



EUROFINS PRODUCT TESTING SERVICE (SHANGHAI) CO., LTD.

EMC TEST- REPORT

TEST REPORT NUMBER: EFSH15030095-IE-01-E01-A3



Eurofins Product Testing Service (Shanghai) Co., Ltd.
No.395 West Jiangchang Road, Jing'an District, Shanghai,
200436, P.R. China

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2 General Information

2.1 Notes

The results of this test report relate exclusively to the item tested as specified in chapter "Description of test item" and are not transferable to any other test items.

Eurofins Product Testing Service (Shanghai) Co., Ltd. is not responsible for any generalisations and conclusions drawn from this report. Any modification of the test item can lead to invalidity of test results and this test report may therefore be not applicable to the modified test item.

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Operator:

2017-12-15

Perry Li / Testing Engineer



Date

Eurofins-Lab.

Name / Title

Signature

cc

Technical responsibility for area of testing:

2017-12-15

Stefan Zhao / Project Engineer



Date

Eurofins

Name / Title

Signature

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2.2 Testing laboratory

Eurofins Product Testing Service (Shanghai) Co., Ltd.

No.395 West Jiangchang Road, Jing'an District, Shanghai, 200436, P.R. China

Telephone : +86-21-61819181

Telefax : +86-21-61819180

Test location, where different:

2.3 Details of approval holder

Name : Cixi Tianma Electrical Appliance Co., Ltd.
Address : No. 483 Zhenxi Road, Zhouxiang Town, Cixi City, Ningbo, 315324, P.R. China
Telephone : ./.
Fax : ./.

2.4 Application details

Date of receipt of application : 2014-11-18
Date of receipt of test item : 2014-11-18
Date of test : 2014-11-18 to 2015-03-23
Amendment 1 : 2016-09-14
Amendment 2 : 2017-08-31 (Date of test: 2017-07-12 to 2017-07-24)
Amendment 3 : 2017-12-15 (Date of test: N/A)

2.5 EUT Information

Product type : Toaster
Model name : TM-2001, TM-2001J, TM-2001F, TM-2001FJ, TM-2001T, TM-2001JT, TM-2001FT, TM-2001FJT, TM-2005, TM-2005J, TM-2005F, TM-2005FJ, TM-2005T, TM-2005JT, TM-2005FT, TM-2005FJT, TM-2006, TM-2006J, TM-2006F, TM-2006FJ, TM-2006T, TM-2006JT, TM-2006FT, TM-2006FJT, TM-2009F, TM-2009FJ, TM-2015T, TM-2016T, TM-2019, TM-2019T, TM-2019TJ, TM-2020, TM-2020T, TM-2020TJ
Brand name : ./.
Serial number : ./.
Ratings : 220-240V~, 50/60Hz, Class I for all models
TM-2001, TM-2001J, TM-2001F, TM-2001FJ, TM-2001T, TM-2001JT, TM-2001FT, TM-2001FJT: 600-700W,
TM-2005, TM-2005J, TM-2005F, TM-2005FJ, TM-2005T, TM-2005JT, TM-2005FT, TM-2005FJT, TM-2006, TM-2006J, TM-2006F, TM-2006FJ, TM-2006T, TM-2006JT, TM-2006FT, TM-2006FJT: 700-800W;
TM-2009F, TM-2009FJ: 1100-1300W;
TM-2015T, TM-2019, TM-2019T, TM-2019TJ, TM-2020, TM-2020T, TM-2020TJ: 650-750W;
TM-2016T: 1280-1480W

Additional information :
The appliances covered by this report are toasters for household and indoor use only.

The detail differences are as below:

Model	Type of shelf	Type of PCB	Type of bread supportor
TM-2001	Movable type	Type A1	No bread supportor
TM-2001J			Type A
TM-2001F	Fixed type		No bread supportor
TM-2001FJ			Type A
TM-2001T	Movable type	Type B1	No bread supportor
TM-2001JT			Type A
TM-2001FT	Fixed type		No bread supportor
TM-2001FJT			Type A

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TM-2005	Movable type	Type A2	No bread supportor
TM-2005J			Type A
TM-2005F	Fixed type		No bread supportor
TM-2005FJ			Type A
TM-2005T	Movable type	Type B2	No bread supportor
TM-2005JT			Type A
TM-2005FT	Fixed type		No bread supportor
TM-2005FJT			Type A
TM-2006	Movable type	Type A3	No bread supportor
TM-2006J			Type A
TM-2006F	Fixed type		No bread supportor
TM-2006FJ			Type A
TM-2006T	Movable type	Type B3	No bread supportor
TM-2006JT			Type A
TM-2006FT	Fixed type		No bread supportor
TM-2006FJT			Type A
TM-2009F	Fixed type	Type A1	No bread supportor
TM-2009FJ			Type B

After review, TM-2001FJ, TM-2001JT, TM-2005FJ, TM-2005JT, TM-2006FJ, TM-2006JT and TM-2009FJ were subjected to full tests and the most unfavourable data was recorded.

See page 120 for Amendment 1.

For TM-2019, TM-2019T, TM-2019TJ, TM-2020, TM-2020T, TM-2020TJ:

See page 120 for Amendment 2.

See page 121 for Amendment 3.

2.6 Test standards

Technical standard :

EN 55014-1: 2006+A1: 2009+A2: 2011

EN 55014-2: 1997+A1: 2001+A2: 2008

EN 55014-2: 2015

EN 61000-3-2: 2014

EN 61000-3-3: 2013

3 Technical test

3.1 Summary of test results

No deviations from the technical specification(s) were ascertained in the course of the tests performed.



or

The deviations as specified were ascertained in the course of the tests performed.



3.2 Test environment

Temperature	:	20	...	25°C
Relative humidity content	:	30	...	60%
Air pressure	:	100	...	103kPa

3.3 Test equipment utilized

Measurement Equipment List				
No.	Name:	Type:	Manufacturer:	Cal due data:
1	EMI test receiver	ESCI	R&S	2017-11-25
2	Single phase Harmonics & Flicker analyser	PACS-1	California Instruments	2017-11-25
3	AC Power Source	5001ix	California Instruments	2017-11-25
4	Coupling/Decoupling Network	L 801 M2/M3	Luethi	2017-11-25
5	Ultra Compact Simulator	UCS 500N7	EMTEST	2017-11-25
6	ESD Gun	NSG 437	TESEQ	2018-07-19
7	Current transformer	MC2630	EMTEST	2017-11-25
8	Motorized variac	MV2616	EMTEST	2017-11-25
9	Continuous wave simulator	CWS500N1	EMTEST	2017-11-25
10	Magnetic field coil	MS100	EMTEST	2017-11-25
11	Current transformer	MC26100	EMTEST	2017-11-25
12	Artificial mains	ENV216	R&S	2017-11-25
13	Click analyser	CL55C	AFJ	2017-09-09
14	Absorbing clamp	MDS21	Luethi	2017-11-25
15	EM clamp	EM101	Luethi	2017-11-25

3.4 Test results

☒ 1st test

☐ test after modification

☐ production test

Test case	Subclause	Required	Test passed	Test failed
Conducted Emission	Clause 4.1.1 of EN 55014-1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Disturbance power	Clause 4.1.2 of EN 55014-1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Radiated disturbance	Clause 4.1.2 of EN 55014-1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discontinuous disturbance	Clause 4.2 of EN 55014-1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Harmonic Current Emissions	EN 61000-3-2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Voltage Changes, Voltage Fluctuations and Flicker	EN 61000-3-3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Electrostatic Discharge	Clause 5.1 of EN 55014-2 & IEC 61000-4-2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Electrical Fast Transients	Clause 5.2 of EN 55014-2 & IEC 61000-4-4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Injected currents (RF continues conducted)	Clause 5.3 & 5.4 of EN 55014-2 & IEC 61000-4-6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Radio frequency electromagnetic fields	Clause 5.5 of EN 55014-2 & IEC 61000-4-3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Surge immunity	Clause 5.6 of EN 55014-2 & IEC 61000-4-5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Voltage dips and Interruption	Clause 5.7 of EN 55014-2 & IEC 61000-4-11	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Note 1: The additional margin(0-10dB) was meet in the frequency range 200MHz to 300MHz in Disturbance power test(absorbing clamp), and the EUT did not contained any circuit with clock frequency more than 30MHz, so the EUT was compliant with the Radiated disturbance test (300MHz-1GHz) without test.

Note 2: The EUT belongs to Category II, so the Radio frequency electromagnetic fields test is not required.

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4 Emission Test

4.1 Conducted Emission

This clause lays down the general requirements for the measurement of disturbance voltage produced at the terminals of apparatus.

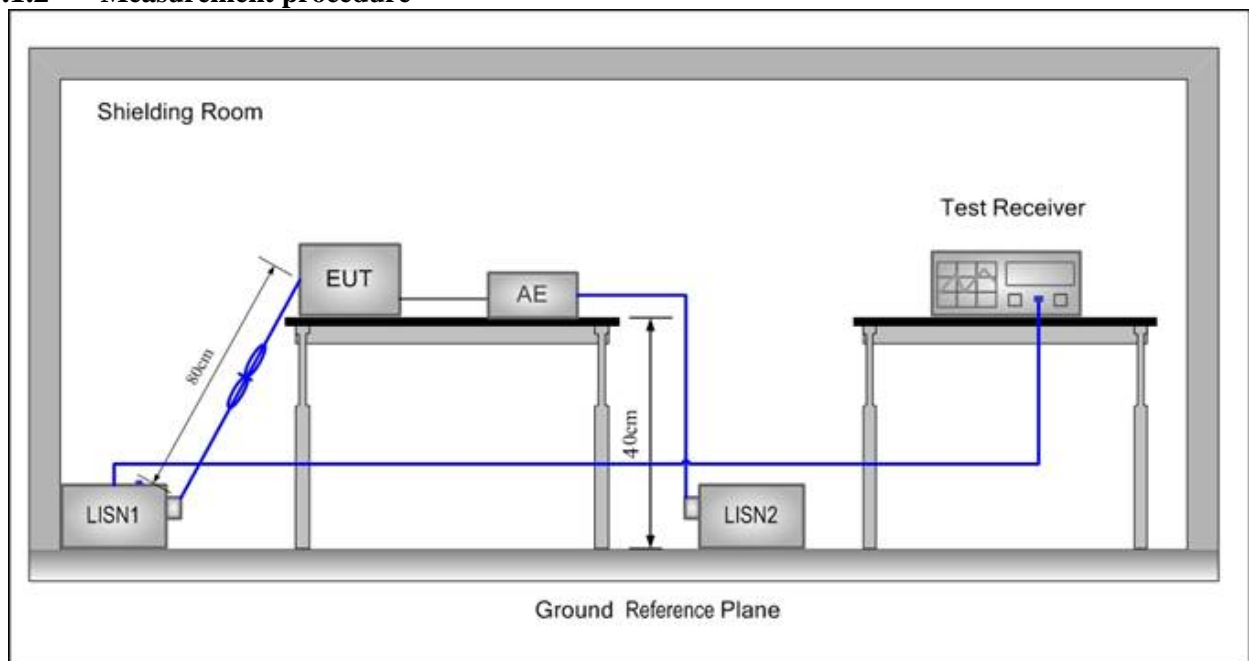
4.1.1 Limits

Frequency range MHz	At mains terminals dB (μV)	
	Quasi-peak Limit	Average Limit
0.15 to 0.50	66 to 56	59 to 46
0.50 to 5	56	46
5 to 30	60	50

Note1: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 30 MHz.

Note2: The lower limit is applicable at the transition frequency.

4.1.2 Measurement procedure



1. The mains terminal disturbance voltage was measured with the EUT in a shielded room.
2. The EUT was connected to AC power source through a LISN (Line Impedance Stabilization Network) which provides a $(50 \mu\text{H} + 5 \Omega) \parallel 50 \Omega$ linear impedance. The power cables of all other units of the EUT were connected to a second LISN, which was bonded to the ground reference plane in the same way as the LISN for the unit being measured.
3. The tabletop EUT was placed upon a non-metallic table 0.4m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, but separated from metallic contact with the ground reference plane by 0.1m of insulation.

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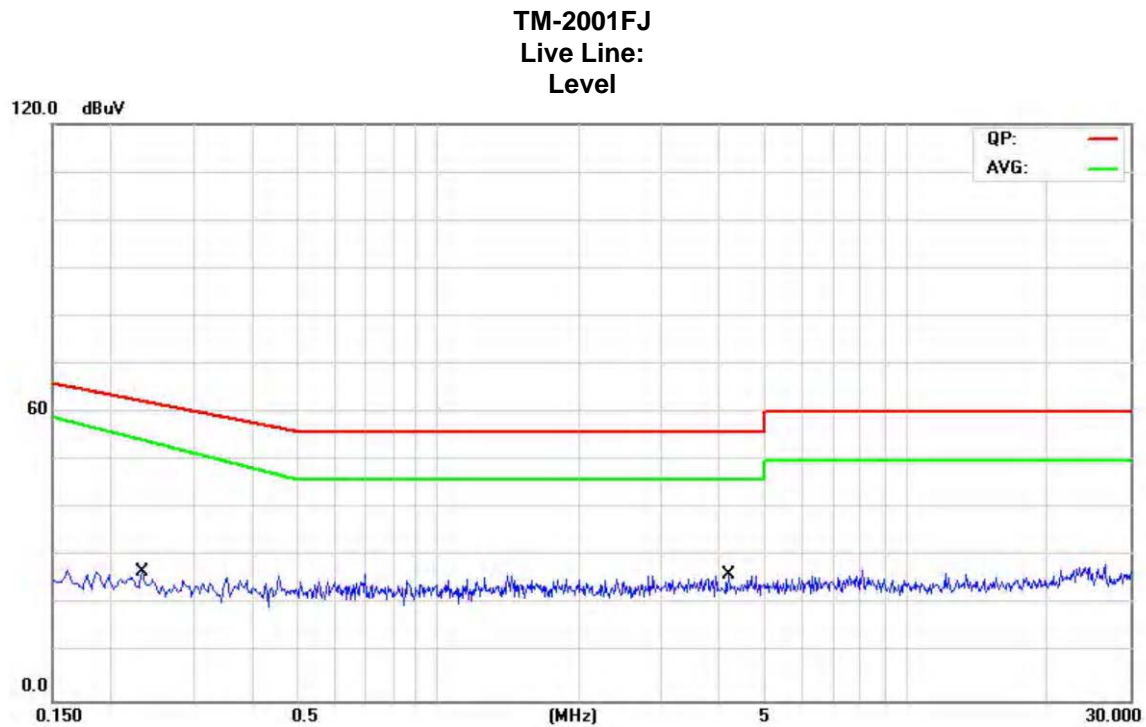
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4. According to a pre-test at 160kHz, the worst voltage was selected for final test. Before get the final emission results with quasi-peak(QP) detector and average(AVG) detector, a pre-scan was performed with the peak(PK) and average(AVG) detector to find out the maximum emission data plots of the EUT.

4.1.3 Measurement uncertainty

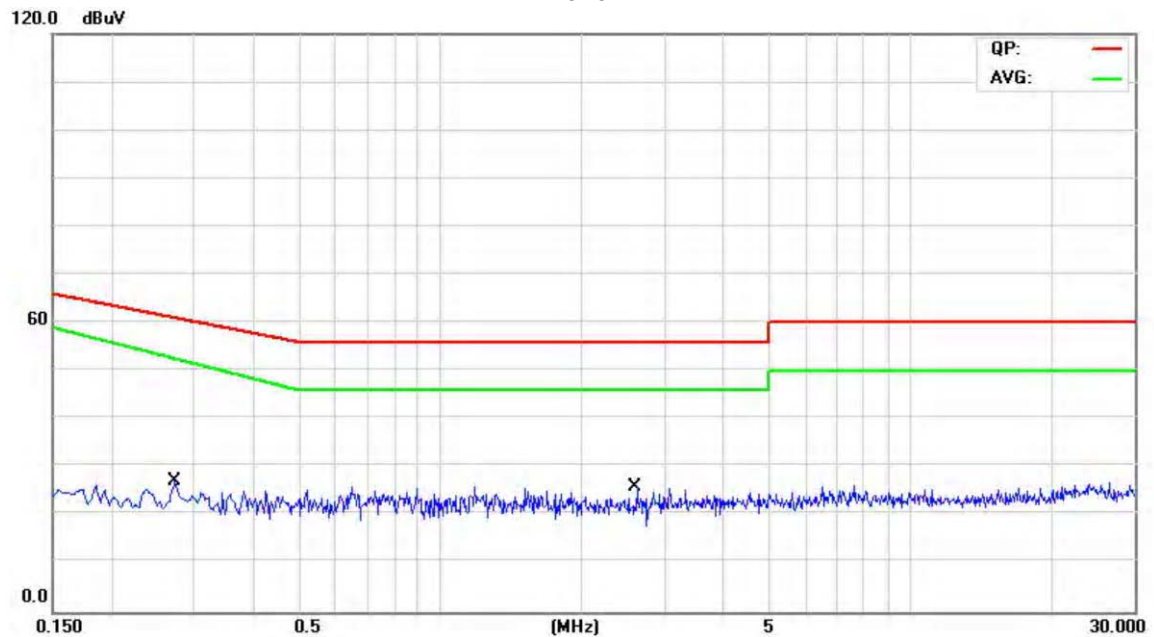
$U_{lab}(cond) = 2.5dB$ at 95% level of confidence, $k=2$

4.1.4 Results -Measurement Data



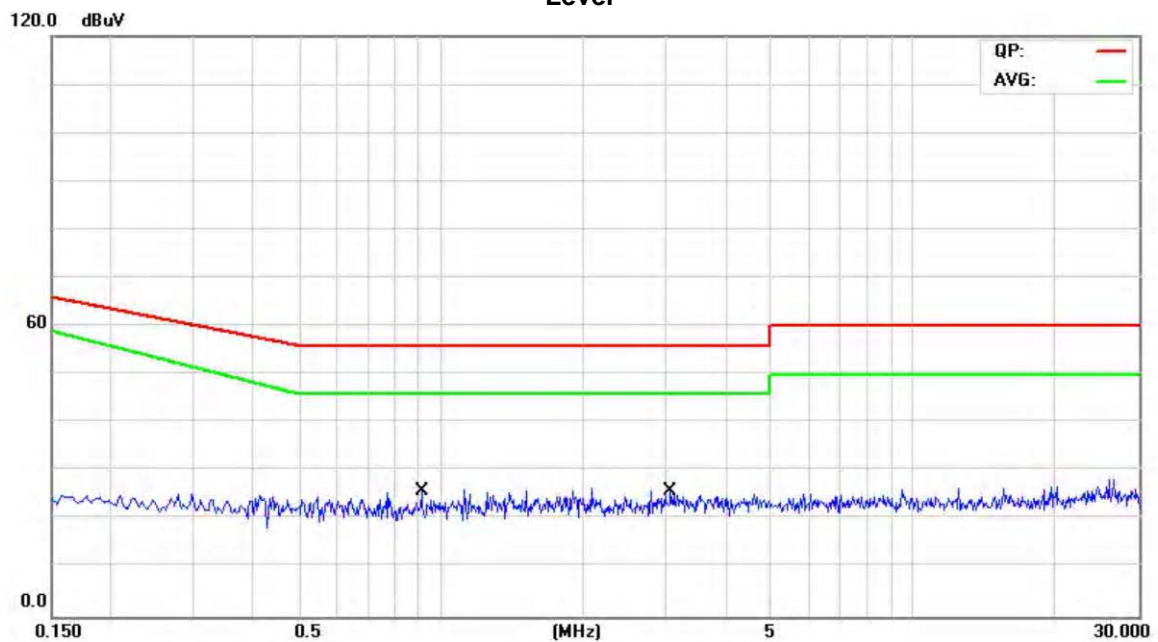
No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	
		MHz	Level	Factor	ment			Detector
			dBuV	dB	dBuV	dBuV	dB	
1		0.2340	9.16	9.85	19.01	62.31	-43.30	QP
2		0.2340	6.22	9.85	16.07	54.20	-38.13	AVG
3		4.1740	9.28	9.95	19.23	56.00	-36.77	QP
4	*	4.1740	4.52	9.95	14.47	46.00	-31.53	AVG

Neutral Line:
Level



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.2740	9.07	9.83	18.90	61.00	-42.10	QP
2		0.2740	5.90	9.83	15.73	52.49	-36.76	AVG
3		2.6340	9.00	9.89	18.89	56.00	-37.11	QP
4	*	2.6340	4.40	9.89	14.29	46.00	-31.71	AVG

TM-2001JT
Live Line:
Level

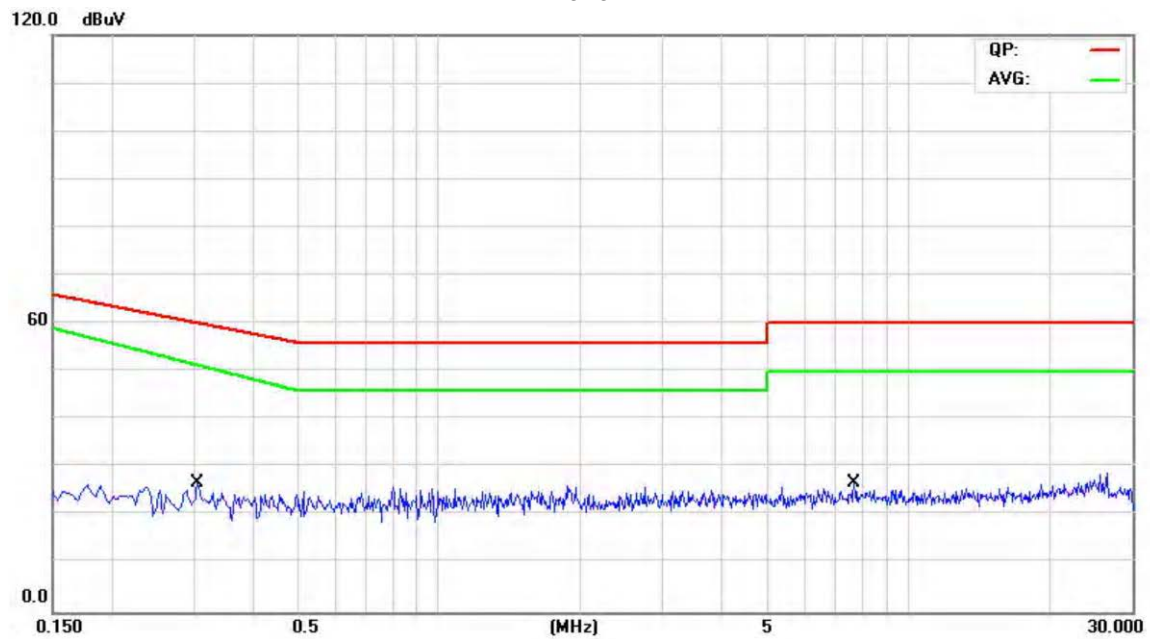


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.9100	8.11	9.68	17.79	56.00	-38.21	QP
2	*	0.9100	5.28	9.68	14.96	46.00	-31.04	AVG
3		3.0580	9.15	9.91	19.06	56.00	-36.94	QP
4		3.0580	4.52	9.91	14.43	46.00	-31.57	AVG

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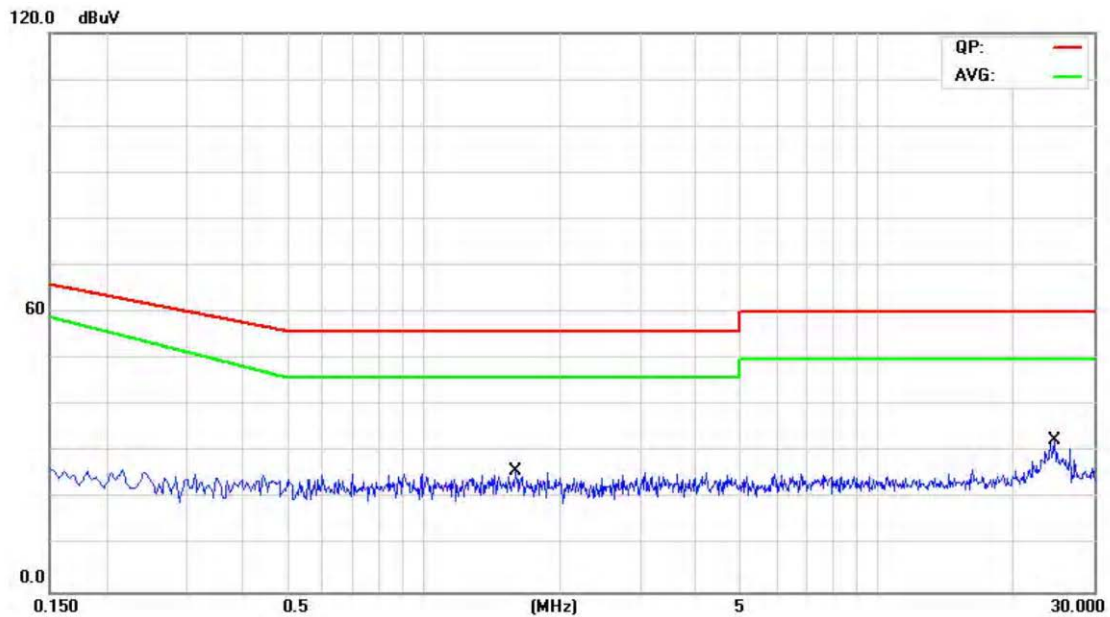
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Neutral Line:
Level



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.3060	9.78	9.81	19.59	60.08	-40.49	QP
2	*	0.3060	6.32	9.81	16.13	51.30	-35.17	AVG
3		7.6660	9.40	9.99	19.39	60.00	-40.61	QP
4		7.6660	4.75	9.99	14.74	50.00	-35.26	AVG

TM-2005FJ
Live Line:
Level

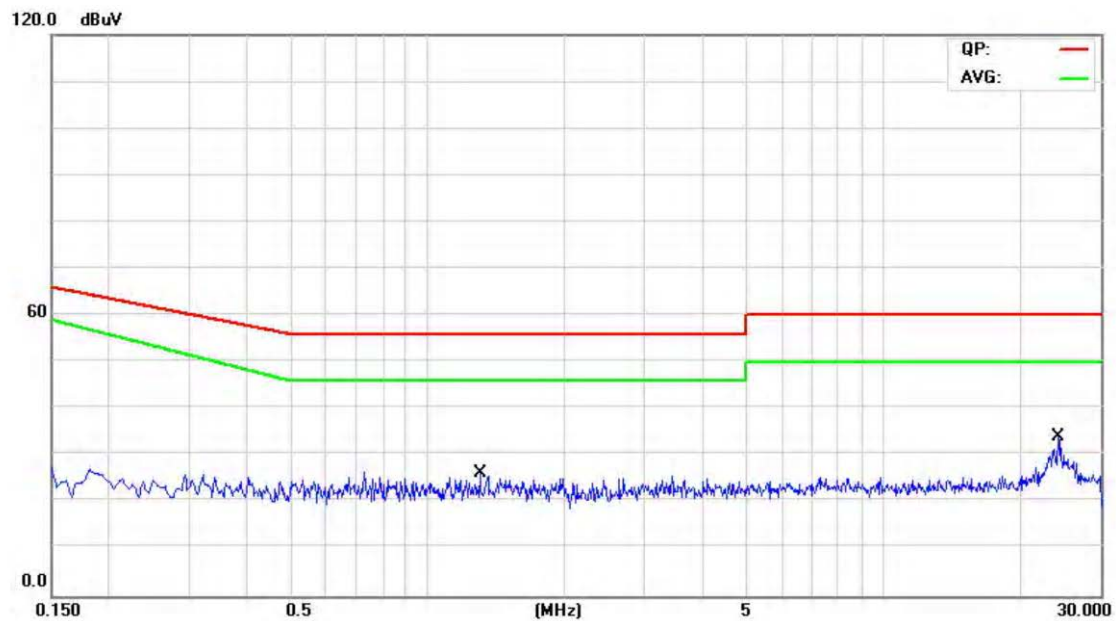


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		1.5980	8.30	9.78	18.08	56.00	-37.92	QP
2		1.5980	5.32	9.78	15.10	46.00	-30.90	AVG
3		24.5540	15.72	10.45	26.17	60.00	-33.83	QP
4	*	24.5540	9.59	10.45	20.04	50.00	-29.96	AVG

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Neutral Line:
Level

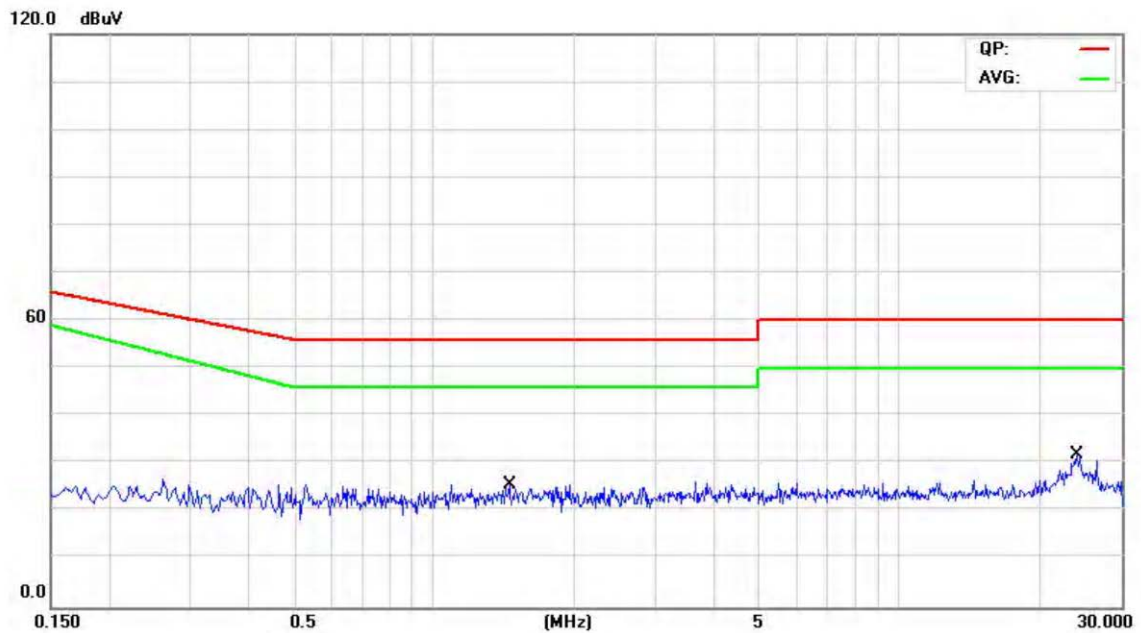


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		1.3060	8.29	9.72	18.01	56.00	-37.99	QP
2		1.3060	5.28	9.72	15.00	46.00	-31.00	AVG
3		24.2180	19.20	10.44	29.64	60.00	-30.36	QP
4	*	24.2180	12.93	10.44	23.37	50.00	-26.63	AVG

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TM-2005JT
Live Line:
Level

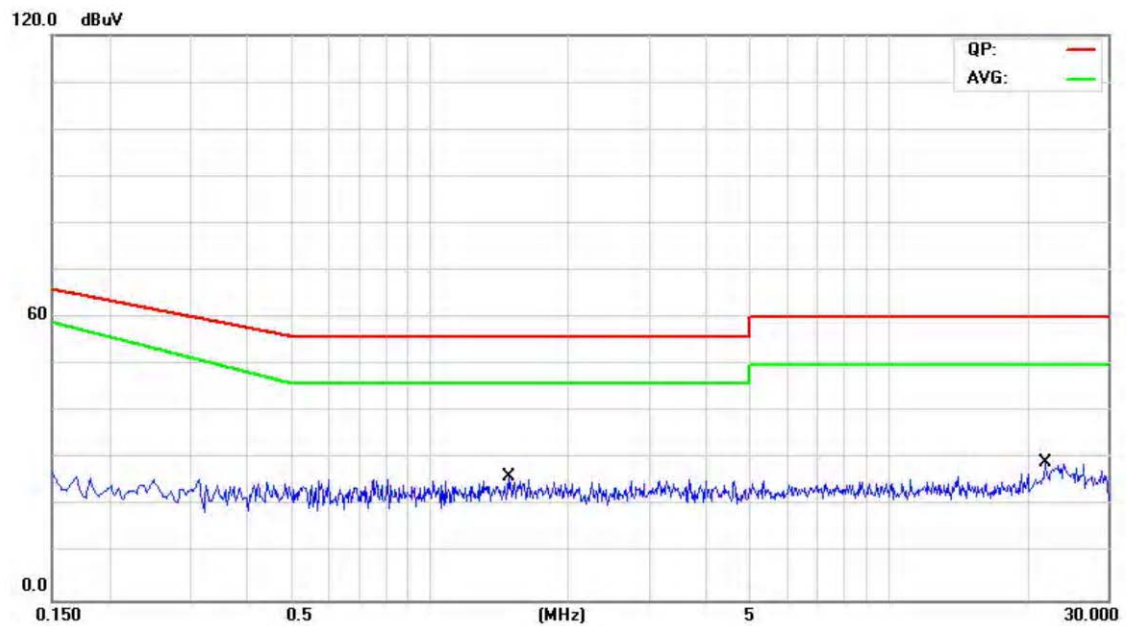


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	
		MHz	Level	Factor	ment			Detector
			dBuV	dB	dBuV	dBuV	dB	
1		1.4540	8.02	9.75	17.77	56.00	-38.23	QP
2		1.4540	5.29	9.75	15.04	46.00	-30.96	AVG
3		24.0820	16.87	10.44	27.31	60.00	-32.69	QP
4	*	24.0820	10.80	10.44	21.24	50.00	-28.76	AVG

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Neutral Line:
Level

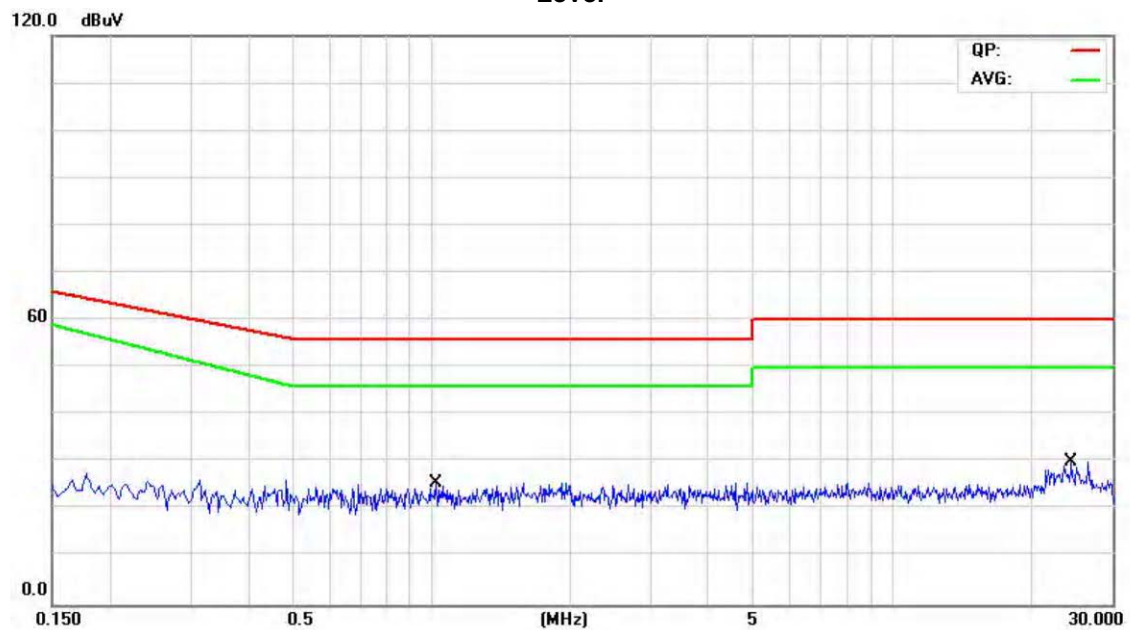


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		1.4860	8.20	9.76	17.96	56.00	-38.04	QP
2	*	1.4860	5.36	9.76	15.12	46.00	-30.88	AVG
3		21.8860	11.39	10.40	21.79	60.00	-38.21	QP
4		21.8860	6.39	10.40	16.79	50.00	-33.21	AVG

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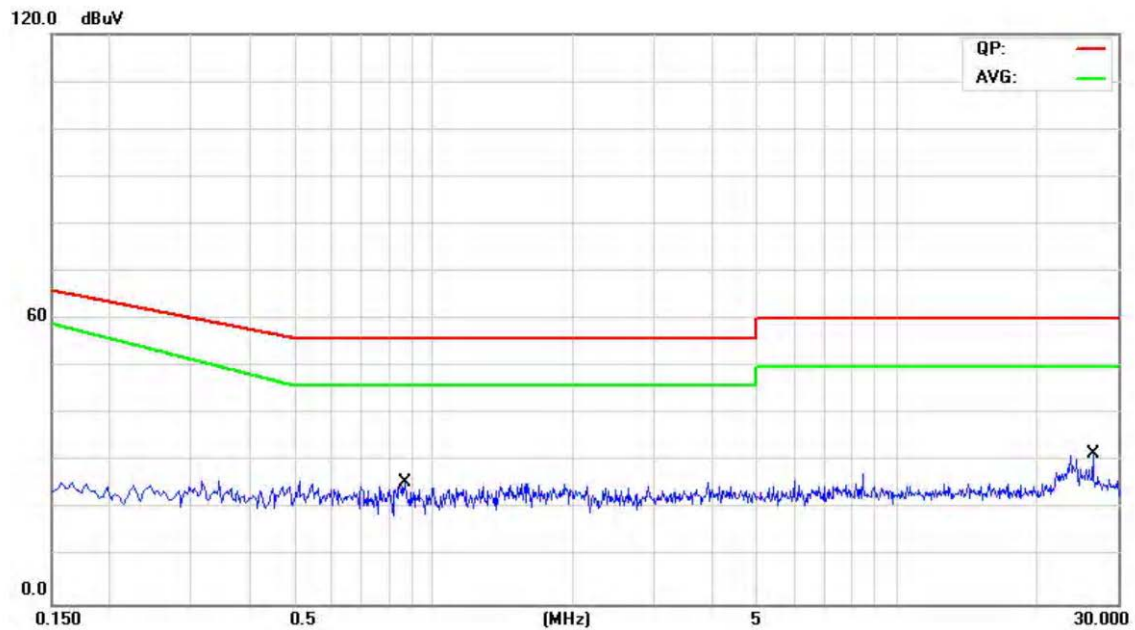
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TM-2006FJ
Live Line:
Level



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		1.0260	8.20	9.66	17.86	56.00	-38.14	QP
2		1.0260	5.36	9.66	15.02	46.00	-30.98	AVG
3		24.4620	16.81	10.44	27.25	60.00	-32.75	QP
4	*	24.4620	11.22	10.44	21.66	50.00	-28.34	AVG

