

# Guangzhou Taipeng Electrical Appliances Technology Co., Ltd.

**TEST REPORT** 

#### **SCOPE OF WORK**

**EMC TESTING-SEE PAGE 6** 

#### **REPORT NUMBER**

190820011GZU-001

**ISSUE DATE** 

[REVISED DATE]

24-February-2020

[\_\_\_\_\_]

#### **PAGES**

26

#### **DOCUMENT CONTROL NUMBER**

EN 55014:2017 (Without electronics)-a © 2017 INTERTEK





Block E, No.7-2 Guang Dong Software Science Park, Caipin Road, Guangzhou Science City, GETDD Guangzhou, China

Telephone: 86-20-8213 9688 Facsimile: 86-20-3205 7538

www.intertek.com

Applicant Name &

Address

: Guangzhou Taipeng Electrical Appliances Technology Co., Ltd. No. 26-27, 9 Floor, Tower A, Cairun International Mansion, No. 2

Dongguanzhuang Road, Tianhe District, Guangzhou, Guangdong, P.R.

China

Manufacturing Site Lianjiang Shi Xiandai Shenghuo Electric Appliances Co., Ltd.

No. 8 Longhua Street Jiuzhoujiang Economic Development Zone,

Lianjiang, Guangdong, P.R. China

190820011GZU-001 Intertek Report No:

**Test standards** EN 55014-1:2017 EN 61000-3-2:2014 EN 61000-3-3:2013 EN 55014-2:2015

#### **Sample Description**

**Product** : Electric kettle Model No. : See page 6

**Electrical Rating** : 220-240 V, 50/60 Hz, Class I,

> TPGK1318-15, TPGK1218-15, TPGK2218-15, TPSK0315-15, TPSK0515-15, TPSK0318-15, TPSK0518-15, TPSK5218SS-15, TPSK7318-15, TPSK7425-15, TPSK7625-15, TPSK8518-15, TPSK8815-15: 1500 W, TPGK1318-18, TPGK1218-18, TPGK2218-18, TPSK0315-18, TPSK0515-18, TPSK0318-18, TPSK0518-18, TPSK5218SS-18, TPSK7318-18,

TPSK7425-18, TPSK7625-18, TPSK8518-18, TPCK0118-18, TPCK0225-

18, TPCK0318-18, TPCK0418-18, TPSK8815-18: 1800W,

TPCK0508-13: 1350 W

Serial No. Not Labeled

**Date Received** : 04 September 2019

Date Test : 05 September 2019 to 06 September 2019

Conducted

Prepared and Checked By

Approved By:

**Guitar Huang** 

**Project Engineer** 

Team Leader

Helen Ma

Intertek Guangzhou

Intertek Guangzhou

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

Version: 13 November 2017 Page 2 of 26 EN 55014:2017 (Without electronics)-a



#### **CONTENT**

TE	ST REPC	DRT		1
C	ONTEN	т		3
1.	TES	T RE	SULTS SUMMARY	4
2.	EM	C RE	SULTS CONCLUSION	5
3.			ATORY MEASUREMENTS	
4.			MENT USED DURING TEST	
5.	EM	II TES	T	10
	5.1	EN	55014-1 CONTINUOUS CONDUCTED DISTURBANCE VOLTAGE TEST	
	5.1		Block Diagram of Test Setup	
	5.1	.2	Test Setup and Procedure	
	5.1		Test Data and curve	
	5.2		55014-1 Conducted Common Mode (Asymmetric Mode) Disturbance at w	
			ORTS	
	5.3		55014-1 DISCONTINUOUS CONDUCTED DISTURBANCE VOLTAGE	
	5.4		55014-1 RADIATED DISTURBANCE (9 KHz-30 MHz)- MAGNETIC FIELD INDUCED CU	
	5.5		55014-1 RADIATED DISTURBANCE POWER	
	5.5		Block Diagram of Test Setup	
		.2	Test Setup and Procedure	
		.3	Test Data and curve	
	5.6	EN	55014-1 RADIATED DISTURBANCE(30MHz-1000MHz)	16
6	НА	RMC	DNICS OF CURRENT	17
	6.1	BLC	OCK DIAGRAM OF TEST SETUP	17
	6.2	TES	T SETUP AND PROCEDURE	17
	6.3	TES	т Data	18
7	FLIC	CKER		20
	7.1	Bio	OCK DIAGRAM OF TEST SETUP	20
	7.2		T SETUP AND PROCEDURE	
	7.3		т Data	
8	AP	PEND	DIX I - PHOTOS OF TEST SETUP	22
9	ΔPI	PENI	DIX II – PHOTOS OF EUT	24
_				· · · · · · · · · · · · · · ·



