EMC TEST REPORT

For

Static Var Generator

Model No.: SVG-400-35K-4L, 5 Kvar, 10Kvar, 15Kvar, 20Kvar, 35Kvar, 50Kvar, 70Kvar, 100Kvar

Prepared for	:	Cook Cooper Electric (shanghai) Co., Ltd.
Address	:	Room A56, 4th Floor, Block B 505 Xinbei Road Minhang District Shanghai

Prepared By	:	Guangdong KAIXU Testing Technology Co., Ltd.
Address	:	Room 215, Building 2, No. 123, Dongcheng Section, Guanlong Road, Dongcheng Street, Dongguan City, Guangdong Province, China

Tel	:	+86-755-85254458
Fax	:	+86-755-85254458
Web	:	www.kti-lab.com

Report Number	:	KTi251021E1511
Date of Receipt	:	Oct. 21, 2025
Date of Test	:	Oct. 21-28, 2025
Date of Report	:	Nov. 03, 2025

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Test Result Certification

Applicant's name:	Cook Cooper Electric (shanghai) Co., Ltd.
Address:	Room A56, 4th Floor, Block B 505 Xinbei Road Minhang District Shanghai
Manufacture's Name:	Cook Cooper Electric (shanghai) Co., Ltd.
Address:	Room A56, 4th Floor, Block B 505 Xinbei Road Minhang District Shanghai
Product name:	Static Var Generator
Model name:	SVG-400-35K-4L, 5 Kvar, 10Kvar, 15Kvar, 20Kvar, 35Kvar, 50Kvar, 70Kvar, 100Kvar
Trademark:	Cooke kolb
Standards:	EN IEC 61000-6-2:2019 EN IEC 61000-6-4:2019 EN IEC 61000-3-2:2019+A2:2024 EN 61000-3-3:2013+A1:2019+A2:2021

This device described above has been tested by Guangdong KAIXU Testing Technology Co., Ltd.. and the test results show that the equipment under test (EUT) is in compliance with the EMC requirements. And it is applicable only to the tested sample identified in the report.

Tested by:	Kevin Yang	
	Kevin Yang	Nov. 03, 2025
Reviewed by:	Terry Huang	
	Terry Huang	Nov. 03, 2025
Approved by:	Store Chu	
	Store Chu	Nov. 03, 2025

GUANGDONG KAIXU TESTING TECHNOLOGY CO., LTD KTi APPROVAL

1 General Description

1.1 Description of EUT

Product name:	Static Var Generator
Model name:	SVG-400-35K-4L
Series Model:	5 Kvar, 10Kvar, 15Kvar, 20Kvar, 35Kvar, 50Kvar, 70Kvar, 100Kvar
Different of series model:	All models are identical for each other except the model number.
Power supply:	AC220-400V, 50/60Hz, 10-50A
Adapter information:	/

1.2 Test mode

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Test mode	Description
Mode 1	Working
Mode 2	/
Mode 3	/
Note: The test modes were carried out for all operation modes. The final test mode of the EUT was the worst test mode for EMI, and its test data is showed.	

1.3 Test setup

See photographs of the test setup in the report for the actual setup and connections between EUT and support equipment.

1.4 Ancillary equipment

Equipment	Model	S/N	Manufacturer
/	/	/	/

2 Summary of Test Result

No.	Test Standard	Description of Test	Result	Remark
Emission				
1	EN IEC 61000-6-4:2019	Conducted emission	Pass	
2		Radiated emission	Pass	
3	EN IEC 61000-3-2:2019+A2:2024	Harmonic current emission	Pass	
4	EN 61000-3-3:2013+A1:2019+A2:2021	Voltage fluctuations &flicker	Pass	
Immunity				
1	EN IEC 61000-6-2:2019	Electrostatic discharges (ESD)	Pass	
2		Radiated electromagnetic field disturbances (RS)	Pass	
3		Conducted disturbances (CS)	Pass	
4		Power frequency magnetic field	Pass	
5		Electrical fast transients/burst (EFT/S)	Pass	
6		Surges	Pass	
7		Voltage dips and interruptions	Pass	
8		Broadband Impulse noise disturbances repetitive	N/A	
9		Broadband Impulse noise disturbances isolated	N/A	
N/A: Mean not applicable.				

3 Test Facilities and Accreditation's

3.1 Test laboratory

Test Site	Guangdong KAIXU Testing Technology Co., Ltd.
Test Site Location	Room 215, Building 2, No. 123, Dongcheng Section, Guanlong Road, Dongcheng Street, Dongguan City, Guangdong Province, China
Telephone:	(86-755)-85254458
Fax:	(86-755)-85254458
CNAS Registration No.:	/

3.2 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	20ºC~30ºC
Humidity	30%~70% (30%~60% for ESD)
Atmospheric pressure	98kPa~101kPa

3.3 Measurement uncertainty

Measurement Uncertainty for a Level of Confidence of 95 %, U=2xUc(y)

Conducted emission(150kHz~30MHz)	± 2.5 dB
Radiated emission(30MHz~1GHz)	± 4.2 dB
Radiated emission (above 1GHz)	± 4.3 dB
Temperature	±1 degree
Humidity	± 5 %

3.4 Test software

Software name	Manufacturer	Model	Version
EMI Measurement Software	Farad	EZ-EMC	V1.1.4.2
Conducted immunity test system	Scholder	EN61000-4-6.exe	V1.3.0
Harmonics and flicker test system	TTI	HA-PC Link	V2.02
DIPS Test Firmware	Prima	DRP61011AG	V4.1.2
EFT Test Firmware	HTEC	HCOMPACT	V1.0.1
Surge Test Firmware	HTEC+	HCOMPACT	V1.0.1

4 List of test equipment

For conducted emission at the mains terminals test

Name of Equipment	Manufacturer	Model	Equipment	Serial No.	Last Cal.	Cal. Interval
EMI Test Receiver	Rohde&Schwarz	ESCI	KTi-EL-203	1166.5950.03-101142	Mar. 03, 2025	1 Year
Pulse Limiter	Rohde&Schwarz	ESH3-Z2	KTi-EL-201	0357.8810.54-101857-hz	Mar. 03, 2025	1 Year
LISN	Rohde&Schwarz	ENV216	KTi-EL-202	3560.6550.12-103020-YU	Mar. 03, 2025	1 Year
Test software	Tonscend	JS32-CE Version 5.0.0				

For radiated emission test (30MHz-1GHz)

Name of Equipment	Manufacturer	Model	Equipment	Serial No.	Last Cal.	Cal. Interval
EMI Test Receiver	Rohde&Schwarz	ESCI7	KTi-EL-205	1166.5950.03-100633	Mar. 03, 2025	1 Year
Logarithmic periodic antenna	Schwarzbeck	VULB9168	KTi-EL-209	01145	Mar. 06, 2025	3 Year
Preamplifier	HP	8447F	KTi-EL-210	1-18-53G22	Mar. 03, 2025	1 Year
3m Anechoic Chamber	Taihe MaoRui	9*6*6	KTi-EL-234	/	Oct. 09, 2024	5 Year
Test software	Tonscend	JS32-RE Version 5.0.0				

For radiated emission test (1GHz above)

Name of Equipment	Manufacturer	Model	Equipment	Serial No.	Last Cal.	Cal. Interval
EMI Test Receiver	Rohde&Schwarz	ESCI 7	KTi-EL-205	1166.5950.03-100633	Mar. 03, 2025	1 Year
Horn antenna	Schwarzbeck	BBHA9120D	KTi-EL-239	03083	Mar. 06, 2025	3 Year
Preamplifier	/	1-18-53G22	KTi-EL-240	2501020026	Mar. 03, 2025	1 Year
Test software	Tonscend	JS32-RE Version 5.0.0				

For harmonic current emissions and voltage fluctuations/flicker test

Name of Equipment	Manufacturer	Model	Equipment	Serial No.	Last Cal.	Cal. Interval
AC Power Source	California instruments	5001i-400	KTi-EL-248	55979	May 17, 2025	1 Year
Harmonic and Flicker Analyzer	California instruments	PACS-1	KTi-EL-249	72145	May 17, 2025	1 Year
Test software	California Instruments	CTS 4 Version 4.32.0				

For electrostatic discharge immunity test

Name of Equipment	Manufacturer	Model	Equipment	Serial No.	Last Cal.	Cal. Interval
ESD Tester	PRIMA	ESD61002TB	KTi-EL-215	PR9240625796	Mar. 05, 2025	1 Year

For radio frequency electromagnetic field immunity (R/S) test (DQT)

Name of Equipment	Manufacturer	Model	Equipment	Serial No.	Last Cal.	Cal. Interval
Amplifier	Micotop	MPA-80-1000-250	KTi-EL-258	MAP2503096	May 17, 2025	1 Year
Amplifier	Micotop	MPA-1000-6000-100	KTi-EL-259	MPA2503098	May 19, 2025	1 Year
Power Meter	Agilent	E4417A	KTi-EL-260	GB41293356	May 17, 2025	1 Year
Power Sensor	Agilent	E9304A	KTi-EL-261	MY55200008	May 17, 2025	1 Year
Power Sensor	Agilent	E9304A	KTi-EL-262	MY55200004	May 17, 2025	1 Year
Signal Generator	ROHDE&SCHWARZ	SMB100A	KTi-EL-263	102913	May 17, 2025	1 Year
Log-Per-Broadband Antenna	SKET	STLP 9129 PLUS	KTi-EL-264	/	May 19, 2025	3 Year
Audio Analyzer	ROHDE&SCHWARZ	UPP200	KTi-EL-267	120175	May 17, 2025	1 Year