Neutral Line:
Level

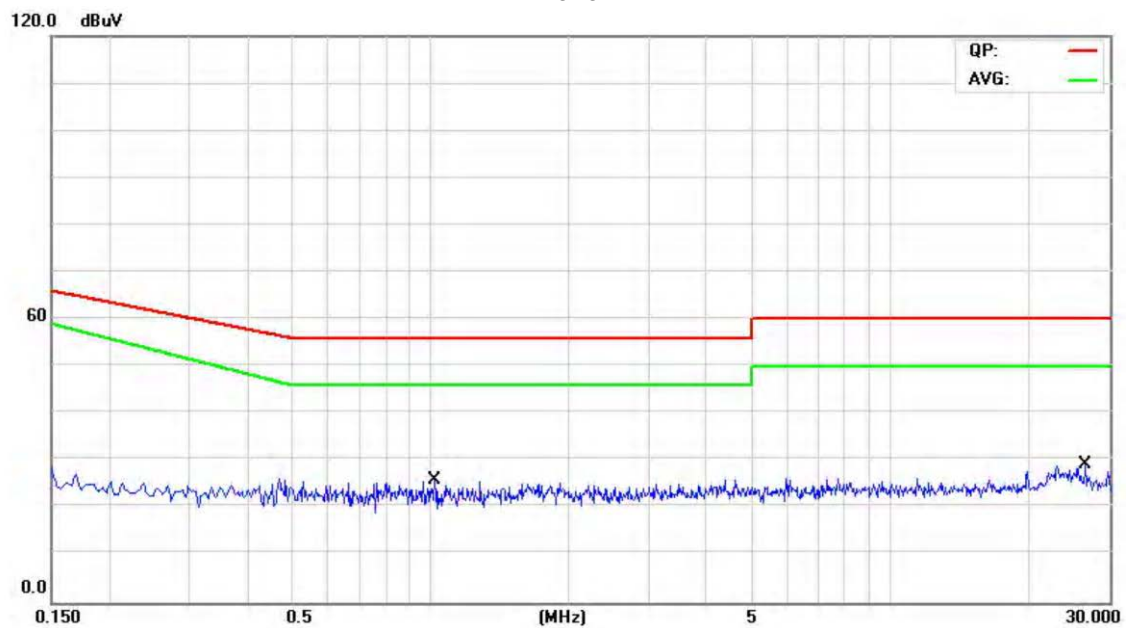


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.8700	8.30	9.69	17.99	56.00	-38.01	QP
2		0.8700	5.46	9.69	15.15	46.00	-30.85	AVG
3		26.4900	17.80	10.28	28.08	60.00	-31.92	QP
4	*	26.4900	14.22	10.28	24.50	50.00	-25.50	AVG

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TM-2006JT
Live Line:
Level

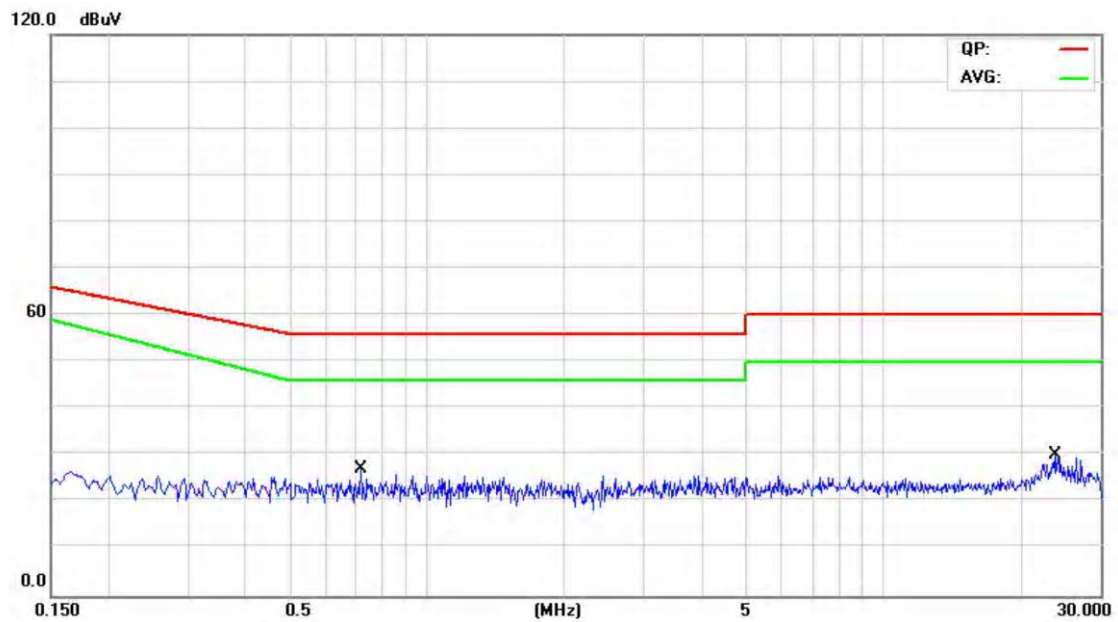


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		1.0260	8.20	9.66	17.86	56.00	-38.14	QP
2		1.0260	5.34	9.66	15.00	46.00	-31.00	AVG
3		26.6100	16.40	10.26	26.66	60.00	-33.34	QP
4	*	26.6100	12.22	10.26	22.48	50.00	-27.52	AVG

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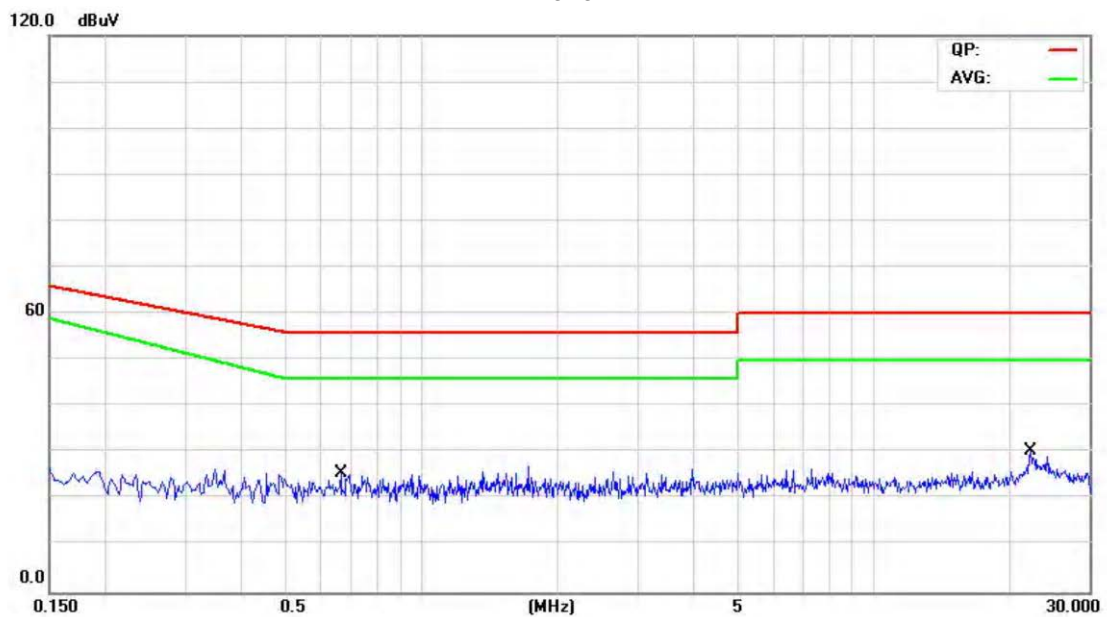


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.7180	8.57	9.74	18.31	56.00	-37.69	QP
2	*	0.7180	5.42	9.74	15.16	46.00	-30.84	AVG
3		23.7900	12.70	10.44	23.14	60.00	-36.86	QP
4		23.7900	7.27	10.44	17.71	50.00	-32.29	AVG

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TM-2009FJ
Live Line:
Level

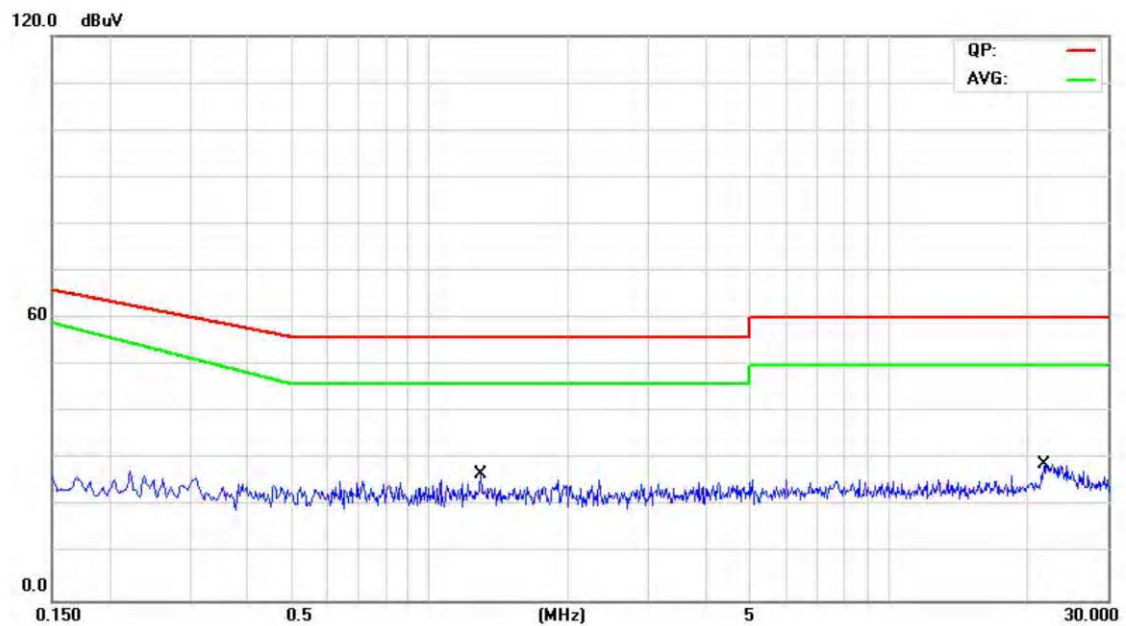


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.6620	8.57	9.74	18.31	56.00	-37.69	QP
2	*	0.6620	5.47	9.74	15.21	46.00	-30.79	AVG
3		22.2700	12.97	10.42	23.39	60.00	-36.61	QP
4		22.2700	7.21	10.42	17.63	50.00	-32.37	AVG

Test Report No.: EFSH15030095-IE-01-E01-A3

Eurofins Product Testing Service (Shanghai) Co., Ltd.
 No.395 West Jiangchang Road, Jing'an District, Shanghai, 200436, P.R. China

Neutral Line:
Level

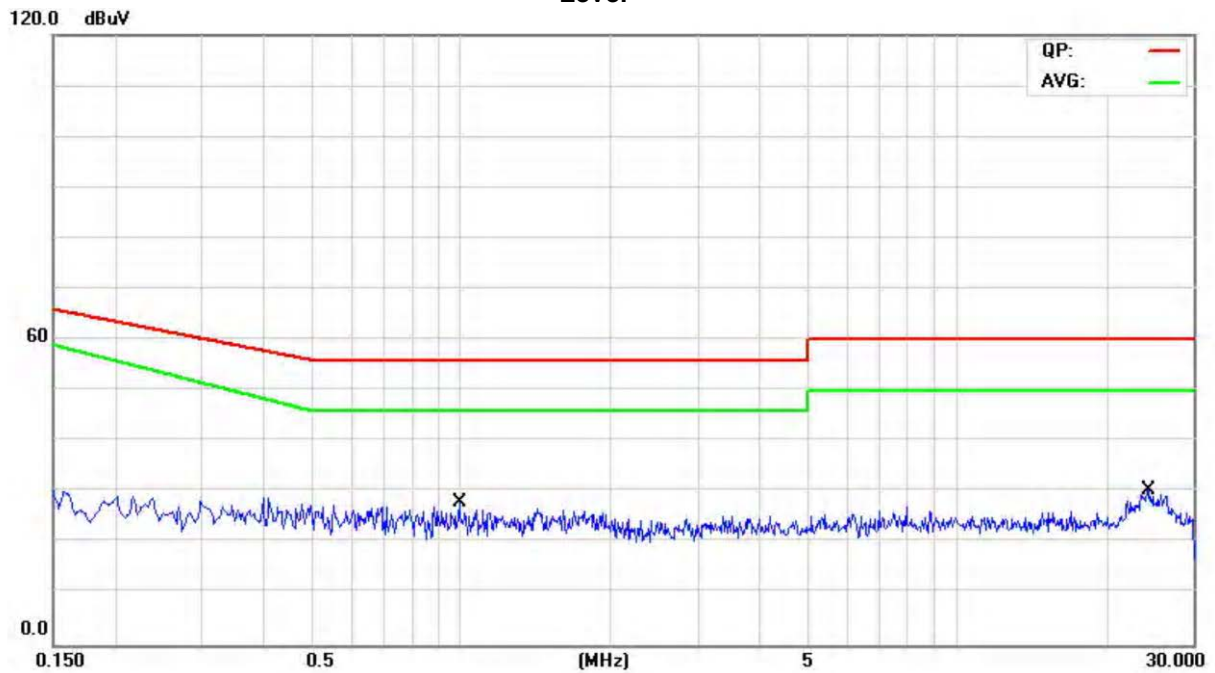


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		1.2940	8.11	9.71	17.82	56.00	-38.18	QP
2	*	1.2940	5.26	9.71	14.97	46.00	-31.03	AVG
3		21.8780	12.45	10.40	22.85	60.00	-37.15	QP
4		21.8780	7.15	10.40	17.55	50.00	-32.45	AVG

Test Report No.: EFSH15030095-IE-01-E01-A3

Eurofins Product Testing Service (Shanghai) Co., Ltd.
No.395 West Jiangchang Road, Jing'an District, Shanghai, 200436, P.R. China

TM-2015T
Live Line:
Level

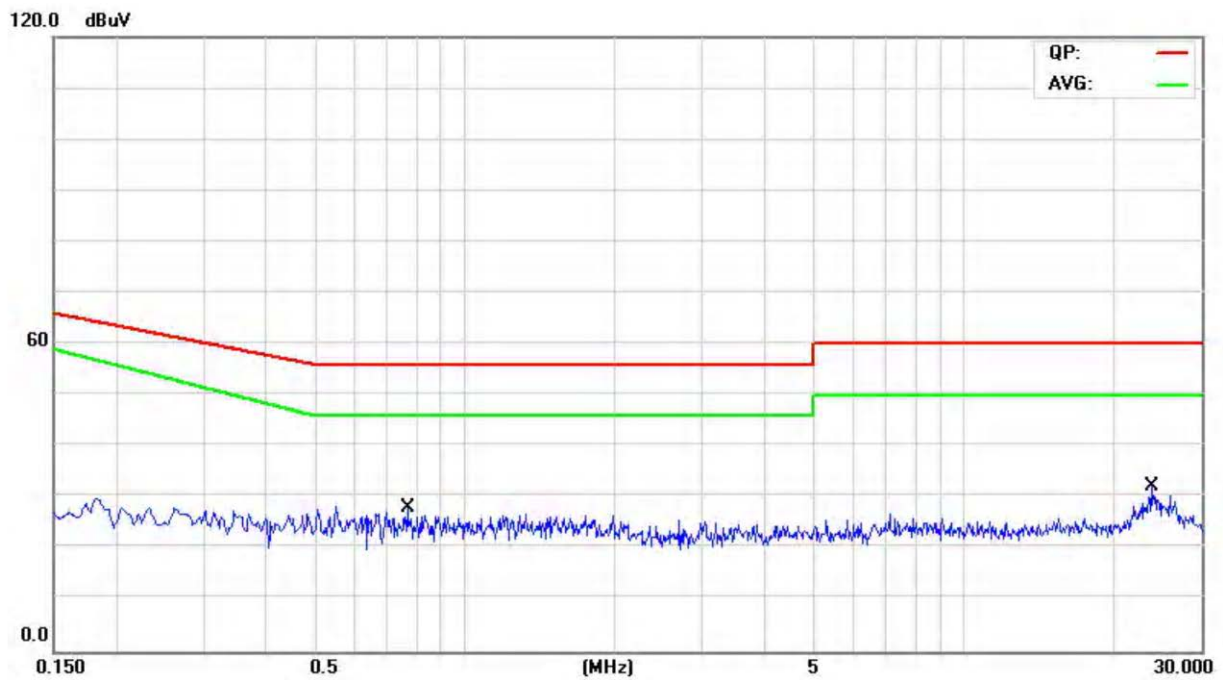


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.9940	9.71	10.40	20.11	56.00	-35.89	QP
2	*	0.9940	6.48	10.40	16.88	46.00	-29.12	AVG
3		24.4580	16.73	10.57	27.30	60.00	-32.70	QP
4		24.4580	10.06	10.57	20.63	50.00	-29.37	AVG

Test Report No.: EFSH15030095-IE-01-E01-A3

Eurofins Product Testing Service (Shanghai) Co., Ltd.
 No.395 West Jiangchang Road, Jing'an District, Shanghai, 200436, P.R. China

Neutral Line:
Level

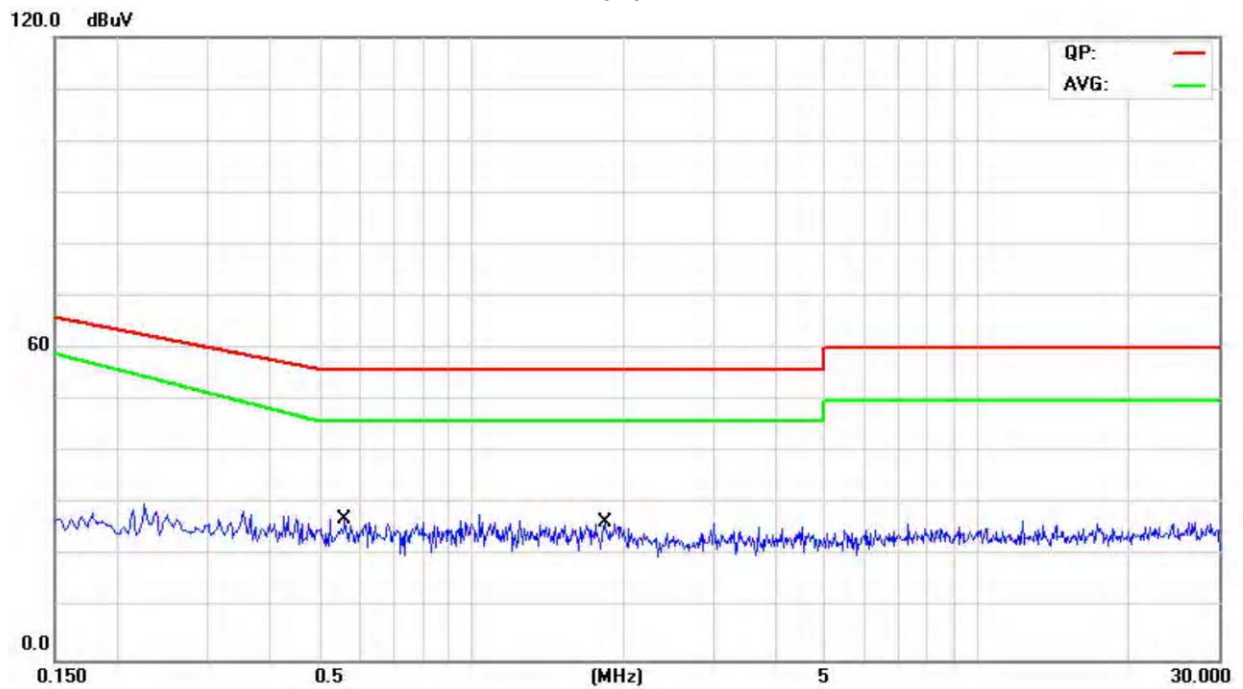


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1		0.7700	10.20	10.37	20.57	56.00	-35.43	QP
2	*	0.7700	6.91	10.37	17.28	46.00	-28.72	AVG
3		23.8860	14.14	10.56	24.70	60.00	-35.30	QP
4		23.8860	8.09	10.56	18.65	50.00	-31.35	AVG

Test Report No.: EFSH15030095-IE-01-E01-A3

Eurofins Product Testing Service (Shanghai) Co., Ltd.
No.395 West Jiangchang Road, Jing'an District, Shanghai, 200436, P.R. China

TM-2016T
Live Line:
Level

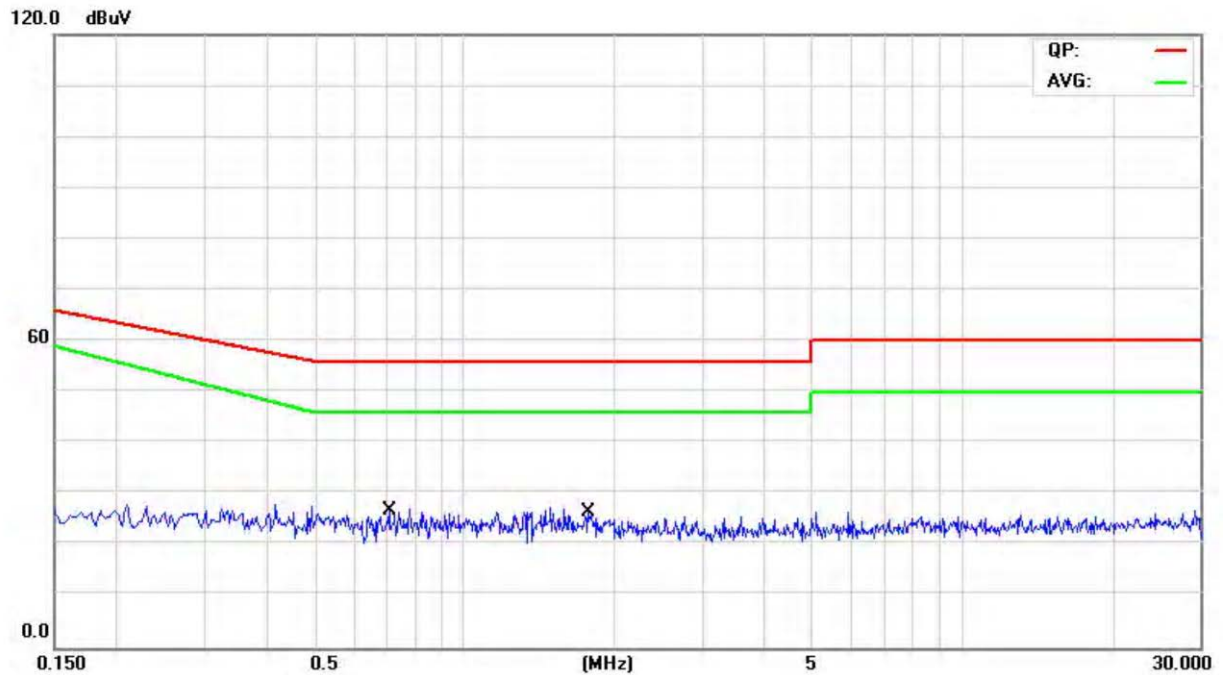


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit		Over	Detector
		MHz	Level	Factor	ment	dBuV	dB		
1		0.5620	10.23	10.48	20.71	56.00	-35.29		QP
2	*	0.5620	6.88	10.48	17.36	46.00	-28.64		AVG
3		1.8300	8.65	10.42	19.07	56.00	-36.93		QP
4		1.8300	5.66	10.42	16.08	46.00	-29.92		AVG

Test Report No.: EFSH15030095-IE-01-E01-A3

Eurofins Product Testing Service (Shanghai) Co., Ltd.
 No.395 West Jiangchang Road, Jing'an District, Shanghai, 200436, P.R. China

Neutral Line:
Level

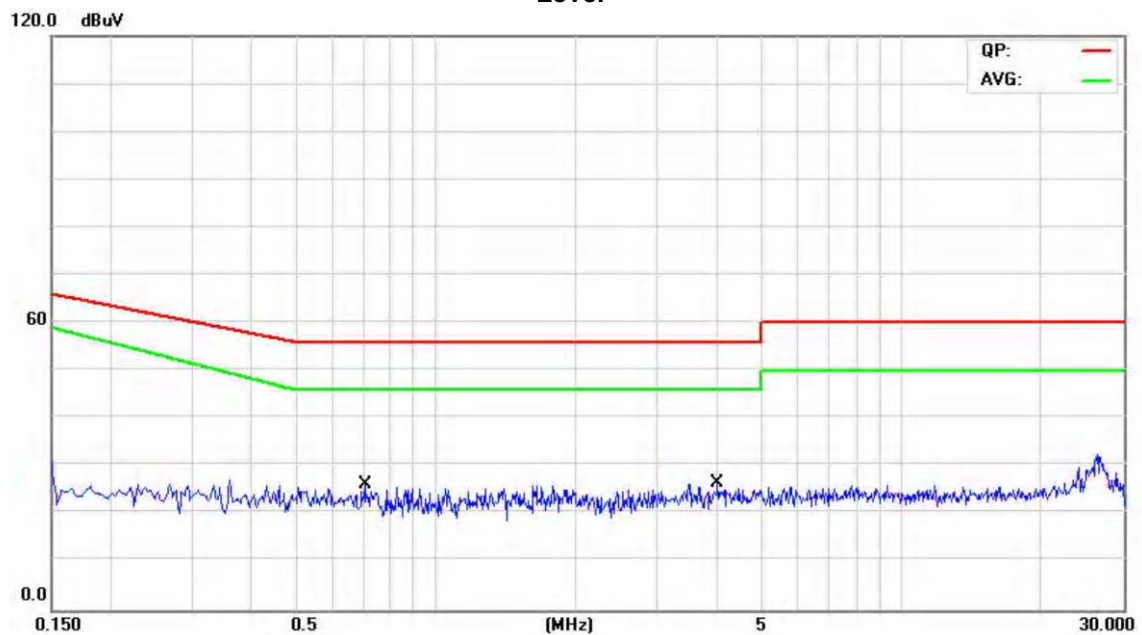


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	
		MHz	Level	Factor	ment			Detector
			dBuV	dB	dBuV	dBuV	dB	
1		0.7060	10.01	10.36	20.37	56.00	-35.63	QP
2	*	0.7060	6.61	10.36	16.97	46.00	-29.03	AVG
3		1.7780	8.71	10.33	19.04	56.00	-36.96	QP
4		1.7780	5.65	10.33	15.98	46.00	-30.02	AVG

Test Report No.: EFSH15030095-IE-01-E01-A3

Eurofins Product Testing Service (Shanghai) Co., Ltd.
No.395 West Jiangchang Road, Jing'an District, Shanghai, 200436, P.R. China

TM-2019
Live Line:
Level

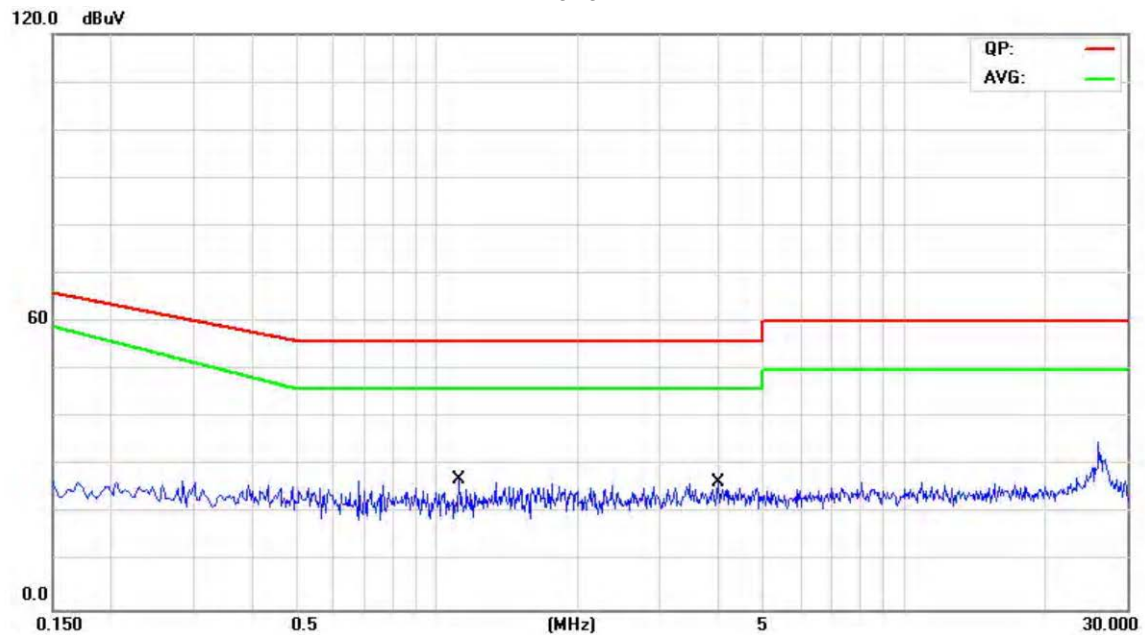


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	
		MHz	Level	Factor	ment			Detector
			dBuV	dB	dBuV	dBuV	dB	
1		0.7060	8.55	10.46	19.01	56.00	-36.99	QP
2	*	0.7060	5.60	10.46	16.06	46.00	-29.94	AVG
3		4.0460	9.22	10.51	19.73	56.00	-36.27	QP
4		4.0460	4.59	10.51	15.10	46.00	-30.90	AVG

Test Report No.: EFSH15030095-IE-01-E01-A3

Eurofins Product Testing Service (Shanghai) Co., Ltd.
 No.395 West Jiangchang Road, Jing'an District, Shanghai, 200436, P.R. China

Neutral Line:
Level

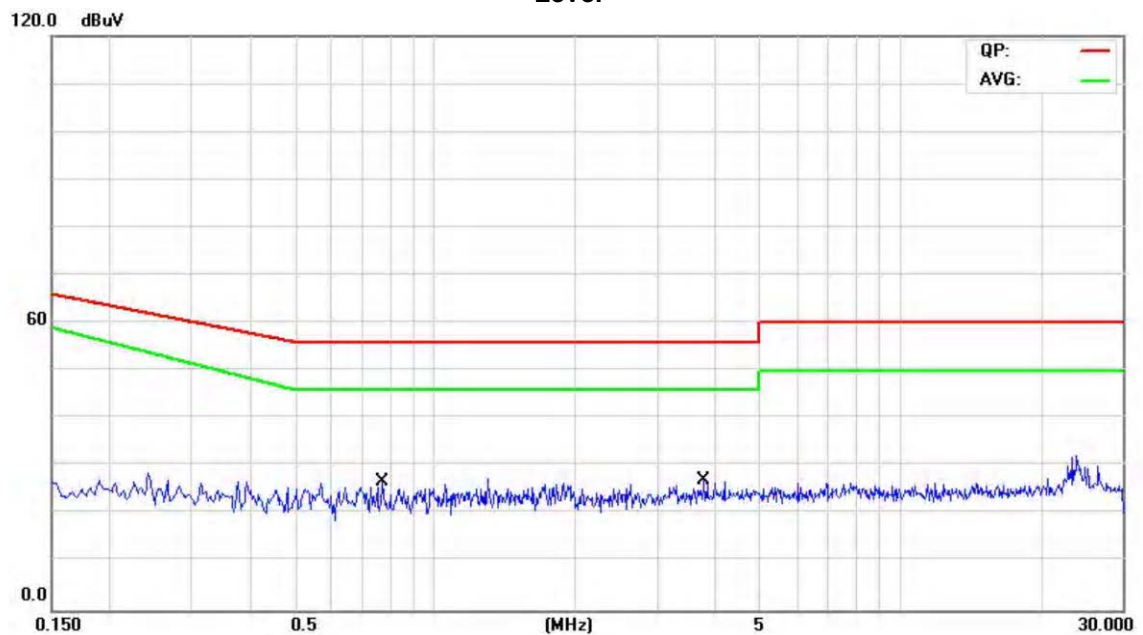


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector
		MHz	Level	Factor	ment	dBuV	dB	
1		1.1140	8.40	10.36	18.76	56.00	-37.24	QP
2	*	1.1140	5.48	10.36	15.84	46.00	-30.16	AVG
3		3.9860	9.17	10.28	19.45	56.00	-36.55	QP
4		3.9860	4.58	10.28	14.86	46.00	-31.14	AVG

Test Report No.: EFSH15030095-IE-01-E01-A3

Eurofins Product Testing Service (Shanghai) Co., Ltd.
No.395 West Jiangchang Road, Jing'an District, Shanghai, 200436, P.R. China

TM-2020T
Live Line:
Level

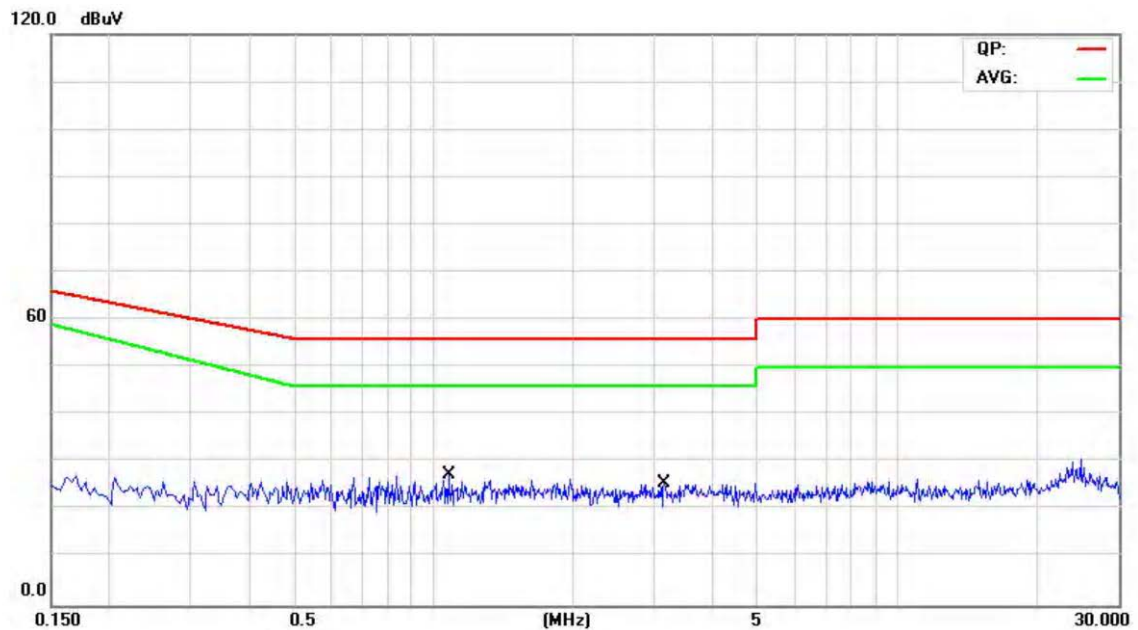


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.7740	8.48	10.45	18.93	56.00	-37.07	QP
2	*	0.7740	5.54	10.45	15.99	46.00	-30.01	AVG
3		3.7860	9.20	10.49	19.69	56.00	-36.31	QP
4		3.7860	4.62	10.49	15.11	46.00	-30.89	AVG

Test Report No.: EFSH15030095-IE-01-E01-A3

Eurofins Product Testing Service (Shanghai) Co., Ltd.
 No.395 West Jiangchang Road, Jing'an District, Shanghai, 200436, P.R. China

Neutral Line:
Level



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		1.0780	8.39	10.36	18.75	56.00	-37.25	QP
2	*	1.0780	5.49	10.36	15.85	46.00	-30.15	AVG
3		3.1420	9.36	10.30	19.66	56.00	-36.34	QP
4		3.1420	4.68	10.30	14.98	46.00	-31.02	AVG

Test Report No.: EFSH15030095-IE-01-E01-A3

Eurofins Product Testing Service (Shanghai) Co., Ltd.
No.395 West Jiangchang Road, Jing'an District, Shanghai, 200436, P.R. China

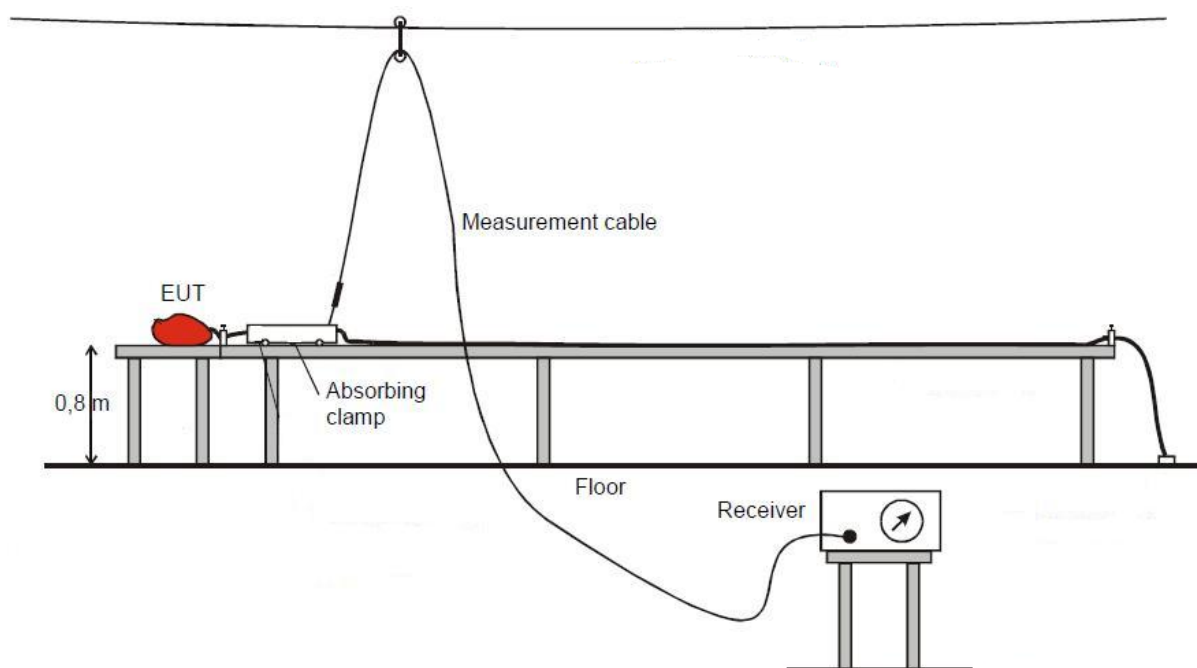
4.2 Disturbance power

This clause lays down the general requirements for the measurement of disturbance power produced at the terminals of apparatus.

4.2.1 limits

Frequency range MHz	Limit dB (pW)	
	Quasi-peak	Average
30 to 300	45 to 55	35 to 45
Note1: Increasing linearly with the frequency from.		

