	Test Report issued under the responsibility of: kiwa
EN IEC55014-1, EN IEC55014-2, EN IEC 61000-3-2, EN 61000-3-3 Household appliances, electrical tools & similar apparatus	
Project Number. ..... :	705358
Report Number. ..... :	705358-002
Date of issue ..... :	2024-12-03
Total number of pages ..... :	48 pages
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Standards ..... :	EN IEC 55014-1:2021; EN IEC 55014-2:2021; EN IEC 61000-3-2:2019+A1:2021; EN 61000-3-3:2013+A1:2019+A2:2021+AC:2022;
Test item description ..... :	SMART BIO-ETHANOL ELECTRONIC BURNER
Trademark or brand name ..... :	innoFire®
Manufacturer ..... :	Same as applicant
Model/Type reference(s) ..... :	ILFP-SR18, ILFP-SR24, ILFP-SR30, ILFP-SR36, ILFP-SR48, ILFP-SR60, ILFP-SR72, ILFP-SR84, ILFP-SR96
Ratings..... :	Adaptor input: 100-240V~, 50/60Hz, 2,5 A, Class I; output: 24,0 V⎓, 6,25 A, 150 W BURNER: 24 V⎓, 150 W

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
Testing Laboratory:	Kiwa Gastec (China) Ltd	
Testing location/ address ..... :	Room 209, No.46, Nanxiang 3rd Road, Science City Development Zone, Guangzhou, China 510663	
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All tests mentioned in this report have been carried out at Kiwa Gastec (China) Ltd., unless otherwise stated. Test reports from Kiwa Gastec (China) Ltd. are issued within the IAS TL-657 accreditation. when stating conformity with a specified requirement, the decision rules is applied to clause 4.2.1 in ILAC-G8/09:2019.This report may only be duplicated as a complete set without any modifications. The test results in this report are exclusively related to the samples offered and tested.

Doc No: KGGZ-LAB-F-124 version 1.0

Tests performed (name of test and test clause): Tests were performed on the sample of models ILFP-SR36.	**Testing location:** Kiwa Gastec (China) Ltd Room 209, No.46, Nanxiang 3rd Road, Science City Development Zone, Guangzhou, China 510663

Use of uncertainty of measurement for decisions on conformity (decision rule):

The measurement uncertainty describes the overall uncertainty of the given measured value during the operation of the EUT.
Measurement uncertainty is calculated in accordance with CISPR 16-4-2:2011+A1:2014+A2:2018.
The measurement uncertainty is given with a confidence of 95%, k=2.

Possible test case verdicts:

- test case does not apply to the test object……: N/A
- test object does meet the requirement……: P (Pass)
- test object does not meet the requirement ……: F (Fail)

Testing :

Date of receipt of test item……..: 2024-11-01

Date (s) of performance of tests……..…: 2024-11-01 to 2024-11-08

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1 TEST RESULTS SUMMARY

Test Item	Standard	Result
Continuous conducted disturbance voltage	EN IEC 55014-1:2021;	Pass
Discontinuous conducted disturbance voltage	EN IEC 55014-1:2021;	Pass
Radiated disturbance power	EN IEC 55014-1:2021;	Pass
Radiated disturbance	EN IEC 55014-1:2021;	N/A
Harmonic of current	EN IEC 61000-3-2:2019+A1:2021;	Pass
Flicker	EN 61000-3-3:2013+A1:2019+A2:2021+AC:2022;	Pass
ESD immunity	EN IEC 55014-2:2021 Reference: IEC 61000-4-2:2008	Pass
Radiated EM field immunity	EN IEC 55014-2:2021 Reference: IEC 61000-4-3:2006 +A1:2007+A2:2010	N/A
EFT immunity	EN IEC 55014-2:2021 Reference: IEC 61000-4-4:2012	Pass
Surge immunity	EN IEC 55014-2:2021 Reference: IEC 61000-4-5:2014 +A1:2017	Pass
Inject current immunity	EN IEC 55014-2:2021 Reference: IEC 61000-4-6:2013	Pass
Voltage dips and interruption immunity	EN IEC 55014-2:2021 Reference: IEC 61000-4-11:2020	Pass

Remark: 1. The symbol "N/A" in above table means Not Applicable.

2. When determining the test results, measurement uncertainty of tests has been considered.

2 EMC Results Conclusion
(with Justification)

We tested the SMART BIO-ETHANOL ELECTRONIC BURNER, Model: ILFP-SR18, ILFP-SR24, ILFP-SR30, ILFP-SR36, ILFP-SR48, ILFP-SR60, ILFP-SR72, ILFP-SR84, ILFP-SR96 to determine if it was in compliance with the relevant standards as marked on the Test Results Summary. We found that the unit met the requirements of EN IEC 55014-1, EN IEC 61000-3-2, EN 61000-3-3 and EN IEC 55014-2 (IEC 61000-4-2), EN IEC 55014-2 (IEC 61000-4-4), EN IEC 55014-2 (IEC 61000-4-6), EN IEC 55014-2 (IEC 61000-4-5), EN IEC 55014-2 (IEC 61000-4-11), standards when tested as received. The worst case's test data was presented in this test report.

These models are stationary or built in SMART BIO-ETHANOL appliance for household and indoor use.

All models are identical except size with different fuel capacity, details refer to following table:

Model	Size (L * W * H: mm)	Fuel capacity (Liter)
ILFP-SR18	457,2*193*168	2,6
ILFP-SR24	610*193*168	4,1
ILFP-SR30	762*193*168	5,7
ILFP-SR36	908*193*168	7,3
ILFP-SR48	1220*193*168	10,3
ILFP-SR60	1524*193*168	13,5
ILFP-SR72	1829*193*168	16,5
ILFP-SR84	2133,8*193*168	19,5
ILFP-SR96	2438*193*168	22,6

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

3 LABORATORY MEASUREMENTS

Configuration Information

Equipment Under Test (EUT):	SMART BIO-ETHANOL ELECTRONIC BURNER
Model:	ILFP-SR36
Serial No.	--
Support Equipment:	N/A
Rated Voltage:	Adaptor input: 100-240V~, 50/60Hz, 2,5 A, Class I; output: 24,0 V⎓, 6,25 A, 150 W BURNER: 24 V⎓, 150 W
Condition of Environment:	Temperature : 22~28°C Relative Humidity: 35~60% Atmosphere Pressure: 86~106kPa

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

2. The EMS measurements had been made in the frequency bands being investigated, with the EUT in the most susceptible operating mode consistent with normal applications. The configuration of the test sample had been varied to achieve maximum susceptibility.

Equipment used during test

1. Kiwa Gastec (China) Ltd

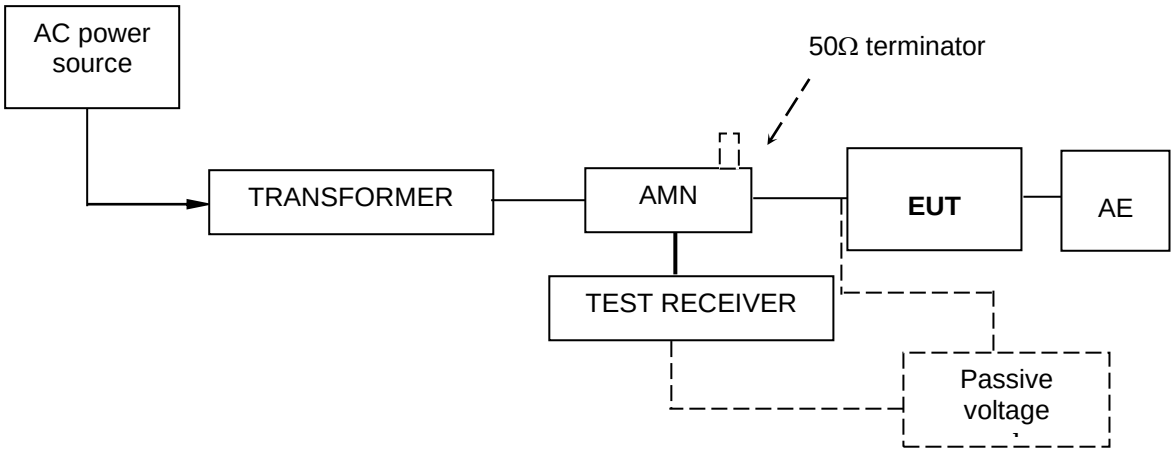
Test Equipment	Type/Mode	Equipment No.	Manufacturer	Cal. Due
Terminal disturbance voltage Power input terminal AC/DC (0.15MHz to 30MHz)				/
EMI receiver	ESRP3	KGGZ-E297	Rohde & Schwarz	2025-06-30
LISN	NSLK8127	KGGZ-E246	SCHWARZBECK	2025-06-30
EMC shield Room	SR-843	KGGZ-E210	EMCU	2025-01-15
Discontinuous conducted disturbance voltage				/
Click Tester	DDA 55+	KGGZ-E306	AFJ	2024-11-24
LISN	LT32C/10	KGGZ-E307	AFJ	2024-11-24
EMC shield Room	SR-843	KGGZ-E210	EMCU	2025-01-15
Disturbance Power				/
EMI receiver	ESRP3	KGGZ-E297	Rohde & Schwarz	2025-06-30
Absorb Power Clamp	MDS-21C	KGGZ-E199	Rohde & Schwarz	2025-03-27
EMC shield Room	SR-843	KGGZ-E210	EMCU	2025-01-15
Harmonic Emission on AC (100 Hz to 2 kHz) / Voltage fluctuations and flicker				/
Single-phase harmonic flicker analyzer	Profline 2105	KGGZ-E298	TESEQ	2025-03-27
Electrostatic discharge				/
ESD Generator	PSE-30	KGGZ-E257	EMCU	2025-07-01
Electrical Fast Transients / Surges/dips				/
Surge/EFT generator	PSS-5-S-E	KGGZ-E254	EMCU	2025-06-30
Injected currents (150 kHz to 230 MHz)				/
C/S test generator	PCS 80	KGGZ-E249	EMCU	2025-06-30
CDN-M316	CDN-M316	KGGZ-E305	LIONCEL	2024-11-24
6dB Attenuator	ATN-6-100	KGGZ-E251	EMCU	2025-06-30
Voltage dips and interruptions				/
Voltage drop test system	PSD	KGGZ-E256-1	EMCU	2025-06-30
Adjustable power supply	PSD 1PM	KGGZ-E256-2	EMCU	2025-06-30

4 EMI TEST

4.1 *EN IEC 55014-1 Continu*ous Conducted Disturbance Voltage Test

Test Result: Pass

4.1.1Block Diagram of Test Setup



4.1.2Test Setup and Procedure

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

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

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

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

When measurements of disturbance are being made, the appliance shall be operated under the conditions defined in clause 7.

