EMC TEST REPORT

Product	:	TOPWASSER RO WATER PURIFIER
Trade mark	:	TOPWASSER
Model/Type reference	:	CL-DR-F103
Serial Number	:	N/A
Ratings	:	DC 24V
Report Number	:	EED32J001891
Date	:	Oct. 12, 2017
Regulations	:	See below

Test Standards	Results
☒ EN 55014-1:2006+A1:2009+A2:2011	PASS
☒ EN 61000-3-2:2014	PASS
☒ EN 61000-3-3:2013	PASS
☒ EN 55014-2:1997+A1:2001+A2:2008	PASS

Prepared for:

TOPWASSER

Schwarzseestrasse 114 1716 Schwarzsee Switzerland

Prepared by:

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Check No.: 3043860293

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(Note: N/A means not applicable)

1. GENERAL INFORMATION

Applicant: TOPWASSER
Schwarzseestrasse 114 1716 Schwarzsee Switzerland

EMC Directive: 2014/30/EU
Product: TOPWASSER RO WATER PURIFIER
Trade mark: TOPWASSER
Model/Type reference: CL-DR-F103
Serial Number: N/A
Report Number: EED32J001891
Sample Received Date: Aug. 25, 2017
Sample tested Date: Aug. 25, 2017 to Sep. 26, 2017

The tested sample(s) and the sample information are provided by the client.

2. TEST SUMMARY

The Product has been tested according to the following specifications:

EMISSION		
Standard	**Test Item**	**Test**
EN 55014-1	Terminal disturbance voltages	Yes
EN 55014-1	Discontinuous disturbance (Clicks)	Yes
EN 55014-1	Disturbance power	Yes
EN 55014-1	Radiated disturbance	N/A[1]
EN 55014-1	Radiated disturbances in the frequency range 9KHz to 30MHz	N/A[2]
EN 61000-3-2	Harmonic current emission	N/A[3]
EN 61000-3-3	Voltage fluctuations & flicker	Yes

IMMUNITY (EN 55014-2)		
Standard	**Test Item**	**Test**
IEC 61000-4-2	Electrostatic discharge	Yes
IEC 61000-4-3	Radio frequency electromagnetic fields	N/A[4]
IEC 61000-4-4	Fast transients	Yes
IEC 61000-4-5	Surges	Yes
IEC 61000-4-6	Injected currents	Yes
IEC 61000-4-11	Voltage dips and interruptions	Yes

Remark:
1. The Product shall be evaluated for emissions in the 30 MHz to 1 000 MHz range by testing in accordance with method a as described in clause 4.1.2.3.2 of EN55014-1.
2. It only apply to induction cooking appliances.
3. The Product belongs to Class A, and its power is less than 75W, so it deems to fulfil this standard without testing.
4. The Product is belong to category II.

3. MEASUREMENT UNCERTAINTY

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

Test item	Value (dB)
Terminal disturbance voltages	3.4
Disturbance power	4.3

4. PRODUCT INFORMATION AND TEST SETUP

4.1 PRODUCT INFORMATION

Product Classification: Mains operated appliance (EN 55014-1)
Category II (EN 55014-2)

Ratings: DC 24V

Adapter information: Manufacture: FO SHAN SHUNDE GUANYUDA POWER SUPPLY CO.,LTD
Model No.: GM60-240275-2DE
Input: 100-240V~ 50/60Hz 2.0A
Output: 24V⎓2.75A

4.2 TEST SETUP CONFIGURATION

See test photographs attached in Appendix 1 for the actual connections between Product and support equipment.

4.3 SUPPORT EQUIPMENT

No.	Device Type	Brand	Model	Series No.	Data Cable	Power Cord
1.	---	---	---	---	---	---

Notes:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

5. FACILITIES AND ACCREDITATIONS

5.1 TEST FACLITY

All measurement facilities used to collect the measurement data are located at Hongwei Industrial Zone, Bao'an 70 District, Shenzhen, Guangdong, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.

5.2 TEST EQUIPMENT LIST

Instrumentation: The following list contains equipments used at CTI for testing.
The calibrations of the measuring instruments, including any accessories that may effect such calibration, are checked frequently to assure their accuracy. Adjustments are made and correction factors applied in accordance with instructions contained in the manual for the measuring instrument.

Equipment used during the tests:

Shielding Room No. 1 - Terminal disturbance voltages Test				
Equipment	**Manufacturer**	**Model**	**Serial No.**	**Due Date**
Receiver	R&S	ESCI	100435	06/13/2018
LISN	R&S	ENV216	100098	06/12/2018

Shielding Room No. 1 - Discontinuous disturbance (Clicks) Test				
Equipment	**Manufacturer**	**Model**	**Serial No.**	**Due Date**
LISN	R&S	ENV216	100098	06/12/2018
Click Analyzer	AFJ	CL55C	5504619103	06/11/2020

Shielding Room No. 1 - PE Test				
Equipment	**Manufacturer**	**Model**	**Serial No.**	**Due Date**
Receiver	R&S	ESCI	100435	06/13/2018
Clamp	EM TEST	MDS21	3717	06/27/2018

Shielding Room No. 2 - Flicker Test (EN 61000-3-3)				
Equipment	**Manufacturer**	**Model**	**Serial No.**	**Due Date**
5KVA AC POWER SOURCE	California instruments	5001iX-400-413	57344	02/22/2018
Flicker & Harmonic Tester	California instruments	PACS-1	72492	02/22/2018

Shielding Room No. 3 - Electrostatic discharge Test (IEC 61000-4-2)				
Equipment	**Manufacturer**	**Model**	**Serial No.**	**Due Date**
ESD Simulator	TESEQ	NSG437	1182	08/25/2018

Shielding Room No. 3 - Fast transients / Surges Test (IEC 61000-4-4) (IEC 61000-4-5)				
Equipment	**Manufacturer**	**Model**	**Serial No.**	**Due Date**
Compact Generator	EM-Test	UCS500M/6B	V0603101093	07/09/2018

Shielding Room No. 2 - Injected currents Test (IEC 61000-4-6)				
Equipment	**Manufacturer**	**Model**	**Serial No.**	**Due Date**
Signal Generator	IFR	2023B	202307/439	12/15/2017
Power Amplifier	AR	75A 250A	320297	N/A
Attenuator	EM-Test	ATT6/75	0320837	09/06/2018
CDN	EM-Test	CDN M2/M3	0204-01	06/12/2018

Shielding Room No. 2 –Voltage dips and interruptions Test (IEC 61000-4-11)				
Equipment	**Manufacturer**	**Model**	**Serial No.**	**Due Date**
5KVA AC POWER SOURCE	California instruments	5001iX-400-413	57344	02/22/2018
Electronic output switch	California instruments	EOS-1	72616	02/22/2018

5.3 LABORATORY ACCREDITATIONS AND LISTINGS

The measuring equipment utilized to perform the tests documented in this report has been calibrated once a year or in accordance with the manufacturer's recommendations, and is traceable under the ISO/IEC/EN 17025 to international or national standards. Equipment has been calibrated by accredited calibration laboratories.

6. TERMINAL DISTURBANCE VOLTAGES

6.1 LIMITS

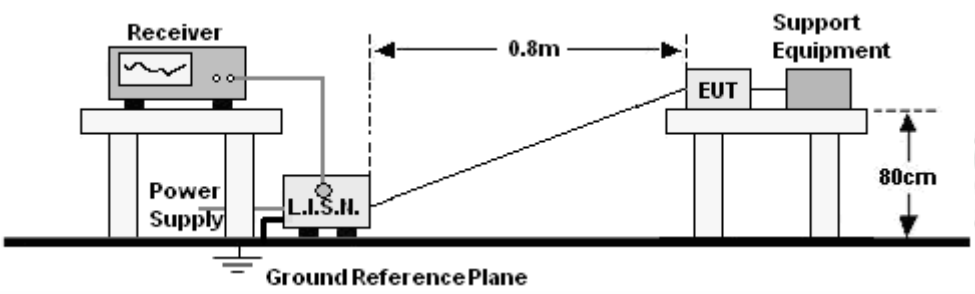
At mains terminals Limits for Household Appliance

Frequency range (MHz)	Limits dB(μV)	
	Quasi-peak	Average
0,15 to 0,50	66 to 56	59 to 46
0,50 to 5	56	46
5 to 30	60	50

NOTE: 1. The lower limit shall apply at the transition frequencies.
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 to 0.50 MHz.

6.2 BLOCK DIAGRAM OF TEST SETUP

For mains terminals:



6.3 TEST PROCEDURE

For mains terminals:

a. The Product was placed on a nonconductive table 0.8 m above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the main through Line Impedance Stability Network (L.I.S.N).

