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Xiangshan Zhengtai Electrical Appliance Co., Ltd.

TEST REPORT

SCOPE OF WORK:
EMC directive (2014/30/EU) – EMC report

Model:
See Appendix II

REPORT NUMBER
210603013SHA-001

ISSUE DATE
July 14, 2021

DOCUMENT CONTROL NUMBER
TTRF61000-6-3_V1

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TEST REPORT

Report no. 210603013SHA-001

Applicant	:	Xiangshan Zhengtai Electrical Appliance Co., Ltd. No. 85, Jianshe Road, Xiangshan, Ningbo, Zhejiang, China.
Manufacturer	:	Xiangshan Zhengtai Electrical Appliance Co., Ltd. No. 85, Jianshe Road, Xiangshan, Ningbo, Zhejiang, China.

Summary

The equipment complies with the requirements according to the following standard(s) or Specification:

EN IEC 61000-6-1:2019: General standards – Immunity standard for residential, commercial and light-industrial environments

EN 61000-6-3:2007/+A1:2011: General standards – Emission standard for residential, commercial and light-industrial environment

PREPARED BY:	**REVIEWED BY:**
Erick Liu	Daniel Zhao
Project Engineer	Reviewer

Contents

Revision History

Report No.	Version	Description	Issued Date
210603013SHA-001	Rev. 01	Initial issue of report	July 14, 2021

Measurement result summary

TEST ITEM	TEST RESULT	NOTE
Conducted emission	NA	
Radiated emission	Pass	
Harmonic current	NA	
Voltage fluctuations and flicker	NA	
Electrostatic discharge	Pass	
Radio frequency electromagnetic field	Pass	
Fast transients	NA	
Surges	NA	
Radio frequency, common mode	NA	
Voltage dips	NA	
Power frequency magnetic field	NA	

Notes: 1: NA =Not Applicable
2: Determination of the test conclusion is based on IEC Guide 115 in consideration of measurement uncertainty.
3: Additions, Deviations and Exclusions from Standards: None.

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Product name	:	Electronic Scale
Type/Model	:	See Appendix II
Description of EUT	:	EUT is an Electronic Scale, all models are the same except the model name. This report is based on 190402019SHA-001 issued by Intertek Testing Services Shanghai dated on May 8, 2019. Only the standard version has been updated.
Rating	:	DC3V, DC4.5V, DC6V
EUT type	:	☒ Table-top ☐ Floor standing
Sample received date	:	November 22, 2011
Date of test	:	November 24, 2011

1.2 Description of Test Facility

Name	:	Intertek Testing Services Shanghai
Address	:	Building 86, No. 1198 Qinzhou Road(North), Shanghai 200233, P.R. China
Telephone	:	86 21 61278200
Telefax	:	86 21 54262353
The test facility is recognized, certified, or accredited by these organizations	:	CNAS Accreditation Lab Registration No. CNAS L0139 FCC Accredited Lab Designation Number: CN1175 IC Registration Lab Registration code No.: 2042B-1 VCCI Registration Lab Registration No.: R-4243, G-845, C-4723, T-2252 A2LA Accreditation Lab Certificate Number: 3309.02

2 TEST SPECIFICATIONS

2.1 Normative references

EN IEC 61000-6-1:2019: General standards – Immunity standard for residential, commercial and light-industrial environments

EN 61000-6-3:2007/+A1:2011: General standards – Emission standard for residential, commercial and light-industrial environment

2.2 Mode of operation during the test

Within this test report, EUT was tested under all available operation modes and tested under its rating voltage and frequency. Other voltage and frequency is specified if used.

2.3 Test peripherals used

Item No	Description	Band and Model	S/No
-	-	-	-

2.4 Record of climatic conditions

Test Item	Temperature (°C)	Relative Humidity (%)	Pressure (Kpa)
Conducted emission	NA	NA	NA
Radiated emission	22	50	/
Harmonic current	NA	NA	NA
Voltage fluctuations and flicker	NA	NA	NA
Electrostatic discharge	22	50	101.1
Radio frequency electromagnetic field	22	50	/
Fast transients	NA	NA	NA
Surges	NA	NA	NA
Radio frequency, common mode	NA	NA	NA
Voltage dips	NA	NA	NA
Power frequency magnetic field	NA	NA	NA

Notes: NA =Not Applicable

2.5 Instrument list

Radiated Emission					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
☑	Test Receiver	R&S	ESIB 26	EC 3045	2019-09-12
☑	Bilog Antenna	TESEQ	CBL 6112D	EC 4206	2019-06-10
☐	Pre-amplifier	R&S	AFS42-00101800-25-S-42	EC5262	2019-06-10
☐	Horn antenna	R&S	HF 906	EC 3049	2019-11-16
☐	Horn antenna	ETS	3117	EC 4792-1	2019-01-09
☐	Horn antenna	TOYO	HAP18-26W	EC 4792-3	2020-07-09
☐	Active loop antenna	Schwarzbeck	FMZB1519	EC 5345	2020-03-14
		EM TEST	NETWAVE-30-400	EC 5383-2	2019-06-19
ESD					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
☐	ESD generator	EM TEST	ditto	EC 2956	2019-06-19
☑	ESD generator	TESEQ	NSG 437	EC 4792-4	2020-03-27
Radiated Immunity					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
☑	Signal generator	R&S	SMR 20	EC 3044-1	2020-01-14
☑	Power amplifier	AR	250W1000B	EC 5818-2	2019-04-19
☑	Power amplifier	BONN	BLMA1060-100	EC 5818-4	2019-04-19
☑	Log-period antenna	AR	AT 1080	EC 3044-7	2020-03-04
☐	Horn antenna	Schwarzbeck	STLP 9149	EC5881	2019-06-19
☑	Field meter	AR	FL17000	EC 5818-1	2019-05-21
☑	Power sensor	Keysight	N1914A	EC 5818-3	2019-04-19
Tet Site					

Used	Equipment	Manufacturer	Type	Internal no.	Due date
☐	Shielded room	Zhongyu	-	EC 2838	2020-01-14
☑	Shielded room	Zhongyu	-	EC 2839	2020-01-14
☑	Semi-anechoic chamber	Albatross project	-	EC 3048	2019-07-31
☑	Fully-anechoic chamber	Albatross project	-	EC 3047	2019-07-31
Additional instrument					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
☐	Spectrum analyzer	Agilent	E7402A	EC 2254	2019-07-15
☐	Therom-Hygrograph	ZJ1-2A	S.M.I.F.	EC 3783	2020-03-20
☑	Therom-Hygrograph	ZJ1-2A	S.M.I.F.	EC 2323	2019-06-07
☑	Therom-Hygrograph	ZJ1-2A	S.M.I.F.	EC 5198	2020-02-20
☑	Therom-Hygrograph	ZJ1-2A	S.M.I.F.	EC 3325	2020-04-07
☑	Pressure meter	YM3	Shanghai Mengde	EC 3320	2019-07-01

2.6 Measurement Uncertainty

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Conducted emission using a VP	9kHz ~ 30MHz	2.75 dB
Conducted emission at mains ports	9kHz ~ 150kHz	3.71 dB
	150kHz ~ 30MHz	3.31 dB
Continuous disturbance voltage at telecom ports	150kHz ~ 30MHz	4.10 dB
Continuous disturbance current at telecom ports	150kHz ~ 30MHz	2.73 dB
Mains terminal discontinuous disturbance voltage/click	-	3.87 dB
Continuous disturbance power	30MHz ~ 300MHz	4.42 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	5.04 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	4.97 dB
	6GHz ~ 18GHz	5.29 dB
Harmonic current emission	-	3.90%
Voltage fluctuations and flicker	-	10.34%
ESD	-	6.65%
Radiated susceptibility	-	2.38%
EFT test at main terminal	-	11.57%
EFT test at signal/telecom terminal	-	11.62%
Surge test at main terminal	-	11.57%
Surge test at signal/telecom terminal	-	11.89%
Injected current test at main terminal	-	1.88 dB
Injected current test at unshielded signal terminal	-	3.41 dB
Injected current test at shielded signal terminal	-	3.30 dB
Voltage dips and interruption	-	6.05%

