TEST REPORT

Report Number :	XH2611L110101GR
Testing Laboratory:	
Name:	Xihua International Testing & Certification (Shenzhen) Co., Ltd.
Address:	Building 10, No.23, North Lane 1, Beihuan Road, Shiyan, Bao'an District, Shenzhen, Guangdong, China
Testing location:	Xihua International Testing & Certification (Shenzhen) Co., Ltd.
Date of issue:	Jul.24,2026
Date of Test:	Jul. 13, 2026 To Jul.24,2026
Applicant:	
Name:	Milky Way Transformer Co.,Ltd.
Address:	No. 8, Dongfeng Road, Wanshi Town, Yixing City, Jiangsu Province, China
Test specification:	
Standard:	EN IEC 61000-6-4:2019 EN IEC 61000-3-2:2019+A1:2021+A2:2024 EN 61000-3-3:2013+A1:2019+A2:2021+AC:2022 EN IEC 61000-6-2:2019
Test procedure:	CE_EMC 2014/30/EU Electromagnetic Compatibility Directive /Annex II
Non-standard test method:	N/A
Test item:	
Test Item description:	Three Phases Oil-immersed Transformer
Trade Mark:	N/A
Model and/or type reference:	S11-10000/69
Additional Model:	SJ-63,SJ-80,SJ-100,SJ-120,SJ-150,SJ-180,SJ-200,SJ-250, SJ-300,SJ-350,SJ-400,SJ-450,SJ-500,SJ-550,SJ-630,SJ-800, SJ-1000,SJ-1200,SJ-1250,SJ-1500,SJ-1800,SZ-2000,SZ-2400, SZ-3000,SZ-3600
Manufacturer:	Milky Way Transformer Co.,Ltd.
Address:	No. 8, Dongfeng Road, Wanshi Town, Yixing City, Jiangsu Province, China
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):	
Testing Laboratory:	Xihua International Testing&Certification(Shenzhen)Co.,Ltd.
Testing location/address:	Building 10,No.23,North Lane 1,Beihuan Road,Shiyan,Bao'an District,Shenzhen,Guangdong,China
Tested by(name,function,signature):	Penny Chen/ Project Handler
Approved by(name,function,signature):	Johnson Xu / Designated Reviewer

TEST REPORT DECLARATION

Applicant	:	Milky Way Transformer Co.,Ltd.
Address	:	No. 8, Dongfeng Road, Wanshi Town, Yixing City, Jiangsu Province, China
EUT Description	:	Three Phases Oil-immersed Transformer
Model Number	:	S11-10000/69,SJ-63,SJ-80,SJ-100,SJ-120,SJ-150,SJ-180,SJ-200,SJ-250,SJ-300,SJ-350,SJ-400,SJ-450,SJ-500,SJ-550,SJ-630,SJ-800, SJ-1000,SJ-1200,SJ-1250,SJ-1500,SJ-1800,SZ-2000,SZ-2400,SZ-3000,SZ-3600 (Note: The series products have the same circuit diagram, PCB layout and functionality. The differences are the model name and appearance, so, we select S11-10000/69 to test.)
Input	:	AC69/13.2KV, 60Hz, 83.7/437.4A, 10000KVA

Test Standards:

EN IEC 61000-6-4:2019
EN IEC 61000-3-2:2019+A1:2021+A2:2024
EN 61000-3-3:2013+A1:2019+A2:2021+AC:2022
EN IEC 61000-6-2:2019

The EUT described above is tested by Xihua International Testing & Certification (Shenzhen) Co., Ltd. EMC Laboratory to determine the maximum emissions from the EUT and ensure the EUT to be compliance with the immunity requirements of the EUT. Xihua International Testing & Certification (Shenzhen) Co., Ltd.. EMC Laboratory is assumed full responsibility for the accuracy of the test results. Also, this report shows that the EUT technically complies with the 2014/30/EU directive and its amendment requirements.
The test report is valid for above tested sample only and shall not be reproduced in part without written approval of the laboratory.

1. TEST RESULTS SUMMARY

Table 1 Test Results Summary

Test Items	Standard	Method	Test Results
Power Line Conducted Emission Test	EN IEC 61000-6-4:2019	Conducted Emissions at DC Power Port (150kHz-30MHz)	PASS
		Conducted Emissions at Wired Network Port (150kHz-30MHz)	PASS
Radiated Emission	EN IEC 61000-6-4:2019	Radiated Emission (30MHz to 1000MHz)	PASS
		Radiated Emission (Above 1GHz)	N/A
Harmonic Current Emission Test	EN IEC 61000-3-2: 2019+A1:2021+A2:2024	EN IEC 61000-3-2: 2019+A1:2021+A2:2024	PASS
Voltage Fluctuations & Flicker Test	EN 61000-3-3:2013 +A1:2019+A2:2021 +AC:2022	EN 61000-3-3:2013 +A1:2019+A2:2021 +AC:2022	PASS
Electrostatic Discharge Test	EN IEC 61000-6-2:2019	EN IEC 61000-4-2:2025	PASS
Radiated Immunity (80MHz-1GHz, 1.4GHz-6GHz)	EN IEC 61000-6-2:2019	EN IEC 61000-4-3:2020	PASS
Electrical Fast Transients Burst at DC Power Port	EN IEC 61000-6-2:2019	EN 61000-4-4:2012	PASS
Electrical Fast Transients Burst at Signal Port	EN IEC 61000-6-2:2019	EN 61000-4-4:2012	PASS
Surge at DC Power Port	EN IEC 61000-6-2:2019	EN 61000-4-5:2014+A1:2017	PASS
Surge at Signal Port	EN IEC 61000-6-2:2019	EN 61000-4-5:2014+A1:2017	PASS
Injected Currents Susceptibility Test	EN IEC 61000-6-2:2019	EN IEC 61000-4-6:2023	PASS
Magnetic Field Immunity Test	EN IEC 61000-6-2:2019	EN 61000-4-8:2010	PASS
Voltage Dips And Interruptions Test	EN IEC 61000-6-2:2019	EN IEC 61000-4-11:2020 +AC:2022-10	PASS

NOTE:
1 "N/A" denotes test is not applicable in this Test Report
2 For client's request and manual description, the test will not be executed.

EN IEC 61000-6-4:2019: Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments
EN IEC 61000-3-2:2019+A1:2021+A2:2024: Electromagnetic compatibility (EMC) -- Part 3-2: Limits - Limits for harmonic current emissions (equipment input current up to and including 16A per phase)
EN 61000-3-3:2013+A1:2019+A2:2021+AC:2022: Electromagnetic compatibility (EMC) -- Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16A per phase and not subject to conditional connection
EN IEC 61000-6-2:2019: Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity standard for industrial environments

2. GENERAL INFORMATION

2.1.Report information

2.1.1.This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are application to the similar items. In addition, such results must not be used to indicate or imply that Xihua approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that Xihua in any way guarantees the later performance of the product/equipment.

2.1.2.The sample/s mentioned in this report is/are supplied by Applicant, Xihua therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture or any information supplied.

2.1.3.Additional copies of the report are available to the Applicant at an additional fee. No third part can obtain a copy of this report through Xihua, unless the applicant has authorized Xihua in writing to do so.

2.2.Measurement Uncertainty

(95% confidence levels, k=2)

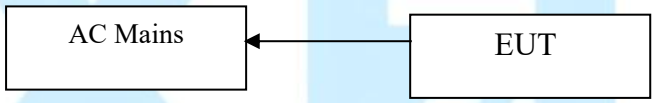
Test Item	Measurement Frequency Range	K	U(dB)
Conducted Emission	0.009MHz～0.15MHz	2	3.7
Conducted Emission	0.15MHz～30MHz	2	3.3
Telecom Conducted Emission(Cat 3)	0.15MHz～30MHz	2	3.1
Telecom Conducted Emission(Cat 5)	0.15MHz～30MHz	2	3.6
Telecom Conducted Emission(Cat 6)	0.15MHz～30MHz	2	4.2
Radiated Emission(#1)	30MHz～1000MHz	2	4.9
Radiated Emission(#1)	1000MHz～18000MHz	2	5.1
Radiated Emission(#2)	30MHz～1000MHz	2	5.0
Radiated Emission(#2)	1000MHz～18000MHz	2	5.1
Power Clamp	30MHz～300MHz	2	2.2

3. PRODUCT DESCRIPTION

3.1.EUT Description

Description	:	Three Phases Oil-immersed Transformer
Applicant	:	Milky Way Transformer Co.,Ltd. No. 8, Dongfeng Road, Wanshi Town, Yixing City, Jiangsu Province, China
Manufacturer	:	Milky Way Transformer Co.,Ltd. No. 8, Dongfeng Road, Wanshi Town, Yixing City, Jiangsu Province, China
Model Number	:	S11-10000/69

3.2.Block Diagram of EUT Configuration



3.3.Operating Condition of EUT

Test mode 1: ON

3.4.Test Conditions

Temperature: 23-26℃
Relative Humidity: 55-68 %

3.5.Modifications

No modification was made.

3.6.Abbreviations

GENERAL PERFORMANCE CRITERIA

According to EN 55015 standard,the general performance criteria as following:

Criterion A The equipment shall continue to operate as intended without operator intervention. No degradation of performance of loss of function is allowed below a performance level specified by the manufacturer when the equipment is used as intended.

Criterion B After the test, the equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed, after the application of the phenomena below a performance level specified by the manufacturer, when the equipment is used as intended.

Criterion C Loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions.

STANDARD COMPLIANCE/SEVERITY LEVEL/CRITERIA			
Tests Standard No.	**TEST SPECIFICATION**	**Test Mode Test Ports**	**Perform Criteria**
1.ESD IEC/EN IEC61000-4-2	8kV air discharge 4kV contact discharge	Direct Mode	B
	4kV HCP discharge 4kV VCP discharge	Indirect Mode	B
2.RS IEC/EN IEC61000-4-3	80 MHz to 1000 MHz; 10V/m, 1 kHz, 80%, AM modulated 1.4GHz to 6GHz 3V/m, 80%, 1kHz AM modulated	Enclosure	A
3.EFT/Burst IEC/EN 61000-4-4	2kV 5/50ns Tr/Td 5kHz or 100kHz Repetition Frequency	AC Power Port	--
		DC Power Port	B
		CTL/Signal Port	--
	1kV 5/50ns Tr/Td 5kHz or 100kHz Repetition Frequency	AC Power Port	--
		DC Power Port	--
		CTL/Signal Port	B
4.Surges IEC/EN 61000-4-5	1.2/50μs Tr/Td , 0.5kV Line to Line , 1kV Line to Ground	L-N	B
		L-PE N-PE	B
		CTL/Signal Port	B
	1.2/50μs Tr/Td , 1kV Line to Ground	L-PE N-PE	B
5.Continuous radio frequency disturbances IEC/EN IEC61000-4-6	10Vrms (emf),80%,1kHz Amp. Mod.	AC Power Port	A
		DC Power Port	A
		CTL/Signal Port	A
	10Vrms (emf),80%,1kHz Amp. Mod.	AC Power Port	A
		DC Power Port	A
		CTL/Signal Port	A
6.Power Frequency Magnetic Field IEC/EN 61000-4-8	50Hz/60Hz 30A/m	Enclosure	A
7.Volt.Interruption Volt.Dips IEC/EN IEC61000-4-11	Voltage dips 100%	AC Power Port	B
	Voltage dips 30%		C
	Voltage Interruption 100%		C

4. TEST EQUIPMENT USED

4.1.For Conducted Emission Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESHS30	828985/018	Feb.10,2026	1 Year
2.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100006	Feb.10,2026	1 Year
3.	L.I.S.N.	Rohde & Schwarz	ESH2-Z5	834549/005	Feb.10,2026	1 Year
4.	Conical	Emtek	N/A	N/A	N/A	N/A
5.	Voltage Probe	Schwarzbeck	TK9416	N/A	Feb.10,2026	1 Year
6.	Coaxial Switch	Anritsu	MP59B	6100214550	Feb.10,2026	1 Year

