

TEST REPORT

Applicant : ZHEJIANG SHENLE ELECTRIC CO.,LTD

Address : NO.666 East JiaoTong Rd.Wenzhou Bridge Industrial Zone,
North BaiXiang,YueQing,ZheJiang,China

Equipment Under Test (EUT):

Name	:	SOCKET
Model	:	See Appendix II /Model List

In Accordance with : EN 61000-6-4:2007+A1:2011, EN 61000-6-2:2005
EN 61000-3-2:2014, EN 61000-3-3:2013

Report No : 18PT0730003E 01

Date of Test : July 30, 2018 to August 07, 2018

Date of Issue : August 08, 2018

Test Result : PASS

In the configuration tested, the EUT complied with the standards specified above

Authorized Signature



(Frank)

Engineer



(Bill Liang)

Manager



The device described above is tested by NINGBO PALTEK CO.,LTD to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and NINGBO PALTEK CO.,LTD is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the EN61000-6-4 and EN 61000-6-2 requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of NINGBO PALTEK CO.,LTD

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Modified History


Version	Report No.	Revision date	Summary
Ver.1.0	18PT0730003E 01	\	Original Report

1. SUMMARY OF TEST RESULT

EMISSION			
Description of Test Item	Standard	Limits	Results
Conducted Disturbance at Mains Terminals	EN 61000-6-4:2007+A1:2011	Table 2	Pass
Radiated Disturbance	EN 61000-6-4:2007+A1:2011	Table 1	Pass
Harmonics*	EN 61000-3-2:2014	Table 3	N/A
Voltage fluctuation and flicker*	EN 61000-3-3:2013	Section 5	N/A
IMMUNITY (EN 61000-6-2:2005)			
Description of Test Item	Basic Standard	Performance Criteria	Results
Electrostatic Discharge (ESD)	IEC 61000-4-2:2008	B	N/A
Radio-Frequency, Continuous Radiated Disturbance*	IEC 61000-4-3:2006+A1:2007+A2:2010	A	N/A
EFT/B Immunity	IEC 61000-4-4:2012	B	N/A
Surge Immunity	IEC 61000-4-5:2014	B	N/A
Conducted RF Immunity	IEC 61000-4-6:2013	A	N/A
Power Frequency Magnetic Field*	IEC 61000-4-8:2009	A	N/A
Voltage dips	IEC 61000-4-11:2004	B&C	N/A
Voltage interruptions		C	N/A
Note: 1. N/A is an abbreviation for Not Applicable..			

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

EUT	: SOCKET
Model Number	: See APPENDIX II /Model List (Note: We prepared SKC14-E, and SRU08-E for EMC test.)
Test voltage	: AC 300V,50/60Hz
Trade Mark	
Applicant	: ZHEJIANG SHENLE ELECTRIC CO.,LTD
Address	: NO.666 East JiaoTong Rd.Wenzhou Bridge Industrial Zone,North BaiXiang,YueQing,ZheJiang,China
Manufacturer	: ZHEJIANG SHENLE ELECTRIC CO.,LTD
Address	: NO.666 East JiaoTong Rd.Wenzhou Bridge Industrial Zone,North BaiXiang,YueQing,ZheJiang,China

2.2. Description of Test Facility

Laboratory : Dongguan Precise Testing & Certification Corp., Ltd.
Building D, Baoding Technology Park, Guangming Road 2, Guangming Community, Dongcheng District,
Dongguan, Guangdong, China

The used test equipment is in accordance with CISPR 16-1 series standards for measurement of radio interference.

2.3. Description of Support Device

:

2.4. Measurement Uncertainty

Radiated Emission Uncertainty (3m Chamber)	: 3.44 (Polarize: H) 3.78 (Polarize: V)
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3. MEASURING DEVICE AND TEST EQUIPMENT

3.1. For Radiated Emission Measurement

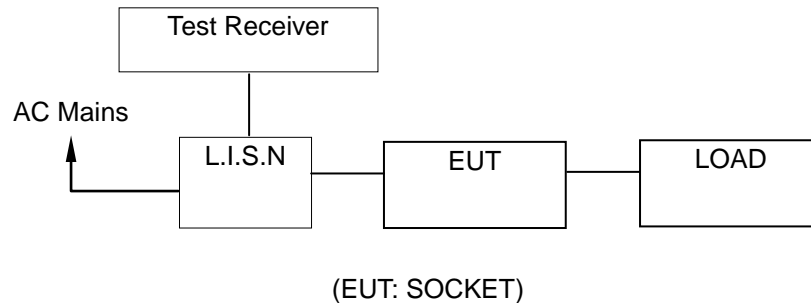
Item	Equipment	Manufacturer	Model No.	Serial No.	Calibration Status
1.	Spectrum Analyzer	Rohde & Schwarz	ESCI	101108	Valid
2.	EMI Test Receiver	Rohde & Schwarz	ESCI	101107	Valid
3.	Pre-Amplifier	CD	PAP-0203	22015	Valid
4.	Bilog Antenna	Schwarzbeck	VULB9163	9163-467	Valid
5.	Cable	Huber + Suhner	CBL3-NN-0.5M	101216-21405 00-2	Valid
6.	Cable	Huber + Suhner	CBL3-NN-3.0M	101216-21430 00-2	Valid
7.	Cable	Huber + Suhner	CBL3-NN-9.0M	101216-21490 00	Valid

3.2. For Power Line Conducted Emission Measurement

Item	Equipment	Manufacturer	Model No.	Serial No.	Calibration Status
1.	Test Receiver	Rohde & Schwarz	ESCI	101178	Valid
2.	L.I.S.N	Rohde & Schwarz	ENV216	101215	Valid
3.	L.I.S.N	Schwarzbeck	NSLK 8126	8128-289	Valid
4.	Cable	HUBER+SUHNER	CBL2-NN-3M	2230300	Valid
5.	Switch	ESE	RSU/M2	---	Valid

4. POWER LINE CONDUCTED EMISSION MEASUREMENT

4.1. Block Diagram of Test Setup



4.2. Measurement Standard

EN 61000-6-4:2007+A1:2011

4.3. Measurement Limits

Frequency	At mains terminals (dB μ V)	
	Quasi-peak Level	Average Level
150KHz ~ 0.5MHz	79*	66*
0.5MHz ~ 30MHz	73	60

1. At the transition frequency the lower limit applies.
2. * Decreasing linearly with logarithm of the frequency.

4.4. EUT Configuration on Measurement

The following equipments are installed on Conducted Emission Measurement to meet EN55015 requirements and operating in a manner which tends to maximize its emission characteristics in a normal application.

EUT : SOCKET
Model Number : SKC14-E,SRU08-E

4.5. Operating Condition of EUT

- 4.5.1. Turn on the power.
- 4.5.2. After that, let the EUT work in test mode (ON) and measure it.

4.6. Test Procedure

The EUT is put on the table, which is 0.8 meter high above the ground and connected to the AC mains through a Line Impedance Stabilization Network (L.I.S.N.). This provided a 50ohm coupling impedance for the tested equipments. Both sides of AC line are checked to find out the maximum conducted emission according to the EN 61000-6-4 regulations during conducted emission measurement. And the voltage probe had been used for the load terminals measurement according to the EN 61000-6-4 standard.

The bandwidth of the test receiver (ESCI) is set at 9KHz in 150K~30MHz range.

