

VERIFICATION OF COMPLIANCE

Verification No.: SHEM230700465201BAC
Applicant: Ningbo AUX Solar Technology Co.,Ltd.
Address of Applicant: No. 17 Fenglin Road, Cicheng Town, Jiangbei District, Ningbo City,
Zhejiang Province, China
Product Description: Energy Storage Battery System
Model No.: ABL-T05H-H01, ABL-T10H-H01, ABL-T15H-H01, ABL-T20H-H01
Sufficient samples of the product have been tested and found to be in conformity with
Test Standards: EN IEC 61000-6-1: 2019
EN IEC 61000-6-2: 2019
EN IEC 61000-6-3: 2021
EN IEC 61000-6-4: 2019
As shown in the
Test Report Number(s): SHEM230700465201

This verification of EMC Compliance has been granted to the applicant based on the results of the tests, performed by laboratory of SGS-CSTC Standards Technical Services Co., Ltd. on the sample of the above-mentioned product in accordance with the provisions of the relevant specific standards under Directive 2014/30/EU. The CE mark as shown below can be used, under the responsibility of the manufacturer, after completion of an EU Declaration of Conformity and compliance with all relevant EU Directives.

Parlam Zhan

Parlam Zhan
Laboratory Manager



Date: 2023-07-25

Copyright of this verification is owned by SGS-CSTC Standards Technical Services Co., Ltd. and may not be reproduced other than in full and with the prior approval of the General Manager. This verification is subjected to the governance of the General Conditions of Services which can be accessed at <https://www.sgs.com/en/terms-and-conditions>



中国认可
国际互认
检测
TESTING
CNAS L0095

Page 1 of 5 Pages

No.: RZUN2023-1781-M1

检测报告

TEST REPORT

UN38.3

NAME OF SAMPLE:

Energy Storage Battery System

产品名称:

储能电池系统

CLIENT:

Ningbo AUX Solar Technology Co., Ltd.

委托单位:

宁波奥克斯甬能科技有限公司

CLASSIFICATION OF TEST:

Commission Test

检测类别:

委托测试

威凯检测技术有限公司
CVC Testing Technology Co., Ltd.

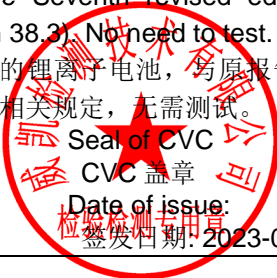
检验检测专用章

检测报告

TEST REPORT

No.: RZUN2023-1781-M1

Page 2 of 5 Pages

Name of samples: Energy Storage Battery System 样品名称: 储能电池系统	Type/Model: 型号规格: ABL-P05H-H01 102,4V 52Ah 5,3kWh
Color : White 样品颜色: 白色	Physical shape: Prismatic 样品形状: 棱柱形
Commissioned by: Ningbo AUX Solar Technology Co., Ltd. 委托单位: 宁波奥克斯甬能科技有限公司	Commissioner address: No. 17 Fenglin Road, Cicheng Town, Jiangbei District, Ningbo City, Zhejiang Province, China 委托单位地址: 浙江省宁波市江北区慈城镇枫林路 17 号
Manufacturer: Zhejiang LeapEnergy Technology Co. Ltd 制造商: 浙江凌骜能源科技有限公司	Manufacturer address: Room 220-116, Comprehensive Office Building, 222 Luyin Road, Qianjin Street, Qiantang District, Hangzhou City, Zhejiang Province, China 制造商地址: 浙江省杭州市钱塘区前进街道绿荫路 222 号综合办公楼 220-116 室
Factory: Zhejiang LeapEnergy Technology Co. Ltd 生产厂: 浙江凌骜能源科技有限公司	Factory address: No.888 Xinrong Road, Sumeng Town, Wucheng District, Jinhua City, Zhejiang Province, China 生产厂地址: 浙江省金华市婺城区苏孟乡新荣路 888 号
Classification of test: Commission Test 检测类别: 委托测试	Quantity of sample: 1 battery pack 样品数量: 1 个电池组
Tested according to: 测试标准: ST/SG/AC.10/11/Rev.7/Amend.1/Section 38.3	Sample identification: 样品标识序号: 1#
Receiving date: 接样日期: 2023-07-10	Means of receiving: Submitted by commissioner 接样方式: 委托单位送样
Completing date: 完成日期: 2023-07-20	Test item: - 测试项目: -
Test conclusion: 检测结论: <p>The Energy Storage Battery System is submitted by Ningbo AUX Solar Technology Co., Ltd. The sample's differences between this report and original report RZUN2023-1781 are comply with the requirements of the Section 38.3 of the Seventh revised edition of the Manual of Tests and Criteria (ST/SG/AC.10/11/Rev.7/Amend.1/Section 38.3). No need to test.</p> <p>由宁波奥克斯甬能科技有限公司送检的锂离子电池, 与原报告 RZUN2023-1781 的样品差异符合联合国《试验和标准手册》第七修订版第 38.3 节相关规定, 无需测试。</p> <p style="text-align: center;"> Seal of CVC CVC 盖章</p> <p style="text-align: center;">Date of issue: 签发日期: 2023-07-20</p>	

Title: Manager
批准人职务: 经理

Approved by: Huang Kun Reviewed by: Zhang Siyao Tested by: Liu Zhen

批 准:  审 核:  检 测: 

Description and illustration of the sample:

样品说明及描述:

The sample's status is good

样品状况良好。

Watt-hour rating of each battery/ 单个电池组的瓦时率: 5,3kWh**Description of the sampling procedure:**

取样程序的说明:

/

Description of the deviation from the standard, if any:

试验结果不符合标准项的说明:

/

Remarks:

备注:

Throughout this report a comma is used as the decimal separator.

本报告中以逗号代替小数点。

The Batteries have not equipped with overcharge protection. According to commissioner, the batteries are designed for use only in another battery, Which affords such protection, According to the UN38.3 standard, the sample is not subject to the requirements of overcharge.

该电池未安装过度充电保护装置, 根据委托方声明, 该样品仅设计用于另一个电池中, 另一个电池上带有过度充电保护装置, 根据 UN38.3 要求, 无需做过度充电试验。

The model, client and nameplate of the product are changed in this report, the modified items did not change the key materials, design and production process of the sample of original report, the production factory entity has no change.

本报告中变更了产品的型号、铭牌和委托单位, 该变更未改变原报告中样品的关键材料, 产品设计和生产工艺, 生产厂也未改变。

This report needs to be used with the original report.

本报告需和原报告一起使用。

茂木



金测专

Photos of Samples and Labels/样品照片及标识

Battery/电池 (ABL-P05H-H01 102,4V 52Ah 5,3kWh)



AUXSOL

Model	ABL-P05H-H01
Cell Type	LiFePO4
Rated Energy	5.3kWh
Rated Capacity	52Ah
Rated Voltage	102.4V
Voltage Range	86.4~115.2V
Max. Charge&Discharge Current	35A
Max Output Power	3kW
Working Temperature Range	-20~50°C

SN:

--	--

IFpP/29/149/120/[1P32S]E/-20+50/95



Li-ion



Room 220-116, Comprehensive Office Building, 222 Luyin Road, Qianjin Street, Qiantang District, Hangzhou City, Zhejiang Province, China



注 意 事 项 Important

1. 报告无检测单位印章无效。
The test report is invalid without the seal of CVC.
2. 未经本试验室书面同意，不得部分地复制本报告。
Nobody is allowed to photocopy or partly photocopy this test report without written permission of CVC.
3. 本报告无批准人、审核人及检测人签名无效。
The test report is invalid without the signatures of Ratifier, Reviewer and Testing engineer.
4. 本报告涂改无效。
The test report is invalid if altered,
5. 对检测报告若有异议，应于收到报告之日起十五天内向检测单位提出。
Objections to the test report must be submitted to CVC within 15 days.
6. 本报告仅对送检样品负责。
The test report is valid for the tested samples only.
7. 判定栏中“-”表示“不需要判定”，“P”表示“通过”，“F”表示“不通过”，“N/A”表示“不适用”。
As for the Verdict, “-” means “no need for judgement”, “P” means “pass”, “F” means “fail” and “N/A” means “not applicable”.

***报告中未加 CMA 标志时，检测数据和结果仅供科研、教学或内部质量控制之用。**
The test data and test results given in this test report should only be used for purposes of scientific research, teaching and internal quality control when the CMA symbol is not presented.

地 址： 广东省广州市科学城开泰大道天泰一路 3 号

广东省广州市黄埔区光谱东路 179 号百事高智慧园 D 栋（测试地点）

Lab Address: No.3, Tiantai 1st Road, Kaitai Avenue, Science City, Guangzhou, Guangdong, China.

Testing Location: Building D, BASIGO INTELLIGENT, No.179, Guangpu East Road, Huangpu District, Guangzhou, P. R. China.

电 话(Tel): 020 32293888

邮政编码(Post Code): 510663

传 真(FAX): 020 32293889

E-mail: office@cvc.org.cn

<http://www.cvc.org.cn>





Test Report issued under the responsibility of:



TEST REPORT
IEC 62619
Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for secondary lithium cells and batteries, for use in industrial applications

Report Number : SHES230701404001
Date of issue : 2023-07-26
Total number of pages : 23 pages

Name of Testing Laboratory preparing the Report : SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

Applicant's name : Ningbo AUX Solar Technology Co., Ltd.
Address : No.17 Fenglin Road, Cicheng Town, Jiangbei District, Ningbo City, Zhejiang Province, China

Test specification:
Standard : IEC 62619:2022
Test procedure..... : CB Scheme
Non-standard test method..... : N/A

TRF template used : IECEE OD-2020-F1:2022, Ed.1.5
Test Report Form No...... : IEC62619B
Test Report Form(s) Originator.... : UL Solutions (Demko)
Master TRF : Dated 2023-02-24

Copyright © 2023 IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components (IECEE System). All rights reserved.

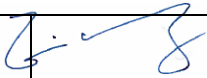

This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

This report is not valid as a CB Test Report unless signed by an approved IECEE Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing NCB. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Test item description :	Rechargeable Lithium-ion Battery Pack	
Trademark(s)	AUXSOL	
Manufacturer	Same as applicant	
Model/Type reference	ABL-T05H-H01, ABL-T10H-H01, ABL-T15H-H01, ABL-T20H-H01	
Ratings	See page 8	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
<input checked="" type="checkbox"/>	CB Testing Laboratory:	SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.
	Testing location/ address :	588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China.
	Tested by (name, function, signature) :	Eric Wang / Project Engineer 
	Approved by (name, function, signature) ... :	Bruce Wu / Report Reviewer 
<input type="checkbox"/>	Testing procedure: CTF Stage 1:	N/A
	Testing location/ address :	
	Tested by (name, function, signature) :	
	Approved by (name, function, signature) ... :	
<input type="checkbox"/>	Testing procedure: CTF Stage 2:	N/A
	Testing location/ address :	
	Tested by (name + signature)	
	Witnessed by (name, function, signature) . :	
	Approved by (name, function, signature) ... :	
<input type="checkbox"/>	Testing procedure: CTF Stage 3:	N/A
<input type="checkbox"/>	Testing procedure: CTF Stage 4:	N/A
	Testing location/ address :	
	Tested by (name, function, signature) :	
	Witnessed by (name, function, signature) . :	
	Approved by (name, function, signature) ... :	
	Supervised by (name, function, signature) :	

<p>List of Attachments (including a total number of pages in each attachment):</p> <p>Attachment 1: 10 pages of Photos; Attachment 2: 1 page of Information for safety; Attachment 3: 1 page of Packaging; Attachment 4: 2 pages of Product specification.</p>	
<p>Summary of testing:</p> <p>The sample(s) tested complies with the requirements of IEC 62619: 2022.</p> <p>Remark:</p> <p>1. Only battery pack was considered and tested according to standard in this report as the cell (model: IFP28148115A-52Ah) was certified according to IEC 62619: 2022 by TÜV SÜD (Certif. No.: SG PSB-BT-03623, CB report No.: 085-282260450-000);</p> <p>2. The functional safety requirement in clause 8 was also evaluated according to Annex H of IEC 60730-1:2016 (SGS Report No. SHFS230300007371).</p> <p>3. Only model ABL-T05H-H01 was full tested as representative model due to all the 4 models of battery pack have the same high-voltage box and basic battery module (model ABL-P05-H01), the only difference is the number of the battery pack, model ABL-T05H-H01, ABL-T10H-H01, ABL-T15H-H01, ABL-T20H-H01 has 1, 2, 3, 4 basic battery modules respectively.</p> <p>After evaluation, the additional test per 7.2.3 Drop test was considered necessary on battery pack model ABL-T10H-H01, ABL-T15H-H01, ABL-T20H-H01.</p>	
<p>Tests performed (name of test, test clause and date test performed):</p> <p><input type="checkbox"/>7.2.1 External short-circuit test (cell or cell block)</p> <p><input type="checkbox"/>7.2.2 Impact test (cell or cell block)</p> <p><input checked="" type="checkbox"/>7.2.3 Drop test (cell or cell block, and battery system)</p> <p><input type="checkbox"/>7.2.4 Thermal abuse test (cell or cell block)</p> <p><input type="checkbox"/>7.2.5 Overcharge test (cell or cell block)</p> <p><input type="checkbox"/>7.2.6 Forced discharge test (cell or cell block)</p> <p><input type="checkbox"/>7.3.2 Internal short-circuit test (cell)</p> <p><input type="checkbox"/>7.3.3 Propagation test (battery system)</p> <p><input checked="" type="checkbox"/>8.2.2 Overcharge control of voltage (battery system)</p> <p><input checked="" type="checkbox"/>8.2.3 Overcharge control of current (battery system)</p> <p><input checked="" type="checkbox"/>8.2.4 Overheating control (battery system)</p>	<p>Testing location:</p> <p>SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. 588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China</p>
<p>Summary of compliance with National Differences (List of countries addressed):</p> <p>EU Group difference</p> <p><input checked="" type="checkbox"/> The product fulfils the requirements of EN IEC 62619:2022.</p>	

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

No decision rule is specified by the IEC standard, when comparing the measurement result with the applicable limit according to the specification in that standard. The decisions on conformity are made without applying the measurement uncertainty ("simple acceptance" decision rule, previously known as "accuracy method").

Other: ... (to be specified, for example when required by the standard or client, or if national accreditation requirements apply)

Information on uncertainty of measurement:

The uncertainties of measurement are calculated by the laboratory based on application of criteria given by OD-5014 for test equipment and application of test methods, decision sheets and operational procedures of IECEE.

IEC Guide 115 provides guidance on the application of measurement uncertainty principles and applying the decision rule when reporting test results within IECEE scheme, noting that the reporting of the measurement uncertainty for measurements is not necessary unless required by the test standard or customer.

Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.

Copy of marking plate:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

Label for Rechargeable Lithium-ion Battery Pack

AUXSOL

ABL-T05H-H01
 ABL-T10H-H01
 ABL-T15H-H01
 ABL-T20H-H01
 Model ABL-BDU-H01

Rated Energy	5.3kwh	10.6kwh	15.9kwh	21.2kwh
Rated Voltage	102.4V	204.8V	307.2V	409.6V
Operating Voltage Range	86.4~115.2V	172.8~230.4V	259.2~345.6V	345.6~460.8V
Battery Designation	IFpP/29/149/120[32S]M-20+50/95	IFpP/29/149/120[64S]M-20+50/95	IFpP/29/149/120[96S]M-20+50/95	IFpP/29/149/120[128S]M-20+50/95
Battery Type	Rechargeable Lithium-ion Battery Pack			
Working Temperature Range	-20~50°C			
Max. Charge&Discharge Current	35A			
Ingress Protection	IP65			

SN: ABL-XXXX-XXX230504XXXX

Ningbo AUX Solar Technology Co., Ltd.
 No. 17 Fenglin Road, Cicheng Town, Jiangbei District, Ningbo City, Zhejiang Province, China

Label for Warning




WARNING

Refer to the user manual before operation
 Risk of fire, explosion, or burns

- 1.High voltage,warning electric shock.
- 2.Keep off the fire,do not immerse in water,use fire extinguisher when fire.
- 3.Beware of corrosion,and repair by professionals.
- 4.Do not touch with conductor,shocking and striking are also forbidden.
- 5.Do not put any heavy objects on top of the system.
- 6.Read the manual before use,no conversion or disassemble.
- 7.Keep out of reach of children.
- 8.For recycling,please contact the battery manufacturers.
- 9.The battery system should not be disposed together with the household waste.

Label for Module

AUXSOL

Model	ABL-P05H-H01	SN: [ABL-XXXX-XXX230504XXXX]
Cell Type	LiFePO4	
Rated Energy	5.3kWh	
Rated Capacity	52Ah	
Rated Voltage	102.4V	
Voltage Range	86.4~115.2V	
Max. Charge&Discharge Current	35A	
Max Output Power	3kW	
Working Temperature Range	-20~50°C	   Li-ion
IFpP/29/149/120[32S]M/-20+50/95		

Ningbo AUX Solar Technology Co., Ltd.
No. 17 Fenglin Road, Cicheng Town, Jiangbei District, Ningbo City, Zhejiang Province, China

Polarity marking on Battery Pack



Remark:

1. The SN number "ABL-XXXX-XXX230504XXXX" includes code for production date "230504".
2. Disposal instructions and recommended charge instructions are included in Battery Pack Specification, see attachment 2 and attachment 4 for details.
3. The polarity was marked near the terminals, see above photo for details.

Test item particulars: --	
Classification of installation and use: --	
Supply Connection: --	
.....:	
Possible test case verdicts:	
- test case does not apply to the test object.....: N/A	
- test object does meet the requirement.....: P (Pass)	
- test object does not meet the requirement.....: F (Fail)	
Testing:	
Date of receipt of test item: 2023-07-05	
Date (s) of performance of tests: 2023-07-05 to 2023-07-20	
General remarks:	
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report.	
Throughout this report a <input checked="" type="checkbox"/> comma / <input type="checkbox"/> point is used as the decimal separator.	
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx . Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.	
Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.	
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC62619B:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies): Ningbo AUX Solar Technology Co., Ltd. No. 888 Xinrong Road, Sumeng Town, Wucheng District, Jinhua City, Zhejiang Province, China	

General product information and other remarks:

Product description:	Rechargeable Lithium-ion Battery Pack			
Model of Battery Pack:	ABL-T05H-H01	ABL-T10H-H01	ABL-T15H-H01	ABL-T20H-H01
Designation of Battery Pack:	IFpP/29/149/120[32S]M/-20+50/95	IFpP/29/149/120[64S]M/-20+50/95	IFpP/29/149/120[96S]M/-20+50/95	IFpP/29/149/120[128S]M/-20+50/95
Nominal voltage of Battery Pack:	102,4 V	204,8 V	307,2 V	409,6 V
Max. charging voltage of Battery Pack:	115,2 V	230,4 V	345,6 V	460,8 V
End of discharge voltage of Battery Pack:	86,4 V	172,8 V	259,2 V	345,6 V
Rated Capacity:	5,3 kWh	10,6 kWh	15,9 kWh	21,2 kWh
Number of cells in battery Pack:	1P32S	1P64S	1P96S	1P128S
Rated capacity of cell of Battery Pack:	52 Ah			
Maximum charge current of Battery Pack:	35 A			
Maximum discharge current of Battery Pack:	35 A			
Charging temperature range of Battery Pack:	0 ~ 50 °C			
Discharge temperature range of Battery Pack:	-20 ~ 50 °C			
Standard charging method of Battery Pack (declared by manufacturer):	Constant charging current 35 A to maximum voltage of above each Battery Pack.			

Model of Module	ABL-P05H-H01
Designation of Module:	IFpP/29/149/120[32S]M/-20+50/95
Nominal voltage of Module:	102,4 V
Max. charging voltage of Module:	115,2 V
End of discharge voltage of Module:	86,4 V
Number of cells in Module:	1P32S
Rated capacity of cell of Module:	52 Ah
Maximum charge current of Module:	35 A
Maximum discharge current of Module:	35 A
Charging temperature range of Module:	0 ~ 50 °C
Discharge temperature range of Module:	-20 ~ 50 °C
Standard charging method of Module (declared by manufacturer):	Constant charging current 35 A to 115,2 V

Model of cell:	IFP28148115A-52Ah
Rated voltage of cell:	3,2 V
Rated capacity of cell:	52 Ah
Maximum charge current of cell:	52 A

Remark: See also Attachment 4 for details.