4.1.3Test Data&Curve

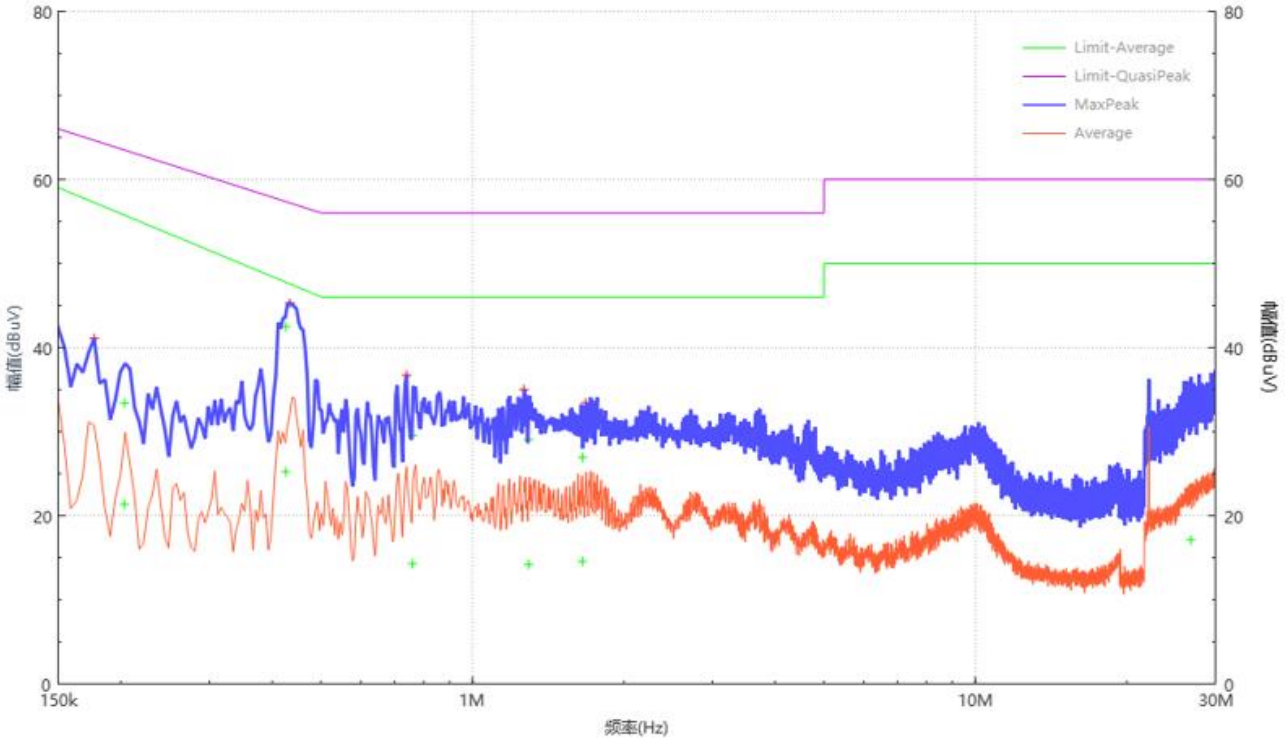
At main terminal: Pass

Temperature	23.5 ºC	Humidity	54.4 %RH
Atmospheric Pressure	101 kPa	Test Voltage	230 V~, 50 Hz
Model No.	ILFP-SR36	Operating Mode	Normal operation
Result	**Pass**		

Final Data List(Peak Search)

Frequency	Line	Factor	Quasi Peak			Average			Pass/Fail
Hz		dB	Level	Limit	Margin	Level	Limit	Margin	
			dB(μV)	dB(μV)	dB	dB(μV)	dB(μV)	dB	
203.37k	L1	10.47	33.41	63.47	30.07	21.36	55.71	34.36	Pass
425.41k	L1	10.4	42.48	57.34	14.86	25.23	47.74	22.51	Pass
759.91k	L1	10.45	29.54	56	26.46	14.29	46	31.71	Pass
1.29M	L1	10.47	29.06	56	26.94	14.2	46	31.8	Pass
1.65M	L1	10.48	26.95	56	29.05	14.58	46	31.42	Pass
26.81M	L1	11.32	23.36	60	36.64	17.14	50	32.86	Pass

TRACE:

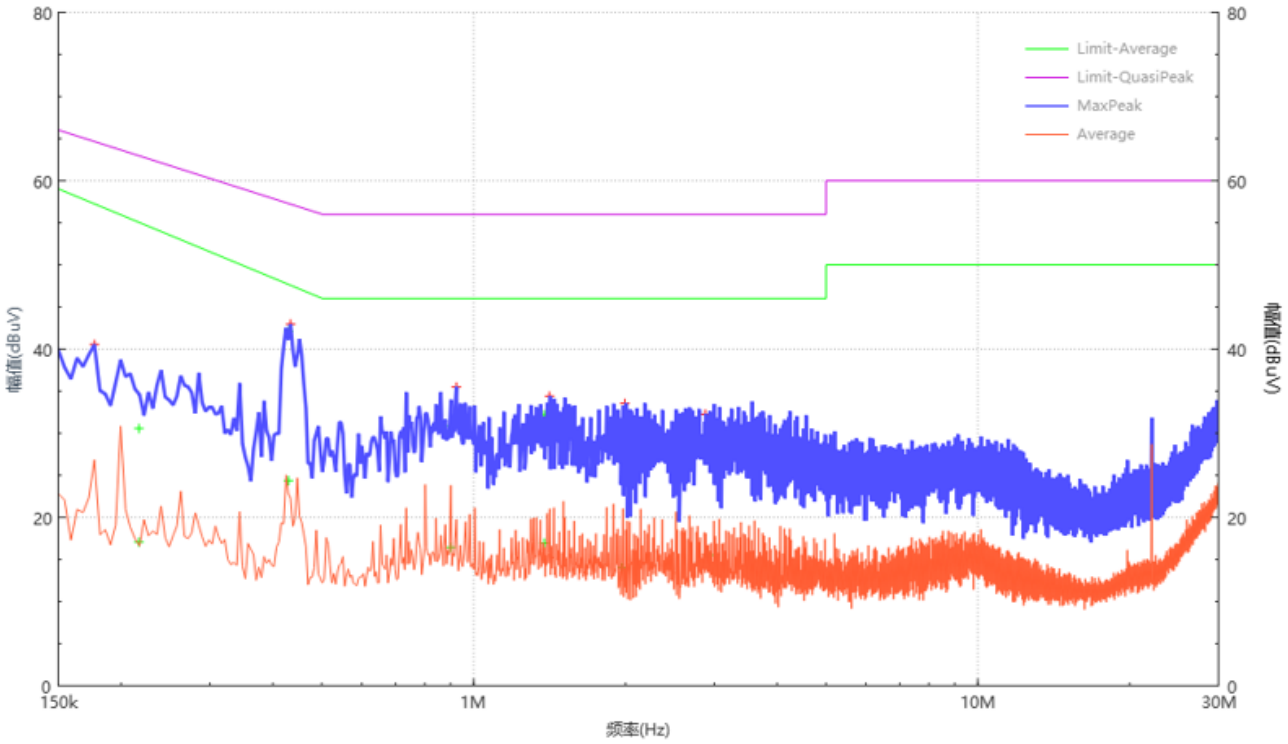


Temperature	23.5 ºC	Humidity	54.4 %RH
Atmospheric Pressure	101 kPa	Test Voltage	230 V~, 50 Hz
Model No.	ILFP-SR36	Operating Mode	Normal operation
Result	**Pass**		

Final Data List(Peak Search)

Frequency	Line	Factor	Quasi Peak			Average			Pass/Fail
Hz		dB	Level	Limit	Margin	Level	Limit	Margin	
			dB(μV)	dB(μV)	dB	dB(μV)	dB(μV)	dB	
216.9k	N	10.43	30.56	62.94	32.37	17.06	55.02	37.96	Pass
429.36k	N	10.38	42.11	57.27	15.15	24.37	47.64	23.27	Pass
900.67k	N	10.41	30.86	56	25.14	16.42	46	29.58	Pass
1.38M	N	10.41	32.18	56	23.82	16.94	46	29.06	Pass
1.97M	N	10.41	29.74	56	26.26	14.02	46	31.98	Pass
2.93M	N	10.44	27.83	56	28.17	15.53	46	30.47	Pass

TRACE:



At load/control terminal: Not Applicable

Frequency	Quasi-Peak		Average	
[MHz]	Disturbance level [dB(µV)]	Permitted limit [dB(µV)]	Disturbance level [dB(µV)]	Permitted limit [dB(µV)]
--	--	--	--	--
--	--	--	--	--
--	--	--	--	--
--	--	--	--	--
--	--	--	--	--

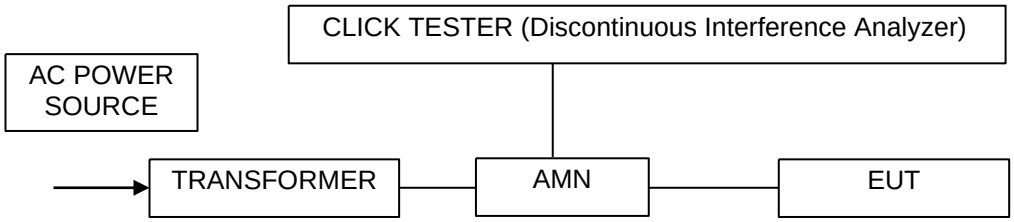
4.1.4 Measurement Uncertainty

The measurement uncertainty describes the overall uncertainty of the given measured value during the operation of the EUT.
Measurement uncertainty is calculated in accordance with CISPR 16-4-2:2011+A1:2014+A2:2018.
Measurement uncertainty of mains terminal disturbance voltage in CISPR band B: 2.58 dB.
The measurement uncertainty is given with a confidence of 95%, k=2.

4.2 *EN IEC 55014-1 Dis*continuous Conducted Disturbance Voltage

Test Result: Pass

4.2.1Block Diagram of Test Setup



4.2.2Test Setup and Procedure

The EUT was placed on a 0.8m high non-metallic table in shielded room, the wall of shielded room used as Ground Reference Plane (GRP), and keeps a distance of at least 0.8m from any of the other metallic surface.

The EUT was connected to an artificial mains network and at a distance of 0.8m from it, the excess lead of EUT was bundled with a length of 0.3m to 0.4m parallel to the main lead.

The number of counted clicks above the permitted limit for continuous interference and their duration, spacing and rate were measured during the observation time. When relevant, a permitted(relaxed) limit for clicks were calculated and a second measurement was performed. Determination of compliance with the permitted limit according to the upper quartile method was applied. The frequency 150kHz, 500 kHz, 1.4 MHz and 30 MHz was checked.

When measurements of disturbance are being made, the appliance shall be operated under the conditions defined in clause 7.

4.2.3 Test Data

Temperature	23.3 ºC	Humidity	55 %RH
Atmospheric Pressure	101 kPa	Test Voltage	230 V~, 50 Hz
Model No.	ILFP-SR36	Operating Mode	Normal operation
Result	**Pass**		

Final Data List

Frequency (MHz)	0.15	0.50	1.40	30.00
Permitted limit for continuous interference (dBμV)	66	56	56	60
Short Clicks [T<10ms]	0	0	0	0
Mid. Clicks [10ms<T<20ms]	0	0	0	0
Long Clicks [T>20ms]	0	0	0	0
Total clicks (number)	0	0	0	0
Switching operation (number)	--			
Factor	--			
Observation time (min.)	120			
Click rate, N	0	0	0	0
Value to be added (dB)	44	44	44	44
Counted clicks allowed to exceed the permitted limit (number)	0	0	0	0
Permitted limit for clicks (dBμV)	110	100	100	104
Counted clicks exceeding the limit (number)	0	0	0	0
Complies with the limit (Pass/Fail)	**Pass**	**Pass**	**Pass**	**Pass**

4.2.4 Measurement Uncertainty

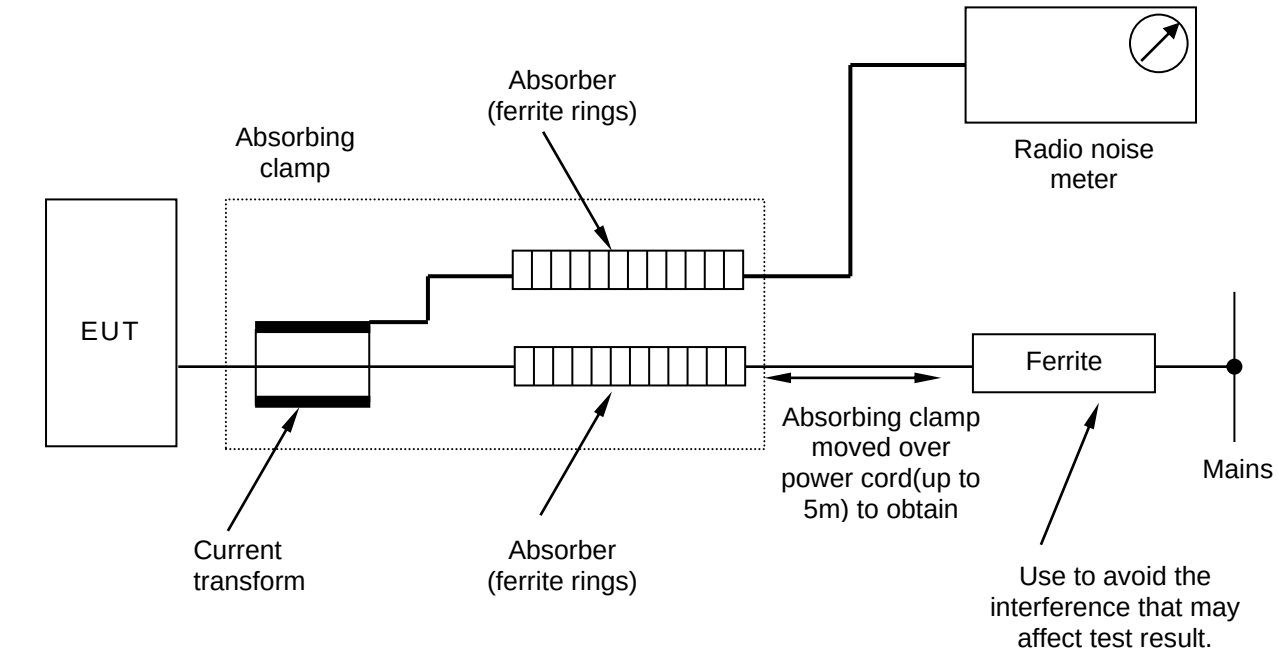
The measurement uncertainty for click test is under consideration according to CISPR 16-4-2:2011+A1:2014+A2:2018.