4.2.For Radiated Emission Measurement

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	ANRITSU	MS2661C	6200140915	Feb.10,2026	1 Year
2.	Test Receiver	Rohde&Schwarz	ESC830	828982/018	Feb.10,2026	1 Year
3.	Bilog Antenna	Schwarzbeck	VULB9163	142	Feb.10,2026	1 Year
4.	50 Coaxial Switch	Anritsu Corp	MP59B	6100237248	Feb.10,2026	1 Year
5.	Cable	Schwarzbeck	AK9513	ACRX1	Feb.10,2026	1 Year
6.	Cable	Rosenberger	N/A	FR2RX2	Feb.10,2026	1 Year
7.	Cable	Schwarzbeck	AK9513	CRRX2	Feb.10,2026	1 Year
8.	Cable	Schwarzbeck	AK9513	CRRX2	Feb.10,2026	1 Year
9.	Signal Generator	HP	864A	3625U00573	Feb.10,2026	1 Year

4.3.For Harmonic / Flicker Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Harmonic and Flicker analyzer	Laplace	AC2000A	309709	Feb.10,2026	1 Year

4.4.For Electrostatic Discharge Immunity Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	ESD Tester	HAEFELY	PSD 1600	H911’292	Feb.10,2026	1 Year

4.5.For RF Strength Susceptibility Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Signal Generator	HP	8648A	3633A02081	Feb.10,2026	1 Year
2.	Amplifier	A&R	500A100	17034	NCR	NCR
3.	Amplifier	A&R	100W/1000M1	17028	NCR	NCR
4.	Isotropic Field Monitor	A&R	FM2000	16829	NCR	NCR
5.	Isotropic Field Probe	A&R	FLW220100	16755	Feb.10,2026	1 Year
6.	Biconic Antenna	EMCO	3108	9507-2534	NCR	NCR
7.	Log-periodic Antenna	A&R	AT1080	16812	NCR	NCR
8.	PC	N/A	486DX2	N/A	N/A	N/A

4.6.For Electrical Fast Transient/Burst Immunity Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Burst Tester	HAEFELY	PEFT 4010	080981-16	Feb.10,2026	1 Year

4.7.For Surge Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Surge Tester	HAEFELY	PSURGE4.1	080107-04	Feb.10,2026	1 Year

4.8.For Injected Currents Susceptibility Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Simulator	EMTEST	CWS 500C	0900-12	Feb.10,2026	1 Year
2.	CDN	EMTEST	CDN-M2	510010010010	Feb.10,2026	1 Year
3.	VDN	EMTEST	CDN-M3	0900-11	Feb.10,2026	1 Year
4.	Injection Clamp	EMTEST	F-2031-23MM	368	Feb.10,2026	1 Year
5.	Attenuator	EMTEST	ATT6	0010222a	Feb.10,2026	1 Year

4.9.For Magnetic Field Immunity Test

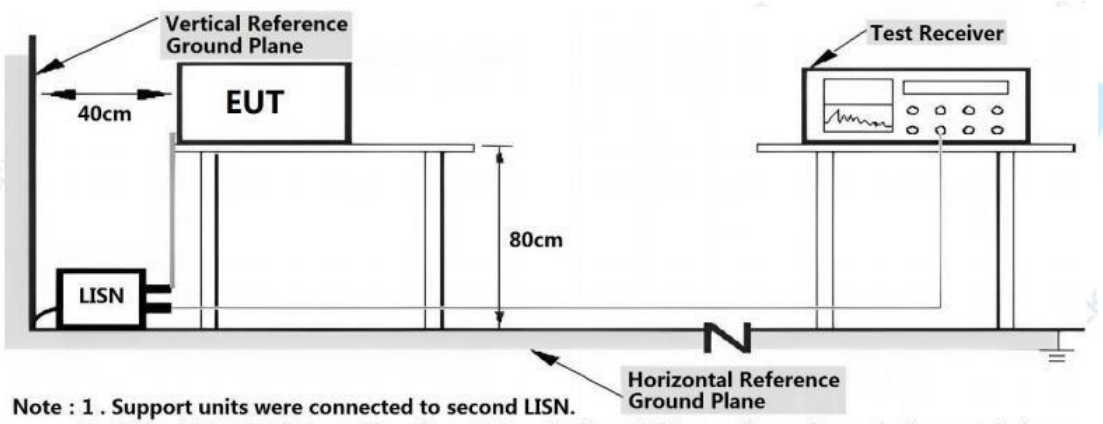
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Magnetic Field Tester	HEAFELY	MAG100.1	083858-10	Feb.10,2026	1 Year

4.10.For Voltage Dips and Interruptions Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Dips Tester	HEAFELY	PLINE 1610	083732-18	Feb.10,2026	1 Year

5. POWER LINE CONDUCTED EMISSION TEST

5.1.Block Diagram of Test Setup



Note : 1 . Support units were connected to second LISN.
2 . Both of LISNs(AMN) are 80cm from EUT and at least 80 from other units and other metal planes.

5.2.Test Standard

EN IEC 61000-6-4:2019

5.3.Power Line Conducted Emission Limit

Frequency MHz	at AC Power PortFrequency Range Limits dB(μV)		at Wired Network PorLimits dB(μV)	
	Quasi-peak Level	Average Level	Quasi-peak Level	Average Level
0.15 ~ 0.50	79	73	97-87	84-74
0.50 ~ 30.00	66	60	87	74

Notes: The lower limit is applicable at the transition frequency

5.4.EUT Configuration on Test

The following equipments are installed on conducted emission test to meet EN IEC 61000-6-4
requirement and operating in a manner, which tends to maximize its emission characteristics in a normal application.

5.4.1.EUT Information

Model Number	:	S11-10000/69
Serial Number	:	N/A
Manufacturer	:	Milky Way Transformer Co.,Ltd.

5.5.Operating Condition of EUT

5.5.1.Setup the EUT and simulators as shown in Section 5.1.

5.5.2.Turn on the power of all equipments.

5.5.3.Let the EUT work in test modes (ON) and test it.

5.6.Test Procedure

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 equipments 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 at least 80 cm from nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item -EUT Test Photos.
All the test results are listed in Section 5.7. The scanning waveform is put in Appendix I.

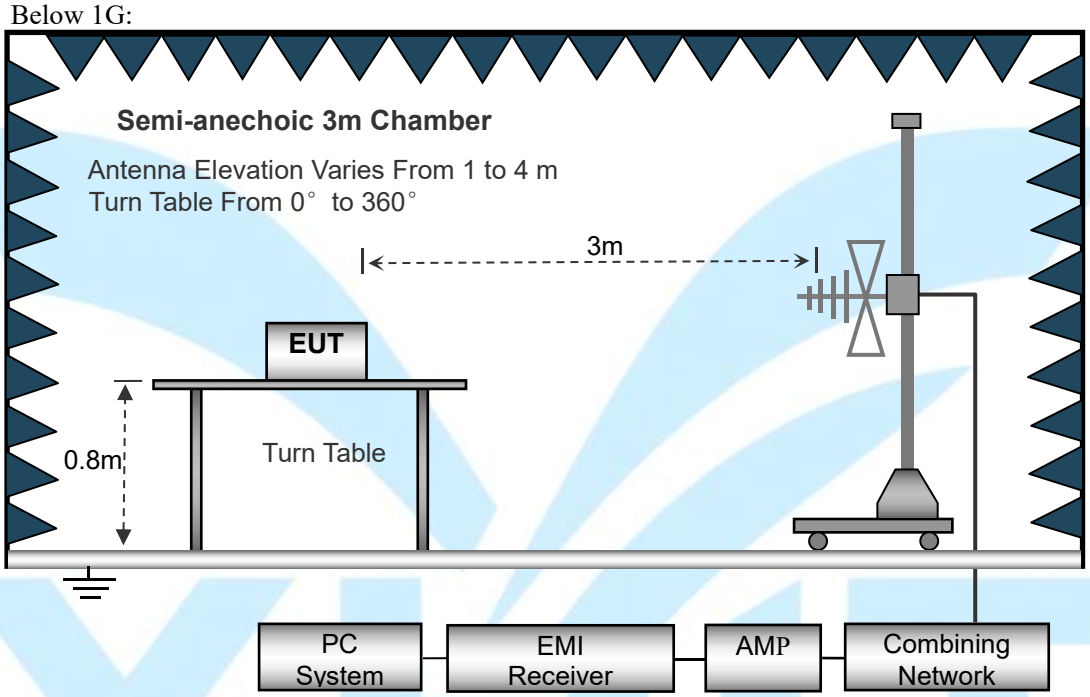
5.7.Test Result

PASS.

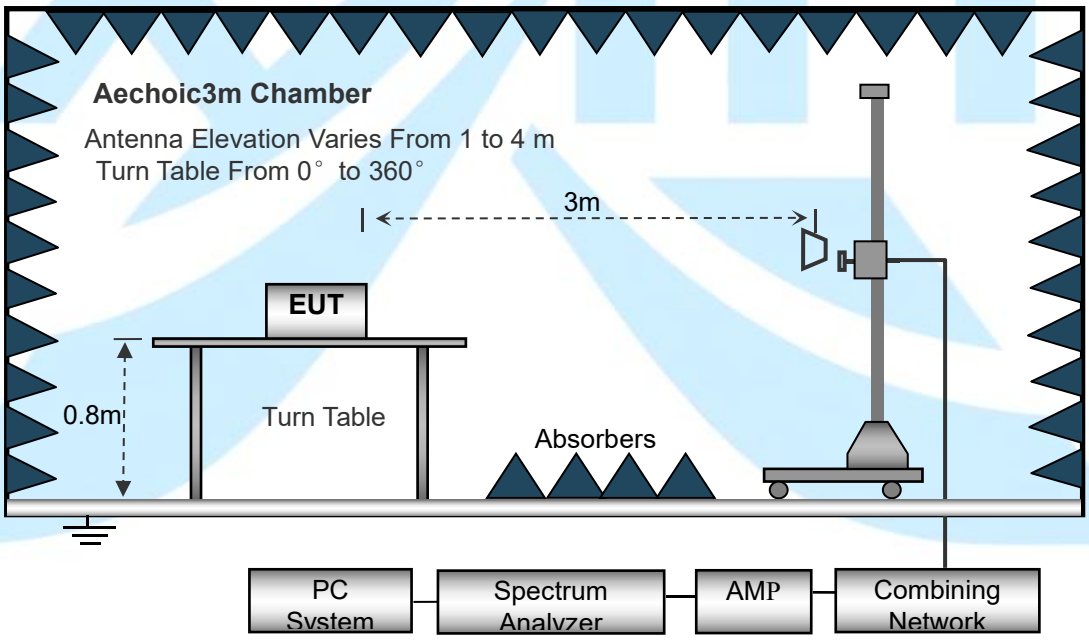
6. RADIATED EMISSION TEST

6.1.Setup Diagram

Below 1G:



Above 1G:



6.2.Test Standard

EN IEC 61000-6-4:2019
Class B

6.3.Radiated Emission Limit

(Below 30MHz to 1000MHz)

Limit:

Test Distance:	3m
30MHz-230MHz	50 dB(μV/m) quasi-peak
230MHz-1GHz	57 dB(μV/m) quasi-peak
Detector:	Peak for pre-scan (120kHz resolution bandwidth) 30M to 1000MHz

(Above 1GHz)

Limit:

Test Distance:	3m
1GHz-3GHz:	76 dB(μV/m) peak; 56 dB(μV/m) average
3GHz-6GHz:	80 dB(μV/m) peak; 60 dB(μV/m) average
Detector:	Peak for pre-scan (1000kHz resolution bandwidth) 1GHz to 6GHz

6.4.EUT Configuration on Test

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

6.5.Operating Condition of EUT

6.5.1.Setup the EUT as shown on Section 6.1.

6.5.2.Turn on the power of all equipments.

6.5.3.Let the EUT work in test mode(On) and measure it.

6.6. Test Procedure

a. The measuring distance of at 3m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured, above 1G Average detector mode will be instead.
e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP(AV) Limits and then no additional QP Mode measurement performed.
f. For the actual test configuration, please refer to the related Item -EUT Test Photos.