IEC 62619			
Clause	Requirement + Test	Result - Remark	Verdict
4	PARAMETER MEASUREMENT TOLERANCES		
	Parameter measurement tolerances		P
5	GENERAL SAFETY CONSIDERATIONS		P
5.1	General		P
	Cells and batteries are safe under conditions of both intended use and reasonably foreseeable misuse... :	Clause 6, Clause 7, 8.1, and 8.2. See also table 5.1 for Critical components information	P
	Reduce the risk of injuries from moving parts		P
5.2	Insulation and wiring		P
	Voltage, current, altitude, and humidity requirements		P
	Adequate clearances and creepage distances between connectors and live parts at different voltages or between live parts and non-current-carrying accessible parts		P
	Protect from hazardous live parts, including during installation		P
	The mechanical integrity of internal connections		P
5.3	Venting		P
	Pressure relief function	Cell: A pressure relief mechanism was used to relieve excessive internal pressure. Battery Pack: Metal enclosure secured by screws, aperture as the venting mechanism.	P
	Encapsulation used to support cells within an outer casing	Metal encapsulation were used to support cells, will not cause the module and battery pack to overheat during normal operation nor inhibit pressure relief.	P
5.4	Temperature/voltage/current management		P
	The design prevents abnormal temperature-rise	BMS was used to prevent abnormal temperature-rise	P
	Voltage, current, and temperature limits of the cells	Overcharge, over current and overheating proof circuit used in this battery. See tests of clause 8.	P
	Specifications and charging instructions for equipment manufacturers		P
5.5	Terminal contacts of the battery pack and/or battery system		P

IEC 62619			
Clause	Requirement + Test	Result - Remark	Verdict
	Polarity marking(s)	Marked "HV+" and "HV-"	P
	Polarity marking not provided for keyed external connector		N/A
	Capability to carry the maximum anticipated current		P
	External terminal contact surfaces		P
	Terminal contacts are arranged to minimize the risk of short circuits		P
5.6	Assembly of cells, modules, or battery packs into battery systems		P
5.6.1	General		P
	Independent control and protection method(s)		P
	Recommendations of cell operating limits, mounting advice, storage conditions and other design recommendations by the cell manufacturer		P
	Batteries designed for the selective discharge of a portion of their series connected cells		N/A
	Protective circuit component(s) and consideration to the end-device application		P
5.6.2	Battery system design		P
	The voltage control function		P
	Maximum charging/discharging current of the cell are not exceeded		P
5.7	Operating region of lithium cells and battery systems for safe use		P
	The cell operating region..... :	Voltage range: 2,0 V to 3,65 V Maximum charge current: 52 A Maximum discharge current: 52 A Charge temperature range: -20~55 °C Discharge temperature range: -30~60 °C (Information from IEC 62619 Certif. No.: SG PSB-BT- 03623, CB report No.: 085- 282260450-000)	P
	Designation of battery system to comply with the cell operating region		P
5.8	System lock (or system lock function)		P
	Non-resettable function to stop battery operation		P
	Manual with procedure for resetting of battery operation		P

IEC 62619			
Clause	Requirement + Test	Result - Remark	Verdict
	Emergency battery final discharge		P
5.9	Quality plan		P
	Manufacturing quality plan (for example: ISO9001, etc.) prepared and implemented..... :	The manufacturer declares compliance with ISO9001.	P
	The process capabilities and the process controls		P
6	TYPE TEST CONDITIONS		P
6.1	General		P
6.2	Test items		P
	Cells or batteries that are not more than six months old (See Table 1 of IEC 62619)		P
	Capacity confirmation of the cells or batteries	Tests were carried out in an ambient temperature of 25±5 °C.	P
	Default ambient temperature of test, 25 °C ± 5 °C		P
7	SPECIFIC REQUIREMENTS AND TESTS		P
7.1	Charging procedure for test purposes		P
	The battery discharged to a specified final voltage prior to charging	Discharge to End of discharge voltage of each Battery Pack according to the above table with a constant current of 35 A.	P
	The cells or batteries charged using the method specified by the manufacturer..... :	Battery Pack: Constant charging current 35 A to maximum charging voltage of each Battery Pack.	P
7.2	Reasonably foreseeable misuse		P
7.2.1	External short-circuit test (cell or cell block)	Approval cell used.	N/A
	Short circuit with total resistance of 30 m ± 10 m at 25 °C ± 5 °C		N/A
	Results: no fire, no explosion		N/A
7.2.2	Impact test (cell or cell block)	Approval cell used.	N/A
	Cylindrical cell, longitudinal axis impact		N/A
	Prismatic cell, longitudinal axis and lateral axis impact		N/A
	Results: no fire, no explosion.		N/A
7.2.3	Drop test (cell or cell block, and battery system)		P
7.2.3.1	General		P
7.2.3.2	Whole drop test (cell or cell block, and battery system)	The mess of the battery pack is more than 20 kg	N/A

IEC 62619			
Clause	Requirement + Test	Result - Remark	Verdict
	Description of the Test Unit..... :		—
	Mass of the test unit (kg)..... :		—
	Height of drop (m)..... :		—
	Results: no fire, no explosion		N/A
7.2.3.3	Edge and corner drop test (cell or cell block, and battery system)		P
	Description of the Test Unit..... :	Battery pack	—
	Mass of the test unit (kg)..... :	ABL-T05H-H01 Approx. 65kg ABL-T10H-H01 Approx. 115 kg ABL-T15H-H01 Approx. 165 kg ABL-T20H-H01 Approx. 215 kg	—
	Height of drop (m)..... :	5 cm for model ABL-T05H-H01. 2,5 cm for models ABL-T10H-H01, ABL-T15H-H01, ABL-T20H-H01.	—
	Results: no fire, no explosion		P
7.2.4	Thermal abuse test (cell or cell block)	Approval cell used.	N/A
	Results: no fire, no explosion		N/A
7.2.5	Overcharge test (cell or cell block)	Approval cell used.	N/A
	For those battery systems that are provided with only a single protection for the charging voltage control		—
	Results: no fire, no explosion..... :		N/A
7.2.6	Forced discharge test (cell or cell block)	Approval cell used.	N/A
	Cells connected in series in the battery system..... :		N/A
	Redundant or single protection for discharge voltage control provided in battery system..... :		N/A
	Target Voltage..... :		N/A
	Maximum discharge current of the cell, Im..... :		N/A
	Discharge current for forced discharge, 1.0 It..... :		N/A
	Discharging time, $t = (1 It / I_m) \times 90$ (min.)..... :		N/A
	Results: no fire, no explosion..... :		N/A
7.3	Considerations for internal short-circuit – Design evaluation		P
7.3.1	General		N/A
7.3.2	Internal short-circuit test (cell)	Approval cell used.	N/A

IEC 62619			
Clause	Requirement + Test	Result - Remark	Verdict
	Samples preparation procedure: In accordance with Clause A.5 and A.6 of IEC 62133-2:2017		N/A
	Tested per 7.3.2 b) in an ambient temperature of 25 °C ± 5 °C.		N/A
	The appearance of the short-circuit location recorded by photograph or other means		—
	The pressing was stopped - When a voltage drop of 50 mV was detected; or		N/A
	- The pressing force of 800 N (cylindrical cells) or 400 N (prismatic cells) was reached		N/A
	Results: no fire..... :		N/A
7.3.3	Propagation test (battery system)	Internal short-circuit test has been considered in cell test report.	N/A
	Method to create a thermal runaway in one cell ... :		N/A
	Results: No external fire from the battery system, no battery case rupture		N/A

8	BATTERY SYSTEM SAFETY (CONSIDERING FUNCTIONAL SAFETY)		P
8.1	General requirements		P
	Functional safety analysis for critical controls	The functional safety requirement was evaluated according to Annex H of IEC 60730-1:2016 (SGS Report No. SHFS230300007371).	P
	Conduct of a process hazard analysis for both the cell manufacturing process and the battery system manufacturing process		P
	Conduct of risk assessment and mitigation of the battery system		P
8.2	Battery management system (or battery management unit)		P
8.2.1	Requirements for the BMS		P
	The safety integrity level (SIL) target of the BMS	Class B per Annex H of IEC 60730-1	P
	The charge control evaluated by tests in clauses 8.2.2 to 8.2.4		P
8.2.2	Overcharge control of voltage (battery system)		P
	The exceeded charging voltage applied to the whole battery system		P
	The exceeded charging voltage applied to only a part of the battery system, such as the cell(s)..... :		N/A

IEC 62619			
Clause	Requirement + Test	Result - Remark	Verdict
	Results: no fire, no explosion..... :	See Table 8.2.2.	P
	The BMS terminated the charging before exceeding the upper limit charging voltage		P
8.2.3	Overcharge control of current (battery system)		P
	Results: no fire, no explosion..... :	See Table 8.2.3	P
	The BMS detected the overcharging current and controlled the charging to a level below the maximum charging current		P
8.2.4	Overheating control (battery system)		P
	The cooling system, if provided, was disconnected	No cooling system	N/A
	Elevated temperature for charging, 5 °C above maximum operating temperature..... :	55 °C	P
	Results: no fire, no explosion..... :	See Table 9.2.5	P
	The BMS detected the overheat temperature and terminated charging		P
	The battery system operated as designed during test		P
9	EMC		P
	Battery system fulfil EMC requirements of the end-device application..... :	The EMC requirement was evaluated according to EN IEC 61000-6-1:2019, EN IEC 61000-6-2:2019, EN IEC 61000-6-3:2021, EN IEC 61000-6-4:2019 (SGS Report No. SHEMA230700416701).	P
10	INFORMATION FOR SAFETY		P
	The cell manufacturer provides information about current, voltage and temperature limits of their products		P
	The battery system manufacturer provides information regarding how to mitigate hazards to equipment manufacturers or end-users.	See attachment 2	P
11	MARKING AND DESIGNATION (REFER TO CLAUSE 5 OF IEC 62620)		P
	The marking items shown in Table 1 in IEC 62620 indicated on the cell, battery system or instruction manual.	See page 6	P
	Cell or battery system has clear and durable markings		P
	Cell designation		N/A
	Battery designation		P

IEC 62619			
Clause	Requirement + Test	Result - Remark	Verdict
	Battery structure formulation		P
12	PACKAGING AND TRANSPORT		P
	Refer to Annex D	See attachment 3	P
ANNEX A	OPERATING REGION OF CELLS FOR SAFE USE		N/A
A.1	General	Has been considered in cell test report.	N/A
A.2	Charging conditions for safe use		N/A
A.3	Consideration on charging voltage		N/A
A.4	Consideration on temperature		N/A
A.5	High temperature range		N/A
A.6	Low temperature range		N/A
A.7	Discharging conditions for safe use		N/A
A.8	Example of operating region		N/A
ANNEX B	PROCEDURE OF 7.3.3 PROPAGATION TEST BY LASER IRRADIATION		N/A
B.1	General		N/A
B.2	Test conditions		N/A
B.2.1	Cell test (preliminary test)		N/A
	The cell fully charged according to the manufacturer recommended conditions		—
	Laser irradiation point on the cell		—
	Output power of laser irradiation		—
	Tested in an ambient temperature of 25 °C ± 5 °C		N/A
	Repeat of cell test for 3 times		N/A
B.2.2	Battery system test (main test)		N/A
	The battery system fully charged according to the manufacturer recommended conditions		—
	Target cell to be laser irradiated		—
	The irradiation point on the target cell same or similar as that on the cell test		
	Output power of laser irradiation		—
	Tested in an ambient temperature of 25 °C ± 5 °C		N/A
ANNEX C	PROCEDURE OF 7.3.3 PROPAGATION TEST BY METHODS OTHER THAN LASER		N/A
C.1	General		N/A

IEC 62619			
Clause	Requirement + Test	Result - Remark	Verdict
C.2	Test conditions:		N/A
	– The battery fully charged according to the manufacturer recommended conditions		—
	– Target cell forced into thermal runaway		—
	– A specially prepared sample (e.g. a heater or a hole for nail penetration provided) used for ease of testing.....		—
C.3	Method used for initiating the thermal runaway. 1) Heater (Heater, Burner, Laser, Inductive heating) 2) Overcharge 3) Nail penetration of the cell 4) Combination of above methods 5) Other methods.....		—
ANNEX D	PACKAGING AND TRANSPORT		P
	The materials and pack design chosen in a way as to prevent the development of unintentional electrical conduction, corrosion of the terminals and ingress of environmental contaminants		P
	Regulations concerning international transport of secondary lithium batteries		P

IEC 62619			
Clause	Requirement + Test	Result - Remark	Verdict

5.1	TABLE: Critical components information					P
Object/part no.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity ¹⁾	
Cell	Hefei Gotion High-tech Power Energy Co., Ltd.	IFP28148115A- 52Ah	3,2 V, 52 Ah	IEC 62619: 2022 EN IEC 62619: 2022	TÜV SÜD (CB Cert. No.: SG PSB-BT- 03623, CB Report No.: 085- 282260450- 000)	
Metallic Enclosure	WUXI ZHONGHENGXI N STAINLESS STEEL CO., LTD	SUS430	Material: Stainless steel, minimum thickness 1,5 mm	--	--	
Lead wires (Signal)	Interchangeable	Interchangeable	24 AWG, Horizontal flame, 200 °C, 300 Vac	UL 758	UL	
Lead wires (Power)	3Q WIRE & CABLE CO LTD	1015	10 AWG, Horizontal flame, 105 °C, 600 Vac	UL 758	UL (E341104)	
Insulation tape	Interchangeable	Interchangeable	Min 105 °C	UL 510A	--	
Foam	Interchangeable	Interchangeable	Min V-2, Min 80 °C, min thickness 1 mm	UL 94, UL 746	--	
Glue	Interchangeable	Interchangeable	Min V-2, Min 80 °C, min thickness 1 mm	UL 94, UL 746	UL	
Cable Ties	Interchangeable	Interchangeable	Maximum operating temperature range: - 40 °C to 85 °C, min V-2.	UL 1565	UL	
Heat shrinkable tubing	CHANGYUAN ELECTRONICS GROUP CO LTD	CB-HFT(6P)	600 V, 125 °C, VW-1	UL 224	UL (E180908)	
Heat shrinkable tubing (Alt.)	Interchangeable	Interchangeable	600 V, 125 °C, VW-1	UL 224	UL	
Charging & Discharging Output Connector	AMPHENOL TECHNOLOGY (ZHUHAI) CO LTD	C10-754727- ()()()	1500 V, 70 A	UL 4128	UL (E180908))	
DC connector between modules	Huizhou Futronics Electronic Technology Co., Ltd.	FSP200936C- 1002F	1000 V, 45 A	EN 61984:2009	UDEM (TH2109077 -C01-R01)	

IEC 62619					
Clause	Requirement + Test			Result - Remark	Verdict
RELAY in Main Control Box & Module	SHANGHAI LIANGXIN ELECTRICAL CO LTD	NDZ3T-40B/750V 12	750 V, 40 A	UL 60947-1; UL 60947-4-1	UL (E514982)
RELAY for heating & pre-charge	XIAMEN HONGFA ELECTROACOUSTIC CO LTD	HFE80V-20C/450-12-HTQ2J(864)	450 V, 20 A	UL 508	UL (E133481)
FUSE	EUGARD CO., LTD	EVB0258	500 V, 60 A	UL 248	UL (E479415)
FUSE for heating	ADVANCED SURGETECH MATERIALS LTD	A103206	250 V, 15 A	UL 248	UL (E470032)
Pre-charge resistor	Anhui Laidefu Electronic Technology Co., Ltd	RX27-4HS-100W-50R J	50 Ω , 100 W, -55 $^{\circ}$ C to 275 $^{\circ}$ C	--	--
NTC	SHENZHENSHI KEMIN SENSOR CO LTD	MF5210K	10 \pm 1% K Ω @ 25 $^{\circ}$ C, T _{moa} 120 $^{\circ}$ C	UL 1434	UL (E356449)
BMU					
PCB	SHEN ZHEN SUN & LYNN CIRCUITS CO LTD	SL-2M	V-0, 130 $^{\circ}$ C	UL 796	UL (E234156)
PCB (Alt.)	Interchangeable	Interchangeable	V-0, 130 $^{\circ}$ C	UL 796	UL
IC (U9, U21, U29)	2Pai Semiconductor Co., Limited	141E61Q	Isolation voltage 5000 V	UL 1577	UL (E494497)
Optical Isolator (OM2, OM3, OM4)	Panasonic Industry Co., Ltd.	AQW216HAXC 88	Isolation voltage 5000 V	UL 1577	UL (E191218)
Optical Isolator (OM5)	Panasonic Electric Works CO.,Ltd.	AQV258HAXC8 8	Isolation voltage 5000 V	UL 1577	UL (E191218)
SBMU					
PCB	SHEN ZHEN SUN & LYNN CIRCUITS CO LTD	SL-2M	V-0, 130 $^{\circ}$ C	UL 796	UL (E234156)
PCB (Alt.)	Interchangeable	Interchangeable	V-0, 130 $^{\circ}$ C	UL 796	UL

IEC 62619					
Clause	Requirement + Test			Result - Remark	Verdict
IC (U9, U21)	2Pai Semiconductor Co., Limited	141E61Q	Isolation voltage 5000 V	UL 1577	UL (E494497)
Optical Isolator (OM3, OM4)	Panasonic Industry Co., Ltd.	AQW216HAXC 88	Isolation voltage 5000 V	UL 1577	UL (E191218)
BSU					
PCB	SHEN ZHEN SUN & LYNN CIRCUITS CO LTD	SL-2M	V-0, 130 °C	UL 796	UL (E234156)
PCB (Alt.)	Interchangeable	Interchangeable	V-0, 130 °C	UL 796	UL
LAN transformer (T1, T2)	SHENZHEN SUNLORD ELECTRONICS CO LTD	ALTWR- F02TFXXX	Isolation voltage 4000 V	UL 62368-1	UL (E532344)
Supplementary information:					
1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.					

IEC 62619			
Clause	Requirement + Test	Result - Remark	Verdict

7.2.1	TABLE: External short-circuit test (cell or cell block)					N/A
Sample No.	Ambient (at 25°C ± 5°C)	OCV at start of test (V dc)	Resistance of Circuit (mΩ)	Maximum Case Temperature Rise ΔT (°C)	Results	
--	--	--	--	--	--	
Supplementary information: A – No fire or Explosion B – Fire C – Explosion D – The test was completed after 6 h E – The test was completed after the cell casing cooled to 20% of the maximum temperature rise F – Other (Please explain): ____						

7.2.5	TABLE: Overcharge test (cell or cell block)					N/A
Sample No.	OCV at start of test (V dc)	OCV at end of test (V dc)	Measured Maximum Charging Current (A)	Measured Maximum Charging Voltage (V dc)	Max. Cell Case Temperature, (°C)	Results
--	--	--	--	--	--	--
Supplementary information: Results: A – No fire or Explosion B – Fire C – Explosion D – Test concluded when temperature reached a steady state condition E – Test concluded when temperature returned to ambient F – Other (Please explain): ____						

7.2.6	TABLE: Forced discharge test (cell or cell block)					N/A
Sample No.	OCV before applying reverse charge, (V dc)	Target Voltage (V dc)	Measured Reverse Charge Current It, (A)	Total Time for Reversed Charge Application (min)	Results	
--	--	--	--	--	--	
Supplementary information: Results: A – No fire or Explosion B – Fire C – Explosion D – Other (Please explain): ____						

IEC 62619			
Clause	Requirement + Test	Result - Remark	Verdict

7.3.2	TABLE: Internal short-circuit test (cell)				N/A
Sample No.	OCV at start of test, (V dc)	Particle location ¹⁾	Maximum applied pressure, (N)	Results	
--	--	--	--	--	
<p>Supplementary information:</p> <p>¹⁾ Identify one of the following:</p> <p>1: Nickel particle inserted between positive and negative (active material) coated area.</p> <p>2: Nickel particle inserted between positive aluminium foil and negative active material coated area.</p> <p>Results:</p> <p>A – No fire or explosion B – Fire C – Explosion D – Test concluded when 50 mV voltage drop occurred prior to reaching force limit E – Test concluded when 800/400 N pressure was reached and 50 mV voltage drop was not achieved F – Test was concluded when fire or explosion occurred G – Other (Please explain): __</p>					

7.3.3	TABLE: Propagation test (battery system)				N/A
Sample No.	OCV of Battery System Before Test, (V dc)	OCV of Target Cell Before Test, (V dc)	Maximum Cell Case Temperature, (°C)	Maximum DUT Enclosure Temperature, (°C)	Results
--	--	--	--	--	--
Method of cell failure ¹⁾		Location of target cell		Area for fire protection (m ²)	
--		--		--	
<p>Supplementary information:</p> <p>1) Cell can be failed through laser exposure, applied heat, overcharge, nail penetration or combinations of these failures or other acceptable methods. See supporting documentation for details on cell failure method</p> <p>2) If the battery system has no outer covering, the manufacturer is required to specify the area for fire protection.</p> <p>Results:</p> <p>A – No fire external to DUT enclosure or area for fire protection or no battery case rupture B – Fire external to DUT enclosure or area for fire protection C – Explosion D – Battery case rupture E – Other (Please explain): __</p>					

IEC 62619			
Clause	Requirement + Test	Result - Remark	Verdict

8.2.2	TABLE: Overcharge control of voltage (battery system)				P
Sample No.	OCV at start of test for Cell/Cell Blocks, (V dc)	Maximum Charging Current, (A)	Max. Charging Voltage, (V dc)	Max. Voltage of Cell/Cell Blocks, (V dc)	Results
1#	2,714 to 2,733	35	115,2	3,65	A, D, F
			Charge Voltage Applied Battery System: 1)		
			Whole	Part	
			128,48 Vdc	--	
Supplementary information:					
1) The exceeded voltage can be applied to only a part of the system such as the cell(s) in the battery system per Figure 6 of IEC 62619, if it is difficult to do it in using the whole battery system.					
Results:					
A – No Fire or Explosion					
B – Fire					
C – Explosion					
D – The voltage of the measured cells or cell blocks did not exceed the upper limit charging voltage					
E – The voltage of the measured cells or cell blocks did exceed the upper limit charging voltage					
F – All function of battery system did operate as intended during the test.					
G – All function of battery system did not operate as intended during the test.					
H – Other (Please explain): ____					