#### 1. TEST RESULTS SUMMARY

Test Item	Standard	Result
Continuous conducted disturbance voltage	EN 55014-1:2017	Pass
Conducted Disturbance at wired network ports	EN 55014-1:2017	N/A
Discontinuous conducted disturbance voltage	EN 55014-1:2017	N/A
Radiated disturbance(9kHz-30MHz)	EN 55014-1:2017	N/A
Radiated disturbance power	EN 55014-1:2017	Pass
Radiated disturbance(30MHz-1000MHz)	EN 55014-1:2017	N/A
Harmonic of current	EN 61000-3-2:2014	Pass
Flicker	EN 61000-3-3:2013	Pass
ESD immunity	EN 55014-2: 2015 Reference: EN 61000-4-2:2009	N/A
Radiated EM field immunity	EN 55014-2:2015 Reference: EN 61000-4-3:2006 +A1:2008+A2:2010	N/A
EFT immunity	EN 55014-2:2015 Reference: EN 61000-4-4:2012	N/A
Surge immunity	EN 55014-2:2015 Reference: EN 61000-4-5:2014	N/A
Inject current immunity	EN 55014-2:2015 Reference: EN 61000-4-6:2014	N/A
Voltage dips and interruption immunity	EN 55014-2:2015 Reference: EN 61000-4-11: 2004	N/A

#### Remark:

- 1. The symbol "N/A" in above table means Not Applicable.
- 2. When determining the test results, measurement uncertainty of tests has been considered.



#### 2. EMC RESULTS CONCLUSION

RE: EMC Testing Pursuant to EMC Directive 2014/30/EU Performed on the Electric kettle,

Models: TPGK1318-15, TPGK1318-18, TPGK1218-15, TPGK1218-18, TPGK2218-15, TPGK2218-18, TPSK0315-15, TPSK0315-15, TPSK0515-15, TPSK0515-15, TPSK0515-18, TPSK0318-15, TPSK0318-18, TPSK0518-15, TPSK0518-15, TPSK7318-15, TPSK7318-18, TPSK7425-15, TPSK7425-18, TPSK7625-15, TPSK7625-18, TPSK8518-15, TPSK8518-18, TPSK8815-15, TPSK8815-18, TPCK0118-18, TPCK0225-18, TPCK0318-18, TPCK0418-18, TPCK0508-13

All models use the same circuit diagram, incorporating one temperature limiter on handle and two thermal cut-outs on kettle bottom.

See below table for model differences:

Model	Ratings	Capacity	Kettle body material	Thermal control
TPGK1318-15	220-240V, 1500W	1,8L	Glass	Fada,
TPGK1318-18	220-240V, 1800W	1,8L	Glass	ZUANBAO,
TPGK1218-15	220-240V, 1500W	1,8L	Glass	Tianming or
TPGK1218-18	220-240V, 1800W	1,8L	Glass	FUFAN
TPGK2218-15	220-240V, 1500W	1,8L	Glass	
TPGK2218-18	220-240V, 1800W	1,8L	Glass	
TPSK0315-15	220-240V, 1500W	1,5L	Metal	
TPSK0315-18	220-240V, 1800W	1,5L	Metal	
TPSK0515-15	220-240V, 1500W	1,5L	Metal	
TPSK0515-18	220-240V, 1800W	1,5L	Metal	
TPSK0318-15	220-240V, 1500W	1,8L	Metal	
TPSK0318-18	220-240V, 1800W	1,8L	Metal	
TPSK0518-15	220-240V, 1500W	1,8L	Metal	
TPSK0518-18	220-240V, 1800W	1,8L	Metal	
TPSK5218SS-15	220-240V, 1500W	1,8L	Metal	
TPSK5218SS-18	220-240V, 1800W	1,8L	Metal	
TPSK7318-15	220-240V, 1500W	1,8L	Metal	
TPSK7318-18	220-240V, 1800W	1,8L	Metal	
TPSK7425-15	220-240V, 1500W	2,5L	Metal wrapped by plastic	
TPSK7425-18	220-240V, 1800W	2,5L	Metal wrapped by plastic	
TPSK7625-15	220-240V, 1500W	2,5L	Metal	
TPSK7625-18	220-240V, 1800W	2,5L	Metal	
TPSK8518-15	220-240V, 1500W	1,8L	Metal	
TPSK8518-18	220-240V, 1800W	1,8L	Metal	
TPSK8815-15	220-240V, 1500W	1,5L	Metal wrapped by plastic	
TPSK8815-18	220-240V, 1800W	1,5L	Metal wrapped by plastic	
TPCK0118-18	220-240V, 1800W	1,8L	Metal wrapped by plastic	
TPCK0225-18	220-240V, 1800W	2,5L	Metal	
TPCK0318-18	220-240V, 1800W	1,8L	Metal wrapped by plastic	
TPCK0418-18	220-240V, 1800W	1,8L	Metal	
TPCK0508-13	220-240V, 1350W	0,8L	Metal	