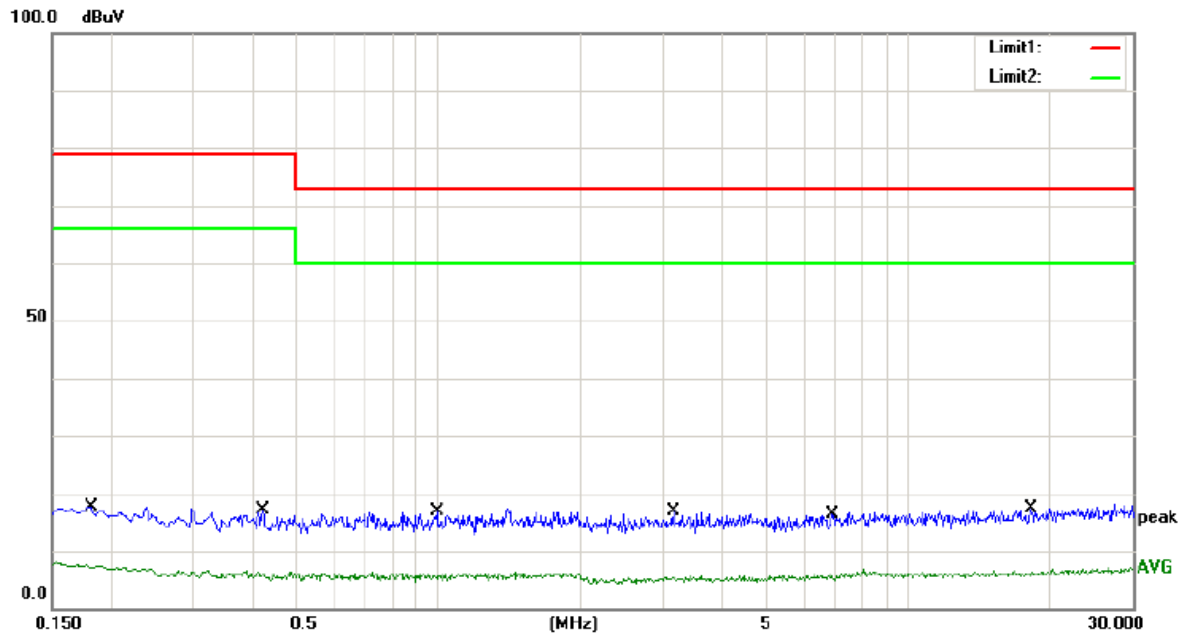
The frequency range from 150KHz to 30MHz is investigated.

4.7. Measurement Results

PASS.

Please refer to the following pages.

SKC14-E



Site site #1

Phase: **L1**

Temperature: 25

Limit: (CE)EN61000-6-4_QP

Power: AC 300V/50Hz

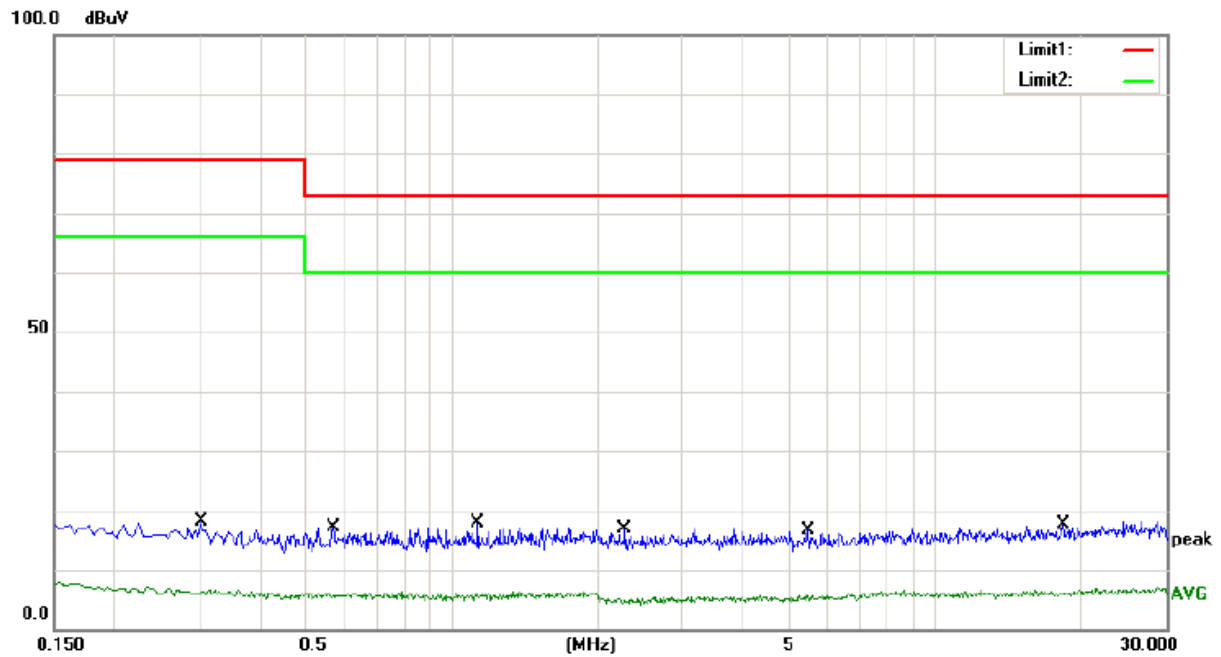
Humidity: 58 %

Mode: ON

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1820	7.63	10.09	17.72	79.00	-61.28	QP	
2		0.1820	-3.02	10.09	7.07	66.00	-58.93	AVG	
3		0.4220	7.07	10.08	17.15	79.00	-61.85	QP	
4		0.4220	-4.31	10.08	5.77	66.00	-60.23	AVG	
5		0.9940	6.83	9.99	16.82	73.00	-56.18	QP	
6		0.9980	-4.80	9.99	5.19	60.00	-54.81	AVG	
7		3.1700	6.70	10.20	16.90	73.00	-56.10	QP	
8		3.1700	-4.79	10.20	5.41	60.00	-54.59	AVG	
9		6.8880	5.97	10.40	16.37	73.00	-56.63	QP	
10		6.8880	-4.88	10.40	5.52	60.00	-54.48	AVG	
11		18.3240	6.85	10.59	17.44	73.00	-55.56	QP	
12	*	18.3240	-4.77	10.59	5.82	60.00	-54.18	AVG	

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: Liu



Site site #1

Phase: **N**

Temperature: 25

Limit: (CE)EN61000-6-4_QP

Power: AC 300V/50Hz

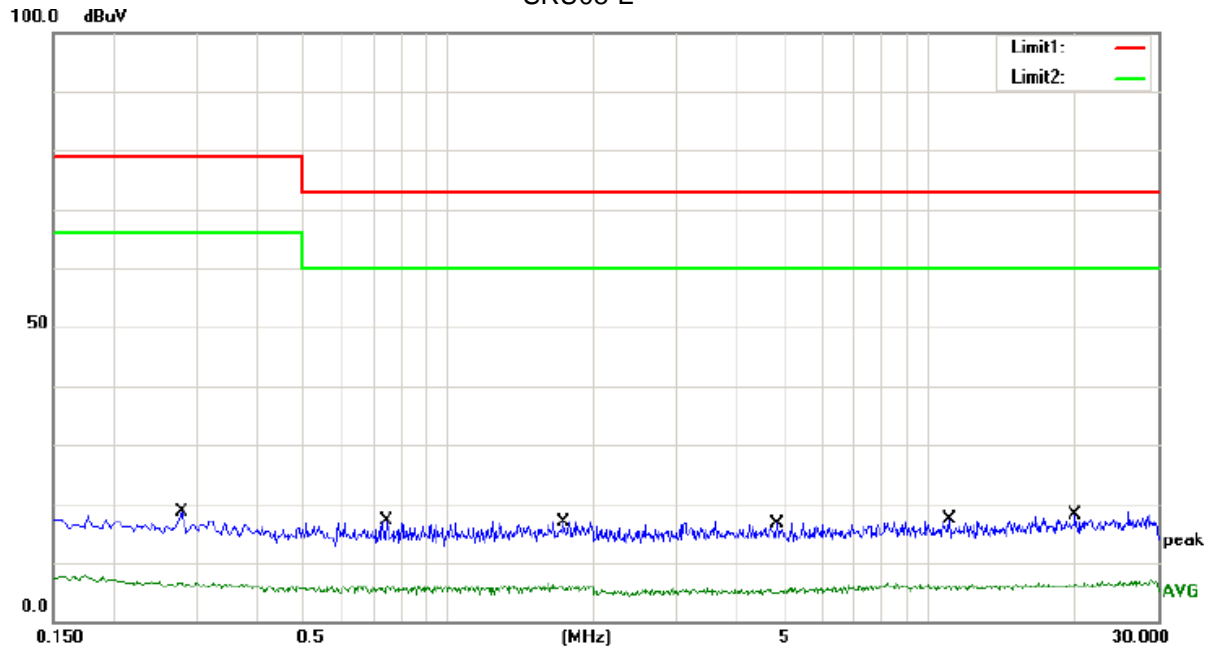
Humidity: 58 %

Mode: ON

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.3020	8.03	10.08	18.11	79.00	-60.89	QP	
2		0.3020	-3.81	10.08	6.27	66.00	-59.73	AVG	
3		0.5700	7.18	10.06	17.24	73.00	-55.76	QP	
4		0.5700	-4.50	10.06	5.56	60.00	-54.44	AVG	
5		1.1340	7.89	10.01	17.90	73.00	-55.10	QP	
6		1.1340	-4.13	10.01	5.88	60.00	-54.12	AVG	
7		2.2820	6.85	10.13	16.98	73.00	-56.02	QP	
8		2.2820	-5.23	10.13	4.90	60.00	-55.10	AVG	
9		5.4560	6.24	10.36	16.60	73.00	-56.40	QP	
10		5.4560	-4.81	10.36	5.55	60.00	-54.45	AVG	
11		18.4160	6.99	10.59	17.58	73.00	-55.42	QP	
12	*	18.4160	-4.57	10.59	6.02	60.00	-53.98	AVG	