8.2.3	TABLE: Overcharge control of current (battery system)			P
Sample No.	OCV at start of test, (V dc)	Max. Charging Current, (A)	Max. Charging Voltage, (V dc)	Results
1#	94,337	42	115,2	A, D, F
Supplementary information:				
Results:				
A – No fire or Explosion				
B – Fire				
C – Explosion				
D – Overcurrent sensing function of BMU did operate and then charging stopped				
E – Overcurrent sensing function of BMU did not operate and then charging stopped				
F – All function of battery system did operate as intended during the test.				
G – All function of battery system did not operate as intended during the test.				
H – Other (Please explain): ____				

IEC 62619			
Clause	Requirement + Test	Result - Remark	Verdict

8.2.4	TABLE: Overheating control (battery system)			P
Model No.	OCV at start (SOC 50%) of test, V dc	Maximum Charging Current, A	Measured Maximum Charging Voltage, V dc	
1#	103,021	35	115,2	
Maximum Specified Temperature of Battery System, °C		Maximum Measured Cell Case Temperature, °C	Results	
50		55	A, D, F, H	
Supplementary information:				
Results:				
A – No fire or Explosion				
B – Fire				
C – Explosion				
D – Temperature sensing function of BMU did operate and then charging stopped				
E – Temperature sensing function of BMU did not operate and then charging stopped				
F – All function of battery system did operate as intended during the test.				
G – All function of battery system did not operate as intended during the test.				
H – Other (Please explain): Protected immediately when charging				

9	TABLE: EMC					N/A
Standard used for EMC test:						
Sample No.	EMC Test Item	Battery Condition	EMC Test Level/ Parameters	Compliance Criteria	Results	
--	--	--	--	--	--	
Supplementary information: None						

---- End of Report ----

Attachment 1 Photo documentation

Overall External View of Battery pack, Model ABL-T05H-H01



Attachment 1 Photo documentation

Overall External View of Battery pack, Model ABL-T10H-H01



Attachment 1 Photo documentation

Overall External View of Battery pack, Model ABL-T15H-H01



Attachment 1 Photo documentation

Overall External View of Battery pack, Model ABL-T20H-H01



Attachment 1 Photo documentation

Overall External Side View of High-voltage Box

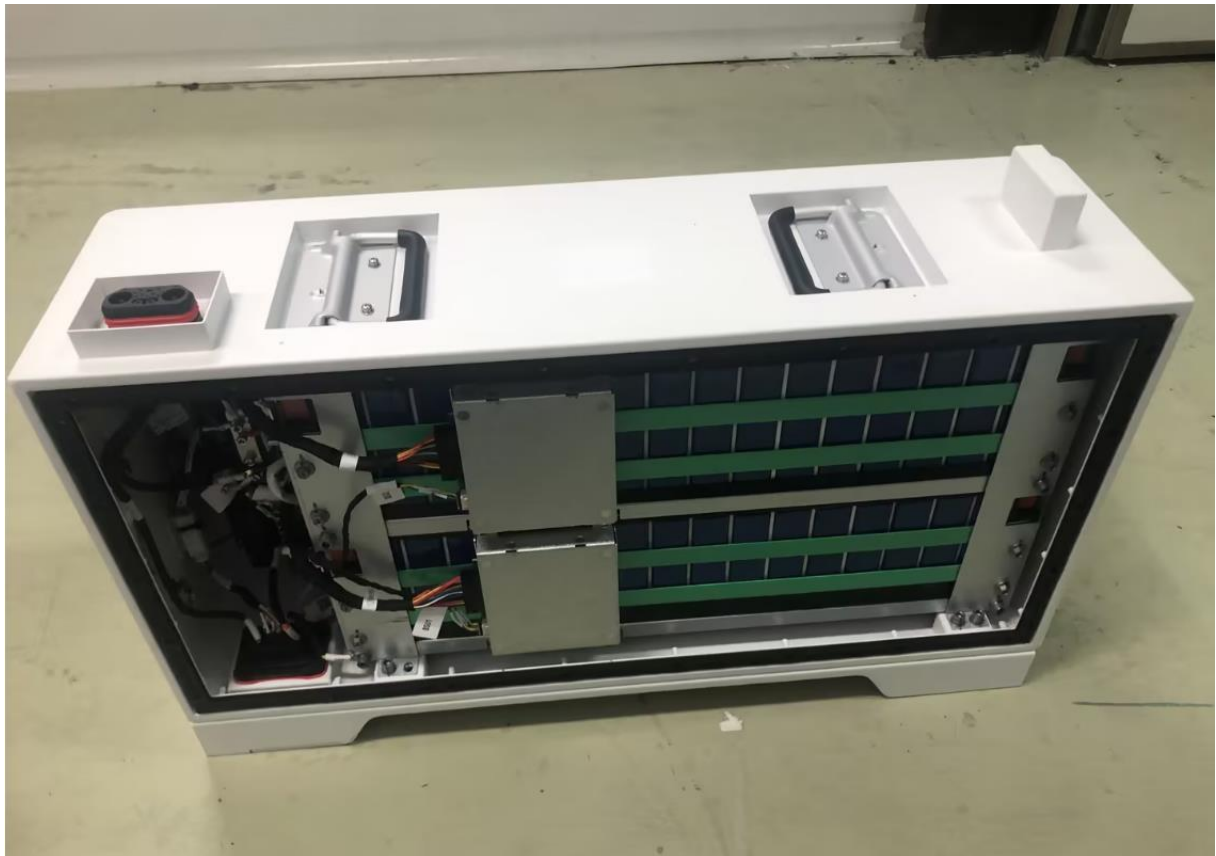


Attachment 1 Photo documentation

Internal View of Battery pack, Model ABL-T05H-H01

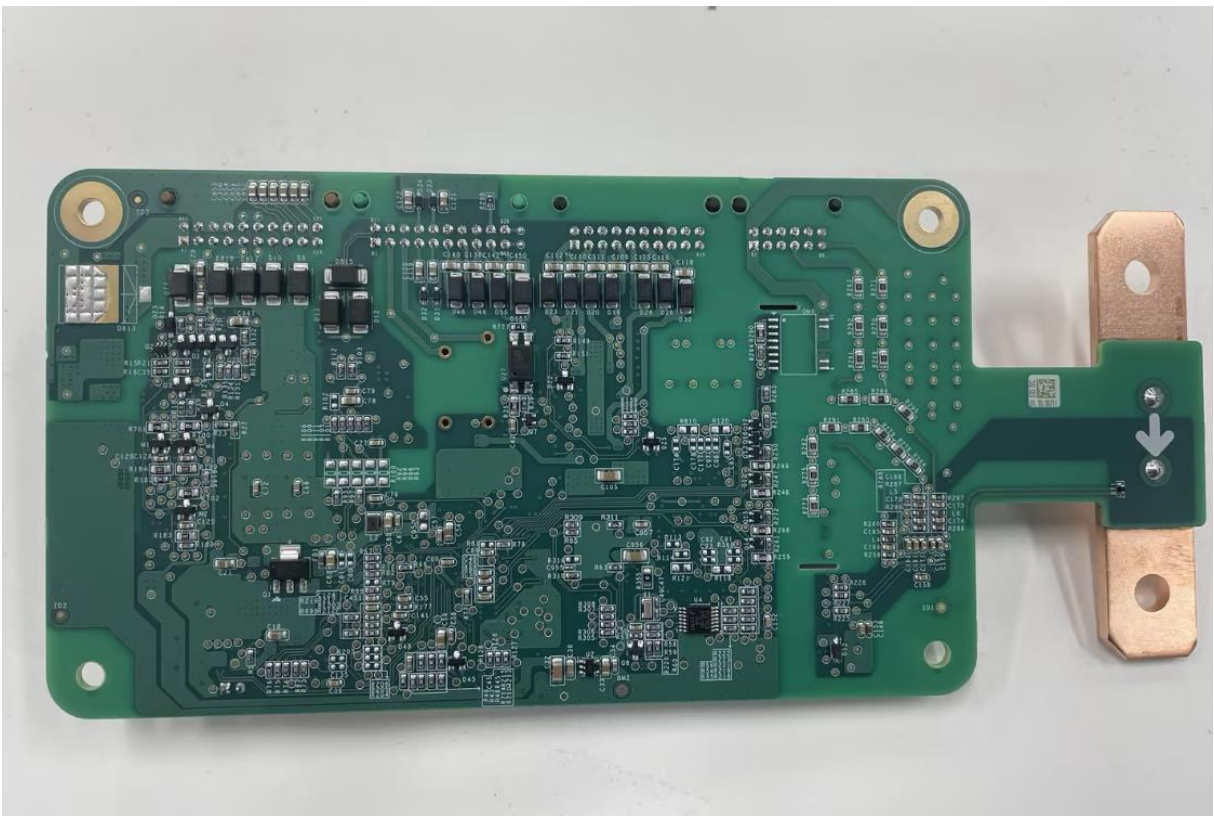
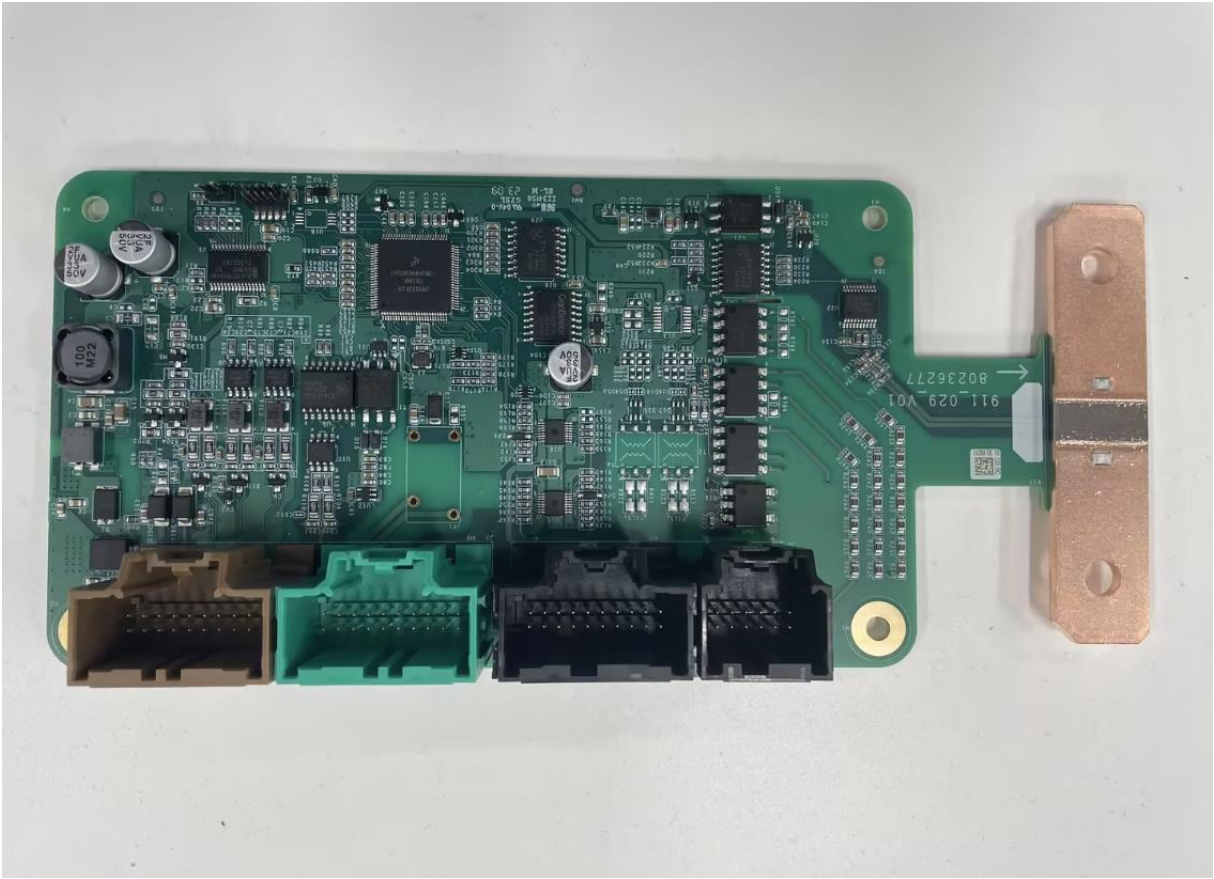


Internal View of Battery Module



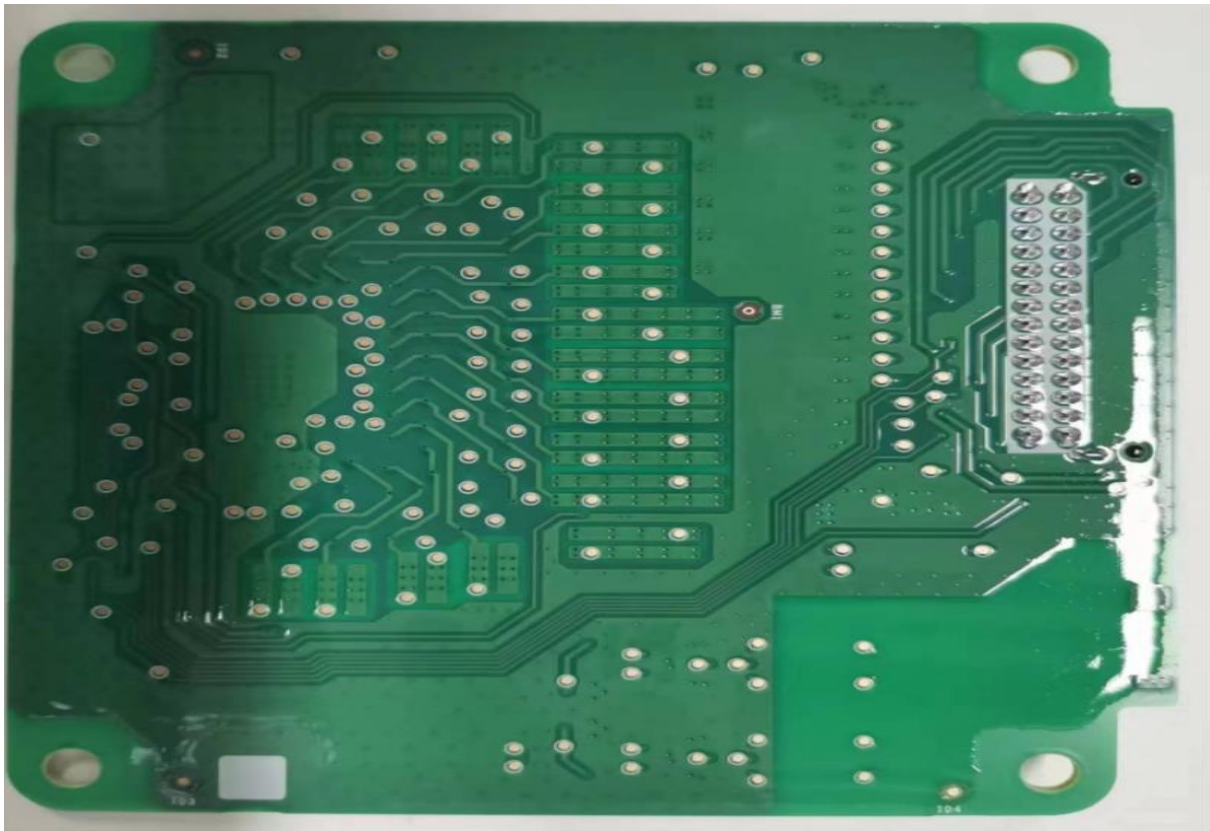
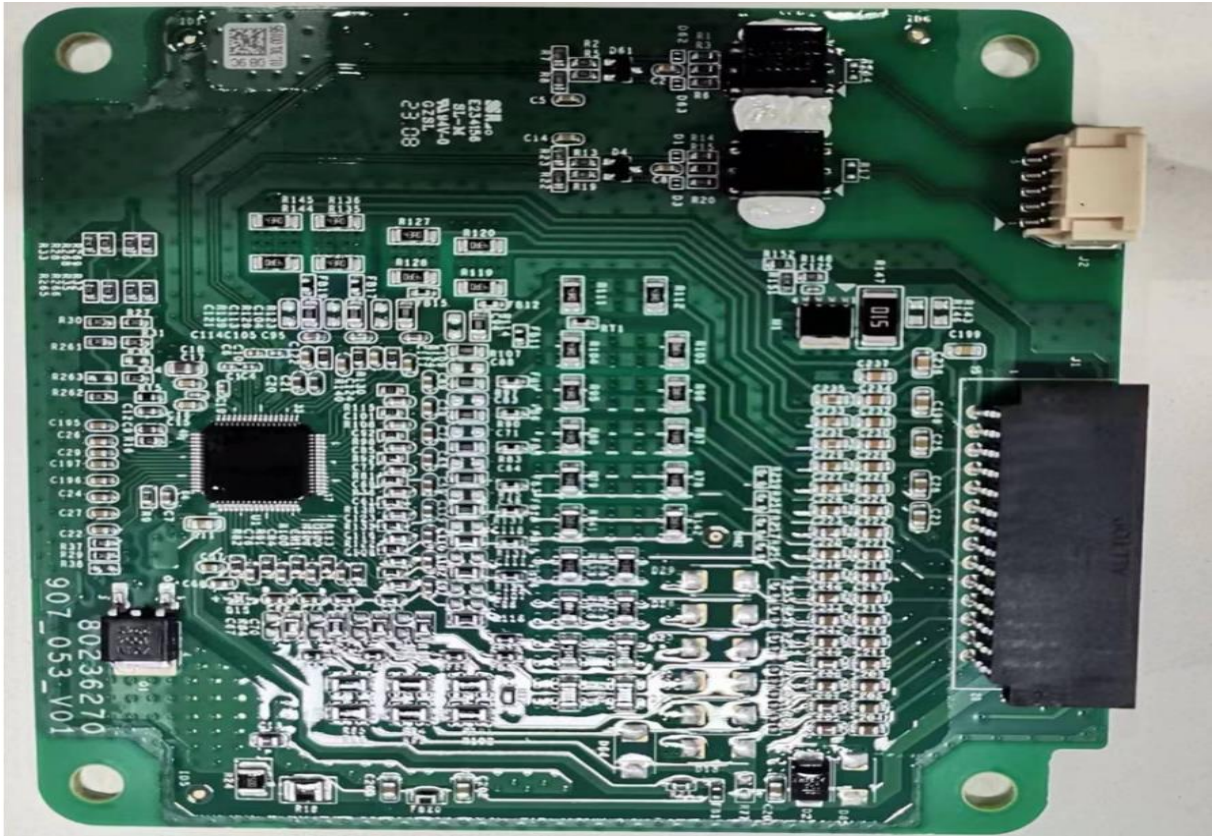
Attachment 1 Photo documentation