Based on above model difference and engineering judgement,

We tested the Electric kettle, representative model: TPSK0318-18 to determine if it was in compliance with the relevant EN standards as marked on the Test Results Summary. We found that the unit met the requirements of EN 55014-1, EN 61000-3-2, EN 61000-3-3 standards when tested as received. The worst case's test data was presented in this test report.

The production units are required to conform to the initial sample as received when the units are placed on the market.

Standards against which no testing has been conducted of the captioned model and the engineering judgement is stated as follows:

EN 55014-2: This product contains no electronic control circuitry. It is classified to Category I of the standard and is therefore deemed to fulfil the relevant immunity requirements without testing.



#### 3. LABORATORY MEASUREMENTS

#### **Configuration Information**

Support Equipment: N/A

Rated Voltage and frequency under test: 220-240 V, 50/60 Hz
Condition of Environment: Temperature: 22~28°C

Relative Humidity:35~60%

Atmosphere Pressure:86~106kPa

#### Notes:

1. The EMI measurements had been made in the operating mode produced the largest emission in the frequency band being investigated consistent with normal applications. An attempt had been made to maximize the emission by varying the configuration of the EUT.

#### 2. Test Location:

Intertek Testing Services Shenzhen Ltd. Guangzhou Branch All tests were performed at:

Block E, No.7-2 Guang Dong Software Science Park, Caipin Road, Guangzhou Science City, GETDD Guangzhou, China

#### 3. Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Conducted Emission (9 kHz-150 kHz)	2.66 dB
2	Conducted Emission (150 kHz-30 MHz)	2.44 dB
3	Disturbance Power (30 MHz-300 MHz)	3.02 dB
4	Radiated Emission (30 MHz-1 GHz)	4.72 dB
5	Radiated Emission (1 GHz-6 GHz)	4.96 dB
6	Radiated Emission (6 GHz-18 GHz)	4.93 dB

The measurement uncertainty describes the overall uncertainty of the given measured value during the operation of the EUT.

Measurement uncertainty is calculated in accordance with CISPR16-4-2:2011 The measurement uncertainty is given with a confidence of 95%, k=2.

Determination of the test conclusion is based on IEC Guide 115 in consideration of measurement uncertainty.



#### 4. EQUIPMENT USED DURING TEST

**Conducted Disturbance-Mains Terminal (2)** 

Conducted Disturbance Wallis Terminal (2)						
Equipment No.	Equipment	Model	Manufacturer	Calibration Interval		
EM080-04	EMI receiver	ESCS30	R&S	1Y		
EM031-04	EMI receiver	ESR3	R&S	1Y		
EM006-06	LISN	ENV216	R&S	1Y		
SA047-111	Digital Temperature-Humidity Recorder	RS210	YIJIE	1Y		
EM004-03	EMC shield Room	8m×4m×3m	Zhongyu	1Y		
EM031-04-01	EMC32 software (CE)	V10.01.00	R&S	N/A		

#### **Disturbance Power**

Equipment No.	· Fauipment		Manufacturer	Calibration Interval
EM080-05	EMI receiver	ESCI	R&S	1Y
EM081-04 Absorb Power Clamp		MDS-21	R&S	1Y
SA047-112	Digital Temperature-Humidity Recorder	RS210	YIJIE	1Y
EM004-04	EMC shield Room	8m×3m×3m	Zhongyu	1Y