4.2.5 Remark:

4.3 *EN IEC 55014-1 Rad*iated Disturbance Power

Test Result: Pass

4.3.1Block Diagram of Test Setup



Note: ——— : power line

——— : signal lime

4.3.2Test Setup and Procedure

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

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

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

When measurements of disturbance are being made, the appliance shall be operated under the conditions defined in clause 7.

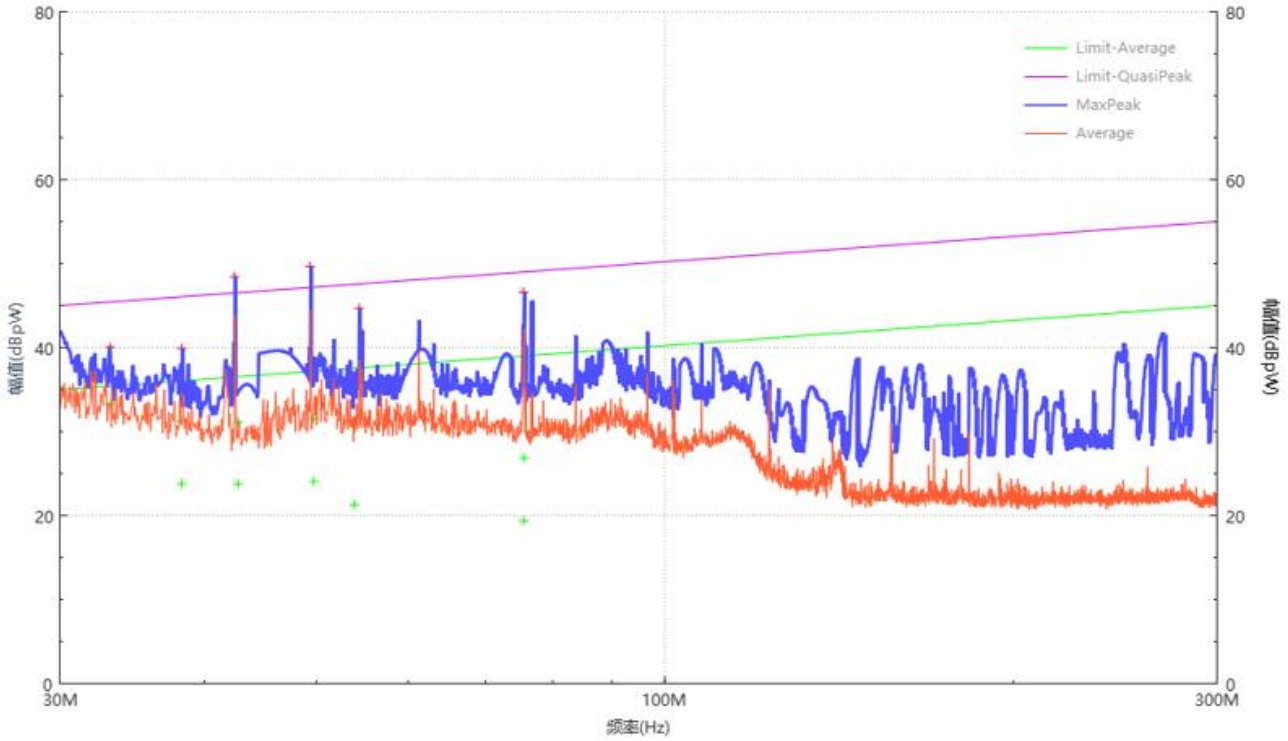
4.3.3Test Data&Curve

Temperature	23.1 ºC	Humidity	52.3 %RH
Atmospheric Pressure	101 kPa	Test Voltage	230 V~, 50 Hz
Model No.	ILFP-SR36	Operating Mode	Normal operation
Result	**Pass**		

Final Data List(Peak Search)

Frequency	Factor	Quasi Peak			Average			Pass/Fail
Hz	dB	Level	Limit	Margin	Level	Limit	Margin	
		dB(pW)	dB(pW)	dB	dB(pW)	dB(pW)	dB	
33.18M	7.4	37.32	45.44	8.12	33.32	35.44	2.12	Pass
38.21M	6.64	31.23	46.05	14.82	23.78	36.05	12.27	Pass
42.78M	6.26	31.16	46.54	15.38	23.76	36.54	12.78	Pass
49.72M	6.91	31.51	47.19	15.69	24.08	37.19	13.11	Pass
53.94M	6.34	30.56	47.55	16.99	21.29	37.55	16.26	Pass
75.56M	5.62	26.86	49.01	22.15	19.37	39.01	19.64	Pass

TRACE:



4.3.4Measurement Uncertainty

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

Measurement uncertainty is calculated in accordance with CISPR 16-4-2:2011+A1:2014+A2:2018.

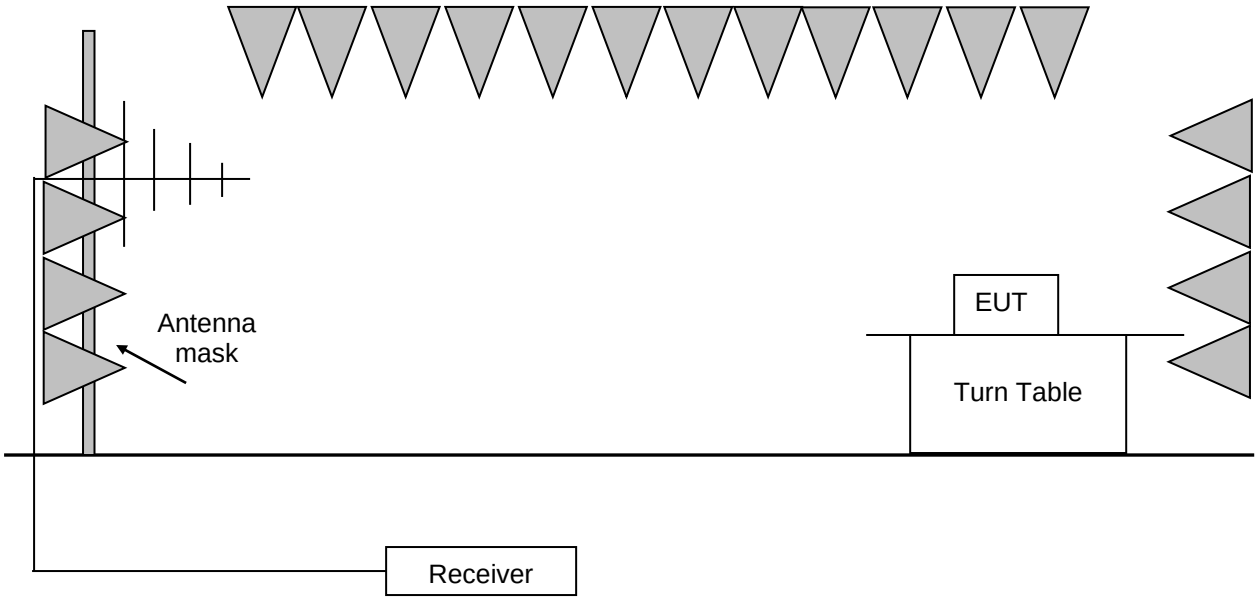
Measurement uncertainty of mains terminal disturbance power: 3.13 dB

The measurement uncertainty is given with a confidence of 95%, k=2.

4.4 *EN IEC 55014-1 Ra*diated Disturbance

Test Result: N/A

4.4.1Block Diagram of Test Setup



4.4.2Test Setup and Procedure

The measurement was applied in a semi-anechoic chamber(SAC). Table-top equipment is placed on a non-conductive setup table with height 0,8 m ± 0,01 m above the ground plane. Floor-standing equipment is placed on a non-conductive support at a height of 5 cm to 15 cm above the ground plane. The turn table rotated 360 degrees to determine the position of the maximum emission level. The EUT was set 3 meters away from the receiving antenna which was mounted on an antenna mask. The antenna moved up and down between from 1meter to 4 meters to find out the maximum emission level.

Broadband antenna was used as receiving antenna. Both horizontal and vertical polarization of the antenna was set on measurement. In order to find the maximum emission, all of the interface cables were manipulated according to CISPR 16-2-3 requirement during radiated test.

The bandwidth setting on R&S Test Receiver was 120 kHz.

The frequency range from 30 MHz to 1000 MHz was checked

4.4.3Test Data

Temperature	--	Humidity	--
Atmospheric Pressure	--	Test Voltage	--
Model No.	--	Operating Mode	--
Result	**N/A**		

Final Data List(Peak Search)

Frequency MHz	Polarization	Factor dB	Level dB (μV/m)	Limit dB (μV/m)	Margin dB	Height cm	Pass/Fail
--	H	--	--	--	--	--	--
--	H	--	--	--	--	--	--
--	H	--	--	--	--	--	--
--	H	--	--	--	--	--	--
--	H	--	--	--	--	--	--
--	H	--	--	--	--	--	--

TRACE:

Temperature	--	Humidity	--
Atmospheric Pressure	--	Test Voltage	--
Model No.	--	Operating Mode	--
Result	**N/A**		

Final Data List(Peak Search)

Frequency MHz	Polarization	Factor dB	Level dB (μV/m)	Limit dB (μV/m)	Margin dB	Height cm	Pass/Fail
--	V	--	--	--	--	--	N/A
--	V	--	--	--	--	--	N/A
--	V	--	--	--	--	--	N/A
--	V	--	--	--	--	--	N/A
--	V	--	--	--	--	--	N/A
--	V	--	--	--	--	--	N/A

TRACE:

4.4.4Measurement uncertainty

The measurement uncertainty describes the overall uncertainty of the given measured value during the operation of the EUT.
Measurement uncertainty is calculated in accordance with CISPR 16-4-2:2011+A1:2014+A2:2018.
Measurement uncertainty of radiated emission: 2.01 dB.
The measurement uncertainty is given with a confidence of 95%, k=2.

4.4.5Remark:

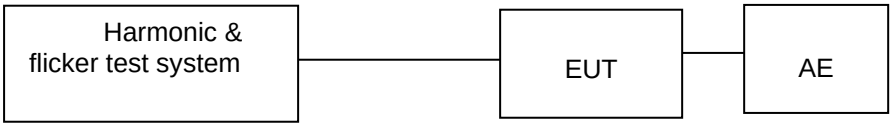
☐ Radiated disturbance shall not be conducted, if the measurement quasi-peak data of disturbance power is lower than applicable limit reduced by the margin (0 to 10dB) at frequency range 200 to 300 MHz and the maximum clock frequency is less than 30MHz,.

☐ Radiated disturbance (300-1000MHz) shall be conducted, if the measurement quasi-peak data of disturbance power is between the limit and limit reduced by the margin (0 to 10dB) at frequency range 200 to 300 MHz or the maximum clock frequency is not less than 30MHz,.