For electrical fast transient/burst immunity test

Name of Equipment	Manufacturer	Model	Equipment	Serial No.	Last Cal.	Cal. Interval
Fast Transient Burst Simulator	PRIMA	EFT61004TA	KTi-EL-218	PR9240743972	Mar. 03, 2025	1 Year
Clamp	PRIMA	PEFT-C105	KTi-EL-219	PEFT-1170	Mar. 03, 2025	1 Year

For surge immunity test

Name of Equipment	Manufacturer	Model	Equipment	Serial No.	Last Cal.	Cal. Interval
Lighting Surge Generator	PRIMA	SUG61005TB-2216	KTi-EL-217	PR200854619	Mar. 03, 2025	1 Year
Coupling/Decoupling Network	PRIMA	SUG-CDN-108	KTi-EL-216	PR924105429	Mar. 03, 2025	1 Year

For injected currents susceptibility test

Name of Equipment	Manufacturer	Model	Equipment	Serial No.	Last Cal.	Cal. Interval
CS Test system	TESEQ	NSG4070	KTi-EL-255	30608	May 17, 2025	1 Year
6dB Attenuator	TESEQ	ATN6075	KTi-EL-256	30783	May 17, 2025	1 Year
CDN	TESEQ	CDN M016	KTi-EL-254	33518	May 17, 2025	1 Year
EM-Clamp	TESEQ	KEMZ 801A	KTi-EL-257	33425	May 17, 2025	1 Year

For power frequency magnetic field immunity test

Equipment	Manufacturer	Model	Equipment No.	Serial No.	Last Cal.	Cal.Interval
POWER FREQUENCY MAGNETIC FIELD GENERATION	EVERFINE	EMS61000-8K	KTi-EL-273	608002	May 16, 2025	1 Year

For voltage dips and short interruptions immunity test

Name of Equipment	Manufacturer	Model	Equipment	Serial No.	Last Cal.	Cal. Interval
Cycle Sag Simulator	PRIMA	DRP61011TB	KTi-EL-220	PR924086817	Mar. 03, 2025	1 Year

5 Emission test

5.1 Conducted emission

5.1.1 Limits

Frequency (MHz)	DC power port (dBμV)		Low voltage AC mains port (dBμV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 -0.5	79	66	66 - 56 *	56 - 46 *
0.5 -5.0	73	60	56	46
5.0 -30	73	60	60	50
Note 1: the tighter limit applies at the band edges. Note 2: the limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.				

5.1.2 Test Procedures

a)The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

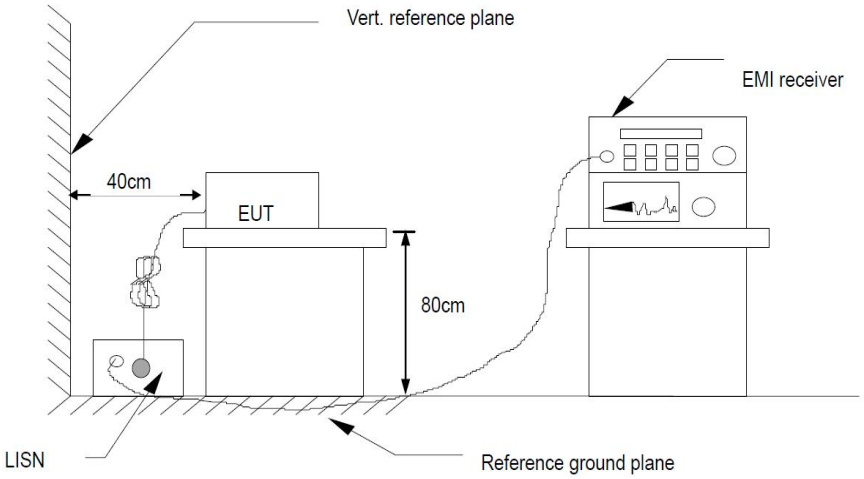
b)Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

c)I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

d)LISN is at least 80 cm from nearest part of EUT chassis.

e)For the actual test configuration, please refer to the related Item – photographs of the test setup.

5.1.3 Test setup

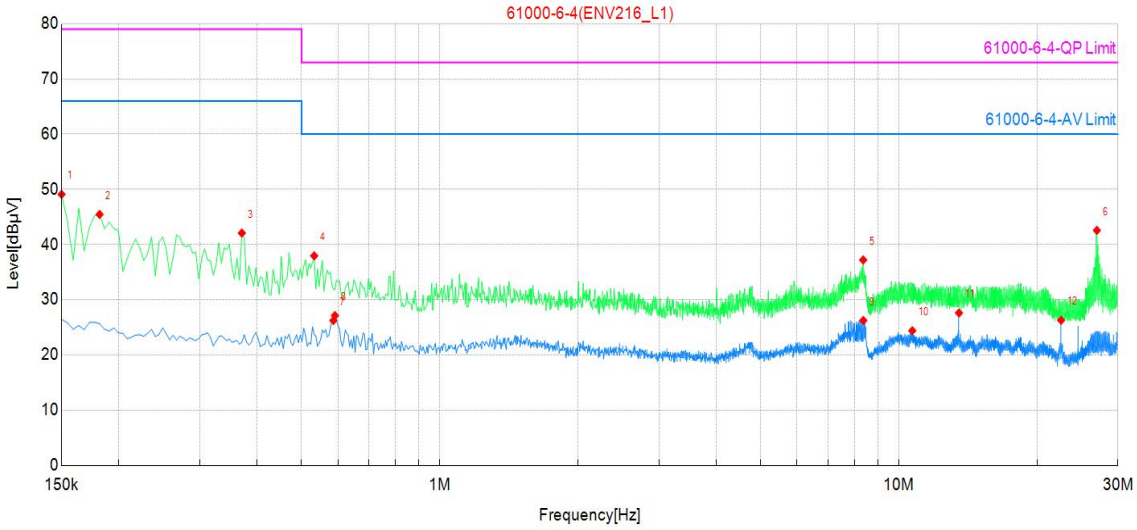


5.1.4 Test Result

Pass

EUT:	Static Var Generator	Model Name:	SVG-400-35K-4L
Test voltage:	AC 230V/50Hz	Test mode:	Mode 1
Pressure:	101kPa	Polarization:	L1
Temperature:	24℃	Relative Humidity:	53%

Line:



Suspected Data List

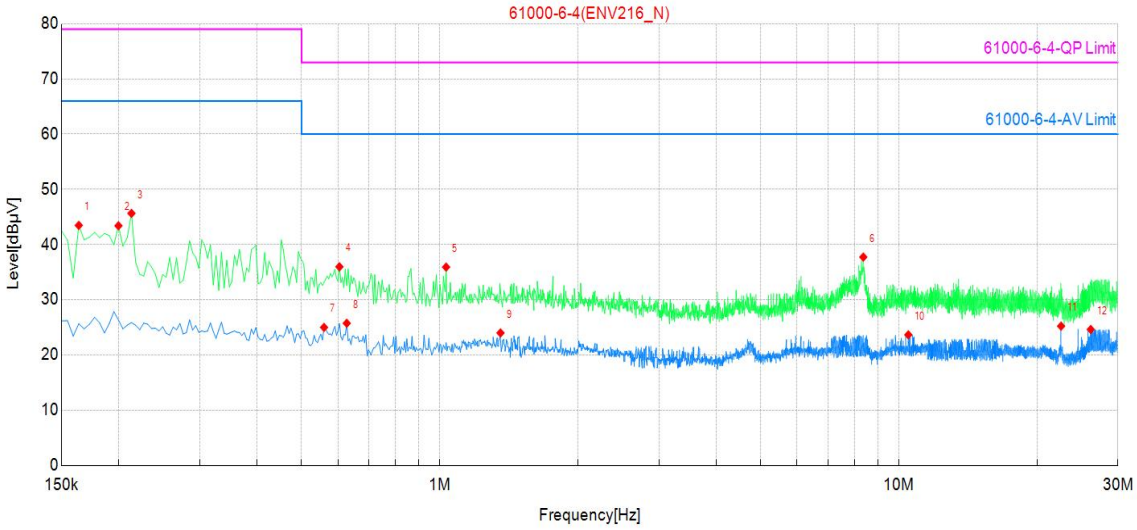
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Phase	Detector	Verdict
1	0.150000	29.80	49.09	19.29	79.00	29.91	L1	PK	PASS
2	0.181500	26.22	45.45	19.23	79.00	33.55	L1	PK	PASS
3	0.370500	22.95	42.08	19.13	79.00	36.92	L1	PK	PASS
4	0.532500	18.83	37.95	19.12	73.00	35.05	L1	PK	PASS
5	8.362500	17.91	37.20	19.29	73.00	35.80	L1	PK	PASS
6	27.001500	22.95	42.57	19.62	73.00	30.43	L1	PK	PASS
7	0.586500	7.07	26.25	19.18	60.00	33.75	L1	AV	PASS
8	0.591000	7.96	27.14	19.18	60.00	32.86	L1	AV	PASS
9	8.367000	6.96	26.25	19.29	60.00	33.75	L1	AV	PASS
10	10.698000	4.96	24.39	19.43	60.00	35.61	L1	AV	PASS
11	13.519500	8.30	27.61	19.31	60.00	32.39	L1	AV	PASS
12	22.564500	6.75	26.28	19.53	60.00	33.72	L1	AV	PASS

Note:(1)Level=Reading+Factor

(2)Margin=Limit-Level

EUT:	Static Var Generator	Model Name:	SVG-400-35K-4L
Test voltage:	AC 230V/50Hz	Test mode:	Mode 1
Pressure:	101kPa	Polarization:	N
Temperature:	24℃	Relative Humidity:	53%

Neutral:



Suspected Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Phase	Detector	Verdict
1	0.163500	24.28	43.47	19.19	79.00	35.53	N	PK	PASS
2	0.199500	24.21	43.40	19.19	79.00	35.60	N	PK	PASS
3	0.213000	26.46	45.65	19.19	79.00	33.35	N	PK	PASS
4	0.604500	16.73	35.97	19.24	73.00	37.03	N	PK	PASS
5	1.032000	16.71	35.91	19.20	73.00	37.09	N	PK	PASS
6	8.367000	18.43	37.73	19.30	73.00	35.27	N	PK	PASS
7	0.559500	5.77	24.99	19.22	60.00	35.01	N	AV	PASS
8	0.627000	6.49	25.74	19.25	60.00	34.26	N	AV	PASS
9	1.356000	4.79	23.99	19.20	60.00	36.01	N	AV	PASS
10	10.486500	4.39	23.65	19.26	60.00	36.35	N	AV	PASS
11	22.569000	5.62	25.22	19.60	60.00	34.78	N	AV	PASS
12	26.182500	4.82	24.61	19.79	60.00	35.39	N	AV	PASS

Note:(1)Level=Reading+Factor

(2)Margin=Limit-Level

5.2 Radiated emission

5.2.1 Limits

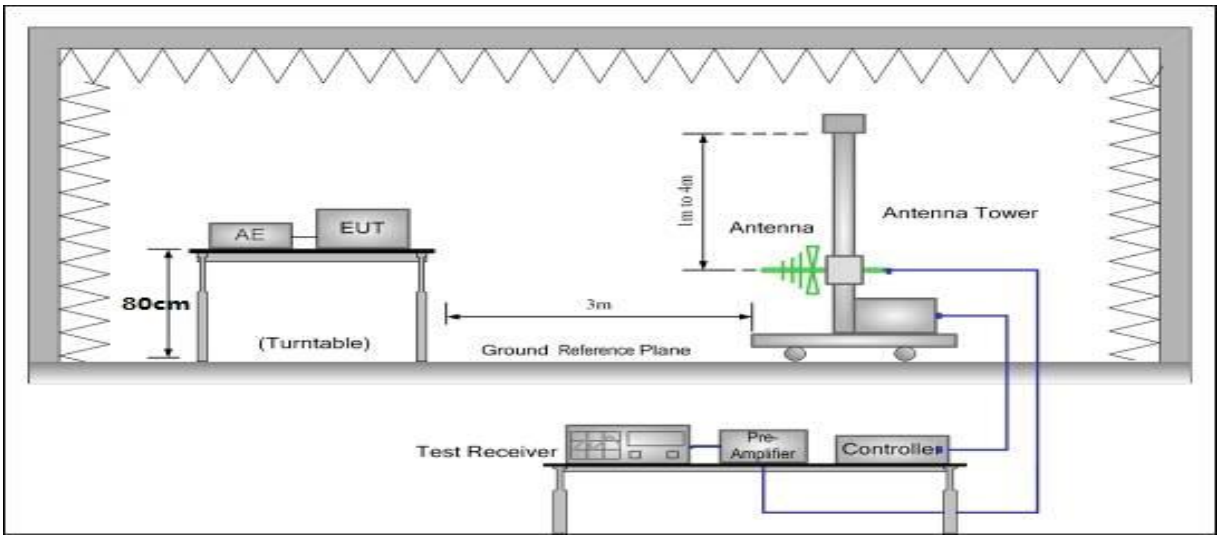
Frequency (MHz)	DISTANCE (Meters)	FIELD STRENGTHS LIMIT (dBμV/m)	
		Quasi-peak	
30-230	3	50	
230-1000	3	57	
/	/	Peak	Average
1000-3000	3	70	50
3000-6000	3	74	54

5.2.2 Test Procedures

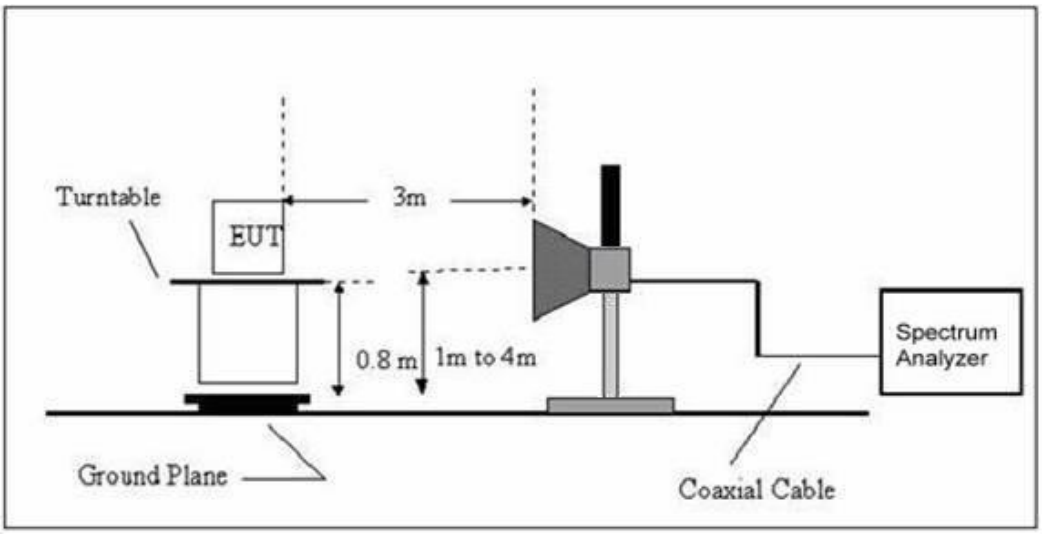
a)The radiated emission tests were performed in the 3 meters.
b)The EUT was placed on the top of a rotating table 0.8 meters above the ground. The table was rotated 360 degrees to determine the position of the highest radiation.
c)The height of the test antenna shall vary between 1m to 4m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d)If the peak mode measured value compliance with and lower than quasi peak mode limit, the EUT shall be deemed to meet QP limits and then no additional QP mode measurement performed.
e)If the peak mode measured value compliance with and lower than average mode limit, the EUT shall be deemed to meet average limits and then no additional average mode measurement performed.
f) For the actual test configuration, please refer to the related item – EUT test photos.

5.2.3 Test Setup

Radiated emission test-up frequency for 30MHz - 1GHz



Radiated emission test-up frequency for above 1GHz



5.2.4 Test Result

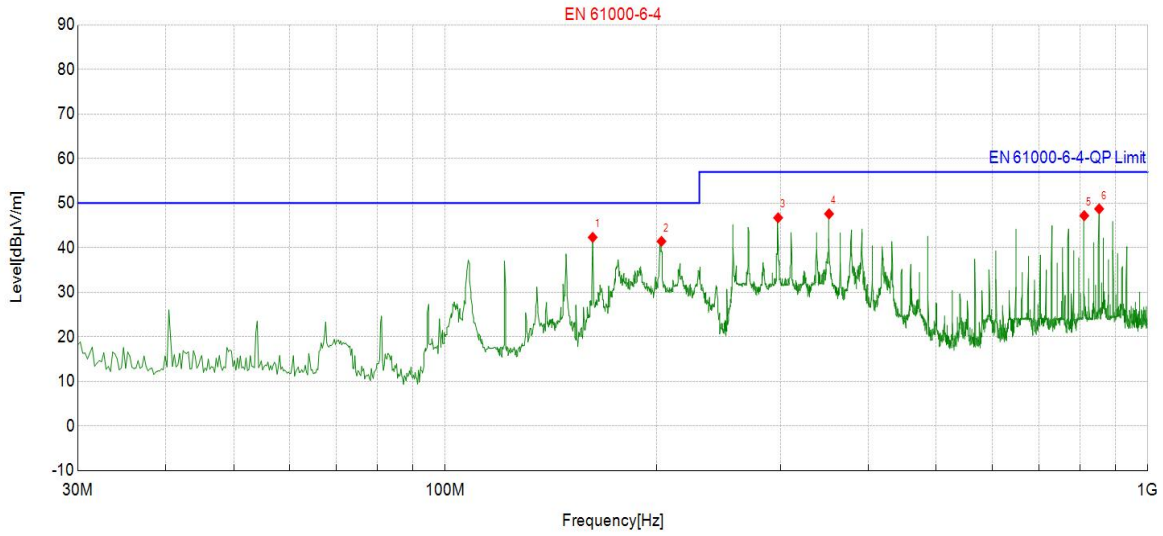
Note: the highest working frequency of EUT is below 108MHz.

Formula:

Measurement Level (dBuV/m) = Reading Level (dBuV/m) + Correct Factor (dBuV/m)

Margin Level (dBuV/m) = Measurement Level (dBuV/m) – Limit Level (dBuV/m)

EUT:	Static Var Generator	Model Name:	SVG-400-35K-4L
Pressure:	101kPa	Polarization:	Horizontal
Test voltage:	AC 230V/50Hz	Test mode:	Mode 1