Harmonic Currents and Flicker (2)

Equipment No.	Equipment	Model	Manufacturer	Calibration Interval
EM001-03	3-Phase Harmonic & Flicker Measuring System	Profline2145- 400	TESEQ	1Y
EM001-03- 01	AC Power Source	NSG1007	TESEQ	1Y
SA047-140	Digital Temperature-Humidity Recorder	AW5145Y	ASAIR	1Y



Detail of the equipment calibration due date:

Equipment No.	Cal. Due date
Conducted Distu	(DD-MM-YYYY)
Terminal (1)	Dance-Iviairis
EM080-05	17/07/2020
EM006-05	16/06/2020
SA047-112	08/11/2020
EM004-04	05/01/2021
Conducted Distu	rbance-Mains
Terminal (2)	
EM080-04	10/11/2020
EM031-04	15/01/2020
EM006-06	08/09/2020
SA047-111	08/11/2020
EM004-03	05/01/2021
EM031-04-01	N/A
Conducted Distu	
Control Terminal	
EM080-05	17/07/2020
EM080-05-01	08/09/2020
SA047-112	08/11/2020
EM004-04 Conducted Distu	05/01/2021
Control Terminal	
EM080-05	17/07/2020
EM005-06-01	09/09/2020
SA047-112	08/11/2020
EM004-04	05/01/2021
Conducted Distu	rbance-Telecom
Terminal	
EM080-05	17/07/2020
EM011-05	07/04/2020
EM011-06	07/04/2020
EM006-06	08/09/2020
SA047-112	08/11/2020
EM004-04	05/01/2021
Conducted Distu	rbance-Antenna
Terminal EM080-04	10/11/2020
EM031-04	15/01/2020
EM084-02	18/07/2020
EM041-01	07/01/2020
EM041-01	07/01/2021
SA047-111	08/11/2020
EM004-03	05/01/2021
Click (1)	03/01/2021
EM008-01	17/07/2020
EM006-06	17/07/2020 08/09/2020
SA047-111	08/11/2020
EM004-03	05/01/2021
Click (2)	
EM008-02	10/11/2020
EM008-02-01	10/11/2020
EM006-04	09/09/2020
EM032-02	17/07/2020
SA047-111	08/11/2020
EM004-03	05/01/2021
Disturbance Pow	
EM080-05	18/07/2020
EM081-04 SA047-112	15/03/2020
SAU47-112 EM004-04	08/11/2020
£IVIUU4-U4	05/01/2021

iue date:	
Equipment No.	Cal. Due date
	(DD-MM-YYYY)
Radiated Disturb Method)	
EM080-05	17/07/2020
EM003-02	10/11/2020
EM003-03	10/11/2020
EM003-01-05	08/09/2020
SA047-112	08/11/2020
EM004-04	05/01/2021
Radiated electron disturbances (9 k	magnetic
EM080-04	10/11/2020
EM031-04	15/01/2020
EM061-04	28/02/2020
SA047-111	08/11/2020
EM004-03	05/01/2021
Radiated Disturb	ance (9 kHz-30
<b>MHz)</b> EM030-04	00/04/2020
EM031-02	09/04/2020 22/10/2020
EM011-04	24/06/2020
EM031-02-01	09/04/2020
SA047-118	16/7/2020
EM045-01-01	N/A
Radiated Disturb	
<b>GHz)</b> EM030-04	9/04/2020
EM031-02	22/10/2020
EM033-01	19/09/2020
EM031-02-01	9/04/2020
EM036-01	21/07/2020
SA047-118	16/07/2020
EM045-01-01	N/A
Radiated Disturb	
EM030-04	09/04/2020
EM031-02	l 22/10/2020
EM031-03	08/09/2020
EM033-02	22/06/2020
EM033-02-02	09/04/2020
EM022-03	16/05/2020
SA047-118	16/07/2020
EM045-01-01	N/A
Harmonic Curren	ts and Eliskor /1\
EM001-02 SA047-111	10/11/2020 08/11/2020
Harmonic Curren	ts and Elickor (2)
EM001-03	09/09/2020
EM001-03-01	08/09/2020
SA047-140	01/01/2021
EMF	1 01/01/2021
EM007-03	20/02/2020
SA047-112	08/11/2020
Induced Current 10 MHz)	Density (20 kHz-
EM080-04	10/11/2020
EM031-04	15/01/2020
EM007-02	07/01/2021
SA047-111	08/11/2020
2M04/-111	1 00/11/2020