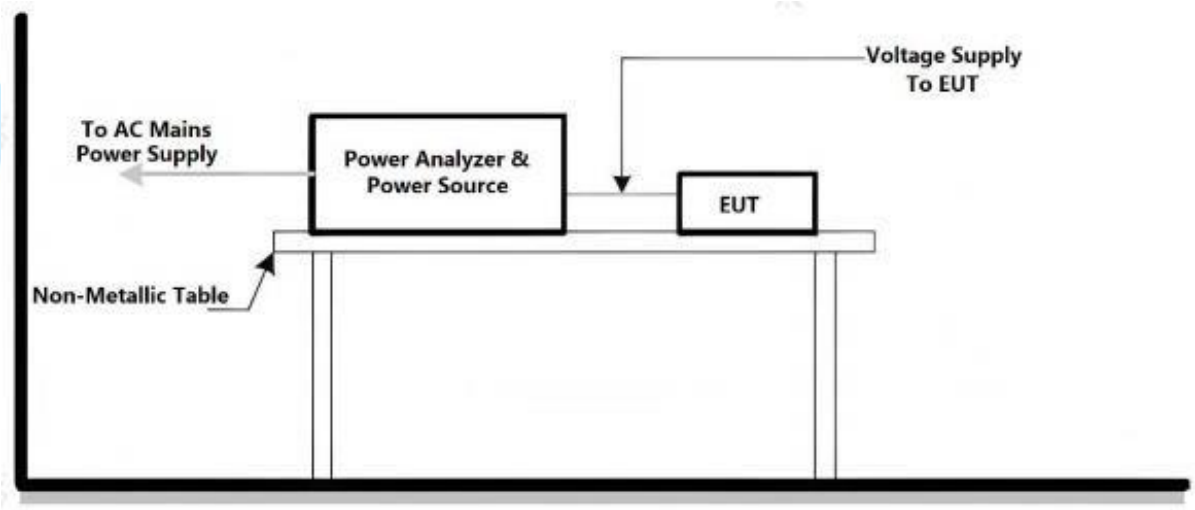
The EUT is tested in Semi-Anechoic Chamber. and all the scanning waveform is put in **Appendix II.**

6.7. Test Results

PASS.

7. HARMONIC CURRENT EMISSION TEST

7.1.Block Diagram of Test Setup



7.2.Test Standard and Limit

7.2.1.Test Standard

EN IEC 61000-3-2:2019+A1:2021+A2:2024
Class A

7.2.2.Limits

LIMITS OF HARMONICS CURRENT (CLASS A & CLASS D)

Table 1-Limits for Class A equipment

Harmonic order(h)	Maximum permissible harmonic current (A)
Odd harmonics	
3	2.30
5	1.14
7	0.77
9	0.40
11	0.33
13	0.21
15≤h≤39	0.15*(15/h)
Even harmonics	
2	1.08
4	0.43
6	0.30
8≤h≤40	0.23*(8/h)

Table 2-Limits for Class D equipment

Harmonic order(h)	Maximum permissible harmonic current per watt (mAW)	Maximum permissible harmonic current (A)
3	3.4	2.30
5	1.9	1.14
7	1.0	0.77
9	0.5	0.40
11	0.35	0.33
13≤h≤39 (odd harmonics only)	3.85/h	See table 1

7.3. Test Procedure

a. The EUT was placed on the top of a wooden table 0.8 meters above the ground and operated to produce the maximum harmonic components under normal operating conditions.
b. The classification of EUT is according to section 5 of EN IEC 61000-3-2. The EUT is classified as follows: Class A: Balanced three-phase equipment, Household appliances excluding equipment as Class D, Tools excluding portable tools, Dimmers for incandescent lamps, audio equipment, equipment not specified in one of the three other classes.
Class B: Portable tools. Portable tools.; Arc welding equipment which is not professional equipment.
Class C: Lighting equipment.
Class D: Equipment having a specified power less than or equal to 600W of the following types: Personal computers and personal computer monitors and television receivers.
c. The correspondent test program of test instrument to measure the current harmonics emanated from EUT is chosen. The measure time shall be not less than the time necessary for the EUT to be exercised.

7.4. Test Results

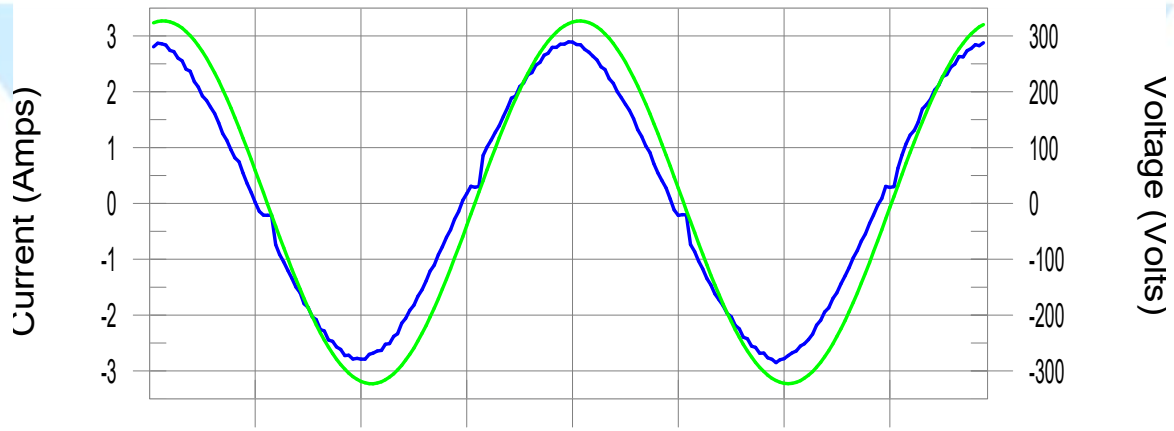
PASS.

Harmonics – Class-C per IEC 61000-3-2:2018+AMD1:2020(Run time)

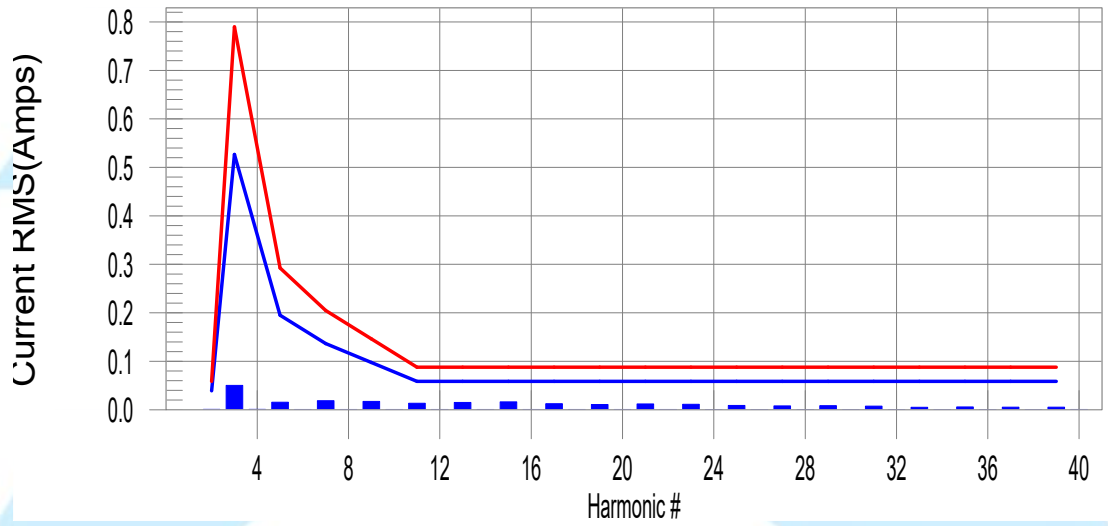
Customer: Customer information

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

Current & voltage waveforms



Harmonics and Class C limit line **European Limits**



Test result: Pass **Worst harmonics H15-19.1% of 150% limit, H15-27.6% of 100% limit**

Current Test Result Summary (Run time)

Customer: Customer information

Test Result: Pass Source qualification: Normal
THC(A): 0.071 I-THD(%): 3.6 POHC(A): 0.026 POHC Limit(A): 0.185

Highest parameter values during test:

V_RMS (Volts):	229.88	Frequency(Hz):	50.00
I_Peak (Amps):	2.984	I_RMS (Amps):	1.953
I_Fund (Amps):	1.950	Crest Factor:	1.528
Power (Watts):	442.0	Power Factor:	0.985

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.001	0.039	N/A	0.001	0.059	N/A	Pass
3	0.050	0.527	9.6	0.052	0.790	6.6	Pass
4	0.001	0.000	N/A	0.001	0.000	N/A	Pass
5	0.016	0.195	8.0	0.016	0.293	5.5	Pass
6	0.001	0.000	N/A	0.001	0.000	N/A	Pass
7	0.019	0.137	13.6	0.019	0.205	9.5	Pass
8	0.001	0.000	N/A	0.001	0.000	N/A	Pass
9	0.017	0.098	17.7	0.018	0.146	12.2	Pass
10	0.001	0.000	N/A	0.001	0.000	N/A	Pass
11	0.013	0.059	23.0	0.014	0.088	15.9	Pass
12	0.001	0.000	N/A	0.001	0.000	N/A	Pass
13	0.015	0.059	25.6	0.016	0.088	17.7	Pass
14	0.001	0.000	N/A	0.001	0.000	N/A	Pass
15	0.016	0.059	27.6	0.017	0.088	19.1	Pass
16	0.001	0.000	N/A	0.001	0.000	N/A	Pass
17	0.013	0.059	21.5	0.013	0.088	14.9	Pass
18	0.001	0.000	N/A	0.001	0.000	N/A	Pass
19	0.011	0.059	N/A	0.011	0.088	N/A	Pass
20	0.001	0.000	N/A	0.001	0.000	N/A	Pass
21	0.012	0.059	20.4	0.012	0.088	14.1	Pass
22	0.000	0.000	N/A	0.001	0.000	N/A	Pass
23	0.011	0.059	N/A	0.012	0.088	N/A	Pass
24	0.000	0.000	N/A	0.001	0.000	N/A	Pass
25	0.009	0.059	N/A	0.009	0.088	N/A	Pass
26	0.000	0.000	N/A	0.001	0.000	N/A	Pass
27	0.008	0.059	N/A	0.008	0.088	N/A	Pass
28	0.000	0.000	N/A	0.001	0.000	N/A	Pass
29	0.008	0.059	N/A	0.009	0.088	N/A	Pass
30	0.000	0.000	N/A	0.001	0.000	N/A	Pass
31	0.008	0.059	N/A	0.008	0.088	N/A	Pass
32	0.000	0.000	N/A	0.001	0.000	N/A	Pass
33	0.005	0.059	N/A	0.005	0.088	N/A	Pass
34	0.000	0.000	N/A	0.001	0.000	N/A	Pass
35	0.006	0.059	N/A	0.006	0.088	N/A	Pass
36	0.000	0.000	N/A	0.000	0.000	N/A	Pass
37	0.005	0.059	N/A	0.005	0.088	N/A	Pass
38	0.000	0.000	N/A	0.000	0.000	N/A	Pass
39	0.005	0.059	N/A	0.006	0.088	N/A	Pass
40	0.000	0.000	N/A	0.001	0.000	N/A	Pass

Note: Dynamic limits were applied for this test.
The highest harmonics values in the above table may not occur at the same window as the maximum harmonics/limit ratio.