☐Radiated disturbance(30-1000MHz) is applied to battery-operated appliance

5 *EN IEC 61000-3-2* Harmonic of Current
Test Result: Pass

5.1 Block Diagram of Test Setup



5.2 Test Setup and Procedure

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

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

5.3 Test Data

Temperature	23 ºC	Humidity	54 %RH
Atmospheric Pressure	101 kPa	Test Voltage	230 V~, 50 Hz
Model No.	ILFP-SR36	Operating Mode	Normal operation
Result	**Pass**		

THC(A): 0.037 I-THD(%): 25.1 POHC(A): 0.014 POHC Limit(A): 0.251

Highest parameter values during test:

V_RMS (Volts): 230.89 **Frequency(Hz): 50.00**
I_Peak (Amps): 0.477 **I_RMS (Amps): 0.169**
I_Fund (Amps): 0.148 **Crest Factor: 7.304**
Power (Watts): 29.6 **Power Factor: 0.774**

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.003	1.080	N/A	0.005	1.620	N/A	Pass
3	0.020	2.300	0.9	0.060	3.450	1.7	Pass
4	0.003	0.430	N/A	0.004	0.645	N/A	Pass
5	0.011	1.140	0.9	0.011	1.710	0.7	Pass
6	0.002	0.300	N/A	0.004	0.450	N/A	Pass
7	0.012	0.770	1.6	0.018	1.155	1.6	Pass
8	0.002	0.230	N/A	0.004	0.345	N/A	Pass
9	0.010	0.400	2.4	0.011	0.600	1.8	Pass
10	0.002	0.184	N/A	0.003	0.276	N/A	Pass
11	0.009	0.330	2.7	0.010	0.495	2.1	Pass
12	0.002	0.153	N/A	0.003	0.230	N/A	Pass
13	0.009	0.210	4.5	0.010	0.315	3.1	Pass
14	0.002	0.131	N/A	0.003	0.197	N/A	Pass
15	0.008	0.150	5.4	0.009	0.225	4.1	Pass
16	0.002	0.115	N/A	0.003	0.173	N/A	Pass
17	0.008	0.132	5.8	0.009	0.198	4.3	Pass
18	0.002	0.102	N/A	0.003	0.153	N/A	Pass
19	0.006	0.118	5.4	0.008	0.178	4.4	Pass
20	0.001	0.092	N/A	0.002	0.138	N/A	Pass
21	0.007	0.107	6.2	0.007	0.161	4.5	Pass
22	0.001	0.084	N/A	0.002	0.125	N/A	Pass
23	0.006	0.098	6.1	0.007	0.147	4.5	Pass
24	0.001	0.077	N/A	0.002	0.115	N/A	Pass
25	0.005	0.090	5.6	0.006	0.135	4.4	Pass
26	0.001	0.071	N/A	0.002	0.107	N/A	Pass
27	0.005	0.083	N/A	0.006	0.125	N/A	Pass
28	0.003	0.066	N/A	0.004	0.099	N/A	Pass
29	0.004	0.078	N/A	0.005	0.116	N/A	Pass
30	0.002	0.061	N/A	0.002	0.092	N/A	Pass
31	0.004	0.073	N/A	0.004	0.109	N/A	Pass
32	0.003	0.058	N/A	0.003	0.086	N/A	Pass
33	0.003	0.068	N/A	0.004	0.102	N/A	Pass
34	0.001	0.054	N/A	0.001	0.081	N/A	Pass
35	0.003	0.064	N/A	0.003	0.096	N/A	Pass
36	0.000	0.051	N/A	0.001	0.077	N/A	Pass
37	0.003	0.061	N/A	0.004	0.091	N/A	Pass
38	0.000	0.048	N/A	0.000	0.073	N/A	Pass
39	0.002	0.058	N/A	0.002	0.087	N/A	Pass
40	0.000	0.046	N/A	0.000	0.069	N/A	Pass

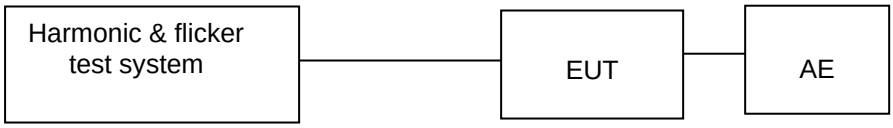
5.4 Measurement Uncertainty

The measurement uncertainty for harmonic test is under consideration according to CISPR 16-4-2:2011+A1:2014+A2:2018.

6 *EN 61000-3-3* Flicker

Test Result: Pass

6.1 Block Diagram of Test Setup



6.2 Test Setup and Procedure

6.2.1Definition

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

Pst: Short-term flicker indicator The flicker severity evaluated over a short period (in minutes); Pst=1 is the conventional threshold of irritability

Plt: long-term flicker indicator; the flicker severity evaluated over a long period (a few hous). Using successive Pst valuse.

dc: the relative steady-state voltage change

dmax: the maximum relative voltage change

d(t): the value during a voltage change

6.2.2Test condition

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

6.3 Test Data

Temperature	23 ºC	Humidity	54 %RH
Atmospheric Pressure	101 kPa	Test Voltage	230 V~, 50 Hz
Model No.	ILFP-SR36	Operating Mode	Normal operation
Result	**Pass**		

Parameter values recorded during the test:
Vrms at the end of test (Volt):230.86

Highest dt (%):		Test limit (%):		
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):	0.064	Test limit:	1.000	Pass
Highest Plt (2 hr. period):	0.028	Test limit:	0.650	Pass

6.4 Measurement Uncertainty

Measurement uncertainty for voltage fluctuation and flicker is under consideration according to CISPR 16-4-2:2011+A1:2014+A2:2018.

7 EMS TEST

Performance Criteria:

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 permission 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 permission 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 instruction for use.

Measurement Uncertainty

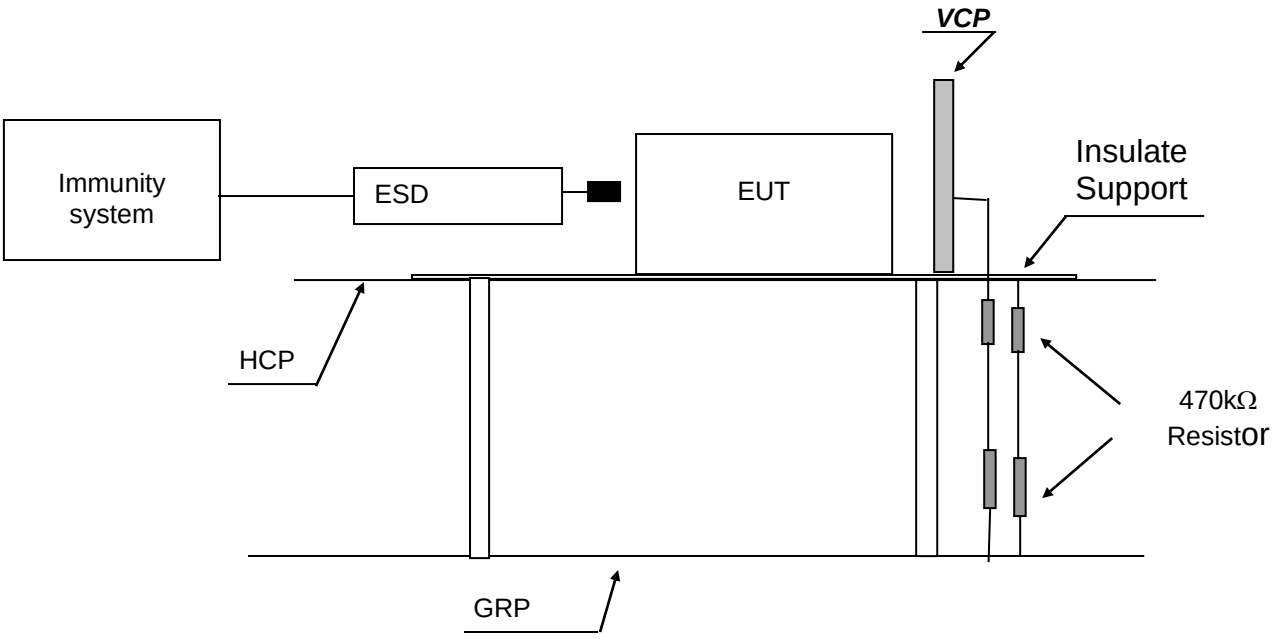
According to CISPR 16-4-2:2011+A1:2014+A2:2018, measurement uncertainty to immunity test is under consideration.

7.1 *IEC 61000-4-2(Pursuant to EN IEC 55014-2) Elect*rostatic Discharge Immunity

Performance criterion: B

Test Result: Pass

7.1.1Block Diagram of Test Setup



Note: HCP means Horizontal Coupling Plane,
VCP means Vertical Coupling Plane
GRP means Ground Reference Plane

7.1.2Test Setup and Procedure

The EUT was put on a 0.8m high wooden tabel/0.1m high for floor standing equipment standing on the ground reference plane(GRP) 3m by 2m in size, made by iron 1.0 mm thick.

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 & HCP were constructed from the same material type & thinkmess 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 surface excepted the GRP, HCP & VCP was greater than 1m.

The EUT was arranged and connected according to its functional requirements.

Direct static electricity discharges was applied only to those points and surface which are accessible to personnel during normal usage.

On each preselected points 10 times of each polarity single discharge were applied The time interval between successive single discharges is at least 1s.

The ESD generator was held perpendicular to the surface to which the discharge is applied. The discharge return cable of the generator was kept at a distance of 0.2m whilst the discharge is being applied. During the contact discharges, the tip of the

discharge electrode was touch 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.

Indirect discharge was conducted to objects placed near the EUT, simulated by applying the dischares of the ESD generator to a coupling plane, in the contact discharge mode.

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 grounded carbon fibre brush with bleeder resistors (2×470 kΩ) in the grounding cable was used after each discharge to remove remnant electrostatic voltage.

10 times of each polarity single discharge were applied to HCP and VCP. The detail selected points are listed in the following table.

7.1.3 Test Result

Direct Application of ESD

Direct Contact Discharge

Applied Voltage (kV)	No. of Discharge for each point	Result (Pursuant to EN IEC 55014-2 criterion B)	Discharged Points
4	20	P	Accessible metal parts of the EUT Conductive substrate with coating which is not declared to be insulating

Direct Air Discharge

Applied Voltage (kV)	No. of Discharge for each point	Result (Pursuant to EN IEC 55014-2 criterion B)	Discharged Points
8	20	P	All accessible points where contact discharge cannot be applied such as Displays, Indicators light, Keyboard, Button, Switch, Knob, Air gap, Slots, Hole and so on

Indirect Application of ESD

Horizontal Coupling Plane under the EUT

Applied Voltage (kV)	No. of Discharge for each point	Result (pursuant to EN IEC 55014-2 criterion B)	Discharged Point
4	20	P	At the front edge of each HCP opposite the centre point of each unit of the EUT

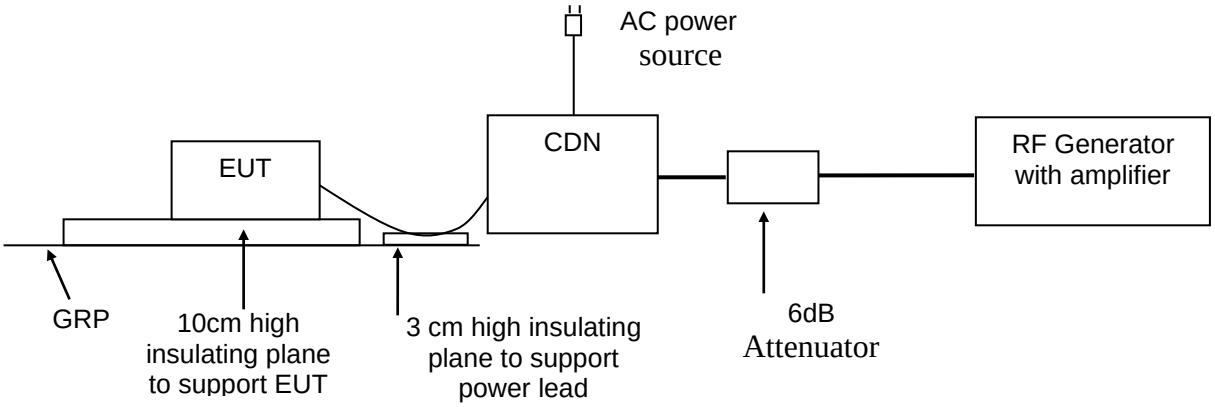
Vertical Coupling Plane beside the EUT

Applied Voltage (kV)	No. of Discharge for each point	Result (pursuant to EN IEC 55014-2 criterion B)	Discharged Point
4	20	P	The centre of the vertical edge of the coupling plane

7.2 *IEC 61000-4-6(Pursuant to EN IEC 55014-2)* Injected Current (0.15 MHz to 230 MHz)

Performance criterion: A
Test Result: Pass

7.2.1Block Diagram of Test Setup



7.2.2Test Setup and Procedure

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 relevant cables were provided with the appropriate coupling and decoupling devices at a distance between 0.1m and 0.3m from the projected geometry of the EUT on an insulating support of 0.03m height above the ground reference plane.
Test voltage was verified before each testing though power meter combined in the RF generator with AMP.
Dwell time was set to 3s and step was set as 1% to keep sufficient response time for EUT. The frequency from 0.15MHz to 230MHz was checked.

