-10.94	QP				
6	280.5152	48.97	-16.22	32.75	47.00	-14.25	QP				





Polarization: V



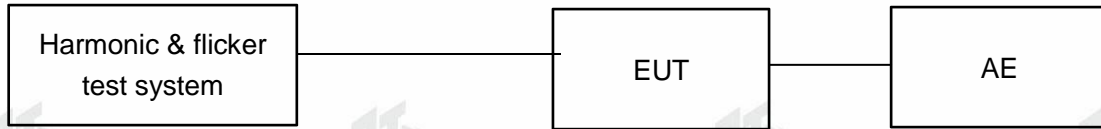
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	37.6798	44.94	-17.20	27.74	40.00	-12.26	QP				
2	41.8596	53.04	-16.94	36.10	40.00	-3.90	QP				
3	65.4579	52.22	-18.87	33.35	40.00	-6.65	QP				
4	109.7960	53.44	-21.39	32.05	40.00	-7.95	QP				
5	180.9658	46.47	-20.69	25.78	40.00	-14.22	QP				
6	892.2909	30.80	-2.96	27.84	47.00	-19.16	QP				

Note: Level=Reading+Factor  
Margin=Level-Limit



### 5.3. Harmonic current emissions

#### 5.3.1. Test Setup



#### 5.3.2. Test Procedure

- Basic Standard(s) : EN IEC 61000-3-2:2019
- Measurement Equipment requirement : IEC 61000-4-7
- Measured Harmonics : 1 - 40
- Equipment Class :  A  B  C  D
- Limits :  Clause 7.1 Table 1  
 Clause 7.2  
 Clause 7.3 Table 2  
 Clause 7.4 Table 3

- This product is not defined as lighting equipment, and has rated power less than 75W, therefore, no limit applies according to EN 61000-3-2
- The EUT is kitchen machines as listed in the scope of IEC 60335-2-14, therefore, is deemed to conform to the harmonic current limits of this standard without further testing.

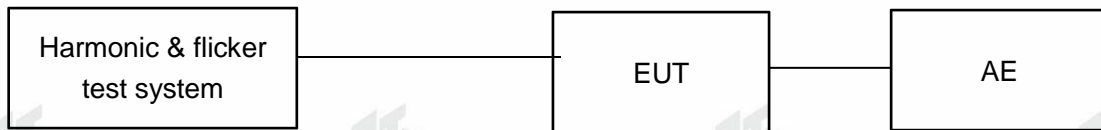
#### 5.3.3. Test Result

N/A



## 5.4. Voltage changes, voltage fluctuations and flicker

### 5.4.1. Test Setup



### 5.4.2. Test Procedure

Basic Standard(s)	: EN 61000-3-3:2013/A1:2019
Measurement Equipment requirement	: IEC 61000-4-15
Limits	: Clause 5

#### 5.4.2.1 Definition

Flicker: impression of unsteadiness of visual sensation induced by a lighting stimulus whose luminance or spectral distribution fluctuates with time.

$P_{st}$ : Short-term flicker indicator the flicker severity evaluated over a short period (in minutes);  $P_{st}=1$  is the conventional threshold of irritability

$P_{lt}$ : long-term flicker indicator; the flicker severity evaluated over a long period (a few hours) using successive  $P_{st}$  values.

dc: the relative steady-state voltage change

$d_{max}$ : the maximum relative voltage change

$d(t)$ : the value during a voltage change

#### 5.4.2.2 Test Procedure

The following limits apply

- " $P_{lt}$ " shall not exceed 0.65.
- " $P_{st}$ " shall not exceed 1.0.
- "dc" shall not exceed 3.3%.
- " $d(t)$ " shall not exceed 3.3% for more than 500ms.
- " $d_{max}$ " shall not exceed:
  - 4% without additional conditions,
  - 6% switched manually or automatically more than twice per day,
  - 7% attended whilst in use or switched automatically for no more than twice per day or attended while in use.
  - For manual switch,  $d_{max}$  is measured in accordance with Annex B of standard, average  $d_{max}$  is calculated from 24 times measurement.
  - The EUT is unlikely to produce significant voltage fluctuations or flicker by technical analysis and evaluation. So it is deemed to fulfil the requirements without testing.

### 5.4.3. Test Result

**PASS**



## 6. Immunity

### Performance criteria

Performance criterion **A**: The apparatus shall continue to operate as intended during the test. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and from what the user may reasonably expect from the apparatus if used as intended.