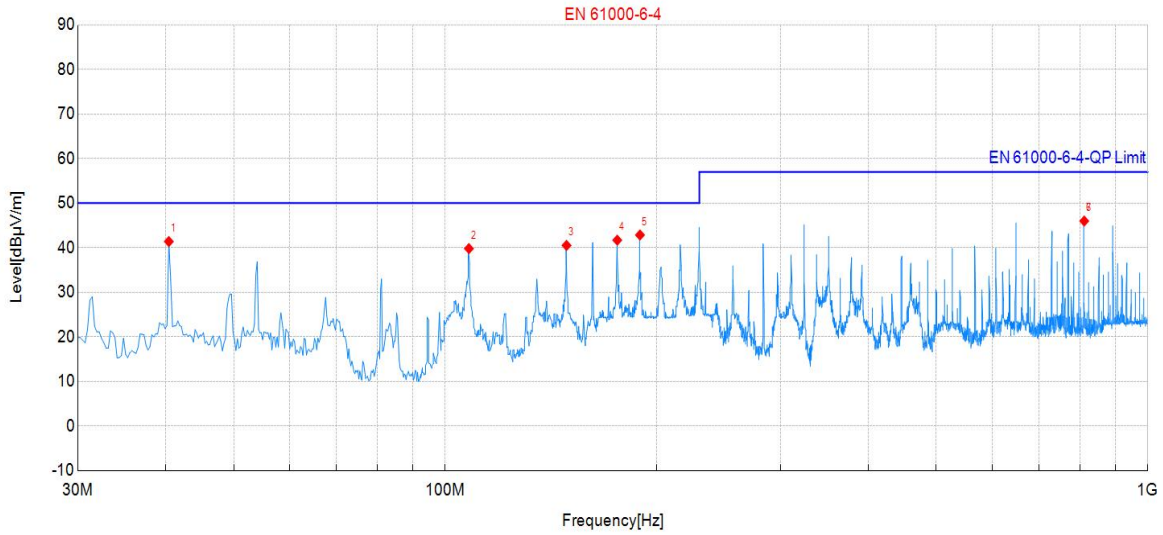


Suspected Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	162.16	58.60	42.31	-16.29	50.00	7.69	100	60	PK	Hori	PASS
2	203.15	61.27	41.41	-19.86	50.00	8.59	100	110	PK	Hori	PASS
3	297.72	63.46	46.70	-16.76	57.00	10.30	100	270	PK	Hori	PASS
4	351.80	63.14	47.58	-15.56	57.00	9.42	100	80	PK	Hori	PASS
5	811.82	55.00	47.17	-7.83	57.00	9.83	100	120	PK	Hori	PASS
6	852.56	56.24	48.70	-7.54	57.00	8.30	100	350	PK	Hori	PASS

Note:(1)Level=Reading+Factor
(2)Margin=Limit-Level

EUT:	Static Var Generator	Model Name:	SVG-400-35K-4L
Pressure:	101kPa	Polarization:	Vertical
Test voltage:	AC 230V/50Hz	Test mode:	Mode 1



Suspected Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	40.43	58.39	41.37	-17.02	50.00	8.63	100	280	PK	Vert	PASS
2	108.09	58.84	39.79	-19.05	50.00	10.21	100	60	PK	Vert	PASS
3	148.83	56.69	40.50	-16.19	50.00	9.50	100	50	PK	Vert	PASS
4	175.74	59.62	41.68	-17.94	50.00	8.32	100	160	PK	Vert	PASS
5	189.32	62.01	42.84	-19.17	50.00	7.16	100	200	PK	Vert	PASS
6	811.82	53.80	45.97	-7.83	57.00	10.03	100	250	PK	Vert	PASS

Note:(1)Level=Reading+Factor
(2)Margin=Limit-Level

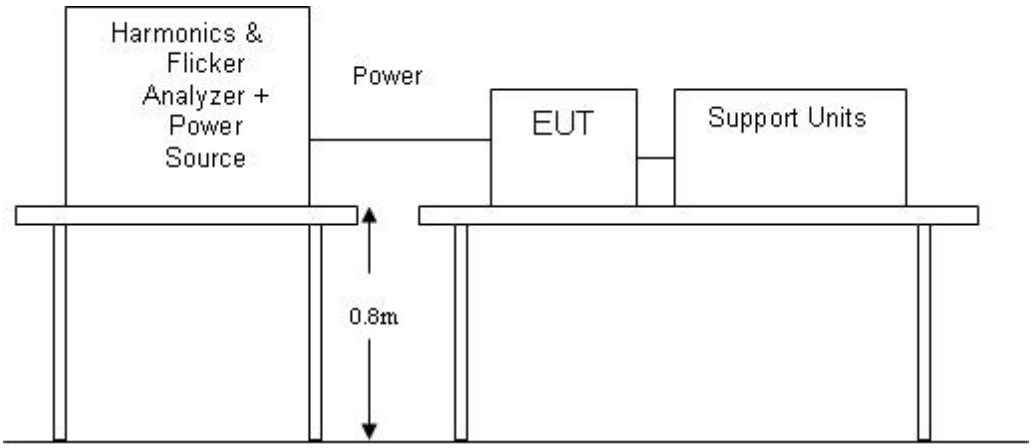
5.3 Harmonic current emission / Voltage fluctuations & flicker

5.3.1 Test Procedures

a)The EUT was installed and placed on a non-conductive table and operated to produce the maximum harmonic components under normal operating conditions for each successive harmonic component in turn.

b)The correspondent test program of test instrument to measure the current harmonics / voltage fluctuations & flicker emanated from EUT. The measure time shall be not less than the time necessary for the EUT to be exercised.

5.3.2 Test Setup



5.3.3 Test Result

Harmonic current emission:

PASS

Voltage fluctuations & flicker:

PASS

6 Immunity test

6.1 Performance criteria

Performance criteria	
Performance criterion	Description
A	The EUT shall continue to operate as intended during and after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the EUT is used as intended. If the performance level is not specified by the manufacturer, this may be derived from the product description and documentation and what the user may reasonably expect from the equipment if used as intended.
B	The EUT shall continue to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the EUT is used as intended. The performance level may be replaced by a permissible loss of performance. However, during the test degradation of performance is allowed but 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, either of these may be derived from the product description and documentation and what the user may reasonably expect from the equipment if used as intended.
C	Temporary loss of function is allowed during the test, provided the function is self-recoverable or can be restored by the operation of the controls

6.2 Electrostatic discharge (ESD) Test Procedures

a)The test generator necessary to perform direct and indirect application of discharges to the EUT in the following manner:

Contact discharge was applied to conductive surfaces and coupling planes of the EUT. During the test, it was performed with single discharges. For the single discharge time between successive single discharges was at least 1 second.

b)Vertical Coupling Plane (VCP):

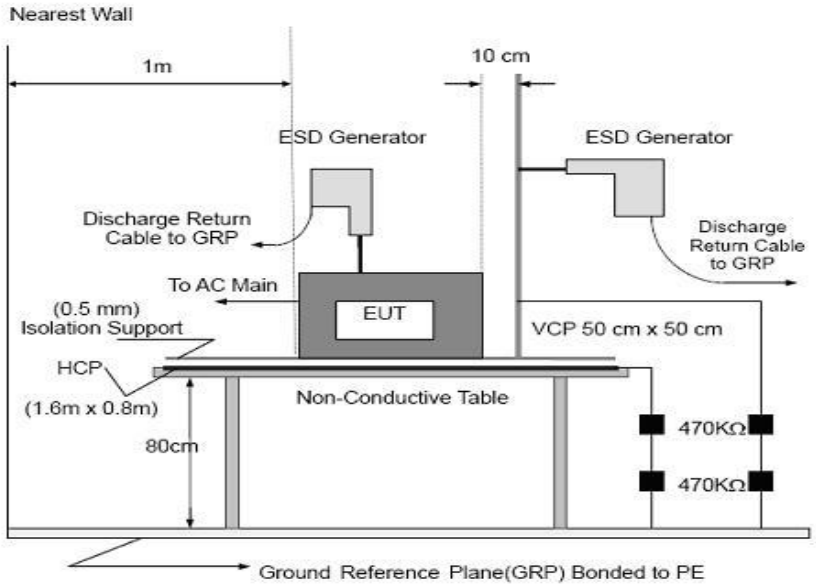
The coupling plane, of dimensions 0.5m x 0.5m, is placed parallel to, and positioned at a distance 0.1m from, the EUT, with the Discharge Electrode touching the coupling plane. The four faces of the EUT will be performed with electrostatic discharge.

c)Horizontal Coupling Plane (HCP):

The coupling plane is placed under to the EUT. The generator shall be positioned vertically at a distance of 0.1m from the EUT, with the Discharge Electrode touching the coupling plane. The four faces of the EUT will be performed with electrostatic discharge.

Air discharges at insulation surfaces of the EUT. It was at least ten single discharges with positive and negative at the same selected point. For the actual test configuration, please refer to the related Item –EUT Test Photos.

6.2.2 Test Setup



6.2.3 Test Result

Indirect discharge

Temperature:	24℃	Relative Humidity:	54%
Pressure:	101kPa	Test mode:	Mode 1

No.	Test Point	Contact discharge level (kV)	Number and polarity	Criterion met	Criterion Required	Result
1	VCP-Front side	☐..2 ☒..4 ☐..6 ☐..8	10 (+)	A	B	Compliance
			10 (-)	A		
2	VCP-Rear side	☐..2 ☒..4 ☐..6 ☐..8	10 (+)	A		
			10 (-)	A		
3	VCP-Left side	☐..2 ☒..4 ☐..6 ☐..8	10 (+)	A		
			10 (-)	A		
4	VCP-Right side	☐..2 ☒..4 ☐..6 ☐..8	10 (+)	A		
			10 (-)	A		
5	HCP	☐..2 ☒..4 ☐..6 ☐..8	10 (+)	A		
			10 (-)	A		

Direct discharge

No.	Test Point	Contact discharge level (kV)	Air discharge level (kV)	Number and polarity	Criterion met	Criterion Required	Result
1	Each nonconductive location touchable by hand	☐..2 ☐..4 ☐..6 ☐..8	☐..2 ☐..4 ☐..6 ☐..8	10 (+)	N/A	B	Compliance
				10 (-)	N/A		
2	Each conductive location touchable by hand	☐..2 ☒..4 ☐..6 ☐..8	☐..2 ☐..4 ☐..6 ☐..8	10 (+)	B		
				10 (-)	B		
Note1: Please see the photographs blew about the details of test points.							

6.3 Radiated electromagnetic field immunity (RS)

6.3.1 Test Procedures

a)The EUT and support equipment, which are placed on a table that is 0.8 meter above ground and the testing was performed in a fully-anechoic chamber.

b)The testing distance from antenna to the EUT was 3 meters.

c)The other condition as following manner:

i. The field strength level was 3V/m.