*:Maximum data x:Over limit l:over margin Comment: Factor build in receiver. Operator: Liu

SRU08-E


Site site #1

 Phase: **N**

Temperature: 25

Limit: (CE)EN61000-6-4_QP

Power: AC 300V/50Hz

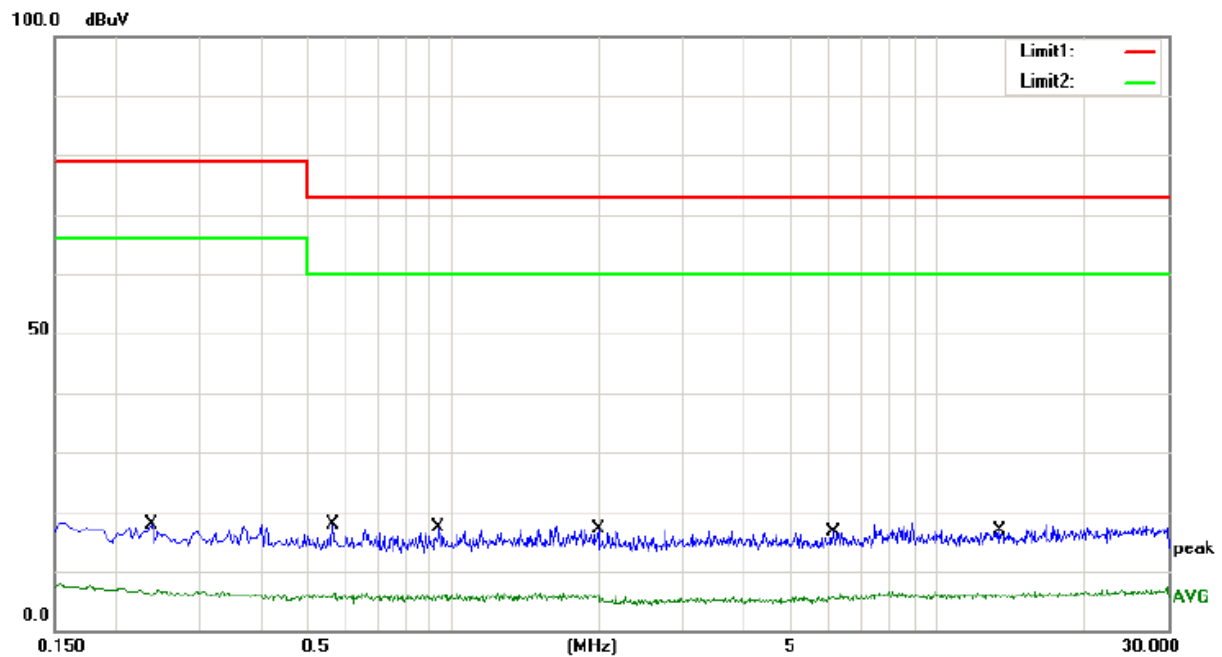
Humidity: 58 %

Mode: ON

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.2780	8.57	10.09	18.66	79.00	-60.34	QP	
2		0.2780	-3.64	10.09	6.45	66.00	-59.55	AVG	
3		0.7460	6.99	10.03	17.02	73.00	-55.98	QP	
4		0.7460	-3.92	10.03	6.11	60.00	-53.89	AVG	
5		1.7380	6.87	10.08	16.95	73.00	-56.05	QP	
6		1.7380	-4.26	10.08	5.82	60.00	-54.18	AVG	
7		4.8260	6.33	10.34	16.67	73.00	-56.33	QP	
8		4.8260	-5.53	10.34	4.81	60.00	-55.19	AVG	
9		11.0320	6.92	10.49	17.41	73.00	-55.59	QP	
10		11.0320	-4.47	10.49	6.02	60.00	-53.98	AVG	
11		20.2680	7.60	10.62	18.22	73.00	-54.78	QP	
12	*	20.2680	-4.37	10.62	6.25	60.00	-53.75	AVG	

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: Liu



Site site #1

Phase: **L1**

Temperature: 25

Limit: (CE)EN61000-6-4_QP

Power: AC 300V/50Hz

Humidity: 58 %

Mode: ON

Note:

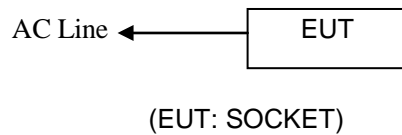
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.2380	7.75	10.09	17.84	79.00	-61.16	QP	
2		0.2380	-3.97	10.09	6.12	66.00	-59.88	AVG	
3		0.5660	7.81	10.06	17.87	73.00	-55.13	QP	
4		0.5660	-4.38	10.06	5.68	60.00	-54.32	AVG	
5		0.9340	7.33	10.00	17.33	73.00	-55.67	QP	
6	*	0.9340	-4.02	10.00	5.98	60.00	-54.02	AVG	
7		1.9980	6.95	10.11	17.06	73.00	-55.94	QP	
8		2.0020	-5.27	10.11	4.84	60.00	-55.16	AVG	
9		6.1120	6.17	10.38	16.55	73.00	-56.45	QP	
10		6.1120	-4.77	10.38	5.61	60.00	-54.39	AVG	
11		13.4800	6.44	10.53	16.97	73.00	-56.03	QP	
12		13.4800	-4.56	10.53	5.97	60.00	-54.03	AVG	

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: Liu

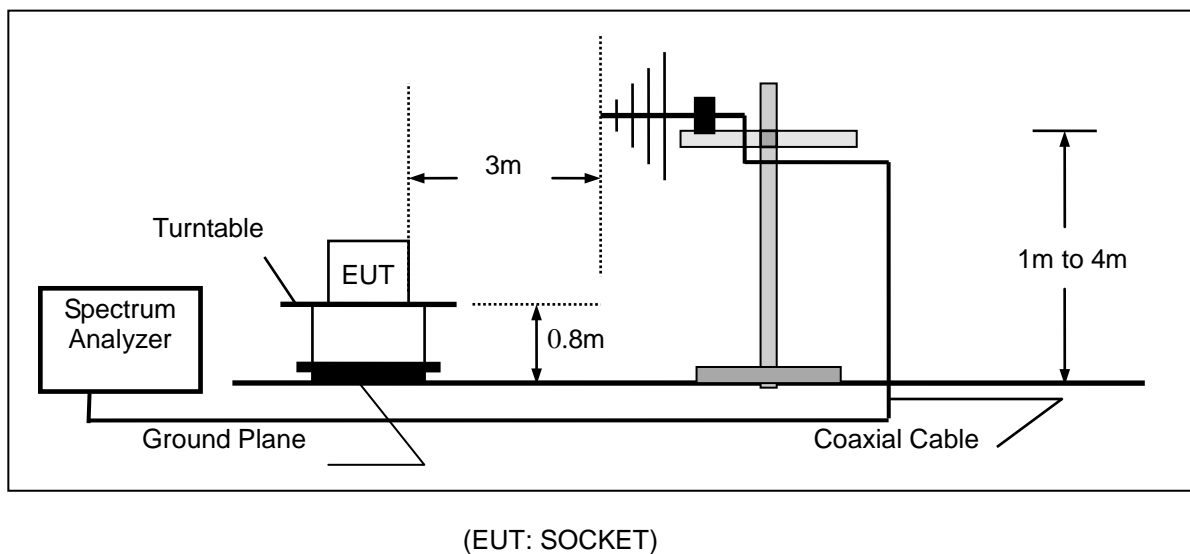
5. RADIATED EMISSION MEASUREMENT

5.1. Block Diagram of Test Setup

5.1.1. Block diagram of connection between the EUT and simulators



5.1.2. Block diagram of test setup (In chamber)



5.2. Measuring Standard

EN 61000-6-4:2007+A1:2011

5.3. Radiated Emission Limits

All emanations from devices or system shall not exceed the level of field strengths specified below:

FREQUENCY (MHz)	DISTANCE (Meters)	FIELD STRENGTHS LIMIT (dB μ V/m)
30 ~ 230	3	50
230 ~ 1000	3	57

FREQUENCY (GHz)	DISTANCE (Meters)	FIELD STRENGTHS LIMIT	
		Average (dB μ V/m)	Peak (dB μ V/m)
1~3	3	56	76
3~6	3	60	80

Note: (1) The smaller limit shall apply at the combination point between two frequency bands.
 (2) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the EUT.