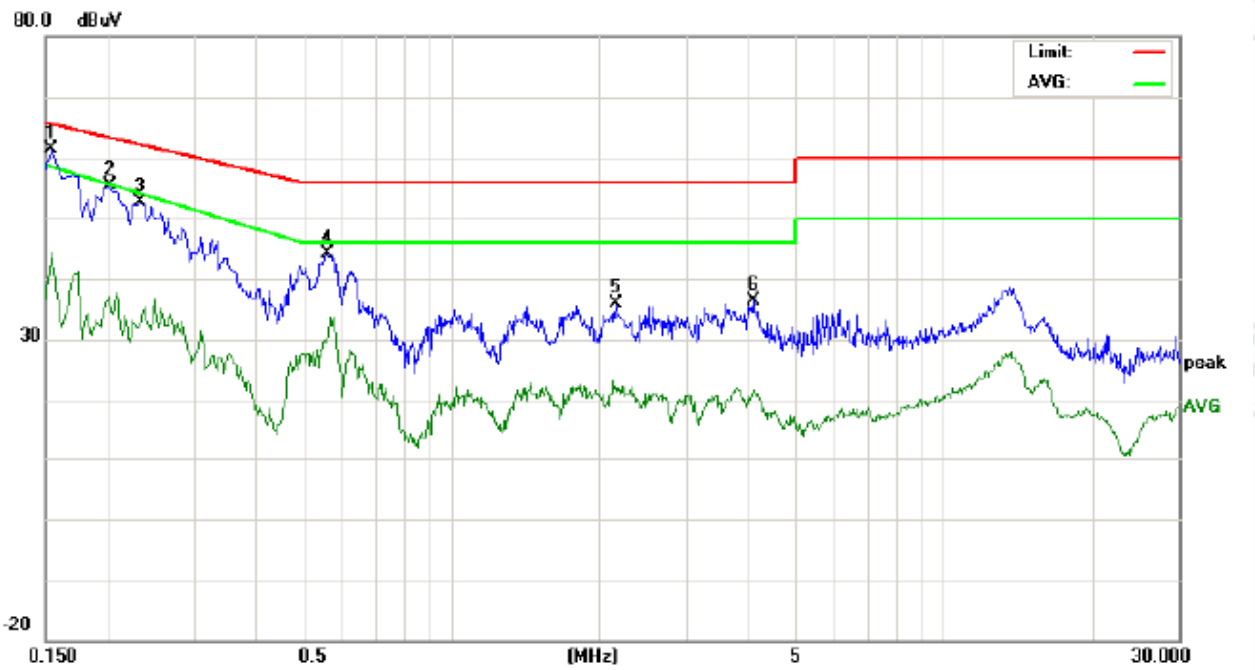
b. The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak and AVG detector in Max Hold mode. Run the receiver's pre-scan to record the maximum disturbance generated from Product in all power lines in the full band.

c. For each frequency whose maximum record was higher or close to limit, measure its QP and AVG values and record.

d. A test at about 160 KHz shall be made over a range of 0.9 to 1.1 times the rated voltage in order to check whether the level of disturbance varies considerably with the supply voltage; in which case, the measurements are to be made at the voltage that causes maximum disturbance.

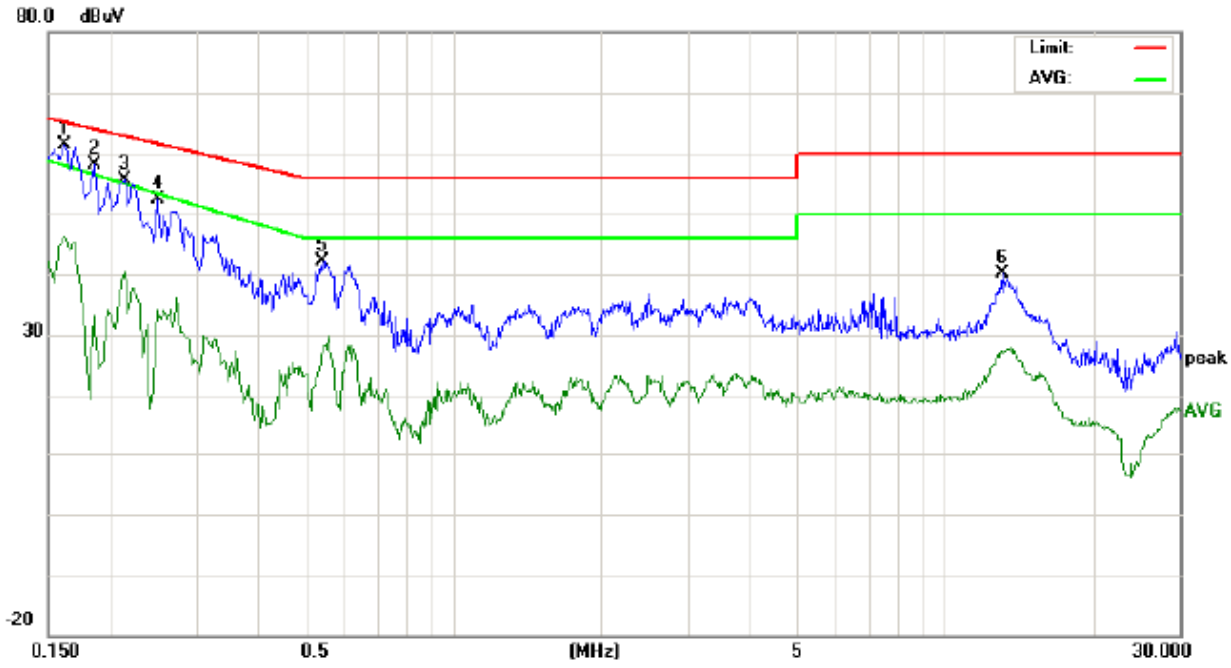
6.4 GRAPHS AND DATA

Product	:	TOPWASSER RO WATER PURIFIER			
Model/Type reference	:	CL-DR-F103	**Temperature**	:	22℃
Power	:	AC 264V/50Hz	**Humidity**	:	53%
Mode	:	ON	**Phase**	:	L



No.	Freq.	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)			
	MHz	Peak	QP	AVG	dB	peak	QP	AVG	QP	AVG	QP	AVG	P/F	Comment
1	0.1550	51.55	48.47	29.94	9.76	61.31	58.23	39.70	65.72	58.64	-7.49	-18.94	P	
2	0.2020	45.60		27.35	9.71	55.31		37.06	63.52	55.78	-8.21	-18.72	P	
3	0.2340	42.77		22.55	9.73	52.50		32.28	62.30	54.19	-9.80	-21.91	P	
4	0.5620	34.37		20.07	9.73	44.10		29.80	56.00	46.00	-11.90	-16.20	P	
5	2.1580	26.20		12.18	9.71	35.91		21.89	56.00	46.00	-20.09	-24.11	P	
6	4.1020	26.68		11.73	9.65	36.33		21.38	56.00	46.00	-19.67	-24.62	P	

Product	:	TOPWASSER RO WATER PURIFIER			
Model/Type reference	:	CL-DR-F103	**Temperature**	:	22℃
Power	:	AC 264V/50Hz	**Humidity**	:	53%
Mode	:	ON	**Phase**	:	N



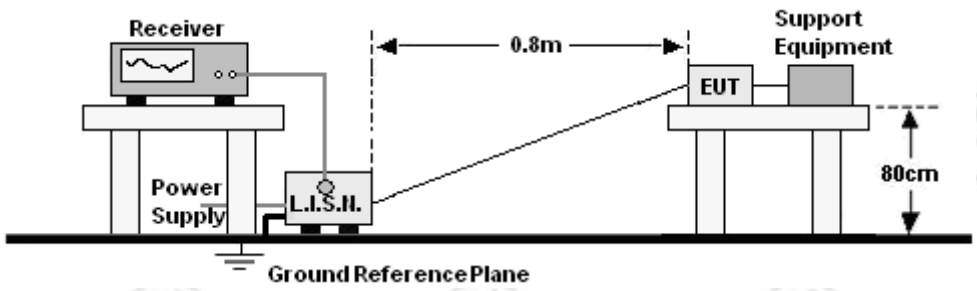
No.	Freq.	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)			
	MHz	Peak	QP	AVG	dB	peak	QP	AVG	QP	AVG	QP	AVG	P/F	Comment
1	0.1620	51.64	48.40	32.18	9.75	61.39	58.15	41.93	65.36	58.16	-7.21	-16.23	P	
2	0.1860	48.42		23.30	9.73	58.15		33.03	64.21	56.67	-6.06	-23.64	P	
3	0.2140	45.79		30.72	9.72	55.51		40.44	63.04	55.16	-7.53	-14.72	P	
4	0.2500	42.72		24.45	9.74	52.46		34.19	61.75	53.48	-9.29	-19.29	P	
5	0.5420	32.36		18.17	9.73	42.09		27.90	56.00	46.00	-13.91	-18.10	P	
6	13.0860	30.13		17.06	9.93	40.06		26.99	60.00	50.00	-19.94	-23.01	P	