Voltage Source Verification Data (Run time)

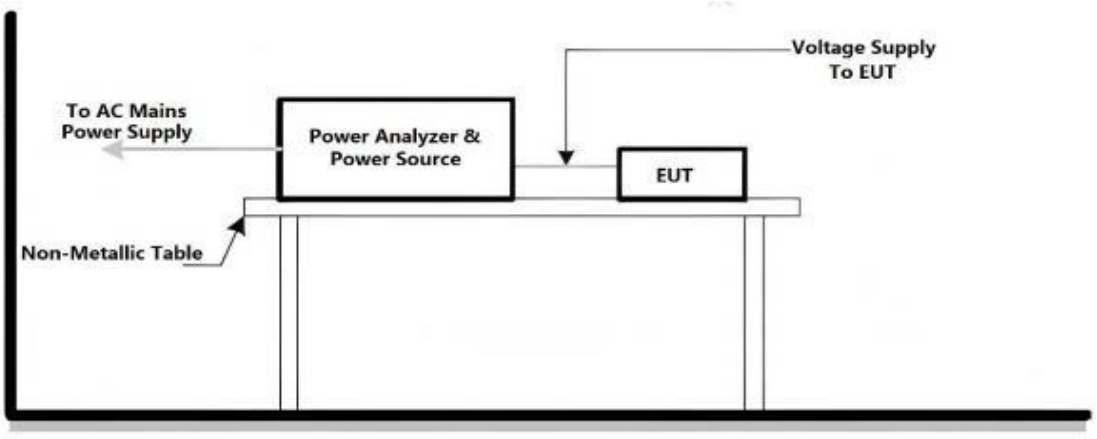
Customer: Customer information
Test Result: Pass Source qualification: Normal

Highest parameter values during test:
Voltage (Vrms): 230 Frequency(Hz): 50.00

Harm#	Harmonics V-rms	Limit V-rms	% of Limit	Status
2	0.067	0.460	14.57	OK
3	0.565	2.069	27.29	OK
4	0.076	0.460	16.62	OK
5	0.051	0.919	5.58	OK
6	0.037	0.460	8.08	OK
7	0.037	0.689	5.33	OK
8	0.017	0.460	3.67	OK
9	0.016	0.460	3.38	OK
10	0.009	0.460	2.03	OK
11	0.015	0.230	6.37	OK
12	0.015	0.230	6.51	OK
13	0.017	0.230	7.36	OK
14	0.009	0.230	3.78	OK
15	0.014	0.230	5.91	OK
16	0.010	0.230	4.32	OK
17	0.018	0.230	7.95	OK
18	0.012	0.230	5.38	OK
19	0.015	0.230	6.53	OK
20	0.016	0.230	6.98	OK
21	0.011	0.230	5.00	OK
22	0.006	0.230	2.47	OK
23	0.012	0.230	5.30	OK
24	0.006	0.230	2.55	OK
25	0.012	0.230	5.01	OK
26	0.004	0.230	1.91	OK
27	0.009	0.230	4.06	OK
28	0.006	0.230	2.58	OK
29	0.011	0.230	4.99	OK
30	0.005	0.230	2.10	OK
31	0.012	0.230	5.25	OK
32	0.004	0.230	1.66	OK
33	0.009	0.230	3.71	OK
34	0.004	0.230	1.73	OK
35	0.009	0.230	4.04	OK
36	0.004	0.230	1.86	OK
37	0.010	0.230	4.50	OK
38	0.004	0.230	1.72	OK
39	0.010	0.230	4.31	OK
40	0.009	0.230	3.94	OK

8. VOLTAGE FLUCTUATIONS & FLICKER TEST

8.1.Block Diagram of Test Setup



8.2.Test Standard

EN 61000-3-3:2013+A1:2019+A2:2021+AC:2022

8.3.Operating Condition of EUT

Same as Section 8.1. The power cord of the EUT is connected to the output of the test system. Turn on the power of the EUT and use the test system to test.

Flicker Test Limit

Test items	Limits(EN 61000-3-3)	Descriptions
P_{st}	≤1.0,Tp=10min	short-term flicker indicator
P_{lt}	≤0.65,Tp=2h	long-term flicker indicator
d_c	≤3.3%	relative steady-state voltage change
d_{max}	≤4%(or 6%Note(1),7%Note(2)	maximum relative voltage change
$D_{(t)}$	≤3.3%,more than 500ms	relative voltage change characteristic

Note:

1. 6 % for equipment which is:
   a. switched manually, or
   b. switched automatically more frequently than twice per day, and also has either a delayed restart (the delay being not less than a few tens of seconds), or manual restart, after a power supply interruption.
2. 7 % for equipment which is
   a. attended whilst in use (for example: hair dryers, vacuum cleaners, kitchen equipment such as mixers, garden equipment such as lawn mowers, portable tools such as electric drills),
   b. switched on automatically, or is intended to be switched on manually, no more than twice per day, and also has either a delayed restart (the delay being not less than a few tens of seconds) or manual restart, after a power supply interruption.

8.4. Test Procedure

a. Fluctuation and Flickers Test:
Tests was performed according to the Test Conditions/Assessment of Voltage Fluctuations specified in Clause 6.0/4.0 of IEC/EN 61000-3-3 depend on which standard adopted for compliance measurement.
b. All types of voltage fluctuation in this report are assessed by direct measurement using flicker-meter.

8.5. Test Results

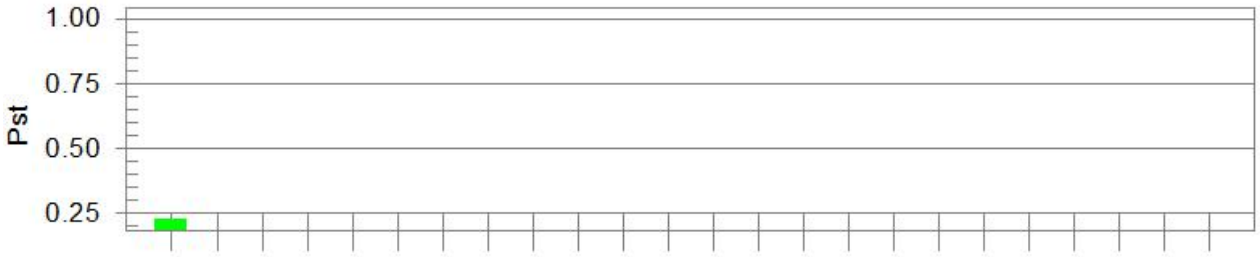
PASS.

Flicker Test Summary per IEC61000-3-3:2013+AMD2:2021 (Run time)

Customer: Customer information

Test Result: Pass Status: Test Completed

Pst_i and limit line European Limits



Plt and limit line

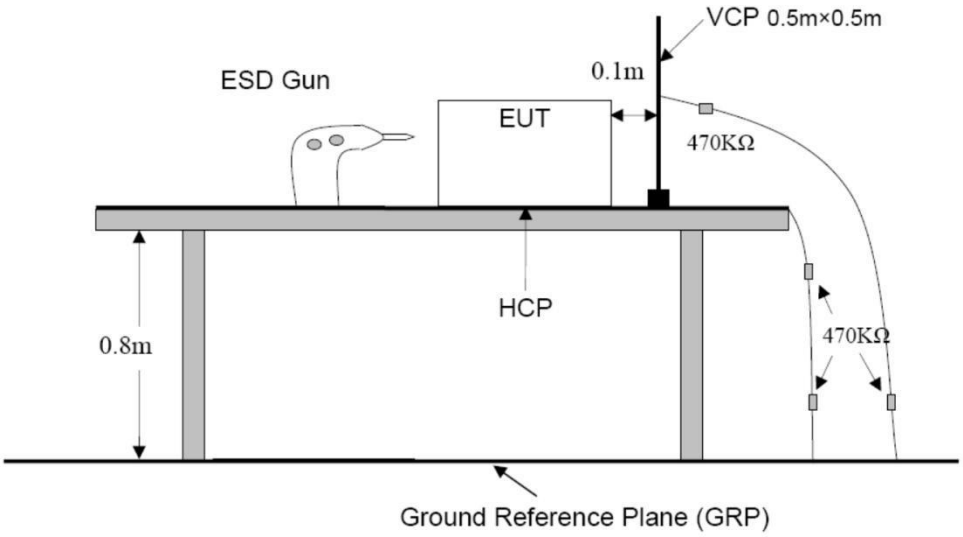


Parameter values recorded during the test:

Vrms at the end of test (Volt):	230.60			
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):	0.224	Test limit:	1.000	Pass
Highest Plt (2 hr. period):	0.098	Test limit:	0.650	**Pass**

9. ELECTROSTATIC DISCHARGE TEST

9.1.Block Diagram of ESD Test Setup



9.2.Test Standard

EN IEC 61000-6-2:2019 (EN 61000-4-2:2025)
Severity Level 3 for Air Discharge at 8KV
Severity Level 2 for Contact Discharge at 4KV

9.3.Severity Levels and Performance Criterion

9.3.1.Severity level

9.3.2.Performance criterion: B

9.3.3.Performance criterion: B

Level	Test Voltage Contact Discharge (KV)	Test Voltage Air Discharge (KV)
1.	2	2
2.	4	4
3.	6	8
4.	8	15
X.	Special	Special

9.4.EUT Configuration on Test

The configuration of EUT are listed in Section 3.2.

9.5.Operating Condition of EUT

9.5.1.Setup the EUT as shown in Section 9.1.

9.5.2.Turn on the power of all equipments.

9.5.3.Let the EUT work in test mode (on) and test it.

9.6.Test Procedure

9.6.1.Air Discharge:
This test is done on a non-conductive surfaces. The round discharge tip of the discharge electrode shall be approached as fast as possible to touch the EUT.
After each discharge, the discharge electrode shall be removed from the EUT.
The generator is then re-triggered for a new single discharge and repeated 10 times for each pre-selected test point.
This procedure shall be repeated until all the air discharge completed.

9.6.2.Contact Discharge:
All the procedure shall be same as Section 9.6.1. except that the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

9.6.3.Indirect discharge for horizontal coupling plane
At least 20 single discharges shall be applied to the horizontal coupling plane, at points on each side of the EUT. The discharge electrode positions vertically at a distance of 0.1m from the EUT and with the discharge electrode touching the coupling plane.

9.6.4.Indirect discharge for vertical coupling plane
At least 20 single discharge shall be applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m X 0.5m, is placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges shall be applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.

9.7.Test Results

PASS.
Please refer to the following page.

Electrostatic Discharge Test Results

Xihua International Testing & Certification (Shenzhen) Co., Ltd..

Applicant:	*Milky Way Transformer Co.,Ltd.*	*Test Date:*	*Jul. 13, 2026*
EUT:	*Three Phases Oil-immersed Transformer*	*Temperature:*	*25 ℃*
M/N:	*S11-10000/69*	*Humidity:*	*61 %*
Power Supply:	*AC 13.2KV, 60Hz*	*Test Mode:*	*ON*

Air Discharge: ±8KV
Contact Discharge: ±4KV
For each point positive 10 times and negative 10 times discharge.

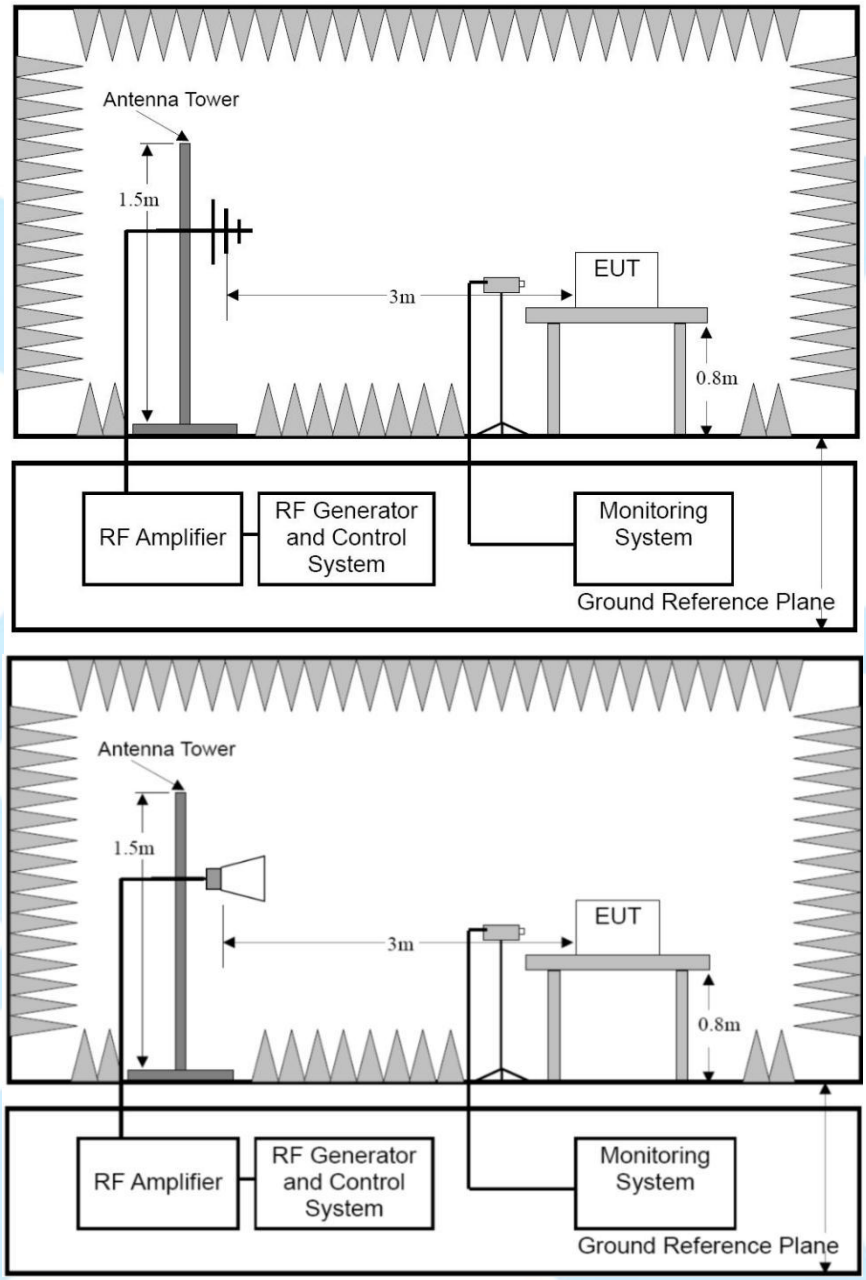
Mode	*Contact Discharge (Indirect)*								*Criterion*	*Result*
Test Level(kV)	*Test Point*	*2*		*4*		*6*				
Test Location		+	-	+	-	+	-			
HCP	*Front*	*P*	*P*	*P*	*P*				*B*	*Complies*
	Rear	*P*	*P*	*P*	*P*					
	Left	*P*	*P*	*P*	*P*					
	Right	*P*	*P*	*P*	*P*					
VCP	*Front*	*P*	*P*	*P*	*P*					
	Rear	*P*	*P*	*P*	*P*					
	Left	*P*	*P*	*P*	*P*					
	Right	*P*	*P*	*P*	*P*					