3 Conducted emission

Test result: NA

3.1 Limits

3.1.1 Limits at the AC mains ports

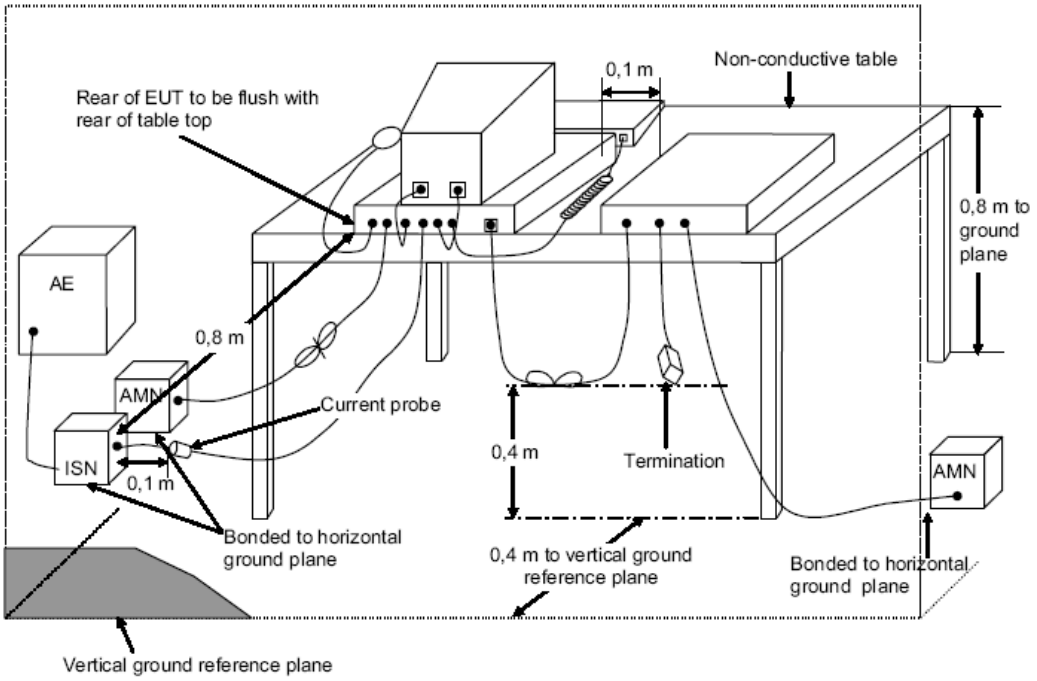
Frequency range (MHz)	Limits (dBuV)	
	Quasi-peak	Average
0.15 ~ 0.5	66-56*	56-46*
0.5 ~ 5	56	46
5 ~ 30	60	50
Note: 1. * means the limit decreasing linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz 2. If the limit for the measurement with the average detector is met when using a receiver with a quasi-peak detector, the equipment under test shall be deemed to meet both limits and the measurement using the receiver with an average detector need not be carried out.		

3.1.2 Limits at the DC mains ports

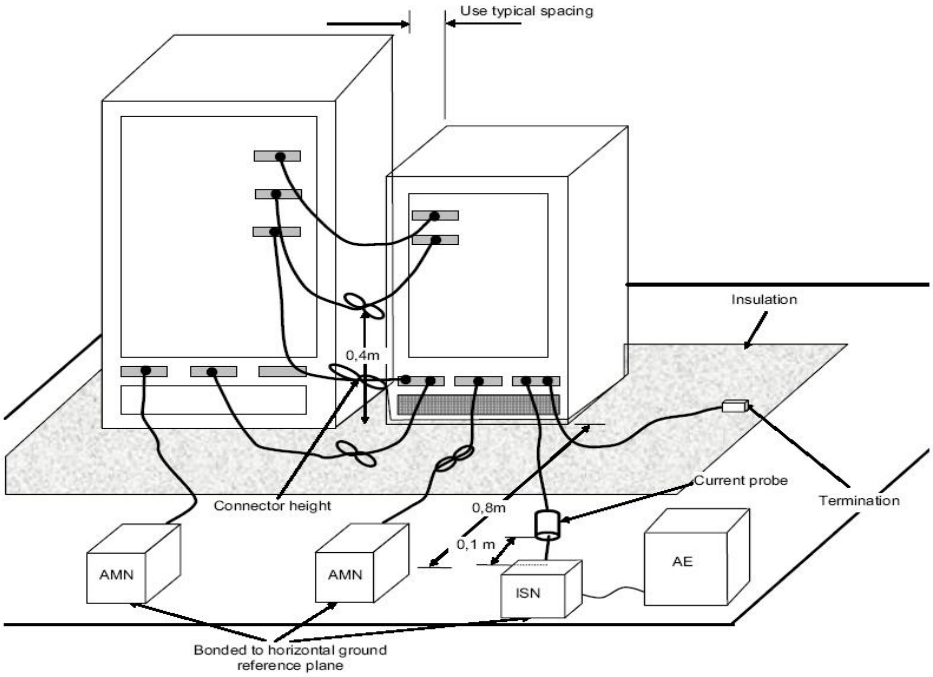
Frequency range (MHz)	Limits (dBuV)	
	Quasi-peak	Average
0.15 ~ 0.5	79	66
0.5 ~ 30	73	60
Note: 1. If the limit for the measurement with the average detector is met when using a receiver with a quasi-peak detector, the equipment under test shall be deemed to meet both limits and the measurement using the receiver with an average detector need not be carried out.		

3.2 Test setup

☒ For table top equipment



☐ For floor standing equipment



3.3 Test Procedure

Measurement was performed in shielded room, and instruments used were following CISPR 16-1-2 clause 4.3.
Detailed test procedure was following CISPR 16-2-1 clause 7.4
EUT arrangement and operation conditions were according to CISPR 16-2-1 clause 7.4.
Frequency range 150kHz – 30MHz was checked and EMI receiver measurement bandwidth was set to 9 kHz.

3.4 Test Result

Test Curve:

Test Data:

Frequency (MHz)	Quasi-peak			Average			Line
	Corrected Reading (dBuV)	Limit (dBuV)	Margin (dB)	Corrected Reading (dBuV)	Limit (dBuV)	Margin (dB)	
Note: * means the emission level 20dB below the relevant limit.							

Remark: 1. Correct Factor = LISN Factor + Cable Loss, the value was added to Original Receiver Reading by the software automatically.
2. Corrected Reading = Original Receiver Reading + Correct Factor
3. Margin = Limit - Corrected Reading
4. If the PK Corrected Reading is lower than AV limit, the AV test can be elided.

Example: Assuming LISN Factor = 10.00dB, Cable Loss = 2.00dB,
Original Receiver Reading = 10.00dBuV, Limit = 66.00dBuV.
Then Correct Factor = 10.00 + 2.00 = 12.00dB;
Corrected Reading = 10dBuV + 12.00dB = 22.00dBuV;
Margin = 66.00dBuV – 22.00dBuV = 44.00dB.

4 Radiated emission

Test result: Pass

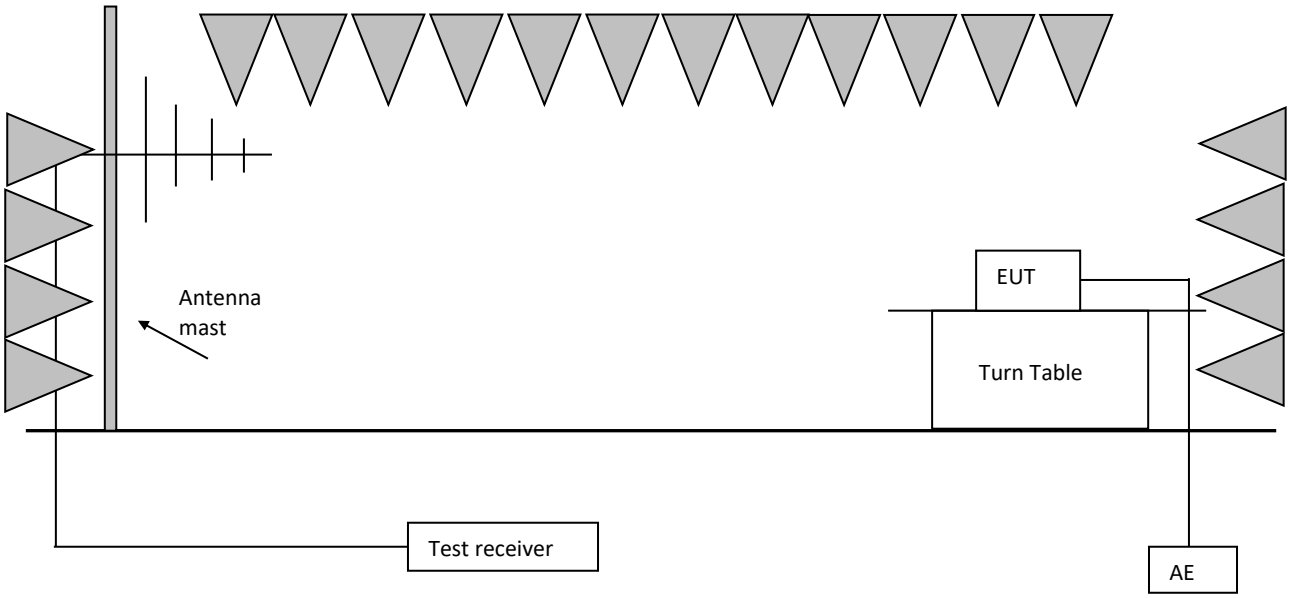
4.1 Limits

Frequency range (MHz)	Limit in dBuV/m (Quasi-peak) Of measurement distance 3m	Limit in dBuV/m (Quasi-peak) Of measurement distance 10m
30-230	40	30
230-1000	47	37
Note: 1. for the measurement distance other than 3m and 10m, the limit is varied according to 20dB/10 decades. 2. The gray rows are selected items. 3. If the internal emission source is operating at a frequency below 9kHz then measurements need only to be performed up to 230MHz.		