7. DISCONTINUOUS DISTURBANCE (CLICKS)

7.1 LIMITS

Frequency	150KHz	500KHz	1.4MHz	30MHz
Limit value (L)(dBμV)	66	56	56	60

7.2 BLOCK DIAGRAM OF TEST SETUP



7.3 TEST RESULTS

Product : TOPWASSER RO WATER PURIFIER
Model/Type reference : CL-DR-F103 **Temperature** : 22℃
Power : AC 264V/50Hz **Humidity** : 53%
Mode : ON

Frequency	150KHz	500KHz	1.4MHz	30MHz
Limit value (L)(dB/uV)	66	56	56	60
mount of clicks > L	short:0	short:0	short:0	short:0
	long:0	long:0	long:0	long:0
Registration ">2 in 2sec"?	N	N	N	N
DIA Continuous (sec) Only if "cont" > 0:	cont:0	cont:0	cont:0	cont:0
Conform with exceptions 4.2.3? Total amount of clicks > L (short + long)	n = 0	n = 0	n = 0	n = 0
Switching operations:	0			
Observation time:	**120 min**			
Click Rate (N = n/T)	N1 =0, N2=0**(used for 0.5 MHz to 30 MHz)**			
New limit: Lq = L + 20 log 30/N (maximum L + 44) Amount of clicks > Lq % > Lq (max 25%)	**Observation time = N/A**			
Remarks:	Count limit reached			
Conformity:	**YES**			

8. DISTURBANCE POWER

8.1 LIMITS

TABLE-1 For household and similar appliances

Frequency range (MHz)	Limits dB(pW)	
	Quasi-peak	Average
30 to 300	45 to 55	35 to 45

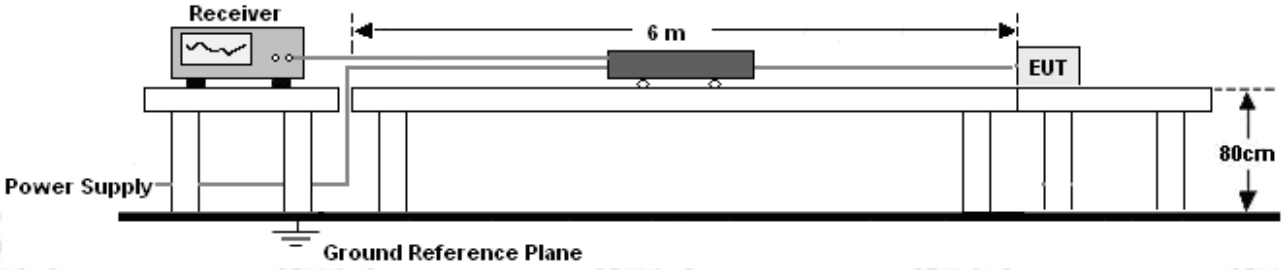
NOTE: The limit Increasing linearly with the frequency from 30 to 300 MHz.

TABLE-2 Margin when performing disturbance power Measurement in the frequency range 30 MHz to 300 MHz

Frequency range (MHz)	Margin Quasi-peak dB(pW)
	Household and similar appliances / Tools
200 to 300	0 to 10

NOTE: The limit Increasing linearly with the frequency from 200 to 300 MHz.

8.2 BLOCK DIAGRAM OF TEST SETUP

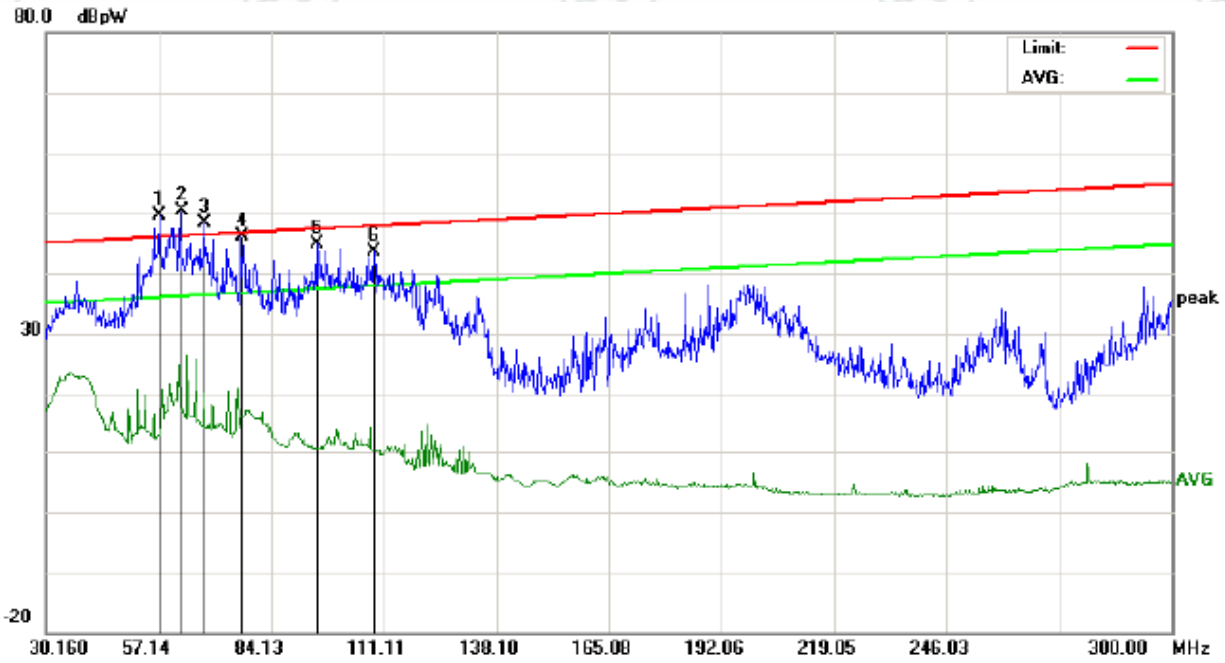


8.3 TEST PROCEDURE

a. The absorbing clamp was placed around the lead to be measured, with its current transformer towards the equipment under test.
b. All connectors having a connected lead shall be terminated in a manner representative of use.
c. The absorbing clamp was applied successively to all leads whose length is 25cm or longer, unscreened or screened, which may be connected to the individual units of the equipment under test.
d. The Product was placed on a nonconductive table of 0.8 m of height above the floor and at least 0.8m from other metallic objects and from any person. The lead to be measured shall be stretched in a straight horizontal line for length sufficient to accommodate the absorbing clamp.
e. A test at about 50 MHz shall be made over a range of 0.9 to 1.1 times the rated voltage in order to check whether the level of disturbance varies considerably with the supply voltage; in which case, the measurements are to be made at the voltage that causes maximum disturbance.
f. Pre-scans were performed with a quasi-peak detector and an average detector.
g. At each test frequency the absorbing clamp shall be moved along the lead until the maximum value is found between a position adjacent to the equipment under test and a distance of about a half wavelength from it.

8.4 GRAPHS AND DATA

Product	:	TOPWASSER RO WATER PURIFIER			
Model/Type reference	:	CL-DR-F103	**Temperature**	:	22℃
Power	:	AC 264V/50Hz	**Humidity**	:	53%
Mode	:	ON	**Test port**	:	AC mains



No.	Freq.	Reading_Level (dBuV)			Correct Factor	Measurement (dBpW)			Limit (dBpW)		Margin (dB)			
	MHz	Peak	QP	AVG	dB	peak	QP	AVG	QP	AVG	QP	AVG	P/F	Comment
1	57.2399	40.67	22.75	4.77	8.99	49.66	31.74	13.76	46.01	36.01	-14.27	-22.25	P	
2	62.3599	41.51	24.32	10.84	8.94	50.45	33.26	19.78	46.20	36.20	-12.94	-16.42	P	
3	68.0399	39.77	21.35	4.80	8.55	48.32	29.90	13.35	46.41	36.41	-16.51	-23.06	P	
4	76.9600	38.18	22.87	7.87	8.02	46.20	30.89	15.89	46.74	36.74	-15.85	-20.85	P	
5	94.8800	37.44	21.72	3.68	7.32	44.76	29.04	11.00	47.40	37.40	-18.36	-26.40	P	
6	108.6800	36.75	22.69	3.70	6.79	43.54	29.48	10.49	47.91	37.91	-18.43	-27.42	P	

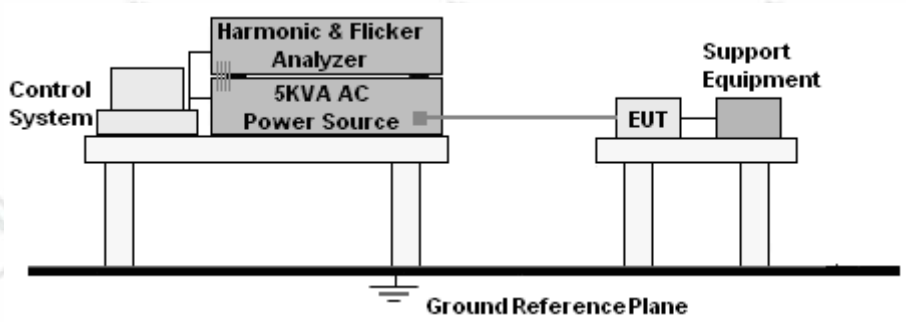
Remark: The maximum clock frequency of the Product is less than 30 MHz and all emission readings from the Product are lower than the applicable limits (Table 2) reduced by the margin, So, Appliances are deemed to comply in the frequency range from 300 MHz to 1 000 MHz.