Performance criterion **B**: The apparatus shall continue to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. During the test, degradation of performance is allowed, however no change of actual operating state or stored data is allowed to persist after the test. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and from what the user may reasonably expect from the apparatus if used as intended.

Performance criterion **C**: Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by the operation of the controls, or by any operation specified in the instructions for use.



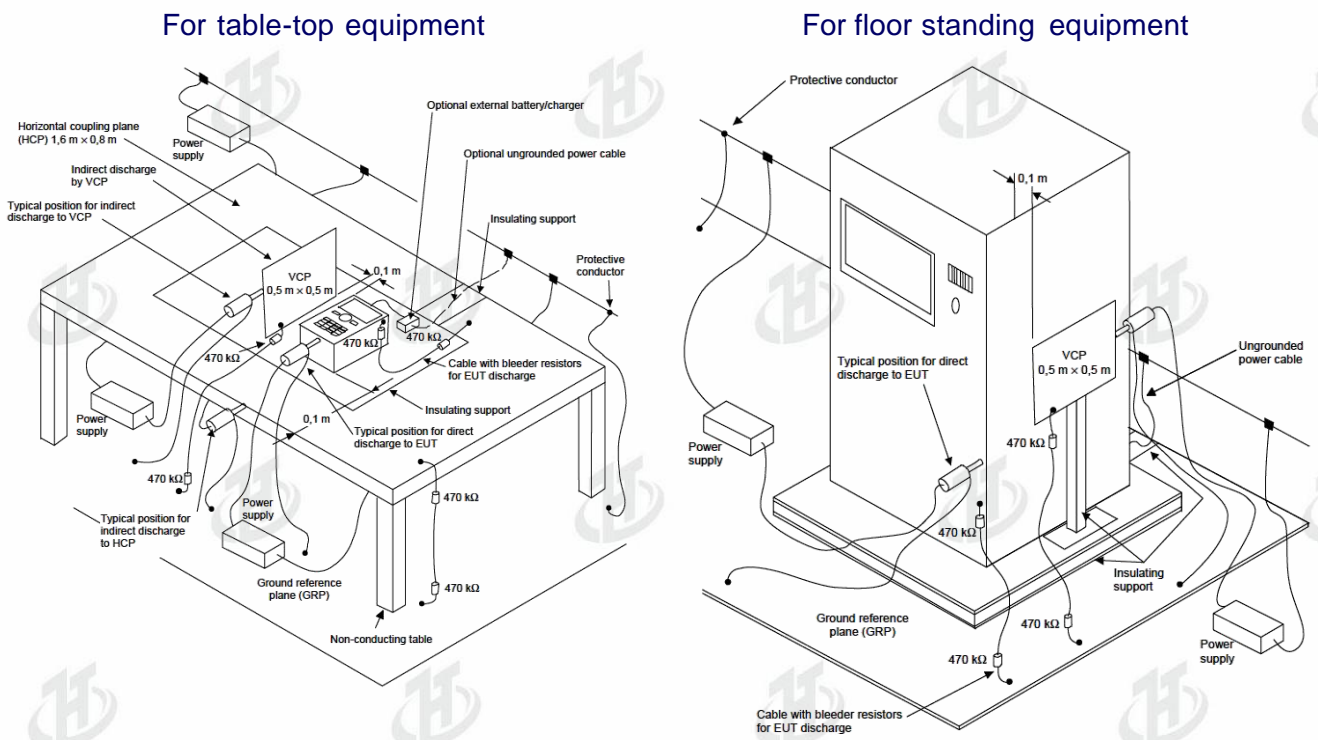
### 6.1. Electrostatic discharges

#### 6.1.1. Test Levels and Performance Criterion

Environmental phenomenon	Test specifications	Test set-up
Electrostatic discharge	8 kV air discharge 4 kV contact discharge	IEC 61000-4-2

Performance criterion: **B**

#### 6.1.2. Test setup



#### 6.1.3. Test Procedure

Measurement was performed in shielded room.

Measurement procedure was applied according to EN 61000-4-2 clause 8.

The test methods and equipment were specified by EN 61000-4-2.