1-6GHz:

Frequency range (GHz)	Average limit in dBuV/m Of measurement distance 3m	Peak limit in dBuV/m Of measurement distance 3m
1-3	50	70
3-6	54	74
Note: 1. for the measurement distance other than 3m and 10m, the limit is varied according to 20dB/10 decades.		

4.2 Block diagram of test set up



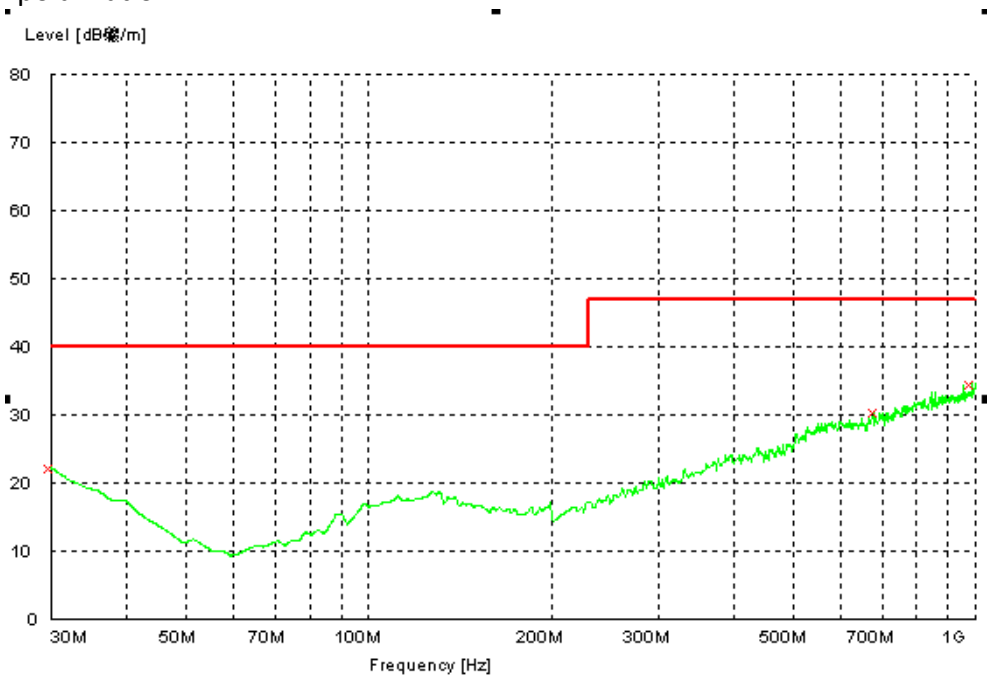
4.3 Test Procedure

The measurement was applied in a semi-anechoic chamber.
Measurement was performed according to CISPR 16-2-3.
Setting of EUT is according to CISPR 16-2-3.
The bandwidth setting on R&S Test Receiver ESI26 was 120 kHz.
The frequency range from 30MHz to 1000MHz was checked.
The bandwidth setting on R&S Test Receiver ESI26 was 1MHz.
The frequency range from 1000MHz to 6000MHz was checked.

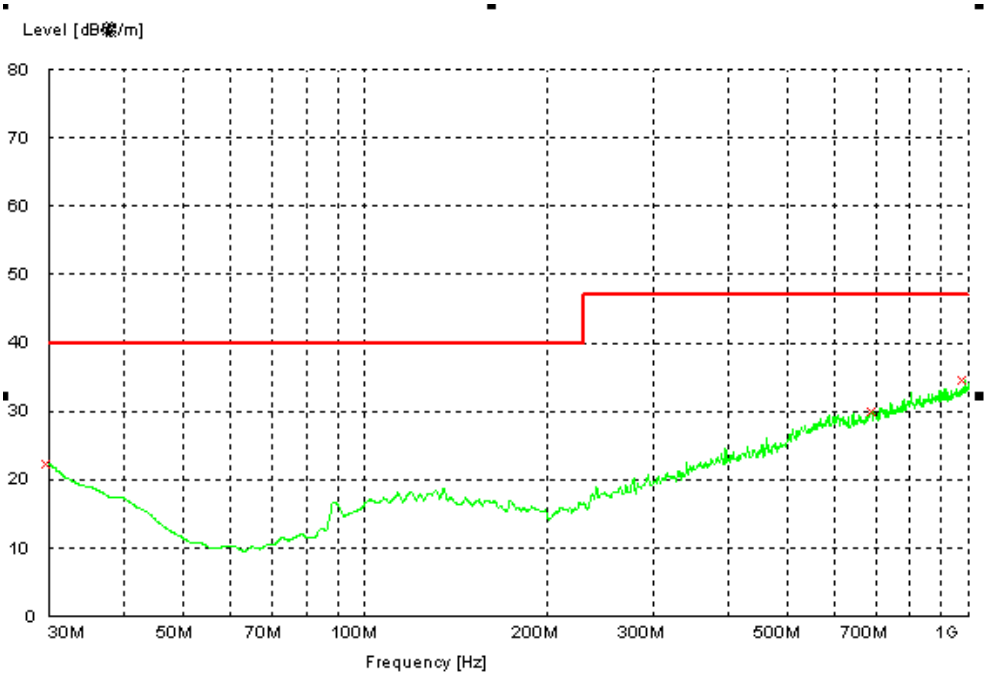
4.4 Test Result

Test Curve:

Horizontal polarization



Vertical polarization



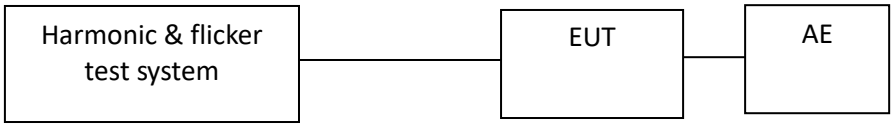
Test data:

Polarization	Frequency (MHz)	Emission level (dBμV/m)	Limits (dBμV/m)	Margin (dBμV/m)
Horizontal	30.00	*	40.00	*
	60.00	*	40.00	*
	100.00	*	40.00	*
	500.00	*	47.00	*
	1000.00	*	47.00	*
Vertical	30.00	*	40.00	*
	60.00	*	40.00	*
	100.00	*	40.00	*
	500.00	*	47.00	*
	1000.00	*	47.00	*
Note: * means margin >10dB.				

5 Harmonic current

Test result: NA

5.1 Test Setup



5.2 Test Procedure

Harmonics of the fundamental current were measured up to 40 order harmonics using a digital power meter with an analogue output and frequency analyzer which was integrated in the harmonic & flicker test system. The measurements were carried out under steady conditions.