PCBA of BMU



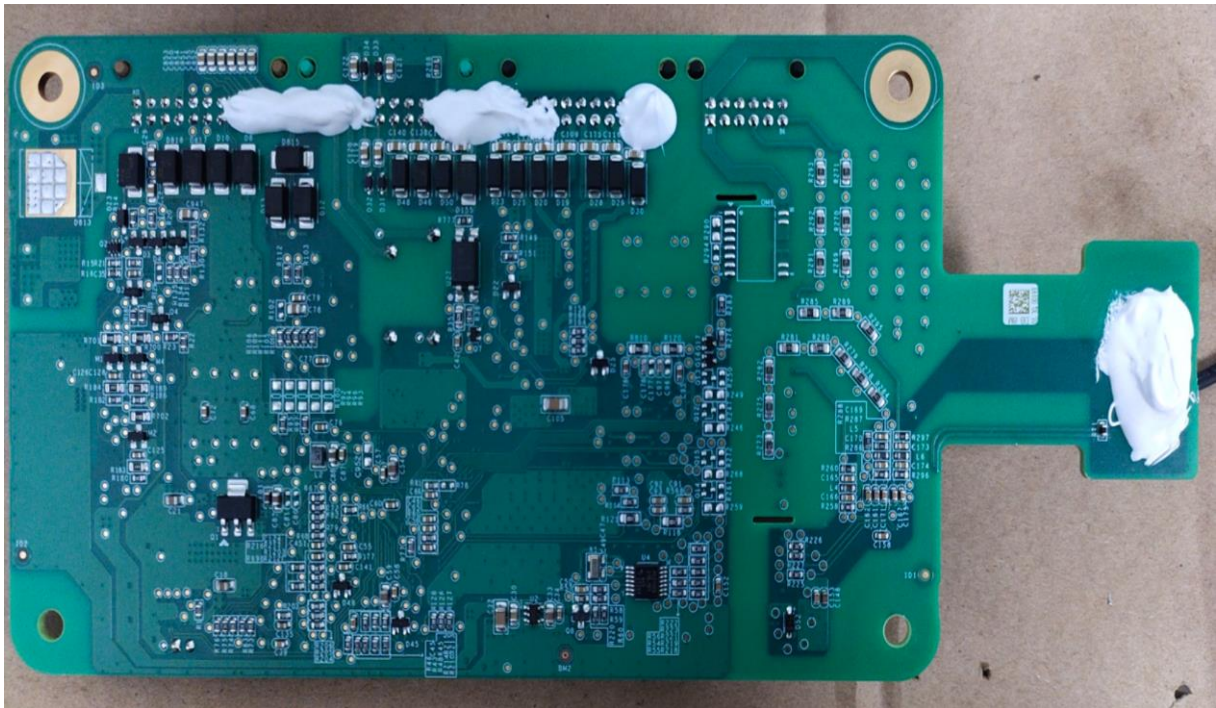
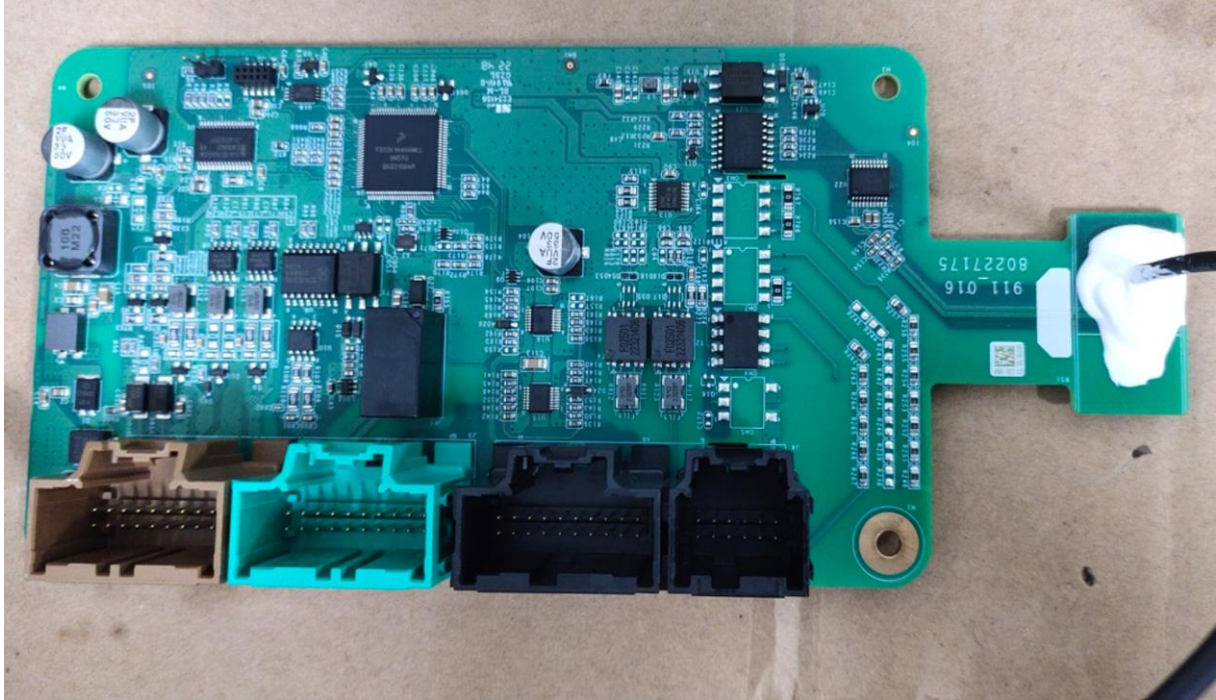
Attachment 1 Photo documentation

PCBA of BSU



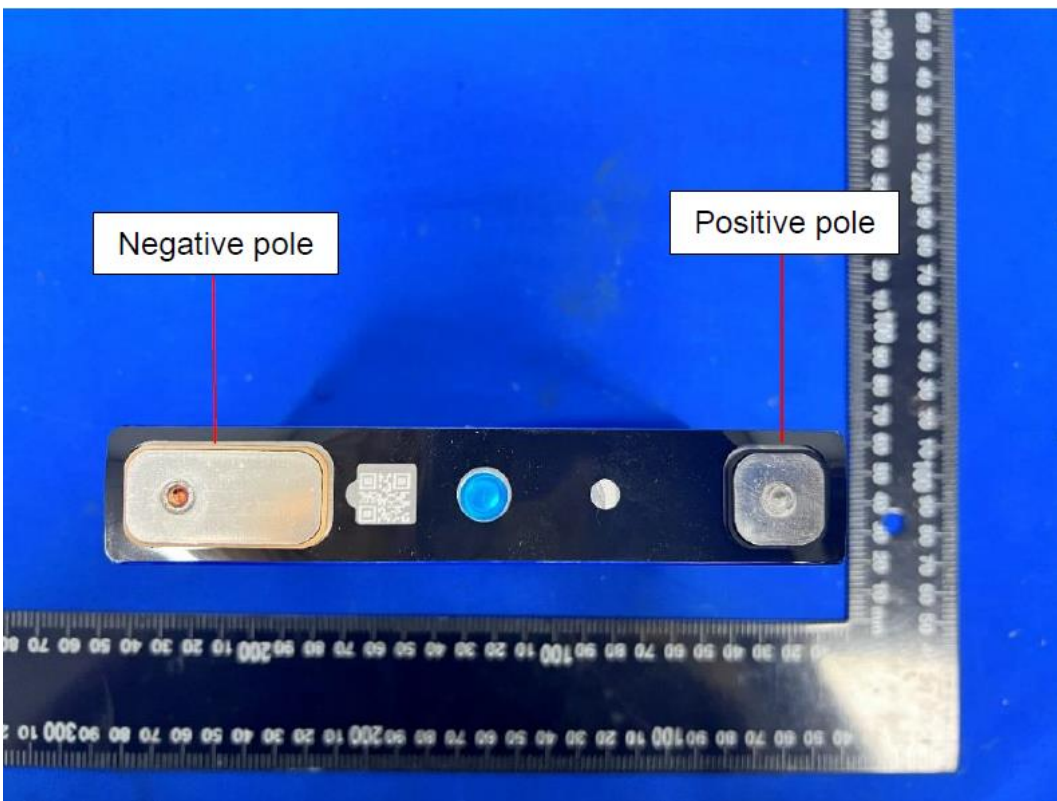
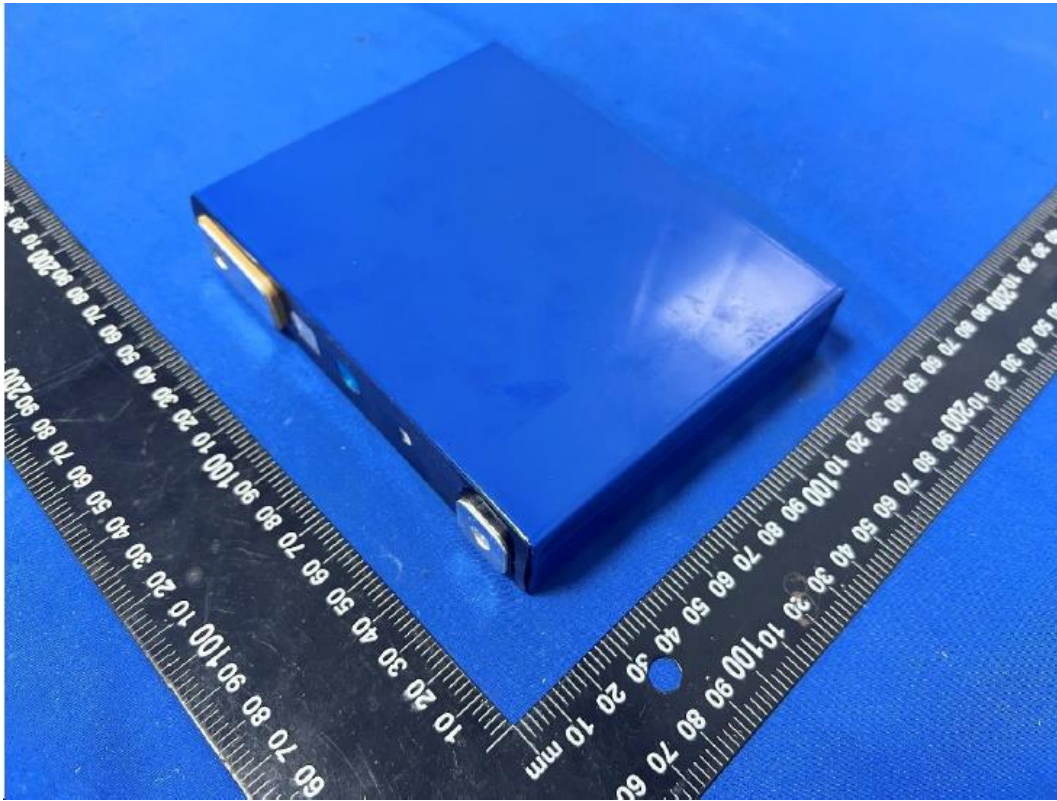
Attachment 1 Photo documentation

PCBA of SBMU



Attachment 1 Photo documentation

Cell



--- End of Attachment 1 ---

Attachment 2 Information for safety

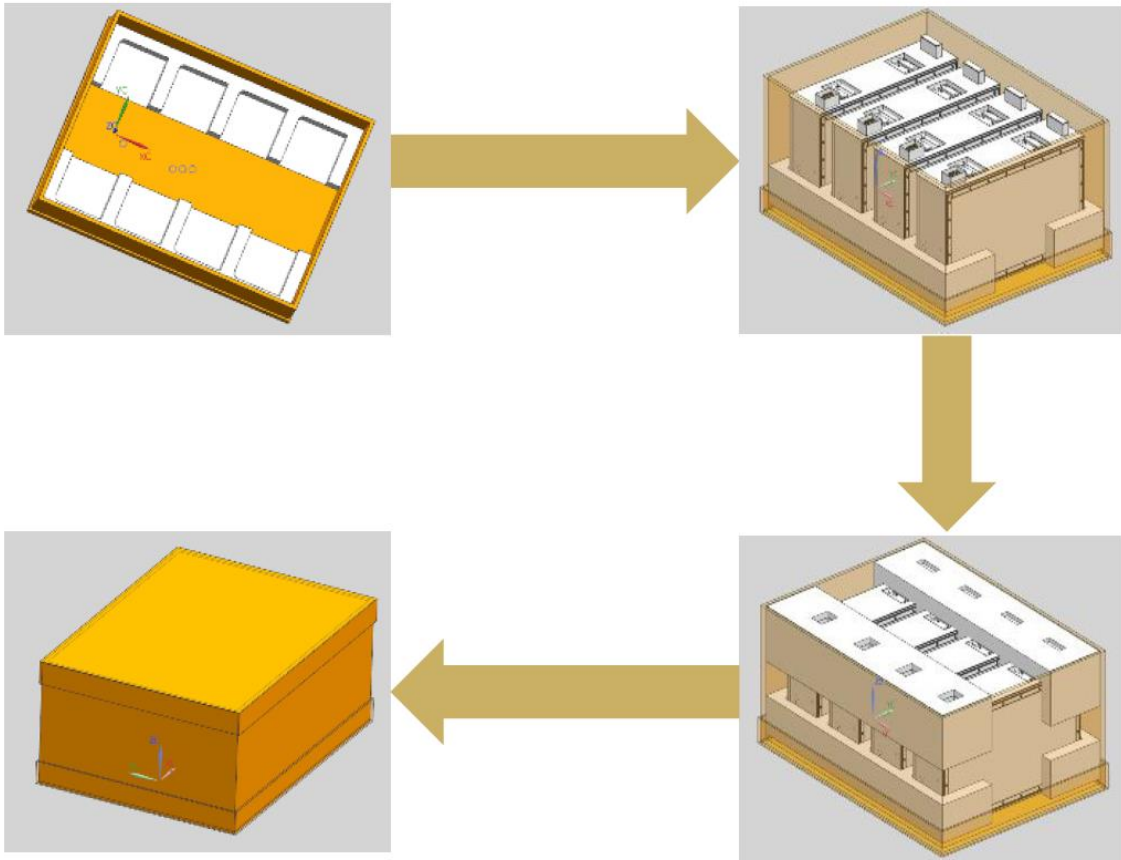
Precautions for product use

- 1 Do not put the battery in water or get it wet.
- 2 It is forbidden to charge and use the battery outside the temperature range specified by us; do not store, charge and use this product near fire or heat sources.
- 3 When the battery pack emits a peculiar smell or leaks, stop using it or stop charging immediately, and move it to an open and ventilated place, away from the fire source, and contact us in time.
- 4 When connecting to a load, do not connect the positive and negative poles reversely.
- 5 Do not short-circuit the positive and negative poles of the battery pack with metal conductors.
- 6 Do not throw the battery pack into fire or heat it.
- 7 It is strictly forbidden to conduct artificial dissection of the battery pack. It is strictly forbidden to pierce the battery pack with nails or sharp objects. It is strictly forbidden to hit the battery pack with a hammer or other external force. It is strictly forbidden to step on and drop the battery pack.
- 8 It is strictly forbidden to put the battery pack in a microwave oven or pressure vessel.
- 9 If any abnormal phenomenon occurs during charging or use, please stop charging and use immediately.
- 10 The best use temperature of the product is $25\pm 5^{\circ}\text{C}$. If the product is not within this temperature range during use, the discharge capacity will be reduced.
- 11 If there is a malfunction or abnormality during use, please contact us and do not disassemble the battery pack privately.

- - - End of Attachment 2 - - -

Attachment 3 Packaging

Method 1



Method 2



--- End of Attachment 3 ---

Attachment 4 Product specification**Specification of Pack**

No.	Technical Data	ABL-T05H-H01	ABL-T10H-H01	ABL-T15H-H01	ABL-T20H-H01
1	Usable Energy (kWh)	5,3	10,6	15,9	21,2
2	Battery Module	ABL-P05H-H01: 102,4 V 52 Ah			
3	Number of Modules	1	2	3	4
4	Cell Type	LFP (LiFePO ₄)			
5	Cell Configuration	1P32S	1P64S	1P96S	1P128S
6	Nominal Voltage (V)	102,4	204,8	307,2	409,6
7	Operating Voltage Range (V)	86,4 to 115,2	172,8 to 230,4	259,2 to 345,6	345,6 to 460,8
8	Nominal Dis-/Charge Current (A)	0,6 C			
9	Maximum Charge Current (A)	35			
10	Maximum Discharge Current (A)	35			
11	LED Energy Display	4*LED (25%、 50%、 75%、 100)			
12	Operating Temperature Range (°C)	Charge: 0 ~ 50 °C Discharge: -20 ~ 50 °C			
13	Relative Humidity	5% ~ 95%			
14	Max. Operating Altitude (m)	4000			
15	Noise Emission (dB)	<30			
16	Communication	CAN, RS485			
17	Weight (kg)	65	115	165	215
18	Dimensions (LxWxH mm)	700*200*650	700*200*1000	700*200*1350	700*200*1700
19	Ingress Protection Rating	IP65			
20	Storage Temperature (°C)	-20~45 °C (≤One Month); 0~35 °C (≤One Year)			
21	Cycle Life	>6000 (70%)			

Attachment 4 Product specification

External Dimensions. mm



L(700)*W(200)*H(650)



L(700)*W(200)*H(1000)



L(700)*W(200)*H(1350)



L(700)*W(200)*H(1700)

--- End of Attachment 4 ---

TEST REPORT

Application No.: SHEM2307004652BA
Applicant: Ningbo AUX Solar Technology Co.,Ltd.
Address of Applicant: No. 17 Fenglin Road, Cicheng Town, Jiangbei District, Ningbo City, Zhejiang Province, China
Manufacturer: Ningbo AUX Solar Technology Co.,Ltd.
Address of Manufacturer: No. 17 Fenglin Road, Cicheng Town, Jiangbei District, Ningbo City, Zhejiang Province, China
Equipment Under Test (EUT):
EUT Name: Energy Storage Battery System
Model No.: ABL-T05H-H01, ABL-T10H-H01, ABL-T15H-H01, ABL-T20H-H01
Remark: Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.
Standard(s) : EN IEC 61000-6-3: 2021
 EN IEC 61000-6-4: 2019
 EN IEC 61000-6-1: 2019
 EN IEC 61000-6-2: 2019
 BS EN IEC 61000-6-3: 2021
 BS EN IEC 61000-6-4: 2019
 BS EN IEC 61000-6-1: 2019
 BS EN IEC 61000-6-2: 2019
Trade Mark : **AUXSOL**
Date of Receipt: 2023-03-27
Date of Test: 2023-04-04 to 2023-04-11
Date of Issue: 2023-07-25

Test Result:	Pass*
---------------------	--------------

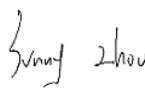
* In the configuration tested, the EUT complied with the standards specified above.


Parlam Zhan

Parlam Zhan
Laboratory Manager



Revision Record			
Version	Description	Date	Remark
00	Co-license	2023-07-25	Based on SHEM230300161801

Authorized for issue by:			
			

		Sunny Zhou/Project Engineer	
			

		Jim Xu/Reviewer	



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

2 Test Summary

Emission Part				
Item	Standard	Method	Requirement	Result
Conducted Emissions at DC Power Port (150kHz-30MHz)	EN IEC 61000-6-3: 2021	CISPR 16-2-1	Table 5	Pass
Conducted Emissions at Other Wired Port (150kHz-30MHz)		CISPR 32	Table 6	Pass
Radiated Emissions (30MHz-1GHz)		CISPR 16-2-3	Table 3.1	Pass
Conducted Emissions at DC Power Port (150kHz-30MHz)	EN IEC 61000-6-4: 2019	CISPR 16-2-1	Table A.1	Pass
Conducted Emissions at Wired Network Port (150kHz-30MHz)		CISPR 32	Table 5	Pass
Radiated Emissions (30MHz-1GHz)		CISPR 16-2-3	Table 3	Pass

Immunity Part				
Item	Standard	Method	Requirement	Result
Conducted Immunity at DC Power Port (150kHz-80MHz)	EN IEC 61000-6-1: 2019	EN 61000-4-6:2014	3Vrms (emf),80%,1kHz Amp. Mod.	Pass
Conducted Immunity at Signal Port (150kHz-80MHz)		EN 61000-4-6:2014	3Vrms (emf),80%,1kHz Amp. Mod.	Pass
Electrical Fast Transients Burst at DC Power Port		EN 61000-4-4:2012	0.5kV 5/50ns Tr/Td 5kHz / 100kHz Repetition Frequency	Pass
Electrical Fast Transients Burst at Signal Port		EN 61000-4-4:2012	0.5kV 5/50ns Tr/Td 5kHz / 100kHz Repetition Frequency	Pass
Electrostatic Discharge		EN 61000-4-2:2009	±4kV Contact Discharge, ±8kV Air Discharge	Pass
Radiated Immunity (80MHz-1GHz, 1.4GHz-6GHz)		EN IEC 61000-4-3: 2020	3V/m, 80%, 1kHz Amp. Mod.	Pass
Surge at DC Port		EN 61000-4-5:2014+A1:2017	1.2/50µs Tr/Td 0.5kV Line to Line 1kV Line to Ground	Pass
Power Frequency Magnetic Field		EN 61000-4-8:2010	50/60Hz 3A/m	Pass



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

Immunity Part				
Item	Standard	Method	Requirement	Result
Conducted Immunity at DC Power Port (150kHz-80MHz)	EN IEC 61000-6-2: 2019	EN 61000-4-6:2014	10Vrms (emf),80%,1kHz Amp. Mod.	Pass
Conducted Immunity at Signal Port (150kHz-80MHz)		EN 61000-4-6:2014	10Vrms (emf),80%,1kHz Amp. Mod.	Pass
Electrical Fast Transients Burst at DC Power Port		EN 61000-4-4:2012	1kV 5/50ns Tr/Td 5kHz / 100kHz Repetition Frequency	Pass
Electrical Fast Transients Burst at Signal Port		EN 61000-4-4:2012	1kV 5/50ns Tr/Td 5kHz / 100kHz Repetition Frequency	Pass
Electrostatic Discharge		EN 61000-4-2:2009	±4kV Contact Discharge, ±8kV Air Discharge	Pass
Power Frequency Magnetic Field		EN 61000-4-8:2010	50Hz/60Hz 30A/m	Pass
Radiated Immunity (80MHz-1GHz, 1.4GHz-6GHz)		EN IEC 61000-4-3: 2020	80MHz to 1GHz 10V/m, 80%, 1kHz Amp. Mod. 1.4 to 6GHz 3V/m, 80%, 1kHz Amp. Mod.	Pass
Surge at DC Power Port		EN 61000-4-5:2014+A1:2017	1.2/50µs Tr/Td, 0.5kV Line to Line, 1kV Line to Ground	Pass

Note1: There are series models mentioned in this report, and they are the similar in electrical and electronic characters. Only the model ABL-T05H-H01 was tested since their difference was the model number.

Note2: After the EN standards test, the EUT was Compliance with BS EN IEC 61000-6-3: 2021, BS EN IEC 61000-6-4: 2019, BS EN IEC 61000-6-1: 2019, BS EN IEC 61000-6-2: 2019, which are identical with EN standards.