7.2.3Test Result

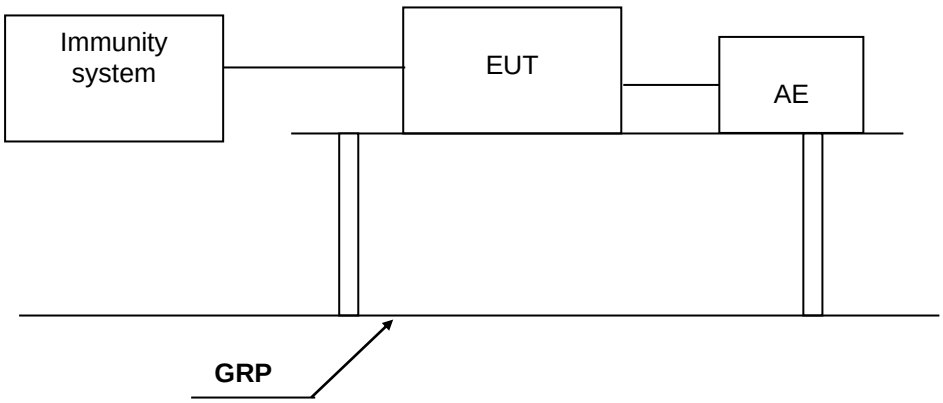
Port:	Frequency (MHz)	Level (Pursuant to EN IEC 55014-2)	Result
A.C. Power Lines	0.15 to 230	3V (r.m.s.)	P
D.C. Power Lines	0.15 to 230	1V (r.m.s.)	N/A
Signal Lines	0.15 to 230	1V (r.m.s.)	N/A
Control Lines	0.15 to 230	1V (r.m.s.)	N/A

7.3 *IEC 61000-4-4(Pursuant to EN IEC 55014-2) El*ectrical Fast Transient/Burst

Performance criterion: B

Test Result: Pass

7.3.1 Block Diagram of Test Setup



7.3.2Test Setup and Procedure

The EUT was placed on a 0.1m high wooden table, standing on the ground reference plane 3m by 2m in size, made by steel 1mm thick.

The distance between the EUT and any other of the metallic surface except the GRP is greater than 0.5m.

The mains lead excess than 0.5m is folded to avoid a flat coil and situated at a distance of 0.1m above the ground reference plane to insure the distance between the coupling device and the EUT were 0.5m.

The EUT was arranged and connected to satisfy its functional requirement and supplied by the coupling-decoupling network.

7.3.3Test Result

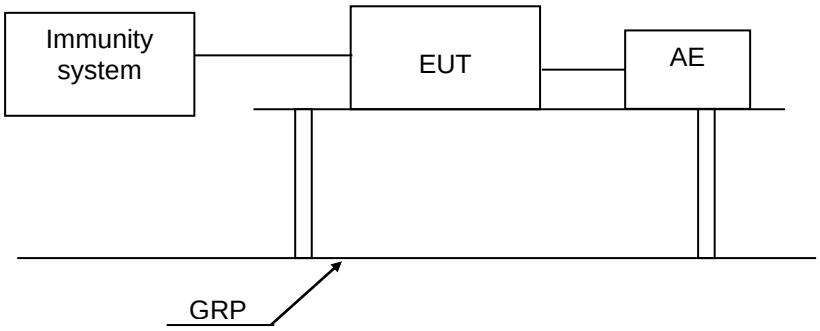
Level (Pursuant to EN IEC 55014-2)	Polarity	A.C. Power supply line and protective earth terminal	D.C. Power Lines, Signal Line & Control Line
0.5kV	+	N/A	N/A
0.5kV	-	N/A	N/A
1kV	+	P	N/A
1kV	-	P	N/A

7.4 *IEC 61000-4-5(Pursuant to EN IEC 55014-2) Su*rge Immunity

Performance criterion: B

Test Result: Pass

7.4.1Block Diagram of Test Setup



7.4.2Test Setup and Procedure

The surge is to be applied to the EUT 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 so that the specified wave may be developed on the lines under test.

The EUT was arranged and connected according to its functional requirements
The EUT was placed on a 0.1m high wooden support above the GRP, supplied by the coupling-decoupling network, and arranged and connected to satisfy its functional requirement and the power cord between the EUT and the coupling/decoupling network was less than 2 meters.

Surge is applied to the EUT power supply terminals.

7.4.3Test Result

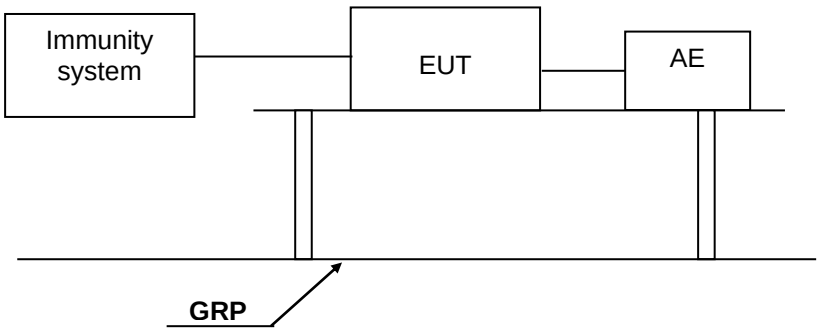
Level (EN IEC 55014-2)		Result
Between Phase And Phase:	1kV	N/A
Between Phase And Neutral:	1kV	P
Between Phase And Earth:	2kV	P
Between Neutral And Earth:	2kV	P

7.5 *IEC 61000-4-11(Pursuant to EN IEC 55014-2) Vo*ltage Dips and Interruptions

Performance criterion: C

Test Result: Pass

7.5.1 Block Diagram of Test Setup



7.5.2 Test Setup and Procedure

The EUT was placed on an insulating support of 0.8m height, standing on a ground reference plane, and arranged and connected to satisfy its functional requirement

The test was performed with the EUT connected to the test generator with the shortest power supply cable as specified by the EUT manufacturer.

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.

7.5.3 Test Result

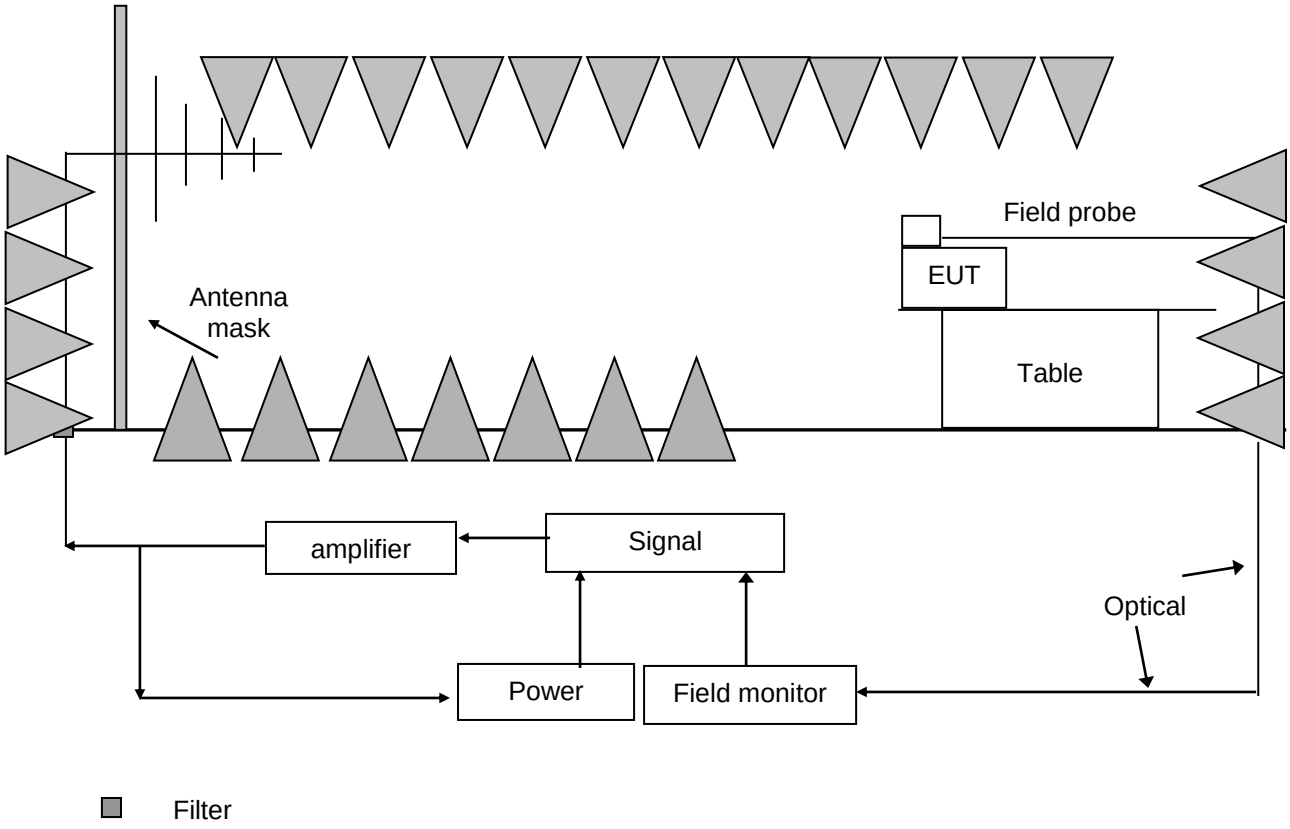
Test condition (EN IEC 55014-2)				
Test Level in %U_T	50 Hz		60 Hz	
	Duration	Result	Duration	Result
0	0.5	P	0.5	P
40	10	P	12	P
70	25	P	30	P

Remark: U_T is the rated voltage for the equipment.

7.6 *IEC 61000-4-3(Pursuant to EN IEC 55014-2) R*adiated Electromagnetic Field Immunity

Performance criterion: A
Test Result: N/A

7.6.1Block Diagram of Test Setup



7.6.2Test Setup and Procedure

The test was conducted in an fully anechoic chamber to maintain a uniform field of sufficient dimensions with respect to the EUT, and also in order to comply with various national and international laws prohibiting interference to radio communications.

The equipment is placed in the test facility on a non-conducting table 0.8m high (for floor standing EUT, is placed on a non-conducting support 0.1m height).

The EUT was placed on the uniform calibrated plane which is 3V/m EM field.

For all ports connected to EUT, manufacturer specified cable type and length was used, for those cables no specification, unshielded cable applied.

Wire is left exposed to the electromagnetic field for a distance of 1m from the EUT.

The EUT was arranged and connected according to its functional requirements

Before testing, the intensity of the established field strength have been checked by placing the field sensor at a calibration grid point, and with the field generating antenna and cables in the same positions as used for the calibration, the forward power needed to give the calibrated field strength was measured.

Spot checks was made at a number of calibration grid points over the frequency range 80MHz to 1000MHz, both polarizations was checked.

After calibration, the EUT is initially placed with one face coincident with the calibration plane.

The frequency range is swept from 80MHz to 1000MHz, with the signal 80% amplitude modulated with a 1 kHz sinewave, pausing to adjust the r.f. signal level.

The dwell time at each frequency was 3s so as that the EUT to be exercised and be able to respond.

The step size was 1% of the fundamental with linear interpolation between calibrated points. Test was performed with the generating antenna facing each of the four sides of the EUT.

7.6.3Test Result

Frequency Range	Field Strength	Modulation	EUT Face	Polarization of Antenna	Criterion	Results
80 MHz to 1000 MHz	3 V/m	80% AM (1 kHz, sine wave)	Front	Hor.	A	**N/A**
				Ver.	A	**N/A**
			Rear	Hor.	A	**N/A**
				Ver.	A	**N/A**
			Left	Hor.	A	**N/A**
				Ver.	A	**N/A**
			Right	Hor.	A	**N/A**
				Ver.	A	**N/A**

7.6.4Remark:

8 Appendix I - Photos of test setup

Conducted Emission

Model - ILFP-SR36

Radiated Power

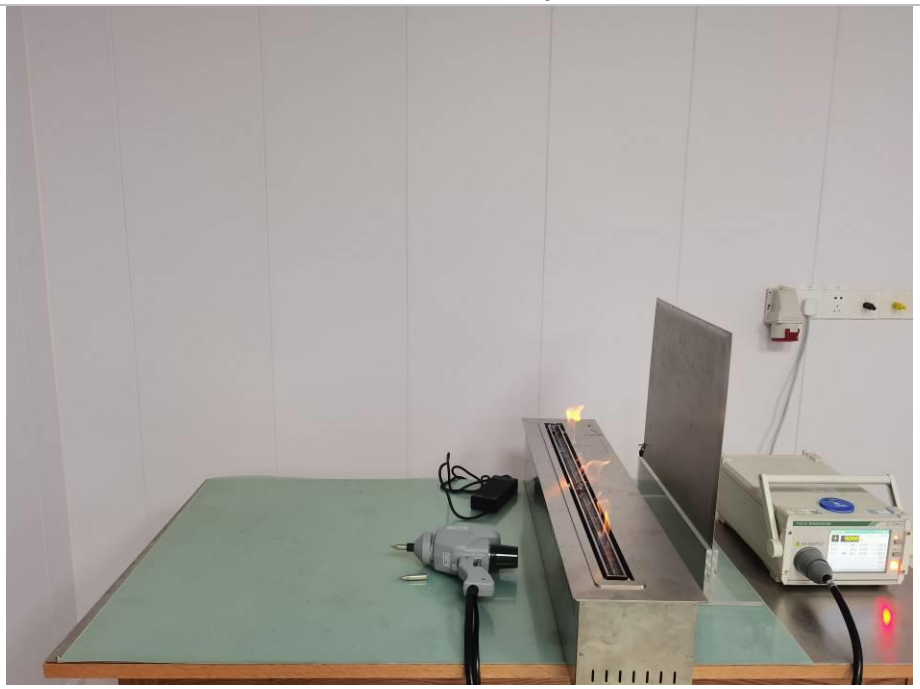
Model - ILFP-SR36

Harmonic/Voltage fluctuations and flicker



Model - ILFP-SR36

ESD Immunity



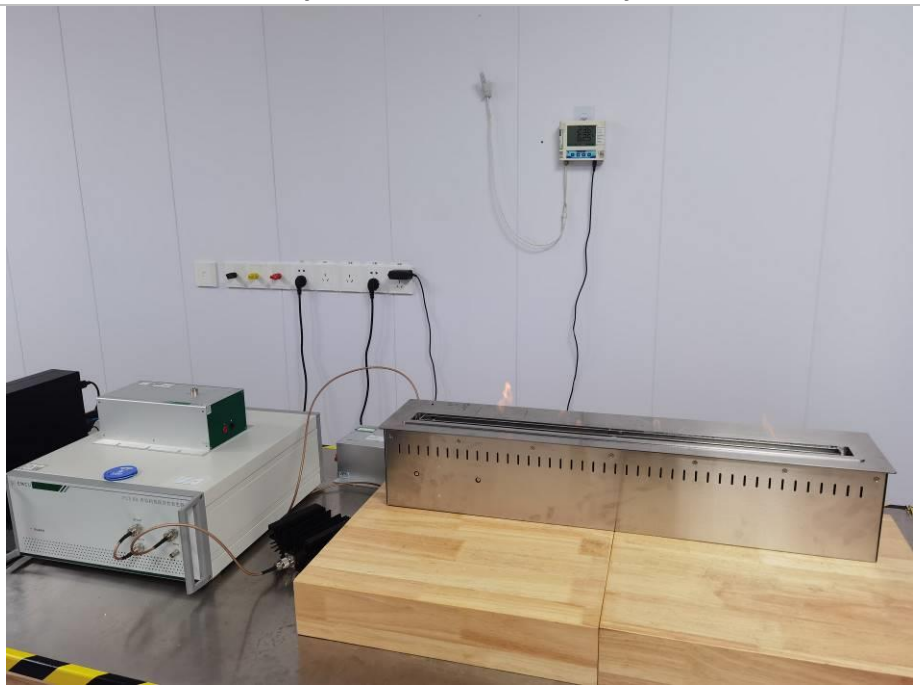
Model - ILFP-SR36

EFT/ SURGE/ DIP Immunity



Model - ILFP-SR36

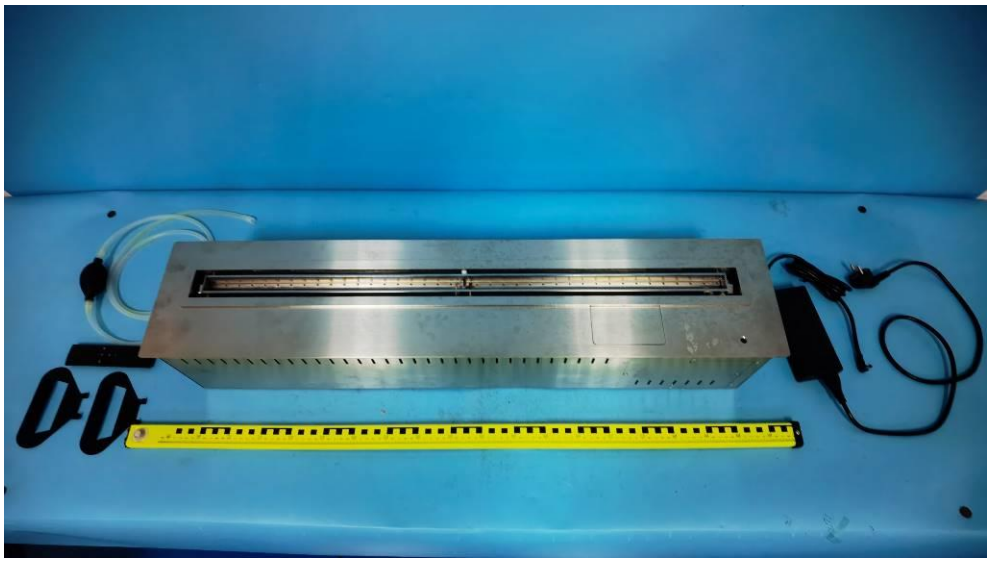
Injected Current Immunity

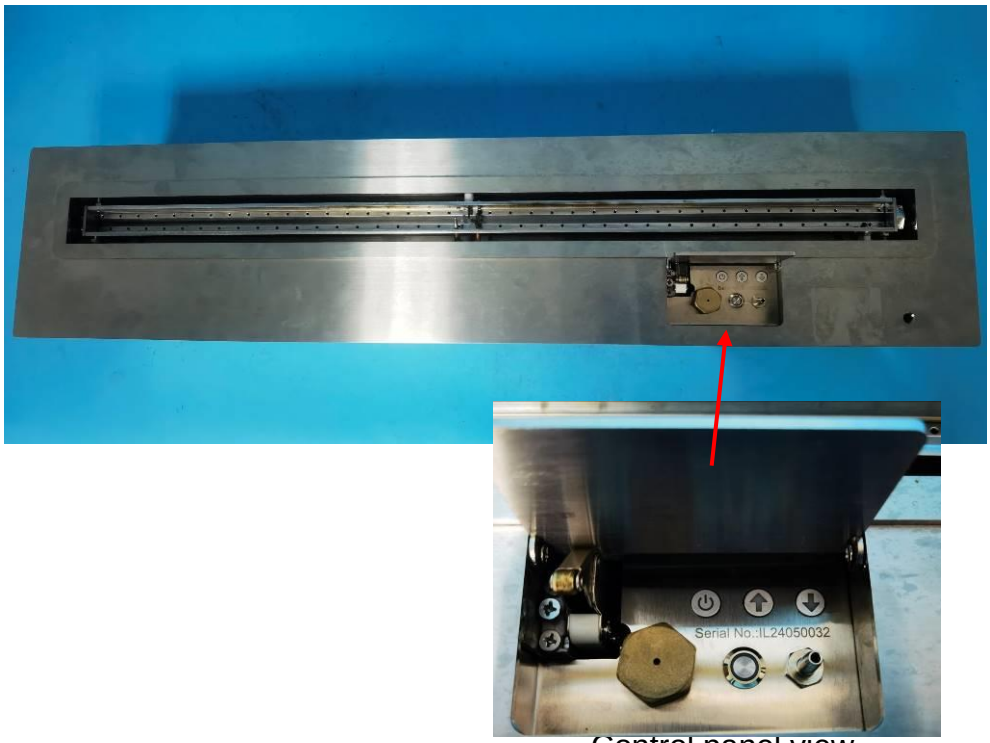


Model - ILFP-SR36

9 Appendix II - Photos of EUT

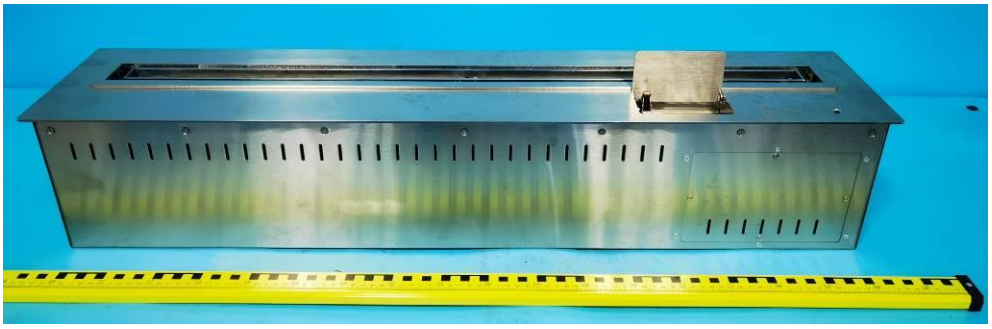
Overall view of model ILFP-SR36