☐ Measuring instrumentation according to IEC 61000-4-7:2002+A1:2008

☐ This product is not defined as lighting equipment, and has rated power less than 75W, therefore, no limit applies according to IEC 61000-3-2:2018

☐ 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 Test limit

5.3.1 Limits for equipment with input current ⩽16A per phase

Harmonic order n	Maximum permissible harmonic current A
Odd harmonics	
3	2,30
5	1,14
7	0,77
9	0,40
11	0,33
13	0,21
$15 \le n \le 39$	$0{,}15\ \frac{15}{n}$
Even harmonics	
2	1,08
4	0,43
6	0,30
$8 \le n \le 40$	$0{,}23\ \frac{8}{n}$

5.3.2 Limits for equipment with input current ＞16A and ⩽75A per phase

☐Current emission limits for professional equipment with I_{1max} ≤ 75 A other than balanced three-phase equipment

Minimal R_{sce}	Admissible individual harmonic current I_n/I_1 [a] %						Admissible harmonic current distortion factors %	
	I_3	I_5	I_7	I_9	I_{11}	I_{13}	*THD*	*PWHD*
33	21,6	10,7	7,2	3,8	3,1	2	23	23
66	24	13	8	5	4	3	26	26
120	27	15	10	6	5	4	30	30
250	35	20	13	9	8	6	40	40
≥ 350	41	24	15	12	10	8	47	47
NOTE 1 The relative values of even harmonics up to order 12 must not exceed 16/n %. Even harmonics above order 12 are taken into account in *THD* and *PWHD* in the same way as odd order harmonics. NOTE 2 Linear interpolation between successive R_{sce} values are permitted.								
[a] I_1 = reference fundamental current; I_n = harmonic current component.								

☐Current emission limits for professional balanced three-phase equipment with I_{1max} ≤ 75 A

Minimal R_{sce}	Admissible individual harmonic current I_n/I_1 [a] %				Admissible harmonic current distortion factors %	
	I_5	I_7	I_{11}	I_{13}	*THD*	*PWHD*
33	10,7	7,2	3,1	2	13	22
66	14	9	5	3	16	25
120	19	12	7	4	22	28
250	31	20	12	7	37	38
≥ 350	40	25	15	10	48	46
NOTE 1 The relative values of even harmonics up to order 12 must not exceed 16/n %. Even harmonics above order 12 are taken into account in *THD* and *PWHD* in the same way as odd order harmonics. NOTE 2 Linear interpolation between successive R_{sce} values are permitted.						
[a] I_1 = reference fundamental current; I_n = harmonic current component.						

☐Current emission limits for professional balanced three-phase equipment with I_{1max} ≤ 75 A under specified conditions

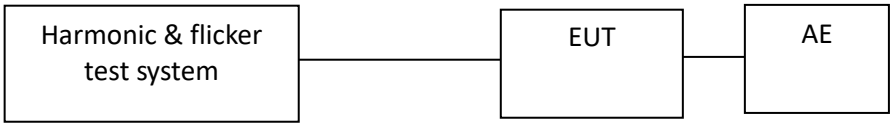
Minimal R_{sce}	Admissible individual harmonic current I_n/I_1 [a] %				Admissible harmonic current distortion factors %	
	I_5	I_7	I_{11}	I_{13}	*THD*	*PWHD*
33	10,7	7,2	3,1	2	13	22
≥ 120	40	25	15	10	48	46
NOTE 1 The relative values of even harmonics up to order 12 must not exceed 16/n %. Even harmonics above order 12 are taken into account in *THD* and *PWHD* in the same way as odd order harmonics. NOTE 2 Linear interpolation between successive R_{sce} values are permitted.						
[a] I_1 = reference fundamental current; I_n = harmonic current component.						

5.4 Test Result

6 Voltage fluctuations and flicker

Test result: NA

6.1 Test Setup



6.2 Test Procedure

6.2.1 Definition

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

Pst: Short-term flicker severity.

Plt: long-term flicker severity.

dc: maximum steady state voltage change during an observation period.

dmax: maximum absolute voltage change during an observation period.

d(t): time function of the relative r.m.s. voltage change evaluated as a single value for each successive half period between zero-crossings of the source voltage, except during time interval in which the voltage is a steady-state condition for at least 1s.

6.2.2 Test condition

The EUT was set to produce the most unfavorable sequence of voltage changes according to Annex A of IEC 61000-3-3: 2013+A1: 2017.

6.2.3 Test protocol

The tested object operated under the operating condition specified in IEC 61000-3-3: 2013+A1: 2017
The following limits apply

- the value of Pst shall not be greater than 1,0.
- the value of Plt shall not be greater than 0,65.
- Tmax, the accumulated time value of d(t) with a deviation exceeding 3,3 % during a single voltage change at the EUT terminals, shall not exceed 500ms.
- the maximum relative steady-state voltage change, dc, shall not exceed 3,3 %.
- the maximum relative voltage change dmax, shall not exceed:

☐ 4% without additional conditions.
☐ 6% for equipment which is:
- switched manually, or
- switched automatically more frequently than twice per day, and also has either a delayed restart (the delay being not less than a few tens of seconds), or manual restart, after a power supply interruption.

☐ 7% for equipment which is:
- attended whilst in use (for example: hair dryers, vacuum cleaners, kitchen equipment such as mixers, garden equipment such as lawn mowers, portable tools such as electric drills), or
- switched on automatically, or is intended to be switched on manually, no more than twice per day, and also has either a delayed restart (the delay being not less than a few tens of seconds) or manual restart, after a power supply interruption.

☐ for manual switch, dmax is measured in accordance with Annex B of standard, average dmax is calculated from 24 times measurement.

☐ Tests need not be made on equipment which is unlikely to produce significant voltage fluctuations. So it is deemed to fulfil the requirements without testing.

6.3 Test Result

None

Immunity Test

Performance criteria

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

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 specified by the manufacturer, when the apparatus is used as intended. The performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is however allowed. No change of actual operating state or stored data is allowed. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, either of these may be derived from the product description and documentation and what the user may reasonable expect from the apparatus if used as intended.

Criterion C: Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by the operation of the controls.

7 Electrostatic Discharge (ESD)

Test result **Pass**

7.1 Severity Level and Performance Criterion

7.1.1 Test level

Contact discharge		Air discharge	
Level	Test voltage (kV)	Level	Test voltage (Kv)
1	2	1	2
2	4	2	4
3	6	3	8
4	8	4	15
X	Special	X	Special

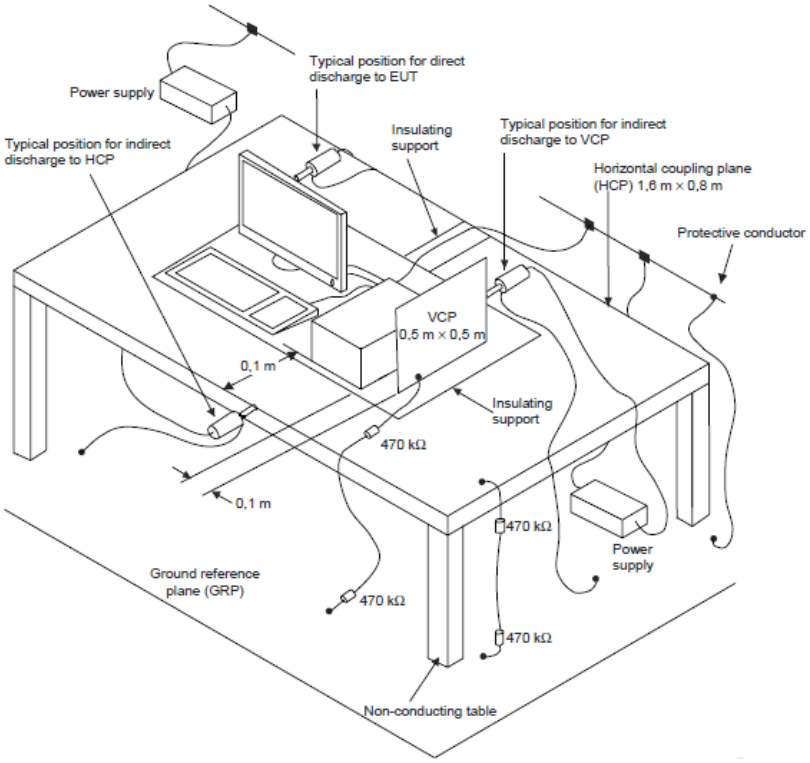
Notes: 1. "X" is an open level. The level has to be specified in the dedicated equipment specification. If higher voltages than those shown are specified, special test equipment may be needed.
2. The gray rows were the selected test level.