Note3: This product supports one to four battery packs in series connection.

Note4: This report was an additional report copied from the report SHEM230300161801, just changing the model name, trade name, photo, applicant and manufacturer. Since the electrical circuit design, layout, components used and internal wiring for the model ABL-T05H-H01, ABL-T10H-H01, ABL-T15H-H01, ABL-T20H-H01 in this report was exactly the same as the model LX-P05-H01 in the report SHEM230300161801.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

3 Contents

	Page
1 COVER PAGE	1
2 TEST SUMMARY	3
3 CONTENTS	5
4 GENERAL INFORMATION	8
4.1 DETAILS OF E.U.T.	8
4.2 DESCRIPTION OF SUPPORT UNITS	8
4.3 MEASUREMENT UNCERTAINTY & DECISION RULE	8
4.4 TEST LOCATION	9
4.5 TEST FACILITY	9
4.6 DEVIATION FROM STANDARDS	9
4.7 ABNORMALITIES FROM STANDARD CONDITIONS	9
4.8 EMS MONITOR	9
5 EQUIPMENT LIST	10
6 EMISSION TEST RESULTS	16
6.1 CONDUCTED EMISSIONS AT DC POWER PORT (150KHZ-30MHZ)	16
6.1.1 <i>E.U.T. Operation</i>	16
6.1.2 <i>Test Mode Description</i>	16
6.1.3 <i>Test Setup Diagram</i>	16
6.1.4 <i>Measurement Procedure and Data</i>	17
6.2 CONDUCTED EMISSIONS AT OTHER WIRED PORT (150KHZ-30MHZ)	22
6.2.1 <i>E.U.T. Operation</i>	22
6.2.2 <i>Test Mode Description</i>	22
6.2.3 <i>Test Setup Diagram</i>	22
6.2.4 <i>Measurement Procedure and Data</i>	22
6.3 RADIATED EMISSIONS (30MHZ-1GHZ)	25
6.3.1 <i>E.U.T. Operation</i>	25
6.3.2 <i>Test Mode Description</i>	25
6.3.3 <i>Test Setup Diagram</i>	25
6.3.4 <i>Measurement Procedure and Data</i>	26
6.4 CONDUCTED EMISSIONS AT DC POWER PORT (150KHZ-30MHZ)	31
6.4.1 <i>E.U.T. Operation</i>	31
6.4.2 <i>Test Mode Description</i>	31
6.4.3 <i>Test Setup Diagram</i>	31
6.4.4 <i>Measurement Procedure and Data</i>	32
6.5 CONDUCTED EMISSIONS AT WIRED NETWORK PORT (150KHZ-30MHZ)	37
6.5.1 <i>E.U.T. Operation</i>	37
6.5.2 <i>Test Mode Description</i>	37
6.5.3 <i>Test Setup Diagram</i>	37
6.5.4 <i>Measurement Procedure and Data</i>	38



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

6.6	RADIATED EMISSIONS (30MHZ-1GHZ)	41
6.6.1	E.U.T. Operation	41
6.6.2	Test Mode Description	41
6.6.3	Test Setup Diagram	41
6.6.4	Measurement Procedure and Data	42
7	IMMUNITY TEST RESULTS	47
7.1	CONDUCTED IMMUNITY AT DC POWER PORT (150KHZ-80MHZ)	48
7.1.1	Test Setup Diagram	48
7.1.2	E.U.T. Operation	48
7.1.3	Test Mode Description	48
7.1.4	Test Condition and Results:	48
7.2	CONDUCTED IMMUNITY AT SIGNAL PORT (150KHZ-80MHZ)	49
7.2.1	Test Setup Diagram	49
7.2.2	E.U.T. Operation	49
7.2.3	Test Mode Description	49
7.2.4	Test Condition and Results:	49
7.3	ELECTRICAL FAST TRANSIENTS BURST AT DC POWER PORT	50
7.3.1	Test Setup Diagram	50
7.3.2	E.U.T. Operation	50
7.3.3	Test Mode Description	50
7.3.4	Test Condition and Results:	50
7.4	ELECTRICAL FAST TRANSIENTS BURST AT SIGNAL PORT	51
7.4.1	Test Setup Diagram	51
7.4.2	E.U.T. Operation	51
7.4.3	Test Mode Description	51
7.4.4	Test Condition and Results:	51
7.5	ELECTROSTATIC DISCHARGE	52
7.5.1	Test Setup Diagram	52
7.5.2	E.U.T. Operation	52
7.5.3	Test Mode Description	52
7.5.4	Test Condition and Results:	52
7.6	RADIATED IMMUNITY (80MHZ1GHZ, 1.4GHZ-6GHZ)	54
7.6.1	Test Setup Diagram	54
7.6.2	E.U.T. Operation	54
7.6.3	Test Mode Description	54
7.6.4	Test Condition and Results:	54
7.7	SURGE AT DC PORT	56
7.7.1	Test Setup Diagram	56
7.7.2	E.U.T. Operation	56
7.7.3	Test Mode Description	56
7.7.4	Test Condition and Results:	56
7.8	POWER FREQUENCY MAGNETIC FIELD	58
7.8.1	Test Setup Diagram	58
7.8.2	E.U.T. Operation	58
7.8.3	Test Mode Description	58
7.8.4	Test Condition and Results:	58
7.9	CONDUCTED IMMUNITY AT DC POWER PORT (150KHZ-80MHZ)	59
7.9.1	Test Setup Diagram	59



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

7.9.2	<i>E.U.T. Operation</i>	59
7.9.3	<i>Test Mode Description</i>	59
7.9.4	<i>Test Condition and Results:</i>	59
7.10	CONDUCTED IMMUNITY AT SIGNAL PORT (150KHZ-80MHZ).....	60
7.10.1	<i>Test Setup Diagram</i>	60
7.10.2	<i>E.U.T. Operation</i>	60
7.10.3	<i>Test Mode Description</i>	60
7.10.4	<i>Test Condition and Results:</i>	60
7.11	ELECTRICAL FAST TRANSIENTS BURST AT DC POWER PORT	61
7.11.1	<i>Test Setup Diagram</i>	61
7.11.2	<i>E.U.T. Operation</i>	61
7.11.3	<i>Test Mode Description</i>	61
7.11.4	<i>Test Condition and Results:</i>	61
7.12	ELECTRICAL FAST TRANSIENTS BURST AT SIGNAL PORT.....	62
7.12.1	<i>Test Setup Diagram</i>	62
7.12.2	<i>E.U.T. Operation</i>	62
7.12.3	<i>Test Mode Description</i>	62
7.12.4	<i>Test Condition and Results:</i>	62
7.13	ELECTROSTATIC DISCHARGE.....	63
7.13.1	<i>Test Setup Diagram</i>	63
7.13.2	<i>E.U.T. Operation</i>	63
7.13.3	<i>Test Mode Description</i>	63
7.13.4	<i>Test Condition and Results:</i>	63
7.14	POWER FREQUENCY MAGNETIC FIELD.....	65
7.14.1	<i>Test Setup Diagram</i>	65
7.14.2	<i>E.U.T. Operation</i>	65
7.14.3	<i>Test Mode Description</i>	65
7.14.4	<i>Test Condition and Results:</i>	65
7.15	RADIATED IMMUNITY (80MHZ-1GHZ, 1.4GHZ-6GHZ).....	66
7.15.1	<i>Test Setup Diagram</i>	66
7.15.2	<i>E.U.T. Operation</i>	66
7.15.3	<i>Test Mode Description</i>	66
7.15.4	<i>Test Condition and Results:</i>	66
7.16	SURGE AT DC POWER PORT.....	68
7.16.1	<i>Test Setup Diagram</i>	68
7.16.2	<i>E.U.T. Operation</i>	68
7.16.3	<i>Test Mode Description</i>	68
7.16.4	<i>Test Condition and Results:</i>	68
8	TEST SETUP PHOTO	70
9	EUT CONSTRUCTIONAL DETAILS (EUT PHOTOS).....	79



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

4 General Information

4.1 Details of E.U.T.

Power supply:	102.4V 52Ah Test voltage: DC102.4V highest internal frequency: 8MHz
---------------	---

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
DC power supply	HP	HP6674A	NA
Resistance load	NA	NA	NA
Laptop	LENOVO	L460	NA

4.3 Measurement Uncertainty & Decision Rule

Measurement Uncertainty:

No.	Item	Measurement Uncertainty (U_{Lab})	U_{CISPR}
1	Conducted Emission at mains port using AMN	3.4dB (9kHz to 150kHz)	3.8dB (9kHz to 150kHz)
		2.9dB (150kHz to 30MHz)	3.4dB (150kHz to 30MHz)
2	Conducted Emission at mains port using VP	2.2dB (9kHz to 30MHz)	2.9dB (9kHz to 30MHz)
3	Conducted Emission at telecommunication port using AAN	4.6dB (150kHz to 30MHz)	5.0dB (150kHz to 30MHz)
4	Radiated Power	3.4dB (30MHz to 300MHz)	4.5dB (30MHz to 300MHz)
5	Radiated emission	5.7dB (30MHz-1GHz)	6.3dB (30MHz-1GHz)
		4.8dB (1GHz-6GHz)	5.2dB (1GHz-6GHz)
		5.0dB (6GHz-18GHz)	5.5dB (6GHz-18GHz)
6	Radiated disturbance (disturbance current in a LLAS)	2.6dB (9kHz to 30MHz)	3.3dB (9kHz to 30MHz)

Note: The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Decision Rule:

- CISPR 16-4-2 for emission measurements is as below described.

Pass means the test result passed the test standard requirement, please find the detailed decision rule in the report relative section.

U_{LAB} less than U_{CISPR} , therefore:

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.



4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. E&E Lab
588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China
Tel: +86 21 6191 5666 Fax: +86 21 6191 5678

No tests were sub-contracted.

Note:

1. SGS is not responsible for wrong test results due to incorrect information (e.g. max. clock frequency, highest internal frequency, antenna gain, cable loss, etc) is provided by the applicant. (if applicable).
2. SGS is not responsible for the authenticity, integrity and the validity of the conclusion based on results of the data provided by applicant. (if applicable).

4.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• **A2LA (Certificate No. 6332.01)**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. is accredited by the American Association for Laboratory Accreditation(A2LA).

• **FCC (Designation Number: CN1301)**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been recognized as an accredited testing laboratory.

• **ISED (CAB Identifier: CN0020)**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. EMC Laboratory has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory.
Company Number: 8617A

• **VCCI (Member No.: 3061)**

The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-13868, C-14336, T-12221, G-10830 respectively.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None

4.8 EMS Monitor

Visual: Monitor the work status



5 Equipment List

Conducted Emissions at DC Power Port (150kHz-30MHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EMI test receiver	Rohde & Schwarz	ESR7	SHEM162-1	2022/12/20	2023/12/19
Line impedance stabilization network	SCHWARZBECK	NSLK8127	SHEM061-1	2022/12/20	2023/12/19
Line impedance stabilization network	EMCO	3816_2	SHEM019-1	2022/12/20	2023/12/19
Pulse limiter	Rohde & Schwarz	ESH3-Z2	SHEM029-1	2022/12/20	2023/12/19
Shielding Room	ZHONGYU	8*4*3M	SHEM079-2	2020/12/20	2023/12/19
CE test Cable	/	/	SHEM172-1	2022/12/20	2023/12/19
Test Software	ESE	e3	Version: 6.111221a	N/A	N/A

Conducted Emissions at Other Wired Port (150kHz-30MHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EMI test receiver	Rohde & Schwarz	ESR7	SHEM162-1	2022/12/20	2023/12/19
Line impedance stabilization network	SCHWARZBECK	NSLK8127	SHEM061-1	2022/12/20	2023/12/19
Line impedance stabilization network	EMCO	3816_2	SHEM019-1	2022/12/20	2023/12/19
Pulse limiter	Rohde & Schwarz	ESH3-Z2	SHEM029-1	2022/12/20	2023/12/19
Shielding Room	ZHONGYU	8*4*3M	SHEM079-2	2020/12/20	2023/12/19
CE test Cable	/	/	SHEM172-1	2022/12/20	2023/12/19
8-wire ISN cat 5	SCHWARZBECK	CAT5 8158	SHEM137-1	2022/12/20	2023/12/19
8-wire ISN cat 3	SCHWARZBECK	CAT3 8158	SHEM137-2	2022/12/20	2023/12/19
8-wire ISN cat 6	SCHWARZBECK	NTFM8158	SHEM137-3	2022/12/20	2023/12/19
2-wire ISN	SCHWARZBECK	NTFM 8131	SHEM139-1	2022/12/20	2023/12/19
Passive Voltage probe	Rohde & Schwarz	ESH2-Z3	SHEM028-1	2022/9/29	2023/9/28
Capacitive Voltage Probe	SCHWARZBECK	CVP9222 B	SHEM169-1	2022/8/02	2023/8/01
Current Probe	SCHWARZBECK	SW9605	SHEM170-1	2022/8/02	2023/8/01
Test Software	ESE	e3	Version: 6.111221a	N/A	N/A



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

Radiated Emissions (30MHz-1GHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EMI test receiver	Rohde & Schwarz	ESU40	SHEM051-1	2022/12/20	2023/12/19
EMI test receiver	Rohde & Schwarz	ESR7	SHEM201-1	2022/8/02	2023/8/01
CONTROLLER	INNCO	CO2000	SHEM047-1	N/A	N/A
ANTENNA MAST	INNCO	MA400-EP	SHEM047-2	N/A	N/A
TURN DEVICE	INNCO	DE 3600-RH	SHEM047-3	N/A	N/A
Broadband UHF-VHF ANTENNA	SCHWARZBECK	VULB9168	SHEM048-1	2021/9/21	2023/9/20
Broadband UHF-VHF ANTENNA	SCHWARZBECK	VULB9168	SHEM202-1	2021/5/7	2023/5/6
Semi/Fully Anechoic	ST	11*6*6M	SHEM078-2	2020/5/25	2023/5/24
Pre-amplifier	HP	8447D	SHEM236-1	2022/8/02	2023/8/01
Pre-amplifier	HP	8447D	SHEM143-1	2022/12/20	2023/12/19
RE test Cable	/	/	SHEM173-1&SHEM174-1	2023/1/7	2024/1/6
Test Software	ESE	e3	Version: 6.111221a	N/A	N/A

Conducted Immunity at DC Power Port (150kHz-80MHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Signal generator	Rohde & Schwarz	SMB100A	SHEM194-1	2022/12/20	2023/12/19
Power Amplifier	HAEFFLY	PAMP250	SHEM023-1	2022/12/20	2023/12/19
6dB Attenuator	HUAXIANG	DTS50-6dB-1G-A	SHEM123-2	2022/12/20	2023/12/19
Coupling clamp	LUTHI	EM 101	SHEM027-1	2022/07/07	2023/07/06
Power Meter	Rohde & Schwarz	NRP	SHEM057-1	2022/8/02	2023/8/01
Power meter sensor	Rohde & Schwarz	NRP-Z91	SHEM057-2	2022/8/02	2023/8/01
Coupling and Decoupling Network (CDN)	LUTHI	L-801 M1	SHEM023-5	2022/12/20	2023/12/19
Coupling and Decoupling Network (CDN)	LUTHI	L-801 M2/M3	SHEM023-6	2022/12/20	2023/12/19
Shielding Room	ZHONGYU	5*3*3M	SHEM079-6	2022/12/20	2025/12/19
Coupling and Decoupling Network	Teseq	CDN M016	SHEM168-1	2022/8/02	2023/8/01
RF Generator	SCHAFFNER	NSG 2070	SHEM221-1	2022/8/02	2023/8/01
Test Software	Rohde & Schwarz	EMC32	Version: 10.20.01	N/A	N/A



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

Conducted Immunity at Signal Port (150kHz-80MHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Signal generator	Rohde & Schwarz	SMB100A	SHEM194-1	2022/12/20	2023/12/19
Power Amplifier	HAEFFLY	PAMP250	SHEM023-1	2022/12/20	2023/12/19
6dB Attenuator	HUAXIANG	DTS50-6dB-1G-A	SHEM123-2	2022/12/20	2023/12/19
Coupling clamp	LUTHI	EM 101	SHEM027-1	2022/07/07	2023/07/06
Power Meter	Rohde & Schwarz	NRP	SHEM057-1	2022/8/02	2023/8/01
Power meter sensor	Rohde & Schwarz	NRP-Z91	SHEM057-2	2022/8/02	2023/8/01
Coupling and Decoupling Network (CDN)	LUTHI	L-801 M1	SHEM023-5	2022/12/20	2023/12/19
Coupling and Decoupling Network (CDN)	LUTHI	L-801 M2/M3	SHEM023-6	2022/12/20	2023/12/19
Shielding Room	ZHONGYU	5*3*3M	SHEM079-6	2022/12/20	2025/12/19
Coupling and Decoupling Network	Teseq	CDN M016	SHEM168-1	2022/8/02	2023/8/01
RF Generator	SCHAFFNER	NSG 2070	SHEM221-1	2022/8/02	2023/8/01
Test Software	Rohde & Schwarz	EMC32	Version: 10.20.01	N/A	N/A

Electrical Fast Transients Burst at DC Power Port					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Immunity Test System	EMC PARTNER	TRA3000 F-S-D-V	SHEM163-1	2022/12/20	2023/12/19
Test Software	EMC-PARTNER	GENECS	Version: 3.29	N/A	N/A
Immunity Test System	TESEQ	NSG 3060	SHEM224-1	2022/8/02	2023/8/01
Coupling / Decoupling Network (CDN)	TESEQ	CDN 3061	SHEM224-3	2022/8/02	2023/8/01
EFT & Surge Generator	PRIMA	PRM61045TB	SHEM200-1	2022/9/29	2023/9/28
CDN for EFT & Surge	PRIMA	PRM-CDN	SHEM200-2	2022/9/29	2023/9/28
Capacitive coupling clamp	PRIMA	EFT-CLAMP	SHEM200-4	2020/9/29	2023/9/28



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

Electrical Fast Transients Burst at Signal Port					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Immunity Test System	EMC PARTNER	TRA3000 F-S-D-V	SHEM163-1	2022/12/20	2023/12/19
Test Software	EMC-PARTNER	GENECS	Version: 3.29	N/A	N/A
Immunity Test System	TESEQ	NSG 3060	SHEM224-1	2022/8/02	2023/8/01
Coupling / Decoupling Network (CDN)	TESEQ	CDN 3061	SHEM224-3	2022/8/02	2023/8/01
Capacitive Coupling Clamp	EM TEST	HFK	SHEM026-2	2022/12/20	2023/12/19
EFT & Surge Generator	PRIMA	PRM61045TB	SHEM200-1	2022/9/29	2023/9/28
CDN for EFT & Surge	PRIMA	PRM-CDN	SHEM200-2	2022/9/29	2023/9/28
Capacitive coupling clamp	PRIMA	EFT-CLAMP	SHEM200-4	2020/9/29	2023/9/28

Electrostatic Discharge					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Electrostatic Discharge Simulator	TESEQ	NSG 437	SHEM041-2	2022/8/02	2023/8/01
Electrostatic Discharge Simulator	3CTEST	EDS20H	SHEM199-1	2022/12/20	2023/12/19

Radiated Immunity (80MHz-1GHz, 1.4GHz-6GHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Signal generator	Rohde & Schwarz	SMB100A	SHEM194-1	2022/12/20	2023/12/19
Power Meter	Rohde & Schwarz	NRP	SHEM057-1	2022/8/02	2023/8/01
Power meter sensor	Rohde & Schwarz	NRP-Z91	SHEM057-2	2022/8/02	2023/8/01
Antenna	SCHWARZBECK	STLP9128D	SHEM130-1	N/A	N/A
Antenna	SCHWARZBECK	STLP9149	SHEM131-1	N/A	N/A
Amplifier	MILMEGA	AS0840-55-55	SHEM133-1	2022/12/20	2023/12/19
Amplifier	MILMEGA	80RF1000-250	SHEM132-1	2022/12/20	2023/12/19
Amplifier	Rohde & Schwarz	BBA150-E60	SHEM171-1	2022/12/20	2023/12/19
Power meter sensor	Rohde & Schwarz	NRP-Z22	SHEM136-1	2022/8/02	2023/8/01
ElectroMagnetic Field Probe	ETS-Lindgren	HI-6105	SHEM134-1	2022/7/15	2023/7/14
Semi/Fully Anechoic	ST	11*6*6M	SHEM078-2	2020/5/25	2023/5/24
Test Software	Rohde & Schwarz	EMC32	Version: 10.20.01	N/A	N/A