4.2.2 Measurement procedure

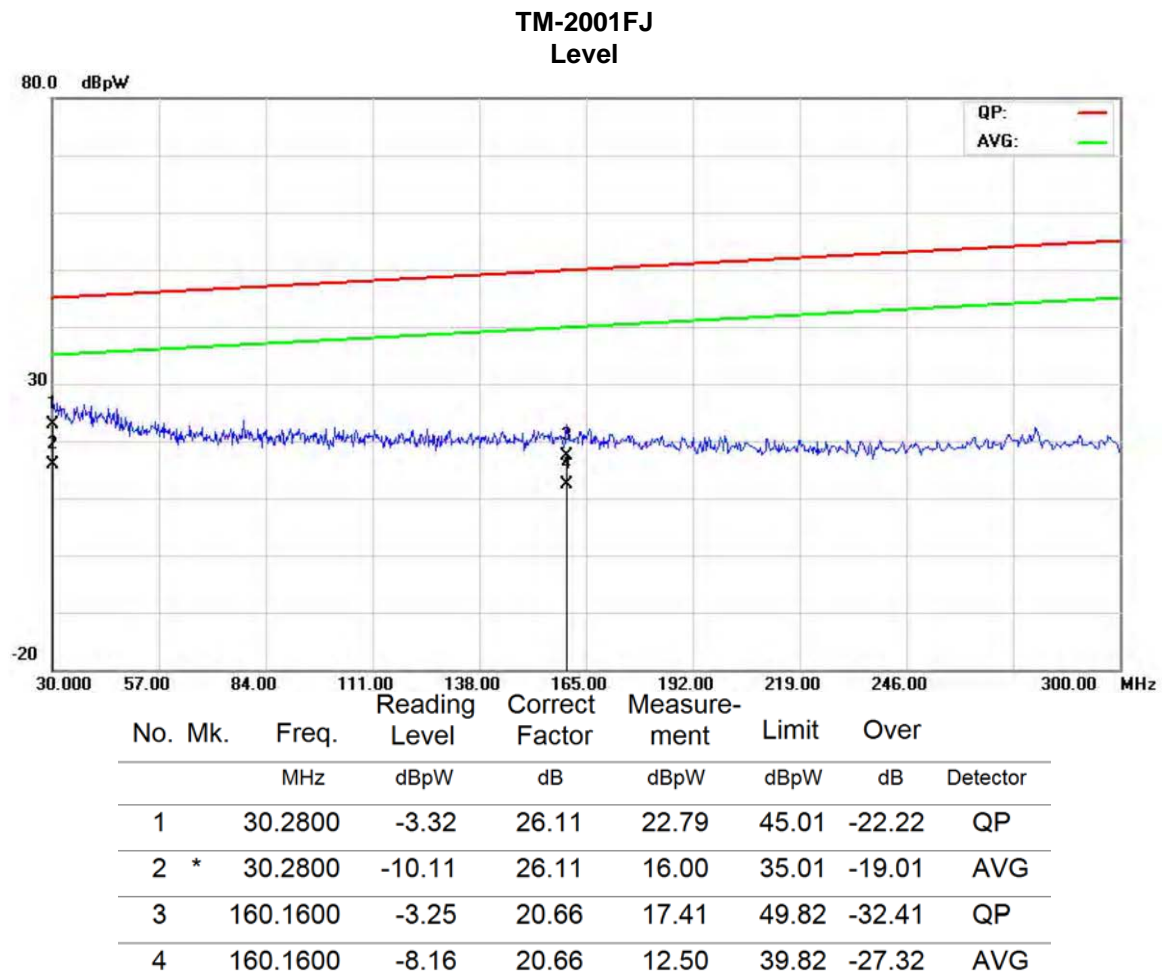


The test configuration corresponds to the standard EN 55014-1. The equipment under test is placed on a non metallic table with 0,8 m high. The lead to be measured is stretched horizontally in a straight line, to permit variation in position of the absorbing clamp along the lead to find the maximum indication. The lead shall be at least length of 6 meter. According to a pre-test at 50MHz, the worst voltage was selected for final test. Before get the final emission results with quasi-peak(QP) detector and average(AVG) detector, a pre-scan was performed with the peak(PK) detector to find out the maximum emission data plots of the EUT. The absorbing clamp is placed around the lead.

4.2.3 Measurement uncertainty

$U_{lab}(cond) = 4.08 \text{ dB}$ at confidence of 95%, $k=2$

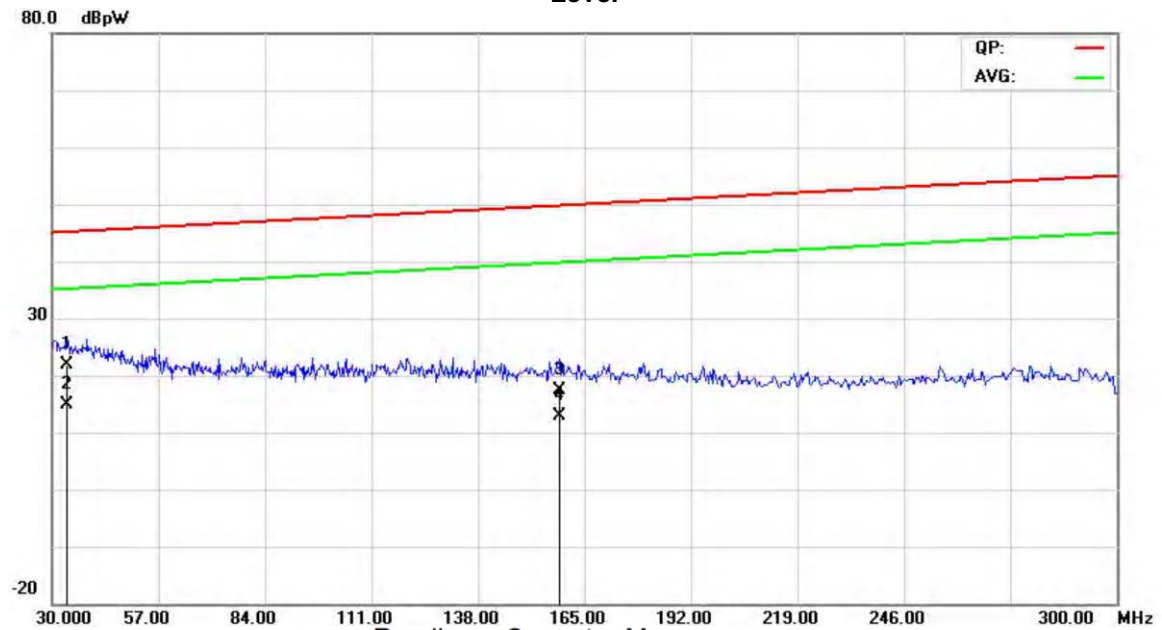
4.2.4 Results



Test Report No.: EFSH15030095-IE-01-E01-A3

Eurofins Product Testing Service (Shanghai) Co., Ltd.
No.395 West Jiangchang Road, Jing'an District, Shanghai, 200436, P.R. China

**TM-2001JT
Level**

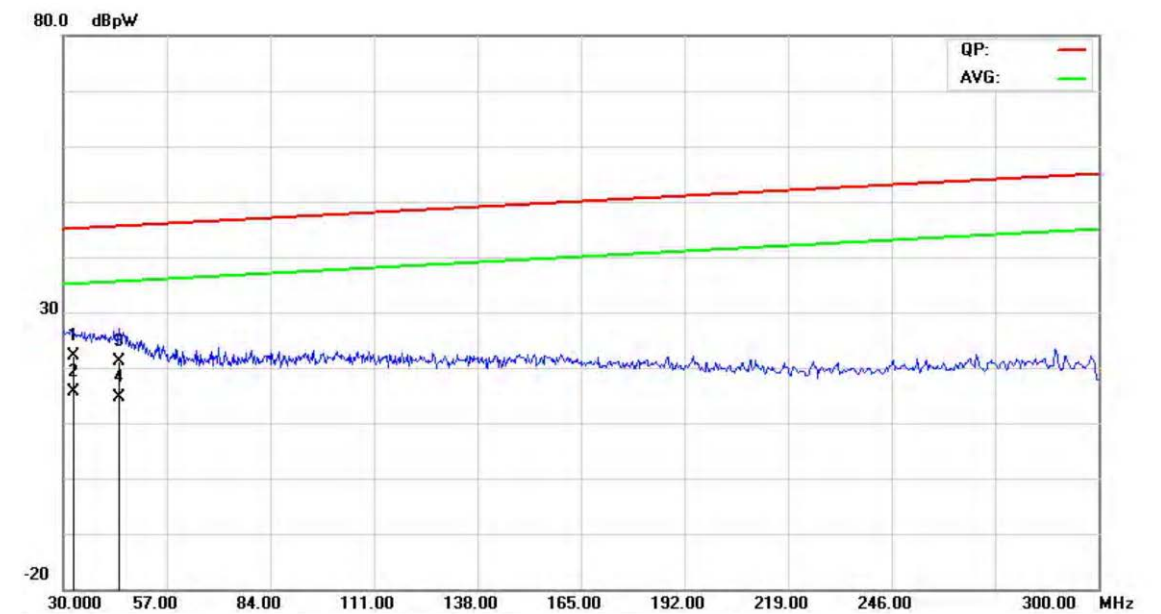


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector
		MHz	Level	Factor	ment	dBpW	dB	
1		33.8800	-3.59	25.45	21.86	45.14	-23.28	QP
2	*	33.8800	-10.49	25.45	14.96	35.14	-20.18	AVG
3		158.5200	-3.24	20.69	17.45	49.76	-32.31	QP
4		158.5200	-7.89	20.69	12.80	39.76	-26.96	AVG

Test Report No.: EFSH15030095-IE-01-E01-A3

Eurofins Product Testing Service (Shanghai) Co., Ltd.
No.395 West Jiangchang Road, Jing'an District, Shanghai, 200436, P.R. China

TM-2005FJ
Level

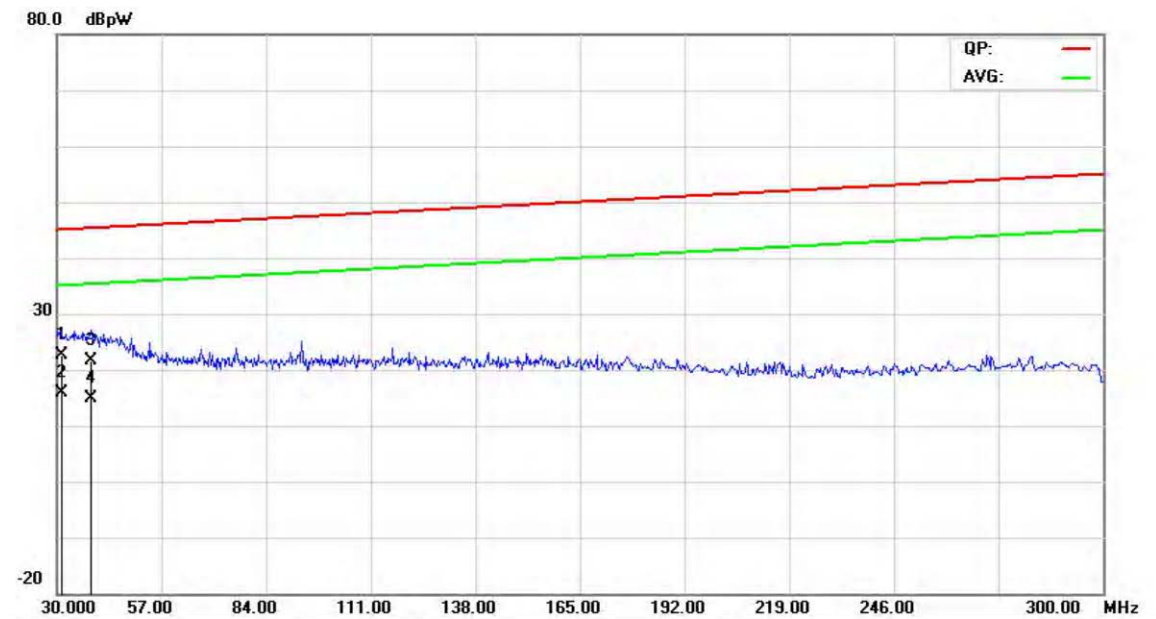


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	
		MHz	Level	Factor	ment			Detector
			dBpW	dB	dBpW	dBpW	dB	
1		32.8000	-3.52	25.65	22.13	45.10	-22.97	QP
2	*	32.8000	-10.14	25.65	15.51	35.10	-19.59	AVG
3		44.6000	-3.47	24.68	21.21	45.54	-24.33	QP
4		44.6000	-10.10	24.68	14.58	35.54	-20.96	AVG

Test Report No.: EFSH15030095-IE-01-E01-A3

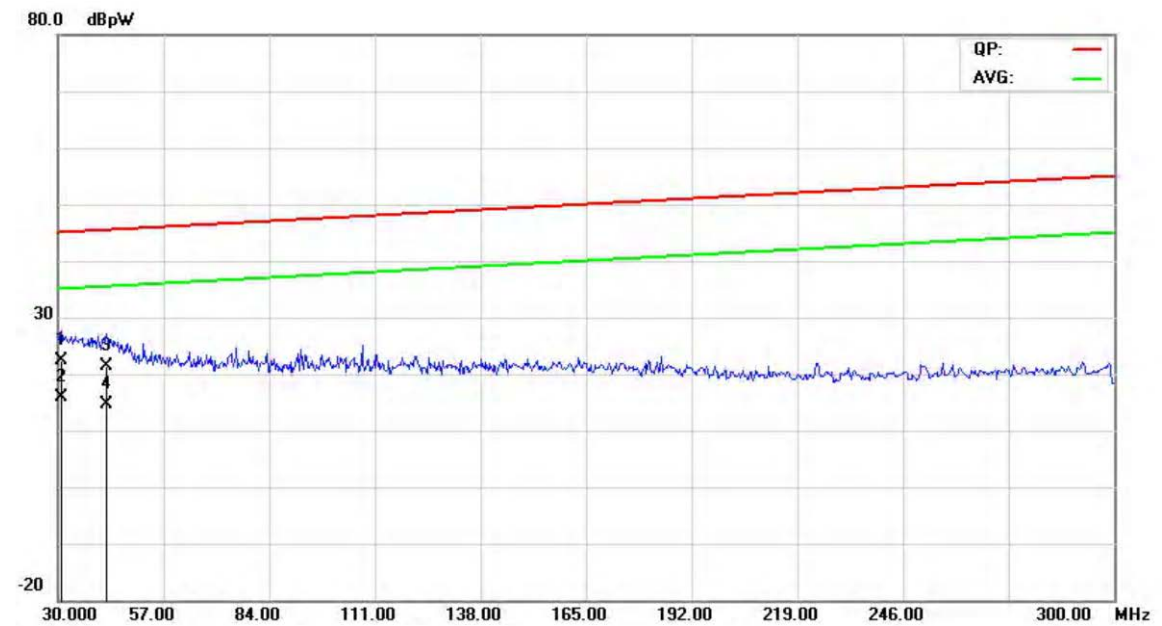
Eurofins Product Testing Service (Shanghai) Co., Ltd.
No.395 West Jiangchang Road, Jing'an District, Shanghai, 200436, P.R. China

**TM-2005JT
Level**



No.	Mk.	Freq. MHz	Reading Level dBpW	Correct Factor dB	Measure- ment dBpW	Limit dBpW	Over dB	Detector
1		31.1200	-3.45	25.96	22.51	45.04	-22.53	QP
2	*	31.1200	-10.11	25.96	15.85	35.04	-19.19	AVG
3		38.9200	-3.45	25.03	21.58	45.33	-23.75	QP
4		38.9200	-10.07	25.03	14.96	35.33	-20.37	AVG

**TM-2006FJ
Level**

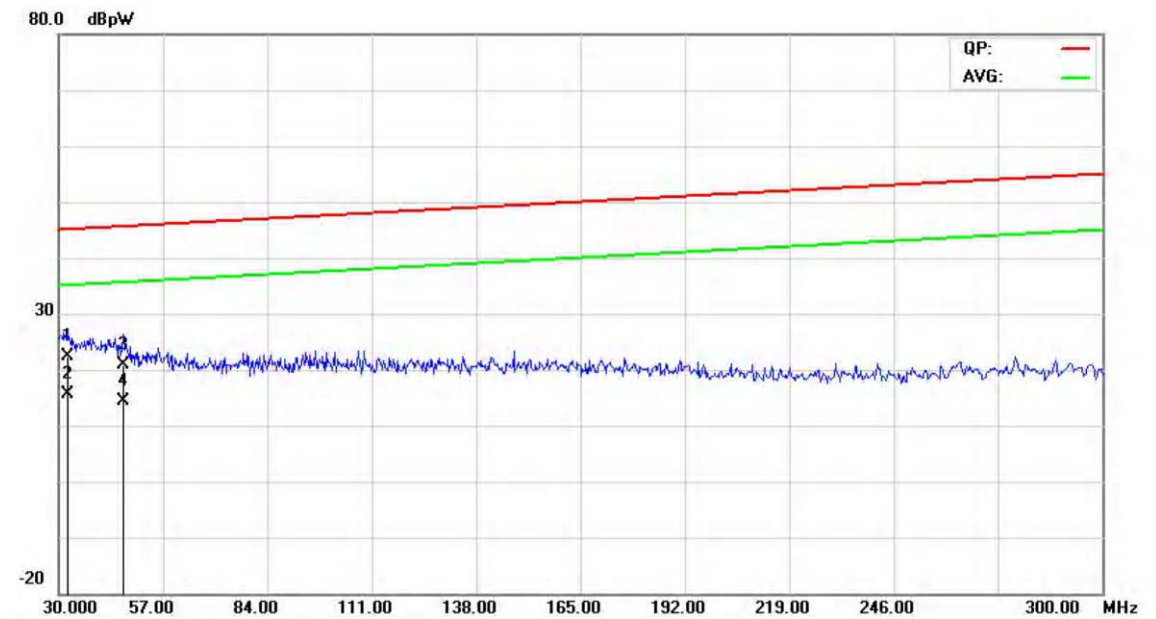


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBpW	dB	dBpW	dBpW	dB	Detector
1		31.0000	-3.48	25.98	22.50	45.04	-22.54	QP
2	*	31.0000	-10.06	25.98	15.92	35.04	-19.12	AVG
3		42.5200	-3.52	24.81	21.29	45.46	-24.17	QP
4		42.5200	-10.13	24.81	14.68	35.46	-20.78	AVG

Test Report No.: EFSH15030095-IE-01-E01-A3

Eurofins Product Testing Service (Shanghai) Co., Ltd.
No.395 West Jiangchang Road, Jing'an District, Shanghai, 200436, P.R. China

**TM-2006JT
Level**

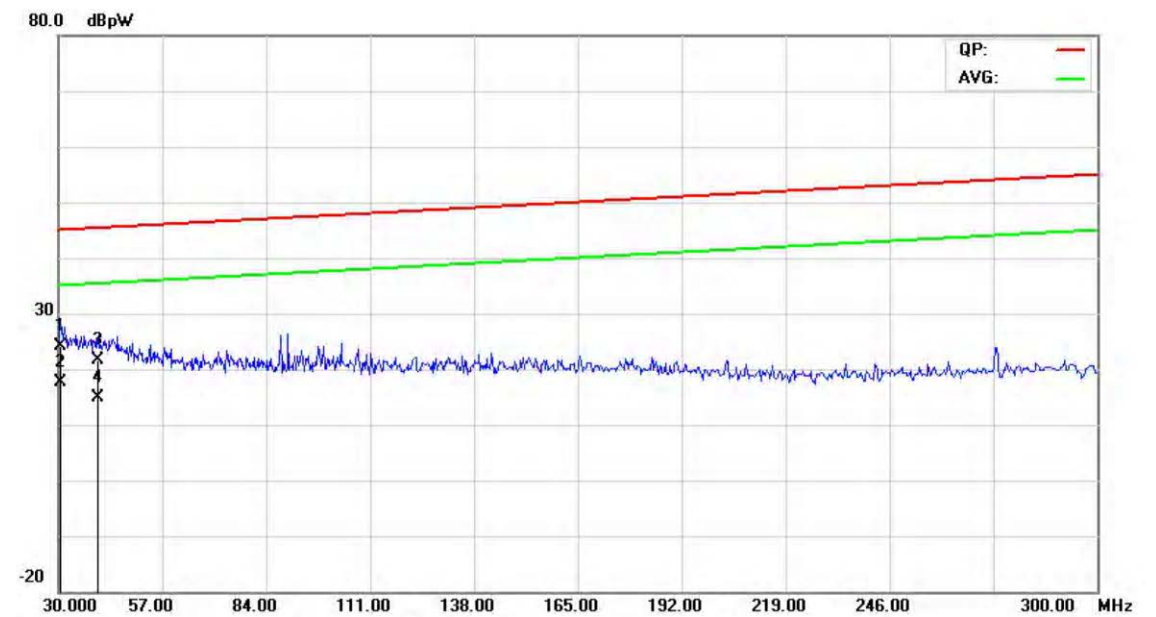


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBpW	dB	dBpW	dBpW	dB	Detector
1		32.3600	-3.42	25.73	22.31	45.09	-22.78	QP
2	*	32.3600	-10.09	25.73	15.64	35.09	-19.45	AVG
3		46.7600	-3.05	23.96	20.91	45.62	-24.71	QP
4		46.7600	-9.61	23.96	14.35	35.62	-21.27	AVG

Test Report No.: EFSH15030095-IE-01-E01-A3

Eurofins Product Testing Service (Shanghai) Co., Ltd.
No.395 West Jiangchang Road, Jing'an District, Shanghai, 200436, P.R. China

TM-2009FJ
Level

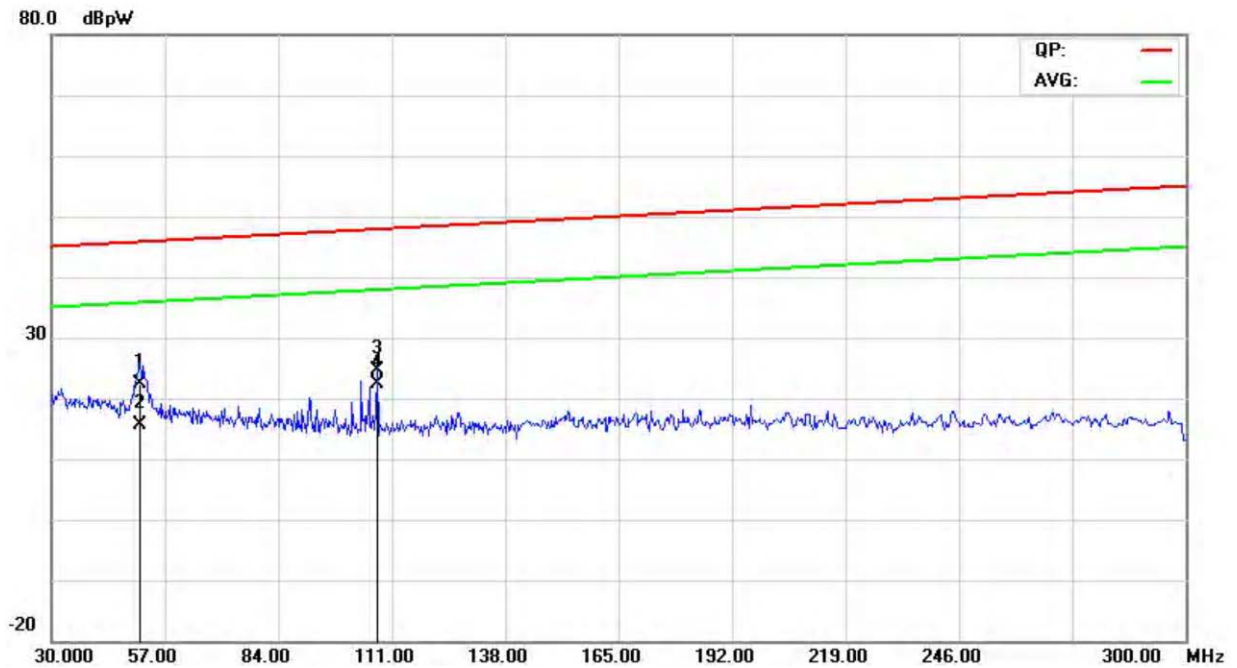


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	
		MHz	Level	Factor	ment			Detector
			dBpW	dB	dBpW	dBpW	dB	
1		30.6000	-1.87	26.05	24.18	45.02	-20.84	QP
2	*	30.6000	-8.42	26.05	17.63	35.02	-17.39	AVG
3		40.2800	-3.39	24.95	21.56	45.38	-23.82	QP
4		40.2800	-10.04	24.95	14.91	35.38	-20.47	AVG

Test Report No.: EFSH15030095-IE-01-E01-A3

Eurofins Product Testing Service (Shanghai) Co., Ltd.
No.395 West Jiangchang Road, Jing'an District, Shanghai, 200436, P.R. China

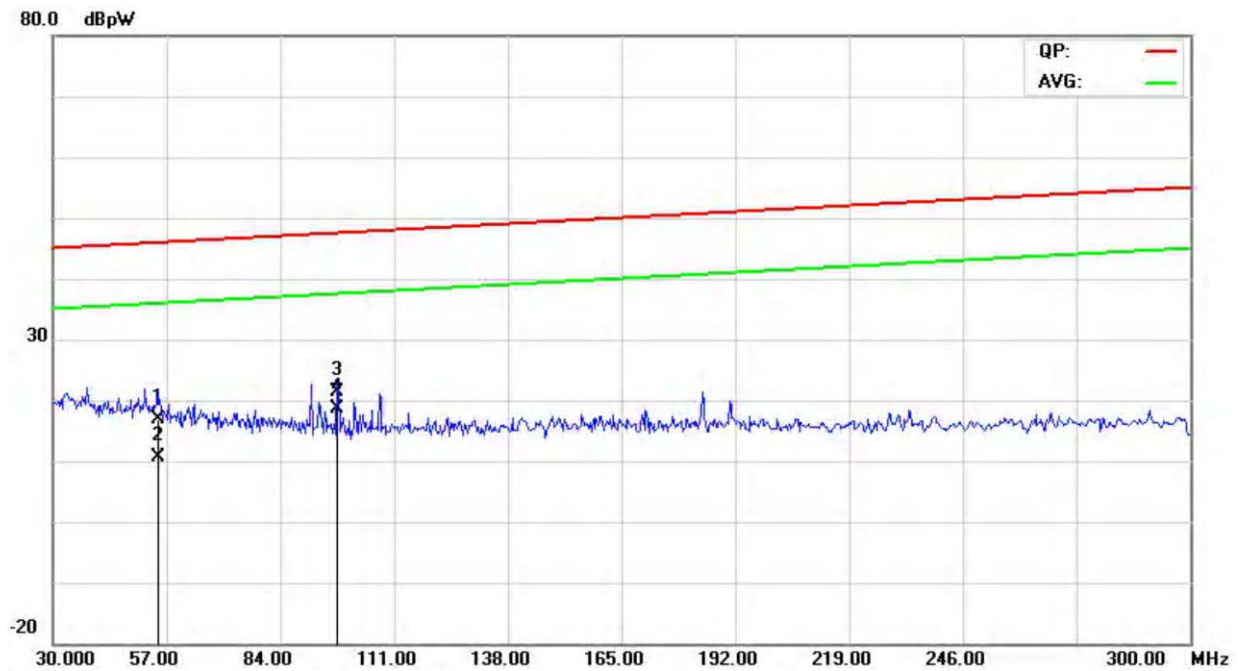
TM-2015T
Level



No.	Mk.	Freq. MHz	Reading Level dBpW	Correct Factor dB	Measure- ment dBpW	Limit dBpW	Over dB	Detector
1		51.1200	3.93	18.51	22.44	45.78	-23.34	QP
2		51.1200	-2.91	18.51	15.60	35.78	-20.18	AVG
3		107.7200	8.10	16.49	24.59	47.88	-23.29	QP
4	*	107.7200	5.81	16.49	22.30	37.88	-15.58	AVG

Test Report No.: EFSH15030095-IE-01-E01-A3

Eurofins Product Testing Service (Shanghai) Co., Ltd.
No.395 West Jiangchang Road, Jing'an District, Shanghai, 200436, P.R. China

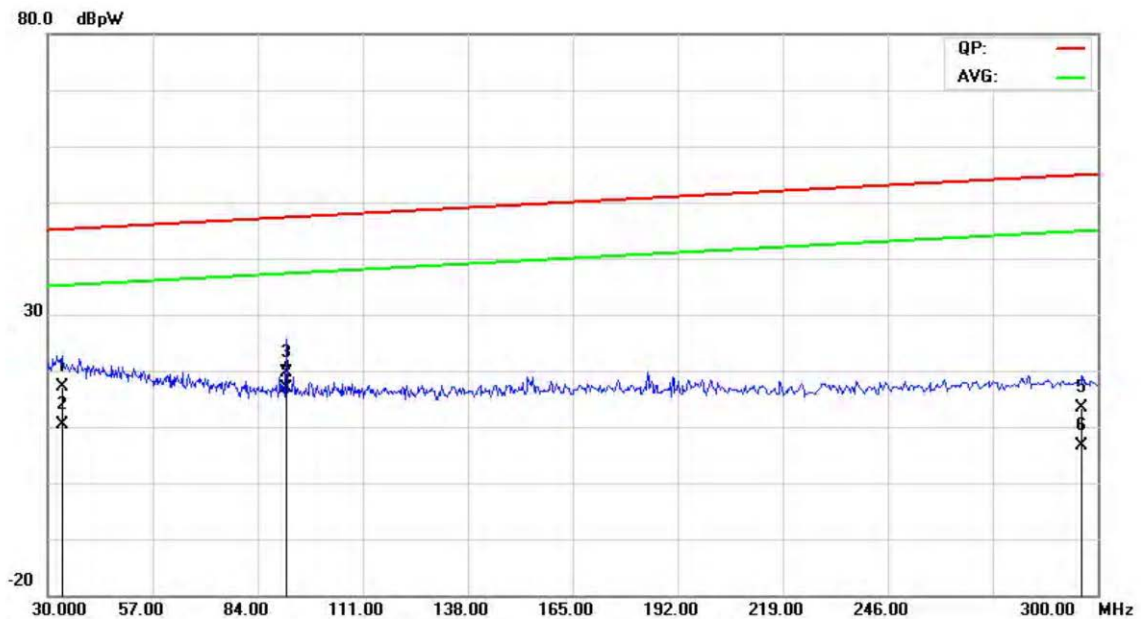
**TM-2016T
Level**


No.	Mk.	Freq. MHz	Reading Level dBpW	Correct Factor dB	Measure- ment dBpW	Limit dBpW	Over dB	Detector
1		55.0400	-1.23	18.20	16.97	45.93	-28.96	QP
2		55.0400	-7.50	18.20	10.70	35.93	-25.23	AVG
3		97.6800	4.70	16.57	21.27	47.51	-26.24	QP
4	*	97.6800	2.13	16.57	18.70	37.51	-18.81	AVG

Test Report No.: EFSH15030095-IE-01-E01-A3

Eurofins Product Testing Service (Shanghai) Co., Ltd.
No.395 West Jiangchang Road, Jing'an District, Shanghai, 200436, P.R. China

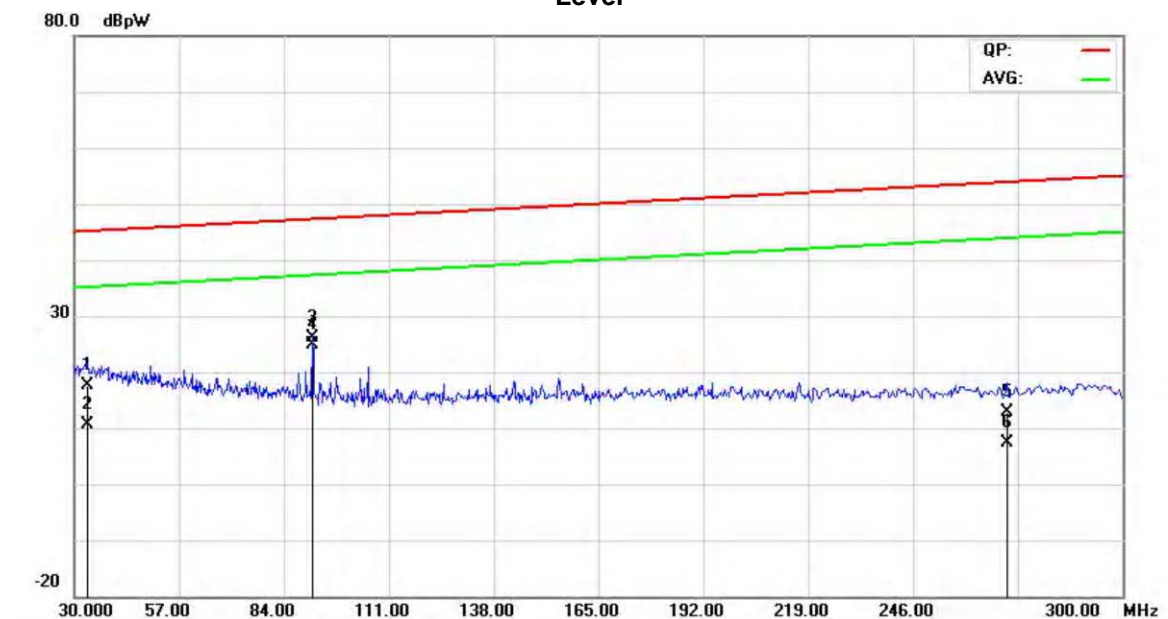
TM-2019
Level



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	
		MHz	Level	Factor	ment			Detector
			dBpW	dB	dBpW	dBpW	dB	
1		33.8400	-3.01	20.03	17.02	45.14	-28.12	QP
2		33.8400	-9.63	20.03	10.40	35.14	-24.74	AVG
3		91.4000	3.46	16.19	19.65	47.27	-27.62	QP
4	*	91.4000	0.71	16.19	16.90	37.27	-20.37	AVG
5		296.0800	-3.48	16.76	13.28	54.85	-41.57	QP
6		296.0800	-10.16	16.76	6.60	44.85	-38.25	AVG

Test Report No.: EFSH15030095-IE-01-E01-A3

Eurofins Product Testing Service (Shanghai) Co., Ltd.
No.395 West Jiangchang Road, Jing'an District, Shanghai, 200436, P.R. China

**TM-2020T
Level**


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBpW	dB	dBpW	dBpW	dB	Detector
1		33.5600	-2.49	20.05	17.56	45.13	-27.57	QP
2		33.5600	-9.35	20.05	10.70	35.13	-24.43	AVG
3		91.4000	9.91	16.19	26.10	47.27	-21.17	QP
4	*	91.4000	8.81	16.19	25.00	37.27	-12.27	AVG
5		270.4000	-3.47	16.47	13.00	53.90	-40.90	QP
6		270.4000	-9.17	16.47	7.30	43.90	-36.60	AVG

Test Report No.: EFSH15030095-IE-01-E01-A3

Eurofins Product Testing Service (Shanghai) Co., Ltd.
No.395 West Jiangchang Road, Jing'an District, Shanghai, 200436, P.R. China

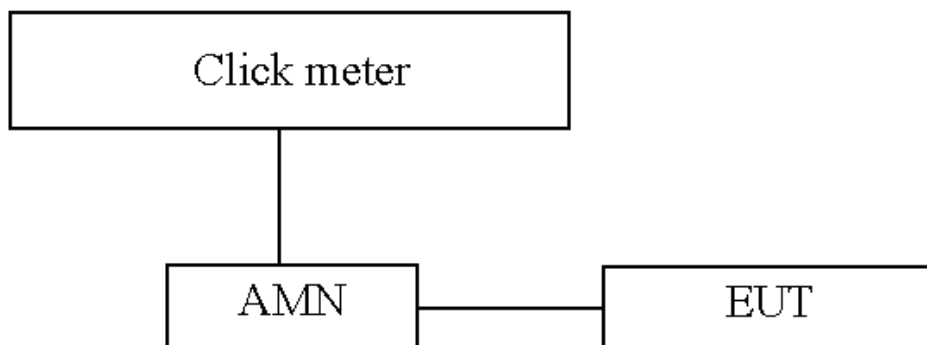
4.3 Discontinuous disturbance

Switching operations in thermostatically controlled appliances, automatic programme controlled machines and other electrically controlled or operated appliances generate discontinuous disturbance.

4.3.1 limits

Frequency range MHz	Limit dB (μV)
0.15	66
0.5	56
1.4	56
30	60

4.3.2 Measurement procedure



The test configuration is contained inside of a shielded chamber. Receiver compliance to CISPR 16-1-1 with time domain function used during measurement. EUT arrangement was follow EN 55014-1 clause 5.2. Operation conditions were follow EN 55014-1 clause 7. 0.15MHz, 0.5MHz, 1.4MHz and 30MHz were spot checked, and upper quartile methods used during measurement. The final judgment of test result was according to figure 9 of EN 55014-1.

4.3.3 Results

TM-2001FJ

Frequency (MHz)	0.15	0.5	1.4	30.0
Permitted limit for continuous interference dB(μ V)	66.0	56.0	56.0	60.0
Counted click/switch operation number	1	1	0	0
Observed time (min)	120	120	120	120
Click duration (ms)	<10ms	<10ms	<10ms	<10ms
Click rate N	<5	<5	<5	<5
Test result	Pass	Pass	Pass	Pass
Note: The click rate is less than 5, and the click duration is less than 10ms. So it is deemed to comply with limits.				

TM-2001JT

Frequency (MHz)	0.15	0.5	1.4	30.0
Permitted limit for continuous interference dB(μ V)	66.0	56.0	56.0	60.0
Counted click/switch operation number	1	1	1	0
Observed time (min)	120	120	120	120
Click duration (ms)	<10ms	<10ms	<10ms	<10ms
Click rate N	<5	<5	<5	<5
Test result	Pass	Pass	Pass	Pass
Note: The click rate is less than 5, and the click duration is less than 10ms. So it is deemed to comply with limits.				

Test Report No.: EFSH15030095-IE-01-E01-A3

Eurofins Product Testing Service (Shanghai) Co., Ltd.
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TM-2005FJ

Frequency (MHz)	0.15	0.5	1.4	30.0
Permitted limit for continuous interference dB(μ V)	66.0	56.0	56.0	60.0
Counted click/switch operation number	1	1	1	0
Observed time (min)	120	120	120	120
Click duration (ms)	<10ms	<10ms	<10ms	<10ms
Click rate N	<5	<5	<5	<5
Test result	Pass	Pass	Pass	Pass
Note: The click rate is less than 5, and the click duration is less than 10ms. So it is deemed to comply with limits.				

TM-2005JT

Frequency (MHz)	0.15	0.5	1.4	30.0
Permitted limit for continuous interference dB(μ V)	66.0	56.0	56.0	60.0
Counted click/switch operation number	1	1	1	0
Observed time (min)	120	120	120	120
Click duration (ms)	<10ms	<10ms	<10ms	<10ms
Click rate N	<5	<5	<5	<5
Test result	Pass	Pass	Pass	Pass
Note: The click rate is less than 5, and the click duration is less than 10ms. So it is deemed to comply with limits.				