Mode	*Air Discharge*								*Contact Discharge*								*Criterion*	*Result*
Test Level(kV)	*2*		*4*		*8*		*15*		*2*		*4*		*6*		*8*			
Test Location	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-		
Gap	*P*	*P*	*P*	*P*	*P*	*P*											*B*	*Complies*
Metal									*P*	*P*	*P*	*P*						

In the table: 'P' represents 'PASS'; 'F' represents 'FAIL'
Discharge should be considered on Contact and Air and Horizontal Coupling Plane (HCP) and Vertical Coupling Plane (VCP)

10. RF FIELD STRENGTH SUSCEPTIBILITY TEST

10.1. R/S Test Setup



Note:

TABLE-TOP EQUIPMENT

The EUT installed in a representative system as described in section 7 of IEC/EN IEC 61000-4-3 was placed on a non-conductive table 0.8 meters in height. The system under test was connected to the power and signal wire according to relevant installation instructions.

FLOOR-STANDING EQUIPMENT

The EUT installed in a representative system as described in section 7 of IEC/EN IEC 61000-4-3 was placed on a non-conductive wood support 0.1 meters in height. The system under test was connected to the power and signal wire according to relevant installation instructions.

10.2.Test Standard

EN IEC 61000-6-2:2019 (EN IEC 61000-4-3:2020)
Severity Level 2 at 3V / m

10.3.Severity Levels and Performance Criterion

10.3.1.Severity level

Level	Field Strength V/m
1.	1
2.	3
3.	10
X.	Special

10.3.2.Performance criterion : A

10.4.EUT Configuration on Test

The configuration of EUT are listed in Section 3.2

10.5.Operating Condition of EUT

Setup the EUT as shown in Section 10.1.. The operating condition of EUT are listed in section 3.3.

10.6.Test Procedure

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. The testing distance from antenna to the EUT was 3 meters. The other condition as following manner:
a. The frequency range is swept from 80MHz to 1GHz, 1.4GHz to 6GHz 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.
b. Sweep Frequency 900 MHz, with the Duty Cycle: 1/8 and Modulation: Pulse 217 Hz (if applicable)
c. The dwell time at each frequency shall be not less than the time necessary for the EUT to be able to respond.
d. The test was performed with the EUT exposed to both vertically and horizontally polarized fields on each of the four sides.

10.7.Test Results

PASS.

RF Field Strength Susceptibility Test Results

Xihua International Testing & Certification (Shenzhen) Co., Ltd..

Applicant:	*Milky Way Transformer Co.,Ltd.*	*Test Date:*	*Jul. 13, 2026*
EUT:	*Three Phases Oil-immersed Transformer*	*Temperature:*	*25 ℃*
M/N:	*S11-10000/69*	*Humidity:*	*61 %*
Power Supply:	*AC 13.2KV, 60Hz*	*Test Mode:*	*ON*

Frequency Range :80MHz to 1GHz, 1.4GHz to 6GHz

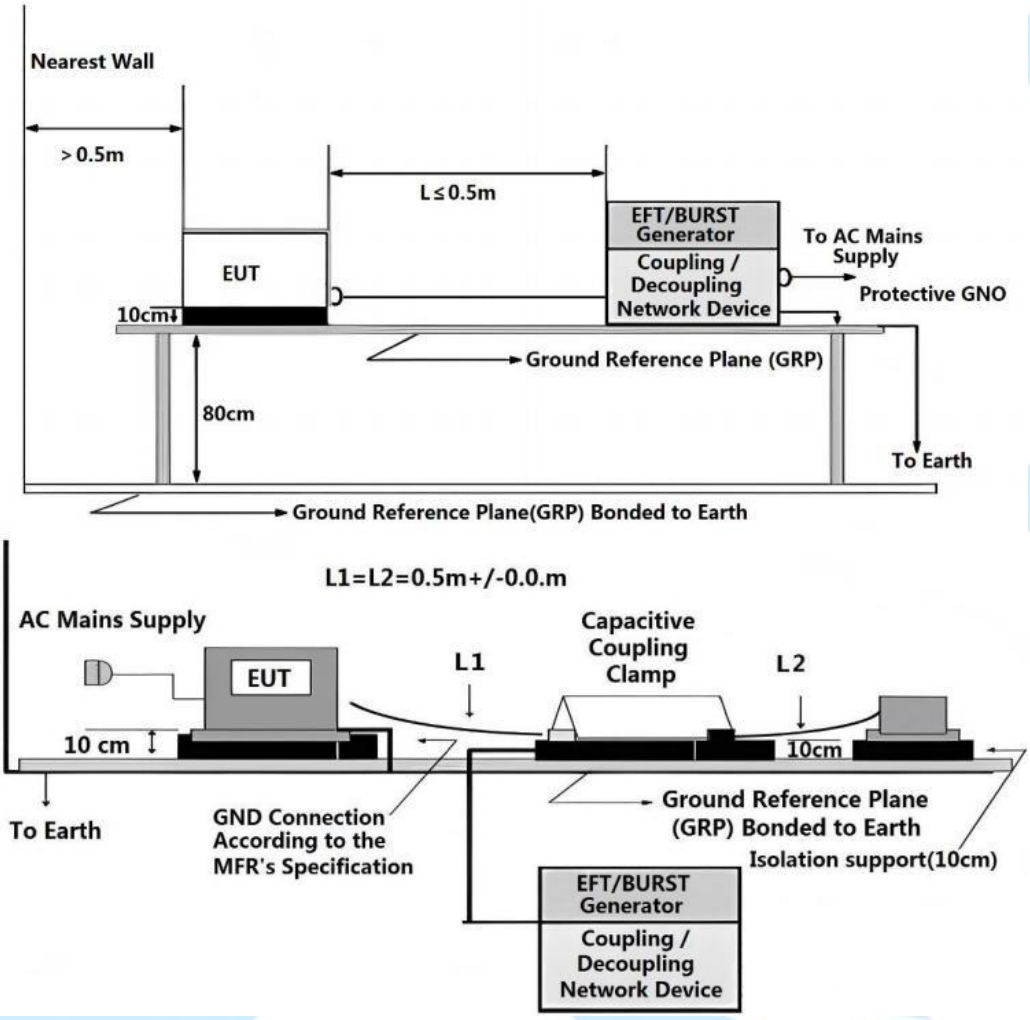
Modulation: ☑ *3 V/m(r.m.s)* ☑ *10 V/m(r.m.s)* ☑ *AM* ☑ *1kHz Sine Wave,* ☑ *80%* ☐ *Pulse* ☐*none*

Criterion : A

Frequency Range	*Level (V/m)*	*Steps*	*1%*	*1%*
			Horizontal	*Vertical*
80 MHz to 1000 MHz	*10*	*Front*	*Pass*	*Pass*
80 MHz to 1000 MHz	*10*	*Right*	*Pass*	*Pass*
80 MHz to 1000 MHz	*10*	*Left*	*Pass*	*Pass*
80 MHz to 1000 MHz	*10*	*Back*	*Pass*	*Pass*
80 MHz to 1000 MHz	*10*	*Top*	*Pass*	*Pass*
80 MHz to 1000 MHz	*10*	*Underside*	*Pass*	*Pass*
1.4GHz to 6GHz	*3*	*Front*	*Pass*	*Pass*
1.4GHz to 6GHz	*3*	*Right*	*Pass*	*Pass*
1.4GHz to 6GHz	*3*	*Left*	*Pass*	*Pass*
1.4GHz to 6GHz	*3*	*Back*	*Pass*	*Pass*
1.4GHz to 6GHz	*3*	*Top*	*Pass*	*Pass*
1.4GHz to 6GHz	*3*	*Underside*	*Pass*	*Pass*

11. ELECTRICAL FAST TRANSIENT/BURST TEST

11.1. EFT Test Setup



Note:
TABLE-TOP EQUIPMENT
The configuration consisted of a wooden table (0.8m high) standing on the Ground Reference Plane. The GRP consisted of a sheet of aluminum (at least 0.25mm thick and 2.5m square) connected to the protective grounding system. A minimum distance of 0.5m was provided between the EUT and the walls of the laboratory or any other metallic structure.
FLOOR-STANDING EQUIPMENT
The EUT installed in a representative system as described in section 7 of IEC/EN 61000-4-4 and its cables, were isolated from the Ground Reference Plane by an insulating support that is 0.1-meter thick. The GRP consisted of a sheet of aluminum (at least 0.25mm thick and 2.5m square) connected to the protective grounding system.

11.2.Test Standard

EN IEC 61000-6-2:2019 (EN 61000-4-4:2012)
Severity Level 2 at 1KV

11.3.Severity Levels and Performance Criterion

11.3.1.Severity level

Open Circuit Output Test Voltage ±10%		
Level	On Power Supply Lines	On I/O (Input/Output) Signal data and control lines
1.	0.5 KV	0.25 KV
2.	1 KV	0.5 KV
3.	2 KV	1 KV
4.	4 KV	2 KV
X	Special	Special

11.3.2.Performance criterion : B

11.4.EUT Configuration on Test

The configuration of EUT are listed in Section 3.2..

11.5.Operating Condition of EUT

Setup the EUT as shown in Section 11.1.. The operating condition of EUT are listed in section 3.3

11.6.Test Procedure

The EUT and its simulators were placed on a 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. The other condition as following manner:
a. The length of power cord between the coupling device and the EUT should not exceed 0.5 meter.
b. Both positive and negative polarity discharges were applied.
c. The duration time of each test sequential was 2 minutes.
Repetition Frequency: 5kHz or 100kHz Burst Period: 300ms
Test Duration: 2 minute per level & polarity

11.7.Test Results

PASS.

Electrical Fast Transient/Burst Test Results

Xihua International Testing & Certification (Shenzhen) Co., Ltd..