5.4. EUT Configuration on Test

The EN 61000-6-4 regulations test method must be used to find the maximum emission during radiated emission measurement.

5.5. Operating Condition of EUT

5.5.1. Turn on the power.

5.5.2. After that, let the EUT work in test mode (AUTO, REV) and measure it.

5.6. Test Procedure

The EUT is placed on a turntable which is 0.8 meter high above the ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna that is mounted on an antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Bilog antenna (calibrated by Dipole Antenna) is used as a receiving antenna. Both horizontal and vertical polarization of the antenna is set on test.

The bandwidth of the Receiver (ESCI) is set at 120kHz.

5.7. Measuring Results

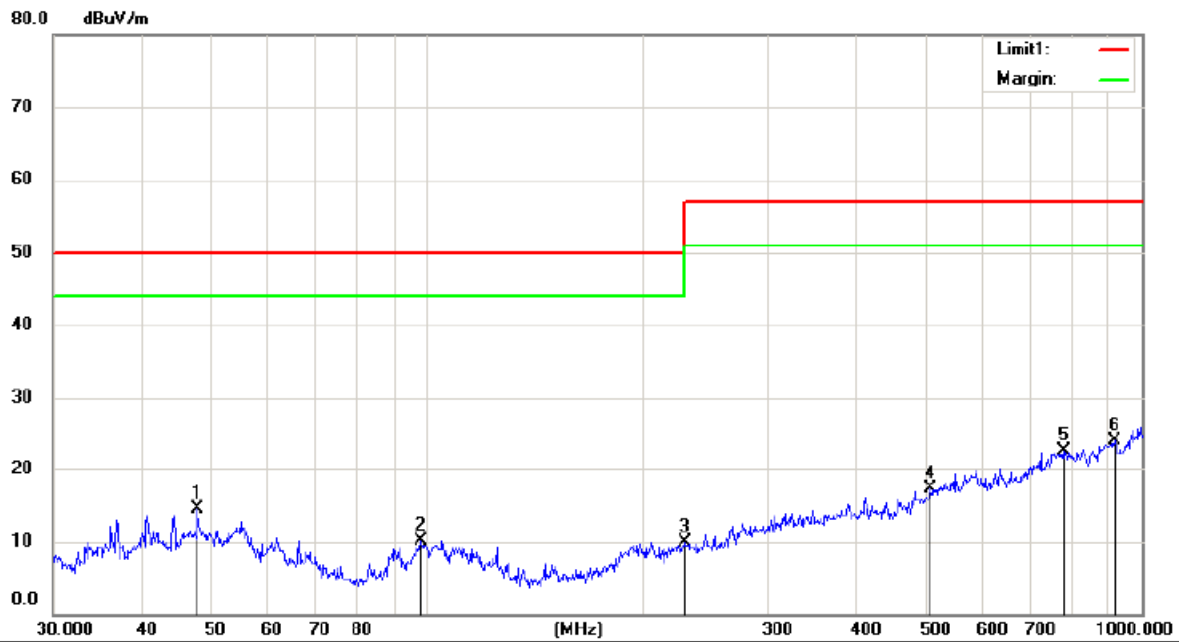
PASS.

The frequency range from 30MHz to 1000MHz is investigated.

Please see the attached pages.

Test data:

SKC14-E



Site site #1

Polarization: **Vertical**

Temperature: 25 C

Limit: (RE) EN 61000-6-4

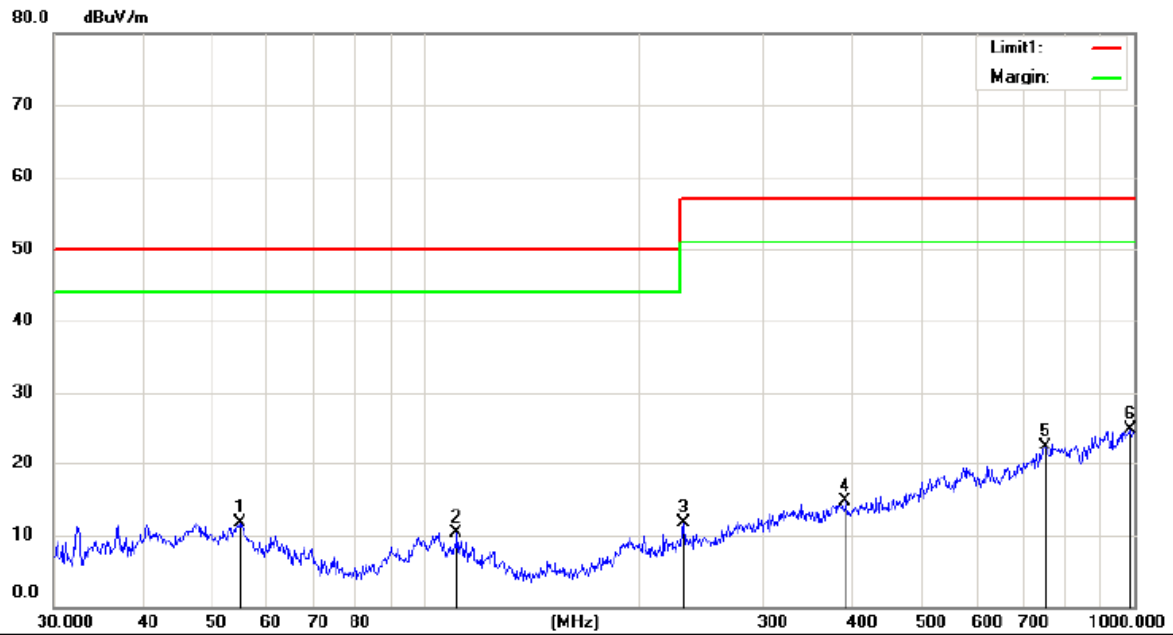
Power: AC 300V/50Hz

Humidity: 52 %

Mode: ON

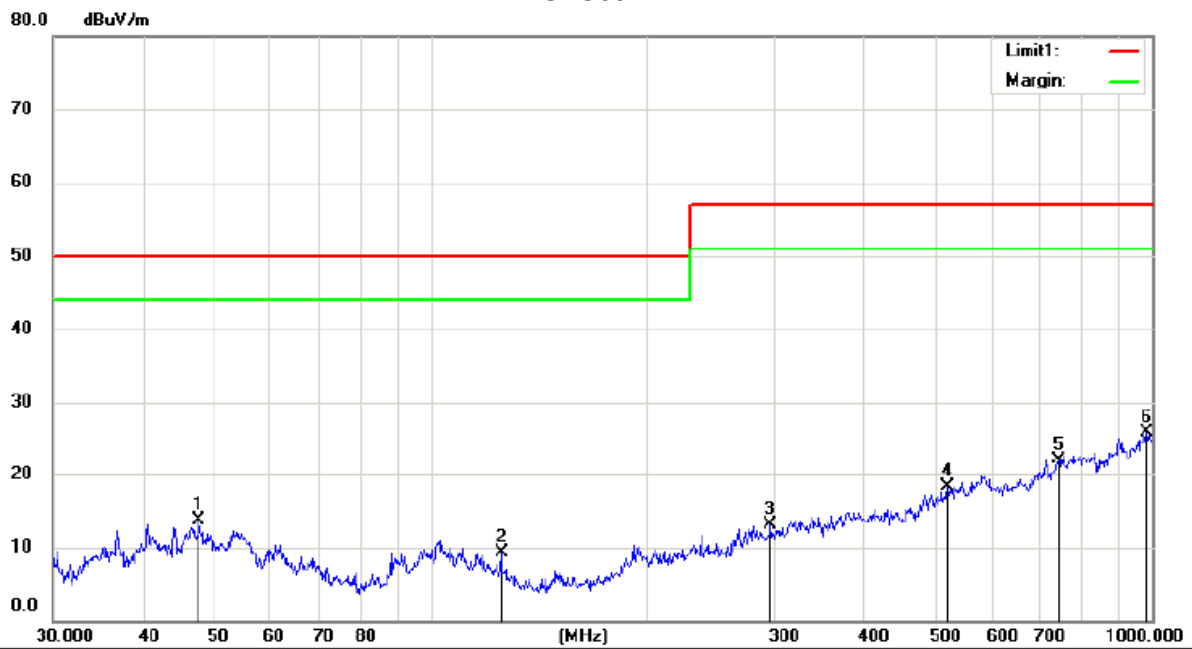
Note:

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	
			dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		47.8260	34.42	-19.86	14.56	50.00	-35.44	QP		
2		98.1418	31.94	-21.75	10.19	50.00	-39.81	QP		
3		230.0985	31.22	-21.28	9.94	57.00	-47.06	QP		
4		506.4790	31.77	-14.38	17.39	57.00	-39.61	QP		
5		776.8777	30.75	-8.14	22.61	57.00	-34.39	QP		
6	*	916.0684	30.77	-6.75	24.02	57.00	-32.98	QP		



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	
			dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		54.8348	31.55	-19.76	11.79	50.00	-38.21	QP		
2		110.9570	32.27	-22.00	10.27	50.00	-39.73	QP		
3		231.7178	32.95	-21.27	11.68	57.00	-45.32	QP		
4		392.0950	31.57	-16.95	14.62	57.00	-42.38	QP		
5		750.1082	31.00	-8.52	22.48	57.00	-34.52	QP		
6	*	986.0715	30.23	-5.23	25.00	57.00	-32.00	QP		

SRU08-E



Site site #1

Polarization: **Vertical**

Temperature: 25 C

Limit: (RE) EN 61000-6-4

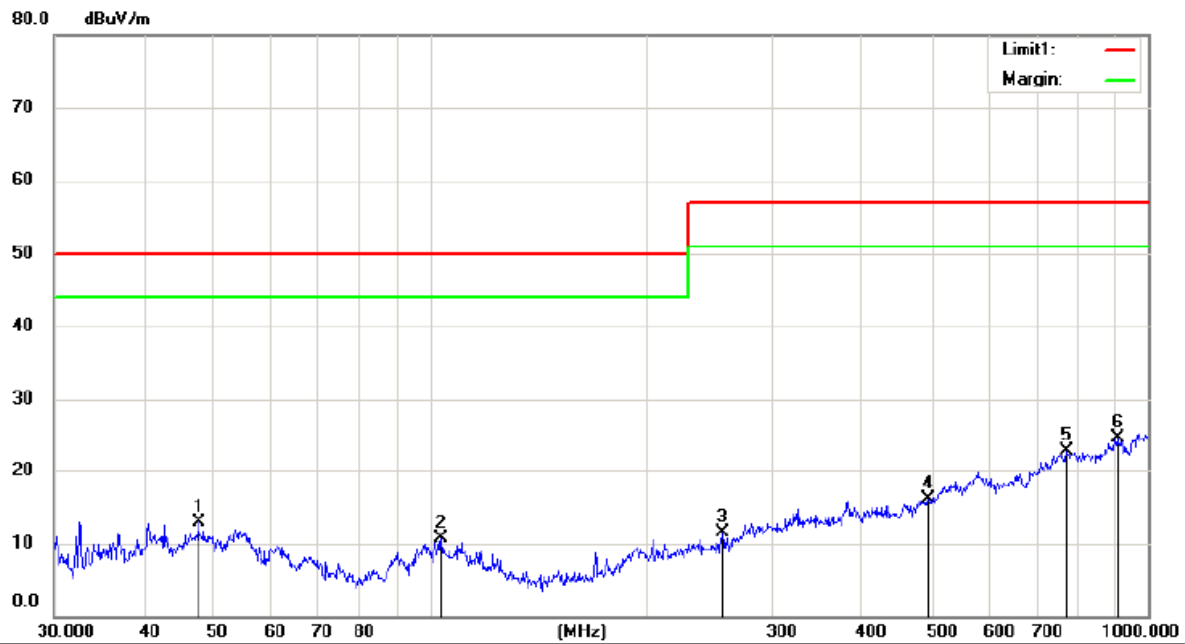
Power: AC 300V/50Hz

Humidity: 52 %

Mode:ON

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1		47.8260	33.50	-19.86	13.64	50.00	-36.36	QP			
2		125.4457	33.40	-24.08	9.32	50.00	-40.68	QP			
3		296.1836	31.99	-18.96	13.03	57.00	-43.97	QP			
4		520.8881	31.67	-13.36	18.31	57.00	-38.69	QP			
5		742.2586	31.21	-9.05	22.16	57.00	-34.84	QP			
6	*	982.6200	31.26	-5.35	25.91	57.00	-31.09	QP			



Site site #1

Polarization: **Horizontal**

Temperature: 25 C

Limit: (RE) EN 61000-6-4

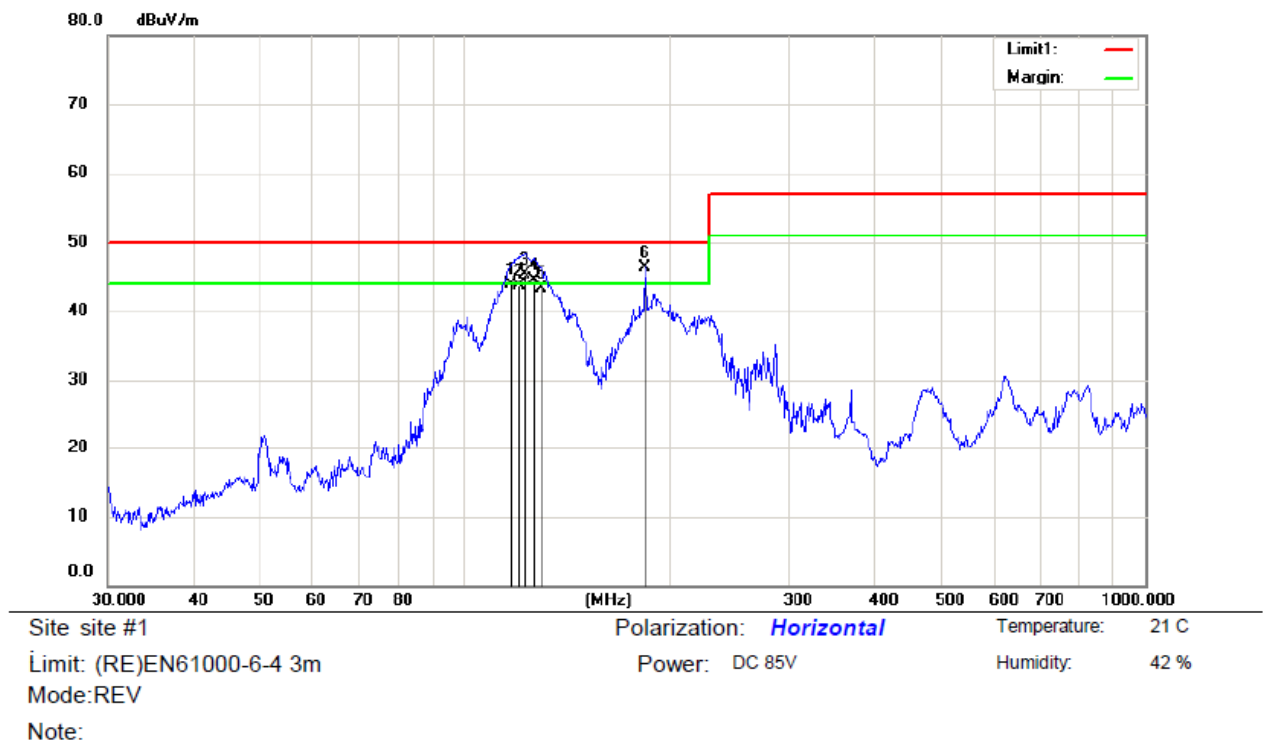
Power: AC 300V/50Hz

Humidity: 52 %

Mode:ON

Note:

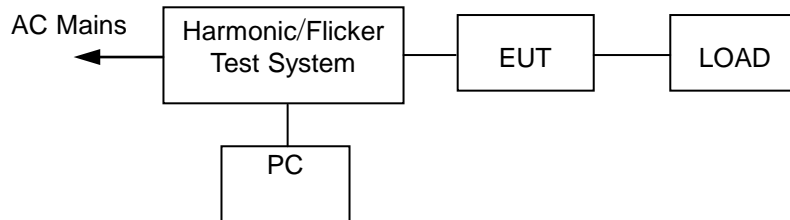
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		47.6584	32.70	-19.81	12.89	50.00	-37.11	QP		
2		103.8054	31.88	-21.17	10.71	50.00	-39.29	QP		
3		255.6230	32.90	-21.44	11.46	57.00	-45.54	QP		
4		494.1983	31.01	-14.97	16.04	57.00	-40.96	QP		
5		771.4484	31.09	-8.19	22.90	57.00	-34.10	QP		
6	*	906.4823	30.82	-6.21	24.61	57.00	-32.39	QP		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1		117.3602	67.08	-23.08	44.00	50.00	-6.00	QP		
2		120.6991	67.46	-23.66	43.80	50.00	-6.20	QP		
3	!	122.8340	69.12	-23.82	45.30	50.00	-4.70	QP		
4	!	126.7723	69.00	-24.40	44.60	50.00	-5.40	QP		
5		129.9225	68.44	-25.14	43.30	50.00	-6.70	QP		
6	*	184.4898	70.27	-23.87	46.40	50.00	-3.60	QP		

6. HARMONIC CURRENT EMISSION MEASUREMENT

6.1. Block Diagram of Test Setup



(EUT: SOCKET)

6.2. Measuring Standard

EN 61000-3-2:2014, CLASS A

6.3. Operation Condition of EUT

6.3.1. Turn on the power.

6.3.2. Let the EUT work in test mode (ON) and measure it.

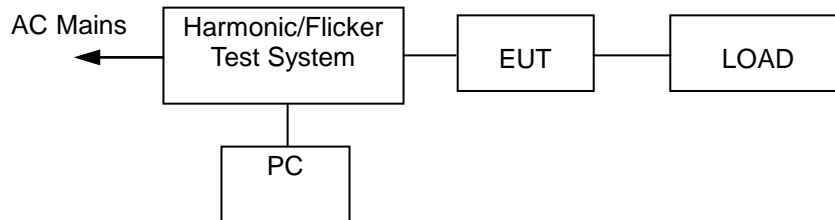
6.4. Measuring Results

N/A

Because power of EUT is less than 75W, according to standard EN 61000-3-2, Harmonic current is unnecessary to test.

7. VOLTAGE FLUCTUATION AND FLICKER MEASUREMENT

7.1. Block Diagram of Test Setup



(EUT: SOCKET)

7.2. Measuring Standard

EN 61000-3-3:2013

7.3. Operation Condition of EUT

7.3.1. Turn on the power.

7.3.2. After that, let the EUT work in test mode (ON) and measure it.

7.4. Measuring Results

N/A.

The inrush current of this EUT does not exceed 20A, and the supply current after inrush is within a variation band of 1,5A. So according to 6.1 of this standard, the EUT is deemed to comply with this standard without further testing.

8. IMMUNITY PERFORMANCE CRITERIA DESCRIPTION

According to the electrical characteristics of the EUT, the product contains no electronic control circuitry and active component. Therefore, the EUT is deemed to fulfill the related requirements of EN 61000-6-2:2005 without actual testing.

9. PHOTOGRAPH

9.1. Photo of Radiation Emission Measurement

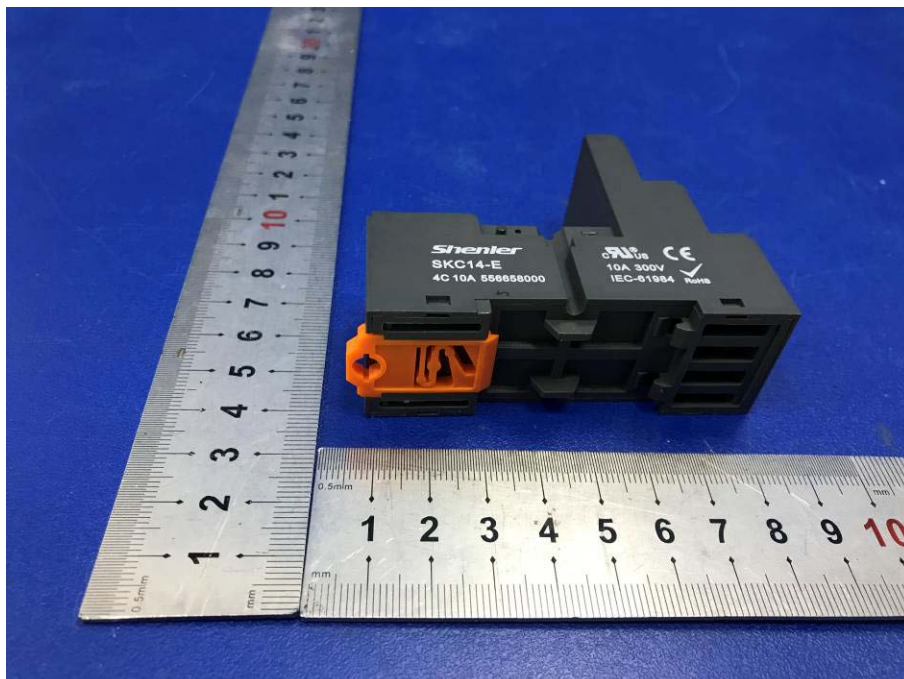
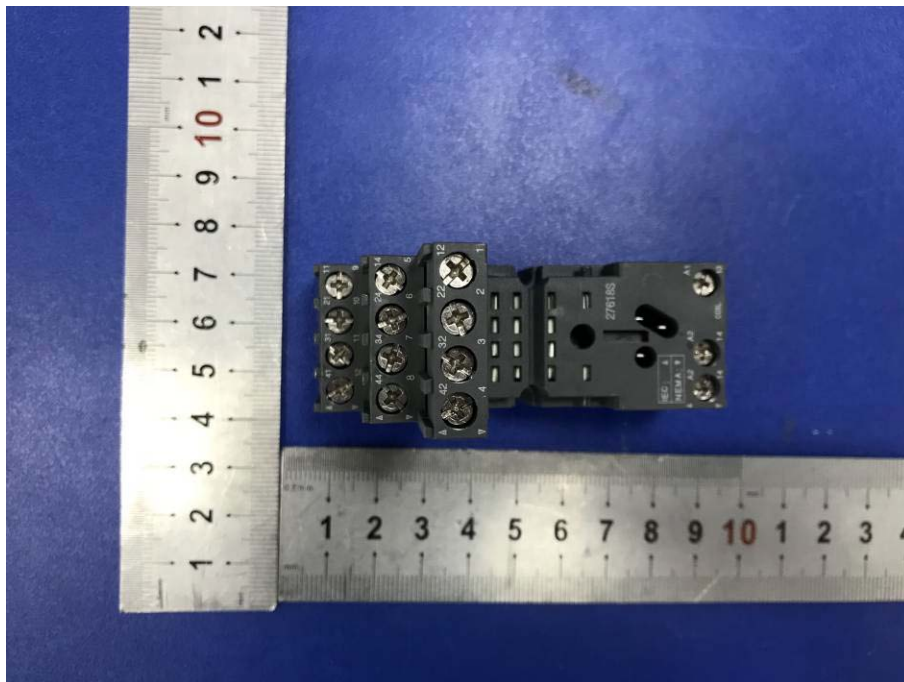