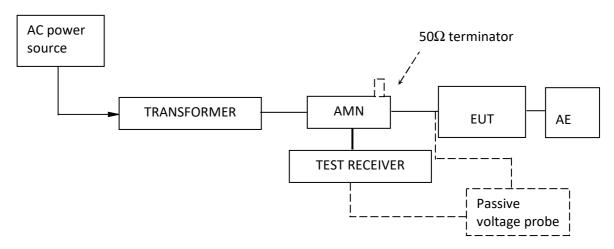


#### 5. EMI TEST

#### 5.1 EN 55014-1 Continuous Conducted Disturbance Voltage Test

**Test Result: Pass** 

#### 5.1.1 Block Diagram of Test Setup



#### 5.1.2 Test Setup and Procedure

The EUT was set to achieve the maximum emission level. The mains terminal disturbance voltage was measured with the EUT in a shielded room. The EUT was connected to AC power source through an Artificial Mains Network which provides a  $50\Omega$  linear impedance Artificial hand is used if appropriate (for handheld apparatus). The load/control terminal disturbance voltage was measured with passive voltage probe if appropriate.

The table-top EUT was placed on a 0.4m high non-metallic table above earthed ground plane(Ground Reference Plane). And for floor standing EUT, was placed on a 0.1m high non-metallic supported on GRP. The EUT keeps a distance of at least 0.8m from any other of the metallic surface. The Artificial Mains Network is situated at a distance of 0.8m from the EUT.

During the test, mains lead of EUT excess 0.8m was folded back and forth parallel to the lead so as to form a horizontal bundle with a length between 0.3m and 0.4m.

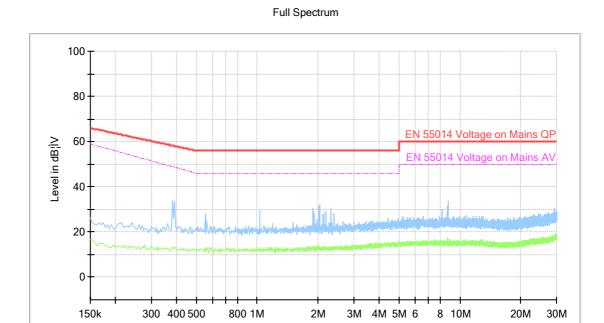
The bandwidth of test receiver was set at 9 kHz. The frequency range from 150 kHz to 30MHz was checked.

When measurements of disturbance are being made, the appliance shall be operated under the conditions defined in Annex A.



# 5.1.3 Test Data and curve At mains terminal: Tested Wire: Live

#### **Operation Mode: Heating mode**



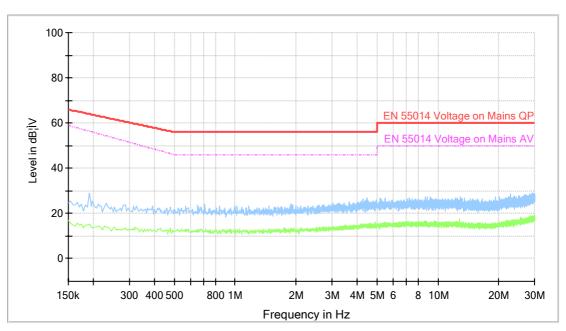
Frequency in Hz

All emission levels are more than 10 dB below the limit.



Tested Wire: Neutral Operation Mode: Heating mode

#### Full Spectrum



All emission levels are more than 10 dB below the limit.

At load/control terminal:

Not Applicable.



### 5.2 EN 55014-1 Conducted Common Mode (Asymmetric Mode) Disturbance at wired network Ports

#### **Test Result: Not Applicable**

Remark: The test only applys to balanced unscreened ports intended for connection to unscreened balanced pairs.

#### 5.3 EN 55014-1 Discontinuous Conducted Disturbance Voltage

Test Result: Not applicable.