7.1.2 Performance Criterion

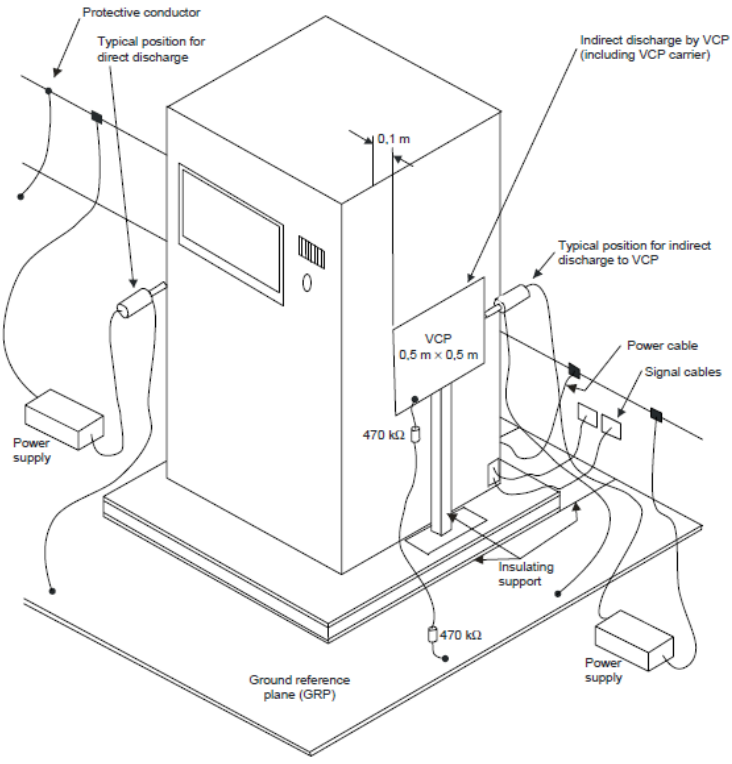
Criterion B

7.2 Test Setup

☐ For table-top equipment



☐ For floor standing equipment



7.3 Test Procedure

Measurement was performed in shielded room.
Measurement procedure was applied according to IEC 61000-4-2 clause 8.
The test method and equipment was specified by IEC 61000-4-2.

7.4 Test Result

Direct discharges were applied at the following selected points:

Test level [kV]	Air/ Contact	Polarity (+/-)	Pass/Fail/NA	Comment
2/4	Contact	+/-	Pass	Accessible metal parts of the EUT
2/4	Contact	+/-	Pass	All touchable screws of enclosure
2/4/8	Air	+/-	Pass	Air gap of the switch, button
2/4/8	Air	+/-	Pass	Slots around the EUT

Indirect contact discharges were applied to the VCP and the HCP at the following selected points:

For table-top equipment

Position	Description	Point	Pass/Fail/NA
HCP front	0,1m from the front of the EUT	Edge of centre on HCP	Pass
HCP back	0,1m from the back of the EUT	Edge of centre on HCP	Pass
HCP right	0,1m from the right side of the EUT	Edge of centre on HCP	Pass
HCP left	0,1m from the left side of the EUT	Edge of centre on HCP	Pass
VCP front	0,1m from the front of the EUT	Edge of centre on VCP	Pass
VCP back	0,1m from the back of the EUT	Edge of centre on VCP	Pass
VCP right	0,1m from the right of the EUT	Edge of centre on VCP	Pass
VCP left	0,1m from the left of the EUT	Edge of centre on VCP	Pass

For floor standing equipment

Position	Description	Point	Pass/Fail/NA
CP front	0,1m from the front of the EUT	Edge of centre on VCP	NA
CP back	0,1m from the back of the EUT	Edge of centre on VCP	NA
CP right	0,1m from the right of the EUT	Edge of centre on VCP	NA
CP left	0,1m from the left of the EUT	Edge of centre on VCP	NA

Observation: All the functions were operated as normal after the test.
Conclusion: The EUT can meet the requirement of Performance Criterion B.

8 Radio frequency electromagnetic field

Test result **Pass**

8.1 Severity Level and Performance Criterion

8.1.1 Test level

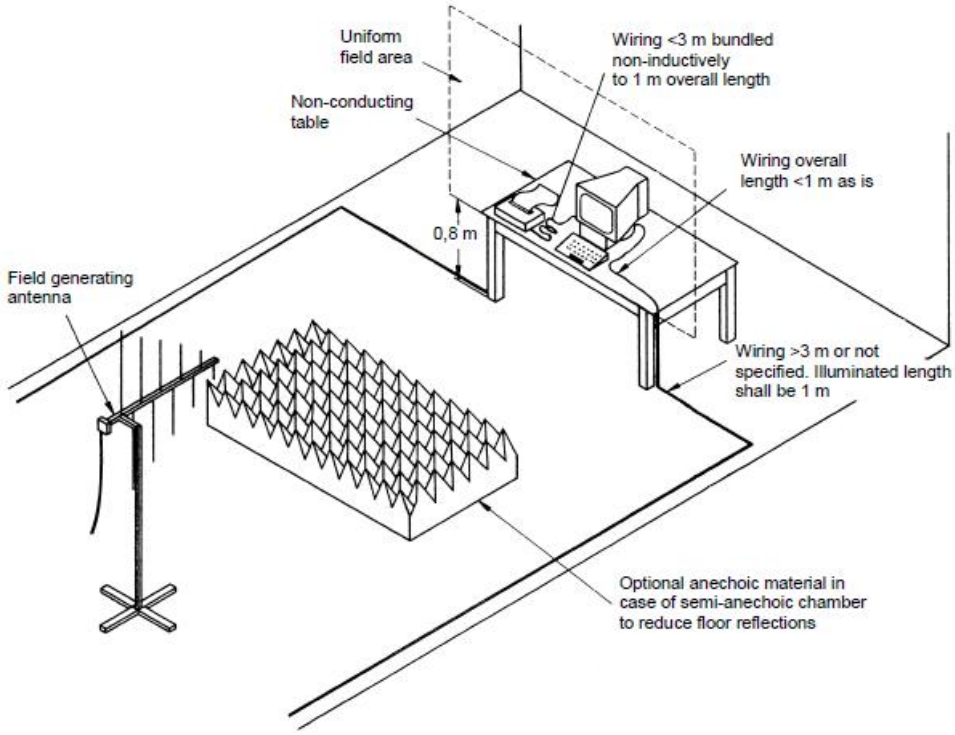
Level	Test field strength V/m
1	1
2	3
3	10
X	Special
Note: 1. X is an open test level. This level may be given in the product specification. 2. The gray row is the selected test level.	

8.1.2 Performance Criterion

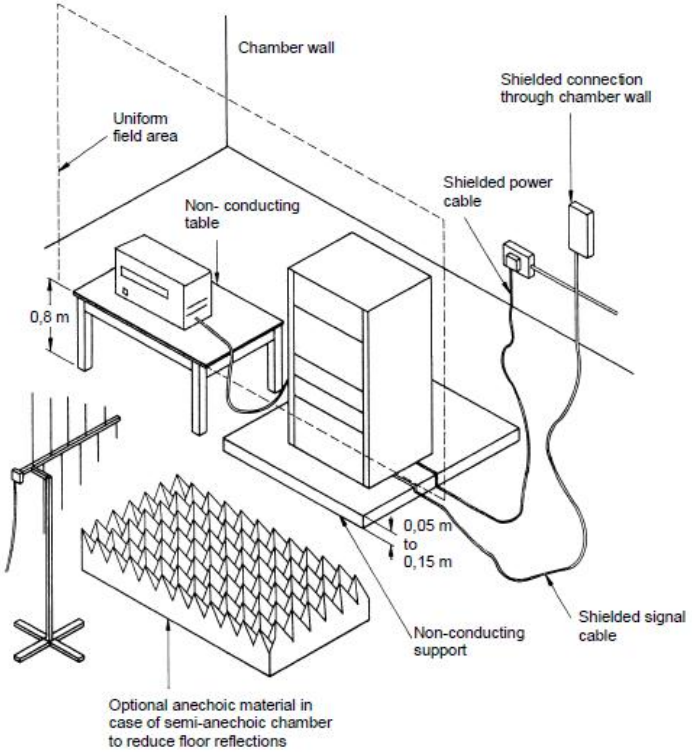
Criterion A

8.2 Test Setup

☐ For table-top equipment



☐ For floor standing equipment



8.3 Test Procedure

Measurement was performed in full-anechoic chamber.
Measurement procedure was applied according to IEC 61000-4-3 clause 8.
The test method and equipment was specified by IEC 61000-4-3.