TM-2006FJ

Frequency (MHz)	0.15	0.5	1.4	30.0
Permitted limit for continuous interference dB(μ V)	66.0	56.0	56.0	60.0
Counted click/switch operation number	1	1	1	0
Observed time (min)	120	120	120	120
Click duration (ms)	<10ms	<10ms	<10ms	<10ms
Click rate N	<5	<5	<5	<5
Test result	Pass	Pass	Pass	Pass
Note: The click rate is less than 5, and the click duration is less than 10ms. So it is deemed to comply with limits.				

TM-2006JT

Frequency (MHz)	0.15	0.5	1.4	30.0
Permitted limit for continuous interference dB(μ V)	66.0	56.0	56.0	60.0
Counted click/switch operation number	1	1	0	0
Observed time (min)	120	120	120	120
Click duration (ms)	<10ms	<10ms	<10ms	<10ms
Click rate N	<5	<5	<5	<5
Test result	Pass	Pass	Pass	Pass
Note: The click rate is less than 5, and the click duration is less than 10ms. So it is deemed to comply with limits.				

TM-2009FJ

Frequency (MHz)	0.15	0.5	1.4	30.0
Permitted limit for continuous interference dB(μ V)	66.0	56.0	56.0	60.0
Counted click/switch operation number	1	1	1	0
Observed time (min)	120	120	120	120
Click duration (ms)	<10ms	<10ms	<10ms	<10ms
Click rate N	<5	<5	<5	<5
Test result	Pass	Pass	Pass	Pass
Note: The click rate is less than 5, and the click duration is less than 10ms. So it is deemed to comply with limits.				

TM-2015T

Frequency (MHz)	0.15	0.5	1.4	30.0
Permitted limit for continuous interference dB(μ V)	66.0	56.0	56.0	60.0
Counted click/switch operation number	2	1	1	0
Observed time (min)	120	120	120	120
Click duration (ms)	<10ms	<10ms	<10ms	<10ms
Click rate N	<5	<5	<5	<5
Test result	Pass	Pass	Pass	Pass
Note: The click rate is less than 5, and the click duration is less than 10ms. So it is deemed to comply with limits.				

Test Report No.: EFSH15030095-IE-01-E01-A3

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TM-2016T

Frequency (MHz)	0.15	0.5	1.4	30.0
Permitted limit for continuous interference dB(μ V)	66.0	56.0	56.0	60.0
Counted click/switch operation number	1	1	0	0
Observed time (min)	120	120	120	120
Click duration (ms)	<10ms	<10ms	<10ms	<10ms
Click rate N	<5	<5	<5	<5
Test result	Pass	Pass	Pass	Pass
Note: The click rate is less than 5, and the click duration is less than 10ms. So it is deemed to comply with limits.				

TM-2019

Frequency (MHz)	0.15	0.5	1.4	30.0
Permitted limit for continuous interference dB(μ V)	66.0	56.0	56.0	60.0
Counted click/switch operation number	1	1	1	0
Observed time (min)	120	120	120	120
Click duration (ms)	<10ms	<10ms	<10ms	<10ms
Click rate N	<5	<5	<5	<5
Test result	Pass	Pass	Pass	Pass
Note: The click rate is less than 5, and the click duration is less than 10ms. So it is deemed to comply with limits.				

TM-2020T

Frequency (MHz)	0.15	0.5	1.4	30.0
Permitted limit for continuous interference dB(μ V)	66.0	56.0	56.0	60.0
Counted click/switch operation number	2	1	1	0
Observed time (min)	120	120	120	120
Click duration (ms)	<10ms	<10ms	<10ms	<10ms
Click rate N	<5	<5	<5	<5
Test result	Pass	Pass	Pass	Pass
Note: The click rate is less than 5, and the click duration is less than 10ms. So it is deemed to comply with limits.				

4.4 Harmonic Current Emissions

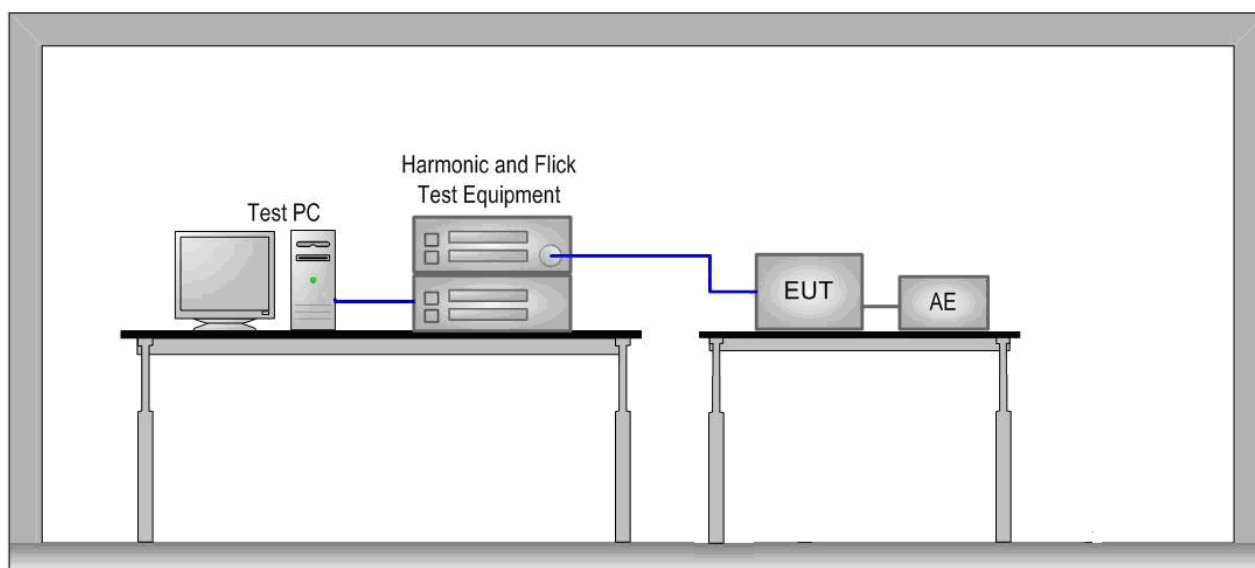
This part deals with the limitation of harmonic currents injected into the public supply system.

4.4.1 Limits

Limit for Class A equipment

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
$15 \leq n \leq 39$	$0,15 \frac{15}{n}$
Even harmonics	
2	1,08
4	0,43
6	0,30
$8 \leq n \leq 40$	$0,23 \frac{8}{n}$

4.4.2 Measurement procedure



The equipment under test is placed on a wooden table with a height of 0,8 m in the EMC lab. For each harmonic order, measure the 1,5 s smoothed r.m.s. harmonic current in each DFT time window and calculate the arithmetic average of the measured values from the DFT time windows, over the entire observation period. Each harmonic order, all 1.5 s smoothed r.m.s. harmonic current values and the average values for the individual harmonic currents, taken over the entire test observation period shall be less than or equal to the applicable limits.

Test Report No.: EFSH15030095-IE-01-E01-A3

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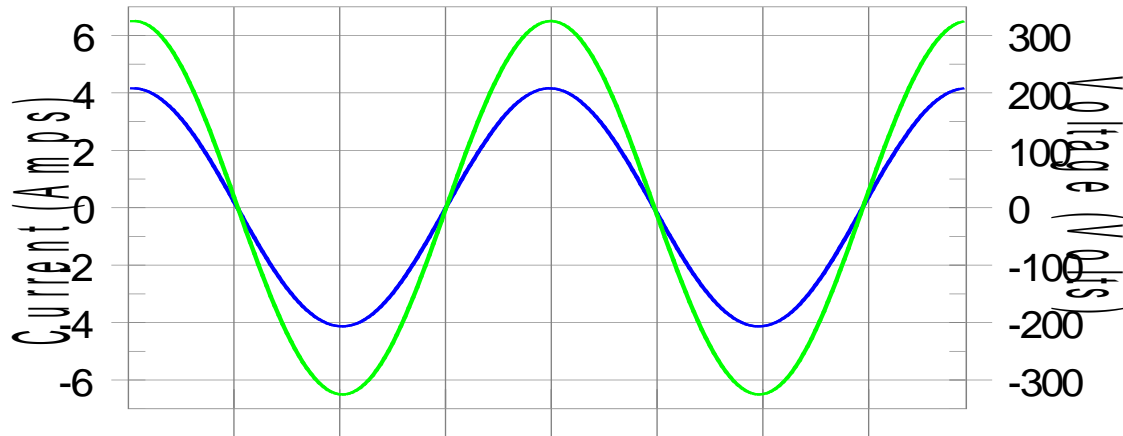
4.4.3 Results

TM-2001FJ

Harmonic

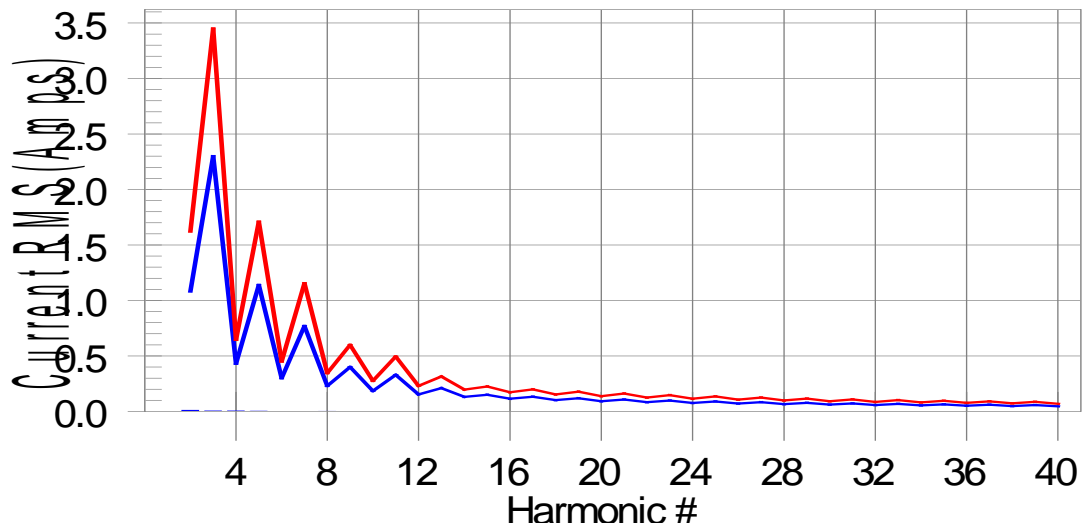
Test Result: Pass Source qualification: Normal

Current & voltage waveforms



Harmonics and Class A limit line

European Limits



Test result: Pass Worst harmonic was #0 with 0.00% of the limit.

Test Report No.: EFSH15030095-IE-01-E01-A3

Eurofins Product Testing Service (Shanghai) Co., Ltd.
No.395 West Jiangchang Road, Jing'an District, Shanghai, 200436, P.R. China

Current Test Result Summary

Test Result: Pass Source qualification: Normal
 THC(A): 0.00 I-THD(%): 0.00 POHC(A): 0.000 POHC Limit(A): 0.320

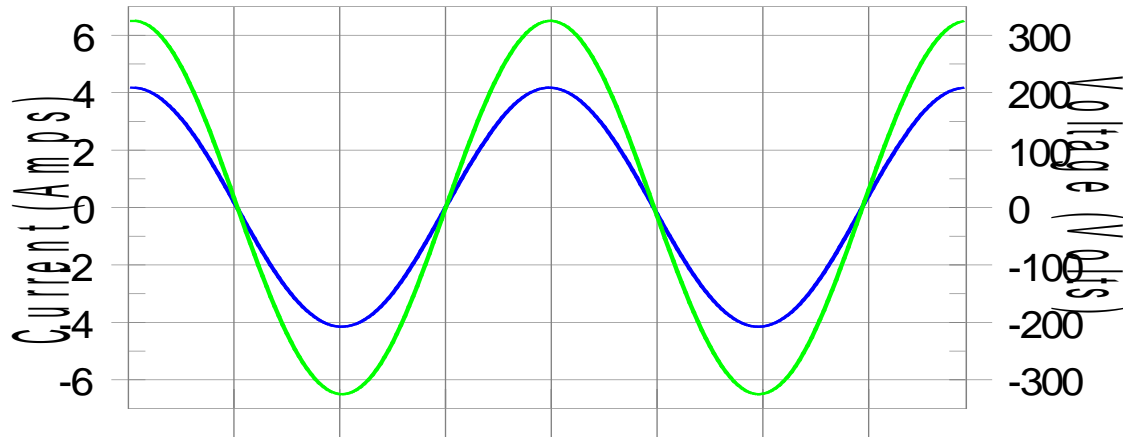
Highest parameter values during test:

V_RMS (Volts):	229.98	Frequency(Hz):	50.00
I_Peak (Amps):	4.164	I_RMS (Amps):	2.926
I_Fund (Amps):	4.294	Crest Factor:	1.425
Power (Watts):	666.9	Power Factor:	1.000

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.010	1.080	0.0	0.011	1.620	0.67	Pass
3	0.004	2.300	0.0	0.005	3.450	0.13	Pass
4	0.004	0.430	0.0	0.005	0.645	0.76	Pass
5	0.002	1.140	0.0	0.003	1.710	0.16	Pass
6	0.001	0.300	0.0	0.001	0.450	0.18	Pass
7	0.001	0.770	0.0	0.001	1.155	0.09	Pass
8	0.001	0.230	0.0	0.001	0.345	0.37	Pass
9	0.001	0.400	0.0	0.001	0.600	0.14	Pass
10	0.000	0.184	0.0	0.001	0.276	0.20	Pass
11	0.000	0.330	0.0	0.000	0.495	0.08	Pass
12	0.001	0.153	0.0	0.001	0.230	0.25	Pass
13	0.000	0.210	0.0	0.001	0.315	0.17	Pass
14	0.000	0.131	0.0	0.000	0.197	0.15	Pass
15	0.000	0.150	0.0	0.000	0.225	0.11	Pass
16	0.000	0.115	0.0	0.000	0.173	0.24	Pass
17	0.000	0.132	0.0	0.000	0.199	0.19	Pass
18	0.000	0.102	0.0	0.000	0.153	0.11	Pass
19	0.000	0.118	0.0	0.000	0.178	0.15	Pass
20	0.000	0.092	0.0	0.000	0.138	0.18	Pass
21	0.000	0.107	0.0	0.000	0.161	0.22	Pass
22	0.000	0.084	0.0	0.000	0.125	0.21	Pass
23	0.000	0.098	0.0	0.000	0.147	0.14	Pass
24	0.000	0.077	0.0	0.000	0.115	0.14	Pass
25	0.000	0.090	0.0	0.000	0.135	0.13	Pass
26	0.000	0.071	0.0	0.000	0.106	0.19	Pass
27	0.000	0.083	0.0	0.000	0.125	0.16	Pass
28	0.000	0.066	0.0	0.000	0.099	0.24	Pass
29	0.000	0.078	0.0	0.000	0.116	0.21	Pass
30	0.000	0.061	0.0	0.000	0.092	0.23	Pass
31	0.000	0.073	0.0	0.000	0.109	0.19	Pass
32	0.000	0.058	0.0	0.000	0.086	0.28	Pass
33	0.000	0.068	0.0	0.000	0.102	0.20	Pass
34	0.000	0.054	0.0	0.000	0.081	0.21	Pass
35	0.000	0.064	0.0	0.000	0.096	0.15	Pass
36	0.000	0.051	0.0	0.000	0.077	0.17	Pass
37	0.000	0.061	0.0	0.000	0.091	0.17	Pass
38	0.000	0.048	0.0	0.000	0.073	0.16	Pass
39	0.000	0.058	0.0	0.000	0.087	0.24	Pass
40	0.000	0.046	0.0	0.000	0.069	0.20	Pass

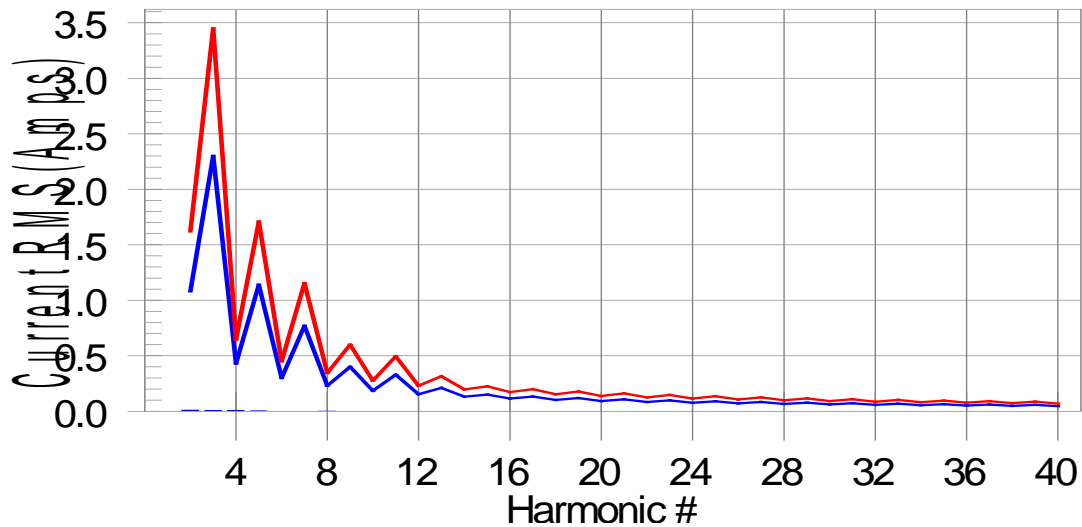
TM-2001JT
Harmonic

Test Result: Pass **Source qualification: Normal**
Current & voltage waveforms



Harmonics and Class A limit line

European Limits



Test result: Pass **Worst harmonic was #0 with 0.00% of the limit.**

Current Test Result Summary

Test Result: Pass Source qualification: Normal
 THC(A): 0.00 I-THD(%): 0.00 POHC(A): 0.000 POHC Limit(A): 0.320
 Highest parameter values during test:

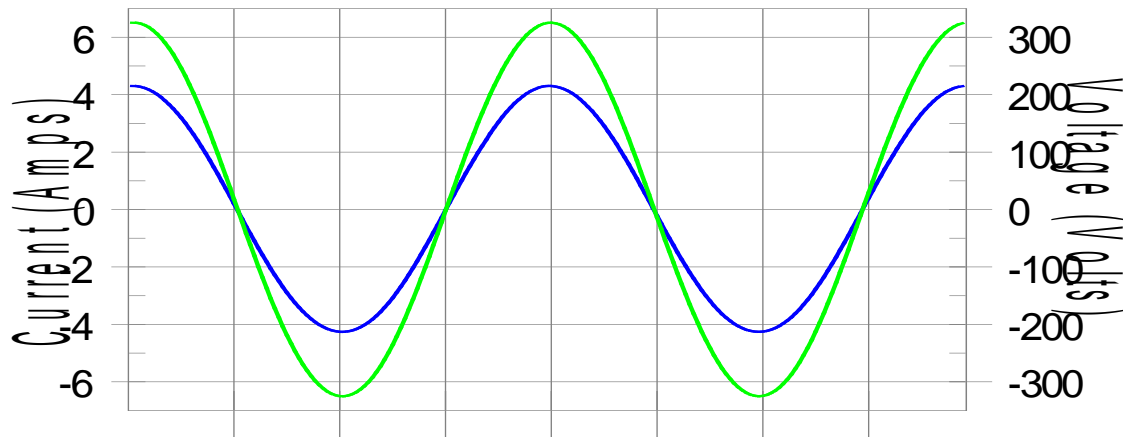
V_RMS (Volts):	229.97	Frequency(Hz):	50.00
I_Peak (Amps):	4.183	I_RMS (Amps):	2.938
I_Fund (Amps):	2.902	Crest Factor:	1.425
Power (Watts):	667.2	Power Factor:	1.000

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.010	1.080	0.0	0.011	1.620	0.66	Pass
3	0.004	2.300	0.0	0.004	3.450	0.13	Pass
4	0.004	0.430	0.0	0.005	0.645	0.74	Pass
5	0.002	1.140	0.0	0.003	1.710	0.15	Pass
6	0.001	0.300	0.0	0.001	0.450	0.17	Pass
7	0.001	0.770	0.0	0.001	1.155	0.08	Pass
8	0.001	0.230	0.0	0.001	0.345	0.38	Pass
9	0.001	0.400	0.0	0.001	0.600	0.15	Pass
10	0.000	0.184	0.0	0.000	0.276	0.17	Pass
11	0.000	0.330	0.0	0.000	0.495	0.09	Pass
12	0.001	0.153	0.0	0.001	0.230	0.26	Pass
13	0.000	0.210	0.0	0.001	0.315	0.16	Pass
14	0.000	0.131	0.0	0.000	0.197	0.14	Pass
15	0.000	0.150	0.0	0.000	0.225	0.10	Pass
16	0.000	0.115	0.0	0.000	0.173	0.25	Pass
17	0.000	0.132	0.0	0.000	0.199	0.19	Pass
18	0.000	0.102	0.0	0.000	0.153	0.10	Pass
19	0.000	0.118	0.0	0.000	0.178	0.14	Pass
20	0.000	0.092	0.0	0.000	0.138	0.16	Pass
21	0.000	0.107	0.0	0.000	0.161	0.21	Pass
22	0.000	0.084	0.0	0.000	0.125	0.19	Pass
23	0.000	0.098	0.0	0.000	0.147	0.14	Pass
24	0.000	0.077	0.0	0.000	0.115	0.14	Pass
25	0.000	0.090	0.0	0.000	0.135	0.14	Pass
26	0.000	0.071	0.0	0.000	0.106	0.18	Pass
27	0.000	0.083	0.0	0.000	0.125	0.14	Pass
28	0.000	0.066	0.0	0.000	0.099	0.24	Pass
29	0.000	0.078	0.0	0.000	0.116	0.21	Pass
30	0.000	0.061	0.0	0.000	0.092	0.22	Pass
31	0.000	0.073	0.0	0.000	0.109	0.18	Pass
32	0.000	0.058	0.0	0.000	0.086	0.28	Pass
33	0.000	0.068	0.0	0.000	0.102	0.20	Pass
34	0.000	0.054	0.0	0.000	0.081	0.21	Pass
35	0.000	0.064	0.0	0.000	0.096	0.15	Pass
36	0.000	0.051	0.0	0.000	0.077	0.19	Pass
37	0.000	0.061	0.0	0.000	0.091	0.16	Pass
38	0.000	0.048	0.0	0.000	0.073	0.16	Pass
39	0.000	0.058	0.0	0.000	0.087	0.21	Pass
40	0.000	0.046	0.0	0.000	0.069	0.19	Pass

TM-2005FJ

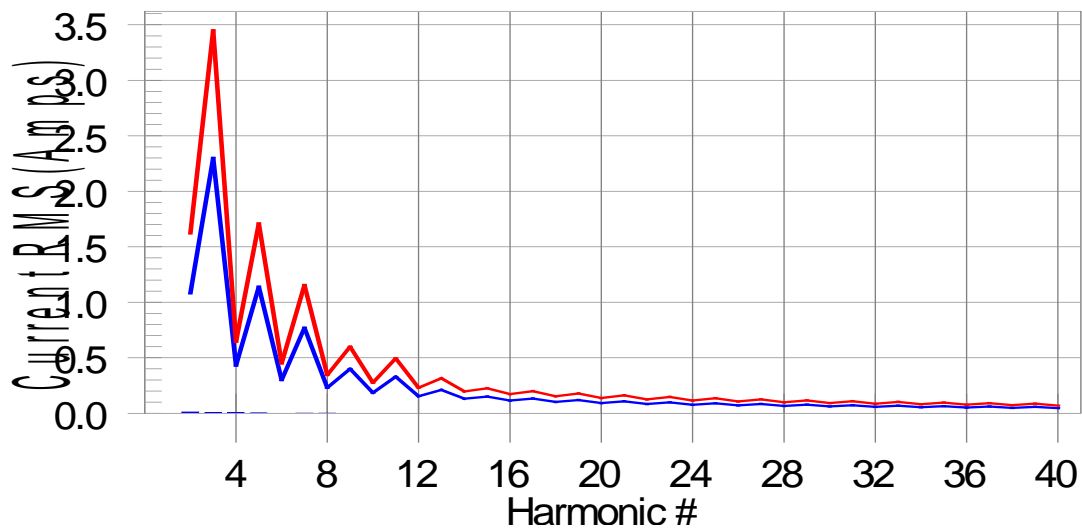
Harmonic

Test Result: Pass Source qualification: Normal
Current & voltage waveforms



Harmonics and Class A limit line

European Limits



Test result: Pass Worst harmonic was #3 with 0.00% of the limit.

Test Report No.: EFSH15030095-IE-01-E01-A3

Eurofins Product Testing Service (Shanghai) Co., Ltd.
 No.395 West Jiangchang Road, Jing'an District, Shanghai, 200436, P.R. China

Current Test Result Summary

THC(A): 0.00 I-THD(%): 0.00 POHC(A): 0.000 POHC Limit(A): 0.320

Highest parameter values during test:

V_RMS (Volts):	229.99	Frequency(Hz):	50.00
I_Peak (Amps):	4.305	I_RMS (Amps):	3.022
I_Fund (Amps):	3.015	Crest Factor:	1.425
Power (Watts):	693.1	Power Factor:	1.000

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.011	1.080	0.0	0.012	1.620	0.71	Pass
3	0.004	2.300	0.0	0.005	3.450	0.14	Pass
4	0.005	0.430	0.0	0.005	0.645	0.80	Pass
5	0.002	1.140	0.0	0.003	1.710	0.18	Pass
6	0.001	0.300	0.0	0.001	0.450	0.17	Pass
7	0.001	0.770	0.0	0.001	1.155	0.10	Pass
8	0.001	0.230	0.0	0.001	0.345	0.41	Pass
9	0.001	0.400	0.0	0.001	0.600	0.16	Pass
10	0.000	0.184	0.0	0.001	0.276	0.18	Pass
11	0.000	0.330	0.0	0.001	0.495	0.10	Pass
12	0.001	0.153	0.0	0.001	0.230	0.28	Pass
13	0.000	0.210	0.0	0.001	0.315	0.16	Pass
14	0.000	0.131	0.0	0.000	0.197	0.14	Pass
15	0.000	0.150	0.0	0.000	0.225	0.10	Pass
16	0.000	0.115	0.0	0.000	0.173	0.27	Pass
17	0.000	0.132	0.0	0.000	0.199	0.20	Pass
18	0.000	0.102	0.0	0.000	0.153	0.09	Pass
19	0.000	0.118	0.0	0.000	0.178	0.14	Pass
20	0.000	0.092	0.0	0.000	0.138	0.17	Pass
21	0.000	0.107	0.0	0.000	0.161	0.21	Pass
22	0.000	0.084	0.0	0.000	0.125	0.19	Pass
23	0.000	0.098	0.0	0.000	0.147	0.14	Pass
24	0.000	0.077	0.0	0.000	0.115	0.15	Pass
25	0.000	0.090	0.0	0.000	0.135	0.13	Pass
26	0.000	0.071	0.0	0.000	0.106	0.17	Pass
27	0.000	0.083	0.0	0.000	0.125	0.14	Pass
28	0.000	0.066	0.0	0.000	0.099	0.25	Pass
29	0.000	0.078	0.0	0.000	0.116	0.22	Pass
30	0.000	0.061	0.0	0.000	0.092	0.22	Pass
31	0.000	0.073	0.0	0.000	0.109	0.16	Pass
32	0.000	0.058	0.0	0.000	0.086	0.29	Pass
33	0.000	0.068	0.0	0.000	0.102	0.18	Pass
34	0.000	0.054	0.0	0.000	0.081	0.20	Pass
35	0.000	0.064	0.0	0.000	0.096	0.15	Pass
36	0.000	0.051	0.0	0.000	0.077	0.20	Pass
37	0.000	0.061	0.0	0.000	0.091	0.16	Pass
38	0.000	0.048	0.0	0.000	0.073	0.16	Pass
39	0.000	0.058	0.0	0.000	0.087	0.19	Pass
40	0.000	0.046	0.0	0.000	0.069	0.19	Pass

Test Report No.: EFSH15030095-IE-01-E01-A3

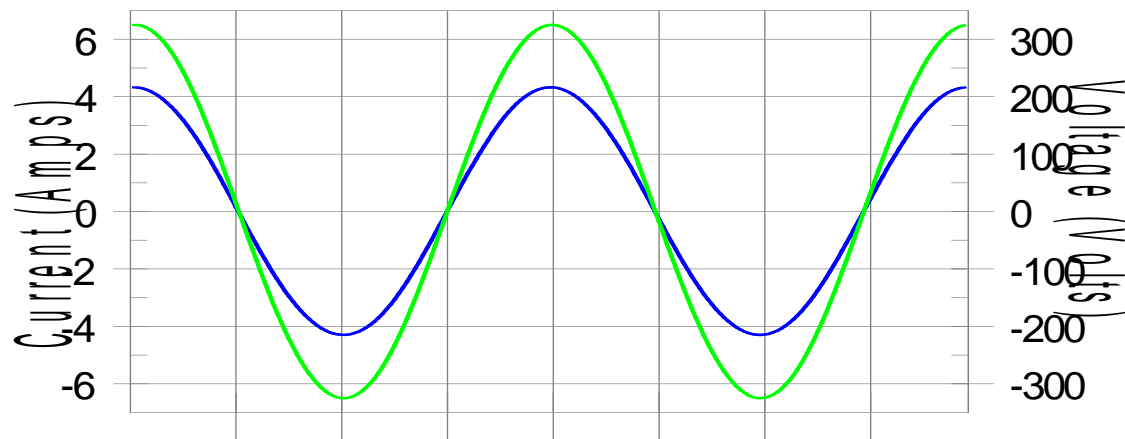
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TM-2005JT

Harmonic

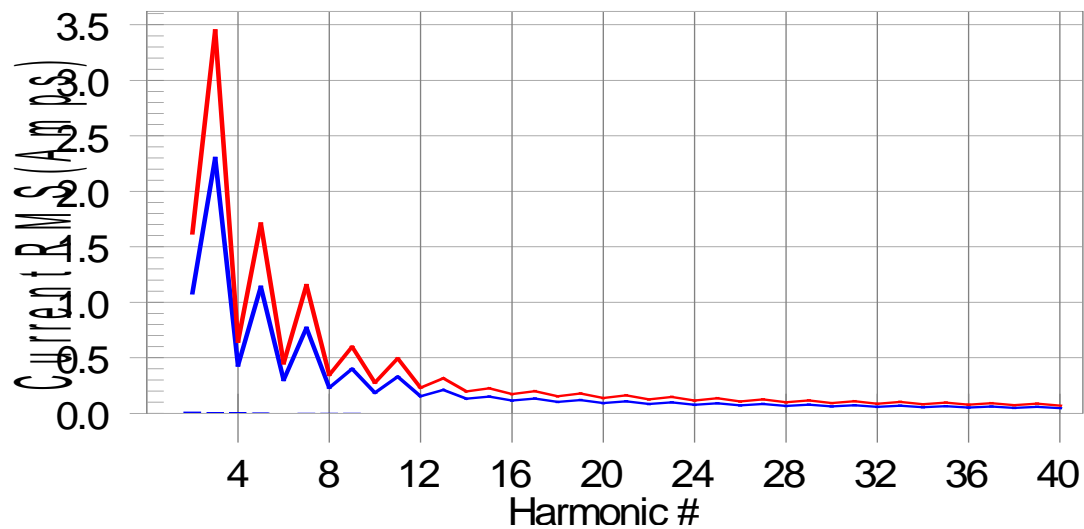
Test Result: Pass Source qualification: Normal

Current & voltage waveforms



Harmonics and Class A limit line

European Limits



Test result: Pass Worst harmonic was #3 with 0.00% of the limit.

Test Report No.: EFSH15030095-IE-01-E01-A3

Eurofins Product Testing Service (Shanghai) Co., Ltd.
No.395 West Jiangchang Road, Jing'an District, Shanghai, 200436, P.R. China

Current Test Result Summary

Test Result: Pass Source qualification: Normal
 THC(A): 0.00 I-THD(%): 0.00 POHC(A): 0.000 POHC Limit(A): 0.320
 Highest parameter values during test:

V_RMS (Volts):	230.01	Frequency(Hz):	50.00
I_Peak (Amps):	4.332	I_RMS (Amps):	3.043
I_Fund (Amps):	3.030	Crest Factor:	1.424
Power (Watts):	696.6	Power Factor:	1.000

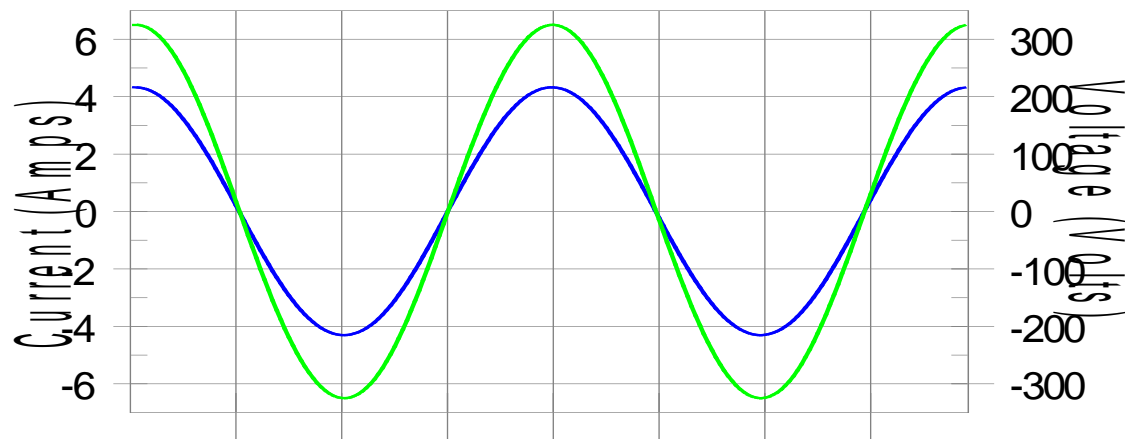
Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.012	1.080	0.0	0.012	1.620	0.77	Pass
3	0.004	2.300	0.0	0.005	3.450	0.13	Pass
4	0.005	0.430	0.0	0.005	0.645	0.80	Pass
5	0.002	1.140	0.0	0.003	1.710	0.17	Pass
6	0.001	0.300	0.0	0.001	0.450	0.19	Pass
7	0.001	0.770	0.0	0.001	1.155	0.11	Pass
8	0.001	0.230	0.0	0.001	0.345	0.41	Pass
9	0.001	0.400	0.0	0.001	0.600	0.18	Pass
10	0.000	0.184	0.0	0.000	0.276	0.16	Pass
11	0.001	0.330	0.0	0.001	0.495	0.13	Pass
12	0.001	0.153	0.0	0.001	0.230	0.31	Pass
13	0.000	0.210	0.0	0.001	0.315	0.16	Pass
14	0.000	0.131	0.0	0.000	0.197	0.13	Pass
15	0.000	0.150	0.0	0.000	0.225	0.12	Pass
16	0.000	0.115	0.0	0.001	0.173	0.30	Pass
17	0.000	0.132	0.0	0.000	0.199	0.20	Pass
18	0.000	0.102	0.0	0.000	0.153	0.17	Pass
19	0.000	0.118	0.0	0.000	0.178	0.13	Pass
20	0.000	0.092	0.0	0.000	0.138	0.19	Pass
21	0.000	0.107	0.0	0.000	0.161	0.21	Pass
22	0.000	0.084	0.0	0.000	0.125	0.18	Pass
23	0.000	0.098	0.0	0.000	0.147	0.19	Pass
24	0.000	0.077	0.0	0.000	0.115	0.19	Pass
25	0.000	0.090	0.0	0.000	0.135	0.16	Pass
26	0.000	0.071	0.0	0.000	0.106	0.16	Pass
27	0.000	0.083	0.0	0.000	0.125	0.12	Pass
28	0.000	0.066	0.0	0.000	0.099	0.28	Pass
29	0.000	0.078	0.0	0.000	0.116	0.22	Pass
30	0.000	0.061	0.0	0.000	0.092	0.21	Pass
31	0.000	0.073	0.0	0.000	0.109	0.17	Pass
32	0.000	0.058	0.0	0.000	0.086	0.29	Pass
33	0.000	0.068	0.0	0.000	0.102	0.21	Pass
34	0.000	0.054	0.0	0.000	0.081	0.20	Pass
35	0.000	0.064	0.0	0.000	0.096	0.21	Pass
36	0.000	0.051	0.0	0.000	0.077	0.23	Pass
37	0.000	0.061	0.0	0.000	0.091	0.15	Pass
38	0.000	0.048	0.0	0.000	0.073	0.18	Pass
39	0.000	0.058	0.0	0.000	0.087	0.18	Pass
40	0.000	0.046	0.0	0.000	0.069	0.22	Pass

TM-2006FJ

Harmonic

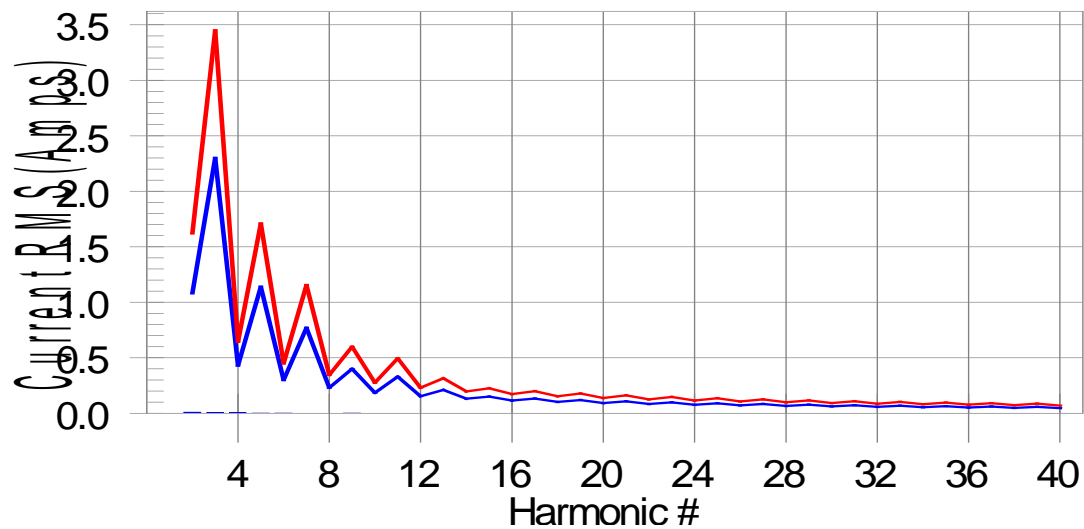
Test Result: Pass Source qualification: Normal

Current & voltage waveforms



Harmonics and Class A limit line

European Limits



Test result: Pass Worst harmonic was #3 with 0.00% of the limit.