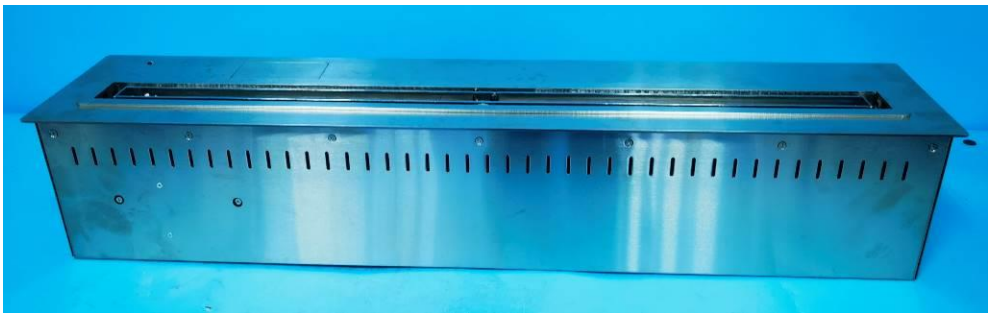


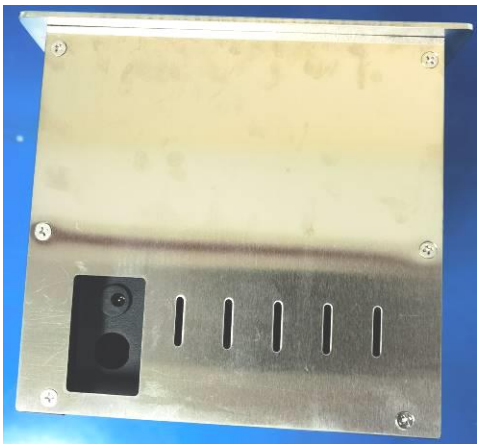


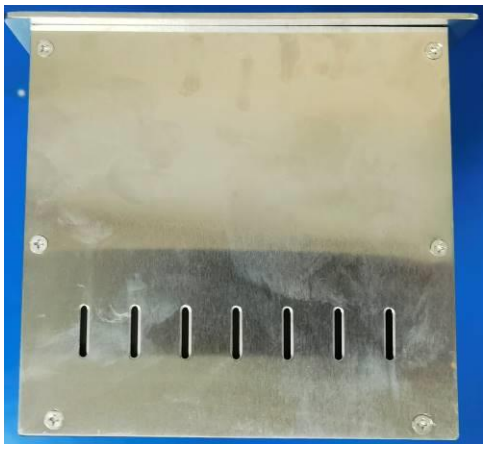
Control panel view

Side view of model ILFP-SR36

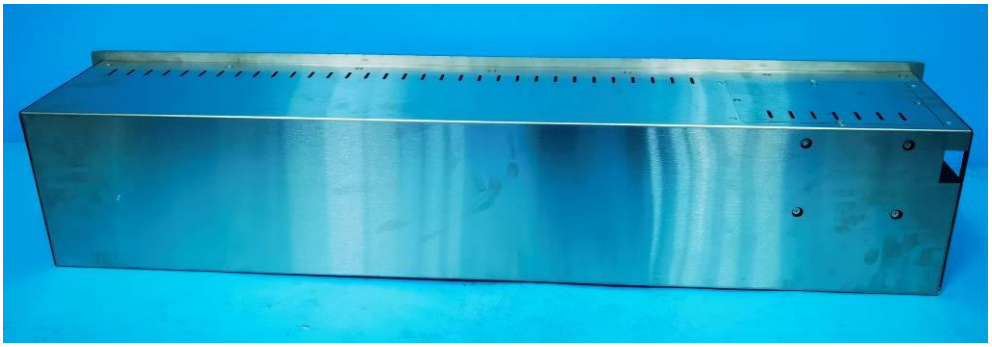








Bottom view



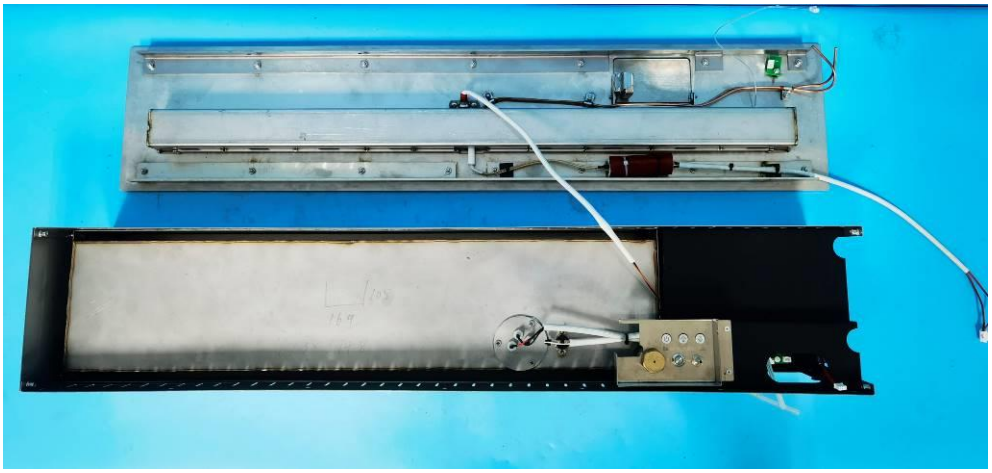
Adaptor view



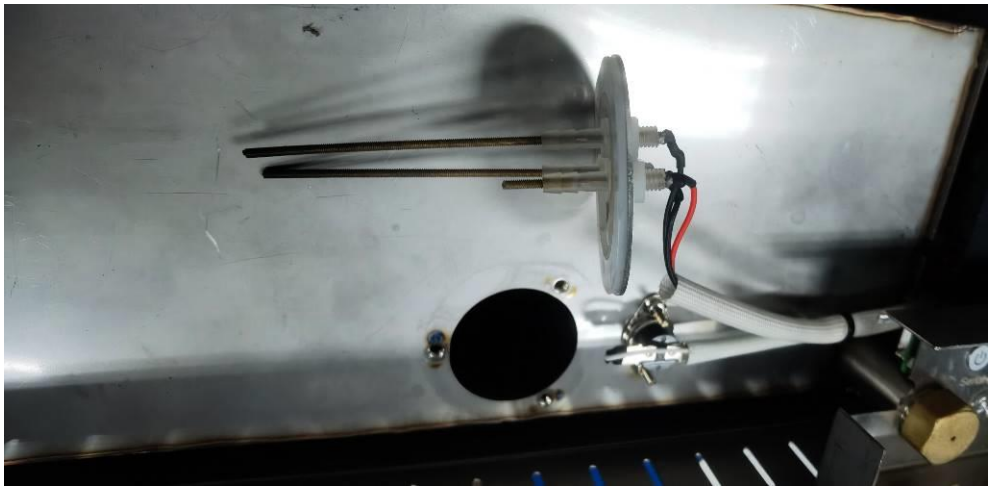
Internal view of adaptor



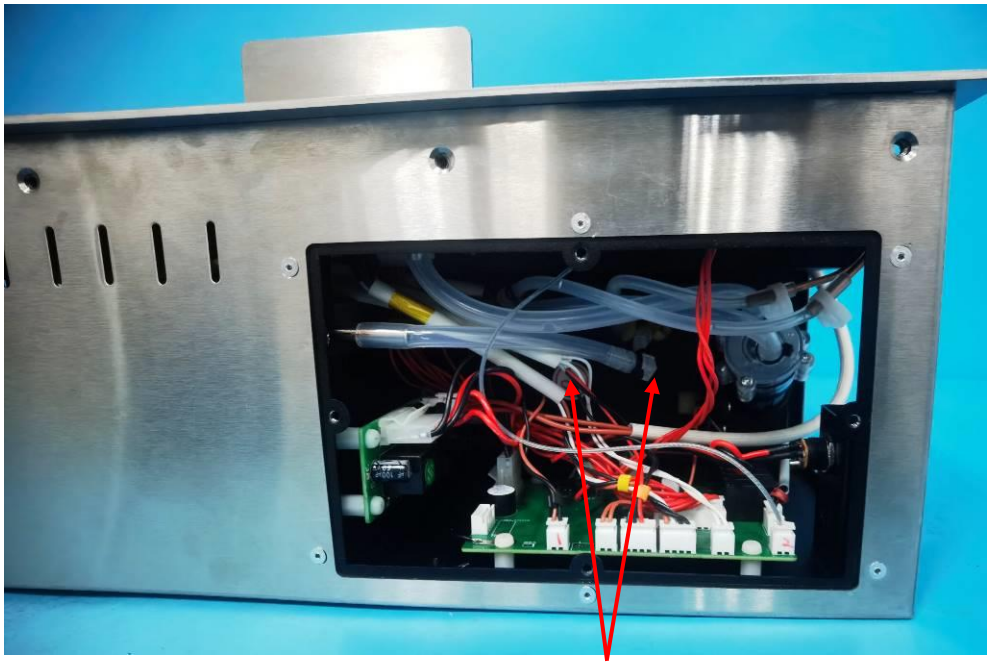
Internal view of model ILFP-SR36



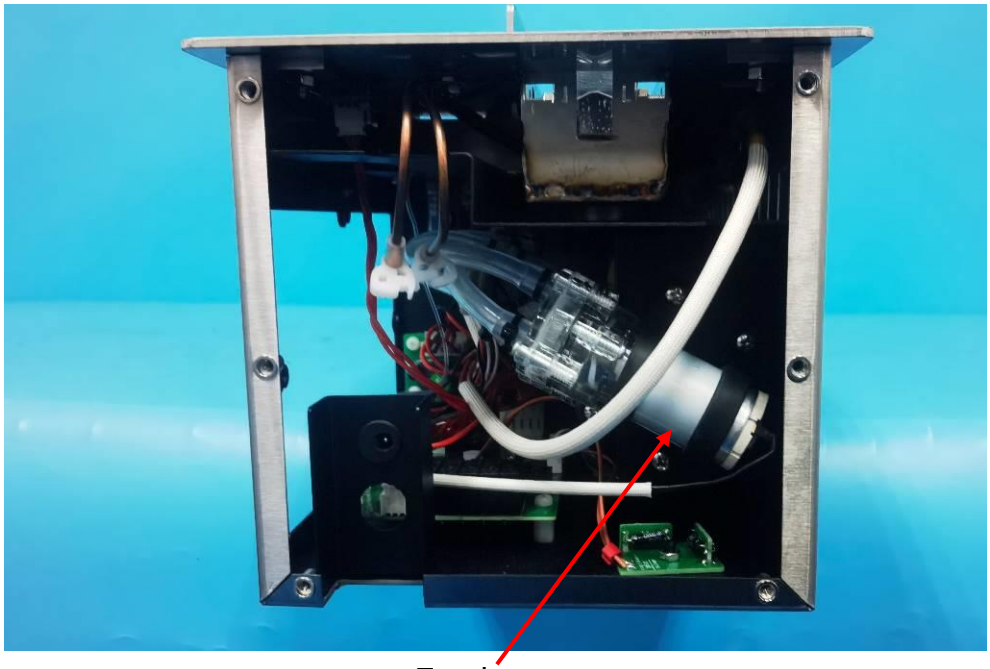




Internal view of model ILFP-SR36

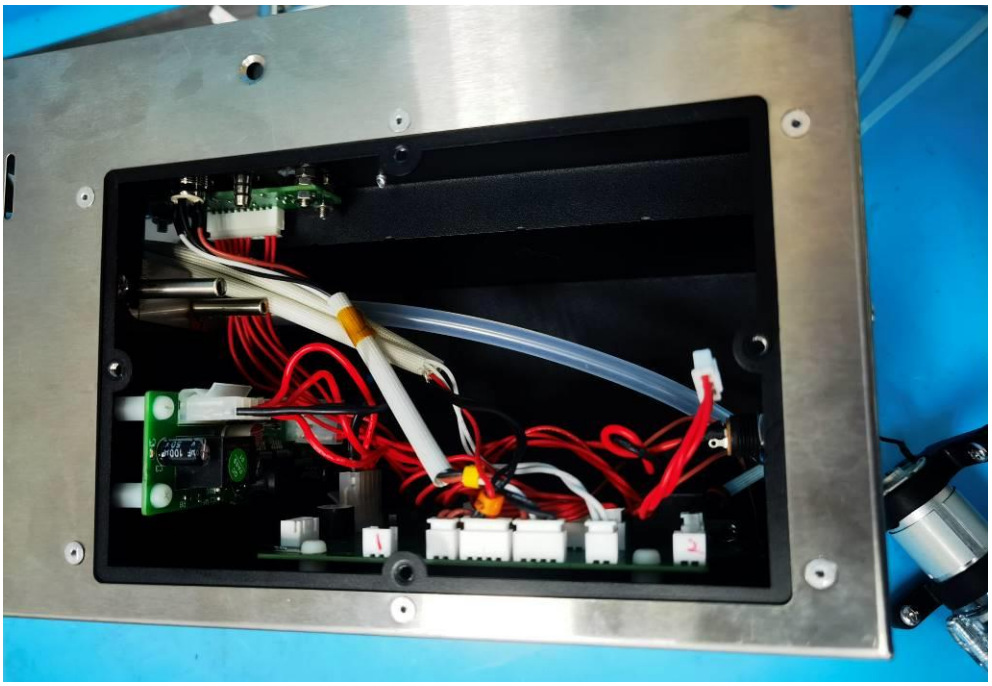