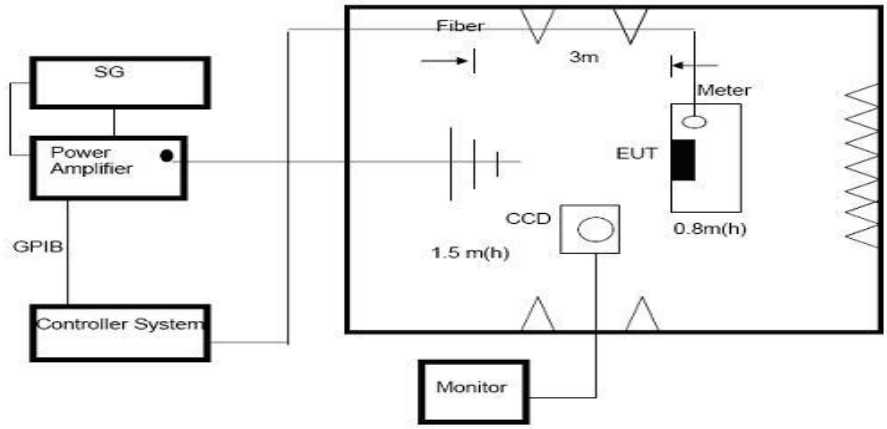
ii. The frequency range is swept from 80 MHz to 1000 MHz with the signal 80%amplitude modulated with a 1kHz sine wave. The rate of sweep did not exceed 1.5x 10-3 decade/s. Where the frequency range is swept incrementally, the step size was 1% of fundamental.

d)The dwell time at each frequency shall be not less than the time necessary for the EUT to be able to respond.

e)The test was performed with the EUT exposed to both vertically and horizontally polarized fields on each of the four sides.

f) For the actual test configuration, please refer to the related Item –EUT Test Photos.

6.3.2 Test setup



6.3.3 Test Result

Temperature:	24℃	Relative Humidity:	51%
Pressure:	101kPa	Test mode:	All Mode

Frequency Range (MHz)	RF Field Position	R.F. Field Strength	Azimuth	Perform. Criteria	Measurement	Result
80- 1000 1400- 6000	H / V	3 V/m (rms) AM Modulated 1000Hz, 80%	Front	A	A	Compliance
			Rear			
			Left			
			Right			

6.4 Conducted disturbances (CS)

6.4.1 Test Procedures

a)The EUT are placed on an insulating support 0.1m high above a ground reference plane. CDN (coupling and decoupling device) is placed on the ground plane about 0.3m from EUT. Cables between CDN and EUT are as short as possible, and their height above the ground reference plane shall be between 30 and 50 mm (where possible).

b)The disturbance signal described below is injected to EUT through CDN.

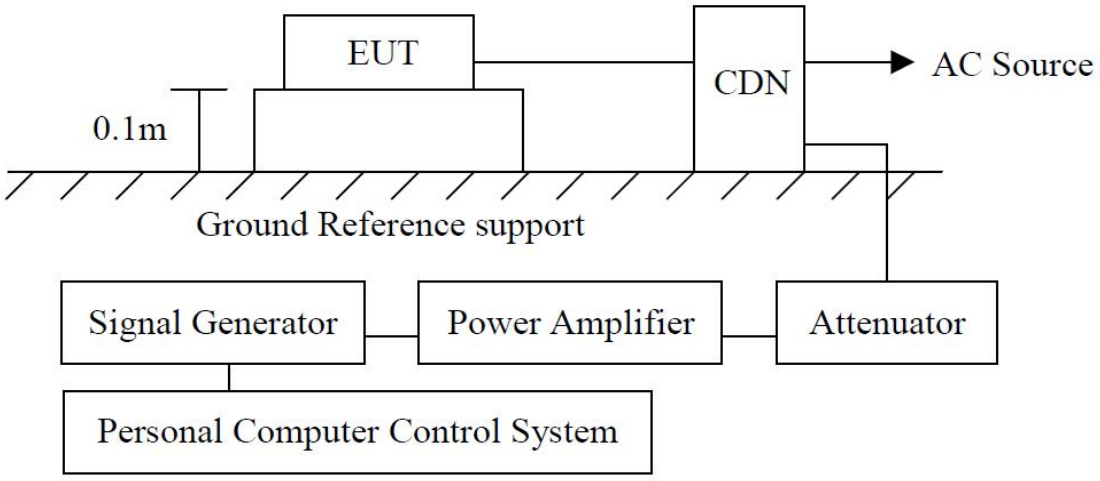
c)The EUT operates within its operational mode(s) under intended climatic conditions after power on.

d)The frequency range is swept from 0.150MHz to 80MHz using 3V signal level, and with the disturbance signal 80% amplitude modulated with a 1 kHz sine wave.

e)The rate of sweep shall not exceed 1.5*10-3decades/s. Where the frequency is swept incrementally; the step size shall not exceed 1% of the start and thereafter 1% of the preceding frequency value.

f) Recording the EUT operating situation during compliance testing and decide the EUT immunity criterion.

6.4.2 Test Setup



6.4.3 Test Result

Temperature:	24℃	Relative Humidity:	52%
Pressure:	101kPa	Test mode:	All mode
Modulation: AM, 80%,1KHz Sine wave Frequency step size: 1% preceding frequency value Coupling mode ☐ M2 ☑ M3 □ Clamp			

Port Type	Frequency(MHz)	Test Voltage	Criterion met	Criterion Required	Result
AC Mains	0.15 to 80	3 V (rms) AM Modulated 1000Hz, 80%	A	A	Compliance

6.5 Power frequency magnetic field

6.5.1 Test Procedures

a)EUT connect the wires according to the typical configuration, and switch on the power supply for 15 minutes.

b)Turn on the instrument power switch and wait for the instrument to start.

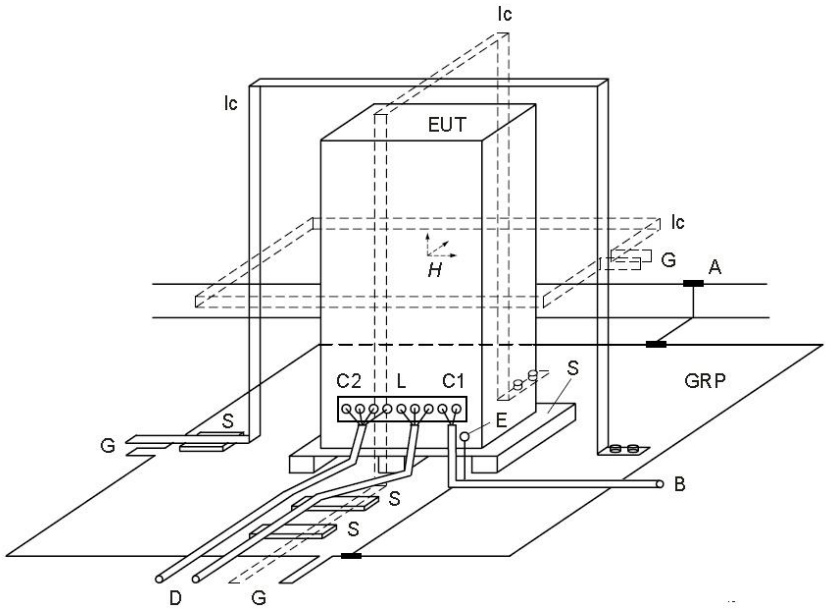
c)When the device is started, click the Setup icon to enter the settings screen

d)As shown below, for the settings screen, click the test time position and current position to set the test time and current

e)Set the correct test time and test current

f) Click Start to begin the test, while observing the status of EUT and recording

6.5.2 Test Setup



Components:

GRP	Ground plane	A	Safety earth
C1	Power supply circuit	C2	Signal circuit
S	Insulating support	L	Communication line
EUT	Equipment under test	B	To power supply source
Ic	Inductive coil	D	To signal source, simulator
E	Earth terminal	G	To the test generator

6.5.3 Test Result

Temperature:	24℃	Relative Humidity:	51%
Pressure:	101kPa	Test mode:	All Mode

EN IEC 61000-6-2:				
Antenna aspect	Duration (min)	Field Strength (A/m)	Observation	Performance Criterion
X	1 min	30	Note ☒1 ☐2 ☐3	A
Y	1 min	30	Note ☒1 ☐2 ☐3	A
Z	1 min	30	Note ☒1 ☐2 ☐3	A

The test only applies to apparatus containing device susceptible to magnetic fields, such as hall elements or magnetic field sensor, so this item isn’t applicable to the products.

6.6 Electrical fast transients/burst (EFT/S)

6.6.1 Test Procedures

a)The EUT and its simulators were placed on the ground reference plane and were insulated from it by a wood support 0.1m + 0.01m thick. The ground reference plane was 1m*1m metallic sheet with 0.65mm minimum thickness. This reference ground plane was project beyond the EUT by at least 0.1m on all sides and the minimum distance between EUT and all other conductive structure, except the ground plane was more than 0.5m. All cables to the EUT was placed on the wood support, cables not subject to EFT/B was routed as far as possible from the cable under test to minimize the coupling between the cables.