9. VOLTAGE FLUCTUATIONS & FLICKER (FLICKER)

9.1 LIMITS

Please refer to EN 61000-3-3: 2013 Clause 5.

9.2 BLOCK DIAGRAM OF TEST SETUP



9.3 TEST PROCEDURE

a. The Product was placed on the top of a non-conductive table above the ground and operated to produce the most unfavorable sequence of voltage changes under normal operating conditions.

b. During the flick test, the measure time shall include that part of whole operation cycle in which the Product produce the most unfavorable sequence of voltage changes. The observation period for short-term flicker indicator is 10 minutes and the observation period for long-term flicker indicator is 2 hours.

9.4 TEST RESULTS

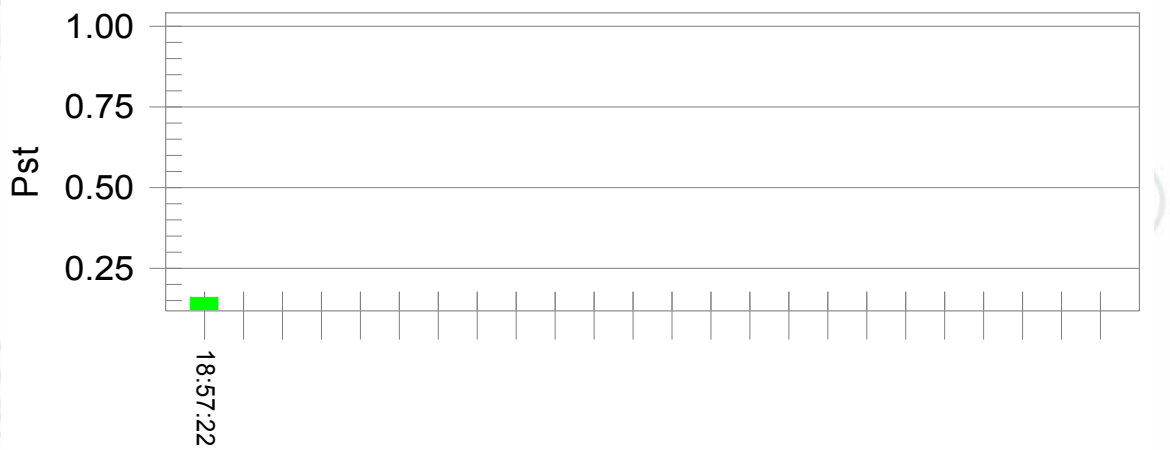
Product	:	TOPWASSER RO WATER PURIFIER			
Model/Type reference	:	CL-DR-F103	**Temperature**	:	24℃
Power	:	AC 230V/50Hz	**Humidity**	:	54%
Mode	:	ON			

Pass.

Flicker Test Summary

Test Result: Pass **Status: Test Completed**

Pst_i and limit line **European Limits**



Parameter values recorded during the test:

Vrms at the end of test (Volt):	**230.01**			
Highest dt (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
T-max (mS):	**0**	**Test limit (mS):**	**500.0**	**Pass**
Highest dc (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Highest dmax (%):	**0.00**	**Test limit (%):**	**4.00**	**Pass**
Highest Pst (10 min. period):	**0.160**	**Test limit:**	**1.000**	**Pass**

10. IMMUNITY TEST

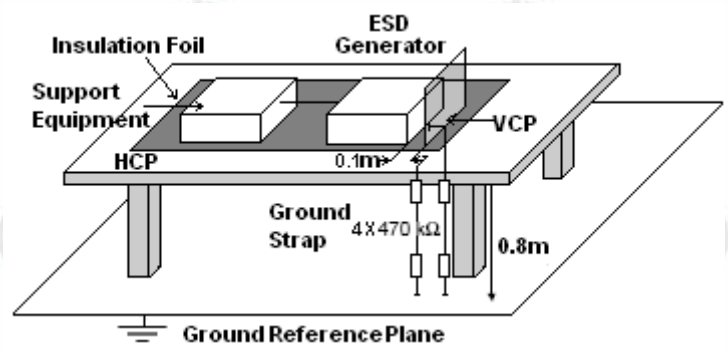
General Performance Criteria	
Product Standard	**EN 55014-2:1997+A1:2001+A2:2008**
CRITERION A	The apparatus shall continue to operate as intended during the test. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by 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.

10.1 ELECTROSTATIC DISCHARGE

10.1.1 TEST SPECIFICATION

Basic Standard	:	EN 55014-2 & IEC 61000-4-2
Test Port	:	Enclosure port
Discharge Impedance	:	330 ohm / 150 pF
Discharge Mode	:	Single Discharge
Discharge Period	:	one second between each discharge

10.1.2 BLOCK DIAGRAM OF TEST SETUP



10.1.3 TEST PROCEDURE

a. Electrostatic discharges were applied only to those points and surfaces of the Product that are accessible to users during normal operation.

b. The test was performed with at least ten single discharges on the pre-selected points in the most sensitive polarity.

c. The time interval between two successive single discharges was at least 1 second.

d. The ESD generator was held perpendicularly to the surface to which the discharge was applied and the return cable was at least 0.2 meters from the Product.

e. Contact discharges were applied to the non-insulating coating, with the pointed tip of the generator penetrating the coating and contacting the conducting substrate.

f. Air discharges were applied with the round discharge tip of the discharge electrode approaching the Product as fast as possible (without causing mechanical damage) to touch the Product. After each discharge, the ESD generator was removed from the Product and re-triggered for a new single discharge. The test was repeated until all discharges were complete.

g. At least ten single discharges (in the most sensitive polarity) were applied to the Horizontal Coupling Plane at points on each side of the Product. The ESD generator was positioned vertically at a distance of 0.1 meters from the Product with the discharge electrode touching the HCP.

h. At least ten single discharges (in the most sensitive polarity) were applied to the center of one vertical edge of the Vertical Coupling Plane in sufficiently different positions that the four faces of the Product were completely illuminated. The VCP (dimensions 0.5m x 0.5m) was placed vertically to and 0.1 meters from the Product.

10.1.4 RESULTS & PERFORMANCE

Product	:	TOPWASSER RO WATER PURIFIER			
Model/Type reference	:	CL-DR-F103	**Temperature**	:	24℃
Power	:	AC 230V/50Hz	**Humidity**	:	54%
Mode	:	ON			

Discharge Method	Discharge Position	Voltage (±kV)	Min. No. of Discharge per polarity (Each Point)	Required Level	Performance Criterion
Contact Discharge	Conductive Surfaces	4	10	B	A
	Indirect Discharge HCP	4	10	B	A
	Indirect Discharge VCP	4	10	B	A
Air Discharge	Slots, Apertures, and Insulating Surfaces	8	10	B	A

☑ There was no observable degradation in performance.

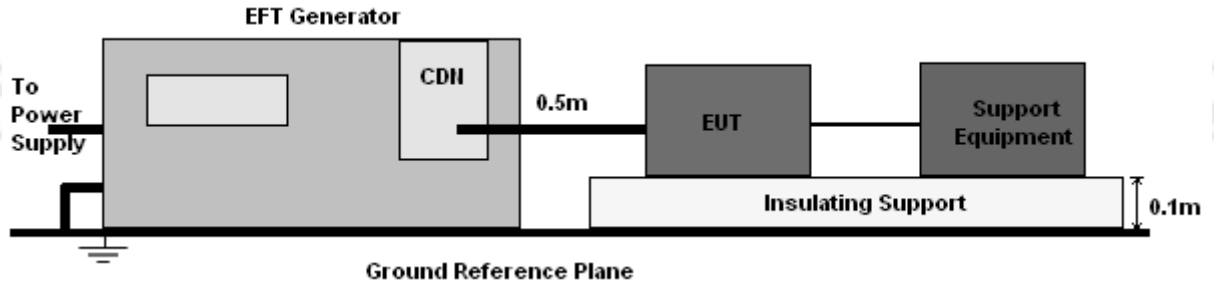
10.2 FAST TRANSIENTS

10.2.1 TEST SPECIFICATION

Basic Standard	:	EN 55014-2 & IEC 61000-4-4
Test Port	:	input a.c. power port
Impulse Frequency	:	5 kHz
Impulse Wave-shape	:	5/50 ns
Burst Duration	:	15 ms
Burst Period	:	300 ms
Test Duration	:	2 minutes per polarity

10.2.2 BLOCK DIAGRAM OF TEST SETUP

For input a.c. power port:



10.2.3 TEST PROCEDURE

a. The Product and support units were located on a non-conductive table above ground reference plane.

b. A 0.5m-long power cord was attached to Product during the test.