#### 6.1.4. Test Result

**PASS**

No.	Location of discharge	Polarity	Discharge	No. of discharges	Test level kV	Result
1	HCP	P&N	C	10	4	PASS
2	VCP	P&N	C	10	4	PASS
3	Points on conductive surface	P&N	C	10	4	PASS
4	Points on non-conductive surface	P&N	A	10	8	PASS

HCP =Horizontal coupling plate VCP =Vertical coupling plate N Negative P Positive A =Air discharge C =Contact discharge



## 6.2. Fast transients

### 6.2.1. Test Levels and Performance Criterion

Ports for signal lines and control lines

Environmental phenomenon	Test specifications	Test set-up
Fast transients common mode	0,5 kV (peak) 5/50 ns $T_r/T_d$ 5 kHz repetition frequency	IEC 61000-4-4
Applicable only to ports interfacing with cables whose total length can exceed 3 m according to the manufacturer's functional specification		

Input and output d.c. power ports

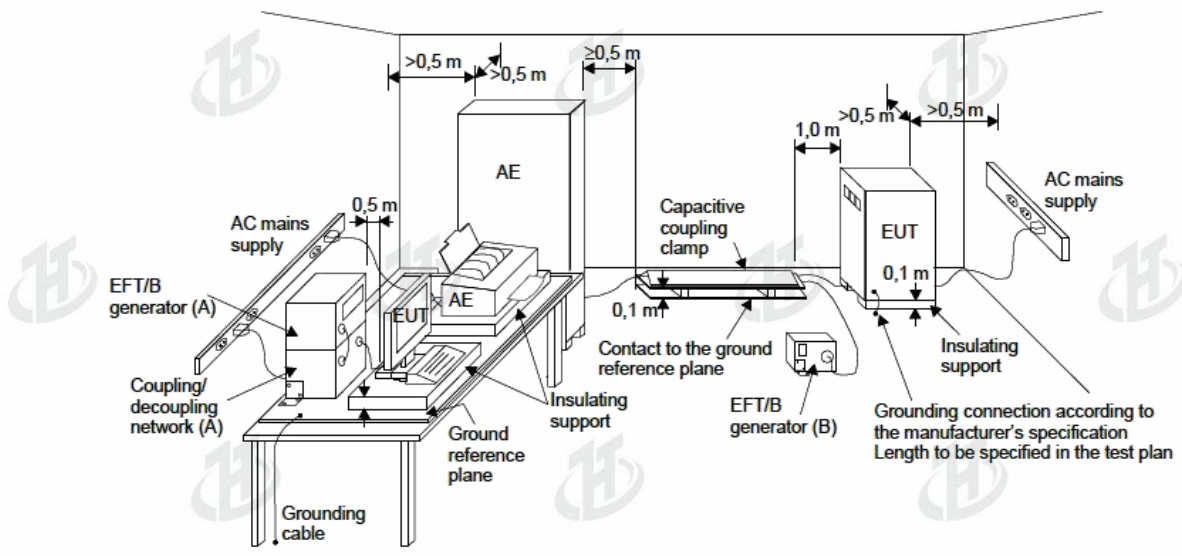
Environmental phenomenon	Test specifications	Test set-up
Fast transients common mode	0,5 kV (peak) 5/50 ns $T_r/T_d$ 5 kHz repetition frequency	IEC 61000-4-4
Not applicable to input ports intended for connection to a battery or a rechargeable battery which shall be removed or disconnected from the apparatus for recharging. Apparatus with a d.c. power input port intended for use with an a.c. – d.c. power adaptor shall be tested on the a.c. power input of the a.c.- d.c. power adaptor specified by the manufacturer or, where none is so specified, using a typical a.c. – d.c. power adaptor. For d.c. input and output ports intended to be connected permanently, the test is only applicable to cables longer than 3 m.		

Input and output a.c. power ports

Environmental phenomenon	Test specifications	Test set-up
Fast transients common mode	1 kV (peak) 5/50 ns $T_r/T_d$ 5 kHz repetition frequency	IEC 61000-4-4
For extra low voltage a.c. ports and output a.c. ports, this testing is only applicable to ports interfacing with cables whose total length may exceed 3 m according to the manufacturer's functional specification.		

Performance criterion: **B**

### 6.2.2. Test setup







623. Test Procedure

Measurement was performed in shielded room.

Measurement procedure was applied according to EN 61000-4-4 clause 8.

The test methods and equipment were specified by EN 61000-4-4.