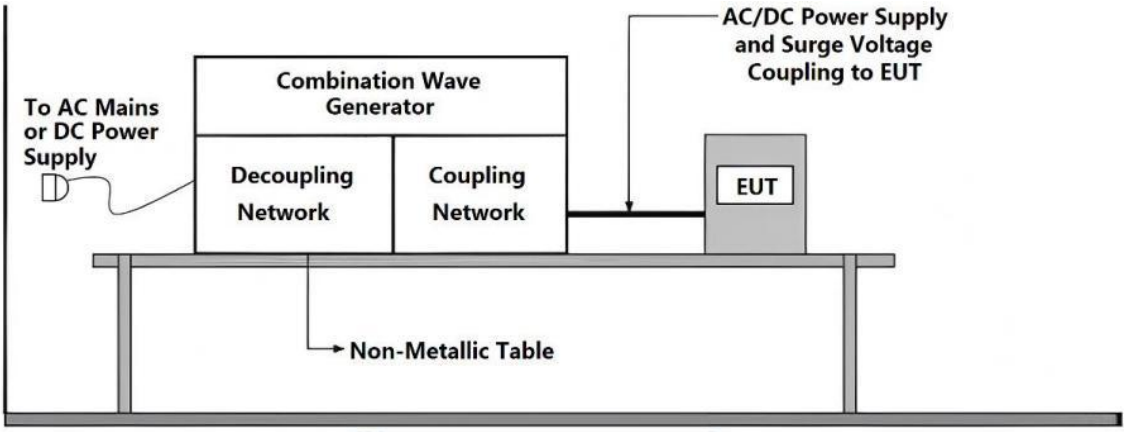
Applicant :	Milky Way Transformer Co.,Ltd.	Test Date :	Jul. 13, 2026
EUT :	Three Phases Oil-immersed Transformer	Temperature :	22 ℃
M/N :	S11-10000/69	Humidity :	50 %
Power Supply :	AC 13.2KV, 60Hz	Test Mode :	-
Inject Place : AC Mains			

Inject Line	Level (kV)	Polarity	Observations	Repetition Frequency	CDN/Clamp	Results
L1	2	+	A	5kHz	Clamp	PASS
L2	2	+	A	5kHz	Clamp	PASS
L3	2	+	A	5kHz	Clamp	PASS
N	2	+	A	5kHz	Clamp	PASS
L1-L2	2	+	A	5kHz	Clamp	PASS
L1-L3	2	+	A	5kHz	Clamp	PASS
L1-N	2	+	A	5kHz	Clamp	PASS
L2-L3	2	+	A	5kHz	Clamp	PASS
L2-N	2	+	A	5kHz	Clamp	PASS
L3-N	2	+	A	5kHz	Clamp	PASS
L1-PE	2	+	A	5kHz	Clamp	PASS
L2-PE	2	+	A	5kHz	Clamp	PASS
L3-PE	2	+	A	5kHz	Clamp	PASS
N-PE	2	+	A	5kHz	Clamp	PASS
DC port	2	-	A	5kHz	Clamp	/
Signal port	1	+	A	--	Clamp	/
Signal port	1	-	A	--	Clamp	/

Note: '' Applicable only to cables which according to the manufacturer's specification supports communication*
on cable lengths greater than 3 m.
A: No degradation in the performance of the EUT was observed

12.SURGE TEST

12.1.Surge Test Setup



12.2.Test Standard

EN IEC 61000-6-2:2019 (EN 61000-4-5:2014+A1:2017)
Severity Level 2 for Line to Neutral at 1.0KV

12.3.Severity Levels and Performance Criterion

12.3.1.Severity level

Severity Level	Open-Circuit Test Voltage KV
1	0.5
2	1.0
3	2.0
4	4.0
*	Special

Performance criterion **: B**

12.4.EUT Configuration on Test

The configuration of EUT are listed in Section 3.2.

12.5.Operating Condition of EUT

12.5.1.Setup the EUT as shown in Section 12.1..

12.5.2.Turn on the power of all equipments.

12.5.3.Let the EUT work in test mode (on) and test it.

12.6.Test Procedure

1) Set up the EUT and test generator as shown on Section 12.1
2) 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.
3) At least 5 positive and 5 negative (polarity) tests with a maximum 1/min repetition rate are conducted during test.
4) Different phase angles are done individually.
5) Record the EUT operating situation during compliance test and decide the EUT immunity criterion for above each test.
6) For EUT power supply: 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. The power cord between the EUT and the coupling / decoupling networks shall be 2meters in length (or shorter).
7) b. For test applied to unshielded asymmetrically operated interconnection lines of EUT: The surge is applied to the lines via the capacitive coupling. The coupling / decoupling networks shall not influence the specified functional conditions of the EUT. The interconnection line between the EUT and the coupling/decoupling networks shall be 2 meters in length (or shorter).
8) c. For test applied to unshielded symmetrically operated interconnection / telecommunication lines of EUT: The surge is applied to the lines via gas arrestors coupling. Test levels below the ignition point of the coupling arrestor cannot be specified. The interconnection line between the EUT and the coupling / decoupling networks shall be 2 meters in length (or shorter).

12.7.Test Results

PASS.

Surge Immunity Test Results

Xihua International Testing & Certification (Shenzhen) Co., Ltd..

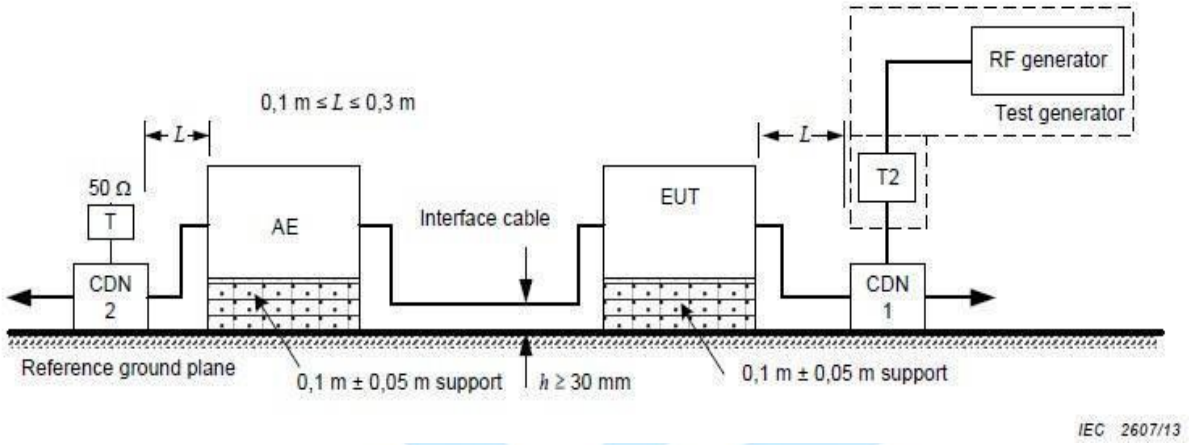
Applicant	: Milky Way Transformer Co.,Ltd.		Test Date	:	Jul. 13, 2026
EUT	: Three Phases Oil-immersed Transformer		Temperature	:	22 ℃
M/N	: S11-10000/69		Humidity	:	50 %
Power Supply	: AC 13.2KV, 60Hz		Test Mode	:	-

Location	Polarity	Phase Angle	No of Pulse	Pulse Voltage (KV)	Performance Criterion	Result
L1/L2/L3-N	+	90	5	1	B	PASS
	-	270	5	1		PASS
L1/L2/L3-PE	+	90	5	2		PASS
	-	270	5	2		PASS
N-PE	-	90	5	2		PASS
	+	270	5	2		PASS
DC Line*	-	90	5	0.5		/
	+	270	5	0.5		/
Signal Line*	-	90	5	0.5		/
	+	270	5	0.5		/
Control ports*	-	90	5	0.5		/
	+	270	5	0.5		/

Note: '*' Applicable only to cables which according to the manufacturer's specification supports communication on cable lengths greater than 3 m.

13.INJECTED CURRENTS SUSCEPTIBILITY TEST

13.1.Block Diagram of Test AC Mains Setup



Note:
FLOOR-STANDING EQUIPMENT
The equipment to be tested is placed on an insulating support of 0.1 meters height above a ground reference plane. All relevant cables shall be provided with the appropriate coupling and decoupling devices at a distance between 0.1 meters and 0.3 meters from the projected geometry of the EUT on the ground reference plane.

13.2.Test Standard

EN IEC 61000-6-2:2019 (EN 61000-4-6:2023)
Severity Level 2 at 3 V (rms), 0.15MHz ~ 80MHz

13.3.Severity Levels and Performance Criterion

13.3.1.Severity level

Level	Field Strength V/m
1.	1
2.	3
3.	10
X	Special

13.3.2.Performance criterion: A

13.4.EUT Configuration on Test

The configuration of EUT are listed in Section 3.2

13.5.Operating Condition of EUT

Setup the EUT as shown in Section 13.1.. The operating condition of EUT are listed in section 3.3

13.6.Test Procedure

1) Set up the EUT, CDN and test generators as shown on Section 13.1.
2) Let the EUT work in test mode and test it.
3) The EUT are placed on an insulating support 0.8m 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).
4) The disturbance signal described below is injected to EUT through CDN.
5) The EUT operates within its operational mode(s) under intended climatic conditions after power on.
6) The frequency range is swept from 150KHz to 80MHz using 3V signal level, and with the disturbance signal 80% amplitude modulated with a 1KHz sine wave.
7) The rate of sweep shall not exceed $1.5*10^{-3}$decades/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.
8) Recording the EUT operating situation during compliance testing and decide the EUT immunity criterion.

13.7.Test Results

PASS.

Injected Currents Susceptibility Test Results

Xihua International Testing & Certification (Shenzhen) Co., Ltd..

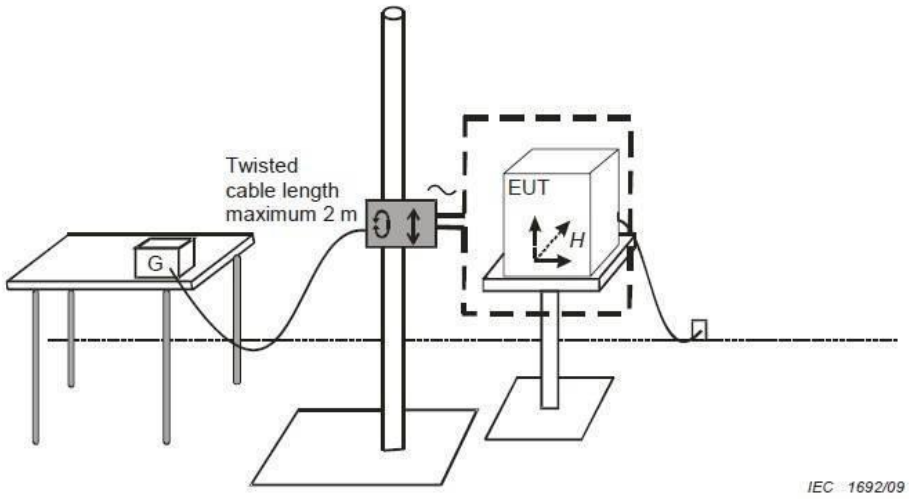
Applicant :	Milky Way Transformer Co.,Ltd.	Test Date :	Jul. 13, 2026
EUT :	Three Phases Oil-immersed Transformer	Temperature :	22℃
M/N :	S11-10000/69	Humidity :	50%
Power Supply :	AC 13.2KV, 60Hz	Test Mode :	--

Frequency Range(MHz)	Injected Position	Strength	Modulation Signal	Freq. Step	Performance Criterion	Result
150KHz～80MHz	AC Line	10V(rms), Unmodulated	AM 80%, 1kHz sine wave	1%	A	PASS
150KHz～80MHz	DC Line	10V(rms), Unmodulated	AM 80%, 1kHz sine wave	1%	A	/
150KHz～80MHz	Signal Line*	10V(rms), Unmodulated	AM 80%, 1kHz sine wave	1%	A	/
150KHz～80MHz	Control Line*	10V(rms), Unmodulated	AM 80%, 1kHz sine wave	1%	A	/

NOTE: Only applicable to ports interfacing with cables whose total length, according to the manufacturer's specification, may exceed 3 m.