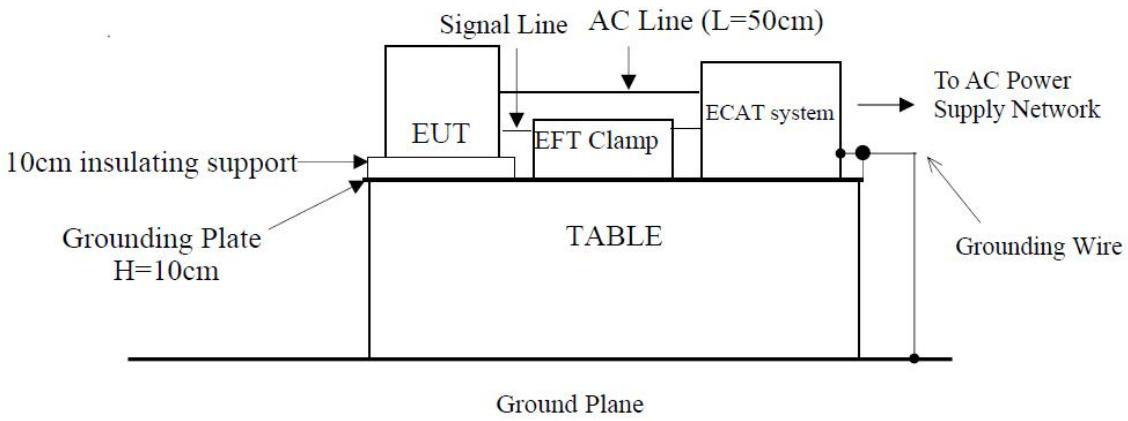
b)For input and AC power ports:

The EUT was connected to the power mains by using a coupling device that couples the EFT interference signal to AC power lines. Both positive transients and negative transients of test voltage were applied during compliance test and the duration of the test can't less than 1min.

c)For signal lines and control lines ports:

Ports which are intended to be connected to telecommunication networks (e.g. public switched telecommunication networks, integrated services digital networks, local area networks and similar networks.)

6.6.2 Test Setup



6.6.3 Test Result

Temperature:	24℃	Relative Humidity:	52%
Pressure:	101kPa	Test mode:	All mode

Port Type	Injected Line	Test Voltage	Criterionmet	Criterion Required	Result
AC Mains	L	±1kV	A	B	Compliance
	N	±1kV	A		
	L-N	±1kV	A		
	L-PE	±1kV	A		
	N-PE	±1kV	A		
	L-N-PE	±1kV	A		
Note: +/- 1KV for AC mains port； +/- 0.5KV for analogue digital data ports and DC network power port.					

6.7 Surges

6.7.1 Test Procedures

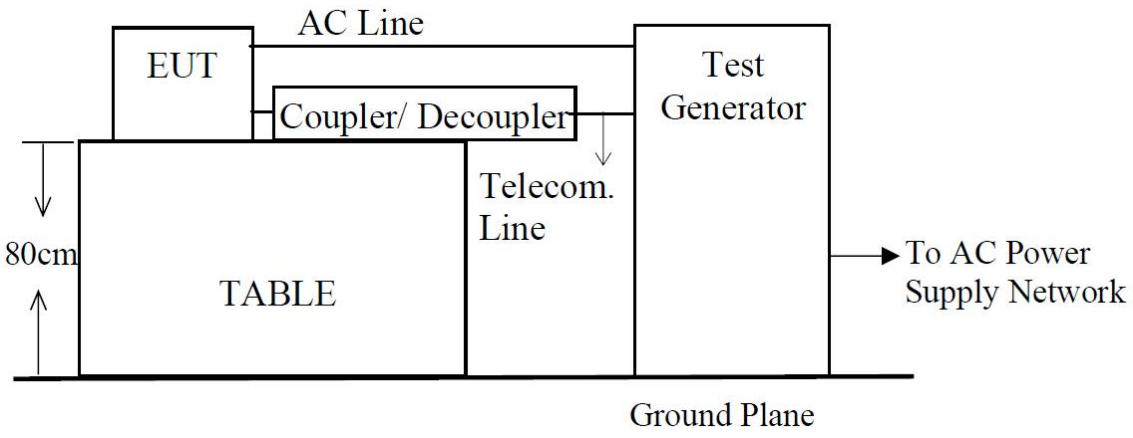
a)For line-to-line coupling mode, provide a 1kV 1.2/50us voltage surge (at open-circuit condition) and 8/20us current surge to EUT selected points, and for active line / neutral lines to ground are same except test level is 2kV.

b)At least 5 positive and 5 negative (polarity) tests with a maximum 1/min repetition rate are applied during test.

c)Different phase angles are done individually.

d)Record the EUT operating situation during compliance test and decide the EUT immunity criterion for above each test.

6.7.2 Test Setup



6.7.3 Test Result

Temperature:	24℃	Relative Humidity:	52%
Pressure:	101kPa	Test mode:	All mode

Port Type	Injected Line	Test Voltage	Criterionmet	Criterion Required	Result
AC Mains	L–N	±1kV	B	B	Compliance
	L–PE	±2kV	N/A		
	N–PE	±2kV	N/A		

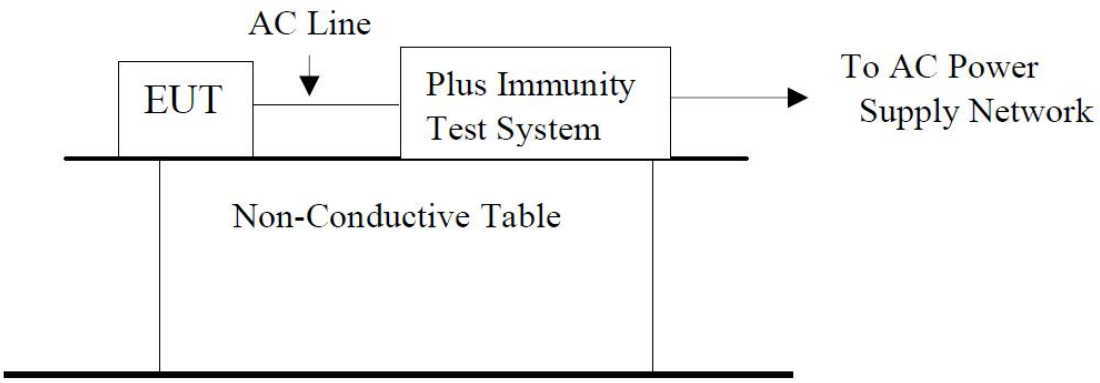
6.8 Voltage dips and interruptions

6.8.1 Test procedures

a)The interruptions are introduced at selected phase angles with specified duration.

b)Record any degradation of performance

6.8.2 Test setup



6.8.3 Test result

Temperature:	24℃	Relative Humidity:	51%
Pressure:	101kPa	Test mode:	All mode

Test Level in %UT	Period	Criterion	Result	Result
0%	0.5	B	A	Compliance
0%	1	B	A	Compliance
70%	25	C	A	Compliance
0%	25	C	C	Compliance

6.9 Broadband Impulse noise disturbances repetitive

6.9.1 Test procedures

a)The EUT are placed on an insulating support 0.1m high above a ground reference plane. CDN (coupling and decoupling device) is placed on the ground plane about 0.3m from EUT. Cables between CDN and EUT are as short as possible, and their height above the ground reference plane shall be between 30 and 50 mm (where possible).

b)The disturbance signal described below is injected to EUT through CDN.

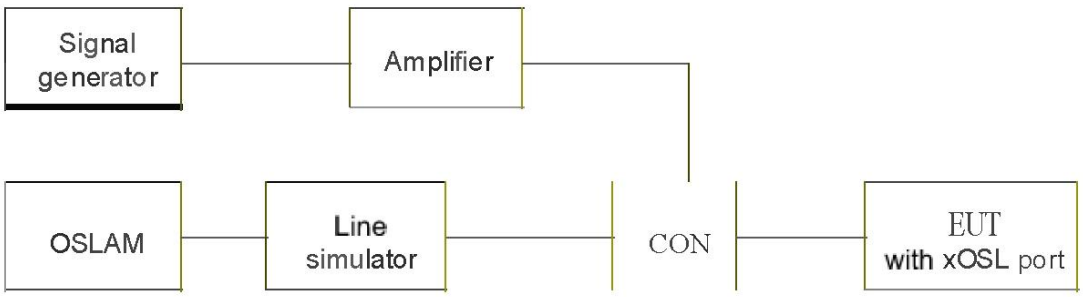
c)The EUT operates within its operational mode(s) under intended climatic conditions after power on.

d)The xOSL technology or 30 MHz, whichever is the lowest using 3V signal level, and with the disturbance signal 80% amplitude modulated with a 128 kHz sine wave.

e)The rate of sweep shall not exceed 1.5*10-3decades/s. Where the frequency is swept incrementally; the step size shall not exceed 1% of the start and thereafter 1% of the preceding frequency value.

f) Recording the EUT operating situation during compliance testing and decide the EUT immunity criterion.

6.9.2 Test setup



6.9.3 Test result

N/A

6.10 Broadband Impulse noise disturbances isolated

6.10.1 Test procedures

a)The EUT are placed on an insulating support 0.1m high above a ground reference plane. CDN (coupling and decoupling device) is placed on the ground plane about 0.3m from EUT. Cables between CDN and EUT are as short as possible, and their height above the ground reference plane shall be between 30 and 50 mm (where possible).

b)The disturbance signal described below is injected to EUT through CDN.

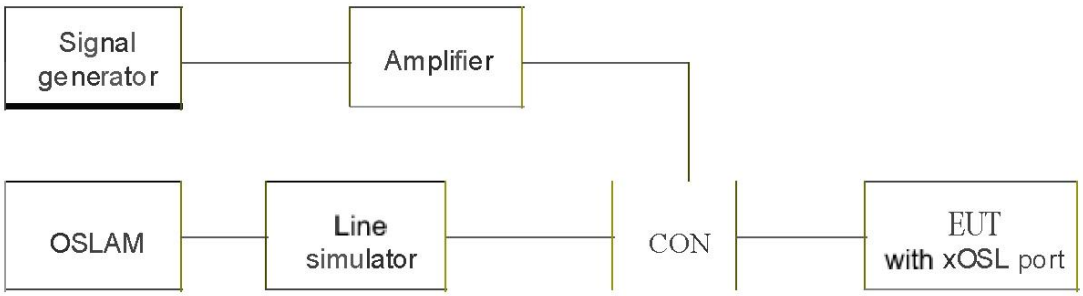
c)The EUT operates within its operational mode(s) under intended climatic conditions after power on.

d)The xOSL technology or 30 MHz, whichever is the lowest using 3V signal level, and with the disturbance signal 80% amplitude modulated with a 128 kHz sine wave.

e)The rate of sweep shall not exceed 1.5*10-3decades/s. Where the frequency is swept incrementally; the step size shall not exceed 1% of the start and thereafter 1% of the preceding frequency value.

f) Recording the EUT operating situation during compliance testing and decide the EUT immunity criterion.