624. Test Result

**PASS**

Location	Level (kV)	Polarity (P/N)	Result
AC power input ports	1	P/N	PASS
DC power input ports	0,5	P/N	N/A
Analogue/digital data ports	0,5	P/N	N/A

**6.3. Injected currents, 0,15 MHz to 230 MHz****6.3.1. Test Levels and Performance Criterion**

## Ports for signal lines and control lines

Environmental phenomenon	Test specifications	Test set-up
RF current common mode 1 kHz, 80 % AM	0,15 MHz to 230 MHz 1 V (r.m.s.) (unmodulated) 150 $\Omega$ source impedance	IEC 61000-4-6
Applicable only to ports interfacing with cables whose total length may exceed 3 m according to the manufacturer's functional specification.		

## Input and output d.c. power ports

Environmental phenomenon	Test specifications	Test set-up
RF current common mode 1 kHz, 80 % AM	0,15 MHz to 230 MHz 1 V (r.m.s.) (unmodulated) 150 $\Omega$ source impedance	IEC 61000-4-6
Not applicable to battery operated appliances that cannot be connected to the mains while in use. Not applicable to input ports intended for connection to a battery or a rechargeable battery which shall be removed or disconnected from the apparatus for recharging. Apparatus with a d.c. power input port intended for use with an a.c. – d.c. power adaptor shall be tested on the a.c. power input of the a.c.- d.c. power adaptor specified by the manufacturer or, where none is so specified, using a typical a.c. – d.c. power adaptor. For d.c. input and output ports intended to be connected permanently, the test is only applicable to cables longer than 3 m.		

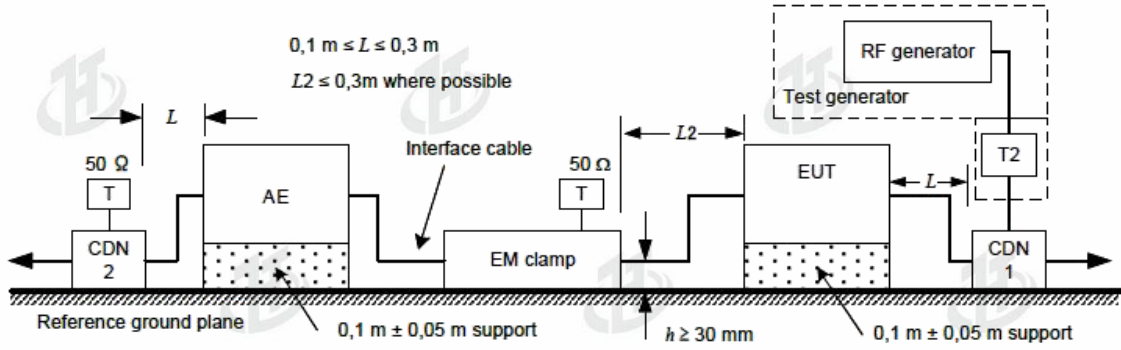
## Input and output a.c. power ports

Environmental phenomenon	Test specifications	Test set-up
RF current common mode 1 kHz, 80 % AM	0,15 MHz to 230 MHz 3 V (r.m.s.) (unmodulated) 150 $\Omega$ source impedance	IEC 61000-4-6
For extra low voltage a.c ports and output a.c. ports, this testing is only applicable to ports interfacing with cables whose total length may exceed 3 m according to the manufacturer's functional specification.		

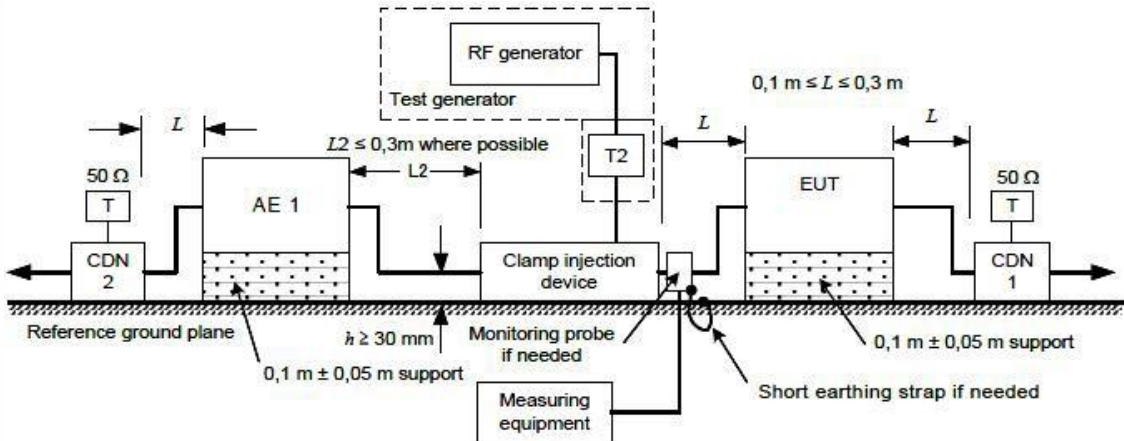
Performance criterion: **A**

6.32. Test setup

using CDN injection devices



using clamp injection devices



6.33. Test Procedure

Measurement was performed in shielded room.