10.2.4 RESULT & PERFORMANCE

Product	:	TOPWASSER RO WATER PURIFIER			
Model/Type reference	:	CL-DR-F103	**Temperature**	:	24℃
Power	:	AC 230V/50Hz	**Humidity**	:	54%
Mode	:	ON			

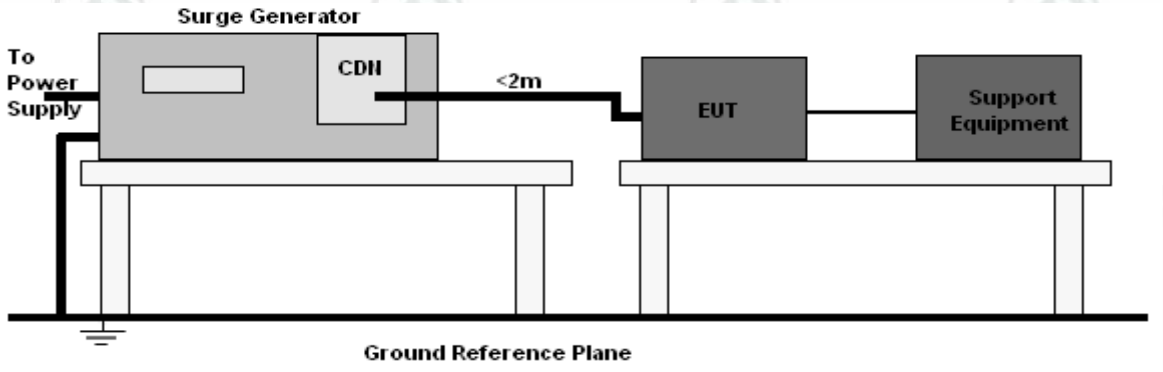
Coupling	Voltage (kV)	Polarity	Required Level	Performance Criterion
L + N	1	±	B	A

10.3 SURGES

10.3.1 TEST SPECIFICATION

Basic Standard	:	EN 55014-2 & IEC 61000-4-5
Test Port	:	input a.c. power port
Wave-Shape	:	Open Circuit Voltage - 1.2 / 50 us Short Circuit Current - 8 / 20 us
Pulse Repetition Rate	:	1 pulse / min.
Test Events	:	Five positive polarity pulses at the 90° phase angel Five negative polarity pulses at the 270° phase angle

10.3.2 BLOCK DIAGRAM OF TEST SETUP



10.3.3 TEST PROCEDURE

a. The surge is to be applied to the Product power supply terminals via the capacitive coupling network. Decoupling networks are 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.

b. The power cord between the Product and the coupling/decoupling networks shall be 2 meters in length (or shorter). Interconnection line between the Product and the coupling/decoupling networks shall be 2 meters in length (or shorter).

10.3.4 RESULT & PERFORMANCE

Product	:	TOPWASSER RO WATER PURIFIER			
Model/Type reference	:	CL-DR-F103	**Temperature**	:	24℃
Power	:	AC 230V/50Hz	**Humidity**	:	54%
Mode	:	ON			

Coupling Line	Voltage (kV)	Phase Angle	Required Level	Performance Criterion
L - N	+1	90°	B	A
	-1	270°		

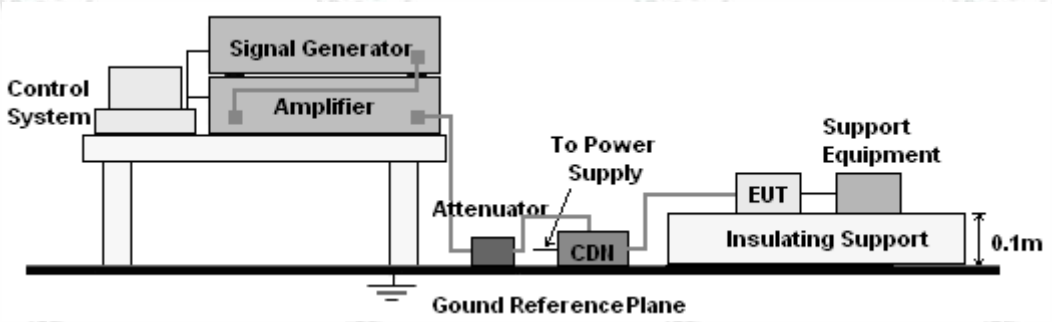
10.4 INJECTED CURRENTS

10.4.1 TEST SPECIFICATION

Basic Standard	:	EN 55014-2 & IEC 61000-4-6
Test Port	:	input a.c. power port
Step Size	:	1%
Modulation	:	80% AM
Dwell Time	:	1 second

10.4.2 BLOCK DIAGRAM OF TEST SETUP

For input a.c. power port:



10.4.3 TEST PROCEDURE

For input a.c. power port:

a. The Product and support units were located at a ground reference plane with the interposition of a 0.1 m thickness insulating support and the CDN was located on GRP directly.

b. The frequency range is swept from 150 kHz to 230MHz, with the signal 80% amplitude modulated with a 1 kHz sine wave. The rate of sweep did not exceed 1.5x 10^{-3} decade/s. Where the frequency range is swept incrementally, the step size was 1% of fundamental.

c. The dwell time at each frequency shall be not less than the time necessary for the Product to be able to respond.

10.4.4 RESULT & PERFORMANCE

Product	:	TOPWASSER RO WATER PURIFIER			
Model/Type reference	:	CL-DR-F103	**Temperature**	:	24℃
Power	:	AC 230V/50Hz	**Humidity**	:	54%
Mode	:	ON			

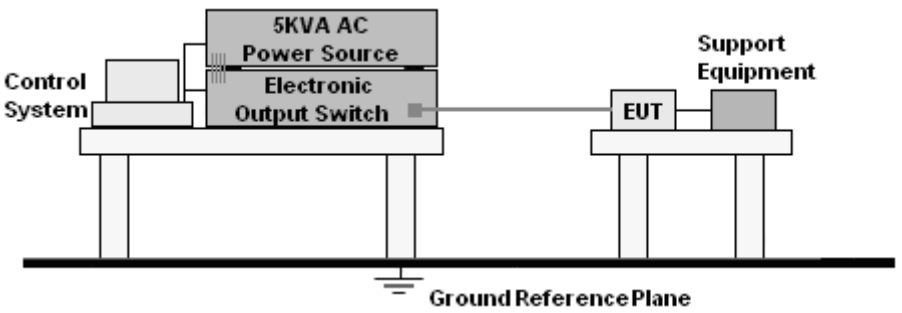
Inject Line	Frequency (MHz)	Voltage Level (V r.m.s.)	Required Level	Performance Criterion
a.c. port	0.15 - 230	3	A	A

10.5 VOLTAGE DIPS AND INTERRUPTIONS

10.5.1 TEST SPECIFICATION

Basic Standard : EN 55014-2 & IEC 61000-4-11
Test Port : input a.c. power port
Phase Angle : 0°, 180°

10.5.2 BLOCK DIAGRAM OF TEST SETUP



10.5.3 TEST PROCEDURE

a. The Product and support units were located on a non-conductive table above ground floor.

b. Set the parameter of tests and then perform the test software of test simulator.

c. Conditions changes to occur at 0 degree crossover point of the voltage waveform.

10.5.4 RESULT & PERFORMANCE

Product : TOPWASSER RO WATER PURIFIER
Model/Type reference : CL-DR-F103 **Temperature** : 24℃
Power : AC 100V 50/60Hz **Humidity** : 54%
Mode : ON

Test Level % U_T	Voltage dips in % U_T	Duration (cycles)		Required Level	Performance criteria
		50Hz	60Hz		
0	100	0.5	0.5	C	A
40	60	10	12	C	B*
70	30	25	30	C	A

Remark*:The product shut down during the test, but it can recover to normal by itself after testing.