8.4 Test Result

Test no.	Frequency (MHz)	Polarization	Test level (V/m)	Modulation	Exposed location	Pass/Fail/NA
1	80-1000	H & V	3	1 kHz, 80% AM 1 % increment	All sides	Pass
2	1400-2000	H & V	3	1 kHz, 80% AM 1 % increment	All sides	Pass
3	2000-2700	H & V	1	1 kHz, 80% AM 1 % increment	All sides	Pass

Observation: All the functions were operated as normal during and after test.
Conclusion: The EUT can meet the requirement of Performance Criterion A

9 Fast transients

Test result **NA**

9.1 Severity Level and Performance Criterion

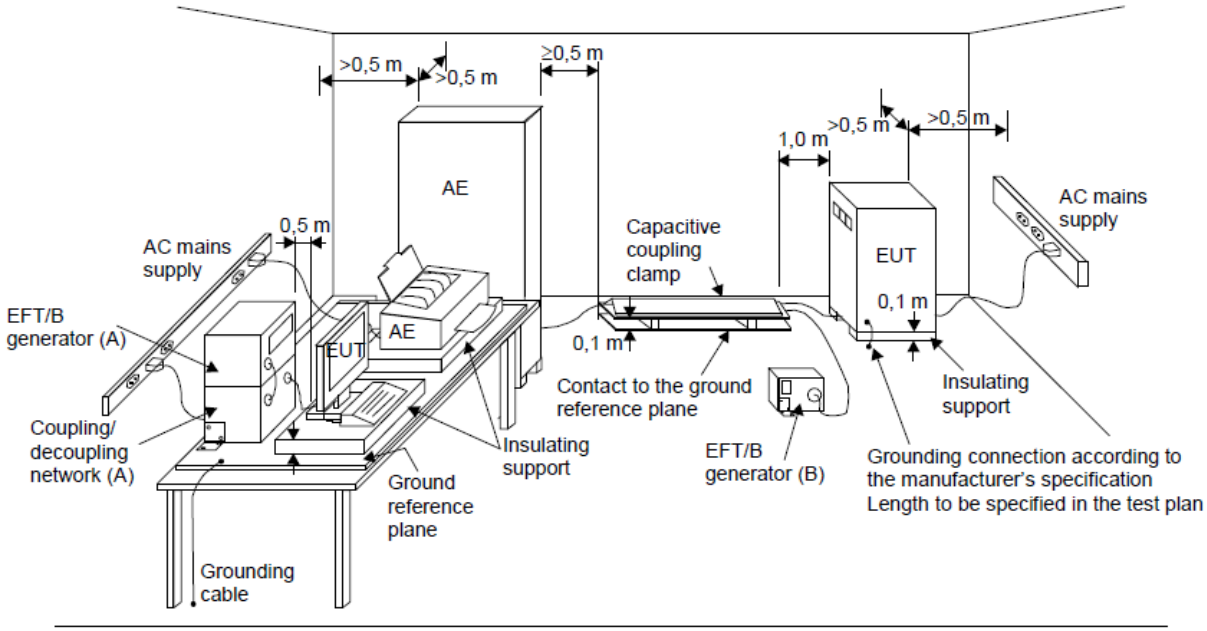
9.1.1 Test level

Open circuit output test voltage and repetition rate of the impulses				
Level	AC mains power input ports		Signal ports, DC power ports	
	Voltage peak (kV)	Repetition rate (kHz)	Voltage peak (kV)	Repetition rate (kHz)
1	0.5	5	0.25	5
2	1	5	0.5	5
3	2	5	1	5
4	4	2.5	2	5
X	Special	Special	Special	Special
Notes: 1. "X" is an open level. The level has to be specified in the dedicated equipment specification. 2. The gray rows were the selected test level.				

9.1.2 Performance Criterion

Criterion B

9.2 Test Setup



(A) location for supply line coupling

(B) location for signal lines coupling

9.3 Test Procedure

Measurement was performed in shielded room.
Measurement procedure was applied according to IEC 61000-4-4 clause 8.
The test method and equipment was specified by IEC 61000-4-4.

9.4 Test Result

Test No.	Level (kV)	Polarity (+/-)	Line for test	Pass/Fail/NA
1	1	+/-	AC power ports	
2	0.5	+/-	Signal ports	
3	0.5	+/-	CC power ports	

Observation:
Conclusion:

10 Surges

Test result **NA**

10.1 Severity Level and Performance Criterion

10.1.1 Test level

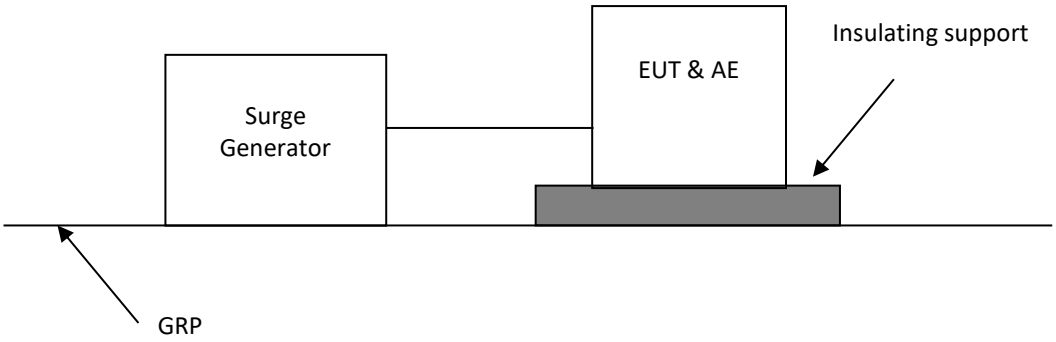
Level	Open-circuit test voltage (kV)
1	0.5
2	1.0
3	2.0
4	4.0
X*	Special

Notes: 1."X" is an open class. This level can be specified in the product specification.
2. The gray rows are the selected level.

10.1.2 Performance Criterion

Criterion B

10.2 Test Setup



10.3 Test Procedure

Measurement was performed in shielded room.
Measurement procedure was applied according to IEC 61000-4-5 clause 8.
The test method and equipment was specified by IEC 61000-4-5.

10.4 Test Result

Test No.	Level [kV]	Polarity +/-	Line for test	Pass/Fail/NA
1	0.5/1	+/-	AC mains power input port (line to line)	
2	0.5/1/2	+/-	AC mains power input port (line to earth)	
3	0.5	+/-	DC power ports	

Observation:
Conclusion:

11 Radio frequency, common mode

Test result **NA**

11.1 Severity Level and Performance Criterion

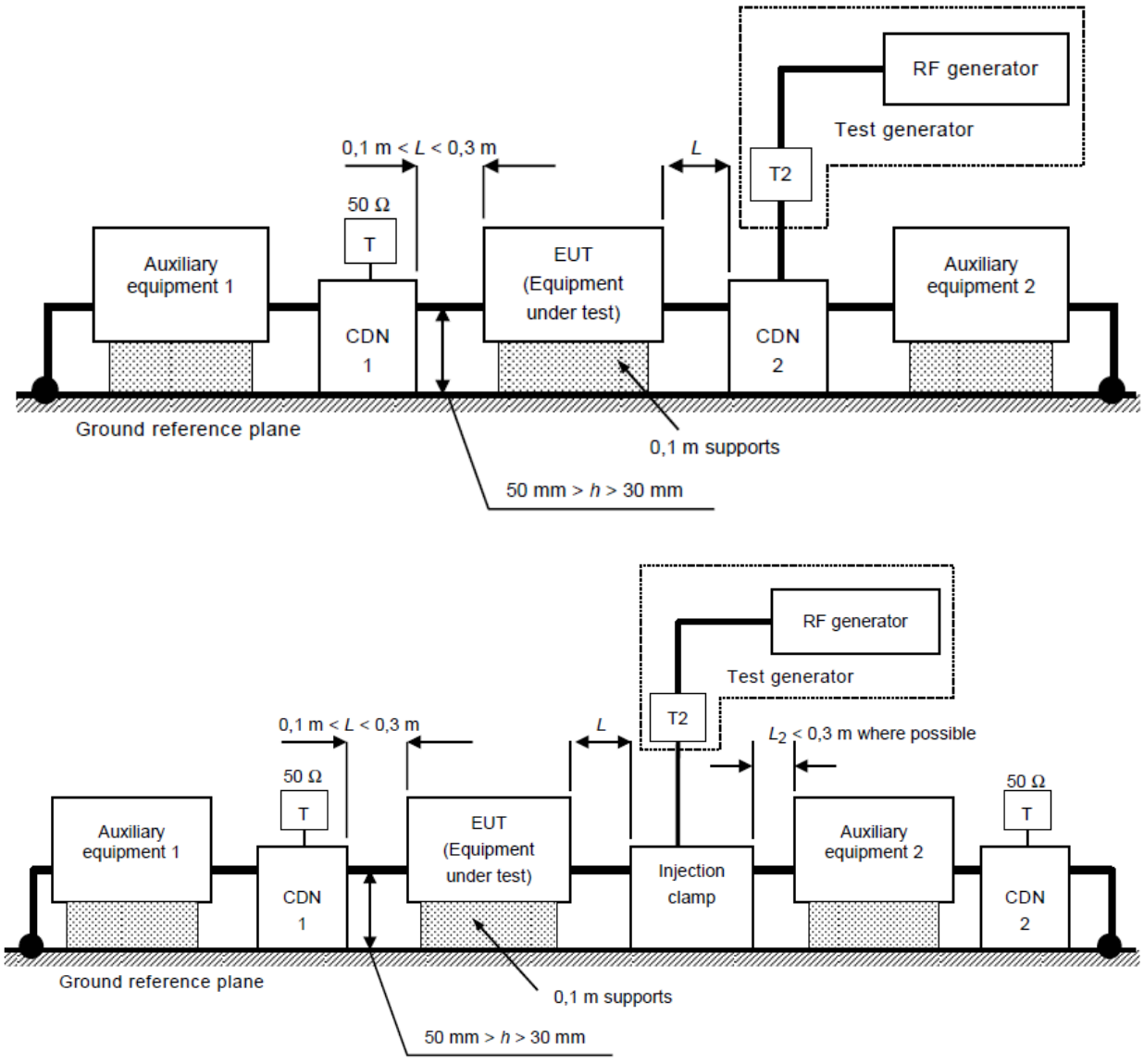
11.1.1 Test level

Frequency range 150kHz – 80MHz		
Level	Voltage level U0 (dBuV)	U0 (V)
1	120	1
2	130	3
3	140	10
X	Special	Special
Notes: 1. “X” is an open level 2. The gray row is the selected test level.		

11.1.2 Performance Criterion

Criterion A

11.2 Block Diagram of Test Setup



T	termination 50 Ω
T2	power attenuator (6 dB)
CDN	coupling and decoupling network

11.3 Test Procedure

Measurement was performed in shielded room.
Measurement procedure was applied according to IEC 61000-4-6 clause 8.
The test method and equipment was specified by IEC 61000-4-6.

11.4 Test Result

Test No.	Frequency (MHz)	Level (V)	Modulation	Injected point	Pass/Fail/NA
1	0.15~80	3	80%, 1 kHz, AM	AC power port	
2	0.15~80	3	80%, 1 kHz, AM	signal ports	
3	0.15~80	3	80%, 1 kHz, AM	DC power ports	

Observation:
Conclusion:

12 Voltage dips

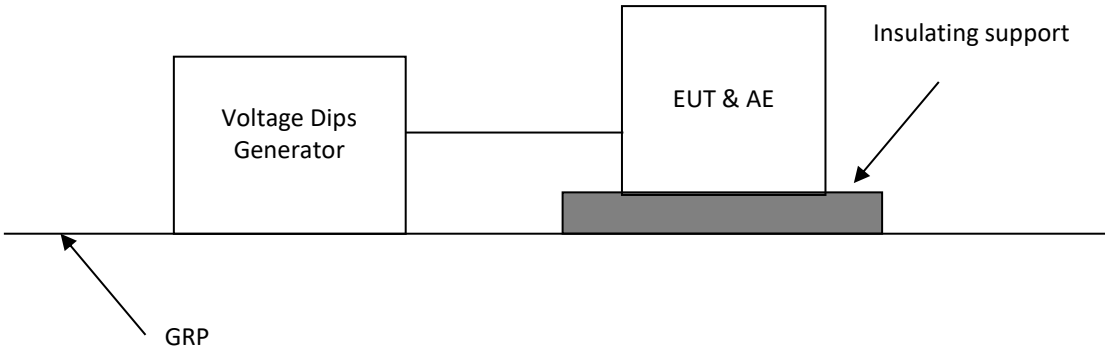
Test result **NA**

12.1 Severity Level and Performance Criterion

12.1.1 Test level

Test level Reduction (%)	Voltage level in % of rated Ut	Duration (cycles)	Performance criterion
100	0	0.5	B
		1	B
		250 (at 50Hz) 300 (at 60Hz)	C
30	70	25 (at 50Hz) 30 (at 60Hz)	C
Notes: The gray rows are selected test level.			

12.2 Test Setup



12.3 Test Procedure

Measurement was performed in shielded room.
Measurement procedure was applied according to IEC 61000-4-11 clause 8.
The test method and equipment was specified by IEC 61000-4-11.

12.4 Test Result

Test no.	Test level % U_T	Voltage dip and short interruptions % U_T	Duration (in periods)	Pass/ Fail	Comment
1	70	30%	25 cycles at 50Hz		
			30 cycles at 60Hz		
2	0	100%	0.5 cycle		
3	0	100%	1 cycle		
4	0	100%	250 cycles at 50Hz		
			300 cycles at 60Hz		
Note: “NA” means not applicable.					

Observation:
Conclusion:

13 Power Frequency Magnetic field

Test result: NA

13.1 Severity Level and Performance Criterion

13.1.1 Test level

Level	Magnetic field strength A/m
1	1
2	3
3	10
4	30
5	100
X	Special

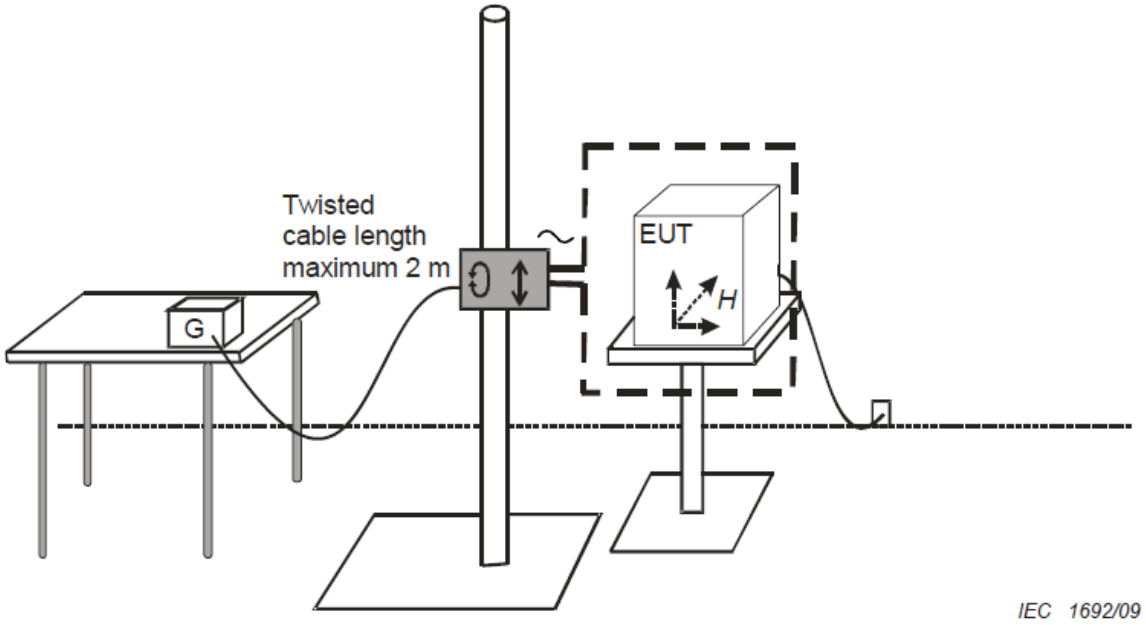
Note: 1. X is an open test level; this level may be given in the product specification.
2. The gray row is the selected test level.