Working pump （2 pcs inner）



Feed pump

Internal view

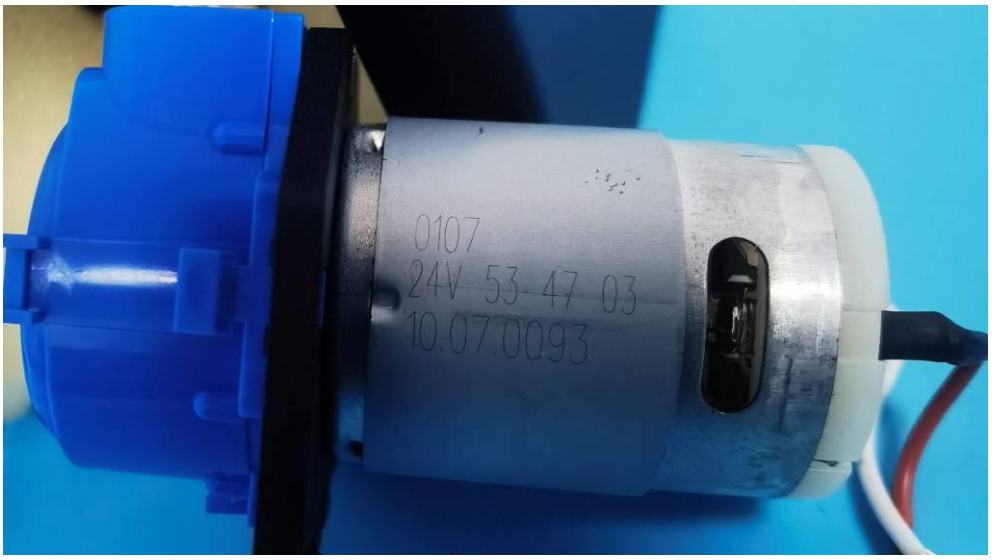




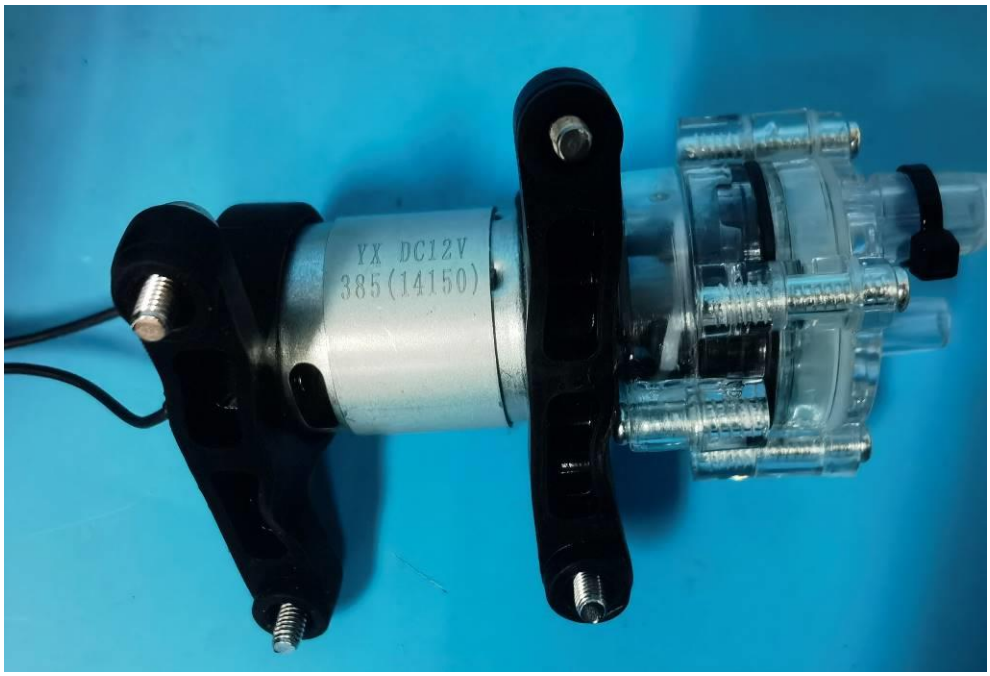
Working pump

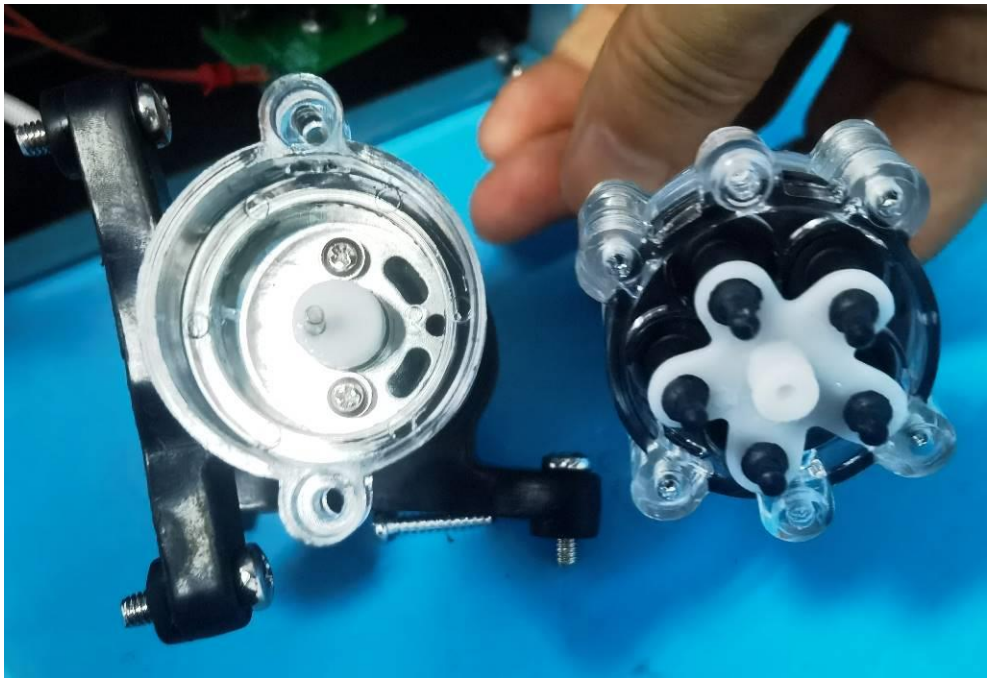




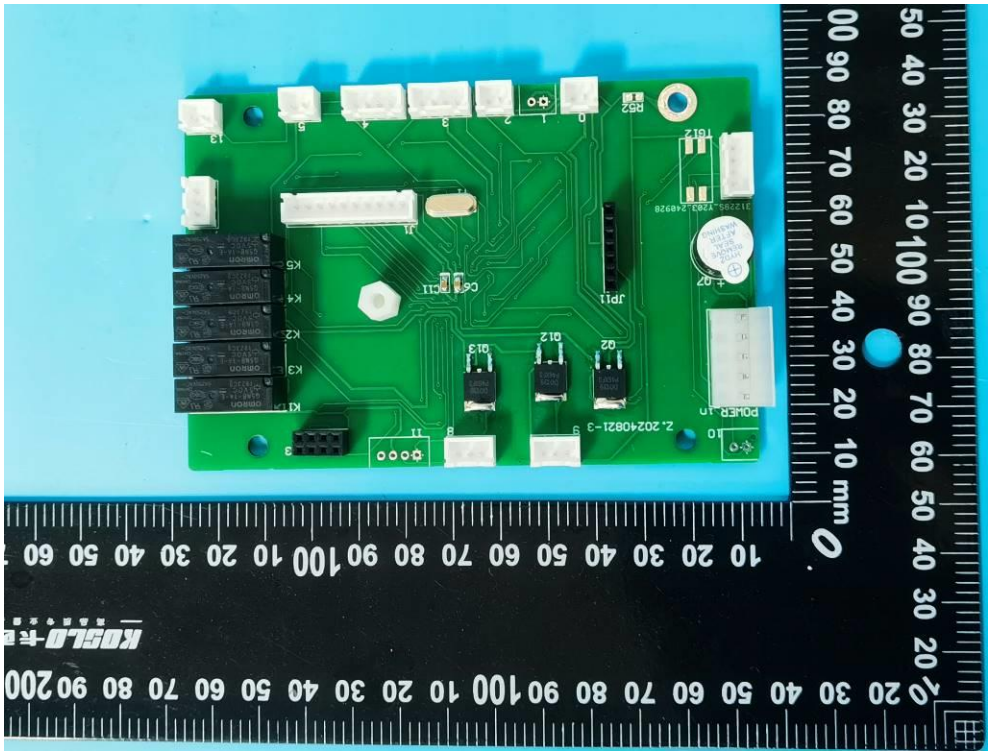


Feed pump view





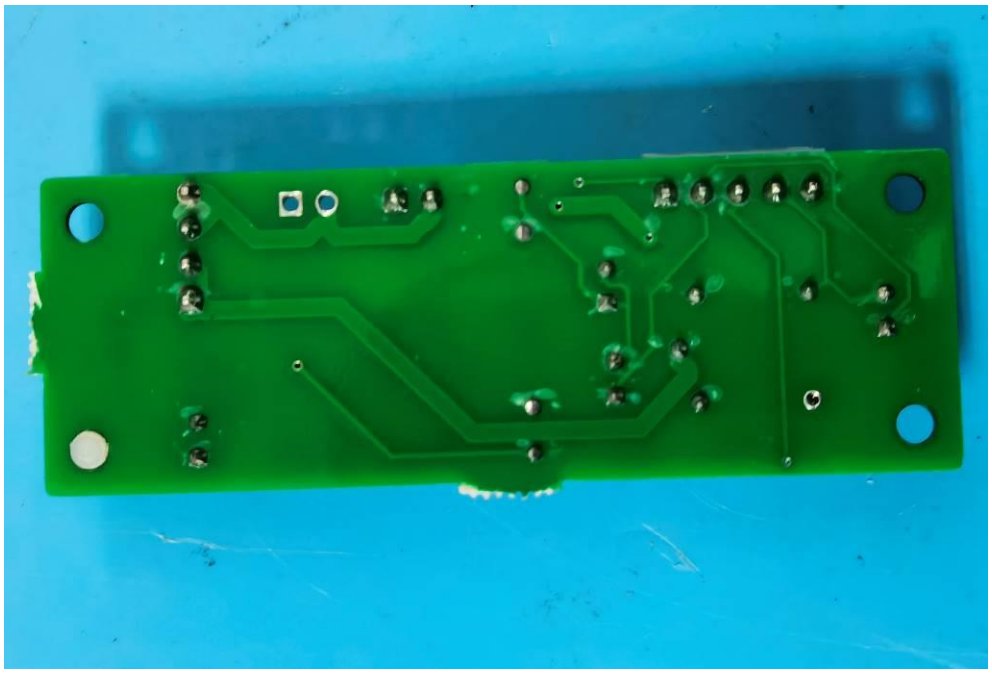
Main PCB view



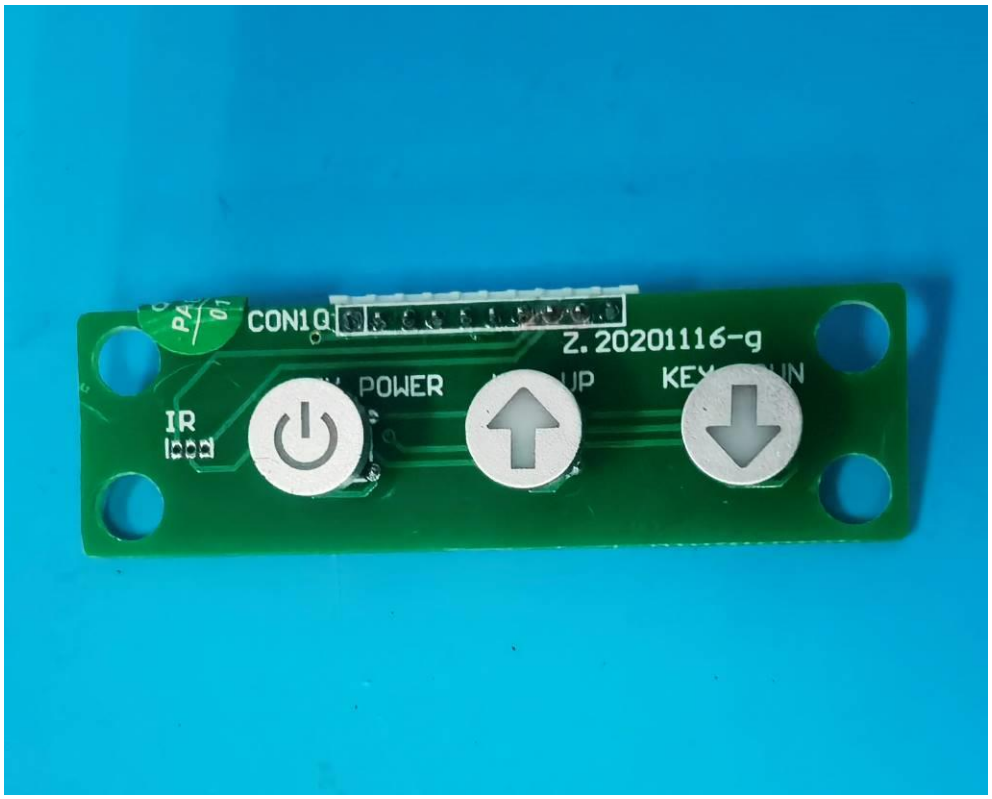


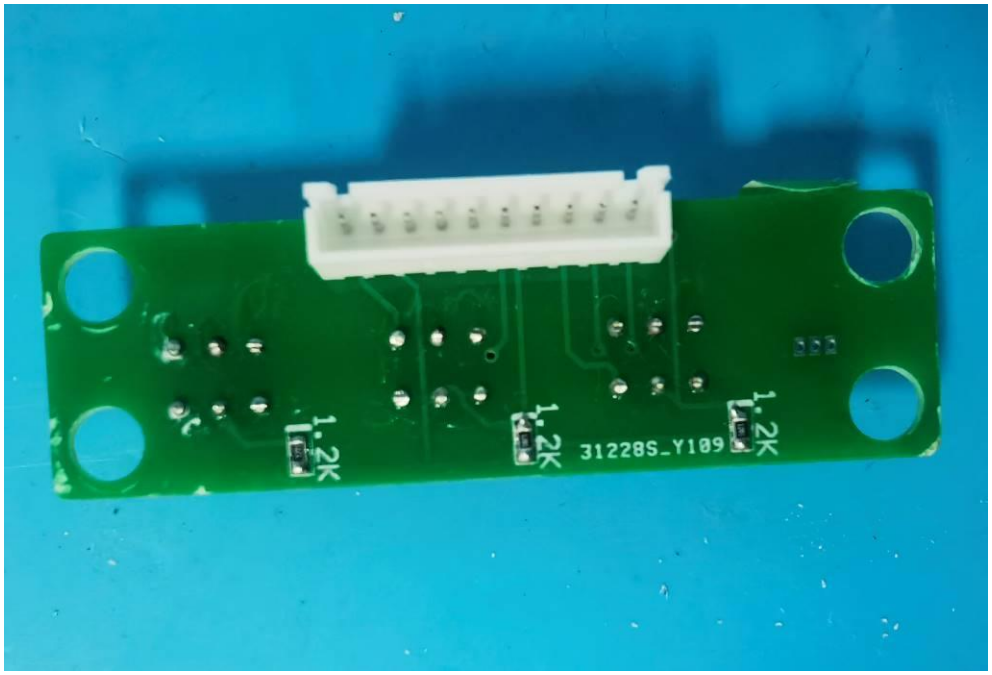
PCB View


Z.20210424
D6
D5
JP4
U4
D1
C1
Q6
R8
QC PASS 01
K1
C4
D11
D21
JP8
JP8_2
C6
JP5



Control PCB view





**********End of Report**********