## 5.4 EN 55014-1 Radiated Disturbance (9 kHz-30 MHz)- Magnetic field induced current method

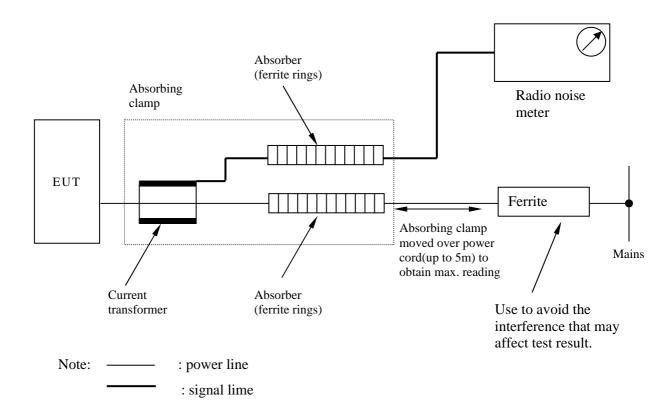
#### **Test Result: Not Applicable**

Remark: The test only applies to induction cooking appliances.

#### 5.5 EN 55014-1 Radiated Disturbance Power

**Test Result: Pass** 

#### 5.5.1 Block Diagram of Test Setup





#### 5.5.2 Test Setup and Procedure

The disturbance power was measured with the EUT in a shielded room. The height of the table shall be 0,1 m  $\pm$  0,025 m for appliances primarily intended to be positioned on the floor in normal use, and 0,8 m  $\pm$  0,05 m for other appliances. The EUT was placed on a non-metallic table at least 0.8m from other metallic surface and the mains lead of EUT was extended to about 6m long. The auxiliary lead longer than 0.25m but shorter than twice length of absorbing clamp was extend to twice length of clamp and those longer than twice length was extend to 6 meters.

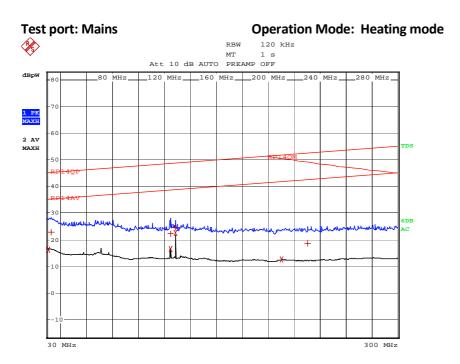
The absorbing clamp was moved along the lead to obtain maximum disturbance. The EUT was set to achieve the maximum emission level, and for each point which appears a relevant high emission level, the absorbing clamp was moved around the lead to get the maximum disturbance value.

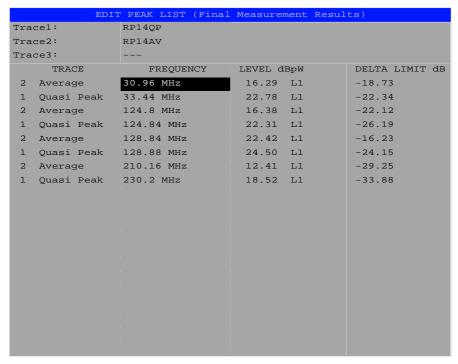
The bandwidth of test receiver was set at 120 kHz. The frequency range from 30MHz to 300MHz was checked.

When measurements of disturbance are being made, the appliance shall be operated under the conditions defined in Annex A.



#### 5.5.3 Test Data and curve





The measurement quasi-peak data of disturbance power is lower than applicable limit reduced by the margin (0 to 10dB) at frequency range 200 to 300 MHz and the maximum clock frequency is less than 30MHz



#### 5.6 EN 55014-1 Radiated Disturbance(30MHz-1000MHz)

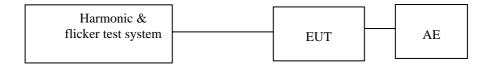
Test Result: Not Applicable
Remark:
☑ Radiated disturbance shall not be conducted, if the measurement quasi-peak data of disturbance power is lower than applicable limit reduced by the margin (0 to 10dB) at frequency range 200 to 300 MHz and the maximum clock frequency is less than 30MHz.
$\square$ Radiated disturbance (300-1000MHz) shall be conducted, if the measurement quasi-peak data of disturbance power is between the limit and limit reduced by the margin (0 to 10dB) at frequency range 200 to 300 MHz or the maximum clock frequency is not less than 30MHz.
$\square$ Radiated disturbance(30-1000MHz) is applied to battery-operated appliance.