Test Report No.: EFSH15030095-IE-01-E01-A3

Eurofins Product Testing Service (Shanghai) Co., Ltd.
No.395 West Jiangchang Road, Jing'an District, Shanghai, 200436, P.R. China

Current Test Result Summary

Test Result: Pass Source qualification: Normal
 THC(A): 0.00 I-THD(%): 0.00 POHC(A): 0.000 POHC Limit(A): 0.320

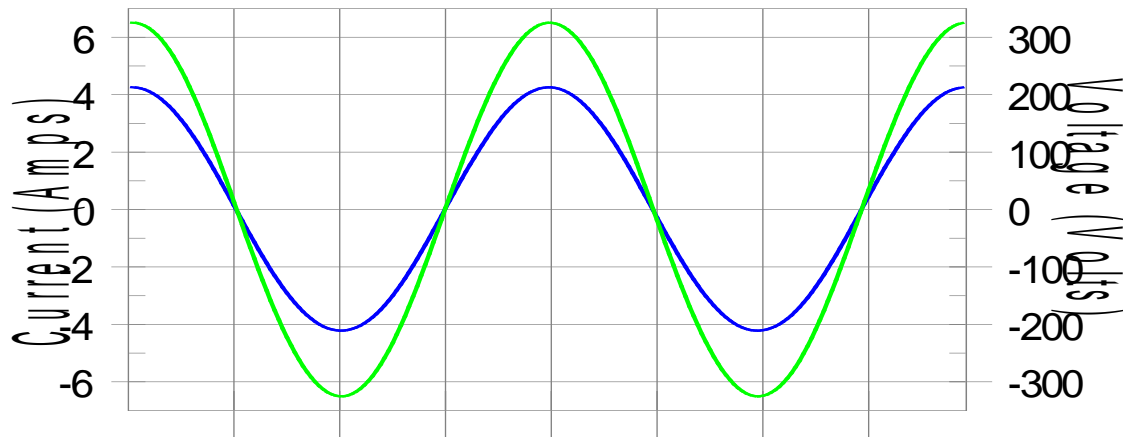
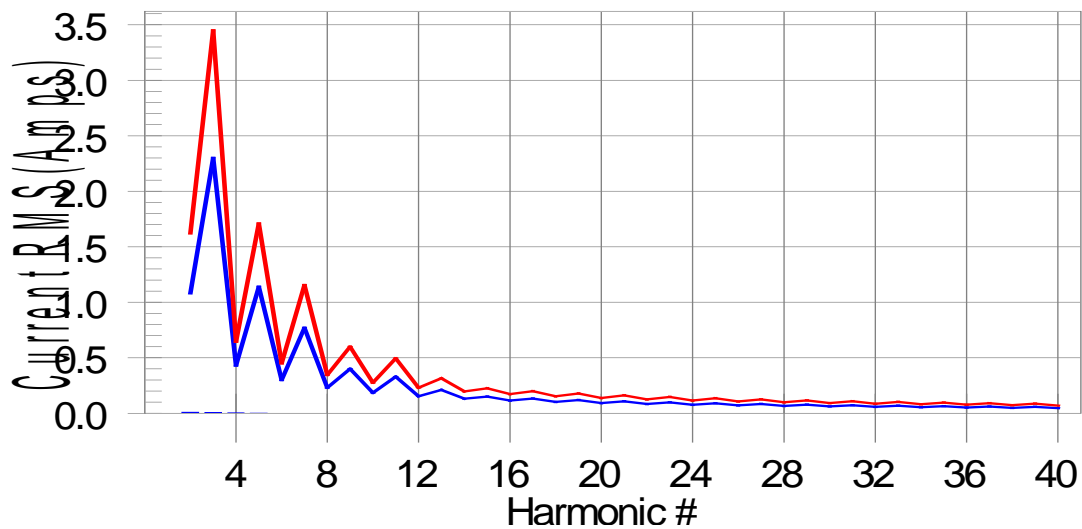
Highest parameter values during test:

V_RMS (Volts):	230.01	Frequency(Hz):	50.00
I_Peak (Amps):	4.334	I_RMS (Amps):	3.048
I_Fund (Amps):	3.032	Crest Factor:	1.423
Power (Watts):	696.8	Power Factor:	1.000

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.009	1.080	0.0	0.010	1.620	0.61	Pass
3	0.005	2.300	0.0	0.005	3.450	0.15	Pass
4	0.002	0.430	0.0	0.003	0.645	0.50	Pass
5	0.001	1.140	0.0	0.001	1.710	0.08	Pass
6	0.001	0.300	0.0	0.001	0.450	0.24	Pass
7	0.001	0.770	0.0	0.001	1.155	0.09	Pass
8	0.001	0.230	0.0	0.001	0.345	0.22	Pass
9	0.001	0.400	0.0	0.001	0.600	0.19	Pass
10	0.000	0.184	0.0	0.001	0.276	0.21	Pass
11	0.000	0.330	0.0	0.001	0.495	0.11	Pass
12	0.000	0.153	0.0	0.000	0.230	0.14	Pass
13	0.000	0.210	0.0	0.000	0.315	0.11	Pass
14	0.000	0.131	0.0	0.000	0.197	0.21	Pass
15	0.000	0.150	0.0	0.000	0.225	0.10	Pass
16	0.000	0.115	0.0	0.000	0.173	0.19	Pass
17	0.000	0.132	0.0	0.000	0.199	0.12	Pass
18	0.000	0.102	0.0	0.000	0.153	0.23	Pass
19	0.000	0.118	0.0	0.000	0.178	0.12	Pass
20	0.000	0.092	0.0	0.000	0.138	0.26	Pass
21	0.000	0.107	0.0	0.000	0.161	0.16	Pass
22	0.000	0.084	0.0	0.000	0.125	0.13	Pass
23	0.000	0.098	0.0	0.000	0.147	0.13	Pass
24	0.000	0.077	0.0	0.000	0.115	0.20	Pass
25	0.000	0.090	0.0	0.000	0.135	0.19	Pass
26	0.000	0.071	0.0	0.000	0.106	0.14	Pass
27	0.000	0.083	0.0	0.000	0.125	0.16	Pass
28	0.000	0.066	0.0	0.000	0.099	0.28	Pass
29	0.000	0.078	0.0	0.000	0.116	0.15	Pass
30	0.000	0.061	0.0	0.000	0.092	0.21	Pass
31	0.000	0.073	0.0	0.000	0.109	0.14	Pass
32	0.000	0.058	0.0	0.000	0.086	0.27	Pass
33	0.000	0.068	0.0	0.000	0.102	0.16	Pass
34	0.000	0.054	0.0	0.000	0.081	0.18	Pass
35	0.000	0.064	0.0	0.000	0.096	0.19	Pass
36	0.000	0.051	0.0	0.000	0.077	0.15	Pass
37	0.000	0.061	0.0	0.000	0.091	0.16	Pass
38	0.000	0.048	0.0	0.000	0.073	0.17	Pass
39	0.000	0.058	0.0	0.000	0.087	0.22	Pass
40	0.000	0.046	0.0	0.000	0.069	0.23	Pass

TM-2006JT
Harmonic

Test Result: Pass **Source qualification: Normal**
Current & voltage waveforms


Harmonics and Class A limit line
European Limits


Test result: Pass **Worst harmonic was #3 with 0.00% of the limit.**

Test Report No.: EFSH15030095-IE-01-E01-A3

Eurofins Product Testing Service (Shanghai) Co., Ltd.
 No.395 West Jiangchang Road, Jing'an District, Shanghai, 200436, P.R. China

Current Test Result Summary

Test Result: Pass Source qualification: Normal
 THC(A): 0.00 I-THD(%): 0.00 POHC(A): 0.000 POHC Limit(A): 0.320

Highest parameter values during test:

V_RMS (Volts):	230.01	Frequency(Hz):	50.00
I_Peak (Amps):	4.258	I_RMS (Amps):	2.992
I_Fund (Amps):	3.021	Crest Factor:	1.423
Power (Watts):	688.1	Power Factor:	1.000

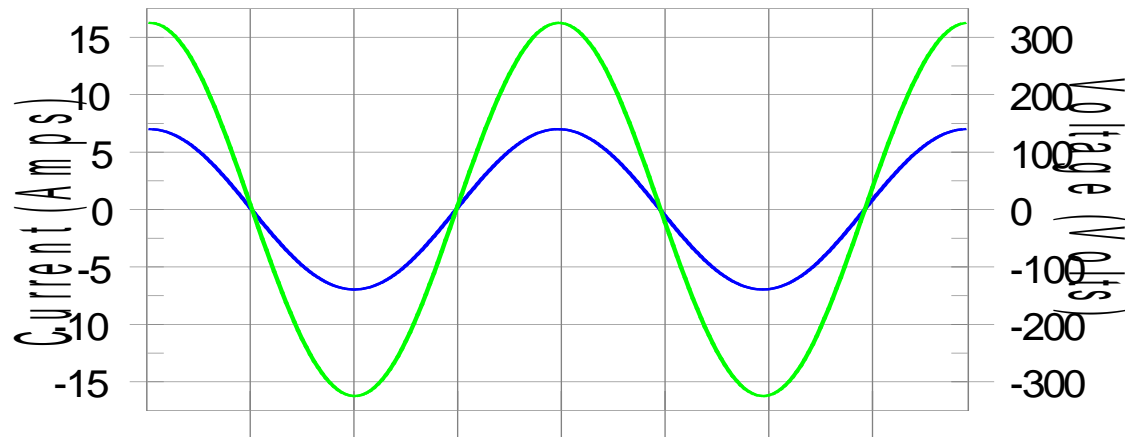
Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.009	1.080	0.0	0.010	1.620	0.62	Pass
3	0.005	2.300	0.0	0.005	3.450	0.15	Pass
4	0.002	0.430	0.0	0.003	0.645	0.47	Pass
5	0.001	1.140	0.0	0.001	1.710	0.08	Pass
6	0.001	0.300	0.0	0.001	0.450	0.21	Pass
7	0.001	0.770	0.0	0.001	1.155	0.09	Pass
8	0.001	0.230	0.0	0.001	0.345	0.21	Pass
9	0.001	0.400	0.0	0.001	0.600	0.17	Pass
10	0.000	0.184	0.0	0.000	0.276	0.18	Pass
11	0.000	0.330	0.0	0.000	0.495	0.10	Pass
12	0.000	0.153	0.0	0.000	0.230	0.13	Pass
13	0.000	0.210	0.0	0.000	0.315	0.09	Pass
14	0.000	0.131	0.0	0.000	0.197	0.18	Pass
15	0.000	0.150	0.0	0.000	0.225	0.09	Pass
16	0.000	0.115	0.0	0.000	0.173	0.16	Pass
17	0.000	0.132	0.0	0.000	0.199	0.10	Pass
18	0.000	0.102	0.0	0.000	0.153	0.22	Pass
19	0.000	0.118	0.0	0.000	0.178	0.10	Pass
20	0.000	0.092	0.0	0.000	0.138	0.23	Pass
21	0.000	0.107	0.0	0.000	0.161	0.15	Pass
22	0.000	0.084	0.0	0.000	0.125	0.12	Pass
23	0.000	0.098	0.0	0.000	0.147	0.13	Pass
24	0.000	0.077	0.0	0.000	0.115	0.17	Pass
25	0.000	0.090	0.0	0.000	0.135	0.16	Pass
26	0.000	0.071	0.0	0.000	0.106	0.14	Pass
27	0.000	0.083	0.0	0.000	0.125	0.13	Pass
28	0.000	0.066	0.0	0.000	0.099	0.26	Pass
29	0.000	0.078	0.0	0.000	0.116	0.15	Pass
30	0.000	0.061	0.0	0.000	0.092	0.20	Pass
31	0.000	0.073	0.0	0.000	0.109	0.12	Pass
32	0.000	0.058	0.0	0.000	0.086	0.28	Pass
33	0.000	0.068	0.0	0.000	0.102	0.16	Pass
34	0.000	0.054	0.0	0.000	0.081	0.17	Pass
35	0.000	0.064	0.0	0.000	0.096	0.18	Pass
36	0.000	0.051	0.0	0.000	0.077	0.15	Pass
37	0.000	0.061	0.0	0.000	0.091	0.15	Pass
38	0.000	0.048	0.0	0.000	0.073	0.15	Pass
39	0.000	0.058	0.0	0.000	0.087	0.19	Pass
40	0.000	0.046	0.0	0.000	0.069	0.22	Pass

TM-2009FJ

Harmonic

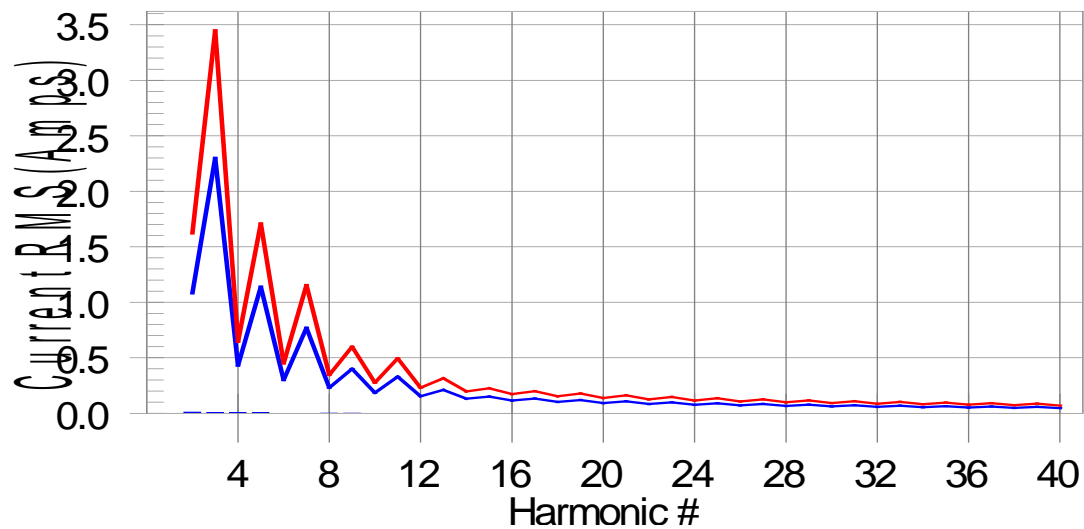
Test Result: Pass Source qualification: Normal

Current & voltage waveforms



Harmonics and Class A limit line

European Limits



Test result: Pass Worst harmonic was #3 with 0.00% of the limit.

Test Report No.: EFSH15030095-IE-01-E01-A3

Eurofins Product Testing Service (Shanghai) Co., Ltd.
No.395 West Jiangchang Road, Jing'an District, Shanghai, 200436, P.R. China

Current Test Result Summary

Test Result: Pass Source qualification: Normal
 THC(A): 0.00 I-THD(%): 0.00 POHC(A): 0.000 POHC Limit(A): 0.320
 Highest parameter values during test:

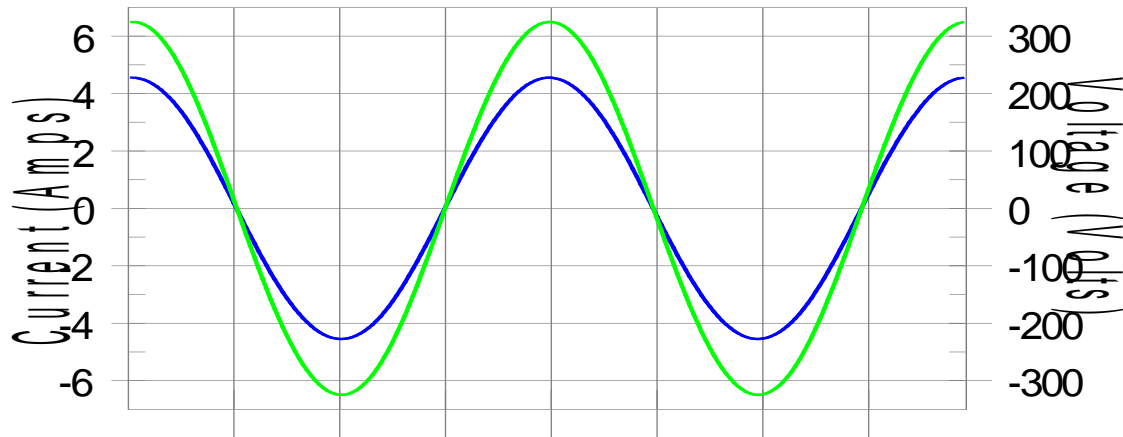
V_RMS (Volts):	229.99	Frequency(Hz):	50.00
I_Peak (Amps):	6.996	I_RMS (Amps):	4.933
I_Fund (Amps):	4.918	Crest Factor:	1.420
Power (Watts):	1130.7	Power Factor:	1.000

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.010	1.080	0.0	0.010	1.620	0.64	Pass
3	0.007	2.300	0.0	0.007	3.450	0.21	Pass
4	0.003	0.430	0.0	0.004	0.645	0.65	Pass
5	0.003	1.140	0.0	0.003	1.710	0.19	Pass
6	0.001	0.300	0.0	0.001	0.450	0.18	Pass
7	0.001	0.770	0.0	0.001	1.155	0.06	Pass
8	0.001	0.230	0.0	0.001	0.345	0.37	Pass
9	0.001	0.400	0.0	0.001	0.600	0.22	Pass
10	0.000	0.184	0.0	0.000	0.276	0.17	Pass
11	0.001	0.330	0.0	0.001	0.495	0.17	Pass
12	0.001	0.153	0.0	0.001	0.230	0.27	Pass
13	0.000	0.210	0.0	0.000	0.315	0.11	Pass
14	0.000	0.131	0.0	0.000	0.197	0.20	Pass
15	0.000	0.150	0.0	0.000	0.225	0.10	Pass
16	0.001	0.115	0.0	0.001	0.173	0.33	Pass
17	0.000	0.132	0.0	0.000	0.199	0.17	Pass
18	0.000	0.102	0.0	0.000	0.153	0.30	Pass
19	0.000	0.118	0.0	0.000	0.178	0.13	Pass
20	0.000	0.092	0.0	0.000	0.138	0.23	Pass
21	0.000	0.107	0.0	0.000	0.161	0.23	Pass
22	0.000	0.084	0.0	0.000	0.125	0.16	Pass
23	0.000	0.098	0.0	0.000	0.147	0.23	Pass
24	0.000	0.077	0.0	0.000	0.115	0.19	Pass
25	0.000	0.090	0.0	0.000	0.135	0.20	Pass
26	0.000	0.071	0.0	0.000	0.106	0.19	Pass
27	0.000	0.083	0.0	0.000	0.125	0.16	Pass
28	0.000	0.066	0.0	0.000	0.099	0.28	Pass
29	0.000	0.078	0.0	0.000	0.116	0.23	Pass
30	0.000	0.061	0.0	0.000	0.092	0.26	Pass
31	0.000	0.073	0.0	0.000	0.109	0.19	Pass
32	0.000	0.058	0.0	0.000	0.086	0.28	Pass
33	0.000	0.068	0.0	0.000	0.102	0.20	Pass
34	0.000	0.054	0.0	0.000	0.081	0.21	Pass
35	0.000	0.064	0.0	0.000	0.096	0.23	Pass
36	0.000	0.051	0.0	0.000	0.077	0.18	Pass
37	0.000	0.061	0.0	0.000	0.091	0.17	Pass
38	0.000	0.048	0.0	0.000	0.073	0.20	Pass
39	0.000	0.058	0.0	0.000	0.087	0.21	Pass
40	0.000	0.046	0.0	0.000	0.069	0.26	Pass

TM-2015T
Harmonic

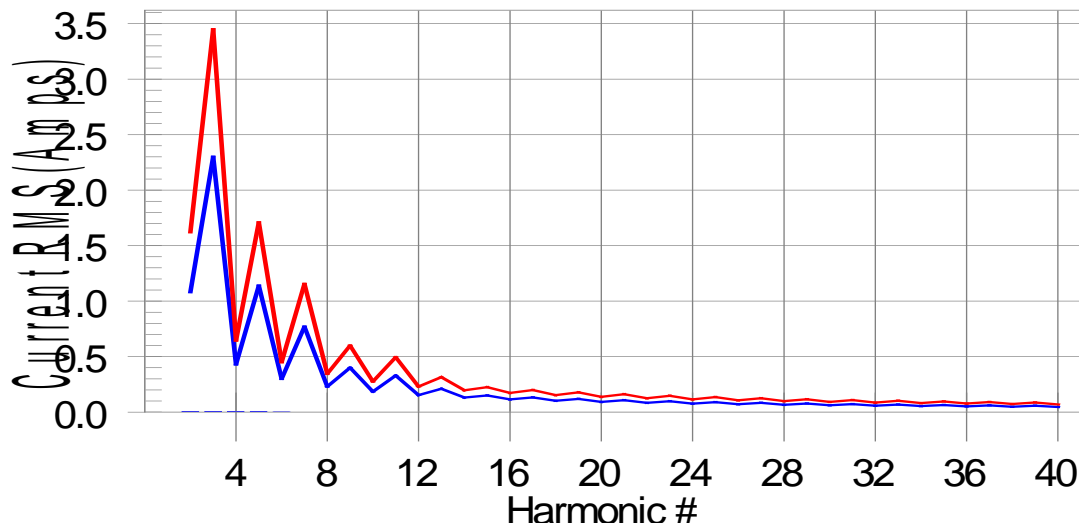
Test Result: Pass **Source qualification: Normal**

Current & voltage waveforms



Harmonics and Class A limit line

European Limits



Test result: Pass **Worst harmonic was #0 with 0.00% of the limit.**

Current Test Result Summary

Test Result: Pass Source qualification: Normal
 THC(A): 0.00 I-THD(%): 0.00 POHC(A): 0.000 POHC Limit(A): 0.251

Highest parameter values during test:

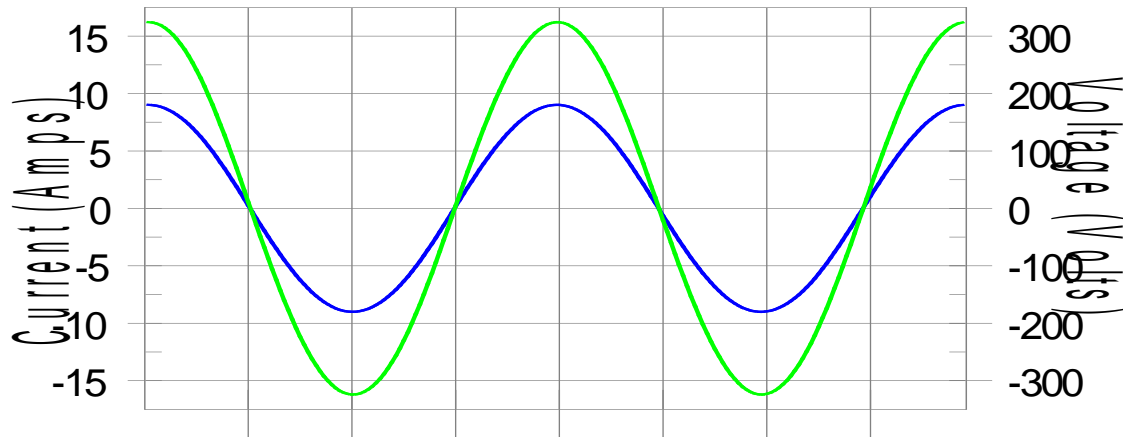
V_RMS (Volts):	229.65	Frequency(Hz):	50.00
I_Peak (Amps):	4.560	I_RMS (Amps):	3.215
I_Fund (Amps):	3.191	Crest Factor:	1.419
Power (Watts):	732.7	Power Factor:	1.000

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.003	1.080	0.0	0.004	1.620	0.26	Pass
3	0.006	2.300	0.0	0.006	3.450	0.17	Pass
4	0.002	0.430	0.0	0.003	0.645	0.41	Pass
5	0.002	1.140	0.0	0.002	1.710	0.14	Pass
6	0.001	0.300	0.0	0.001	0.450	0.27	Pass
7	0.001	0.770	0.0	0.001	1.155	0.07	Pass
8	0.000	0.230	0.0	0.000	0.345	0.11	Pass
9	0.001	0.400	0.0	0.001	0.600	0.11	Pass
10	0.000	0.184	0.0	0.001	0.276	0.20	Pass
11	0.001	0.330	0.0	0.001	0.495	0.12	Pass
12	0.000	0.153	0.0	0.000	0.230	0.13	Pass
13	0.000	0.210	0.0	0.000	0.315	0.06	Pass
14	0.000	0.131	0.0	0.000	0.197	0.10	Pass
15	0.000	0.150	0.0	0.000	0.225	0.10	Pass
16	0.000	0.115	0.0	0.000	0.173	0.14	Pass
17	0.000	0.132	0.0	0.000	0.199	0.06	Pass
18	0.000	0.102	0.0	0.000	0.153	0.16	Pass
19	0.000	0.118	0.0	0.000	0.178	0.03	Pass
20	0.000	0.092	0.0	0.000	0.138	0.14	Pass
21	0.000	0.107	0.0	0.000	0.161	0.07	Pass
22	0.000	0.084	0.0	0.000	0.125	0.05	Pass
23	0.000	0.098	0.0	0.000	0.147	0.08	Pass
24	0.000	0.077	0.0	0.000	0.115	0.04	Pass
25	0.000	0.090	0.0	0.000	0.135	0.05	Pass
26	0.000	0.071	0.0	0.000	0.106	0.05	Pass
27	0.000	0.083	0.0	0.000	0.125	0.06	Pass
28	0.000	0.066	0.0	0.000	0.099	0.11	Pass
29	0.000	0.078	0.0	0.000	0.116	0.08	Pass
30	0.000	0.061	0.0	0.000	0.092	0.11	Pass
31	0.000	0.073	0.0	0.000	0.109	0.07	Pass
32	0.000	0.058	0.0	0.000	0.086	0.15	Pass
33	0.000	0.068	0.0	0.000	0.102	0.03	Pass
34	0.000	0.054	0.0	0.000	0.081	0.06	Pass
35	0.000	0.064	0.0	0.000	0.096	0.05	Pass
36	0.000	0.051	0.0	0.000	0.077	0.04	Pass
37	0.000	0.061	0.0	0.000	0.091	0.07	Pass
38	0.000	0.048	0.0	0.000	0.073	0.06	Pass
39	0.000	0.058	0.0	0.000	0.087	0.10	Pass
40	0.000	0.046	0.0	0.000	0.069	0.11	Pass

TM-2016T Harmonic

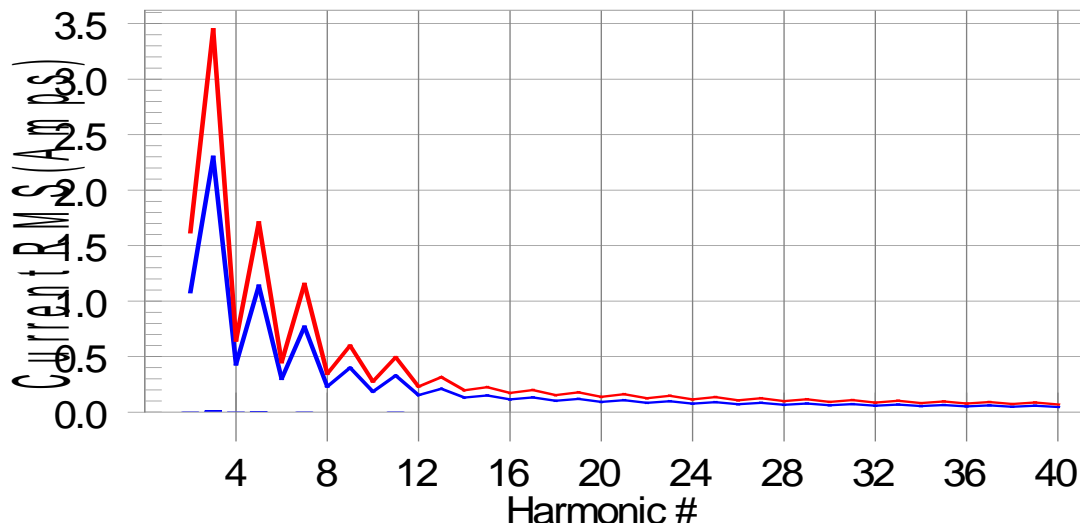
Test Result: Pass Source qualification: Normal

Current & voltage waveforms



Harmonics and Class A limit line

European Limits



Test result: Pass Worst harmonic was #0 with 0.00% of the limit.

Current Test Result Summary

Test Result: Pass Source qualification: Normal
 THC(A): 0.00 I-THD(%): 0.00 POHC(A): 0.000 POHC Limit(A): 0.251

Highest parameter values during test:

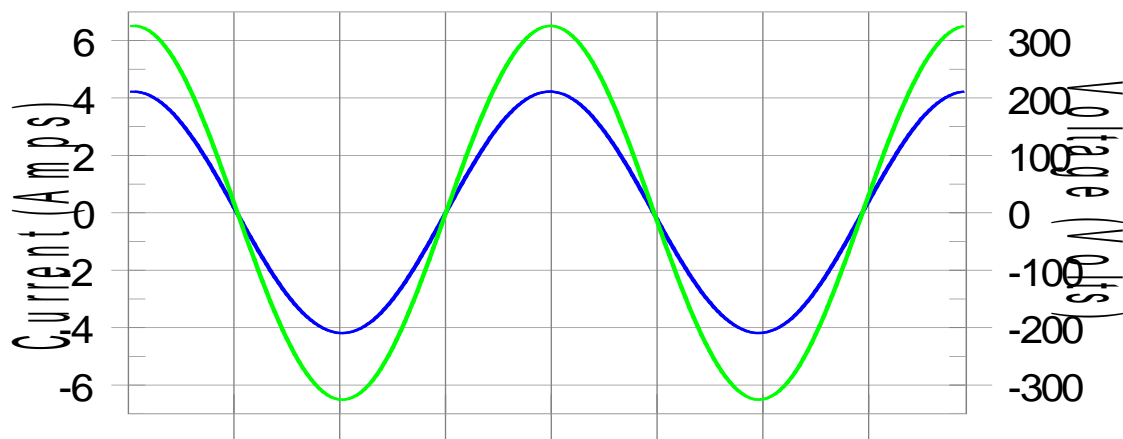
V_RMS (Volts):	229.37	Frequency(Hz):	50.00
I_Peak (Amps):	9.015	I_RMS (Amps):	6.367
I_Fund (Amps):	6.349	Crest Factor:	1.416
Power (Watts):	1455.6	Power Factor:	1.000

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.001	1.080	0.0	0.001	1.620	0.08	Pass
3	0.010	2.300	0.0	0.011	3.450	0.31	Pass
4	0.001	0.430	0.0	0.002	0.645	0.25	Pass
5	0.005	1.140	0.0	0.006	1.710	0.32	Pass
6	0.000	0.300	0.0	0.001	0.450	0.13	Pass
7	0.001	0.770	0.0	0.002	1.155	0.14	Pass
8	0.000	0.230	0.0	0.000	0.345	0.12	Pass
9	0.000	0.400	0.0	0.001	0.600	0.11	Pass
10	0.000	0.184	0.0	0.001	0.276	0.19	Pass
11	0.001	0.330	0.0	0.001	0.495	0.29	Pass
12	0.000	0.153	0.0	0.000	0.230	0.14	Pass
13	0.000	0.210	0.0	0.000	0.315	0.15	Pass
14	0.000	0.131	0.0	0.000	0.197	0.18	Pass
15	0.000	0.150	0.0	0.000	0.225	0.20	Pass
16	0.000	0.115	0.0	0.000	0.173	0.19	Pass
17	0.000	0.132	0.0	0.000	0.199	0.11	Pass
18	0.000	0.102	0.0	0.000	0.153	0.27	Pass
19	0.000	0.118	0.0	0.000	0.178	0.10	Pass
20	0.000	0.092	0.0	0.000	0.138	0.27	Pass
21	0.000	0.107	0.0	0.000	0.161	0.11	Pass
22	0.000	0.084	0.0	0.000	0.125	0.16	Pass
23	0.000	0.098	0.0	0.000	0.147	0.17	Pass
24	0.000	0.077	0.0	0.000	0.115	0.07	Pass
25	0.000	0.090	0.0	0.000	0.135	0.09	Pass
26	0.000	0.071	0.0	0.000	0.106	0.13	Pass
27	0.000	0.083	0.0	0.000	0.125	0.10	Pass
28	0.000	0.066	0.0	0.000	0.099	0.14	Pass
29	0.000	0.078	0.0	0.000	0.116	0.12	Pass
30	0.000	0.061	0.0	0.000	0.092	0.21	Pass
31	0.000	0.073	0.0	0.000	0.109	0.14	Pass
32	0.000	0.058	0.0	0.000	0.086	0.17	Pass
33	0.000	0.068	0.0	0.000	0.102	0.07	Pass
34	0.000	0.054	0.0	0.000	0.081	0.07	Pass
35	0.000	0.064	0.0	0.000	0.096	0.08	Pass
36	0.000	0.051	0.0	0.000	0.077	0.08	Pass
37	0.000	0.061	0.0	0.000	0.091	0.13	Pass
38	0.000	0.048	0.0	0.000	0.073	0.06	Pass
39	0.000	0.058	0.0	0.000	0.087	0.12	Pass
40	0.000	0.046	0.0	0.000	0.069	0.14	Pass

TM-2019
Harmonic

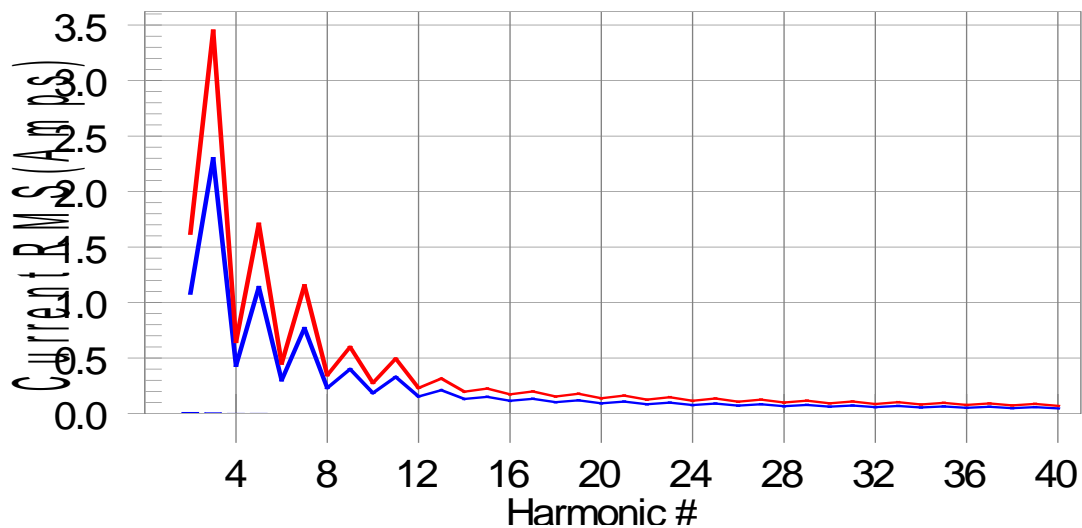
Test Result: Pass **Source qualification: Normal**

Current & voltage waveforms



Harmonics and Class A limit line

European Limits



Test result: Pass **Worst harmonic was #0 with 0.00% of the limit.**

Current Test Result Summary (Run time)

Test Result: Pass Source qualification: Normal
 THC(A): 0.00 I-THD(%): 0.00 POHC(A): 0.000 POHC Limit(A): 0.251

Highest parameter values during test:

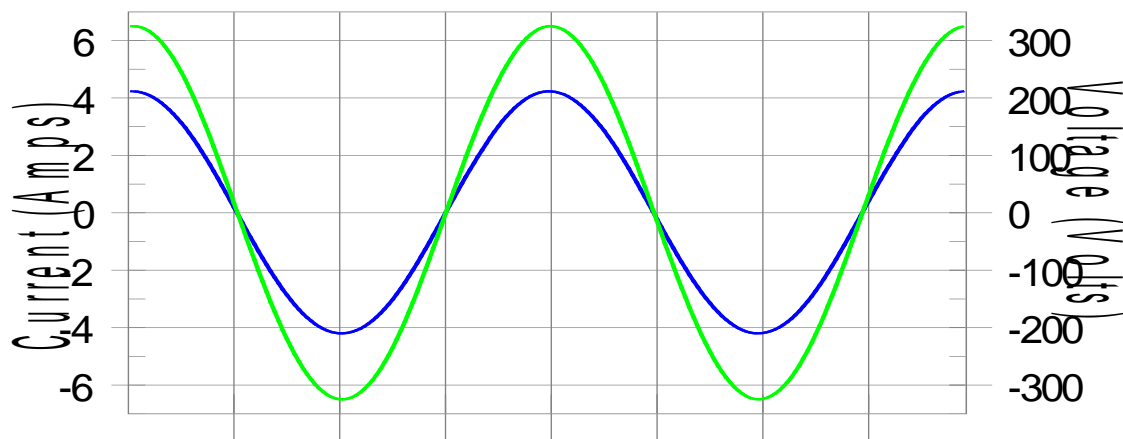
V_RMS (Volts):	230.12	Frequency(Hz):	50.00
I_Peak (Amps):	4.224	I_RMS (Amps):	2.969
I_Fund (Amps):	2.968	Crest Factor:	1.425
Power (Watts):	682.9	Power Factor:	1.000

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.005	1.080	0.0	0.011	1.620	0.65	Pass
3	0.006	2.300	0.0	0.007	3.450	0.22	Pass
4	0.002	0.430	0.0	0.003	0.645	0.39	Pass
5	0.002	1.140	0.0	0.003	1.710	0.17	Pass
6	0.001	0.300	0.0	0.001	0.450	0.25	Pass
7	0.001	0.770	0.0	0.001	1.155	0.10	Pass
8	0.000	0.230	0.0	0.000	0.345	0.11	Pass
9	0.001	0.400	0.0	0.001	0.600	0.19	Pass
10	0.000	0.184	0.0	0.001	0.276	0.20	Pass
11	0.001	0.330	0.0	0.001	0.495	0.14	Pass
12	0.000	0.153	0.0	0.000	0.230	0.11	Pass
13	0.000	0.210	0.0	0.000	0.315	0.11	Pass
14	0.000	0.131	0.0	0.000	0.197	0.15	Pass
15	0.000	0.150	0.0	0.000	0.225	0.08	Pass
16	0.000	0.115	0.0	0.000	0.173	0.16	Pass
17	0.000	0.132	0.0	0.000	0.199	0.08	Pass
18	0.000	0.102	0.0	0.000	0.153	0.14	Pass
19	0.000	0.118	0.0	0.000	0.178	0.08	Pass
20	0.000	0.092	0.0	0.000	0.138	0.21	Pass
21	0.000	0.107	0.0	0.000	0.161	0.09	Pass
22	0.000	0.084	0.0	0.000	0.125	0.08	Pass
23	0.000	0.098	0.0	0.000	0.147	0.04	Pass
24	0.000	0.077	0.0	0.000	0.115	0.09	Pass
25	0.000	0.090	0.0	0.000	0.135	0.06	Pass
26	0.000	0.071	0.0	0.000	0.106	0.07	Pass
27	0.000	0.083	0.0	0.000	0.125	0.09	Pass
28	0.000	0.066	0.0	0.000	0.099	0.14	Pass
29	0.000	0.078	0.0	0.000	0.116	0.09	Pass
30	0.000	0.061	0.0	0.000	0.092	0.12	Pass
31	0.000	0.073	0.0	0.000	0.109	0.08	Pass
32	0.000	0.058	0.0	0.000	0.086	0.14	Pass
33	0.000	0.068	0.0	0.000	0.102	0.06	Pass
34	0.000	0.054	0.0	0.000	0.081	0.08	Pass
35	0.000	0.064	0.0	0.000	0.096	0.07	Pass
36	0.000	0.051	0.0	0.000	0.077	0.07	Pass
37	0.000	0.061	0.0	0.000	0.091	0.08	Pass
38	0.000	0.048	0.0	0.000	0.073	0.07	Pass
39	0.000	0.058	0.0	0.000	0.087	0.09	Pass
40	0.000	0.046	0.0	0.000	0.069	0.14	Pass