14.MAGNETIC FIELD IMMUNITY TEST

14.1.Block Diagram of Test Setup



Note:
TABLE-TOP EQUIPMENT
The equipment shall be subjected to the test magnetic field by using the induction coil of standard dimension (1 m x 1 m). The induction coil shall then be rotated by 90 degrees in order to expose the EUT to the test field with different orientations.
FLOOR-STANDING EQUIPMENT
The equipment shall be subjected to the test magnetic field by using induction coils of suitable dimensions. The test shall be repeated by moving and shifting the induction coils, in order to test the whole volume of the EUT for each orthogonal direction. The test shall be repeated with the coil shifted to different positions along the side of the EUT, in steps corresponding to 50 % of the shortest side of the coil. The induction coil shall then be rotated by 90 degrees in order to expose the EUT to the test field with different orientations.

14.2.Test Standard

EN IEC 61000-6-2:2019 (EN IEC 61000-4-11:2020)
Severity Level 2 at 3A/m Class C

14.3.Severity Levels and Performance Criterion

14.3.1.Severity level

Level	Magnetic Field Strength A/m
1	1
2	3
3	10
4	30

5	100
X.	Special

14.3.2.Performance criterion : A

14.4.EUT Configuration on Test

The configuration of EUT are listed in Section 3.2.

14.5.Operating Condition of EUT

14.5.1.Setup the EUT as shown in Section 14.1

14.5.2.Turn on the power of all equipments.

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

14.6.Test Procedure

The EUT and support equipment, are placed on a table that is 0.8 meter above a metal ground plane measured 1m*1m min. and 0.65mm thick min. The other condition as following manner:

a. The equipment cabinets shall be connected to the safety earth directly on the GRP via the earth terminal of the EUT.

b. The cables supplied or recommended by the equipment manufacturer shall be used. 1 meter of all cables used shall be exposed to the magnetic field.

14.7.Test Results

PASS.

Please refer to the following page.

Magnetic Field Immunity Test Results

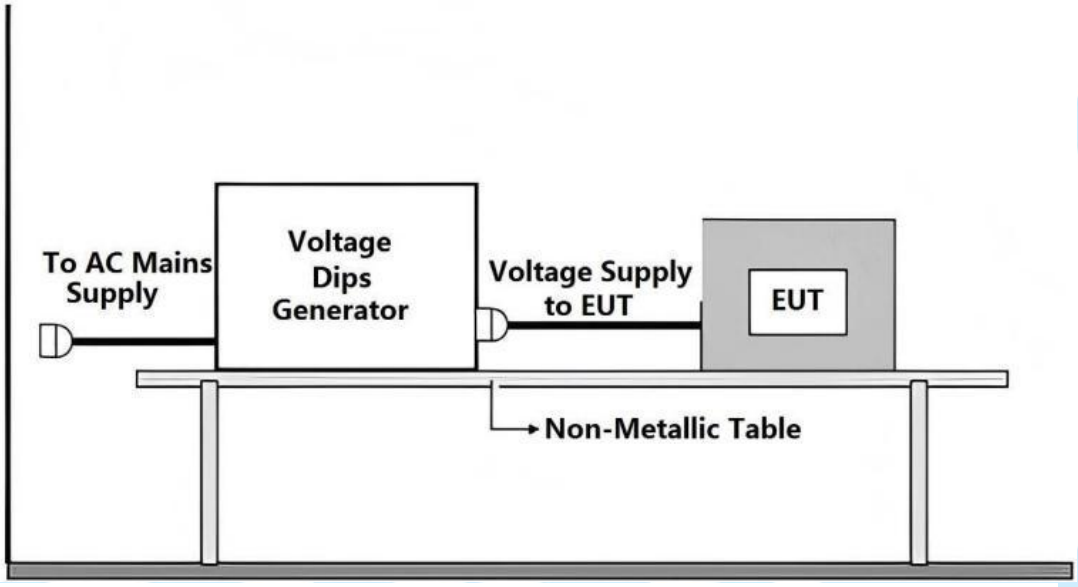
Xihua International Testing & Certification (Shenzhen) Co., Ltd..

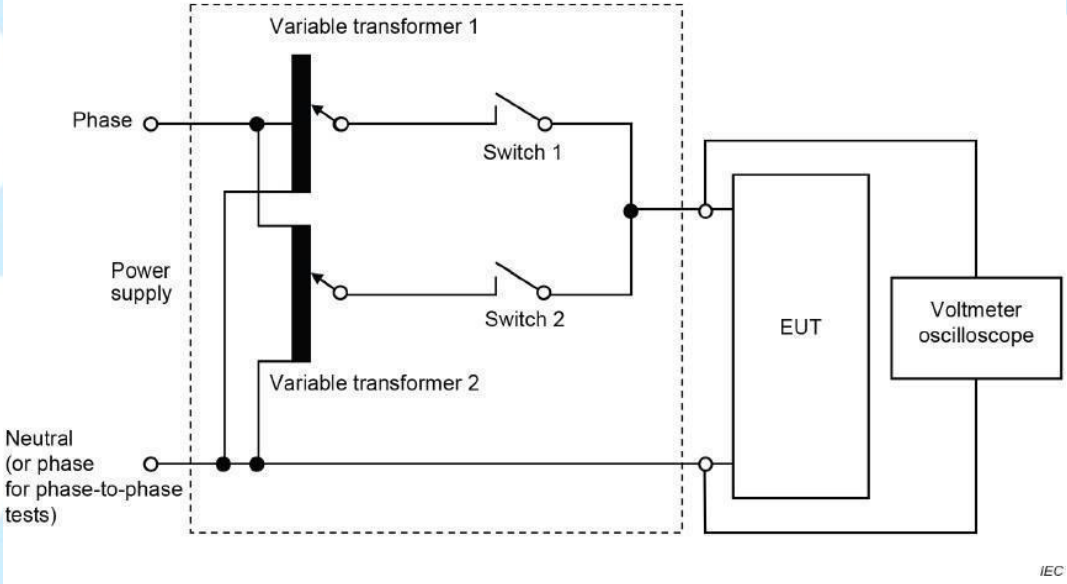
Applicant :	*Milky Way Transformer Co.,Ltd.*	*Test Date :*	*Jul. 13, 2026*
EUT :	*Three Phases Oil-immersed Transformer*	*Temperature :*	*22℃*
M/N :	*S11-10000/69*	*Humidity :*	*50%*
Power Supply :	*AC 13.2KV, 60Hz*	*Test Mode :*	*-*

Test Level % U_T	*Voltage Dips & Short Interruptions % U_T*	*Duration (in period)*	*Phase Angle*	*Criterion*	*Result*
30 A/m	*60 Hz*	*X*	*Continue*	*A*	*PASS*
30 A/m	*60 Hz*	*Y*	*Continue*	*A*	*PASS*
30 A/m	*60 Hz*	*Z*	*Continue*	*A*	*PASS*

15.VOLTAGE DIPS AND INTERRUPTIONS TEST

15.1 Voltage Dips and Interruptions Test Setup





15.2.Test Standard

EN IEC 61000-6-2:2019 (EN IEC 61000-4-11:2020)
Class B & C & C

15.3.Severity Levels and Performance Criterion

15.3.1 Severity level

Environmental Phenomena	Test Specification	Units	Performance Criterion
Voltage Dips	100	% Reduction period	B
	30	% Reduction period	C
Voltage Interruptions	100	% Reduction period	C

15.3.2 Performance criterion : C & B

15.4 EUT Configuration on Test

The configuration of EUT are listed in Section 3.2.

15.5 Operating Condition of EUT

15.5.1 Setup the EUT as shown in Section 14.1.

15.5.2 Turn on the power of all equipments.

15.5.3 Let the EUT work in test mode (On) and test it.

15.6 Test Procedure

1) Set up the EUT and test generator as shown on Section 15.1.
2) The interruptions is introduced at selected phase angles with specified duration.
3) Record any degradation of performance.
4) The EUT shall be tested for each selected combination of test levels and duration with a
5) sequence of three dips/interruptions with intervals of 10 s minimum (between each test event).
6) Each representative mode of operation shall be tested. Abrupt changes in supply voltage shall
7) occur at zero crossings of the voltage waveform.

15.7 Test Result

PASS.

Voltage Dips And Interruptions Test Results

Xihua International Testing & Certification (Shenzhen) Co., Ltd..

Applicant :	Milky Way Transformer Co.,Ltd.	Test Date :	Jul. 13, 2026
EUT :	Three Phases Oil-immersed Transformer	Temperature :	22℃
M/N :	S11-10000/69	Humidity :	50%
Power Supply :	AC 13.2KV, 60Hz	Test Mode :	-

Phase Angle:0°/45°/90°/135°/180°/225°/270°/315°/360°

Test Mode: HDMI(1/2) / DP(1/2)

Interruption &Dips	Duration(T)	Criterion	Result	Judgment
Voltage dips 100%	0.5	B	PASS	Complies
Voltage dips 30%	25	C	PASS	Complies
Voltage Interruption 100%	250	C	PASS	Complies

Note:

(1) In the table: 'P' represents 'PASS'; 'F' represents 'FAIL'.

(2) Criteria A: There was no change operated with initial operating during the test.

(3) Criteria B: The EUT function loss during the test, but self-recoverable after the test.

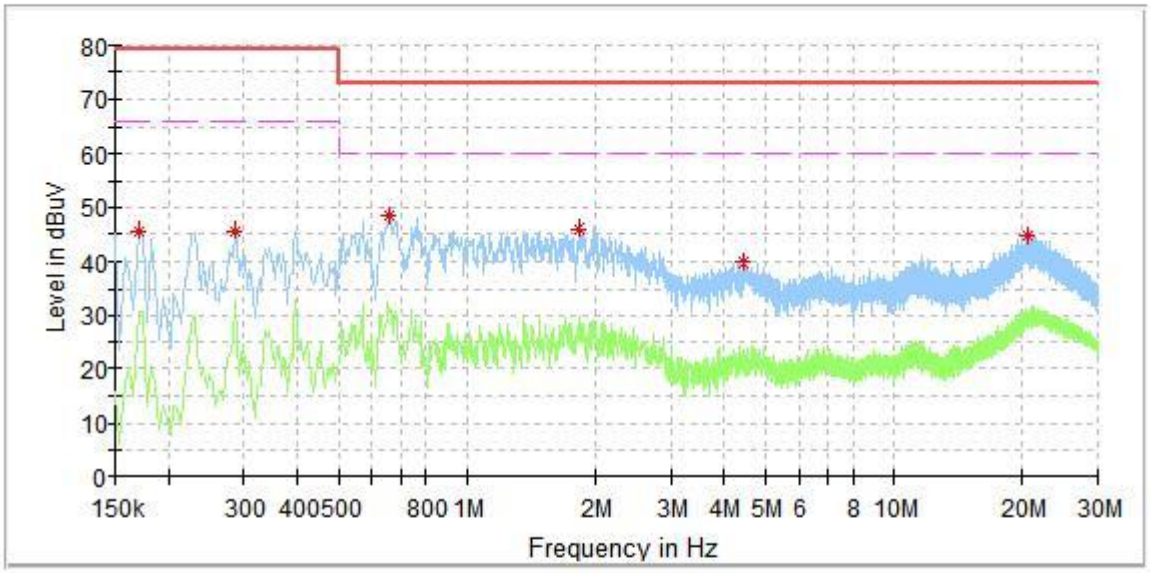
(4) Criteria C: The system shut down during the test.

(5) Under normal operation of the product, there may be a phenomenon of power outage and restart.