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

Surge at DC Port					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Immunity Test System	EMC PARTNER	TRA3000 F-S-D-V	SHEM163-1	2022/12/20	2023/12/19
Test Software	EMC-PARTNER	GENECS	Version: 3.29	N/A	N/A
Immunity Test System	TESEQ	NSG 3060	SHEM224-1	2022/8/02	2023/8/01
Coupling / Decoupling Network (CDN)	TESEQ	CDN 3061	SHEM224-3	2022/8/02	2023/8/01
EFT & Surge Generator	PRIMA	PRM61045TB	SHEM200-1	2022/9/29	2023/9/28
CDN for EFT & Surge	PRIMA	PRM-CDN	SHEM200-2	2022/9/29	2023/9/28
Data coupling network 4 line	EM TEST	CNV 504	SHEM026-3	2022/12/20	2023/12/19
CDN for unsymmetrical interconnection lines (1.2/50us)	SCHAFFNER	CDN 117	SHEM224-5	2022/8/02	2023/8/01
CDN for symmetric datalines & Resistor network (Surge 1.2/50 or 10/700 us)	SCHAFFNER	CDN 118 & INA172	SHEM224-6 & SHEM224-7	2022/8/02	2023/8/01

Power Frequency Magnetic Field					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Compliance Test System	AMETEK	PACS-1	SHEM024-2	2022/8/02	2023/8/01
AC Power Source 5KVA	AMETEK	5001iX	SHEM025-2	2022/8/02	2023/8/01
Current transformer for magnetic field coil	EM TEST	MC2630	SHEM026-7	2022/07/06	2023/07/05
Current transformer for magnetic field coil	EM TEST	MC26100	SHEM026-8	2022/07/06	2023/07/05
Magnetic field coil	EM TEST	MS100	SHEM026-9	2022/07/06	2023/07/05



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

General used equipment					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Digital pressure meter	YONGZHI	DYM3-01	SHEM082-1	2021-01-22	2024-01-21
Temperature&humidity recorder	ShangHai weather meter work	ZJ 1-2B	SHEM042-9~10	2022-12-31	2023-12-30
Temperature&humidity recorder	ShangHai weather meter work	ZJ 1-2B	SHEM042-5	2022-08-01	2023-07-31
Digital Temperature& humidity recorder	Jianda Renke	RS-WS-N01-6J	SHEM247-1~8	2023-01-13	2024-01-12
Digital Multimeter	FLUKE	17B+	SHEM271-1	2022-08-26	2023-08-25
Autoformer regulator	Guangzhou bao de	TDGC2-5KVA	SHEM150-1	N/A	N/A
Multi-purpose tong tester	FLUKE	317	SHEM001-2	2022-11-14	2023-11-13



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

6 Emission Test Results

6.1 Conducted Emissions at DC Power Port (150kHz-30MHz)

Test Requirement: EN IEC 61000-6-3: 2021

Test Method: CISPR 16-2-1

Limit:

0.15M-0.5MHz 79dB(μV) quasi-peak, 66dB(μV) average

0.5M-30MHz 73dB(μV) quasi-peak, 60dB(μV) average

Detector: Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz

6.1.1 E.U.T. Operation

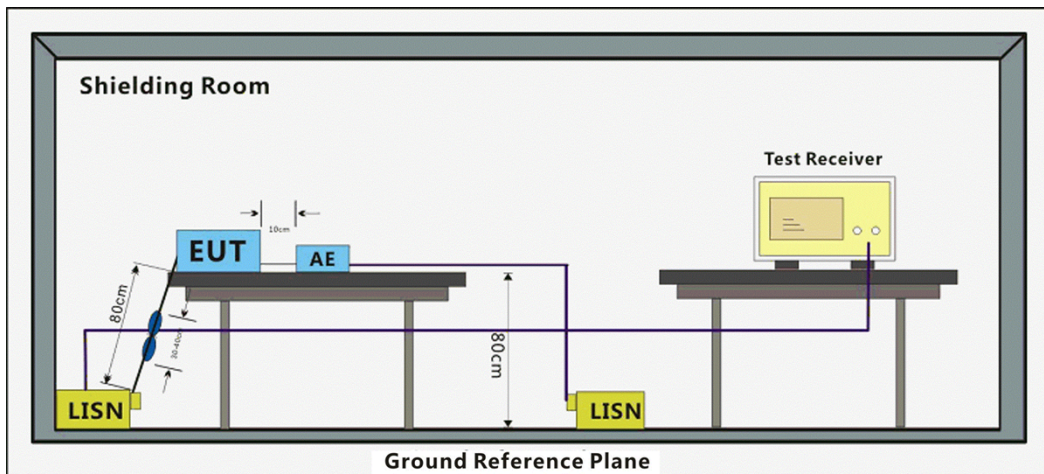
Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1010 mbar

6.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Charging mode_ keep the EUT Charging continual
Final test	01	Discharging mode_ keep the EUT Discharging continual

6.1.3 Test Setup Diagram



6.1.4 Measurement Procedure and Data

Frequency range: 150KHz-30MHz

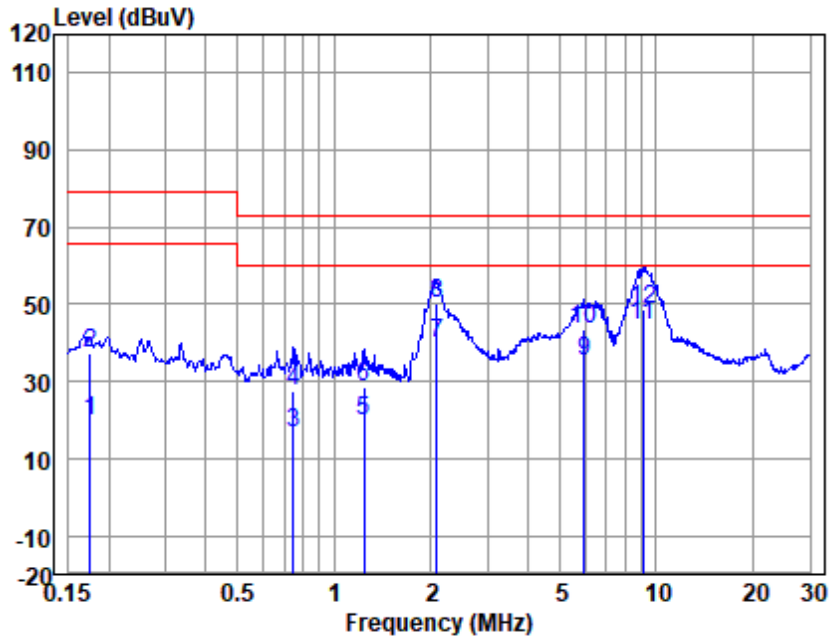
An initial pre-scan was performed with peak detector. Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.

The red line show in graphic is the limit in standard used in this section.

Measured Level = Read level + Cable Loss + LISN Factor



Test Mode: 00; Line: Live line



LISN : LINE
 EUT/Project No : 01618BA
 Test Mode : 00

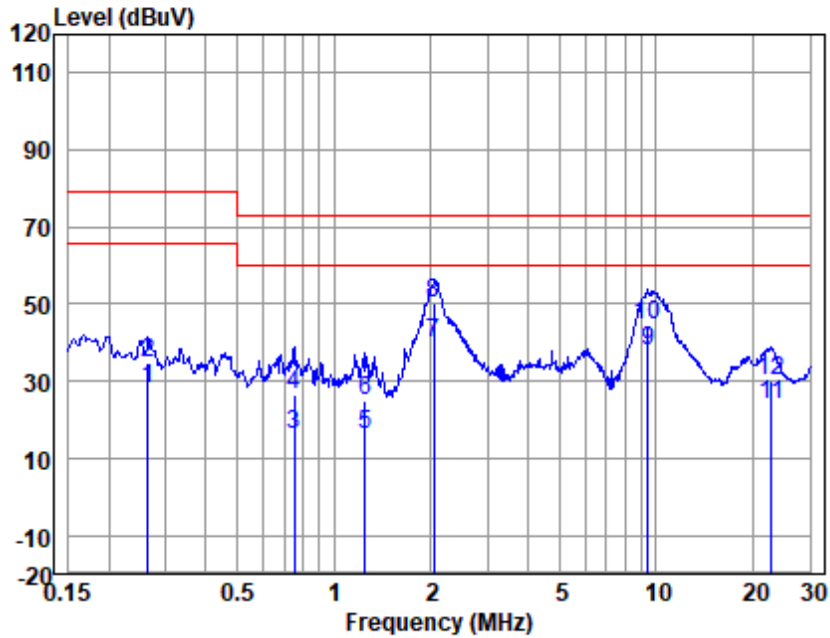
	Freq (MHz)	Read level (dBUV)	LISN Factor (dB)	Cable Loss (dB)	Emission Level (dBUV)	Limit (dBUV)	Over Limit (dB)	Remark
1	0.17	9.33	0.40	9.87	19.60	66.00	-46.40	Average
2	0.17	27.00	0.40	9.87	37.27	79.00	-41.73	QP
3	0.75	6.85	0.20	9.86	16.91	60.00	-43.09	Average
4	0.75	17.22	0.20	9.86	27.28	73.00	-45.72	QP
5	1.24	9.61	0.20	9.86	19.67	60.00	-40.33	Average
6	1.24	18.37	0.20	9.86	28.43	73.00	-44.57	QP
7	2.09	29.88	0.20	9.86	39.94	60.00	-20.06	Average
8	2.09	40.25	0.20	9.86	50.31	73.00	-22.69	QP
9	5.96	25.08	0.35	9.97	35.40	60.00	-24.60	Average
10	5.96	33.48	0.35	9.97	43.80	73.00	-29.20	QP
11	9.11	34.24	0.40	9.98	44.62	60.00	-15.38	Average
12	9.11	38.44	0.40	9.98	48.82	73.00	-24.18	QP

Notes: Emission Level = Read Level + LISN Factor + Cable loss



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Test Mode: 00; Line: Neutral Line



LISN : NEUTRAL
 EUT/Project No : 01618BA
 Test Mode : 00

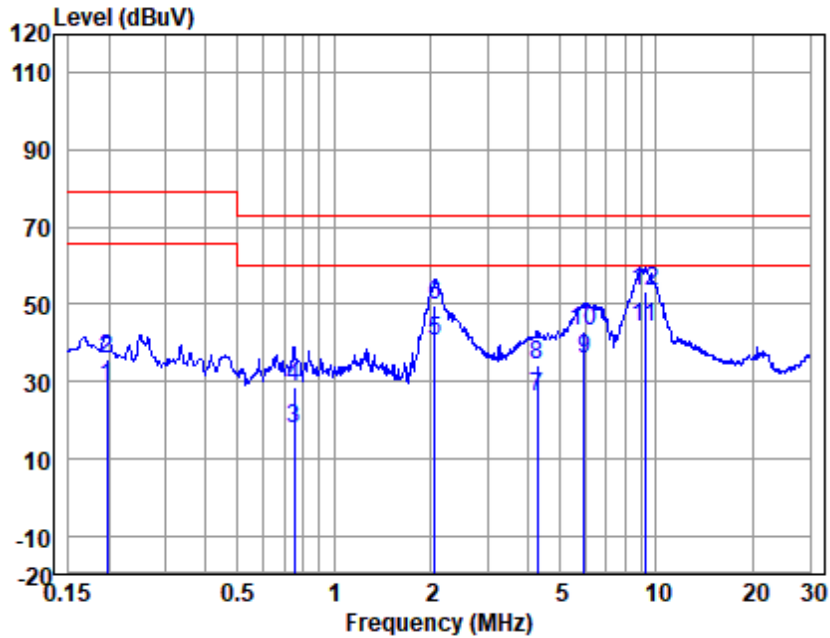
	Freq (MHz)	Read level (dBUV)	LISN Factor (dB)	Cable Loss (dB)	Emission Level (dBUV)	Limit (dBUV)	Over Limit (dB)	Remark
1	0.26	17.72	0.30	9.87	27.89	66.00	-38.11	Average
2	0.26	24.77	0.30	9.87	34.94	79.00	-44.06	QP
3	0.75	5.79	0.30	9.86	15.95	60.00	-44.05	Average
4	0.75	16.53	0.30	9.86	26.69	73.00	-46.31	QP
5	1.25	5.84	0.30	9.86	16.00	60.00	-44.00	Average
6	1.25	14.96	0.30	9.86	25.12	73.00	-47.88	QP
7	2.04	29.63	0.31	9.86	39.80	60.00	-20.20	Average
8	2.04	40.20	0.31	9.86	50.37	73.00	-22.63	QP
9	9.45	27.19	0.55	9.98	37.72	60.00	-22.28	Average
10	9.45	34.03	0.55	9.98	44.56	73.00	-28.44	QP
11	22.78	12.74	0.97	10.07	23.78	60.00	-36.22	Average
12	22.78	19.16	0.97	10.07	30.20	73.00	-42.80	QP

Notes: Emission Level = Read Level + LISN Factor + Cable loss



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Test Mode: 01; Line: Live line



LISN : LINE
 EUT/Project No : 01618BA
 Test Mode : 01

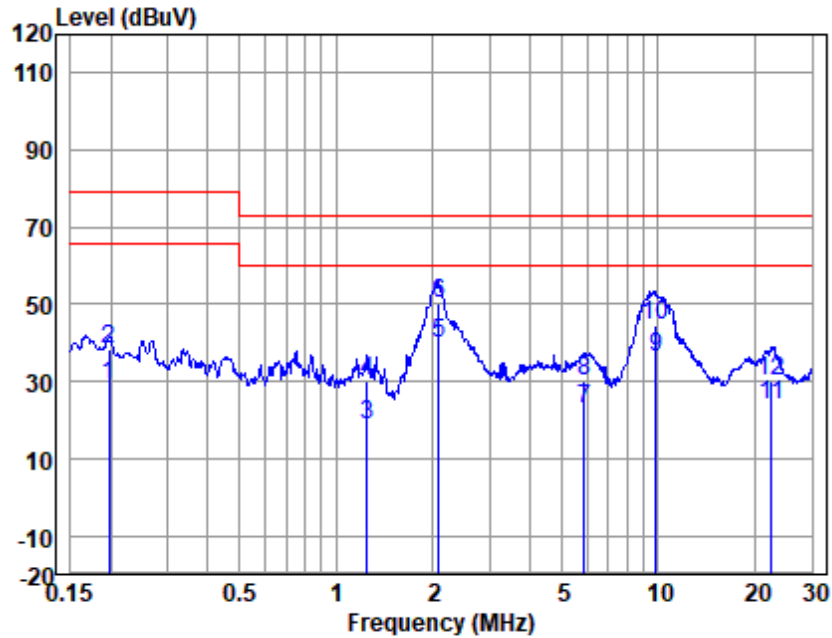
	Freq (MHz)	Read level (dBuV)	LISN Factor (dB)	Cable Loss (dB)	Emission Level (dBuV)	Limit (dBuV)	Over Limit (dB)	Remark
1	0.20	18.34	0.40	9.87	28.61	66.00	-37.39	Average
2	0.20	25.65	0.40	9.87	35.92	79.00	-43.08	QP
3	0.75	7.70	0.20	9.86	17.76	60.00	-42.24	Average
4	0.75	18.34	0.20	9.86	28.40	73.00	-44.60	QP
5	2.05	30.25	0.20	9.86	40.31	60.00	-19.69	Average
6	2.05	39.57	0.20	9.86	49.63	73.00	-23.37	QP
7	4.27	15.93	0.28	9.90	26.11	60.00	-33.89	Average
8	4.27	24.28	0.28	9.90	34.46	73.00	-38.54	QP
9	5.96	25.51	0.35	9.97	35.83	60.00	-24.17	Average
10	5.96	32.48	0.35	9.97	42.80	73.00	-30.20	QP
11	9.25	33.87	0.40	9.98	44.25	60.00	-15.75	Average
12	9.25	43.10	0.40	9.98	53.48	73.00	-19.52	QP

Notes: Emission Level = Read Level + LISN Factor + Cable loss



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Test Mode: 01; Line: Neutral Line



LISN : NEUTRAL
 EUT/Project No : 01618BA
 Test Mode : 01

	Freq (MHz)	Read level (dBUV)	LISN Factor (dB)	Cable Loss (dB)	Emission Level (dBUV)	Limit (dBUV)	Over Limit (dB)	Remark
1	0.20	18.82	0.30	9.87	28.99	66.00	-37.01	Average
2	0.20	28.00	0.30	9.87	38.17	79.00	-40.83	QP
3	1.25	8.66	0.30	9.86	18.82	60.00	-41.18	Average
4	1.25	20.00	0.30	9.86	30.16	73.00	-42.84	QP
5	2.08	29.70	0.31	9.86	39.87	60.00	-20.13	Average
6	2.08	39.87	0.31	9.86	50.04	73.00	-22.96	QP
7	5.90	12.33	0.40	9.97	22.70	60.00	-37.30	Average
8	5.90	19.60	0.40	9.97	29.97	73.00	-43.03	QP
9	9.86	25.96	0.59	9.98	36.53	60.00	-23.47	Average
10	9.86	34.10	0.59	9.98	44.67	73.00	-28.33	QP
11	22.54	12.62	0.96	10.07	23.65	60.00	-36.35	Average
12	22.54	19.29	0.96	10.07	30.32	73.00	-42.68	QP

Notes: Emission Level = Read Level + LISN Factor + Cable loss



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

6.2 Conducted Emissions at Other Wired Port (150kHz-30MHz)

Test Requirement: EN IEC 61000-6-3: 2021

Test Method: CISPR 32

Limit:

0.15M-0.5MHz 84dB(μV)-74dB(μV) quasi-peak, 74dB(μV)-64dB(μV) average

0.5M-30MHz 74dB(μV) quasi-peak, 64dB(μV) average

Detector: Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz

6.2.1 E.U.T. Operation

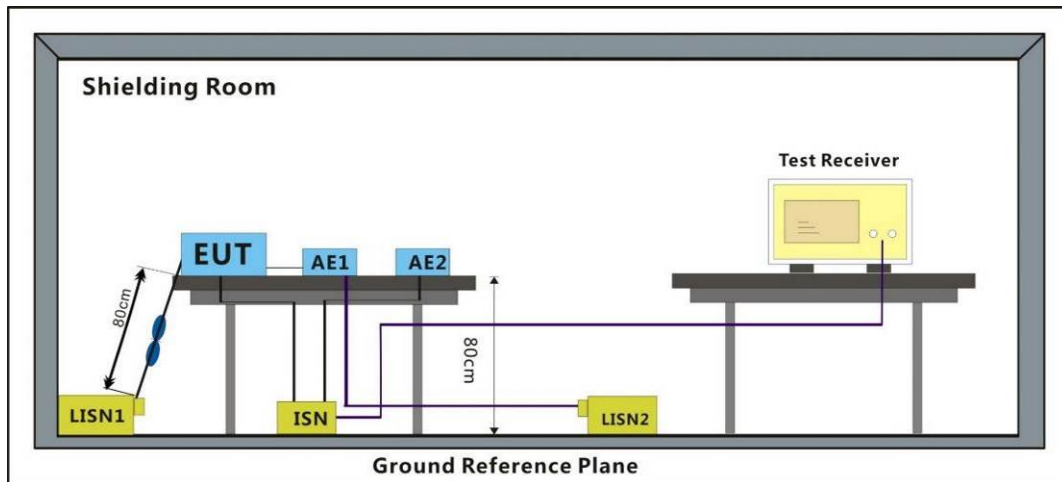
Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1010 mbar

6.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Charging mode_ keep the EUT Charging continual
Final test	01	Discharging mode_ keep the EUT Discharging continual

6.2.3 Test Setup Diagram



6.2.4 Measurement Procedure and Data

Frequency range: 150KHz-30MHz

An initial pre-scan was performed with peak detector. Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.

The red line show in graphic is the limit in standard used in this section.