TM-2020T
Harmonic

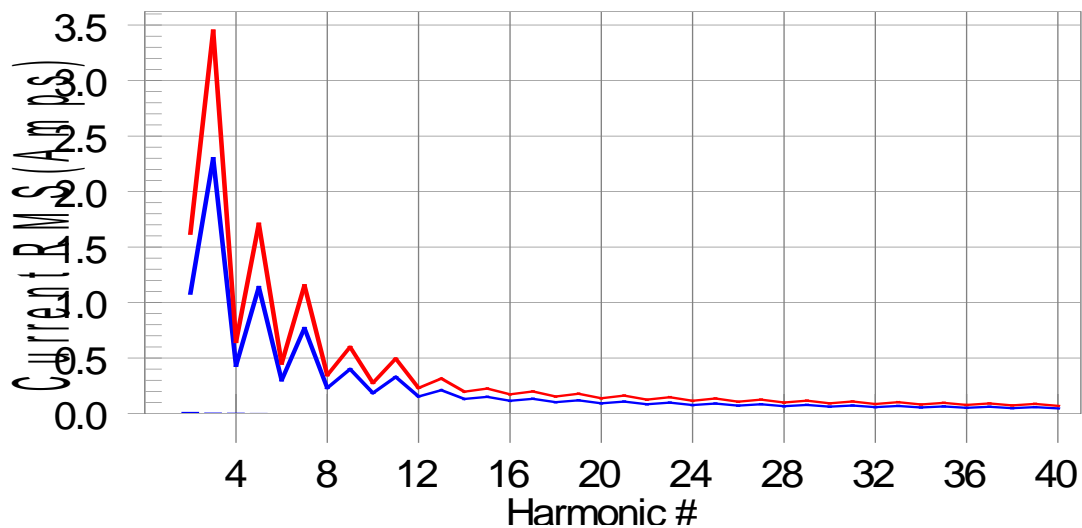
Test Result: Pass **Source qualification: Normal**

Current & voltage waveforms



Harmonics and Class A limit line

European Limits



Test result: Pass **Worst harmonic was #0 with 0.00% of the limit.**

Current Test Result Summary (Run time)

Test Result: Pass Source qualification: Normal
 THC(A): 0.00 I-THD(%): 0.00 POHC(A): 0.000 POHC Limit(A): 0.251

Highest parameter values during test:

V_RMS (Volts):	229.96	Frequency(Hz):	50.00
I_Peak (Amps):	4.238	I_RMS (Amps):	2.977
I_Fund (Amps):	2.967	Crest Factor:	1.425
Power (Watts):	682.0	Power Factor:	1.000

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.012	1.080	0.0	0.012	1.620	0.75	Pass
3	0.004	2.300	0.0	0.005	3.450	0.15	Pass
4	0.004	0.430	0.0	0.005	0.645	0.76	Pass
5	0.002	1.140	0.0	0.003	1.710	0.18	Pass
6	0.000	0.300	0.0	0.001	0.450	0.17	Pass
7	0.001	0.770	0.0	0.001	1.155	0.13	Pass
8	0.001	0.230	0.0	0.001	0.345	0.36	Pass
9	0.001	0.400	0.0	0.001	0.600	0.16	Pass
10	0.000	0.184	0.0	0.000	0.276	0.09	Pass
11	0.001	0.330	0.0	0.001	0.495	0.16	Pass
12	0.001	0.153	0.0	0.001	0.230	0.26	Pass
13	0.000	0.210	0.0	0.000	0.315	0.12	Pass
14	0.000	0.131	0.0	0.000	0.197	0.11	Pass
15	0.000	0.150	0.0	0.000	0.225	0.09	Pass
16	0.000	0.115	0.0	0.000	0.173	0.23	Pass
17	0.000	0.132	0.0	0.000	0.199	0.11	Pass
18	0.000	0.102	0.0	0.000	0.153	0.15	Pass
19	0.000	0.118	0.0	0.000	0.178	0.07	Pass
20	0.000	0.092	0.0	0.000	0.138	0.11	Pass
21	0.000	0.107	0.0	0.000	0.161	0.12	Pass
22	0.000	0.084	0.0	0.000	0.125	0.06	Pass
23	0.000	0.098	0.0	0.000	0.147	0.13	Pass
24	0.000	0.077	0.0	0.000	0.115	0.12	Pass
25	0.000	0.090	0.0	0.000	0.135	0.07	Pass
26	0.000	0.071	0.0	0.000	0.106	0.08	Pass
27	0.000	0.083	0.0	0.000	0.125	0.05	Pass
28	0.000	0.066	0.0	0.000	0.099	0.18	Pass
29	0.000	0.078	0.0	0.000	0.116	0.12	Pass
30	0.000	0.061	0.0	0.000	0.092	0.09	Pass
31	0.000	0.073	0.0	0.000	0.109	0.09	Pass
32	0.000	0.058	0.0	0.000	0.086	0.15	Pass
33	0.000	0.068	0.0	0.000	0.102	0.09	Pass
34	0.000	0.054	0.0	0.000	0.081	0.07	Pass
35	0.000	0.064	0.0	0.000	0.096	0.12	Pass
36	0.000	0.051	0.0	0.000	0.077	0.12	Pass
37	0.000	0.061	0.0	0.000	0.091	0.05	Pass
38	0.000	0.048	0.0	0.000	0.073	0.12	Pass
39	0.000	0.058	0.0	0.000	0.087	0.07	Pass
40	0.000	0.046	0.0	0.000	0.069	0.11	Pass

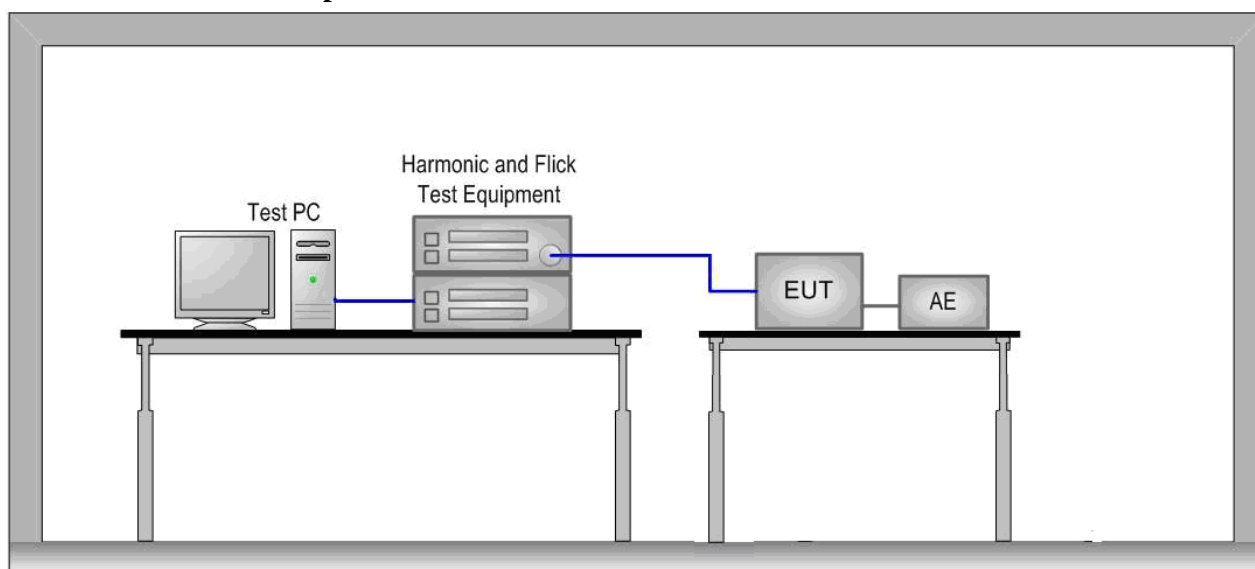
4.5 Voltage Changes, Voltage Fluctuations and Flicker

This part is concerned with the limitation of voltage fluctuations and flicker impressed on the public low-voltage system.

4.5.1 Limits

Value	Limit
Pst	1,0
Plt	0,65
dt	3,3%
dc	3,3%
dmax	4,0%

4.5.2 Measurement test procedure



The equipment under test is placed on a wooden table with a height of 0,8 m in the EMC lab. The voltage fluctuations and flicker were measured at the supply terminals of the EUT.

4.5.3 Results

TM-2001FJ

Parameter values recorded during the test:

Vrms at the end of test (Volt): 229.93

Highest dt (%): 0.59

Time(mS) > dt: 0

Highest dc (%): 0.59

Highest dmax (%): 0.59

Highest Pst (10 min. period): 0.202

Test limit (%): 3.30 Pass

Test limit (mS): 500.0 Pass

Test limit (%): 3.30 Pass

Test limit (%): 4.00 Pass

Test limit: 1.000 Pass

Test Report No.: EFSH15030095-IE-01-E01-A3

Eurofins Product Testing Service (Shanghai) Co., Ltd.
No.395 West Jiangchang Road, Jing'an District, Shanghai, 200436, P.R. China

TM-2001JT

Parameter values recorded during the test:

Vrms at the end of test (Volt):	229.98		
Highest dt (%):	0.60	Test limit (%):	3.30 Pass
Time(mS) > dt:	0	Test limit (mS):	500.0 Pass
Highest dc (%):	0.60	Test limit (%):	3.30 Pass
Highest dmax (%):	0.63	Test limit (%):	4.00 Pass
Highest Pst (10 min. period):	0.245	Test limit:	1.000 Pass

TM-2005FJ

Parameter values recorded during the test:

Vrms at the end of test (Volt):	229.94		
Highest dt (%):	0.59	Test limit (%):	3.30 Pass
Time(mS) > dt:	0	Test limit (mS):	500.0 Pass
Highest dc (%):	0.62	Test limit (%):	3.30 Pass
Highest dmax (%):	0.67	Test limit (%):	4.00 Pass
Highest Pst (10 min. period):	0.299	Test limit:	1.000 Pass

TM-2005JT

Parameter values recorded during the test:

Vrms at the end of test (Volt):	229.94		
Highest dt (%):	0.62	Test limit (%):	3.30 Pass
Time(mS) > dt:	0	Test limit (mS):	500.0 Pass
Highest dc (%):	0.60	Test limit (%):	3.30 Pass
Highest dmax (%):	0.61	Test limit (%):	4.00 Pass
Highest Pst (10 min. period):	0.272	Test limit:	1.000 Pass

TM-2006FJ

Parameter values recorded during the test:

Vrms at the end of test (Volt):	230.04		
Highest dt (%):	0.63	Test limit (%):	3.30 Pass
Time(mS) > dt:	0	Test limit (mS):	500.0 Pass
Highest dc (%):	0.60	Test limit (%):	3.30 Pass
Highest dmax (%):	0.65	Test limit (%):	4.00 Pass
Highest Pst (10 min. period):	0.263	Test limit:	1.000 Pass

TM-2006JT

Parameter values recorded during the test:

Vrms at the end of test (Volt):	229.93		
Highest dt (%):	0.66	Test limit (%):	3.30 Pass
Time(mS) > dt:	0	Test limit (mS):	500.0 Pass
Highest dc (%):	0.60	Test limit (%):	3.30 Pass
Highest dmax (%):	0.65	Test limit (%):	4.00 Pass
Highest Pst (10 min. period):	0.275	Test limit:	1.000 Pass

TM-2009FJ

Parameter values recorded during the test:

Vrms at the end of test (Volt):	229.94		
Highest dt (%):	1.29	Test limit (%):	3.30 Pass
Time(mS) > dt:	0	Test limit (mS):	500.0 Pass
Highest dc (%):	1.00	Test limit (%):	3.30 Pass
Highest dmax (%):	1.27	Test limit (%):	4.00 Pass
Highest Pst (10 min. period):	0.397	Test limit:	1.000 Pass

TM-2015T

Parameter values recorded during the test:

Vrms at the end of test (Volt):	229.95		
Highest dt (%):	1.26	Test limit (%):	3.30 Pass
Time(mS) > dt:	0.0	Test limit (mS):	500.0 Pass
Highest dc (%):	-1.24	Test limit (%):	3.30 Pass
Highest dmax (%):	-1.15	Test limit (%):	4.00 Pass
Highest Pst (10 min. period):	0.275	Test limit:	1.000 Pass

TM-2016T

Parameter values recorded during the test:

Vrms at the end of test (Volt):	228.21		
Highest dt (%):	-0.68	Test limit (%):	3.30 Pass
Time(mS) > dt:	0.0	Test limit (mS):	500.0 Pass
Highest dc (%):	0.76	Test limit (%):	3.30 Pass
Highest dmax (%):	0.77	Test limit (%):	4.00 Pass
Highest Pst (10 min. period):	0.206	Test limit:	1.000 Pass

TM-2019

Parameter values recorded during the test:

Vrms at the end of test (Volt):	230.07		
Highest dt (%):	0.64	Test limit (%):	3.30 Pass
Time(mS) > dt:	0.0	Test limit (mS):	500.0 Pass
Highest dc (%):	-0.60	Test limit (%):	3.30 Pass
Highest dmax (%):	0.64	Test limit (%):	6.00 Pass
Highest Pst (10 min. period):	0.000	Test limit:	1.000 Pass

TM-2020T

Parameter values recorded during the test:

Vrms at the end of test (Volt):	229.90		
Highest dt (%):	0.74	Test limit (%):	3.30 Pass
Time(mS) > dt:	0.0	Test limit (mS):	500.0 Pass
Highest dc (%):	0.58	Test limit (%):	3.30 Pass
Highest dmax (%):	0.73	Test limit (%):	6.00 Pass
Highest Pst (10 min. period):	0.000	Test limit:	1.000 Pass

5 Immunity Test

5.1 Performance Criteria Description in Clause 6 of EN 55014-2

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.
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. 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.
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.

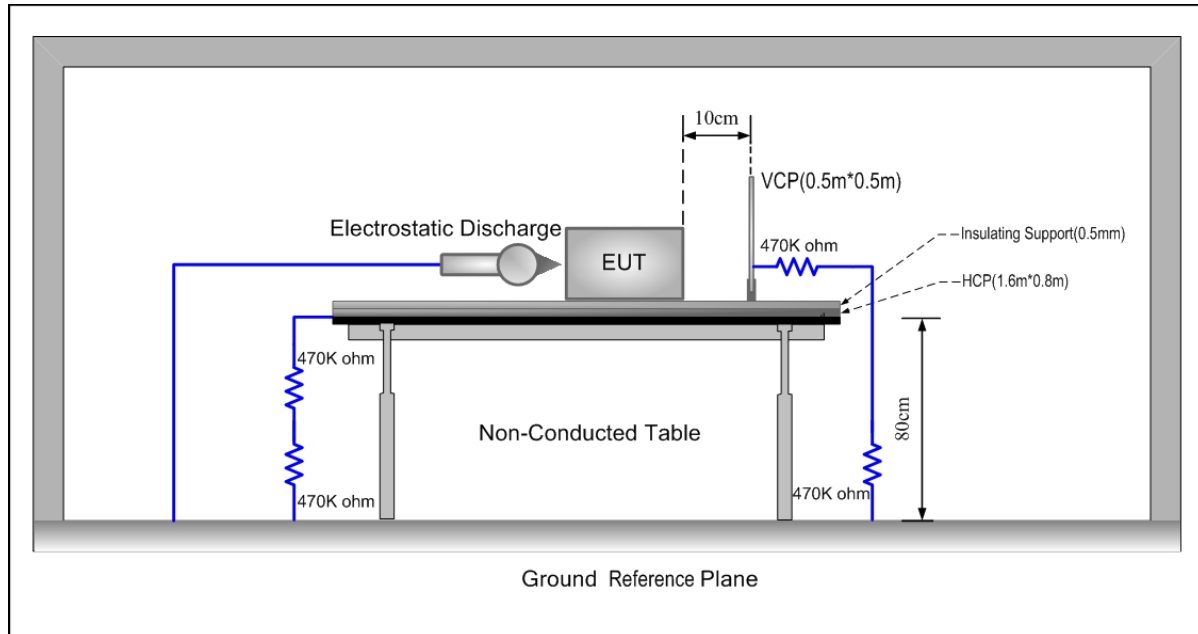
5.2 Classification of apparatus

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

The EUT belongs to Category II.

5.3 ESD

5.3.1 Test Procedures



1. Contact discharge was applied only to conductive surfaces of the EUT. Air discharge was applied only to non-conducted surfaces of the EUT.
2. The EUT was put on a 0.8m high wooden table for table-top equipment or 0.1m high for floor standing equipment standing on the ground reference plane (GRP).
3. A horizontal coupling plane(HCP) 1.6m by 0.8m in size was placed on the table, and the EUT with its cables were isolated from the HCP by an insulating support thick than 0.5mm. The VCP 0.5m by 0.5m in size while HCP were constructed from the same material type and thickness as that of the GRP, and connected to the GRP via a 470kΩ resistor at each end. The distance between EUT and any of the other metallic surfaces excepted the GRP, HCP and VCP was greater than 1m.
4. During the contact discharges, the tip of the discharge electrode was touching the EUT before the discharge switch is operated. During the air discharges, the round discharge tip of the discharge electrode was approached as fast as possible to touch the EUT. After each discharge, the ESD generator was removed from the EUT, the generator is then retriggered for a new single discharge. For ungrounded product, a discharge cable with two resistances was used after each discharge to remove remnant electrostatic voltage. 10 times of each polarity single discharge were applied to HCP and VCP.

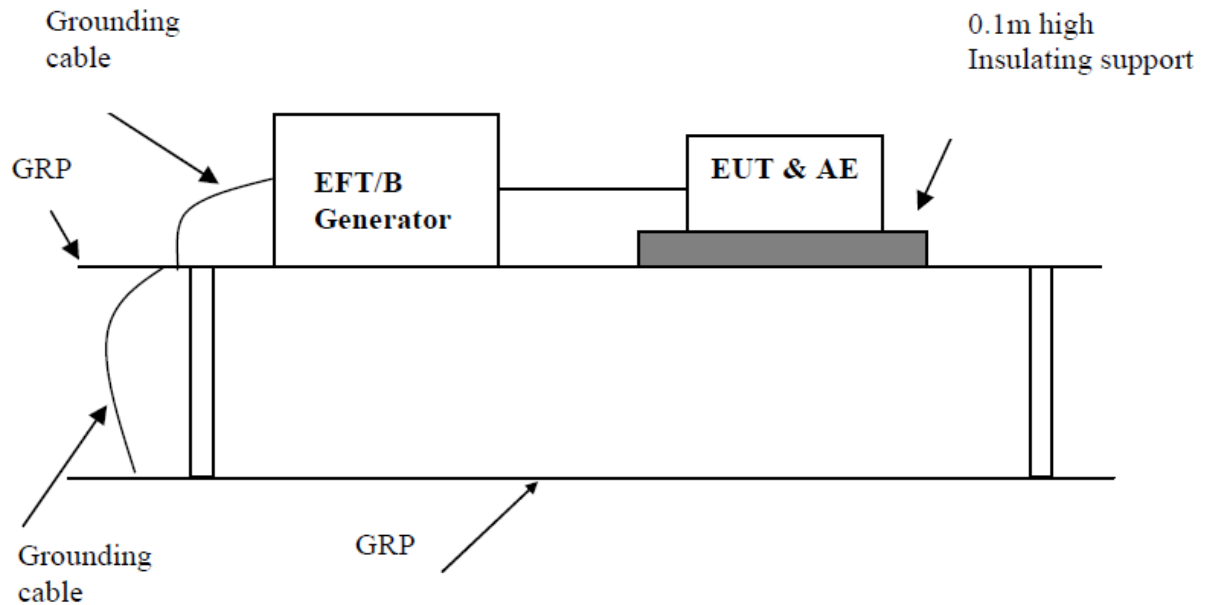
5.3.2 Results

Test point	Table (T) Floor (F)	Contact (C) Air (A)	Voltage (kV)	Number of discharge	Polarity (+ / -)	Opinion
Air discharge	T	A	8	20	+ / -	A
Contact discharge	T	C	4	20	+ / -	A
HCP	T	C	4	20	+ / -	A
VCP	T	C	4	20	+ / -	A

A: no loss of function.

5.4 Electrical Fast Transients

5.4.1 Measurement procedure



1. The EUT was placed on a ground reference plane (GRP) insulated by an insulating support 0,1 m thick and the GRP was placed on a 0.8m high wooden table for table-top equipment. For floor standing equipment, the EUT was placed on a 0.1m high wooden support above the GRP.
2. The GRP shall project beyond the EUT and the clamp by at least 0.1m on all sides. The distance between the EUT and any other of the metallic surface except the GRP was greater than 0.5m. All cables to the EUT was placed on the insulation support 0.1m above GRP. Cables not subject to EFT was routed as far as possible from cable under test to minimize the coupling between the cables.
3. The length of signal and power cable between the EUT and EFT generator was 0.5m. If the cable is a non-detachable supply cable more than 0.5m, the excess length of this cable shall be folded to avoid a flat coil and situated at a distance of 0.1m above the GRP.

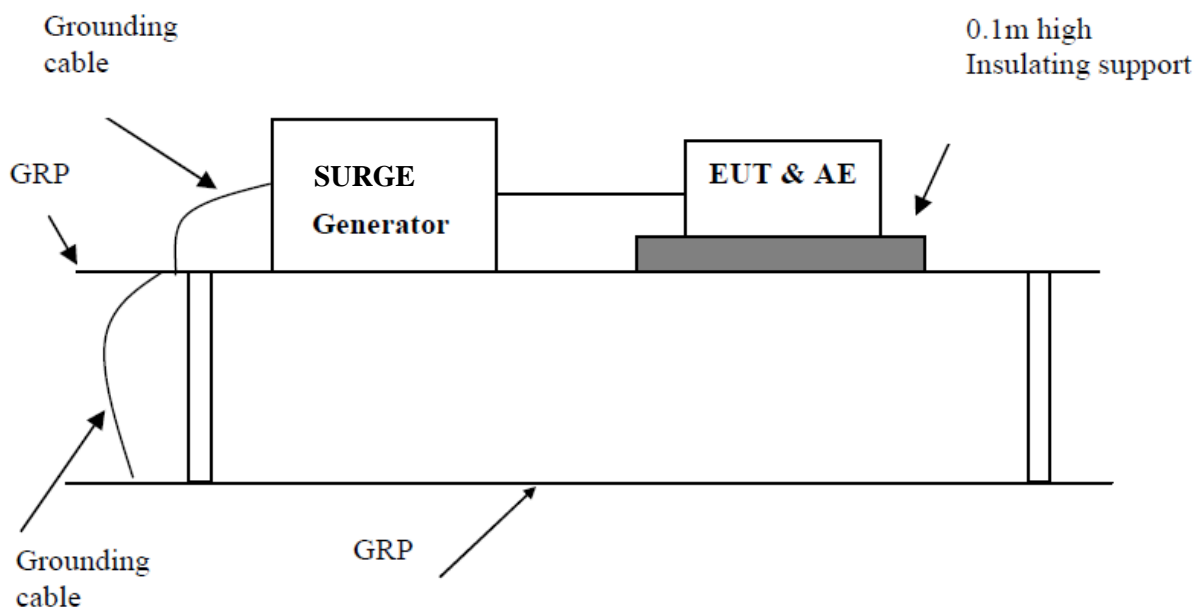
5.4.2 Results

Test port	Voltage (kV)	Polarity (+ / -)	Duration (s or min)	Waveform Tr / Th	Repetition Frequency (kHz)	Opinion
AC power line	1	+ / -	2 min	5/50 ns	5	A

A: no loss of function.

5.5 Surge Immunity

5.5.1 Measurement procedure



1. The EUT was placed on a ground reference plane (GRP) insulated by an insulating support 0,1 m thick and the GRP was placed on a 0.8m high wooden table for table-top equipment. For floor standing equipment, the EUT was placed on a 0.1m high wooden support above the GRP.
2. The 1,2/50 μ s surge was to be applied to the EUT power supply terminals via the capacitive coupling network. Decoupling networks were required in order to avoid possible adverse effects on equipment not under test that may be powered by the same lines and to provide sufficient decoupling impedance to the surge wave so that the specified wave may be applied on the lines under test.
3. The positive pulses are applied 90° relative to the phase angle of the a.c. line voltage to the equipment under test, and the negative pulses are applied 270° relative to the phase angle of the a.c. line voltage to the equipment under test.

5.5.2 Results

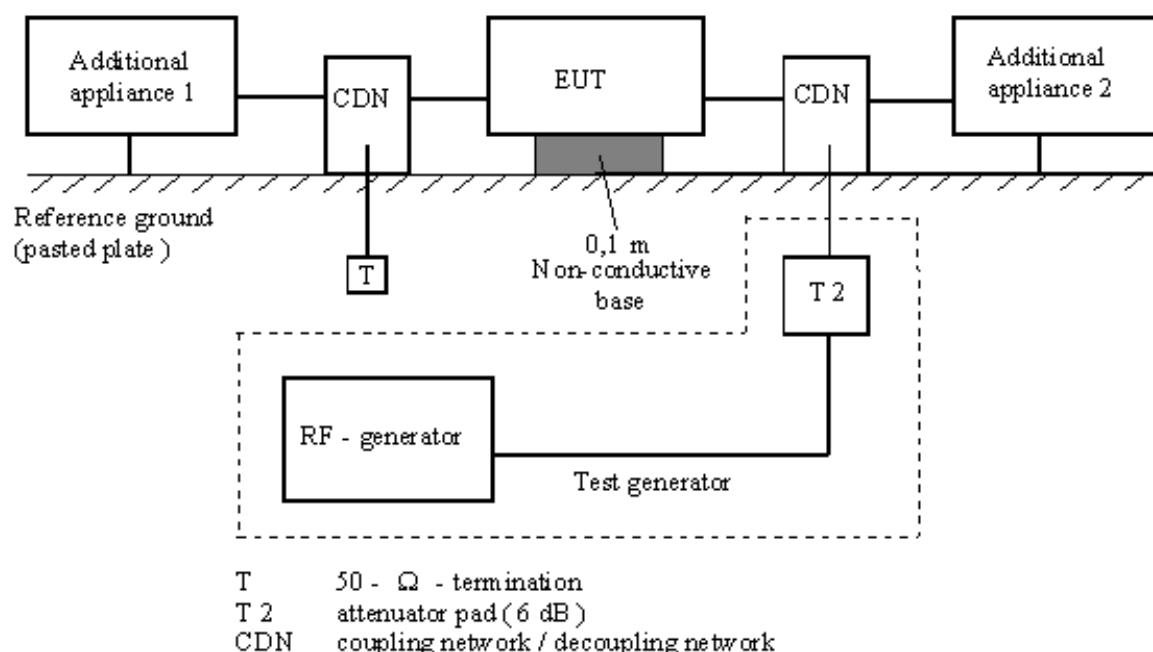
Test mode	Polarity (+ / -)	Voltage (kV)	Waveform Tr / Th	Number of pulses	Opinion
Live-Neutral	+ / -	1	1.2/50 μ s	5	B
Live-PE	+ / -	2	1.2/50 μ s	5	B
Neutral-PE	+ / -	2	1.2/50 μ s	5	B

A: no loss of function.

B: the appliance could not work normal during test, but it would recover after test.

5.6 Injected currents (RF continues conducted)

5.6.1 Measurement procedure



1. The EUT was placed on an insulating support of 0.1m height above a ground reference Plane, arranged and connected to satisfy its functional requirement. All cables exiting the EUT was supported at a height of at least 30 mm above the ground reference plane.
2. The coupling and decoupling devices were required, they were located between 0,1 m and 0,3 m from the EUT. This distance was to be measured horizontally from the projection of the EUT on to the ground reference plane to the coupling and decoupling device.
3. The frequency range was swept from 150 kHz to 230 MHz, using the signal levels established during the setting process, and with the disturbance signal 80 % amplitude modulated with a 1 kHz sine wave, pausing to adjust the RF signal level or to change coupling devices as necessary. Where the frequency was swept incrementally, the step size do not exceed 1 % of the preceding frequency value. The dwell time of the amplitude modulated carrier at each frequency was not less than the time necessary for the EUT to be exercised and to respond, and was not less than 3s.

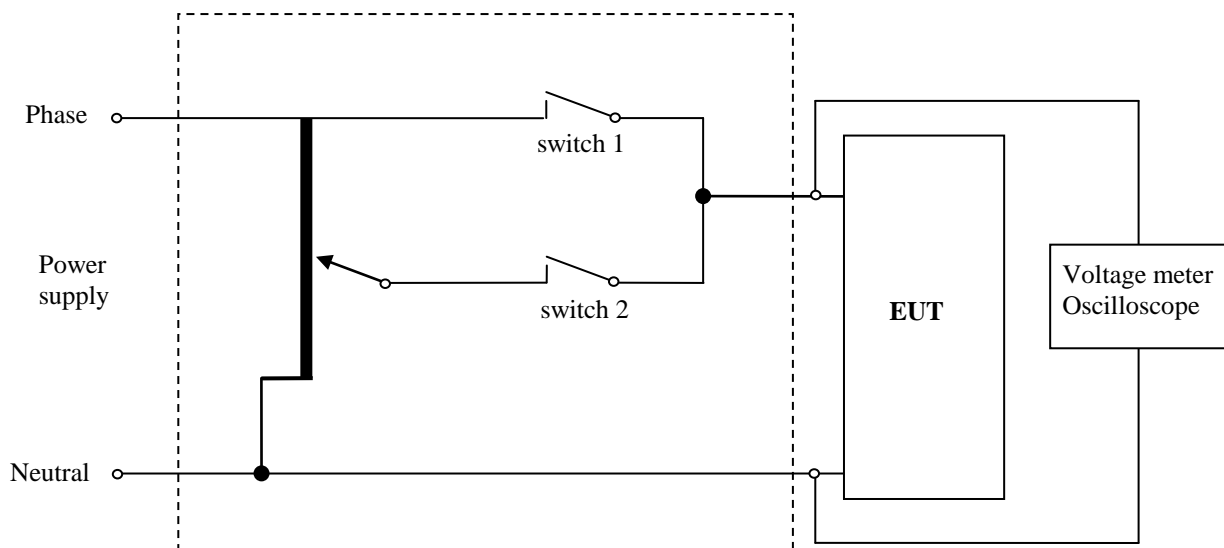
5.6.2 Results

Test port	Voltage (e.m.f.)	Modulation	Frequency Range	Opinion
AC power line	3 V	80% AM 1 kHz	150 kHz - 230 MHz	A

A: no loss of function.

5.7 Voltage dips and Interruption

5.7.1 Measurement procedure



1. The EUT was placed on a ground reference plane (GRP) insulated by an insulating support 0,1 m thick and the GRP was placed on a 0.8m high wooden table for table-top equipment. For floor standing equipment, the EUT was placed on a 0.1m high wooden support above the GRP.
2. The test was performed with the EUT connected to the test generator with the shortest power supply cable as specified by the EUT manufacturer. Voltage change shall occur at zero crossing.
3. The EUT was tested for each selected combination of test level and duration with a sequence of three dips /interruptions with intervals of 10 s minimum. Each representative mode of operation was tested.

5.7.2 Results

Reduction of supply voltage of	Voltage in % (in V)	Duration in parts of period (in ms)	Opinion
interruption	0 % (0V)	0,5 (10 ms)	A
60 %	40 % (92 V)	10 (200 ms)	B
30 %	70 % (161 V)	25 (500 ms)	B

A: no loss of function.

B: the appliance could not work normal during test, but it would recover after test.

6 Test Setup Photos

Harmonic & Flicker



Conducted Emission & Click



Test Report No.: EFSH15030095-IE-01-E01-A3

Eurofins Product Testing Service (Shanghai) Co., Ltd.
No.395 West Jiangchang Road, Jing'an District, Shanghai, 200436, P.R. China

Disturbance power



ESD



Electrical Fast Transients, Surge & Dips



Injected currents (RF continues conducted)



Test Report No.: EFSH15030095-IE-01-E01-A3

Eurofins Product Testing Service (Shanghai) Co., Ltd.
No.395 West Jiangchang Road, Jing'an District, Shanghai, 200436, P.R. China

7 EUT Photos

Photo 1
Overall view for TM-2001 series



Photo 2
Internal view for TM-2001, TM-2001J, TM-2001T, TM-2001JT



Test Report No.: EFSH15030095-IE-01-E01-A3

Eurofins Product Testing Service (Shanghai) Co., Ltd.
No.395 West Jiangchang Road, Jing'an District, Shanghai, 200436, P.R. China

Photo 3

Internal view for TM-2001F, TM-2001FJ, TM-2001FT and TM-2001FJT



Photo 4

PCB view of TM-2001, TM-2001J, TM-2001F, TM-2001FJ



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Photo 5
PCB view of TM-2001, TM-2001J, TM-2001F, TM-2001FJ



Photo 6
PCB view of TM-2001T, TM-2001JT, TM-2001FT, TM-2001FJT

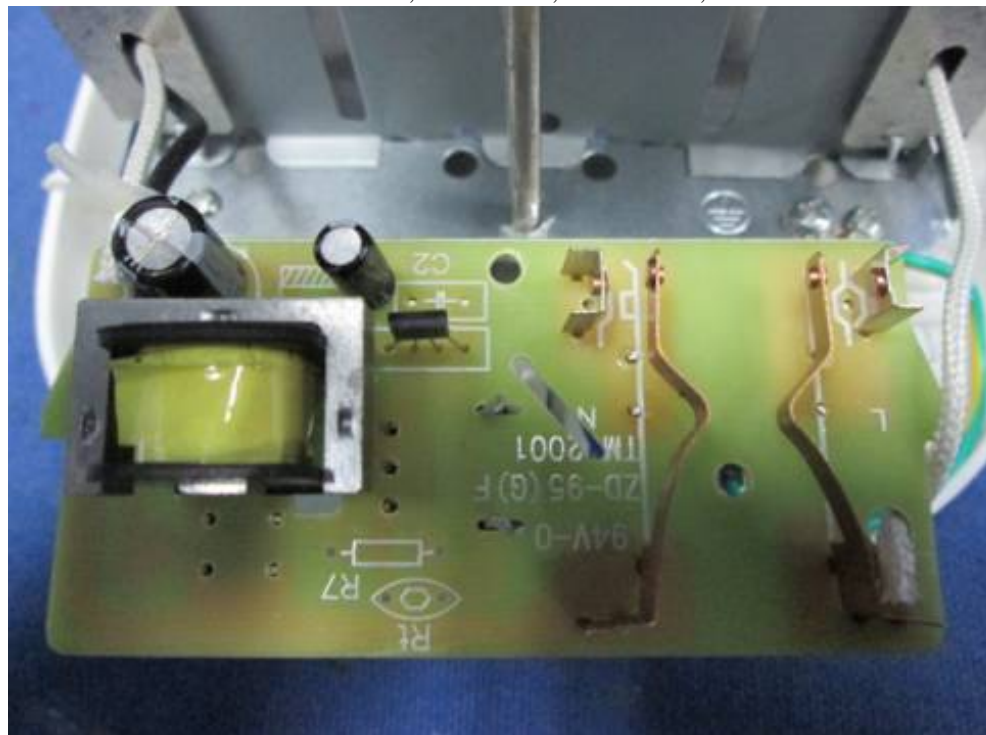


Photo 7

PCB rear view for TM-2001T, TM-2001JT, TM-2001FT, TM-2001FJT



Photo 8

Overall view for TM-2005 series



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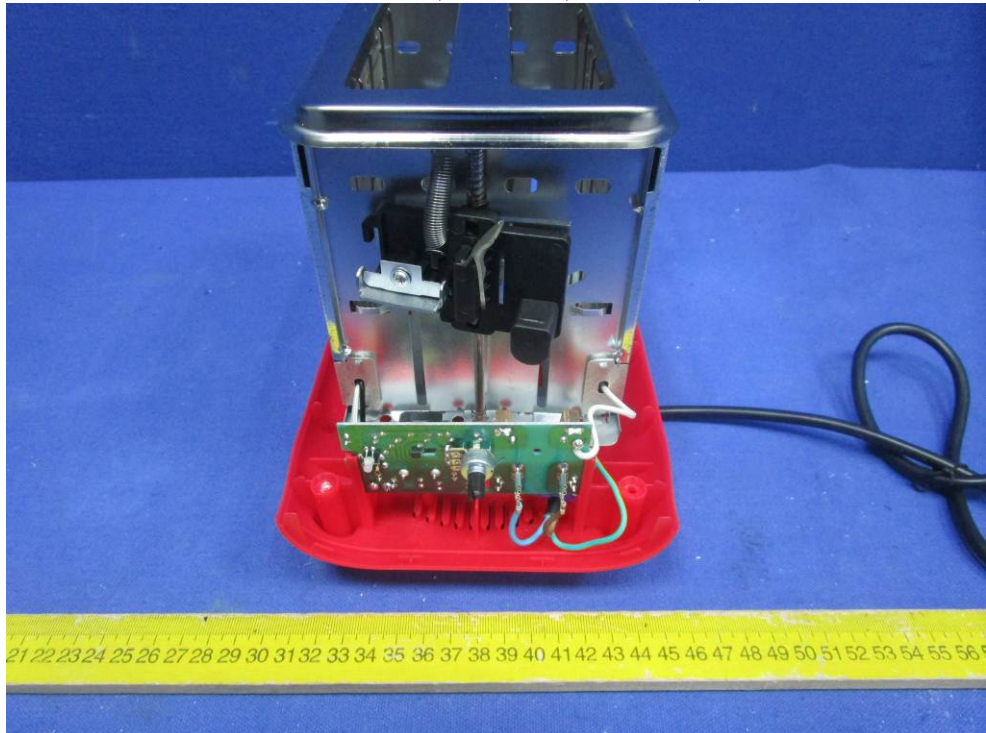
Photo 9