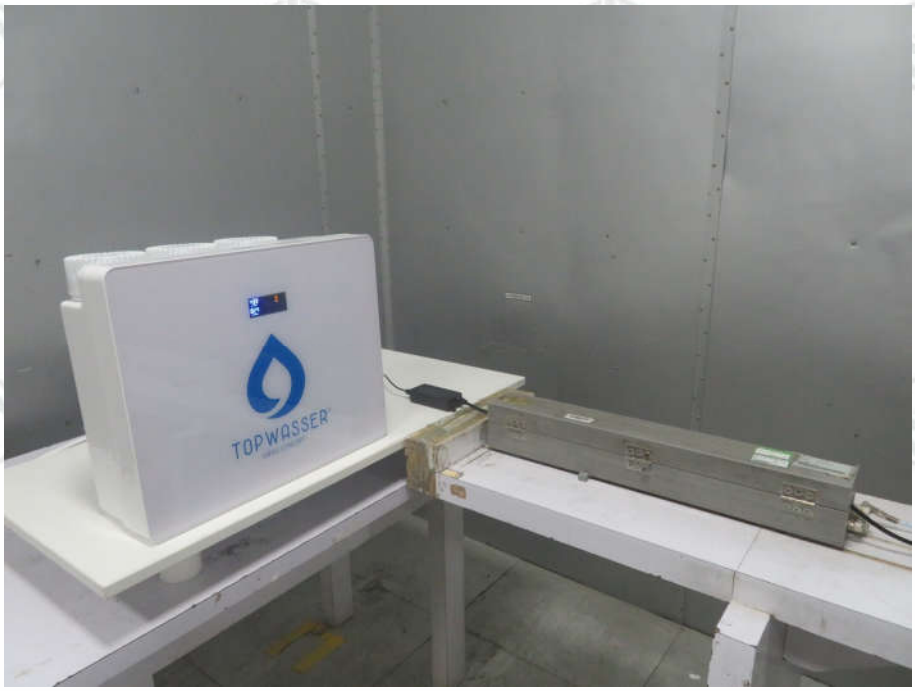
Product	:	TOPWASSER RO WATER PURIFIER			
Model/Type reference	:	CL-DR-F103	**Temperature**	:	24℃
Power	:	AC 240V 50/60Hz	**Humidity**	:	54%
Mode	:	ON			

Test Level % U_T	Voltage dips in % U_T	Duration (cycles)		Required Level	Performance criteria
		50Hz	60Hz		
0	100	0.5	0.5	C	A
40	60	10	12	C	A
70	30	25	30	C	A