APPENDIX I

L1

EN 61000-6-4 Conducted Emission Test

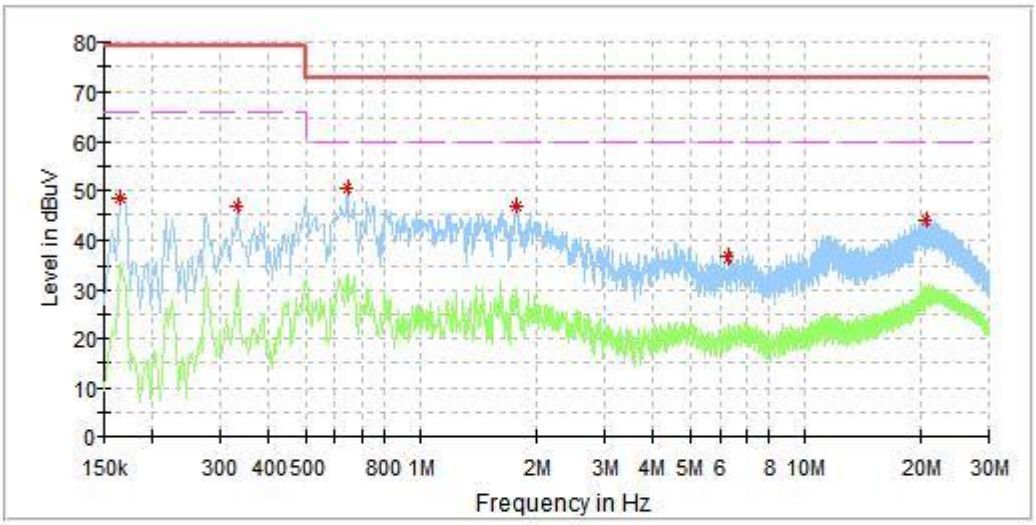


Critical_Freqs

Frequency (MHz)	MaxPeak (dBuV)	Average (dBuV)	Limit (dBuV)	Margin (dB)	Line	Corr. (dB)
0.170000	45.69	---	79.00	33.31	L1	9.64
0.286000	45.45	---	79.00	33.55	L1	9.64
0.658000	48.51	---	73.00	24.49	L1	9.65
1.838000	46.13	---	73.00	26.87	L1	9.68
4.446000	39.72	---	73.00	33.28	L1	9.75
20.482000	44.77	---	73.00	28.23	L1	10.03

L2

EN 61000-6-4 Conducted Emission Test

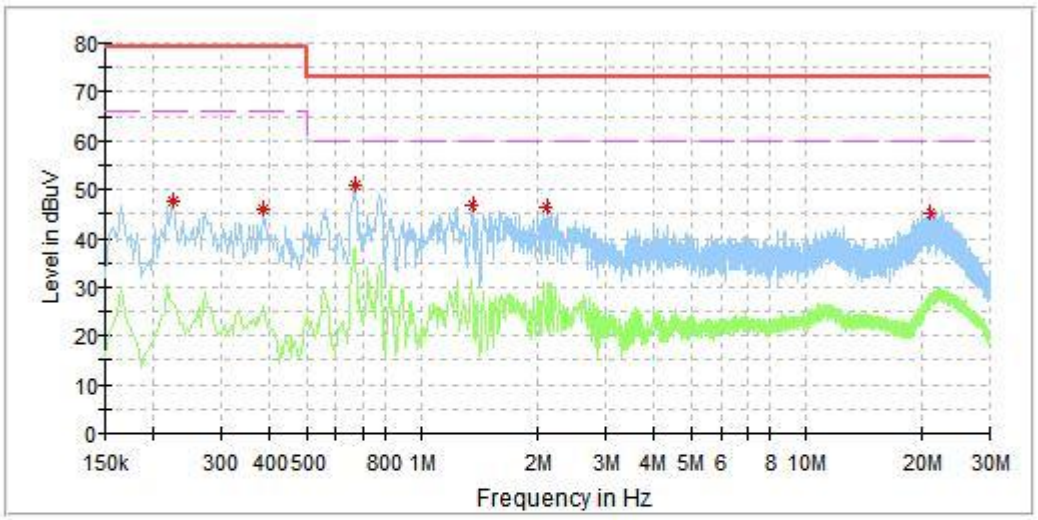


Critical_Freqs

Frequency (MHz)	MaxPeak (dBuV)	Average (dBuV)	Limit (dBuV)	Margin (dB)	Line	Corr. (dB)
0.166000	48.28	---	79.00	30.72	L2	9.64
0.334000	46.90	---	79.00	32.10	L2	9.64
0.642000	50.37	---	73.00	22.63	L2	9.65
1.766000	46.58	---	73.00	26.42	L2	9.68
6.306000	36.55	---	73.00	36.45	L2	9.81
20.538000	44.08	---	73.00	28.92	L2	10.03

L3

EN 61000-6-4 Conducted Emission Test

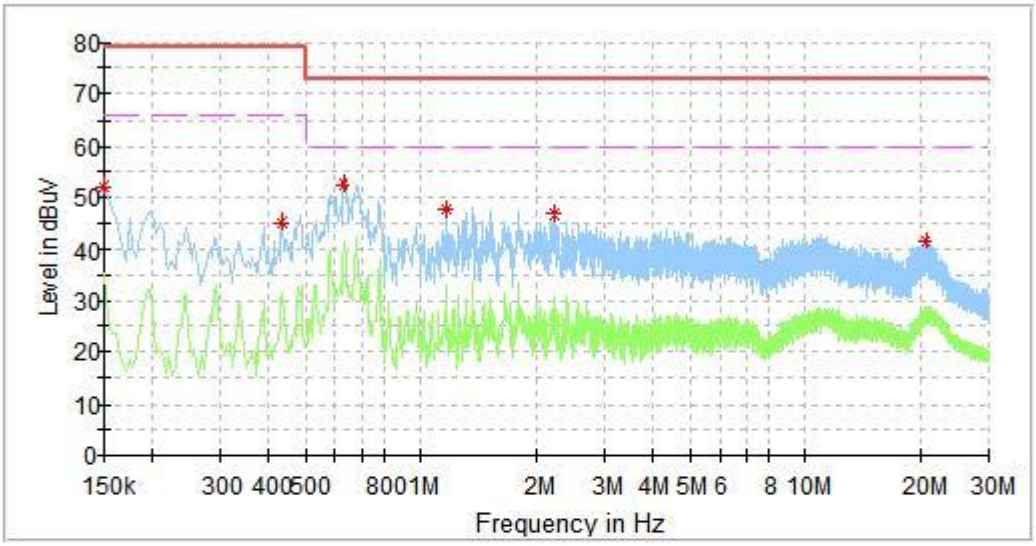


Critical_Freqs

Frequency (MHz)	MaxPeak (dBuV)	Average (dBuV)	Limit (dBuV)	Margin (dB)	Line	Corr. (dB)
0.226000	47.73	---	79.00	31.27	L3	9.64
0.386000	46.10	---	79.00	32.90	L3	9.64
0.674000	51.02	---	73.00	21.98	L3	9.65
1.350000	46.84	---	73.00	26.16	L3	9.67
2.118000	46.51	---	73.00	26.49	L3	9.69
20.990000	45.04	---	73.00	27.96	L3	10.04

N

EN 61000-6-4 Conducted Emission Test



Critical_Freqs

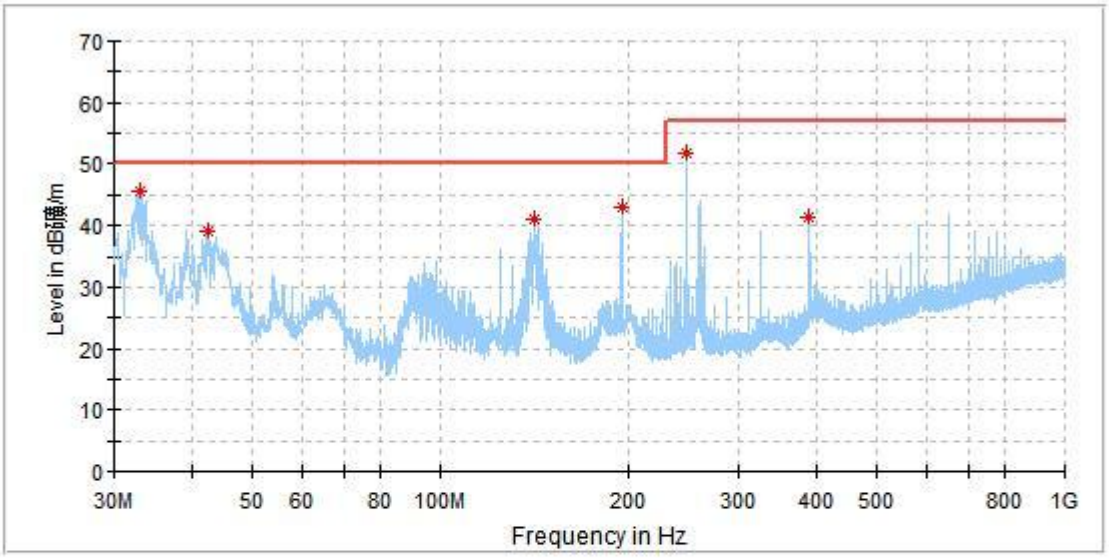
Frequency (MHz)	MaxPeak (dBuV)	Average (dBuV)	Limit (dBuV)	Margin (dB)	Line	Corr. (dB)
0.150000	52.31	---	79.00	26.69	N	9.61
0.438000	44.94	---	79.00	34.06	N	9.64
0.630000	52.54	---	73.00	20.46	N	9.65
1.166000	47.78	---	73.00	25.22	N	9.65
2.226000	46.66	---	73.00	26.34	N	9.68
20.634000	41.38	---	73.00	31.62	N	10.05

APPENDIX II

Below 30MHz to 1000MHz

Polarity: Horizontal

EN 61000-6-4 Radiated Emission Test

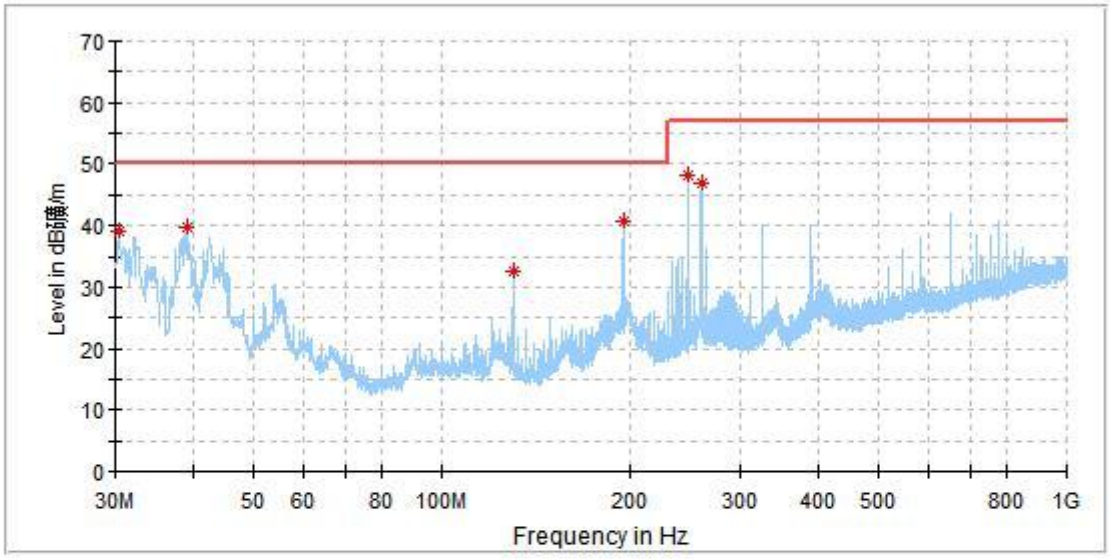


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
33.091875	45.67	50.00	4.33	100.0	H	9.0	17.23
42.306875	39.16	50.00	10.84	100.0	H	9.0	20.45
141.186250	41.14	50.00	8.86	100.0	H	0.0	15.43
195.021250	42.96	50.00	7.04	100.0	H	193.0	19.14
247.522500	51.90	57.00	5.10	200.0	H	0.0	20.45
390.051875	41.41	57.00	15.59	100.0	H	216.0	24.09

Polarity: Vertical

EN 61000-6-4 Radiated Emission Test



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
30.424375	38.93	50.00	11.07	100.0	V	0.0	16.93
39.215000	39.66	50.00	10.34	100.0	V	0.0	19.52
129.970625	32.55	50.00	17.45	100.0	V	0.0	16.08
195.021250	40.77	50.00	9.23	100.0	V	269.0	19.14
247.522500	48.05	57.00	8.96	200.0	V	218.0	20.45
260.011250	46.74	57.00	10.26	200.0	V	11.0	20.80

APPENDIX III



Photo 1 General Appearance of the EUT



Photo 2 General Appearance of the EUT



Photo 3 General Appearance of the EUT



Photo 4 General Appearance of the EUT



Photo 5 General Appearance of the EUT



Photo 6 General Appearance of the EUT



Photo 7 General Appearance of the EUT

---- End of report ----