#### 6 Harmonics of current

**Test Result: Pass** 

#### 6.1 Block Diagram of Test Setup



#### **6.2 Test Setup and Procedure**

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



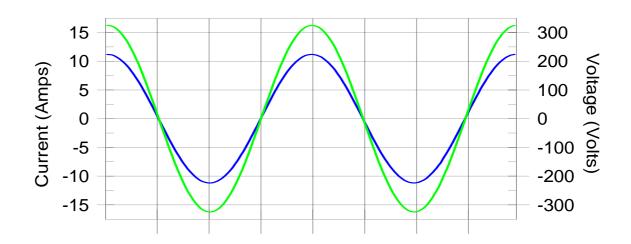
#### 6.3 Test Data

Mode: Heating mode

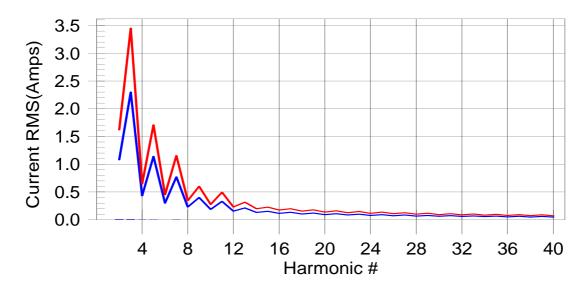
Harmonics – Class-A per Ed. 5.0 (2018)(Run time)

Test Result: Pass Source qualification: Normal

#### **Current & voltage waveforms**



#### <u>Harmonics and Class A limit line</u> <u>European Limits</u>



Test result: Pass Worst harmonics H2-0.8% of 150% limit, H2-.5% of 100% limit.



#### Current Test Result Summary (Run time)

Test Result: Pass Source qualification: Normal

THC(A): 0.010 I-THD(%): 0.1 POHC(A): 0.002 POHC Limit(A): 0.251

Highest parameter values during test:

 V\_RMS (Volts):
 230.242
 Frequency(Hz):
 50.00

 I\_Peak (Amps):
 11.374
 I\_RMS (Amps):
 7.915

 I\_Fund (Amps):
 7.914
 Crest Factor:
 11.571

 Power (Watts):
 1818.4
 Power Factor:
 1.000

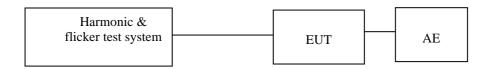
Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.006	1.080	0.5	0.013	1.620	0.8	Pass
3	0.005	2.300	0.2	0.013	3.450	0.4	Pass
4	0.003	0.430	N/A	0.010	0.645	N/A	Pass
5	0.002	1.140	N/A	0.008	1.710	N/A	Pass
6	0.001	0.300	N/A	0.005	0.450	N/A	Pass
7	0.002	0.770	N/A	0.005	1.155	N/A	Pass
8	0.001	0.230	N/A	0.003	0.345	N/A	Pass
9	0.001	0.400	N/A	0.002	0.600	N/A	Pass
10	0.001	0.184	N/A	0.002	0.276	N/A	Pass
11	0.001	0.330	N/A	0.003	0.495	N/A	Pass
12	0.001	0.153	N/A	0.002	0.230	N/A	Pass
13	0.001	0.210	N/A	0.002	0.315	N/A	Pass
14	0.001	0.131	N/A	0.002	0.197	N/A	Pass
15	0.001	0.150	N/A	0.003	0.225	N/A	Pass
16	0.001	0.115	N/A	0.002	0.173	N/A	Pass
17	0.001	0.132	N/A	0.003	0.198	N/A	Pass
18	0.001	0.102	N/A	0.002	0.153	N/A	Pass
19	0.001	0.118	N/A	0.002	0.178	N/A	Pass
20	0.001	0.092	N/A	0.002	0.138	N/A	Pass
21	0.001	0.107	N/A	0.002	0.161	N/A	Pass
22	0.001	0.084	N/A	0.001	0.125	N/A	Pass
23	0.001	0.098	N/A	0.002	0.147	N/A	Pass
24	0.001	0.077	N/A	0.001	0.115	N/A	Pass
25	0.001	0.090	N/A	0.002	0.135	N/A	Pass
26	0.001	0.071	N/A	0.001	0.107	N/A	Pass
27	0.001	0.083	N/A	0.002	0.125	N/A	Pass
28	0.001	0.066	N/A	0.001	0.099	N/A	Pass
29	0.001	0.078	N/A	0.001	0.116	N/A	Pass
30	0.001	0.061	N/A	0.001	0.092	N/A	Pass
31	0.001	0.073	N/A	0.001	0.109	N/A	Pass
32	0.000	0.058	N/A	0.001	0.086	N/A	Pass
33	0.001	0.068	N/A	0.001	0.102	N/A	Pass
34	0.001	0.054	N/A	0.001	0.081	N/A	Pass
35	0.001	0.064	N/A	0.001	0.096	N/A	Pass
36	0.000	0.051	N/A	0.001	0.077	N/A	Pass
37	0.001	0.061	N/A	0.001	0.091	N/A	Pass
38	0.000	0.048	N/A	0.001	0.073	N/A	Pass
39	0.001	0.058	N/A	0.001	0.087	N/A	Pass
40	0.001	0.046	N/A	0.001	0.069	N/A	Pass