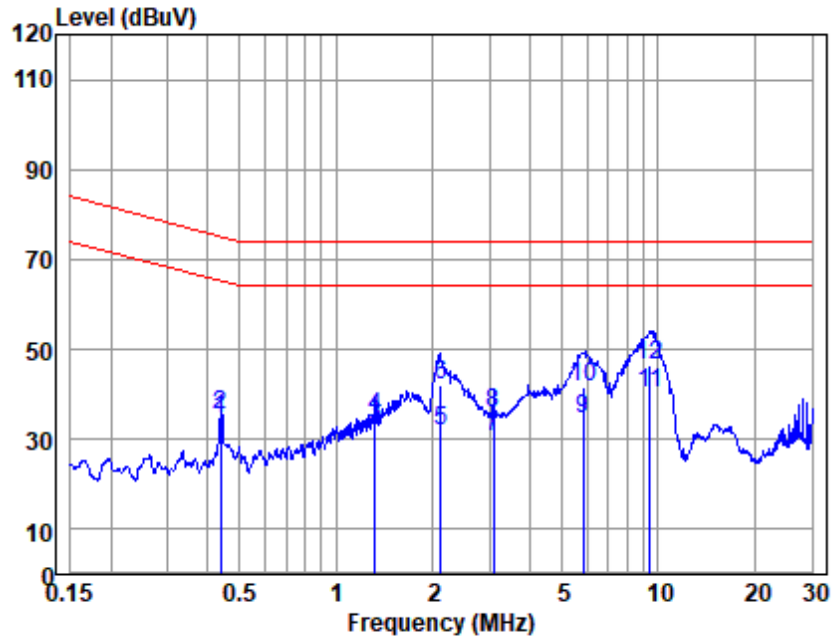
Measured Level = Read level + Cable Loss + LISN Factor



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

Test Mode: 00



ISN : NTFM 8131

EUT/Project No : 01618BA

Test Mode : 00

	Freq (MHz)	Read level (dBUV)	CDN Factor (dB)	Cable Loss (dB)	Emission Level (dBUV)	Limit (dBUV)	Over Limit (dB)	Remark
1	0.44	15.08	9.60	9.87	34.55	65.07	-30.52	Average
2	0.44	15.79	9.60	9.87	35.26	75.07	-39.81	QP
3	1.32	13.68	9.50	9.86	33.04	64.00	-30.96	Average
4	1.32	15.81	9.50	9.86	35.17	74.00	-38.83	QP
5	2.11	12.69	9.50	9.86	32.05	64.00	-31.95	Average
6	2.11	22.71	9.50	9.86	42.07	74.00	-31.93	QP
7	3.09	11.24	9.50	9.87	30.61	64.00	-33.39	Average
8	3.09	16.43	9.50	9.87	35.80	74.00	-38.20	QP
9	5.87	14.94	9.50	9.97	34.41	64.00	-29.59	Average
10	5.87	22.35	9.50	9.97	41.82	74.00	-32.18	QP
11	9.45	20.64	9.60	9.98	40.22	64.00	-23.78	Average
12	9.45	27.06	9.60	9.98	46.64	74.00	-27.36	QP

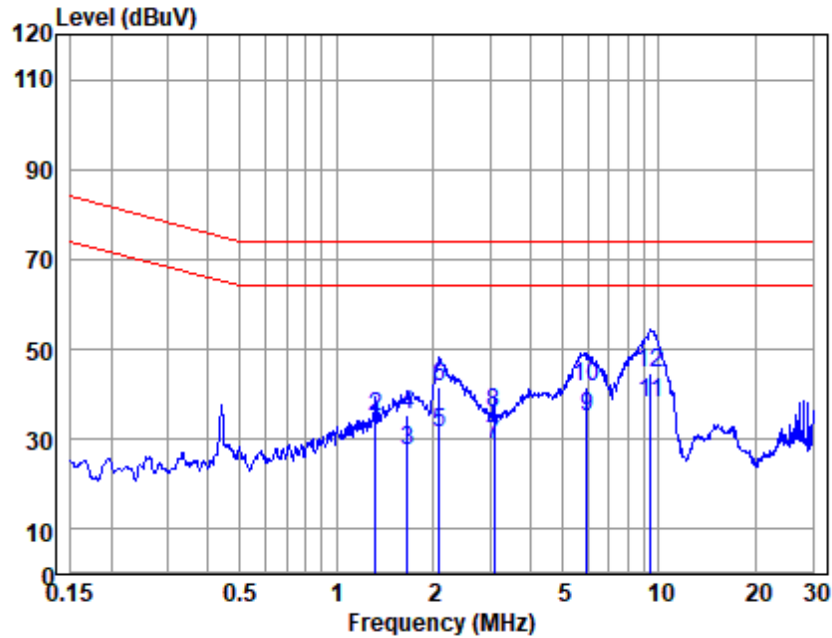
Notes: Emission Level = Read Level + ISN Factor + Cable loss



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

Test Mode: 01



ISN : NTFM 8131
 EUT/Project No : 01618BA
 Test Mode : 01

	Freq (MHz)	Read level (dBuV)	CDN Factor (dB)	Cable Loss (dB)	Emission Level (dBuV)	Limit (dBuV)	Over Limit (dB)	Remark
1	1.32	13.32	9.50	9.86	32.68	64.00	-31.32	Average
2	1.32	15.61	9.50	9.86	34.97	74.00	-39.03	QP
3	1.66	8.08	9.50	9.86	27.44	64.00	-36.56	Average
4	1.66	15.91	9.50	9.86	35.27	74.00	-38.73	QP
5	2.09	12.27	9.50	9.86	31.63	64.00	-32.37	Average
6	2.09	22.20	9.50	9.86	41.56	74.00	-32.44	QP
7	3.09	9.57	9.50	9.87	28.94	64.00	-35.06	Average
8	3.09	16.42	9.50	9.87	35.79	74.00	-38.21	QP
9	5.96	15.60	9.50	9.97	35.07	64.00	-28.93	Average
10	5.96	22.07	9.50	9.97	41.54	74.00	-32.46	QP
11	9.45	18.55	9.60	9.98	38.13	64.00	-25.87	Average
12	9.45	24.93	9.60	9.98	44.51	74.00	-29.49	QP

Notes: Emission Level = Read Level + ISN Factor + Cable loss



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

6.3 Radiated Emissions (30MHz-1GHz)

Test Requirement: EN IEC 61000-6-3: 2021

Test Method: CISPR 16-2-3

Limit:

Test Distance: 10m

30MHz-230MHz 30 dB(μV/m) quasi-peak

230MHz-1GHz 37 dB(μV/m) quasi-peak

Detector: Peak for pre-scan (120kHz resolution bandwidth) 30MHz to 1000MHz

Test Distance: 3m

30MHz-230MHz 40 dB(μV/m) quasi-peak

230MHz-1GHz 47 dB(μV/m) quasi-peak

Detector: Peak for pre-scan (120kHz resolution bandwidth) 30MHz to 1000MHz

6.3.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C

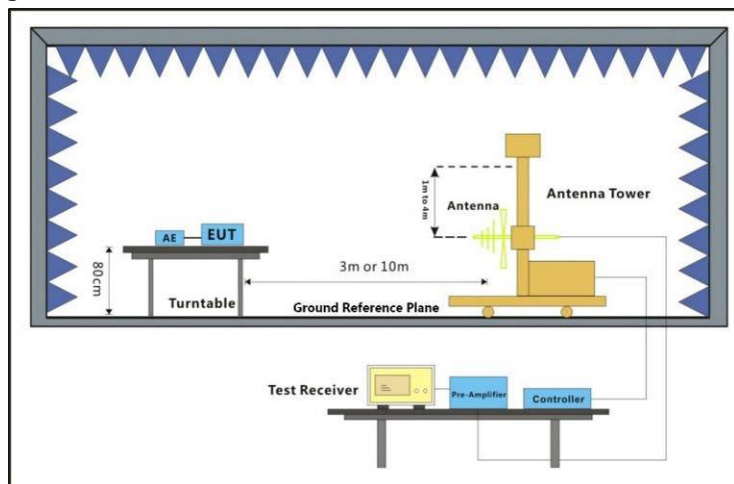
Humidity: 50 % RH

Atmospheric Pressure: 1010 mbar

6.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Charging mode_keep the EUT Charging continual
Final test	01	Discharging mode_keep the EUT Discharging continual

6.3.3 Test Setup Diagram



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com



6.3.4 Measurement Procedure and Data

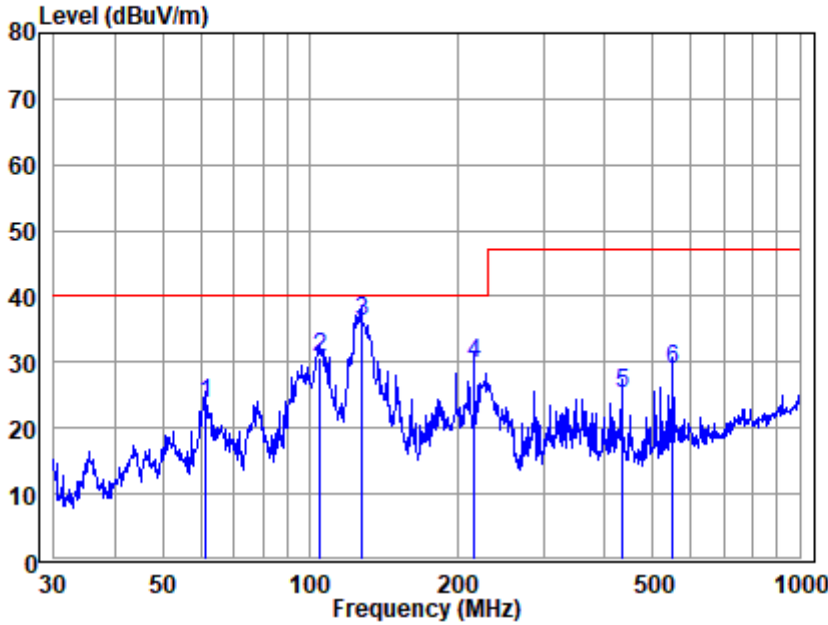
Frequency range: 30MHz-1GHz

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities. The red line show in graphic is the limit in standard used in this section.

Level=Read Level + Antenna Factor + Cable Loss - Preamp Factor



Test Mode: 00; Polarity: Horizontal



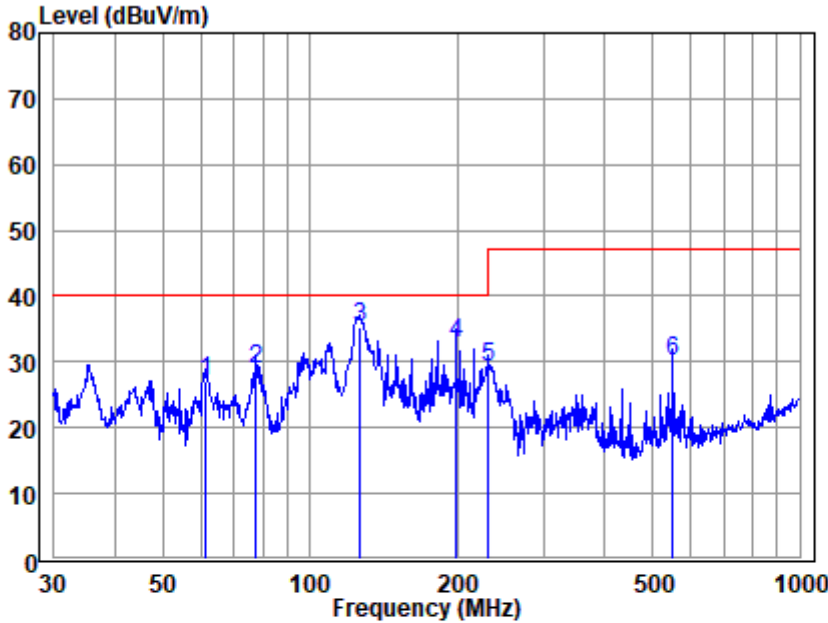
Antenna Polarity :Horizontal
 EUT/Project :1618BA
 Test mode :00

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
1 61.13	43.00	13.08	1.22	33.60	23.70	40.00	-16.30	QP
2 104.54	52.71	9.60	1.93	33.59	30.65	40.00	-9.35	QP
3 127.22	55.89	11.70	2.19	33.55	36.23	40.00	-3.77	QP
4 216.02	49.79	9.90	3.22	33.24	29.67	40.00	-10.33	QP
5 432.55	37.11	16.66	4.45	32.97	25.25	47.00	-21.75	QP
6 550.95	37.45	18.80	5.57	33.00	28.82	47.00	-18.18	QP

Note: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



Test Mode: 00; Polarity: Vertical



Antenna Polarity :Vertical
 EUT/Project :1618BA
 Test mode :00

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
1	60.92	46.24	13.09	1.22	33.60	26.95	40.00	-13.05 QP
2	77.59	51.09	9.62	1.68	33.52	28.87	40.00	-11.13 QP
3	126.33	54.94	11.62	2.17	33.55	35.18	40.00	-4.82 QP
4	198.59	53.29	9.92	2.95	33.31	32.85	40.00	-7.15 QP
5	230.91	48.46	10.60	3.20	33.18	29.08	47.00	-17.92 QP
6	550.95	38.69	18.80	5.57	33.00	30.06	47.00	-16.94 QP

Note: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

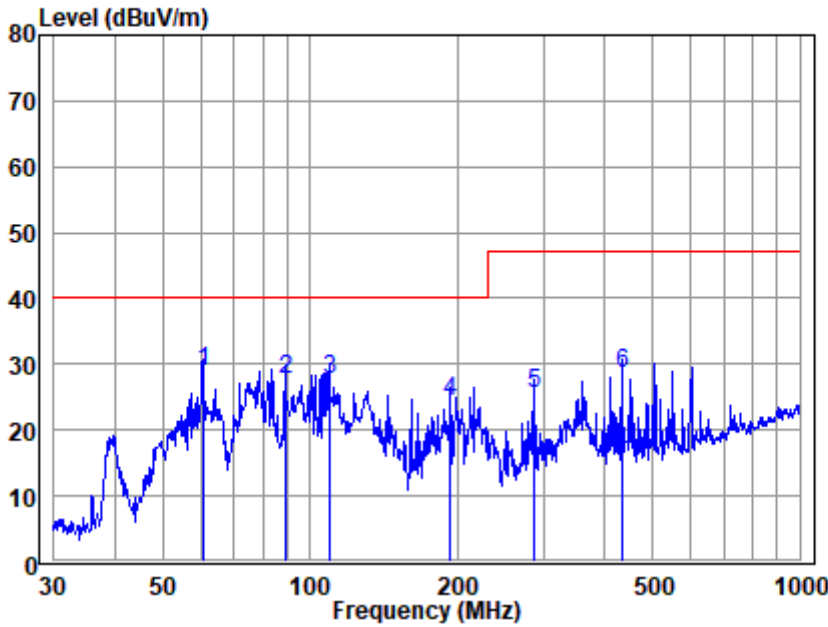


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.
 EEC EMC Lab

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
 NO.588 West Jindu Road, Songjiang District, Shanghai China 201612 t (86-21) 61915666 f (86-21) 61915678 www.sgs.com.cn
 中国·上海·松江区金都西路588号 邮编: 201612 t (86-21) 61915666 f (86-21) 61915678 sgs.china@sgs.com

Test Mode: 01; Polarity: Horizontal



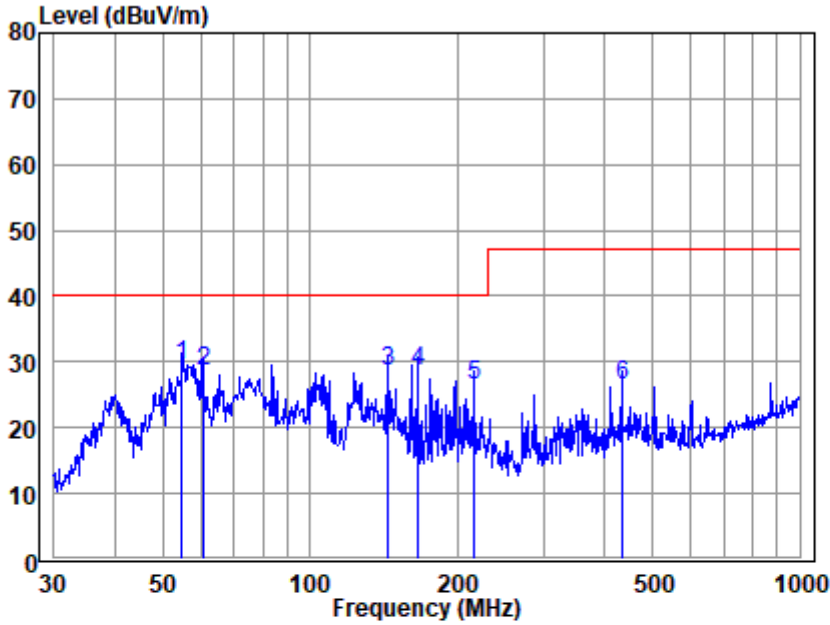
Antenna Polarity :Horizontal
 EUT/Project :1618BA
 Test mode :01

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 60.49	48.14	13.11	1.21	33.60	28.86	40.00	-11.14	QP
2 88.96	51.72	7.78	1.86	33.59	27.77	40.00	-12.23	QP
3 109.80	49.03	10.29	2.01	33.58	27.75	40.00	-12.25	QP
4 193.09	44.73	10.23	2.73	33.33	24.36	40.00	-15.64	QP
5 287.99	41.75	13.30	3.50	33.02	25.53	47.00	-21.47	QP
6 432.55	40.58	16.66	4.45	32.97	28.72	47.00	-18.28	QP

Note: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



Test Mode: 01; Polarity: Vertical



Antenna Polarity :Vertical
 EUT/Project :1618BA
 Test mode :01

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	54.83	48.42	13.55	1.11	33.65	29.43	40.00	-10.57 QP
2	60.49	47.84	13.11	1.21	33.60	28.56	40.00	-11.44 QP
3	143.83	46.60	13.11	2.46	33.51	28.66	40.00	-11.34 QP
4	166.07	46.49	12.97	2.57	33.44	28.59	40.00	-11.41 QP
5	216.02	46.64	9.90	3.22	33.24	26.52	40.00	-13.48 QP
6	432.55	38.36	16.66	4.45	32.97	26.50	47.00	-20.50 QP

Note: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

6.4 Conducted Emissions at DC Power Port (150kHz-30MHz)

Test Requirement: EN IEC 61000-6-4: 2019

Test Method: CISPR 16-2-1

Limit:

0.15MHz -0.5MHz 89dB(μV) quasi-peak, 76dB(μV) average

0.5MHz -30MHz 83dB(μV) quasi-peak, 70dB(μV) average

Detector: Peak for pre-scan (9kHz resolution bandwidth) 150kHz to 30MHz

NOTE 1: The lower limit is applicable at the transition frequency.

6.4.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C

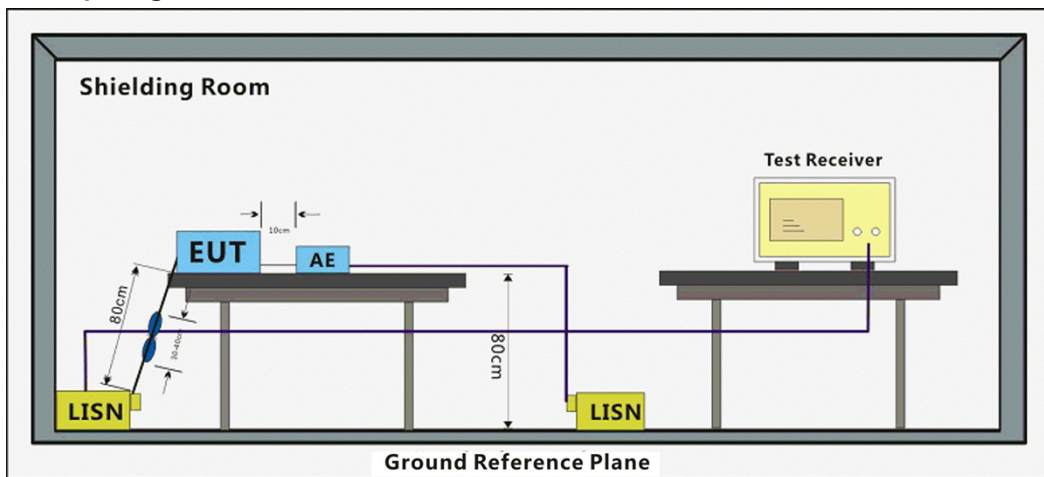
Humidity: 50 % RH

Atmospheric Pressure: 1010 mbar

6.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Charging mode_ keep the EUT Charging continual
Final test	01	Discharging mode_ keep the EUT Discharging continual

6.4.3 Test Setup Diagram



6.4.4 Measurement Procedure and Data

Frequency range: 150KHz-30MHz

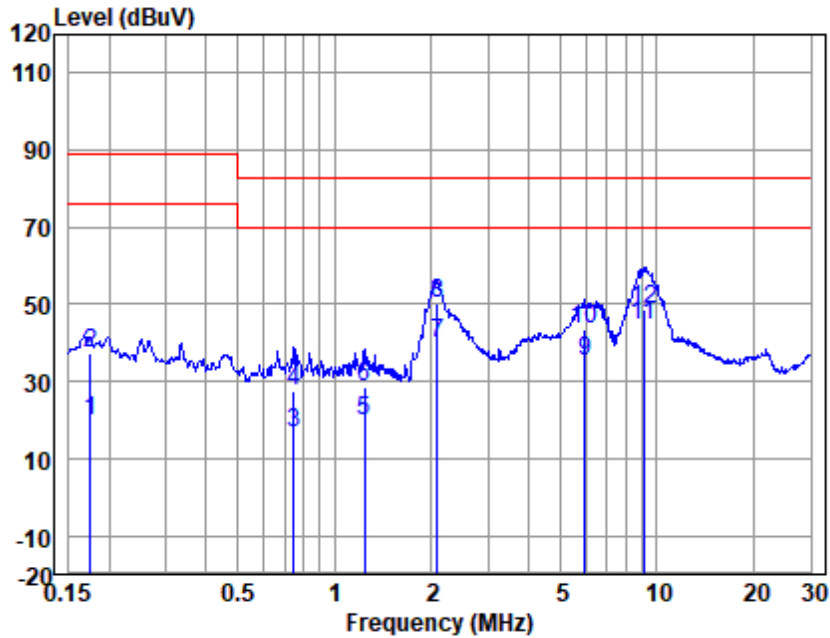
An initial pre-scan was performed with peak detector. Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.

The red line show in graphic is the limit in standard used in this section.