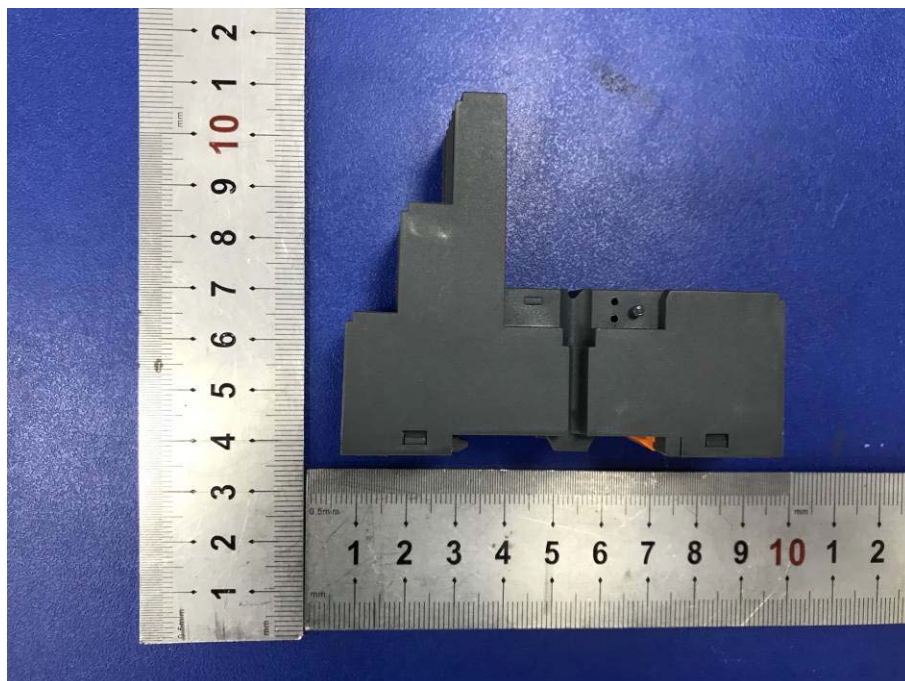
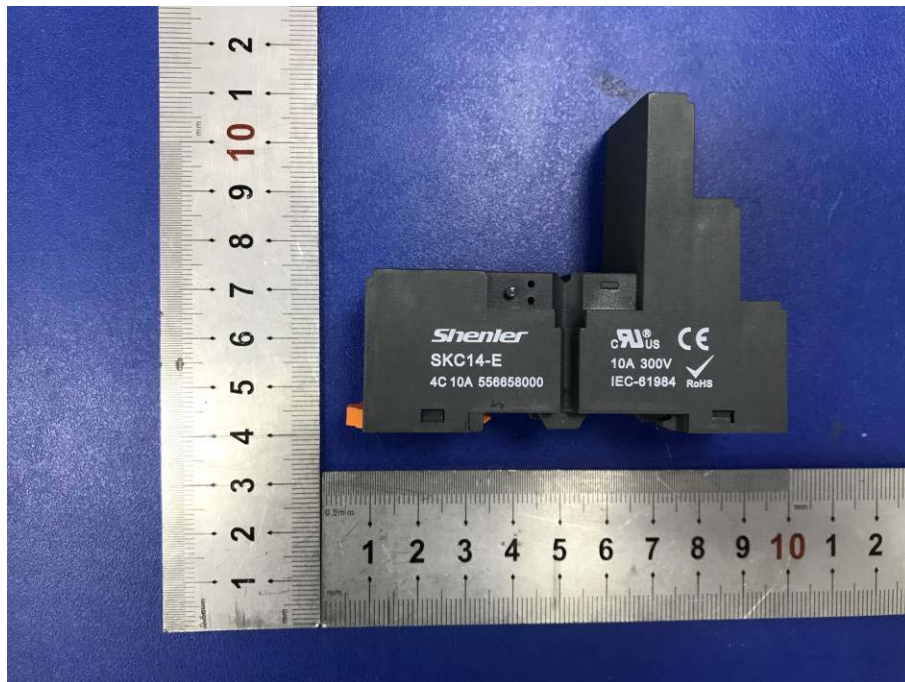
9.2. Photo of Electrostatic Discharge Test

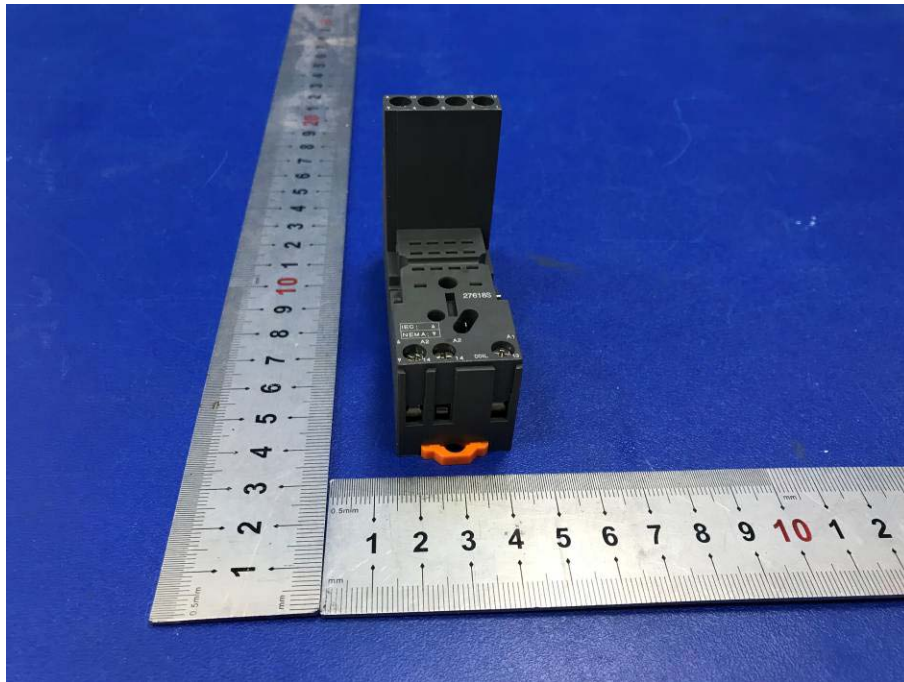


APPENDIX I (Photo of EUT)

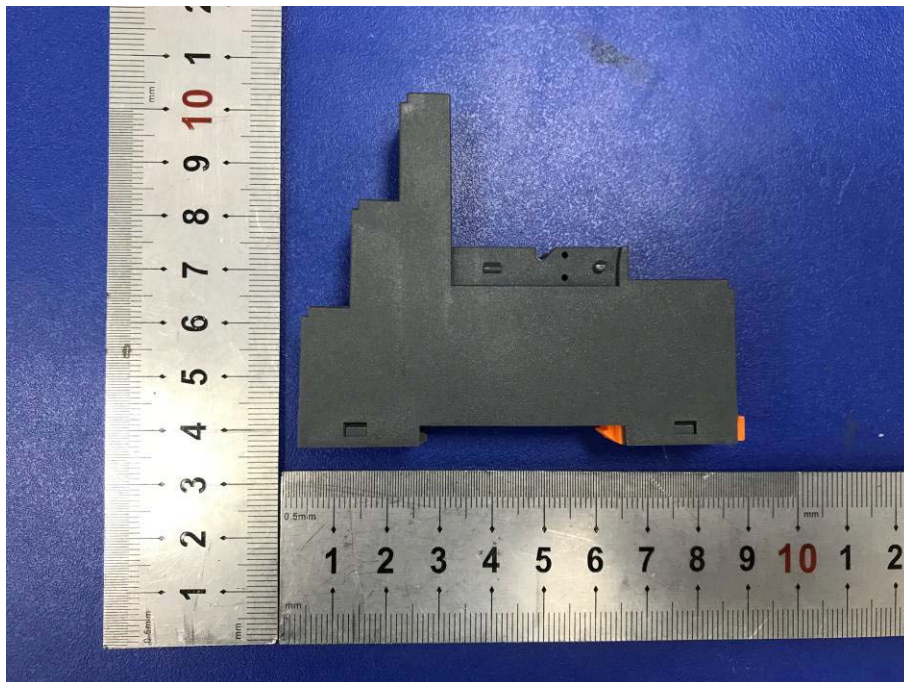
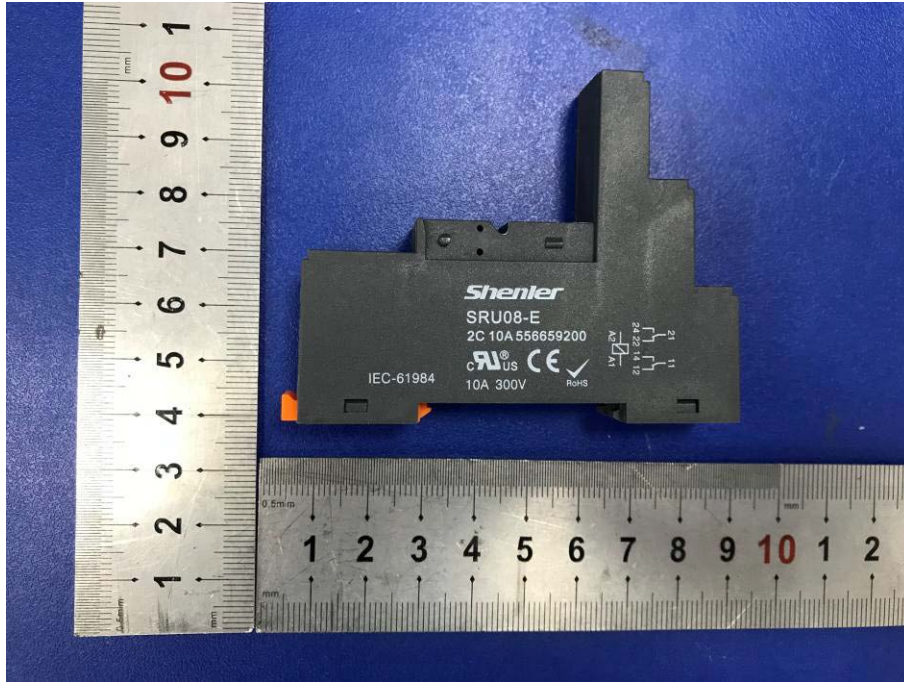
SKC14-E