APPENDIX 1 PHOTOGRAPHS OF TEST SETUP

TERMINAL DISTURBANCE VOLTAGES TEST SETUP

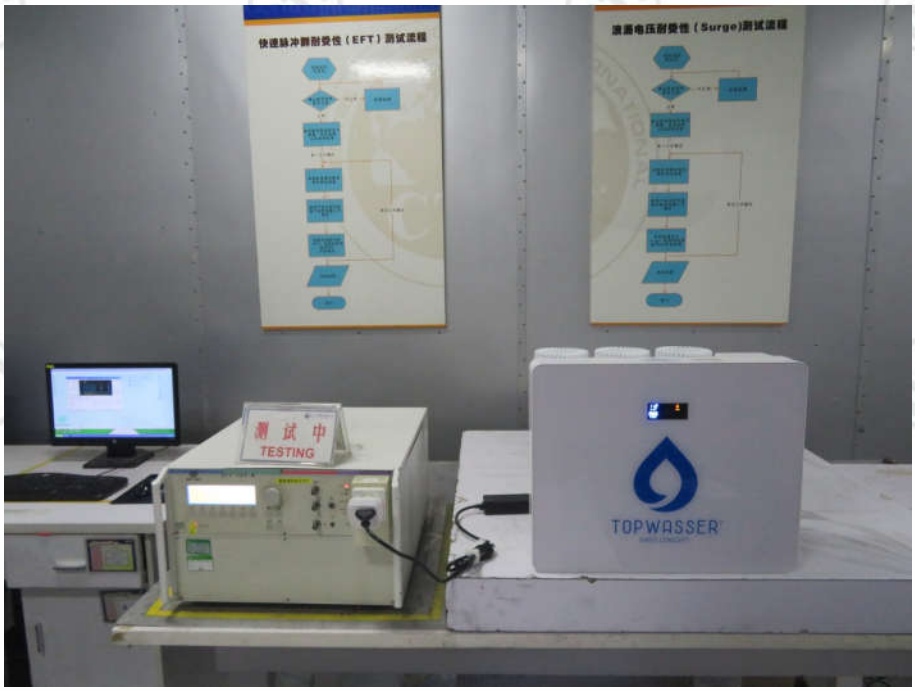
DISCONTINUOUS DISTURBANCE (CLICKS) TEST SETUP



DISTURBANCE POWER TEST SETUP

HARMONIC & FLICKER TEST SETUP

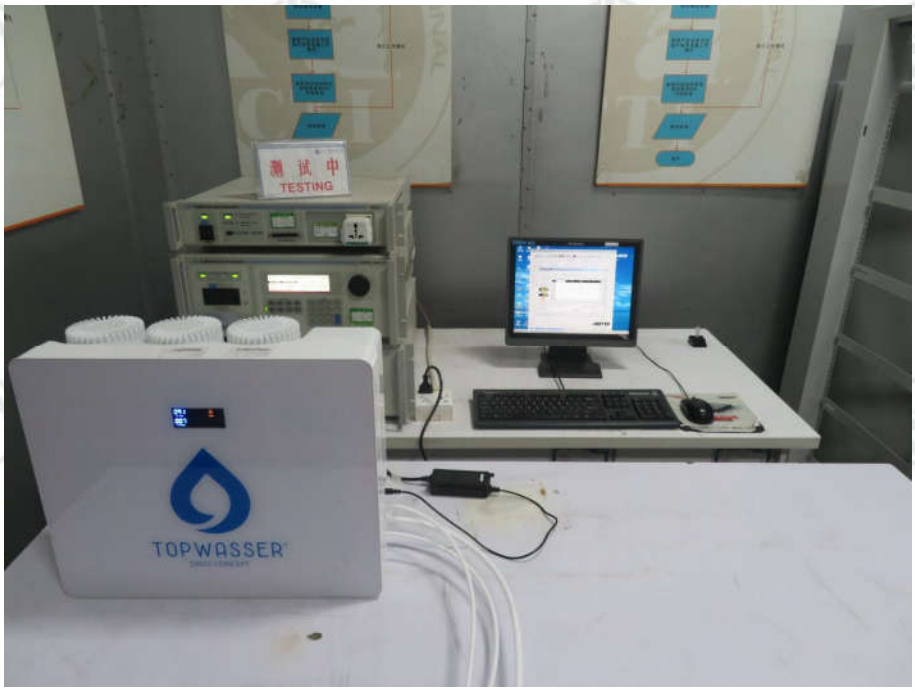
ELECTROSTATIC DISCHARGE TEST SETUP



FAST TRANSIENTS TEST SETUP

SURGES TEST SETUP

INJECTED CURRENTS TEST SETUP

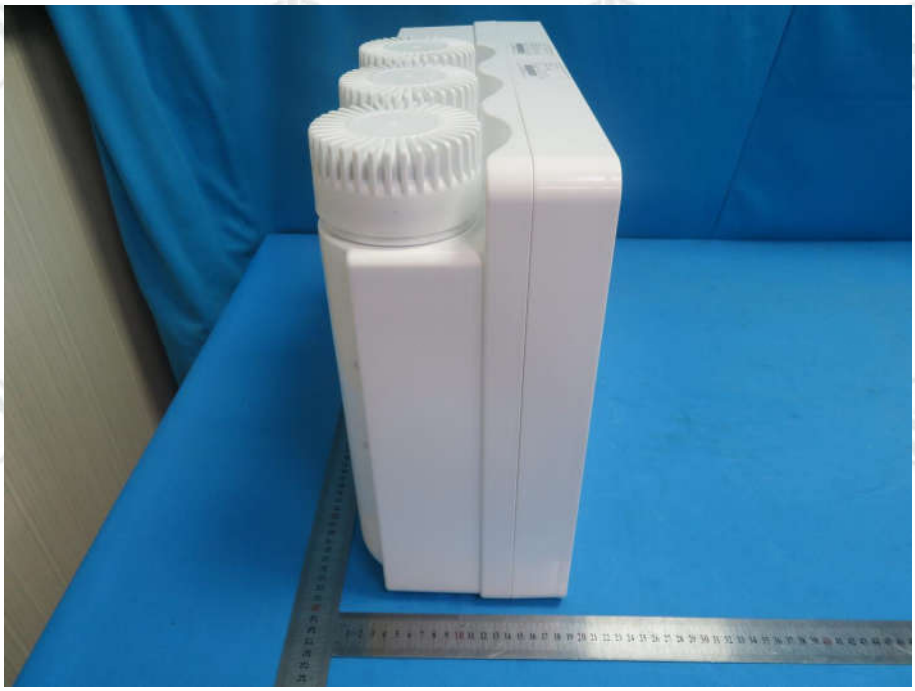


VOLTAGE DIPS AND INTERRUPTIONS TEST SETUP

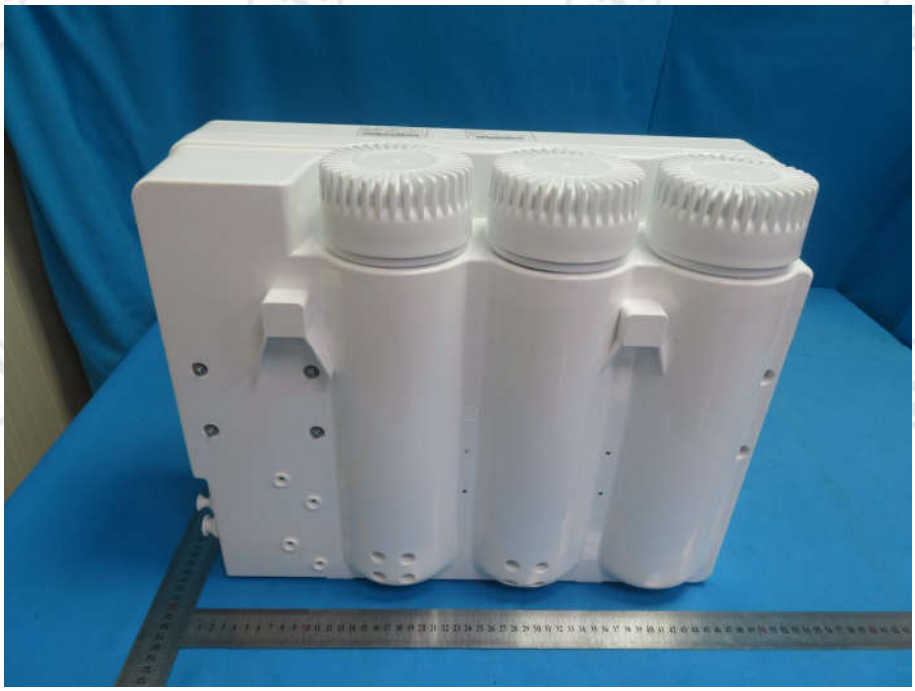
APPENDIX 2 PHOTOGRAPHS OF PRODUCT

View of Product-1

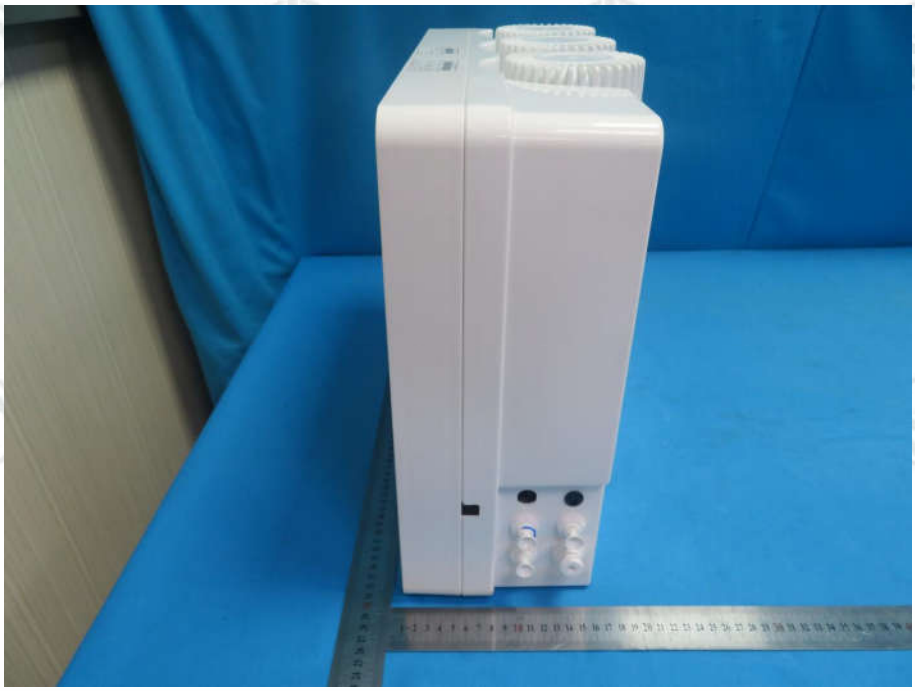
View of Product-2



View of Product-3