Internal view for TM-2005, TM-2005J, TM-2005T, TM-2005JT



Photo 10

Internal view for TM-2005, TM-2005J, TM-2005T, TM-2005JT



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Photo 11

PCB view of TM-2005, TM-2005J, TM-2005F, TM-2005FJ

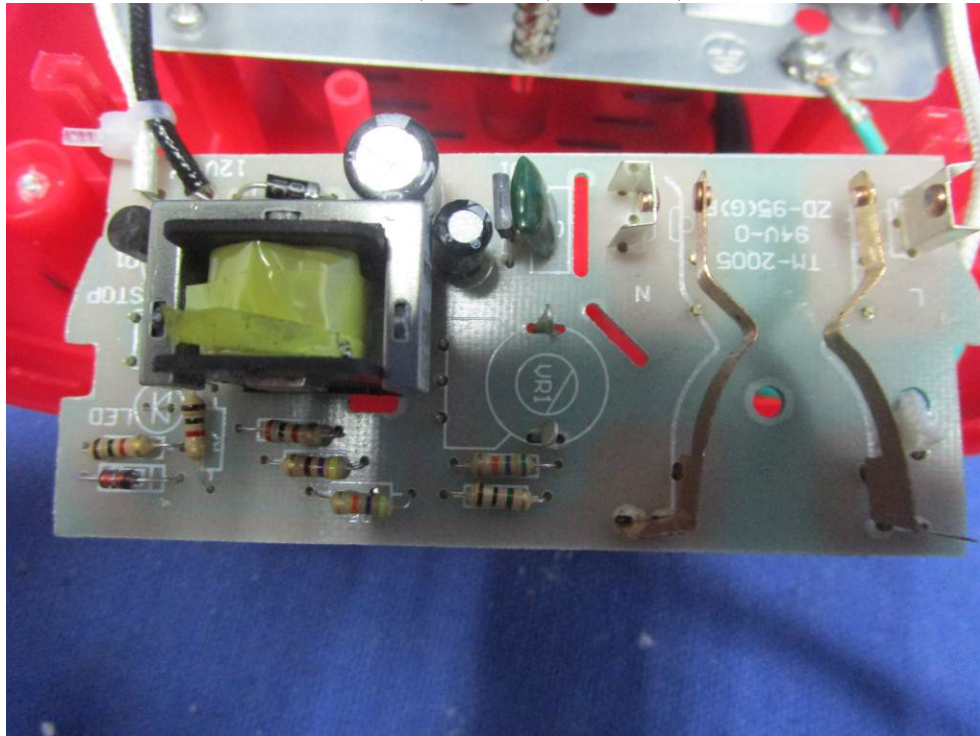


Photo 12

PCB rear view for TM-2005, TM-2005J, TM-2005F, TM-2005FJ

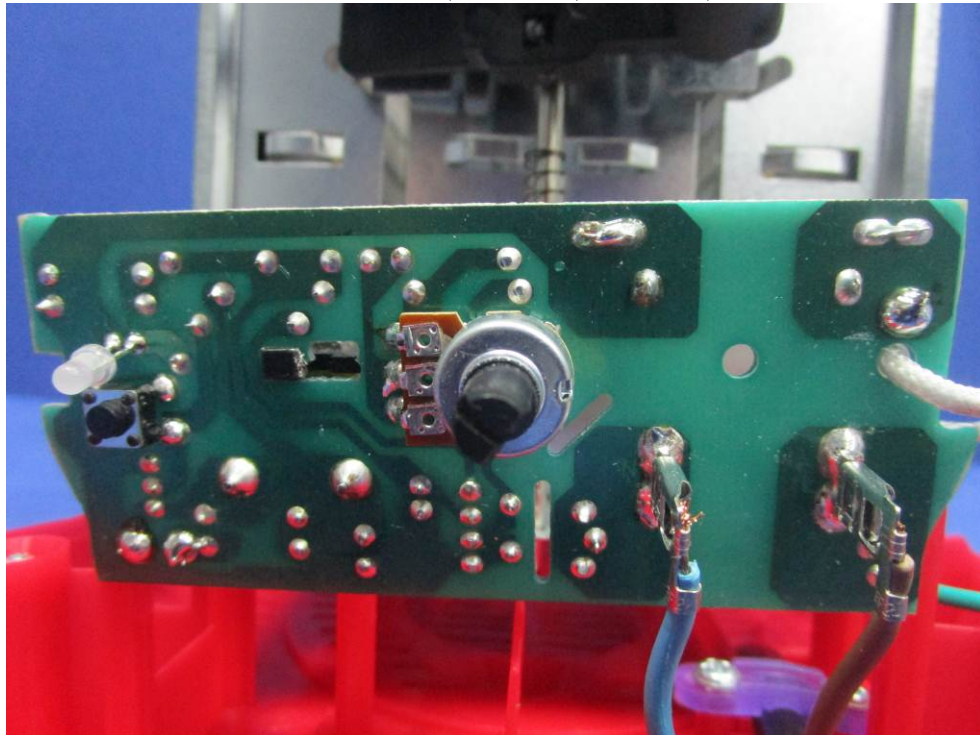


Photo 13

PCB view of TM-2005T, TM-2005JT, TM-2005FT, TM-2005FJT

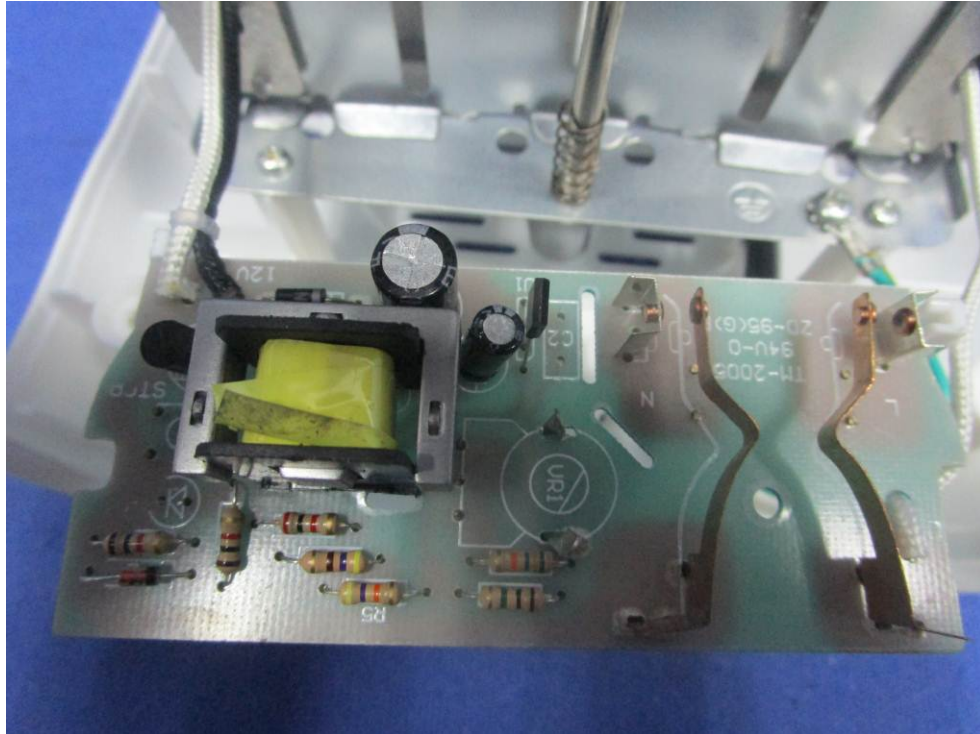


Photo 14

PCB rear view for TM-2005T, TM-2005JT, TM-2005FT, TM-2005FJT

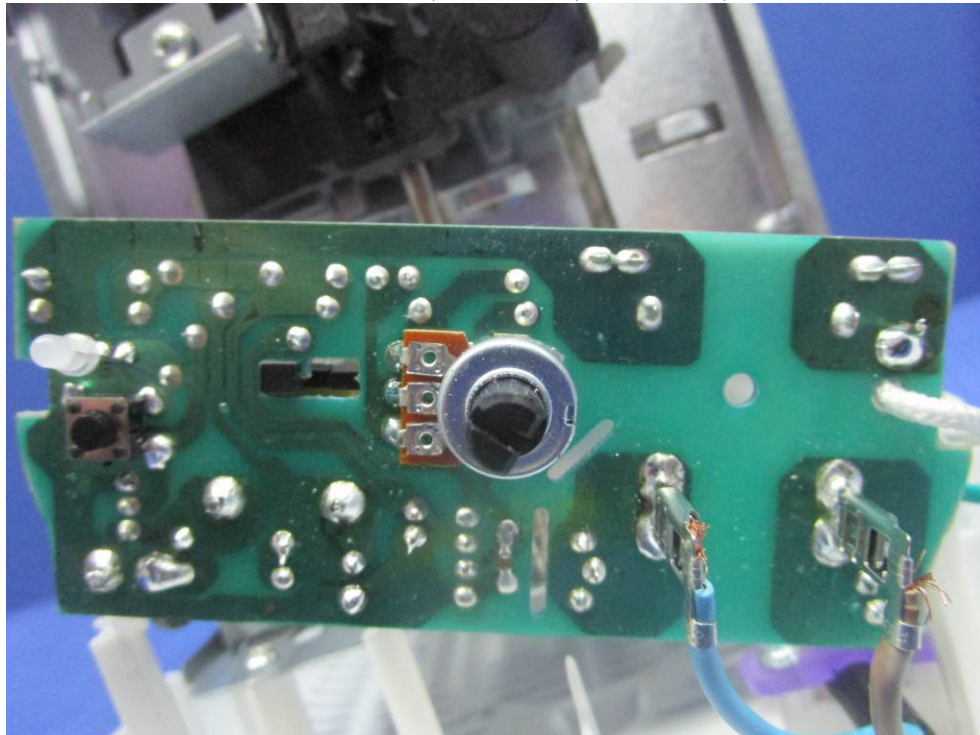


Photo 15
Overall view for TM-2006 series



Photo 16
Internal view for TM-2006, TM-2006J, TM-2006T, TM-2006JT



Photo 17

Internal view for TM-2006F, TM-2006FJ, TM-2006FT, TM-2006FJT



Photo 18

PCB 1 view of TM-2006, TM-2006J, TM-2006F, TM-2006FJ

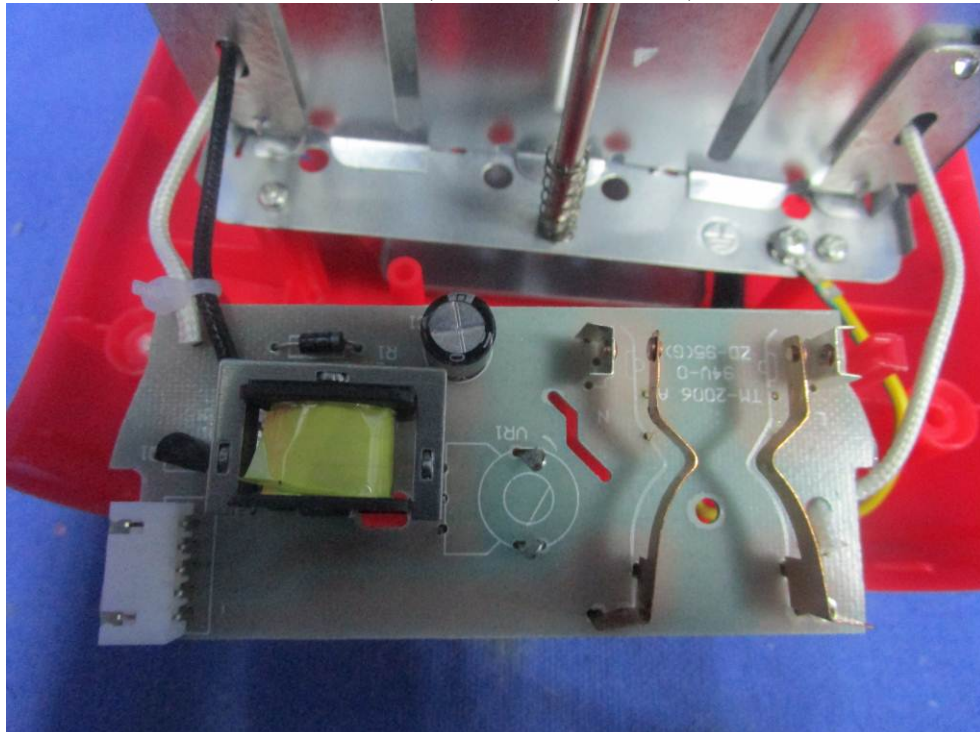


Photo 19

PCB 1 rear view for TM-2006, TM-2006J, TM-2006F, TM-2006FJ

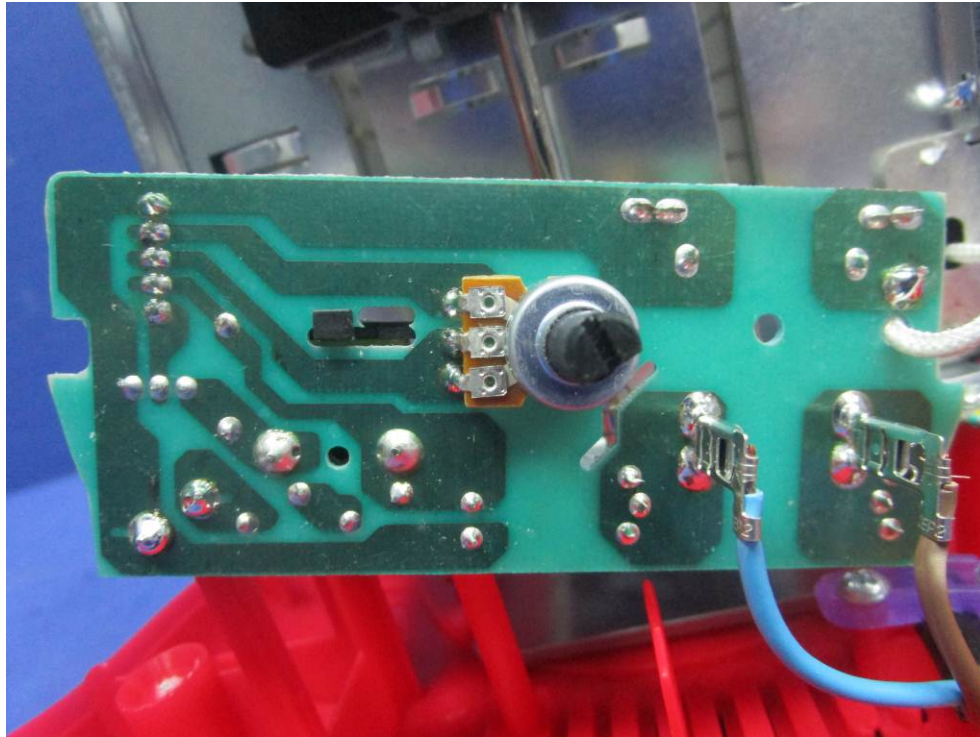


Photo 20

PCB 2 view of TM-2006, TM-2006J, TM-2006F, TM-2006FJ

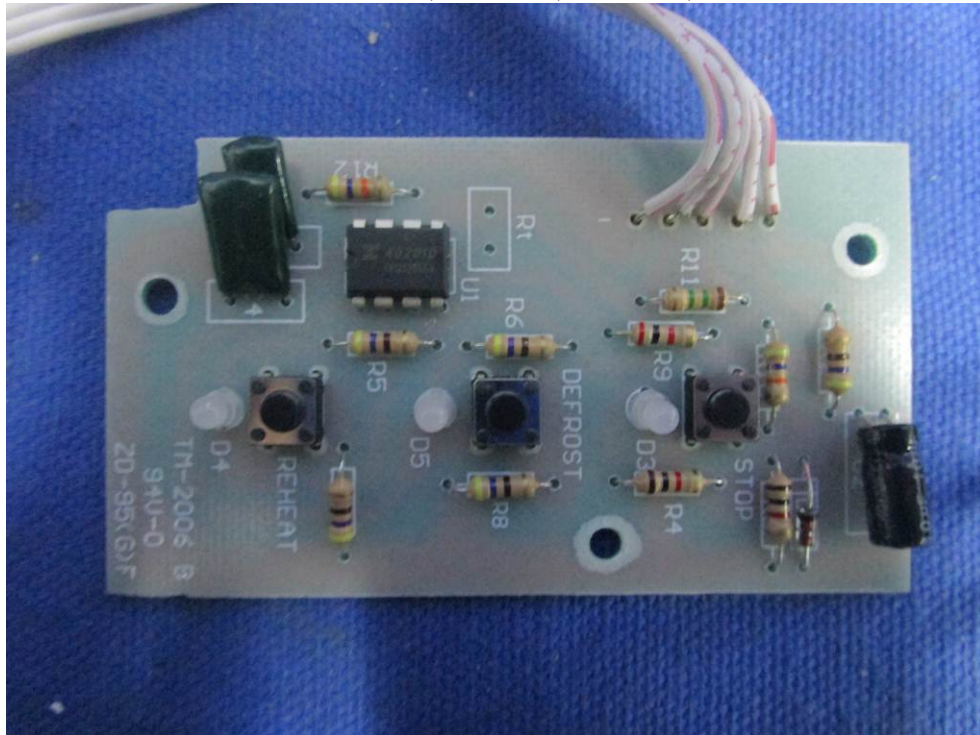


Photo 21

PCB 2 rear view for TM-2006, TM-2006J, TM-2006F, TM-2006FJ

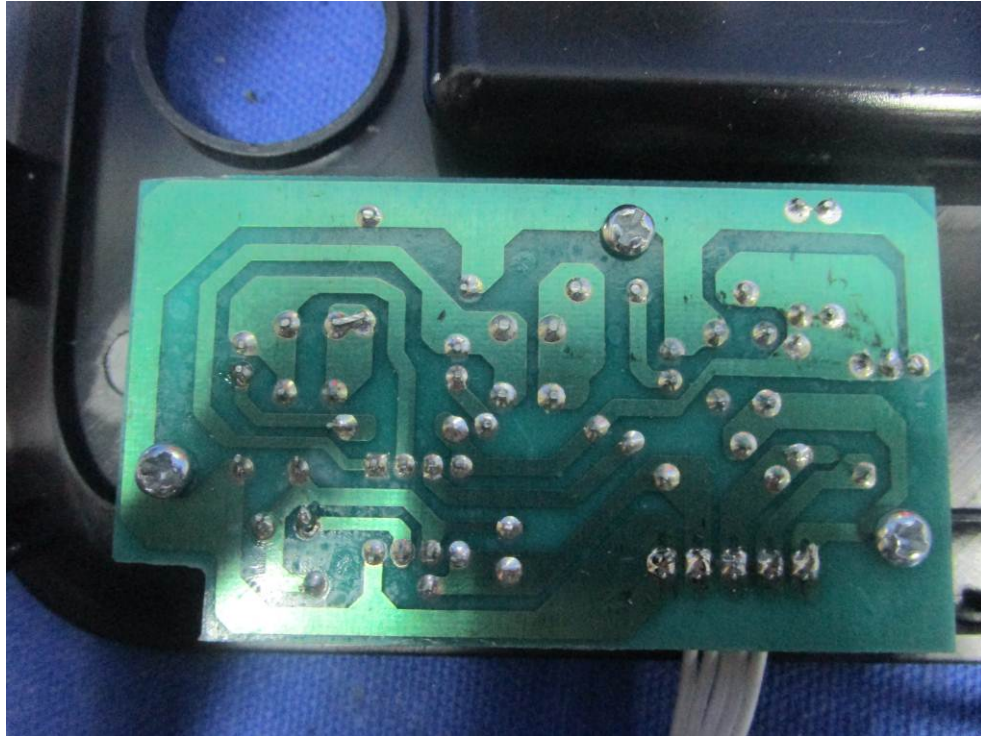


Photo 22

PCB 1 view of TM-2006T, TM-2006JT, TM-2006FT, TM-2006FJT

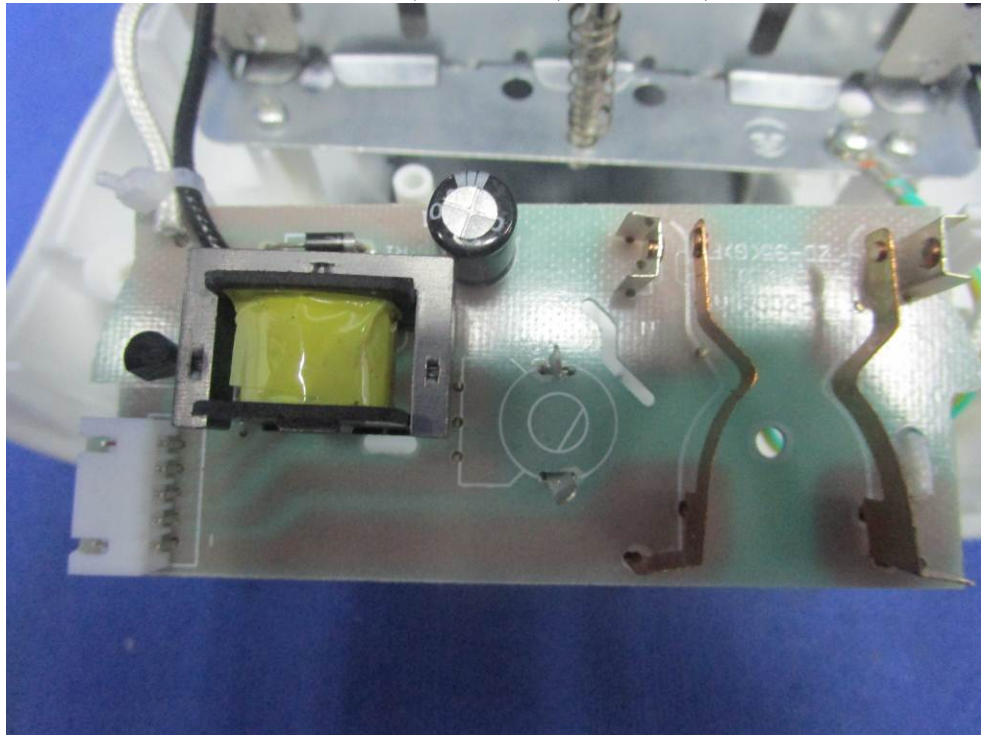


Photo 23

PCB 1 rear view for TM-2006T, TM-2006JT, TM-2006FT, TM-2006FJT

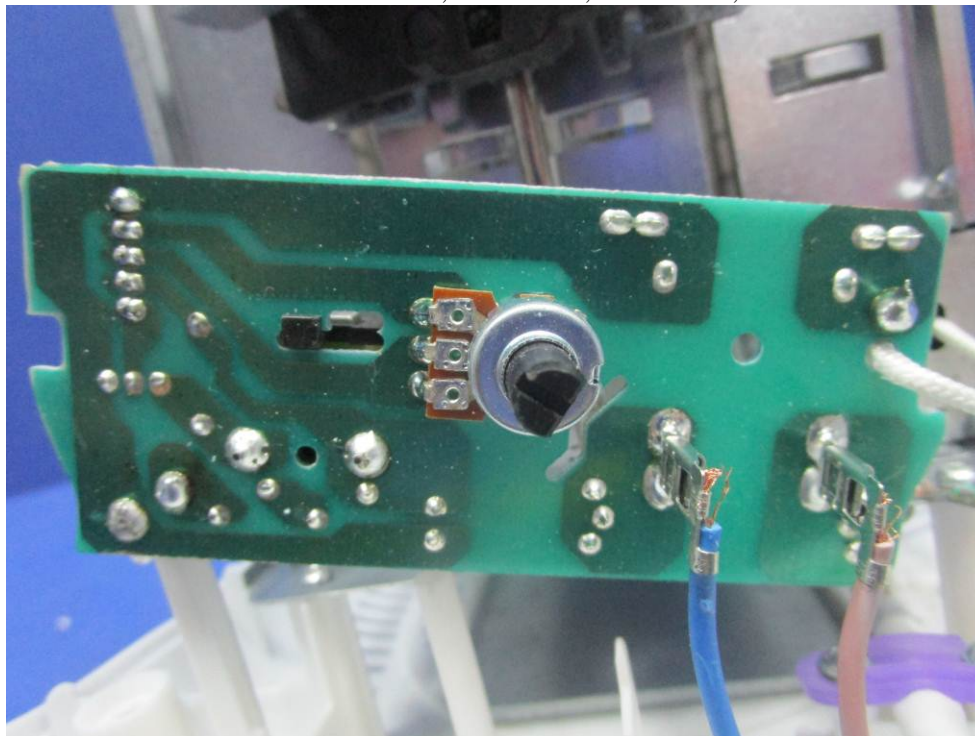


Photo 24

PCB 2 view of TM-2006T, TM-2006JT, TM-2006FT, TM-2006FJT

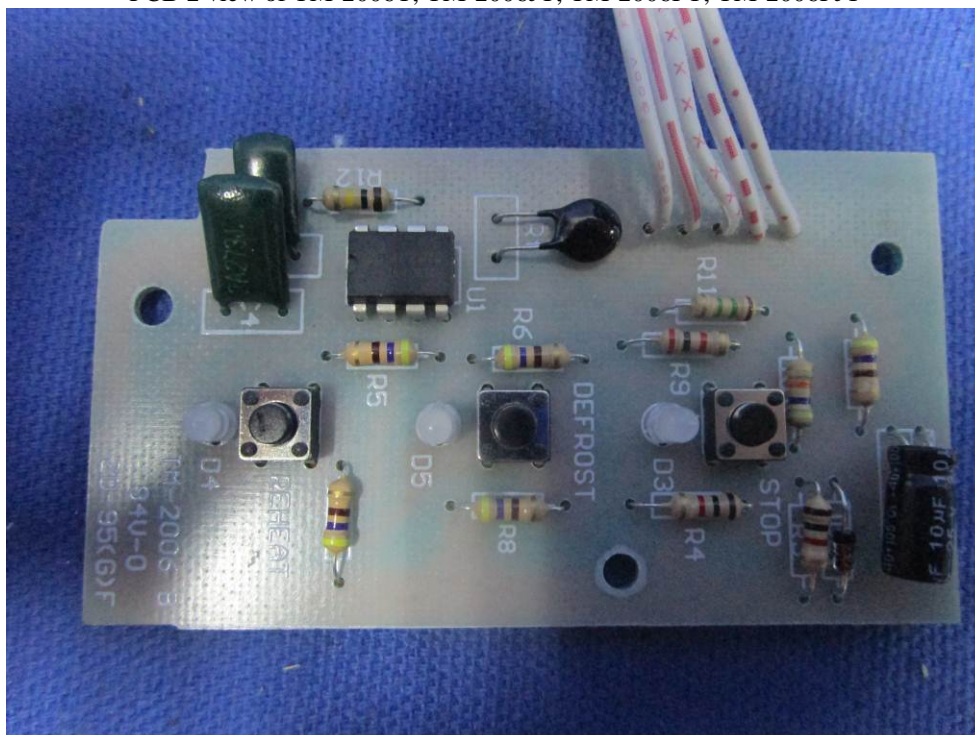


Photo 25

PCB 2 rear view for TM-2006T, TM-2006JT, TM-2006FT, TM-2006FJT

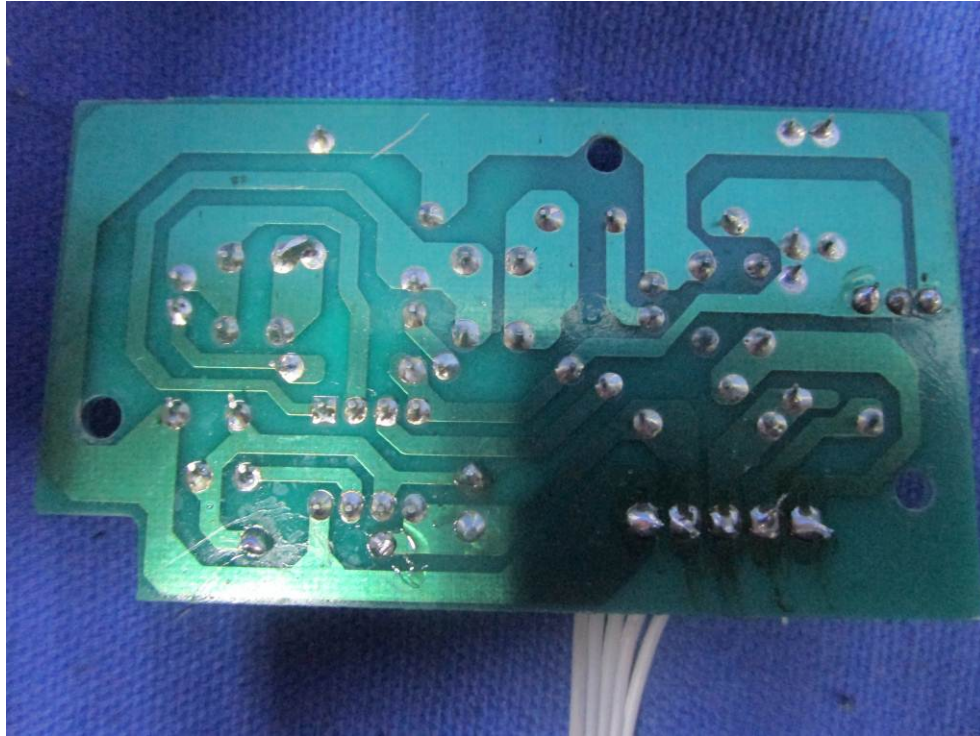


Photo 26

Overall view for TM-2009F and TM-2009FJ



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Photo 27
Internal view for TM-2009F and TM-2009FJ