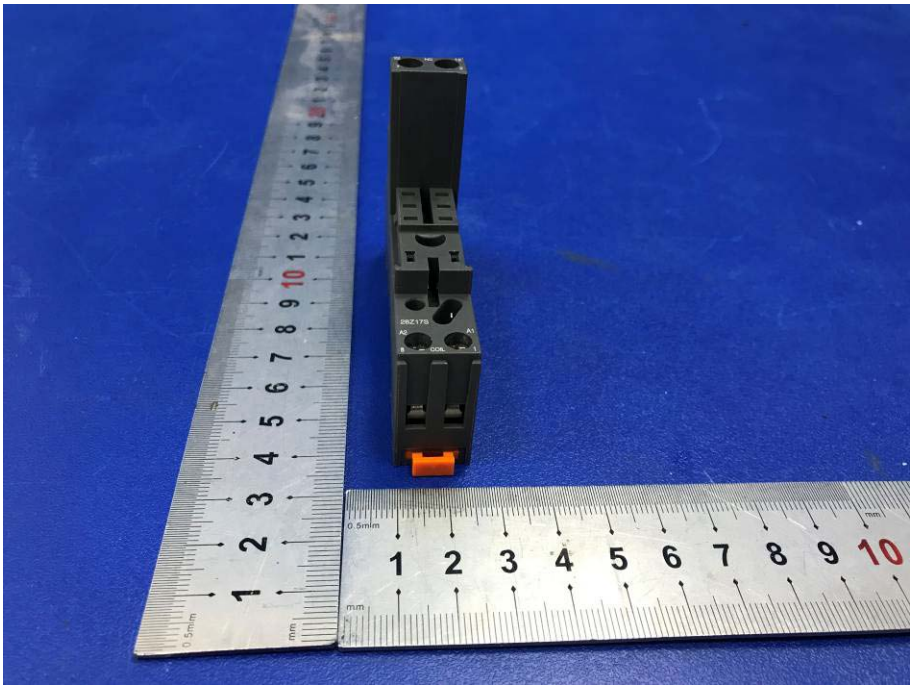
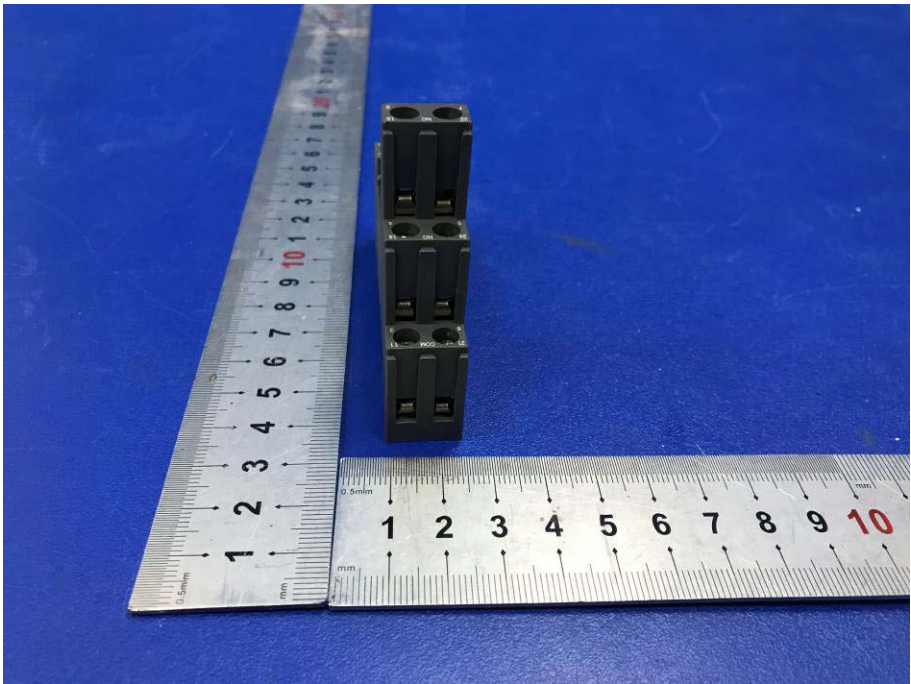


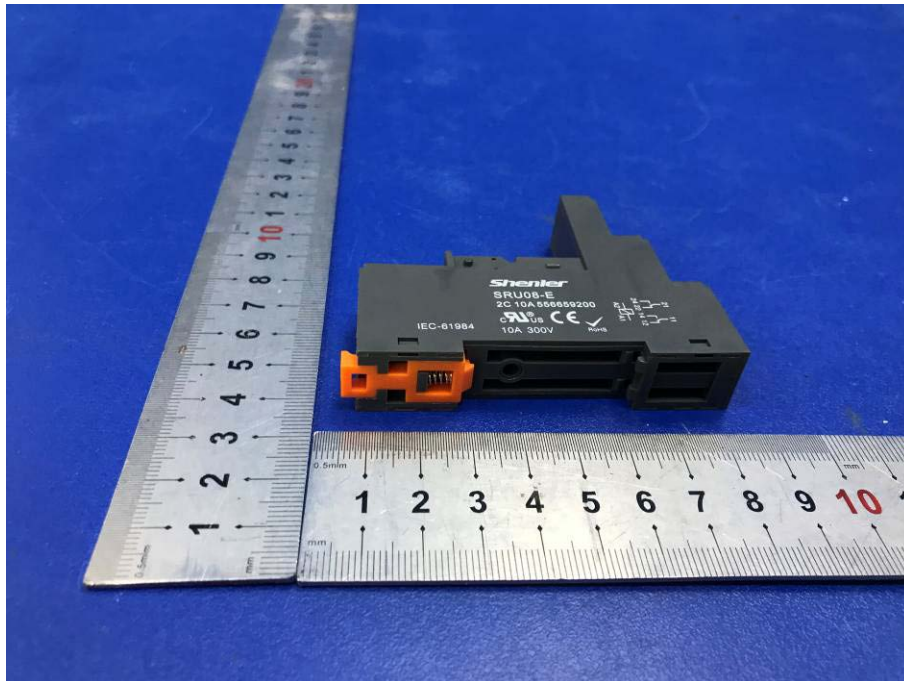




SRU08-E







APPENDIX II (Model List)

SRT05-E	SYF08A	SKF08-E	STF08A
SRT08-E	SYF11A	SKF14-E	STF14A
SRT05-ES	SYF14A	SKF08-A	STF08A-E
SRT08-ES	SYF08A-E	SKF14-A	STF14A-E
SRT05-A	SYF11A-E	SKB08-E	STB08-E
SRT08-A	SYF14A-E	SKB14-E	STB11-E
SRT05-AS	SY08-P	SKC08-E	STB14-E
SRT08-AS	SY14-P	SKC11-E	PTF08A
SRB05-E	SY08-A	SKC14-E	PTF11A
SRB08-E	SY14-A	SKC08-ES	PTF14A
SRC05-E	SY08	SKC08-ET	PF083A
SRC08-E	SY11	SKC11-ET	PF113A
SRU05-E	SY14	SKC14-ET	PF083A-E
SRU08-E	SY08-0	SKC08-S	PF113A-E
SRU05-S	SY11-0	SKC14-S	PF085A
SRU08-S	SY14-0	SKC08-ST	P3G08
SRC05-S	ST08	SKC14-ST	PYF14.5A
SRC08-S	ST14	SUB08-E	P76F-06
SRU05-ST	ST08-0	SUB11-E	SRC08-P
SRU08-ST	ST14-0	SUB08-A	SRT05-P
SRC05-ST	SEB08-E	SUB11-A	SRT08-P
SRC08-ST	SEB11-E	AMD-	
SRC05-P	SEB11-P	BMD-	
SNC05	SNC05-E	SNC05-S	

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