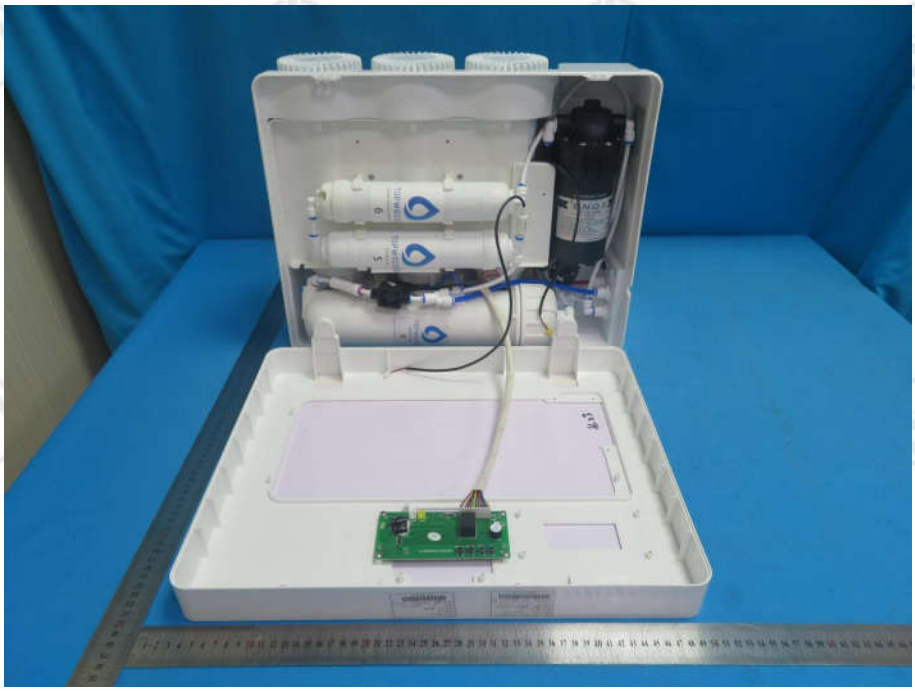


View of Product-4

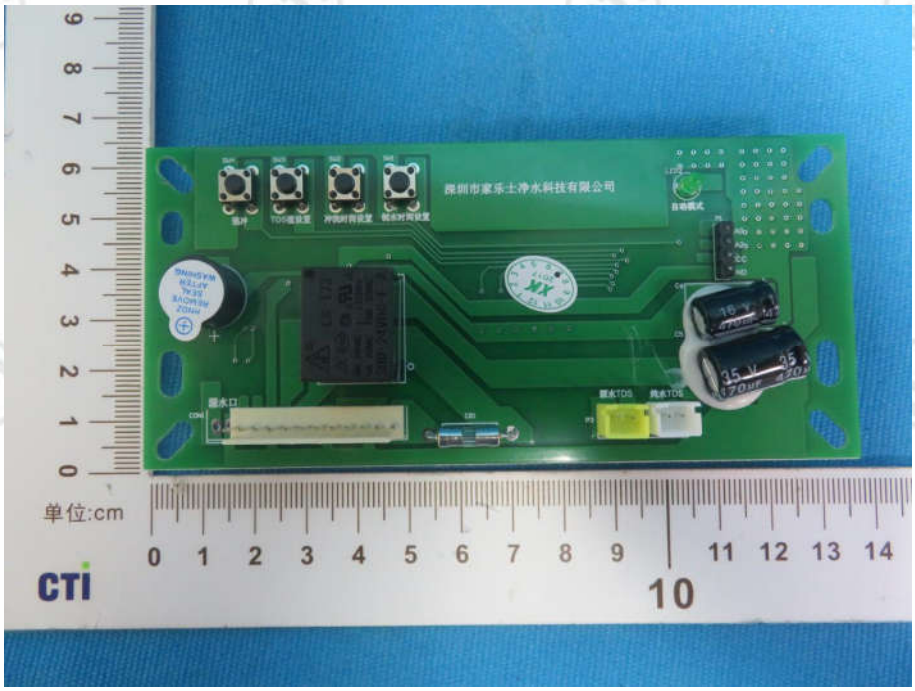


View of Product-5

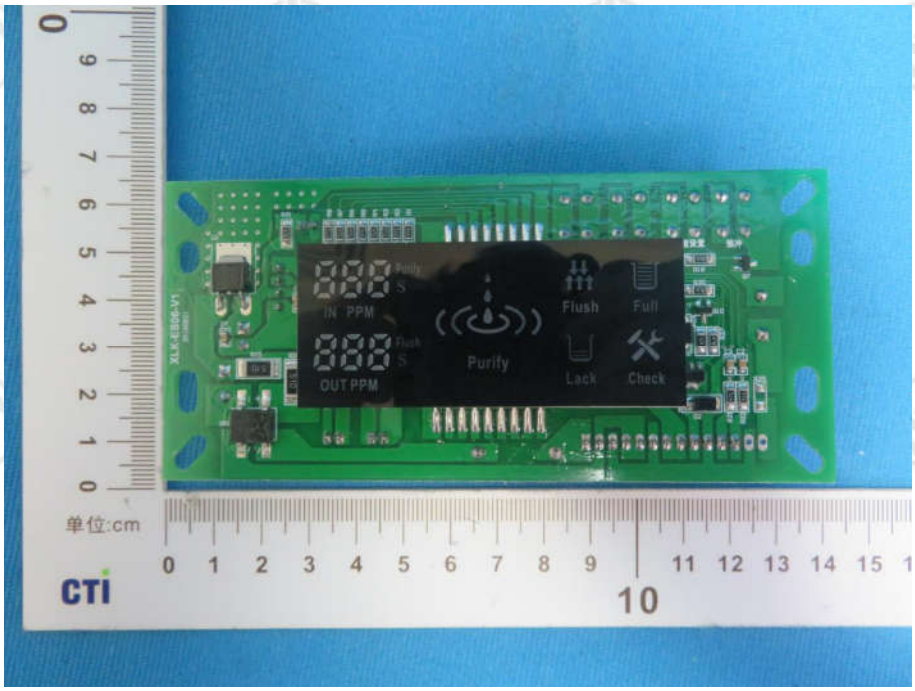
View of Product-6



View of Product-7



View of Product-8



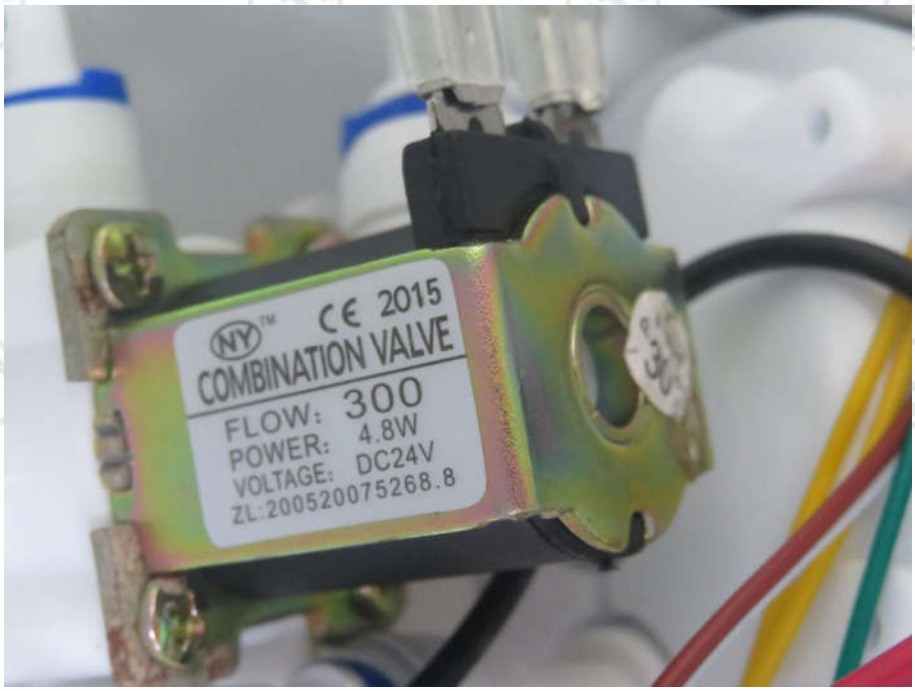
View of Product-9

View of Product-10

View of Product-11

View of Product-12

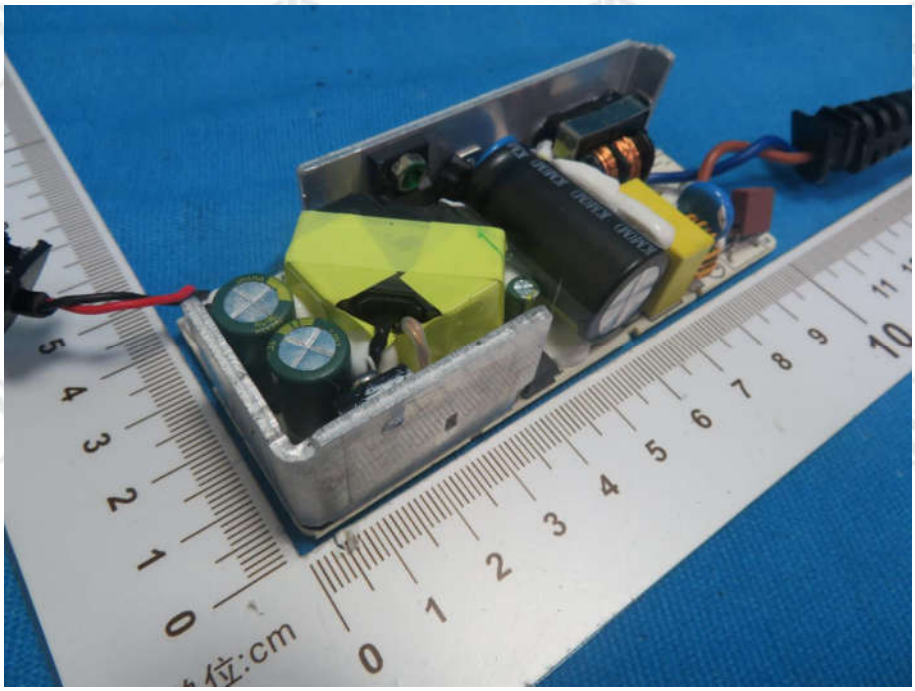
View of Product-13



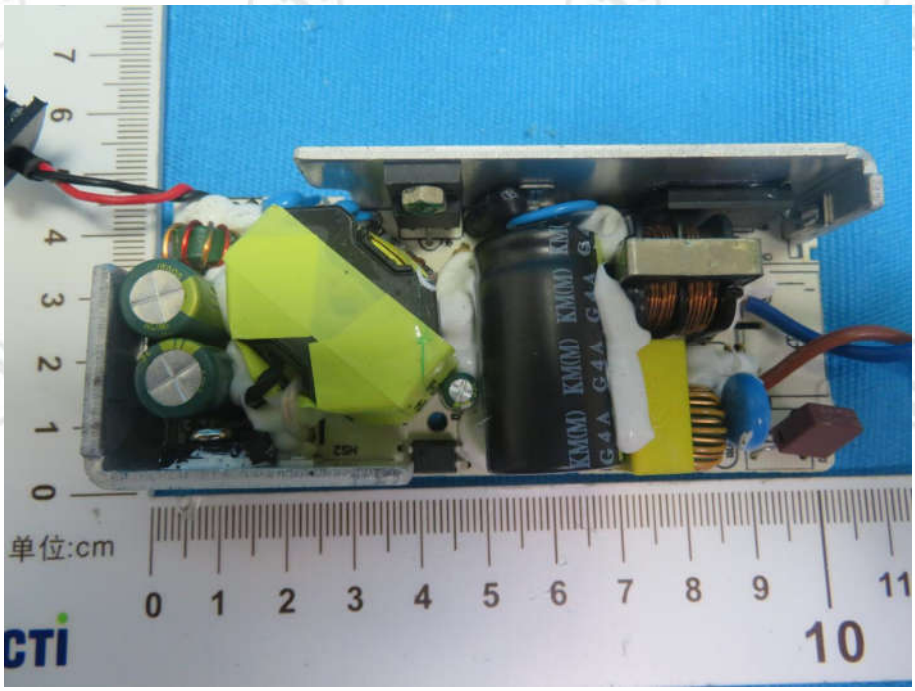
View of Product-14

View of Product-15

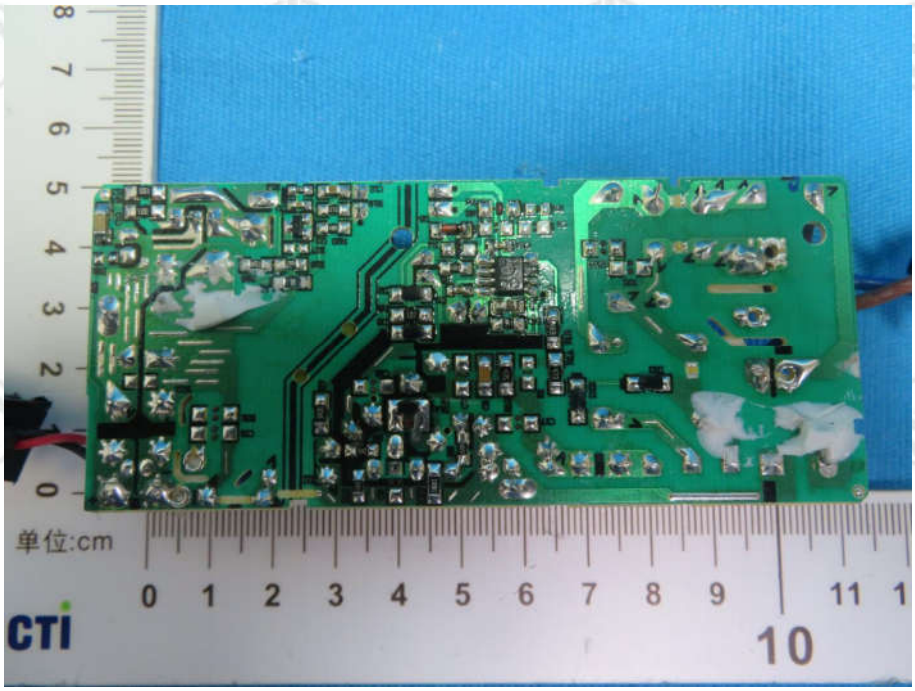
View of Product-16



View of Product-17



View of Product-18



View of Product-19

*** End of Report ***