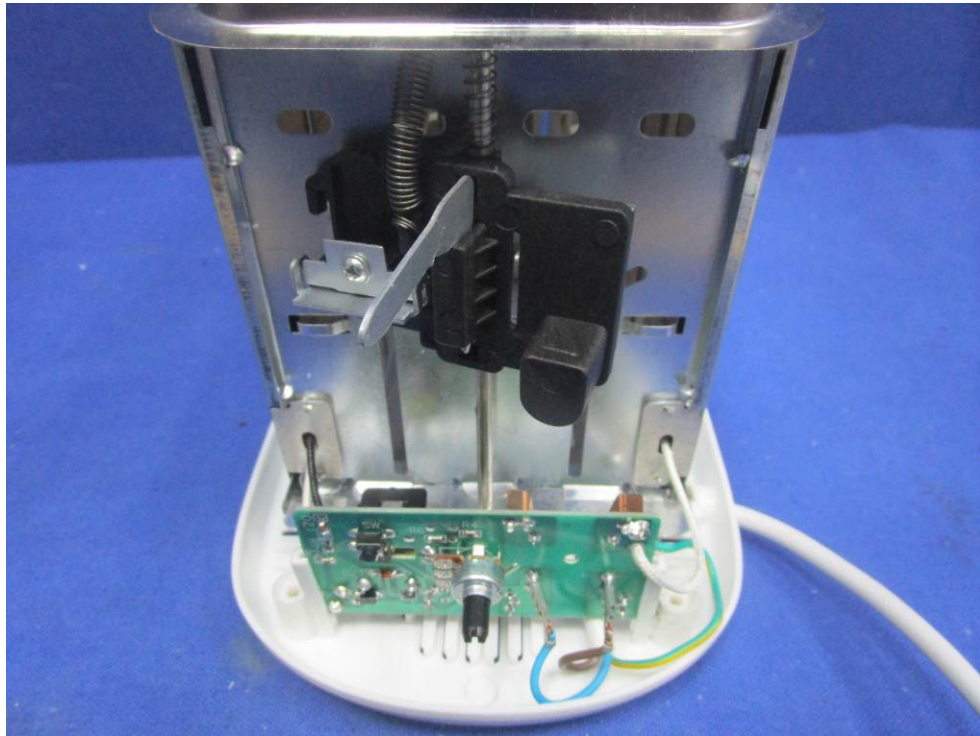


Photo 28
PCB view of TM-2009F and TM-2009FJ

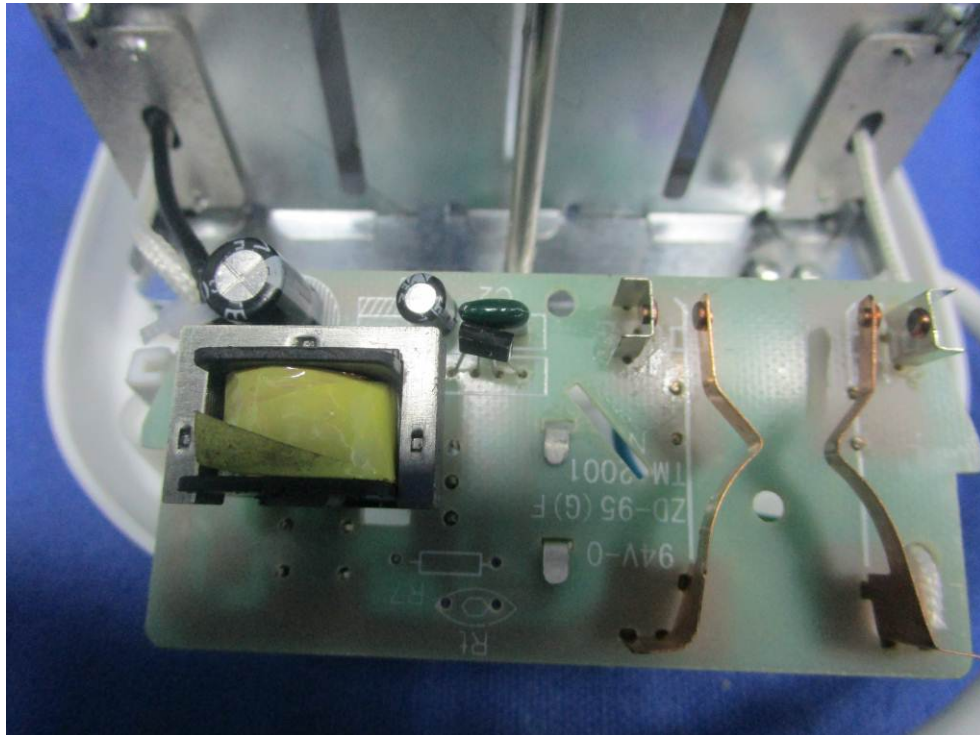


Photo 29
PCB rear view for TM-2009F and TM-2009FJ

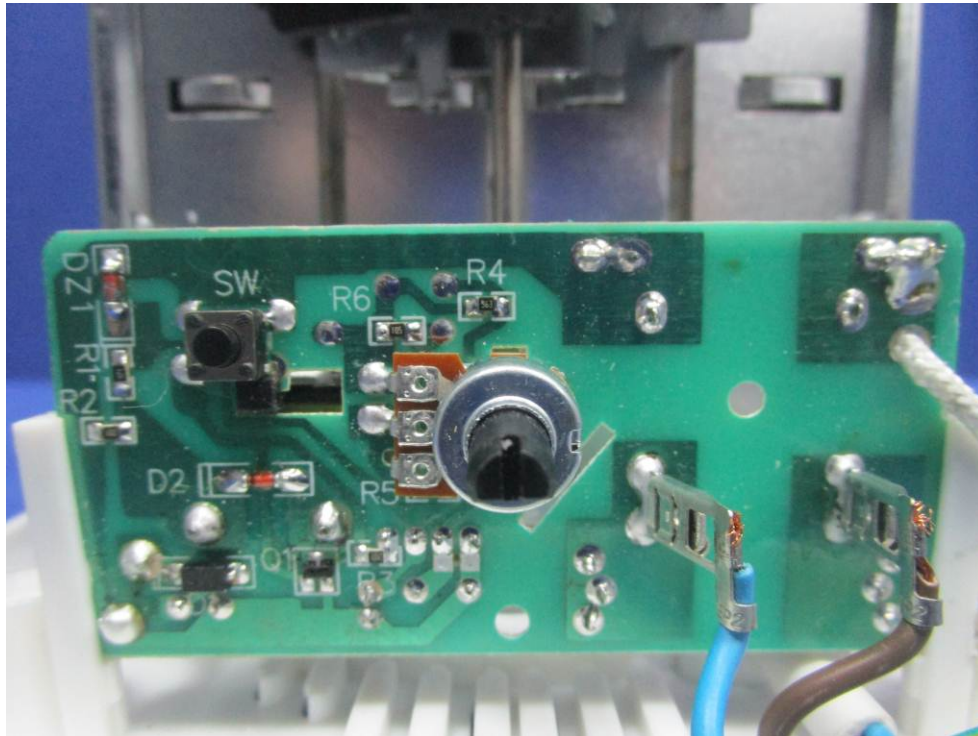


Photo 30
Overall view for TM-2015T



Photo 31
Top view for TM-2015T



Photo 32
Internal view for TM-2015T

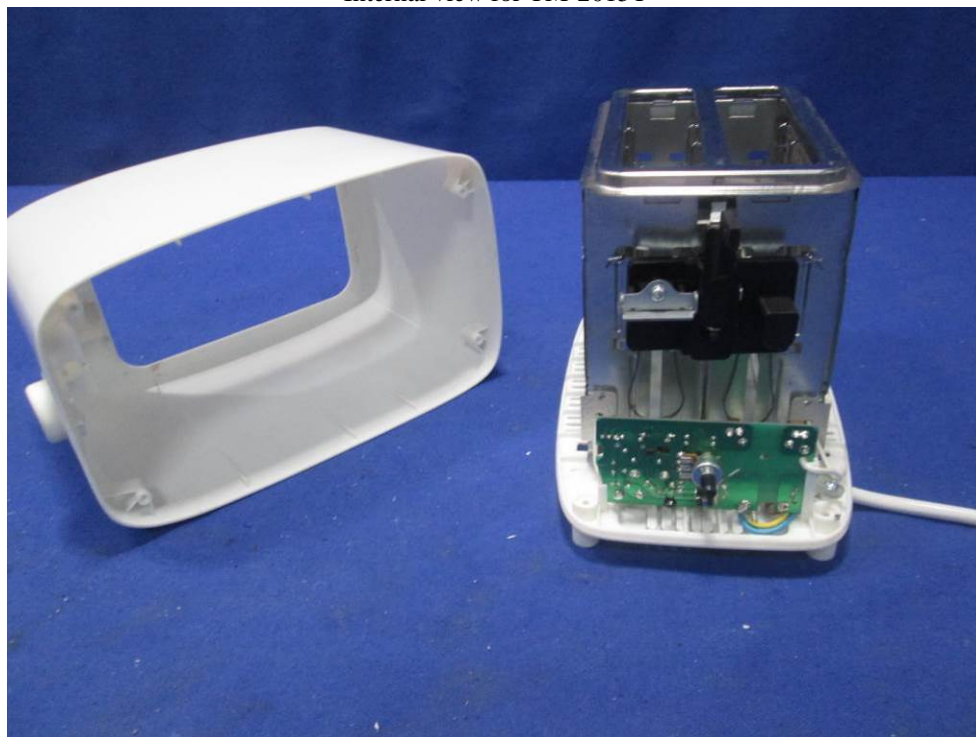


Photo 33
PCB view of TM-2015T

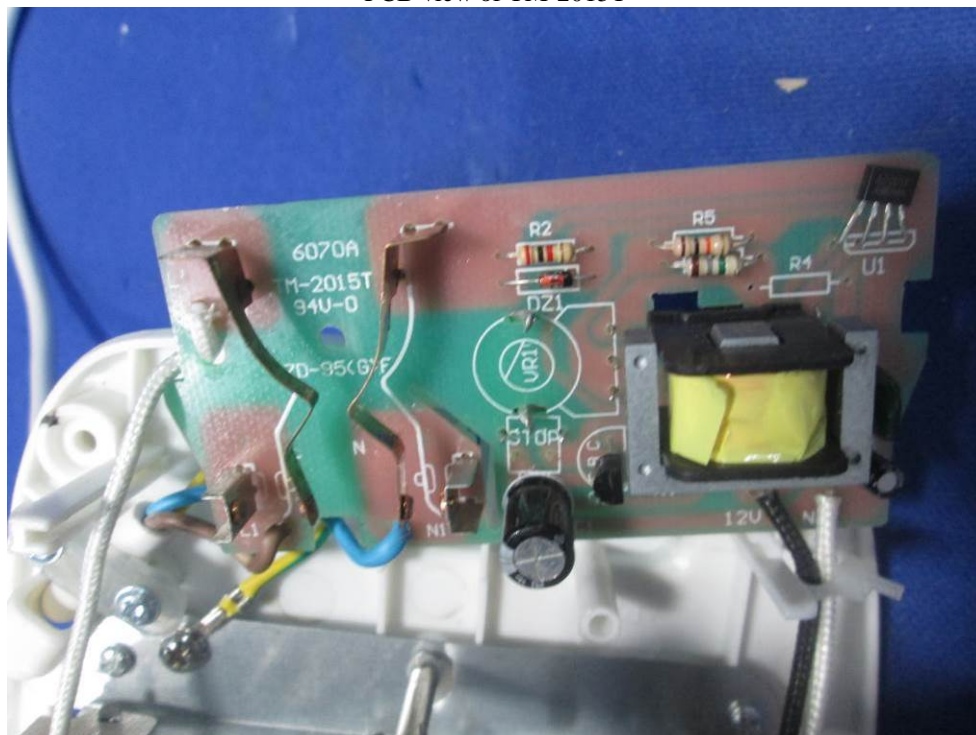


Photo 34
PCB view of TM-2015T

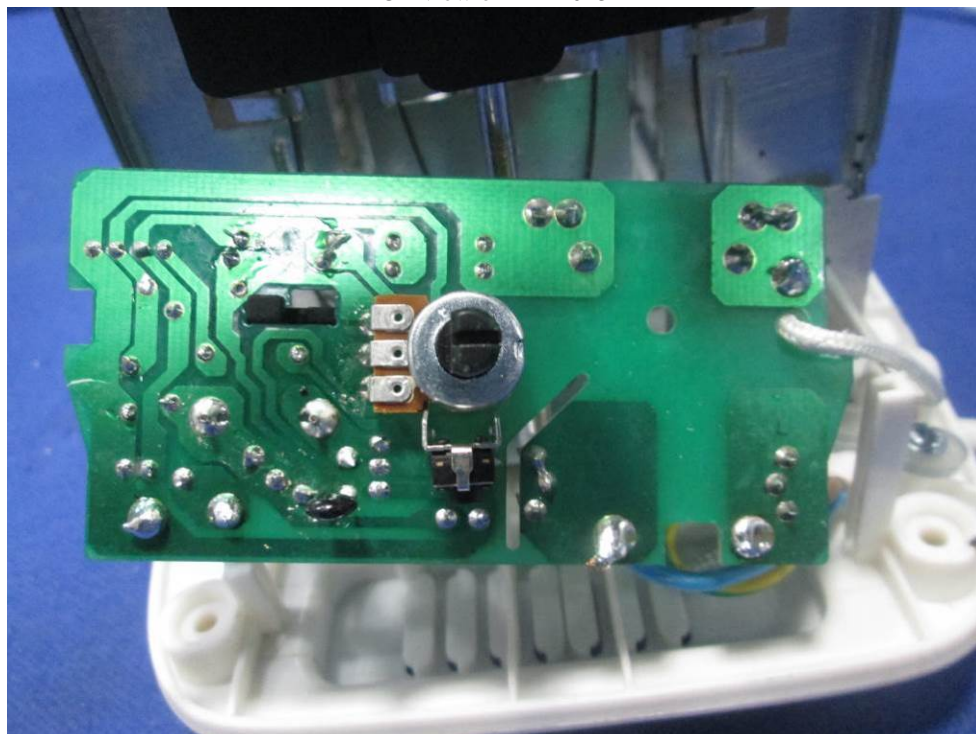


Photo 35
Overall view for TM-2016T



Photo 36
Top view for TM-2016T



Photo 37
Internal view for TM-2016T



Photo 38
PCB view for TM-2016T

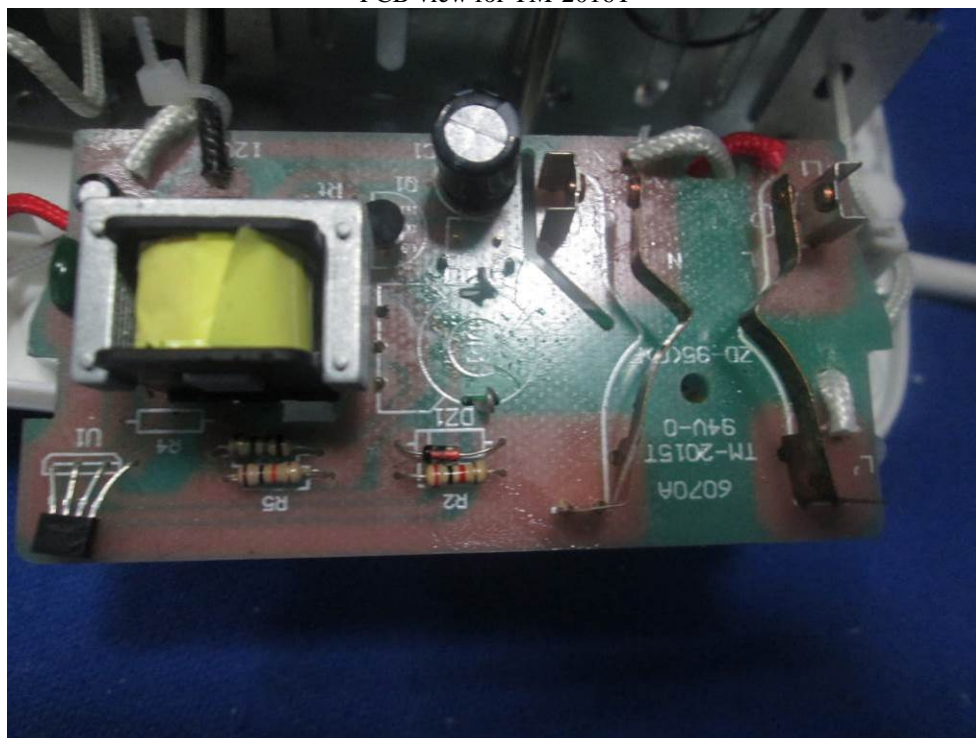
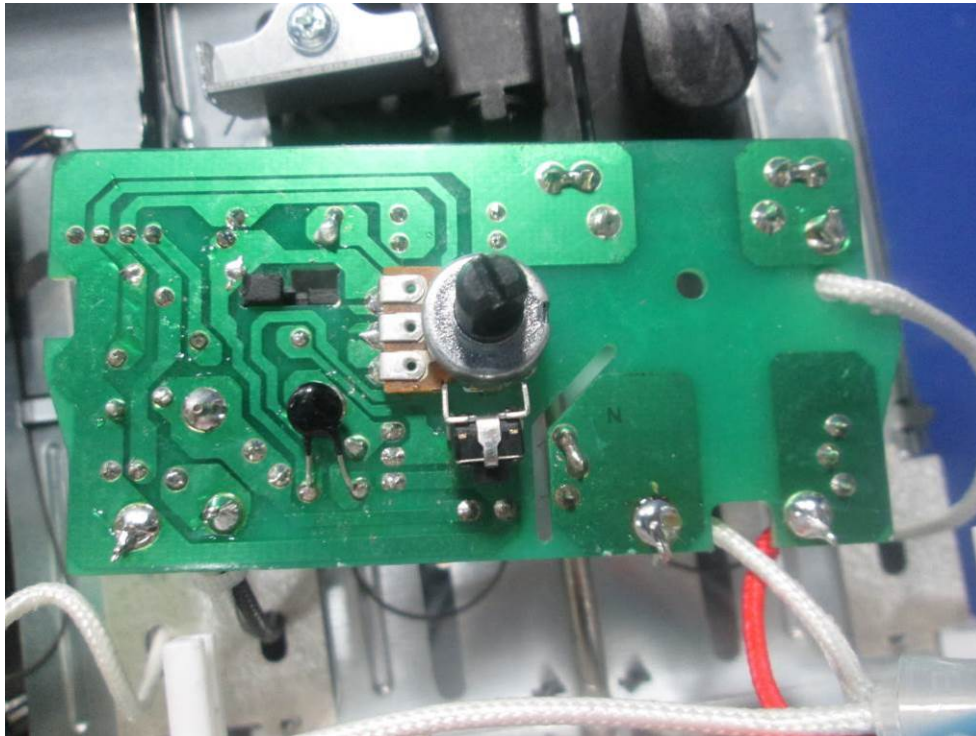


Photo 39
PCB view for TM-2016T



Amendment 2 photo:
Photo 40
Description: Overall view for TM-2019, TM-2019T, TM-2019TJ



Photo 41

Description: Top view for TM-2019, TM-2019T, TM-2019TJ



Photo 42

Description: Bottom view for TM-2019, TM-2019T, TM-2019TJ



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Photo 43

Description: Control knob of TM-2019, TM-2019T, TM-2019TJ



non-metallic material (Plastic) for button

Photo 44

Description: Internal view 1 for TM-2019, TM-2019T, TM-2019TJ

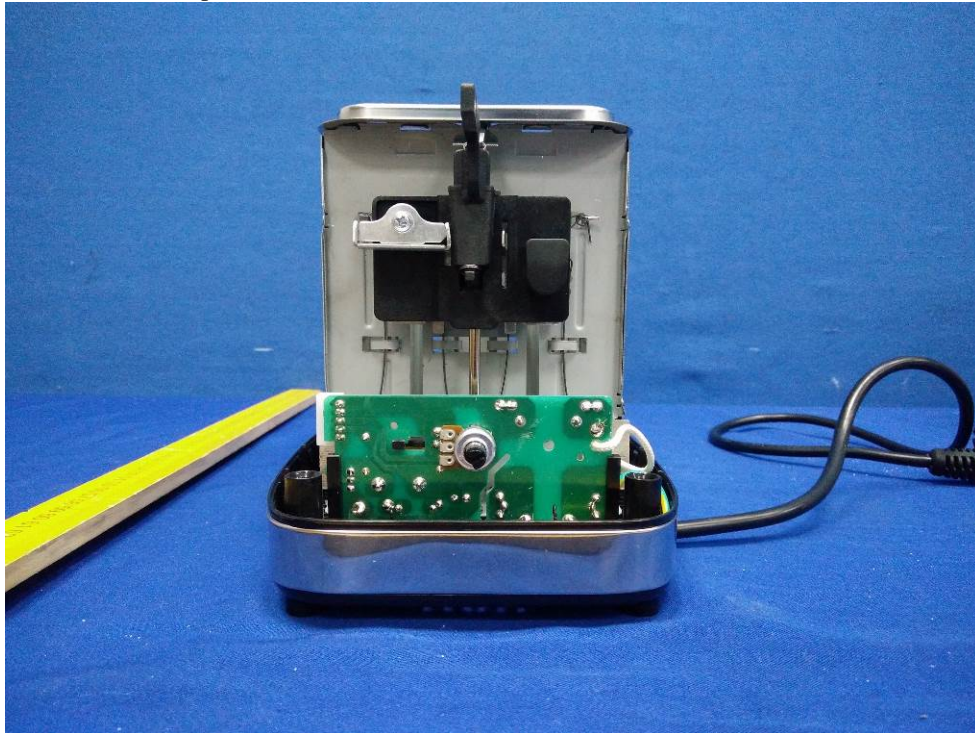


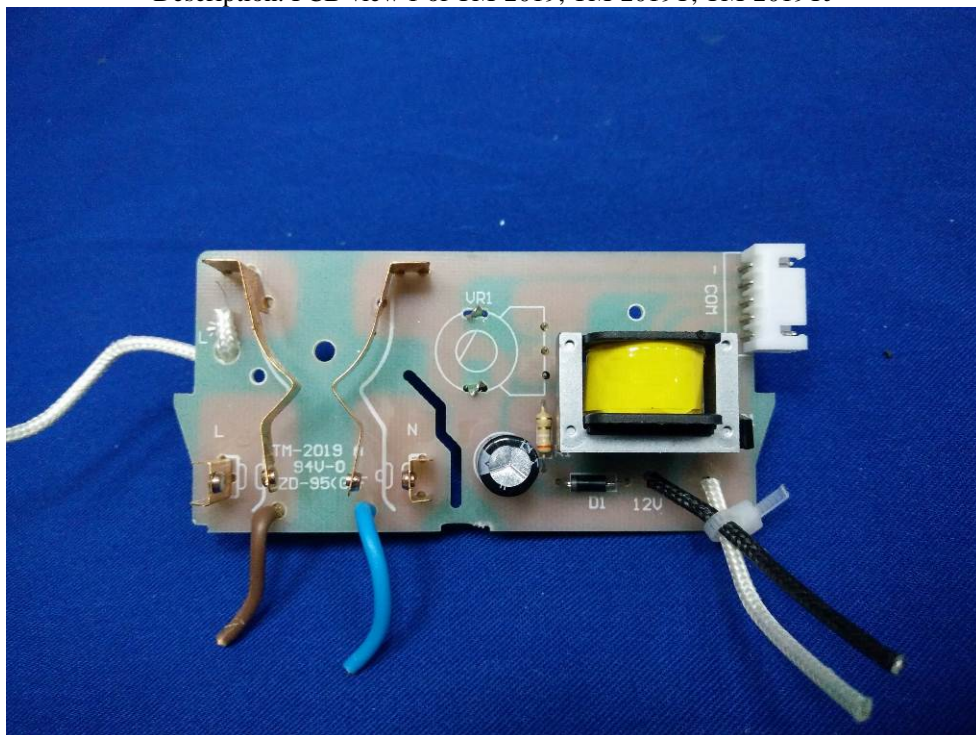
Photo 45

Description: Internal view 2 for TM-2019, TM-2019T, TM-2019TJ



Photo 46

Description: PCB view 1 of TM-2019, TM-2019T, TM-2019TJ



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Photo 47

Description: PCB view 2 of TM-2019, TM-2019T, TM-2019TJ

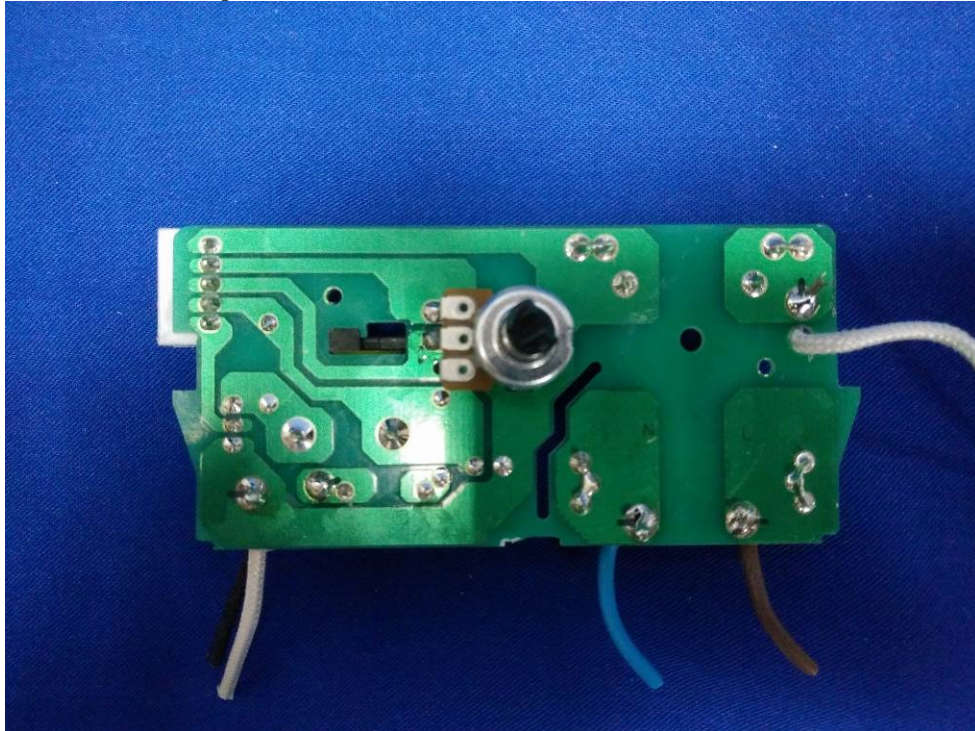


Photo 48

Description: Control PCB view 1 of TM-2019

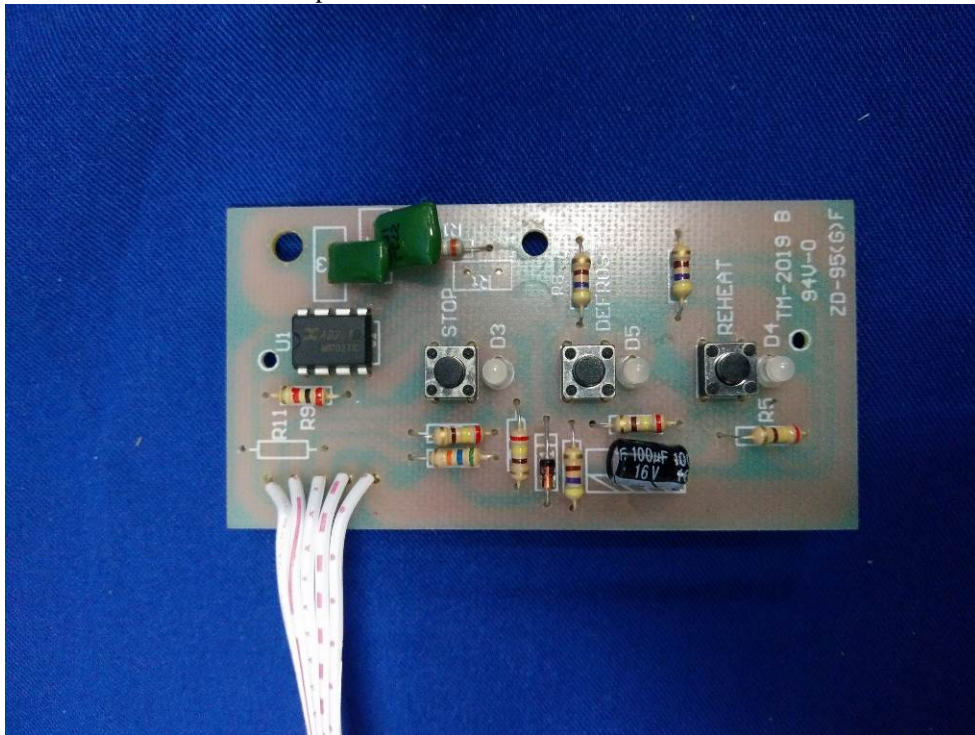


Photo 49

Description: Control PCB view 2 of TM-2019

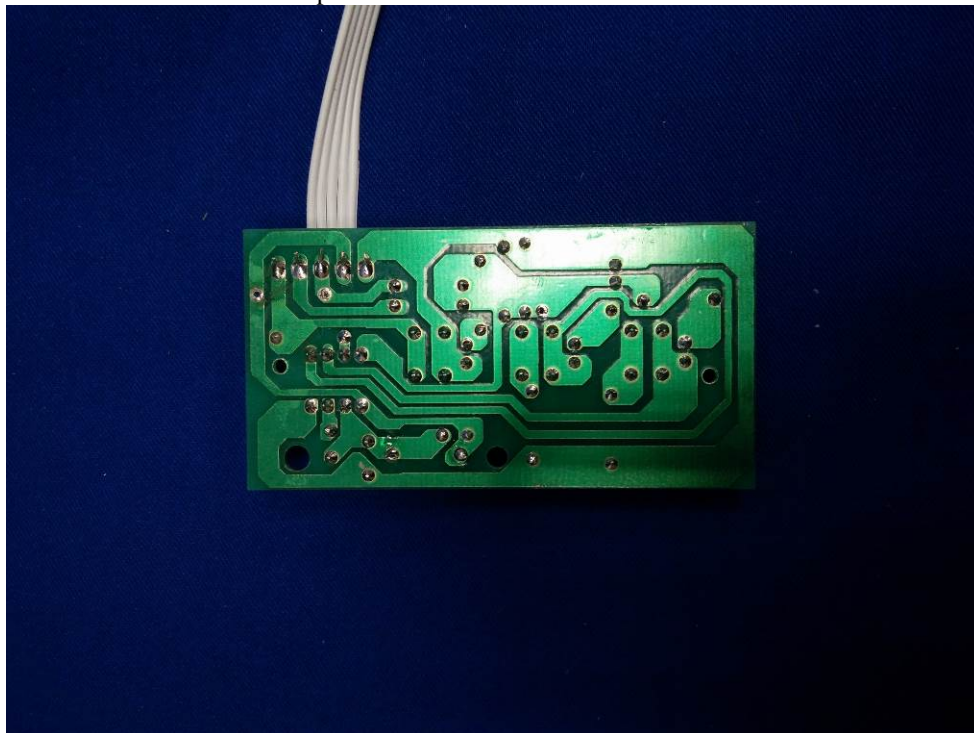
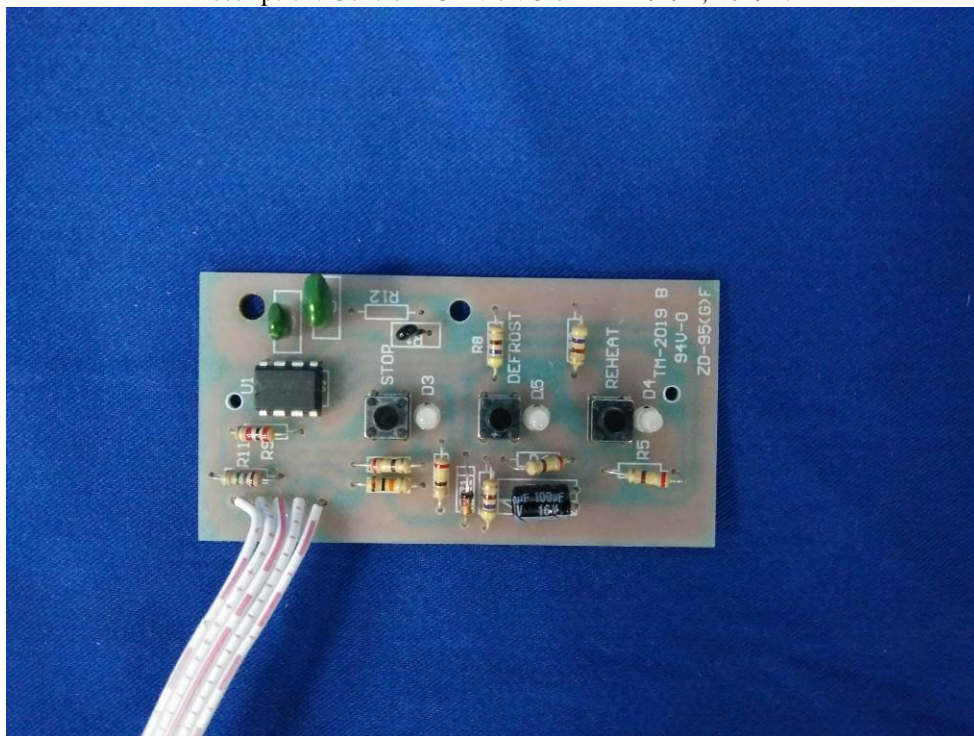


Photo 50

Description: Control PCB view 3 of TM-2019T, 2019TJ



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Photo 51

Description: Control PCB view 4 of TM-2019T, 2019TJ

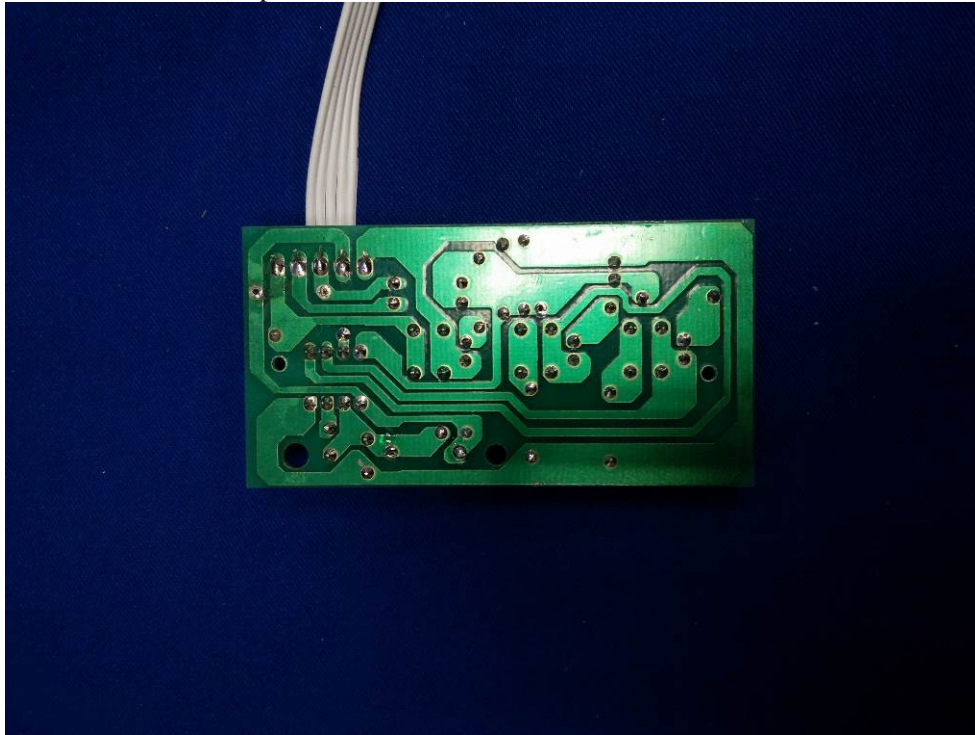


Photo 52

Description: Overall view for TM-2020, TM-2020T, TM-2020TJ



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Photo 53

Description: Front view for TM-2020, TM-2020T, TM-2020TJ



Photo 54

Description: Top view for TM-2020, TM-2020T, TM-2020TJ



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Photo 55

Description: Bottom view for TM-2020, TM-2020T, TM-2020TJ



Photo 56

Description: Control knob of TM-2020, TM-2020T, TM-2020TJ



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Photo 57

Description: Internal view 1 for TM-2020, TM-2020T, TM-2020TJ



Photo 58

Description: Internal view 2 for TM-2020, TM-2020T, TM-2020TJ



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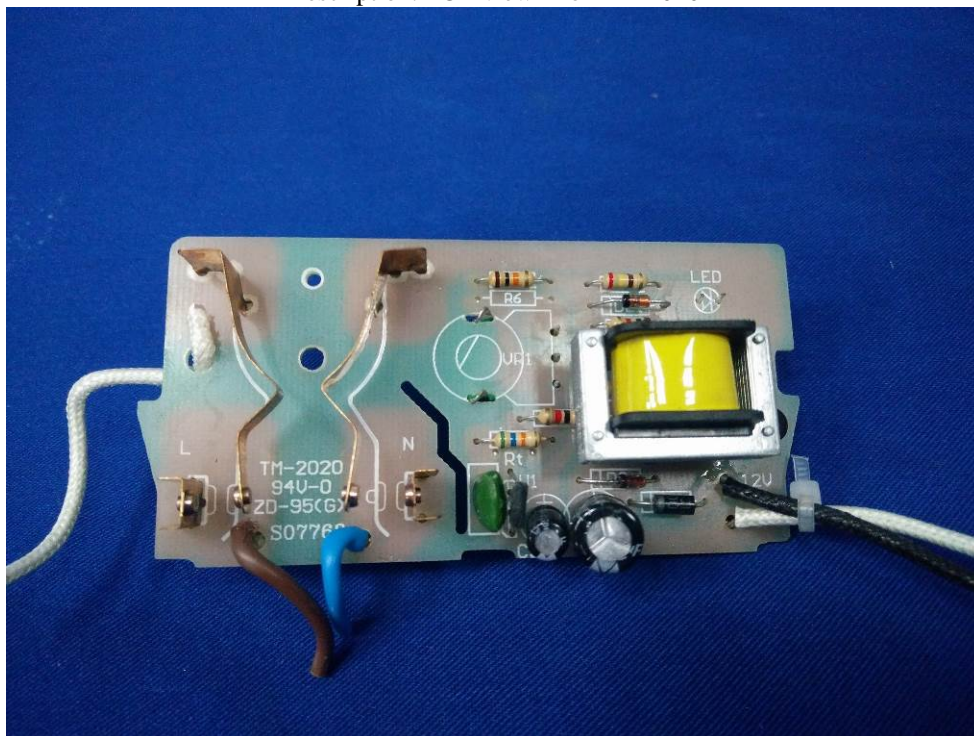
Photo 59

Description: Internal view 3 for TM-2020, TM-2020T, TM-2020TJ



Photo 60

Description: PCB view 1 for TM-2020

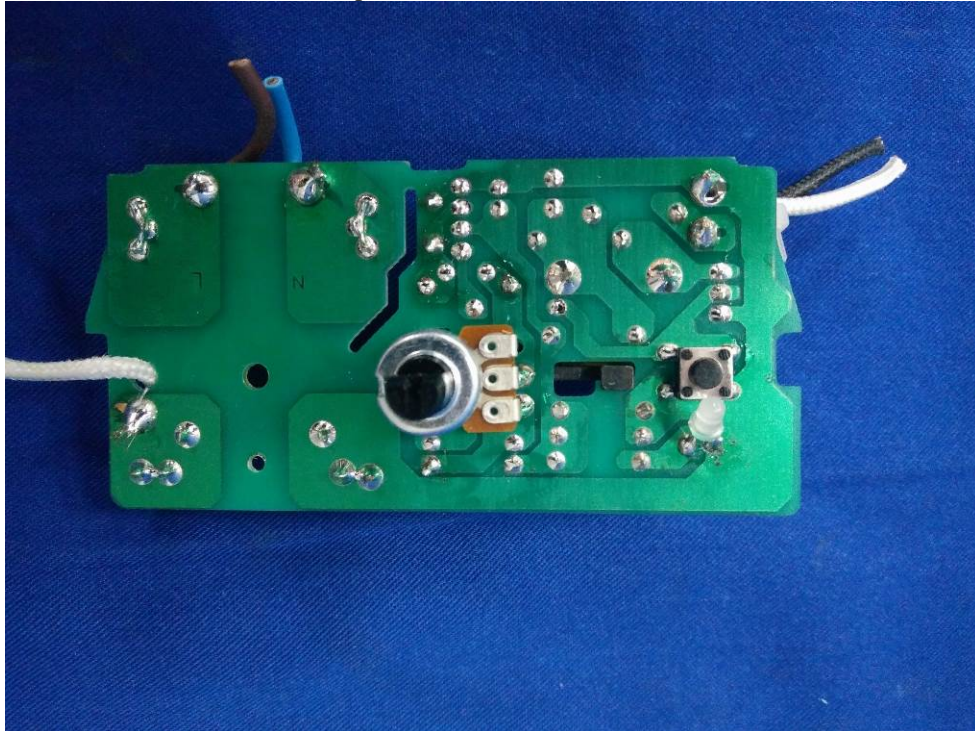


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Photo 61

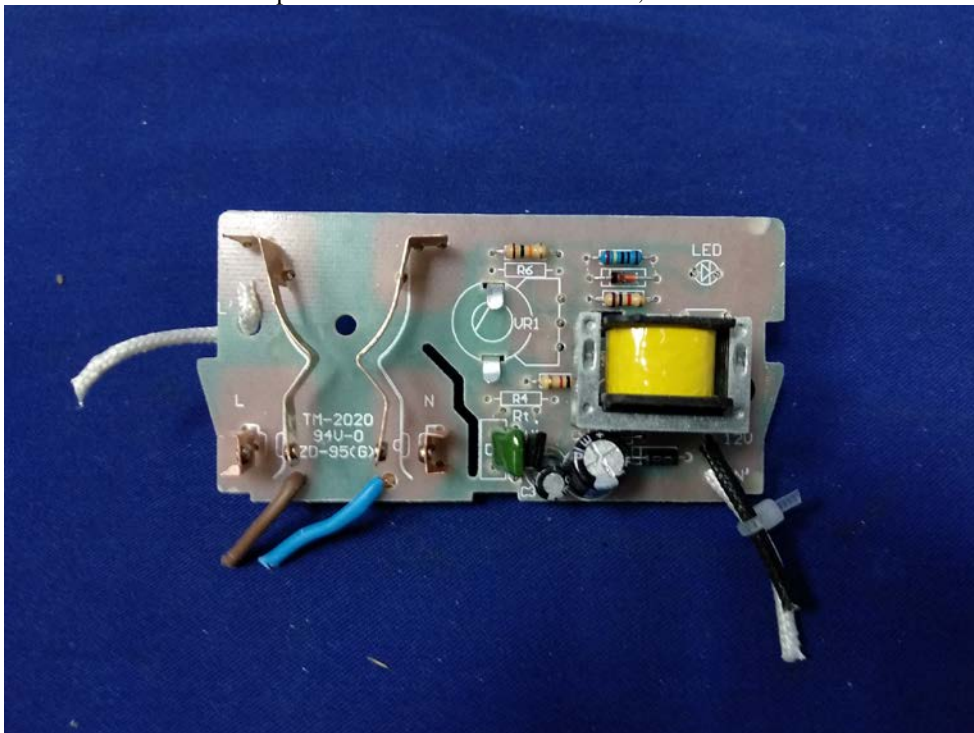
Description: PCB view 2 for TM-2020



Amendment 3 photo:

Photo 62

Description: PCB view 3 for TM-2020T, TM-2020TJ

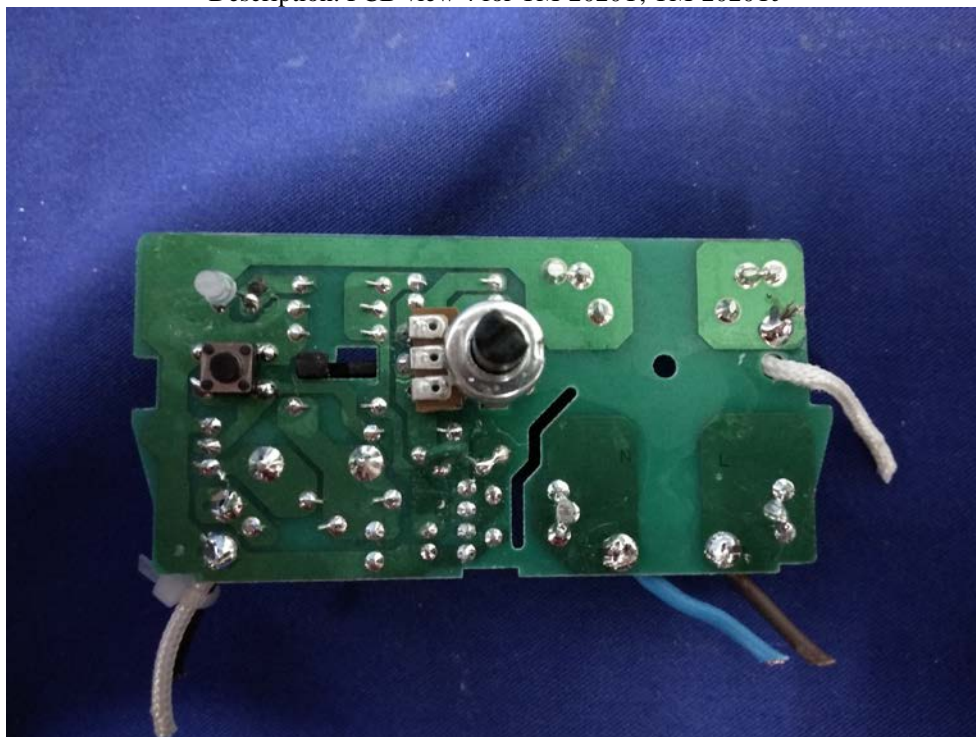


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Photo 63

Description: PCB view 4 for TM-2020T, TM-2020TJ



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8 Amendment 1

The original test report ref. No. EFSH15030095-IE-01-E01 dated 2015-03-23 was modified on 2016-09-14 to include the following changes and/or additions:

1. Two new models: TM-2015T and TM-2016T were added.
2. Compared with original model, TM-2015T and TM-2001T share similar construction except appearance and PCB with other models.
3. TM-2016T has different construction, appearance and PCB.

After review, TM-2015T and TM-2016T were subjected to the tests and the most unfavourable data was recorded.

This report replaces the original test report: EFSH15030095-IE-01-E01.

9 Amendment 2

The original test report ref. No. EFSH15030095-IE-01-E01 dated 2015-03-23 and EFSH15030095-IE-01-E01-A1 dated 2016-09-14 were modified on 2017-08-31 to include the following changes and/or additions:

1. Six new models: TM-2019, TM-2019T, TM-2019TJ, TM-2020, TM-2020T and TM-2020TJ were added. The detail differences are as below:

Model	Type of Resistance	With/without bread supportor
TM-2019	Mechanical temperature sensing resistor	Without bread supportor
TM-2019T	Thermistor	Without bread supportor
TM-2019TJ		With bread supportor
TM-2020	Mechanical temperature sensing resistor	Without bread supportor
TM-2020T	Thermistor	Without bread supportor
TM-2020TJ		With bread supportor

2. Compared with original model, TM-2019 series and TM-2006 series share similar construction except appearance and PCB with other models. TM-2020 series and TM-2005 series share similar construction except appearance and PCB with other models.

3. Add technical standard "EN 55014-2:2015".

After review, TM-2019 and TM-2020T were tested and recorded.

Test report ref. No. EFSH15030095-IE-01-E01-A1 was replaced by this test report ref. No. EFSH15030095-IE-01-E01-A2.

10 Amendment 3

The original test report ref. No. EFSH15030095-IE-01-E01 dated 2015-03-23, EFSH15030095-IE-01-E01-A1 dated 2016-09-14 and EFSH15030095-IE-01-E01-A2 dated 2017-08-31 were modified on 2017-12-15 to include the following changes and/or additions:

The value of resistance on PCB for TM-2020T and TM-2020TJ was changed. Detail refers to EUT photo 62 - 63.

After review, no additional test needs to be performed.

Test report ref. No. EFSH15030095-IE-01-E01-A2 was replaced by this test report ref. No. EFSH15030095-IE-01-E01-A3.