Measurement procedure was applied according to EN 61000-4-6 clause 8.

The test methods and equipment were specified by EN 61000-4-6.

6.34. Test Result

**PASS**

Injected point	Frequency (MHz)	Level (e.m.f)	Modulation	Result
Signal lines and control lines	0.15 to 230	1V (r.m.s)	80%, 1 kHz, AM	N/A
d.c. power ports	0.15 to 230	1V (r.m.s)	80%, 1 kHz, AM	N/A
a.c. power ports	0.15 to 230	3V (r.m.s)	80%, 1 kHz, AM	PASS

## 6.4. Radio frequency electromagnetic fields, 80 MHz to 1 000 MHz

### 6.4.1. Test Levels and Performance Criterion

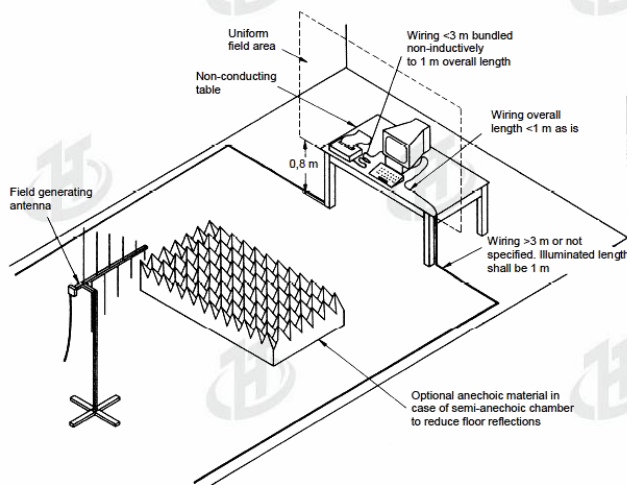
Enclosure port

Environmental phenomenon	Test specifications	Test set-up
Radio-frequency electromagnetic field, 1 kHz, 80% AM	80 MHz to 1 000 MHz 3 V/m (r.m.s.) (unmodulated)	IEC 61000-4-3 or IEC 61000-4-22

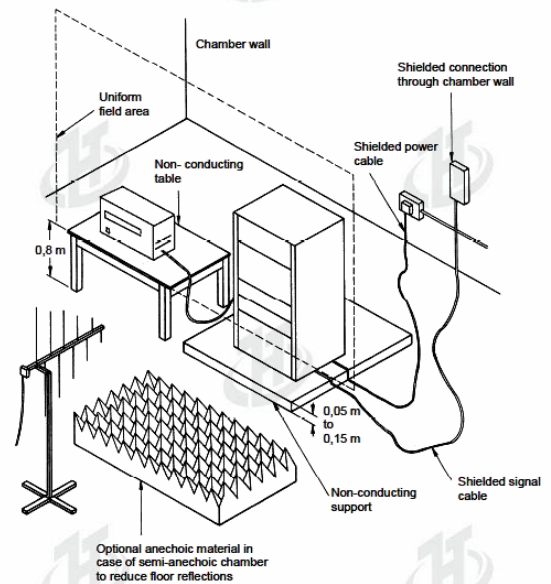
Performance criterion: **A**

### 6.4.2. Test setup

For table-top equipment



For floor standing equipment



### 6.4.3. Test Procedure

Measurement procedure was applied according to EN 61000-4-3 clause 8. The test methods and equipment were specified by EN 61000-4-3.

### 6.4.4. Test Result

The EUT is belong to category II. So the test item is not applicable.