6.10.2 Test setup

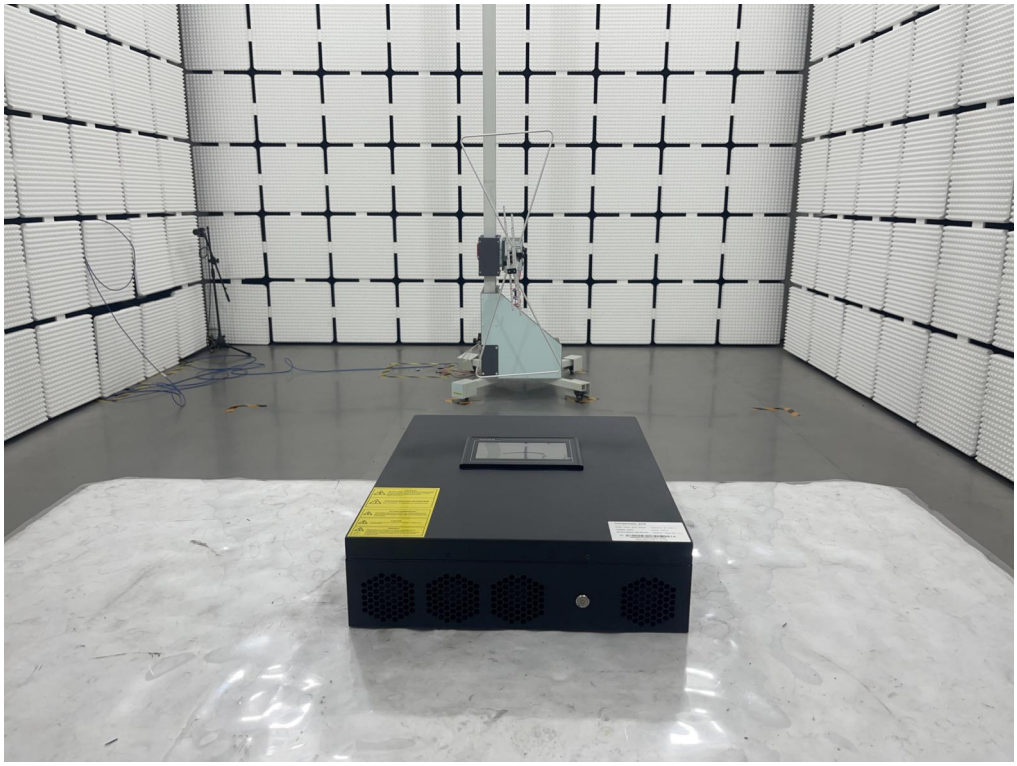


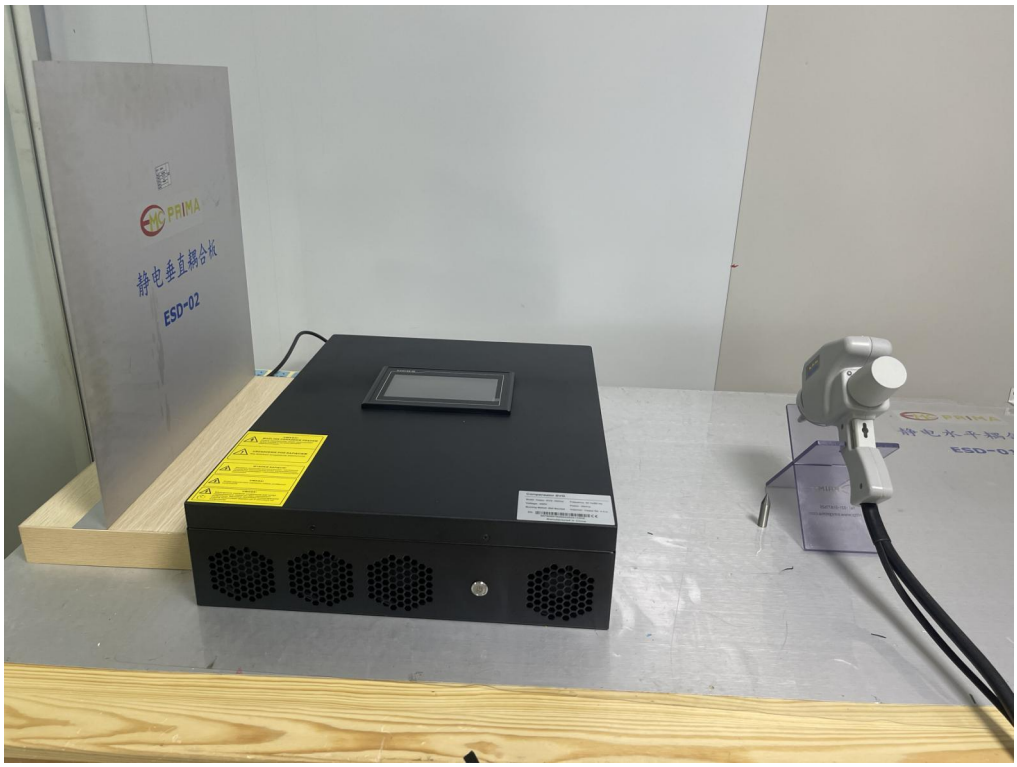
6.10.3 Test result

N/A

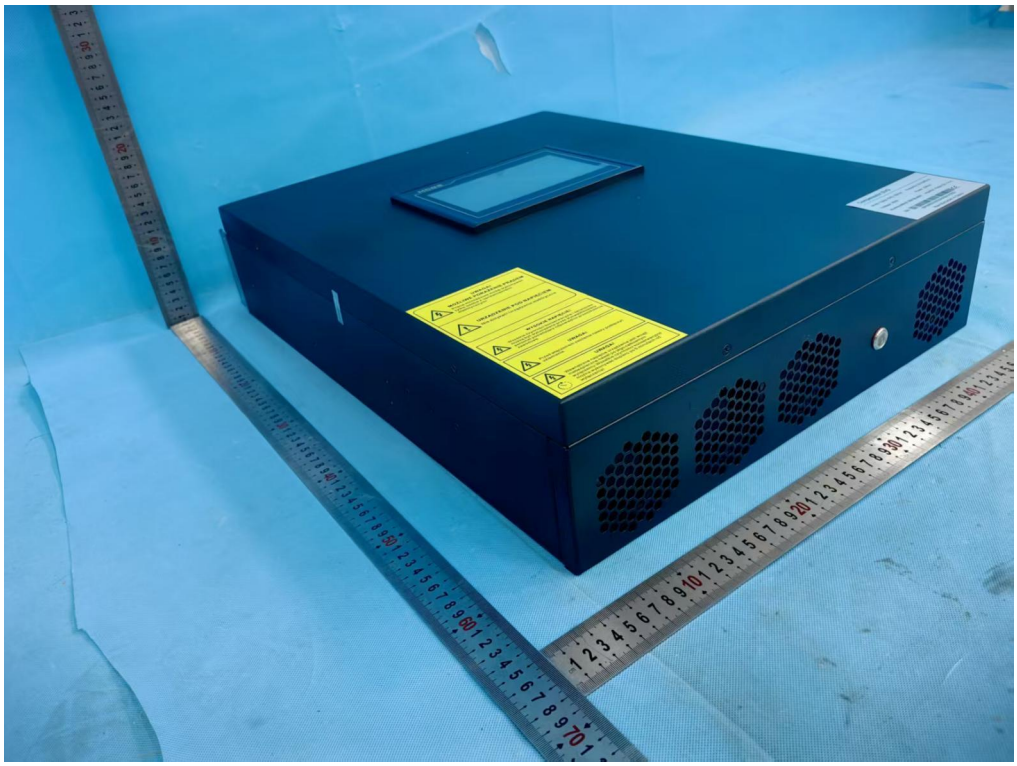
Test photographs of the EUT

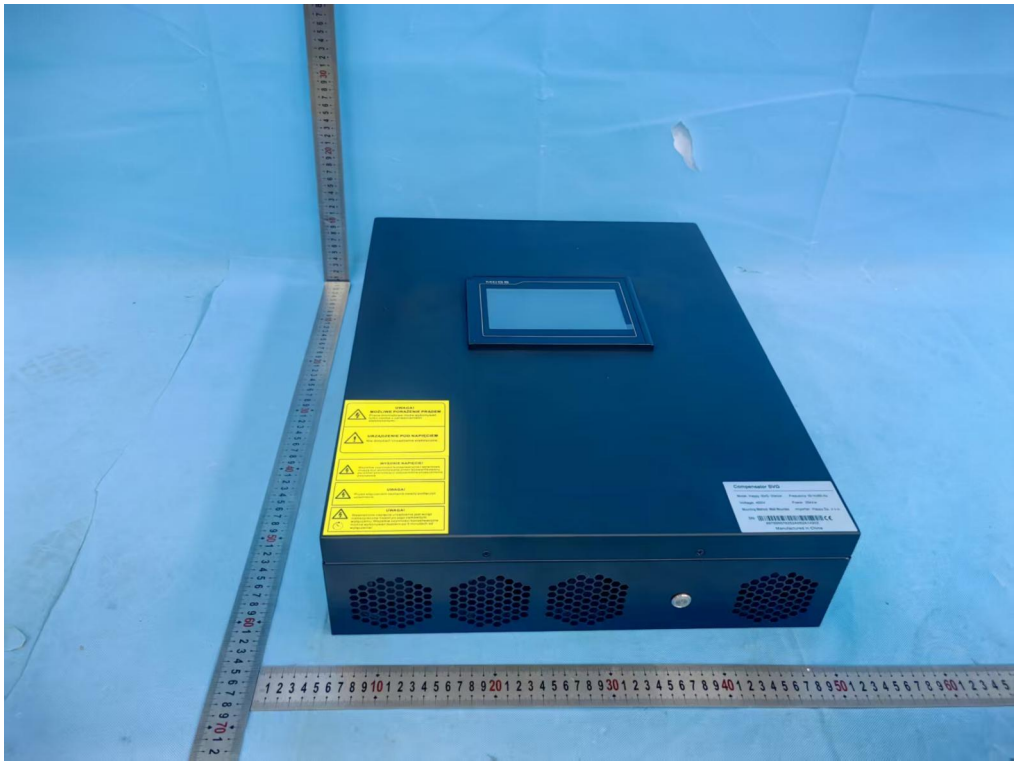
Conducted emission test

Radiated emission test


ESD test


Photographs of the Test EUT



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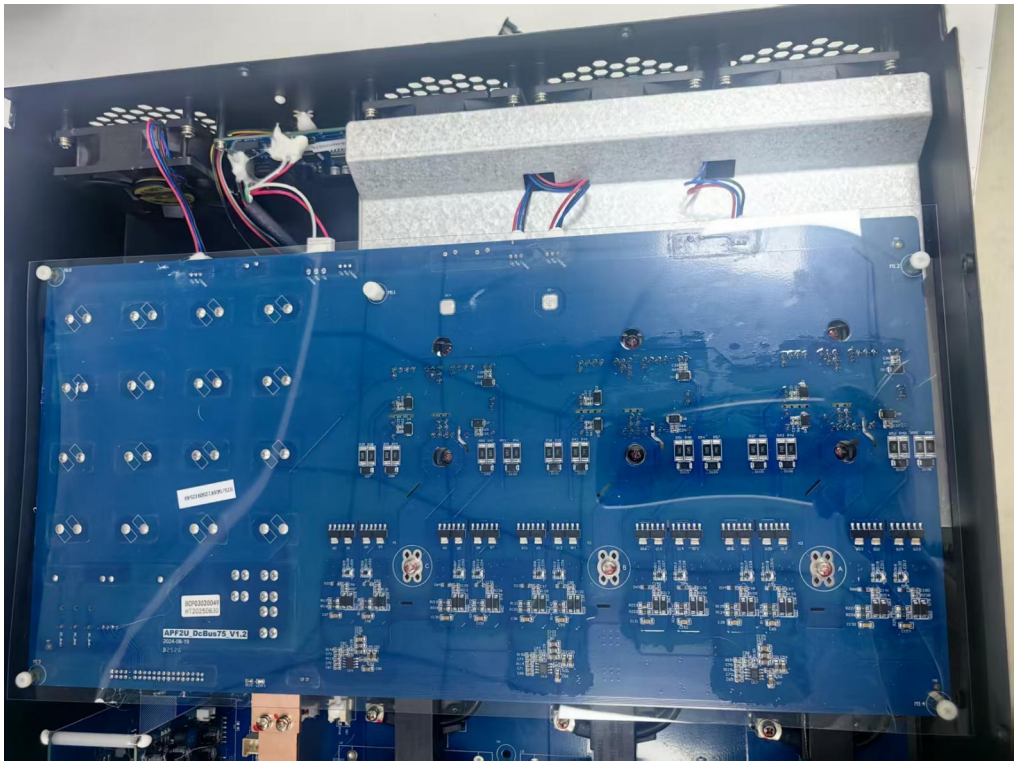
Prace montażowe może wykonywać tylko osoba z uprawnieniami elektrycznymi .
URZĄDZENIE POD NAPIĘCIEM
Nie dotykać! Urządzenie elektryczne.
WYSOKIE NAPIĘCIE!