13.1.2 Performance Criterion

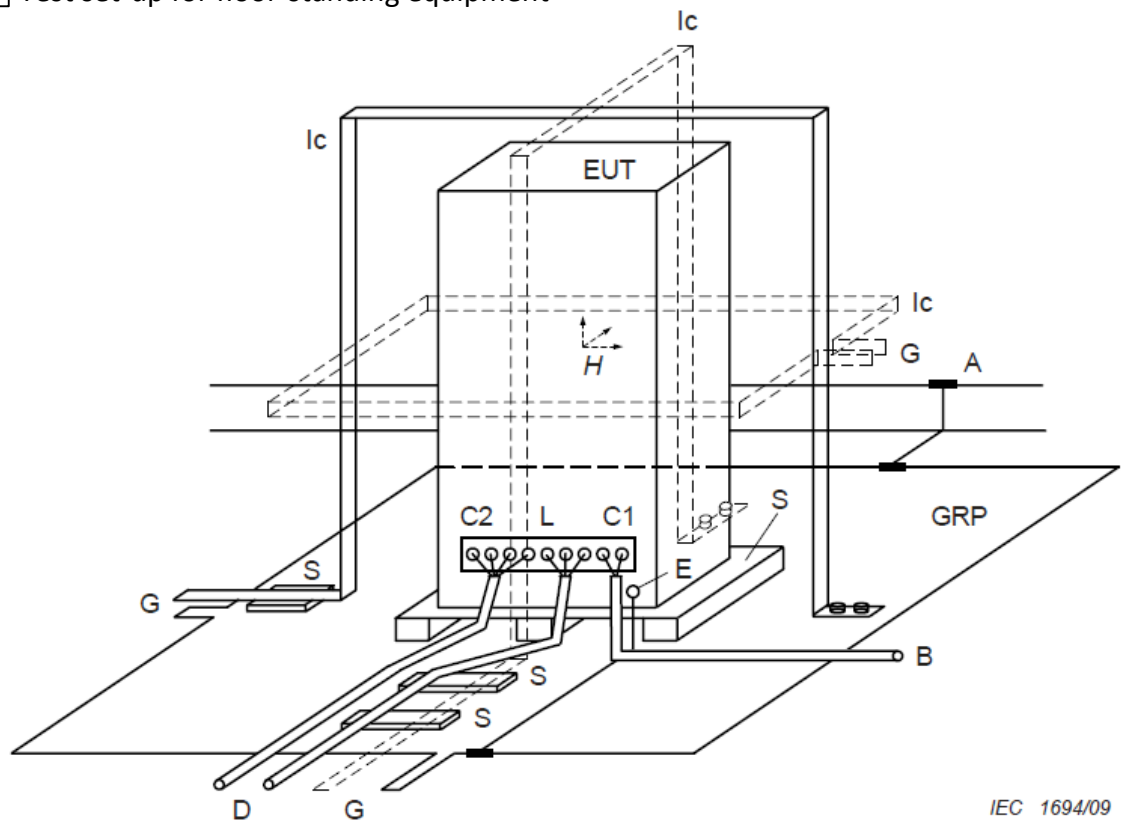
Performance criterion A

13.2 Diagram of Test Setup

☐ Test set-up for table-top equipment



☐ Test set-up for floor-standing equipment



13.3 Test Setup and Test Procedure

Measurement was performed in shielded room.
Measurement and setting of EUT was applied according to clause 7 of IEC 61000-4-8.
The test method and equipment was specified by IEC 61000-4-8 with the modifications by clause 8 of IEC 61000-6-1.

13.4 Test Protocol

Test No.	Level A/m	Axis	Result	Comment
1	3	X		
2	3	Y		
3	3	Z		

Observation:
Conclusion:

Appendix I: Photograph of equipment under test

Appendix II: Model list

ZTE-2009H1; ZTE-2004B4; ZTE-2004B5; SYE-2002A1; SYE-2002A2; SYE-2005A11;

KCE-021; KCE-022; KCE-025; KCE-027; KCE-029; KCE-029B; KCE-029S;

KCE-029（Bamboo fibre）; KCE-030; KCE-030(multi-functional);

ZT2101; ZT2101B; ZT2102; ZT2103; ZT2104; ZT2105; ZT2106; ZT2107; ZT2108; ZT2109;

ZT2110; ZT2110B; ZT2110C; ZT2111; ZT2112; ZT2113; ZT2114; ZT2115;

ZT2115（Latex platform）; ZT2116; ZT2117; ZT2118; ZT2119; ZT2120; ZT2121; ZT2122;

ZT2123; ZT2124; ZT2125; ZT2126; ZT2127; ZT2128; ZT2129; ZT2130; ZT2131; ZT2132;

ZT2133; ZT2134; ZT2135; ZT2136; ZT2137; ZT2138; ZT2139; ZT2140; ZT2141; ZT2142;

ZT2143; ZT2144; ZT2145; ZT2146; ZT2147; ZT2148; ZT2149; ZT2150;

ZT5101; ZT5102; ZT5103; ZT5104; ZT5104B; ZT5104C; ZT5104D; ZT5105; ZT5106; ZT5106B1
;

ZT5106B2; ZT5106H; ZT5106C; ZT5106J; ZT5106G; ZT5107; ZT5108; ZT5109; ZT5110;

ZT5111; ZT5112; ZT5113; ZT5114; ZT5115; ZT5116; ZT5117; ZT5118; ZT5119; ZT5120;

ZT5121; ZT5122; ZT5123; ZT5124; ZT5125; ZT5126; ZT5127; ZT5128; ZT5129; ZT5130;

ZT5131; ZT5132; ZT5133; ZT5134; ZT5135; ZT5136; ZT5137; ZT5138; ZT5139; ZT5140;

ZT5141; ZT5142; ZT5143; ZT5144; ZT5145; ZT5146; ZT5147; ZT5148; ZT5149; ZT5150;

ZT6101; ZT6101（Bamboo fibre）; ZT6102; ZT6103; ZT6104; ZT6105; ZT6106; ZT6107;

ZT6108; ZT6109; ZT6110; ZT6111; ZT6112; ZT6113; ZT6114; ZT6115; ZT6116; ZT6117;

ZT6118; ZT6119; ZT6120; ZT6121; ZT6122; ZT6123; ZT6124; ZT6125; ZT6126; ZT6127;

ZT6128; ZT6129; ZT6130; ZT6131; ZT6132; ZT6133; ZT6134; ZT6135; ZT6136; ZT6137;

ZT6138; ZT6139; ZT6140; ZT6141; ZT6142; ZT6143; ZT6144; ZT6145; ZT6146; ZT6147;

ZT6148; ZT6149; ZT6150;

ZH7101; ZH7102; TH103; ZH104; ZH7105; ZH7106; ZH7107; ZH7108; ZH7109; ZH7110;

ZH7111; ZH7112; ZH7113; ZH7114; ZH7115; ZH7116; ZH7117; ZH7118; ZH7119; ZH7120;

ZH7121; ZH7122; ZH7123; ZH7124; ZH7125; ZH7126; ZH7127; ZH7128; ZH7129; ZH7130;

ZH7131; ZH7132; ZH7133; ZH7134; ZH7135; ZH7136; ZH7137; ZH7138; ZH7139; ZH7140;

ZH7141; ZH7142; ZH7143; ZH7144; ZH7145; ZH7146; ZH7147; ZH7148; ZH7149; ZH7150;

ZH8101; ZH8102; ZH8103; ZH8104; ZH8105; ZH8106; ZH8107; ZH8108; ZH8109; ZH8110;

ZH8111; ZH8112; ZH8113; ZH8114; ZH8115; ZH8116; ZH8117; ZH8118; ZH8119; ZH8120;

ZH8121; ZH8122; ZH8123; ZH8124; ZH8125; ZH8126; ZH8127; ZH8128; ZH8129; ZH8130;

ZH8131; ZH8132; ZH8133; ZH8134; ZH8135; ZH8136; ZH8137; ZH8138; ZH8139; ZH8140;

ZH8141; ZH8142; ZH8143; ZH8144; ZH8145; ZH8146; ZH8147; ZH8148; ZH8149; ZH8150;

ZH9101; ZH9102; ZH9103; ZH9104; ZH9105; ZH9106; ZH9107; ZH9108; ZH9109; ZH9110;

ZH9111; ZH9112; ZH9113; ZH9114; ZH9115; ZH9116; ZH9117; ZH9118; ZH9119; ZH9120;

ZH9121; ZH9122; ZH9123; ZH9124; ZH9125; ZH9126; ZH9127; ZH9128; ZH9129; ZH9130;

ZH9131; ZH9132; ZH9133; ZH9134; ZH9135; ZH9136; ZH9137; ZH9138; ZH9139; ZH9140;

ZH9141; ZH9142; ZH9143; ZH9144; ZH9145; ZH9146; ZH9147; ZH9148; ZH9149; ZH9150;

ZH1101; ZH1102; ZH1103; ZH1104; ZH1105; ZH1106; ZH1107; ZH1108; ZH1109; ZH1110;

ZH1111; ZH1112; ZH1113; ZH1114; ZH1115; ZH1116; ZH1117; ZH1118; ZH1119; ZH1120;

ZH1121; ZH1122; ZH1123; ZH1124; ZH1125; ZH1126; ZH1127; ZH1128; ZH1129; ZH1130;

ZH1131; ZH1132; ZH1133; ZH1134; ZH1135; ZH1136; ZH1137; ZH1138; ZH1139; ZH1140;

ZH1141; ZH1142; ZH1143; ZH1144; ZH1145; ZH1146; ZH1147; ZH1148; ZH1149; ZH1150;

********** END **********