## 6.5. Surges

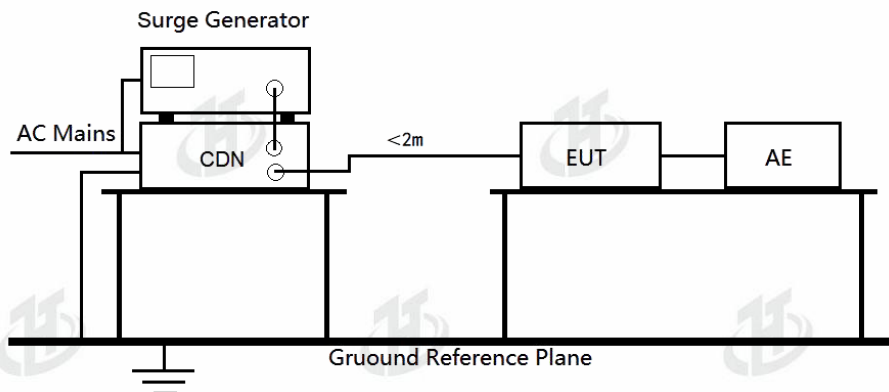
### 6.5.1. Test Levels and Performance Criterion

Input a.c. power ports

Environmental phenomenon	Test specifications	Test set-up
Surge	1,2/50 (8/20) $\mu$ s Tr/Td 2 kV line-to-earth with 12 $\Omega$ Impedance 1 kV line-to-line with 2 $\Omega$ Impedance	IEC 61000-4-5

Performance criterion: **B**

### 6.5.2. Test setup



### 6.5.3. Test Procedure

Measurement procedure was applied according to EN 61000-4-5 clause 8. The test methods and equipment were specified by EN 61000-4-5.

### 6.5.4. Test Result

**PASS**

Location	Level(kV)	Polarity(P/N)	Result
AC mains power ports (line to line)	1.0	P/N	PASS
AC mains power ports (line to earth)	2.0	P/N	N/A
DC network power ports (line to line)	0,5	P/N	N/A
DC network power ports (line to earth)	0,5	P/N	N/A
unshielded symmetrical ports (line to ground)	1.0/4.0	P/N	N/A
coaxial or shielded ports (shield to ground)	0,5	P/N	N/A





## 6.6. Voltage dips

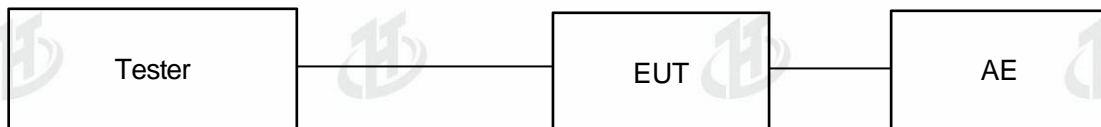
### 6.6.1. Test Levels and Performance Criterion

Input a.c. power ports

Environmental phenomena		Test level in % $U_T$	Durations for voltage dips		Test set-up	
			50Hz	60Hz		
Voltage dips in % $U_T$	100 60 30	0 40 70	0,5 cycle 10 cycle 25 cycle	0,5 cycle 12 cycle 30 cycle	IEC 61000-4-11 Voltage change shall occur at zero crossing	
$U_T$ is the rated voltage of the equipment under test.						

Performance criterion: **C**

### 6.6.2. Test setup



### 6.6.3. Test Procedure

Measurement procedure was applied according to EN 61000-4-11 clause 8.  
The test methods and equipment were specified by EN 61000-4-11.

### 6.6.4. Test Result

**PASS**

$U_T$ in V	Frequency in Hz	Test Level % of $U_T$	Phase angles [°]	Duration in cycles	Results
<input checked="" type="checkbox"/> 230 <input type="checkbox"/> 120	<input checked="" type="checkbox"/> 50 <input type="checkbox"/> 60	0	0, 45, 90, 135, 180, 225, 270, 315	<input checked="" type="checkbox"/> 0,5 (50 Hz) <input type="checkbox"/> 0,5 (60 Hz)	PASS
<input checked="" type="checkbox"/> 230 <input type="checkbox"/> 120	<input checked="" type="checkbox"/> 50 <input type="checkbox"/> 60	40	0, 45, 90, 135, 180, 225, 270, 315	<input checked="" type="checkbox"/> 10 (50 Hz) <input type="checkbox"/> 12 (60 Hz)	PASS
<input checked="" type="checkbox"/> 230 <input type="checkbox"/> 120	<input checked="" type="checkbox"/> 50 <input type="checkbox"/> 60	70	0, 45, 90, 135, 180, 225, 270, 315	<input checked="" type="checkbox"/> 25 (50 Hz) <input type="checkbox"/> 30 (60 Hz)	PASS





## 7. Photographs of EUT

EUT Photo 1



EUT Photo 2





EUT Photo 3



EUT Photo 4



\*\*\*End of report\*\*\*