Wszelkie czynności konserwacyjne i serwisowe muszą być wykonywane przez wykwalifikowany personel posiadający odpowiednie przeszkolenie zawodowe.
UWAGA!
Przed włączeniem zasilania należy podłączyć uziemienie.
UWAGA!
Wewnętrzne napięcie urządzenia jest wciąż niebezpieczne nawet po jego całkowitym wyłączeniu.Wszelkie czynności konserwacyjne można wykonywać dopiero po 5 minutach od wyłączenia!


N
N
C
B
A


CT1P
CT2P
CT3P
CT4P
CT5P
CT6P
485-2A
2B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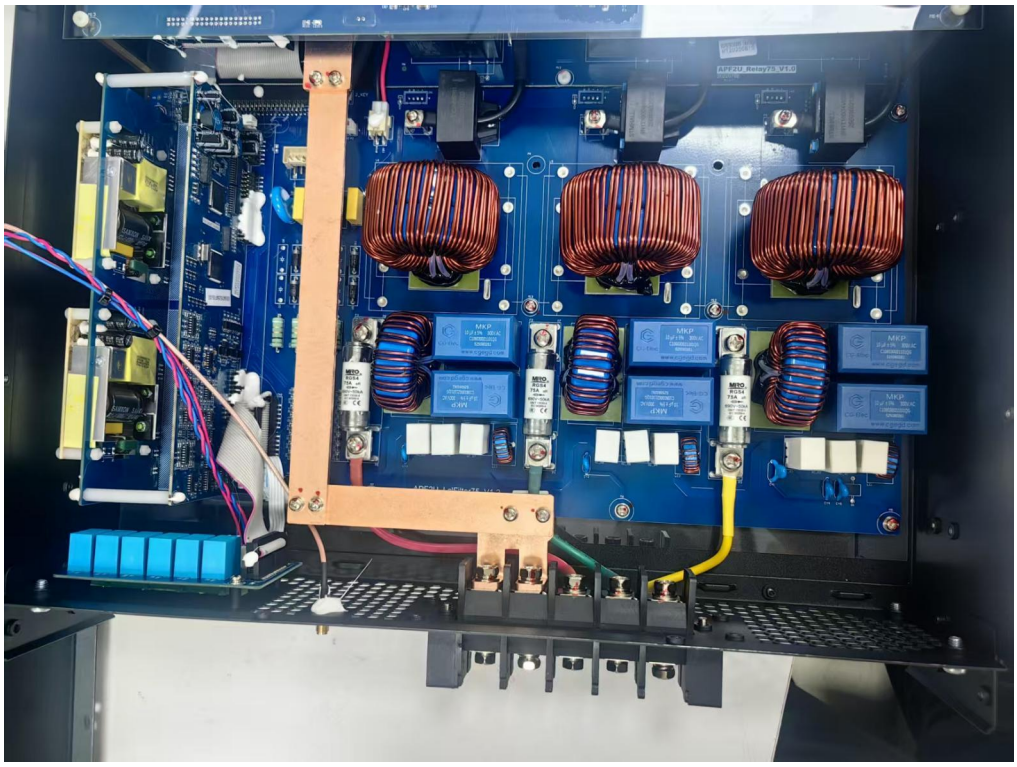

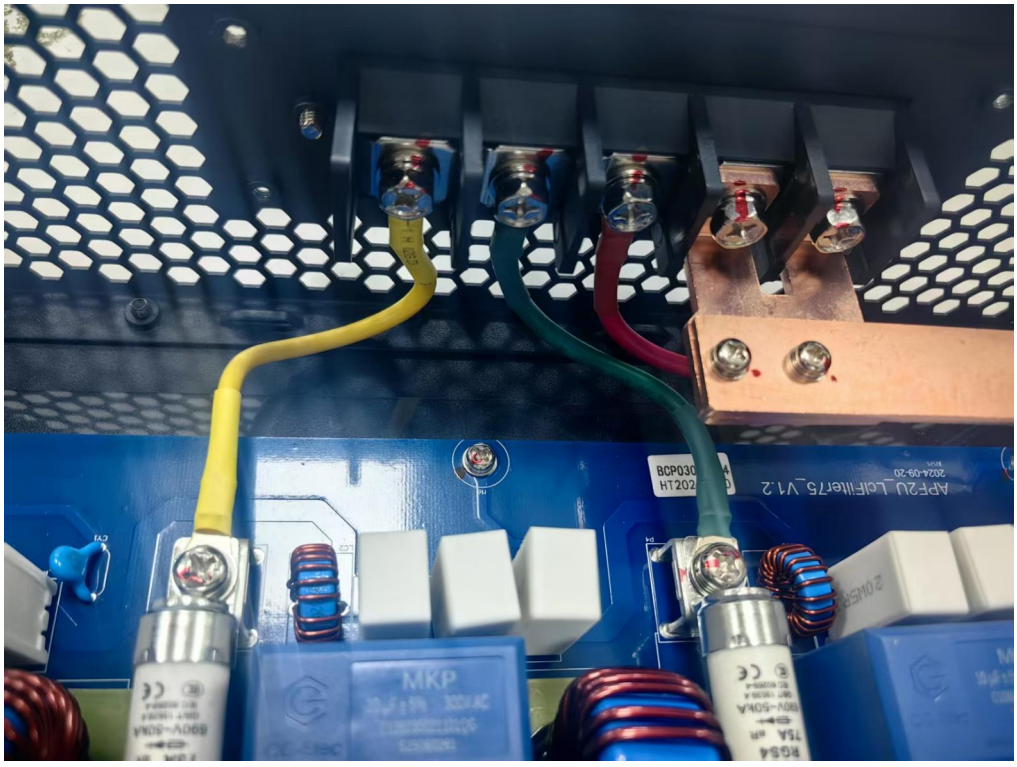

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