#### 7 Flicker

**Test Result: Pass** 

#### 7.1 Block Diagram of Test Setup



#### 7.2 Test Setup and Procedure

#### 7.2.1 Definition

Flicker: impression of unsteadiness of visual sensation induced by a lighting

stimulus whose luminance or spectral distribution fluctuates with

time.

Pst: Short-term flicker indicator The flicker severity evaluated over a

short period (in minutes); Pst=1 is the conventional threshold of

irritability

Plt: long-term flicker indicator; the flicker severity evaluated over a long

period (a few hous). Using successive Pst valuse.

dc: the relative steady-state voltage changedmax: the maximum relative voltage changed(t): the value during a voltage change

#### 7.2.2 Test condition

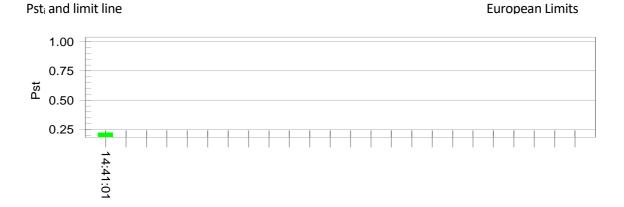
The EUT was set to produce the most unfavourable sequence of voltage changes.



#### 7.3 Test Data

#### Flicker Test Summary per EN/IEC61000-3-3 Ed. 3.0 (2013) (Run time)

Test Result: Pass Status: Test Completed

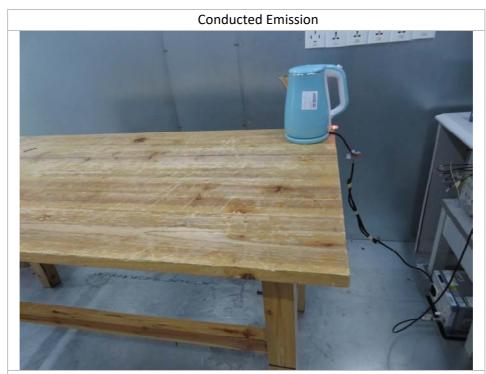


Parameter values recorded during the test:

Vrms at the end of test (Volt):	230.28			
T-max (mS):	0.0	Test limit (mS):	500.0	Pass
Highest dc (%):	-1.51	Test limit (%):	3.30	Pass
Highest dmax (%):	-1.55	Test limit (%):	6.00	Pass
Highest Pst (10 min. period):	0.222	Test limit:	1.000	Pass



#### 8 APPENDIX I - PHOTOS OF TEST SETUP



Radiated Power









#### 9 APPENDIX II – PHOTOS OF EUT





Overall view, TPSK0318-18, kettle bottom

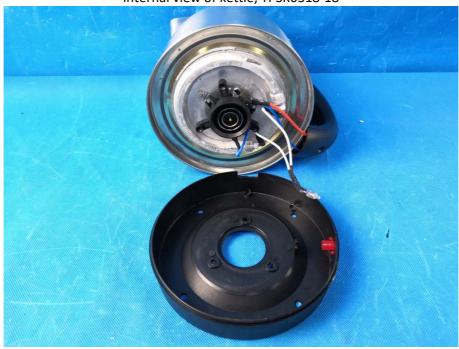








Internal view of kettle, TPSK0318-18









View of indicator, TPSK0318-18