Measured Level = Read level + Cable Loss + LISN Factor



Test Mode: 00; Line: Live line



LISN : LINE
 EUT/Project No : 01618BA
 Test Mode : 00

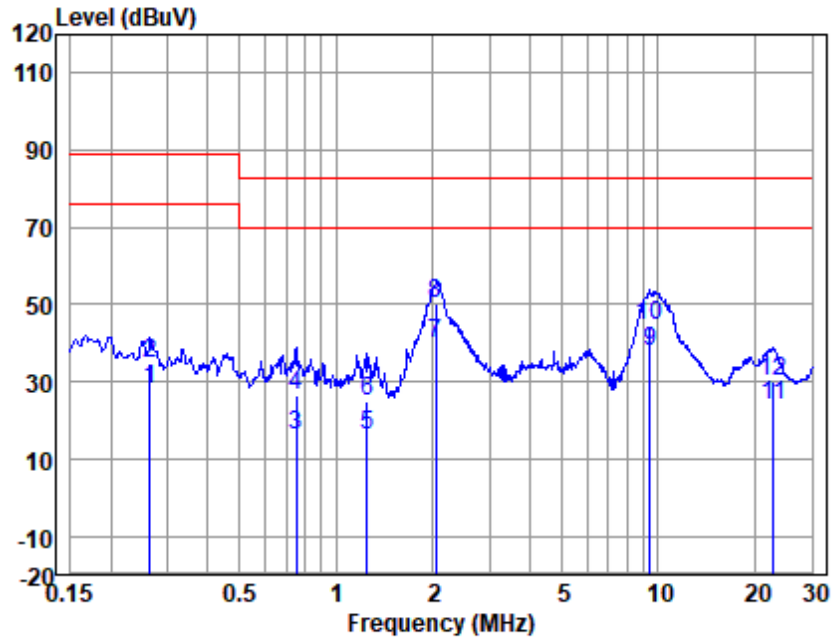
Freq (MHz)	Read level (dBUV)	LISN Factor (dB)	Cable Loss (dB)	Emission Level (dBUV)	Limit (dBUV)	Over Limit (dB)	Remark	
1	0.17	9.33	0.40	9.87	19.60	76.00	-56.40	Average
2	0.17	27.00	0.40	9.87	37.27	89.00	-51.73	QP
3	0.75	6.85	0.20	9.86	16.91	70.00	-53.09	Average
4	0.75	17.22	0.20	9.86	27.28	83.00	-55.72	QP
5	1.24	9.61	0.20	9.86	19.67	70.00	-50.33	Average
6	1.24	18.37	0.20	9.86	28.43	83.00	-54.57	QP
7	2.09	29.88	0.20	9.86	39.94	70.00	-30.06	Average
8	2.09	40.25	0.20	9.86	50.31	83.00	-32.69	QP
9	5.96	25.08	0.35	9.97	35.40	70.00	-34.60	Average
10	5.96	33.48	0.35	9.97	43.80	83.00	-39.20	QP
11	9.11	34.24	0.40	9.98	44.62	70.00	-25.38	Average
12	9.11	38.44	0.40	9.98	48.82	83.00	-34.18	QP

Notes: Emission Level = Read Level + LISN Factor + Cable loss



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Test Mode: 00; Line: Neutral Line



LISN : NEUTRAL
 EUT/Project No : 01618BA
 Test Mode : 00

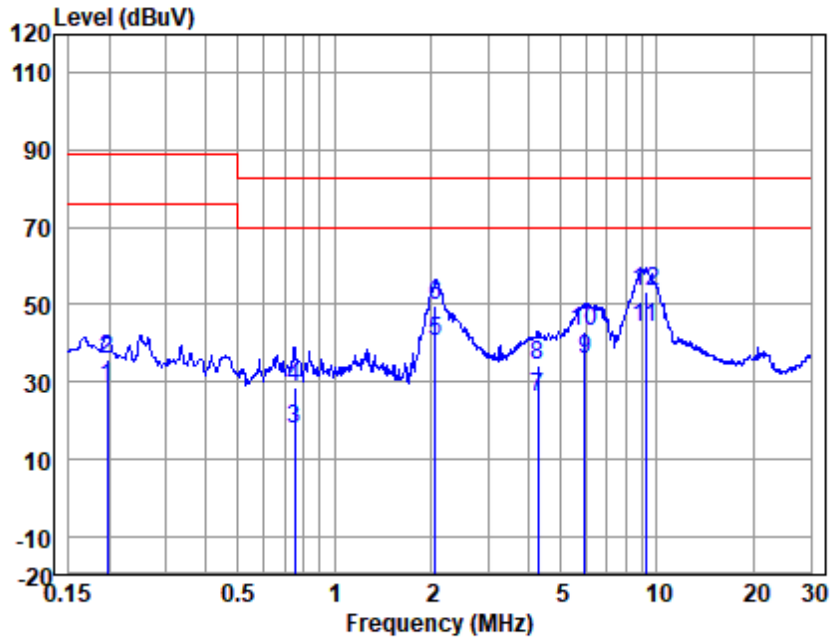
	Freq (MHz)	Read level (dBUV)	LISN Factor (dB)	Cable Loss (dB)	Emission Level (dBUV)	Limit (dBUV)	Over Limit (dB)	Remark
1	0.26	17.72	0.30	9.87	27.89	76.00	-48.11	Average
2	0.26	24.77	0.30	9.87	34.94	89.00	-54.06	QP
3	0.75	5.79	0.30	9.86	15.95	70.00	-54.05	Average
4	0.75	16.53	0.30	9.86	26.69	83.00	-56.31	QP
5	1.25	5.84	0.30	9.86	16.00	70.00	-54.00	Average
6	1.25	14.96	0.30	9.86	25.12	83.00	-57.88	QP
7	2.04	29.63	0.31	9.86	39.80	70.00	-30.20	Average
8	2.04	40.20	0.31	9.86	50.37	83.00	-32.63	QP
9	9.45	27.19	0.55	9.98	37.72	70.00	-32.28	Average
10	9.45	34.03	0.55	9.98	44.56	83.00	-38.44	QP
11	22.78	12.74	0.97	10.07	23.78	70.00	-46.22	Average
12	22.78	19.16	0.97	10.07	30.20	83.00	-52.80	QP

Notes: Emission Level = Read Level + LISN Factor + Cable loss



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Test Mode: 01; Line: Live line



LISN : LINE
 EUT/Project No : 01618BA
 Test Mode : 01

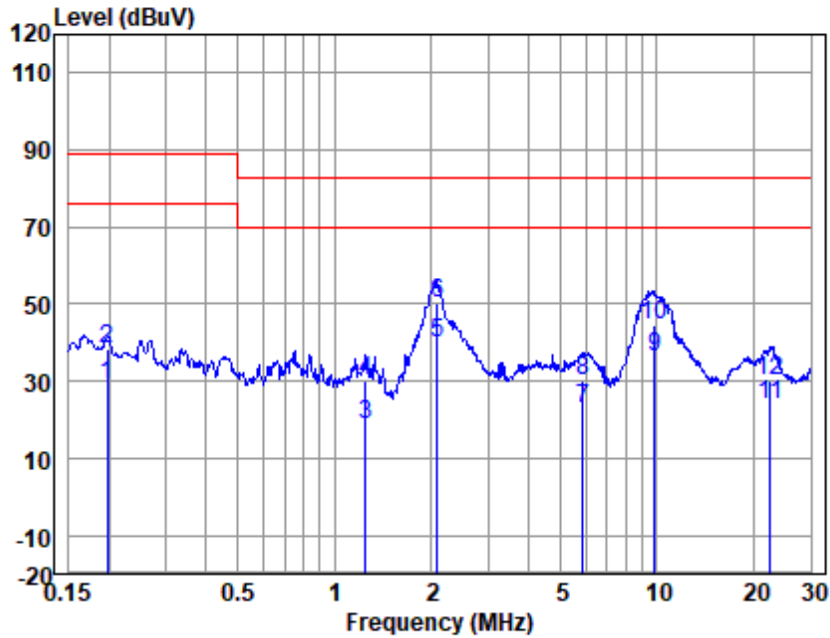
	Freq (MHz)	Read level (dBUV)	LISN Factor (dB)	Cable Loss (dB)	Emission Level (dBUV)	Limit (dBUV)	Over Limit (dB)	Remark
1	0.20	18.34	0.40	9.87	28.61	76.00	-47.39	Average
2	0.20	25.65	0.40	9.87	35.92	89.00	-53.08	QP
3	0.75	7.70	0.20	9.86	17.76	70.00	-52.24	Average
4	0.75	18.34	0.20	9.86	28.40	83.00	-54.60	QP
5	2.05	30.25	0.20	9.86	40.31	70.00	-29.69	Average
6	2.05	39.57	0.20	9.86	49.63	83.00	-33.37	QP
7	4.27	15.93	0.28	9.90	26.11	70.00	-43.89	Average
8	4.27	24.28	0.28	9.90	34.46	83.00	-48.54	QP
9	5.96	25.51	0.35	9.97	35.83	70.00	-34.17	Average
10	5.96	32.48	0.35	9.97	42.80	83.00	-40.20	QP
11	9.25	33.87	0.40	9.98	44.25	70.00	-25.75	Average
12	9.25	43.10	0.40	9.98	53.48	83.00	-29.52	QP

Notes: Emission Level = Read Level + LISN Factor + Cable loss



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Test Mode: 01; Line: Neutral Line



LISN : NEUTRAL
 EUT/Project No : 01618BA
 Test Mode : 01

	Freq (MHz)	Read level (dBUV)	LISN Factor (dB)	Cable Loss (dB)	Emission Level (dBUV)	Limit (dBUV)	Over Limit (dB)	Remark
1	0.20	18.82	0.30	9.87	28.99	76.00	-47.01	Average
2	0.20	28.00	0.30	9.87	38.17	89.00	-50.83	QP
3	1.25	8.66	0.30	9.86	18.82	70.00	-51.18	Average
4	1.25	20.00	0.30	9.86	30.16	83.00	-52.84	QP
5	2.08	29.70	0.31	9.86	39.87	70.00	-30.13	Average
6	2.08	39.87	0.31	9.86	50.04	83.00	-32.96	QP
7	5.90	12.33	0.40	9.97	22.70	70.00	-47.30	Average
8	5.90	19.60	0.40	9.97	29.97	83.00	-53.03	QP
9	9.86	25.96	0.59	9.98	36.53	70.00	-33.47	Average
10	9.86	34.10	0.59	9.98	44.67	83.00	-38.33	QP
11	22.54	12.62	0.96	10.07	23.65	70.00	-46.35	Average
12	22.54	19.29	0.96	10.07	30.32	83.00	-52.68	QP

Notes: Emission Level = Read Level + LISN Factor + Cable loss



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

6.5 Conducted Emissions at Wired Network Port (150kHz-30MHz)

Test Requirement: EN IEC 61000-6-4: 2019

Test Method: CISPR 32

Limit:

0.15MHz -0.5MHz 97 to 87dB(μV) quasi-peak, 84 to 74dB(μV) average

0.5MHz -30MHz 87dB(μV) quasi-peak, 74dB(μV) average

Detector: Peak for pre-scan (9kHz resolution bandwidth) 150kHz to 30MHz

NOTE 1: The lower limit is applicable at the transition frequency.

6.5.1 E.U.T. Operation

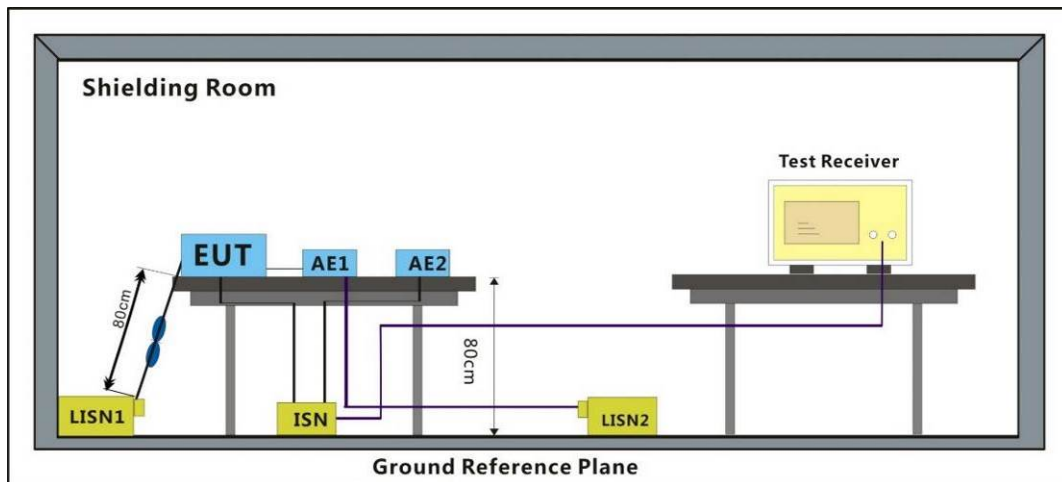
Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1010 mbar

6.5.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Charging mode_keep the EUT Charging continual
Final test	01	Discharging mode_keep the EUT Discharging continual

6.5.3 Test Setup Diagram



6.5.4 Measurement Procedure and Data

Frequency range: 150KHz-30MHz

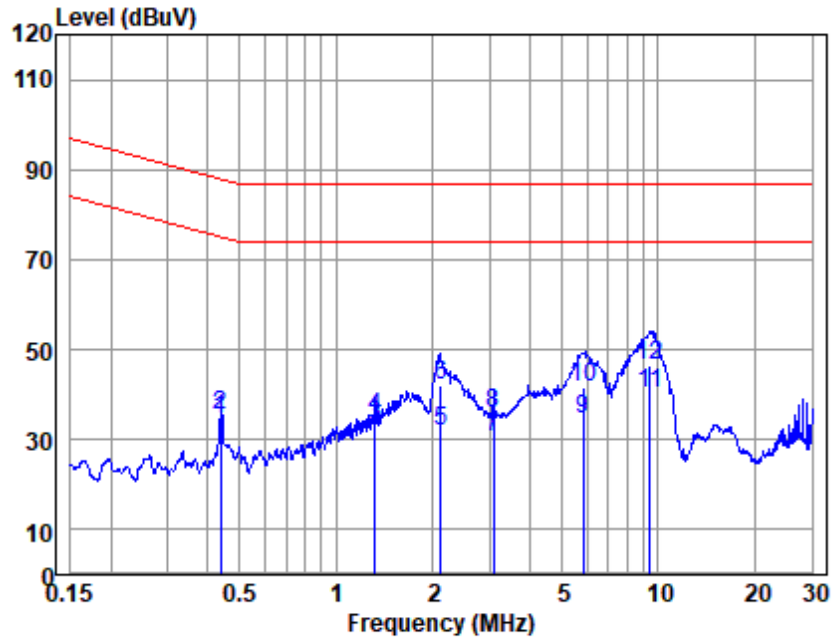
An initial pre-scan was performed with peak detector. Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.

The red line show in graphic is the limit in standard used in this section.

Measured Level = Read level + Cable Loss + ISN Factor



Test Mode: 00



ISN : NTFM 8131
 EUT/Project No : 01618BA
 Test Mode : 00

	Freq (MHz)	Read level (dBUV)	CDN Factor (dB)	Cable Loss (dB)	Emission Level (dBUV)	Limit (dBUV)	Over Limit (dB)	Remark
1	0.44	15.18	9.50	9.87	34.55	75.07	-40.52	Average
2	0.44	15.89	9.50	9.87	35.26	88.07	-52.81	QP
3	1.32	13.68	9.50	9.86	33.04	74.00	-40.96	Average
4	1.32	15.81	9.50	9.86	35.17	87.00	-51.83	QP
5	2.11	12.69	9.50	9.86	32.05	74.00	-41.95	Average
6	2.11	22.71	9.50	9.86	42.07	87.00	-44.93	QP
7	3.09	11.24	9.50	9.87	30.61	74.00	-43.39	Average
8	3.09	16.43	9.50	9.87	35.80	87.00	-51.20	QP
9	5.87	14.94	9.50	9.97	34.41	74.00	-39.59	Average
10	5.87	22.35	9.50	9.97	41.82	87.00	-45.18	QP
11	9.45	20.64	9.60	9.98	40.22	74.00	-33.78	Average
12	9.45	27.06	9.60	9.98	46.64	87.00	-40.36	QP

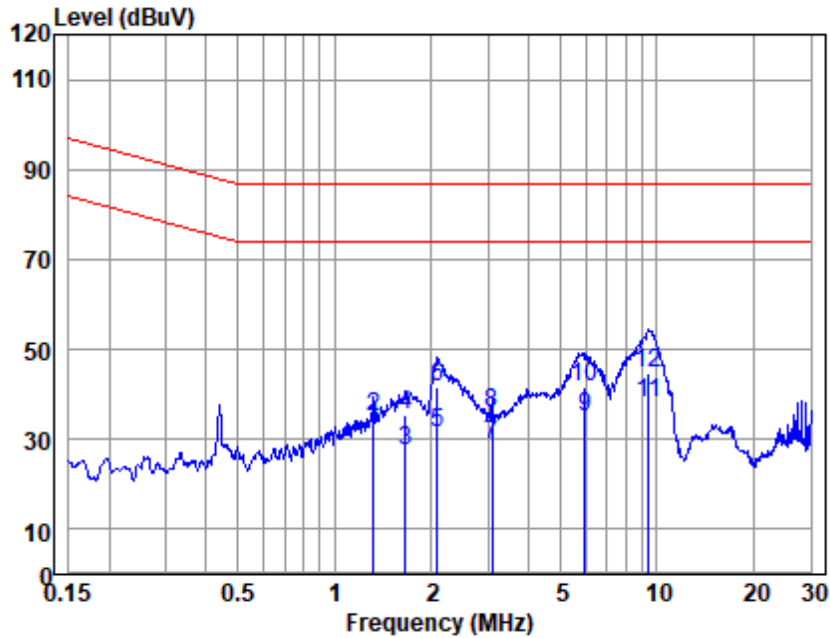
Notes: Emission Level = Read Level + ISN Factor + Cable loss



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

Test Mode: 01



ISN : NTFM 8131
 EUT/Project No : 01618BA
 Test Mode : 01

	Freq (MHz)	Read level (dBUV)	CDN Factor (dB)	Cable Loss (dB)	Emission Level (dBUV)	Limit (dBUV)	Over Limit (dB)	Remark
1	1.32	13.32	9.50	9.86	32.68	74.00	-41.32	Average
2	1.32	15.61	9.50	9.86	34.97	87.00	-52.03	QP
3	1.66	8.08	9.50	9.86	27.44	74.00	-46.56	Average
4	1.66	15.91	9.50	9.86	35.27	87.00	-51.73	QP
5	2.09	12.27	9.50	9.86	31.63	74.00	-42.37	Average
6	2.09	22.20	9.50	9.86	41.56	87.00	-45.44	QP
7	3.09	9.57	9.50	9.87	28.94	74.00	-45.06	Average
8	3.09	16.42	9.50	9.87	35.79	87.00	-51.21	QP
9	5.96	15.60	9.50	9.97	35.07	74.00	-38.93	Average
10	5.96	22.07	9.50	9.97	41.54	87.00	-45.46	QP
11	9.45	18.55	9.60	9.98	38.13	74.00	-35.87	Average
12	9.45	24.93	9.60	9.98	44.51	87.00	-42.49	QP

Notes: Emission Level = Read Level + ISN Factor + Cable loss



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

6.6 Radiated Emissions (30MHz-1GHz)

Test Requirement: EN IEC 61000-6-4: 2019

Test Method: CISPR 16-2-3

Limit:

Test Distance: 10m

30MHz-230MHz 40 dB(μV/m) quasi-peak

230MHz-1GHz 47 dB(μV/m) quasi-peak

Detector: Peak for pre-scan (120kHz resolution bandwidth) 30M to 1000MHz

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

6.6.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C

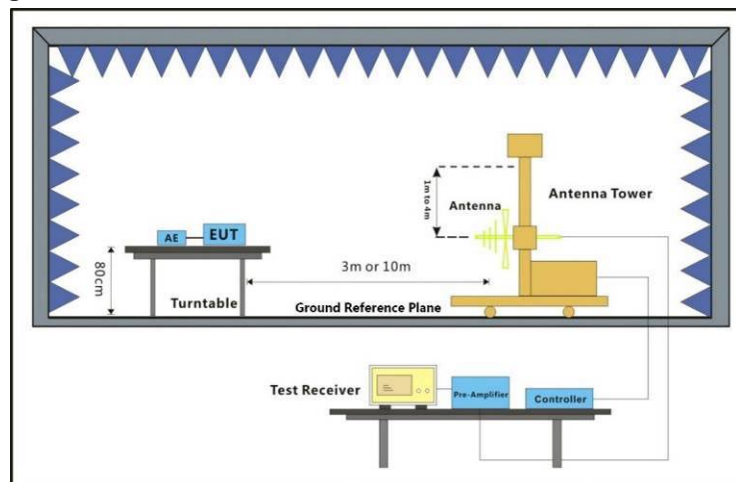
Humidity: 50 % RH

Atmospheric Pressure: 1010 mbar

6.6.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Charging mode_keep the EUT Charging continual
Final test	01	Discharging mode_keep the EUT Discharging continual

6.6.3 Test Setup Diagram



6.6.4 Measurement Procedure and Data

Frequency range: 30MHz-1GHz

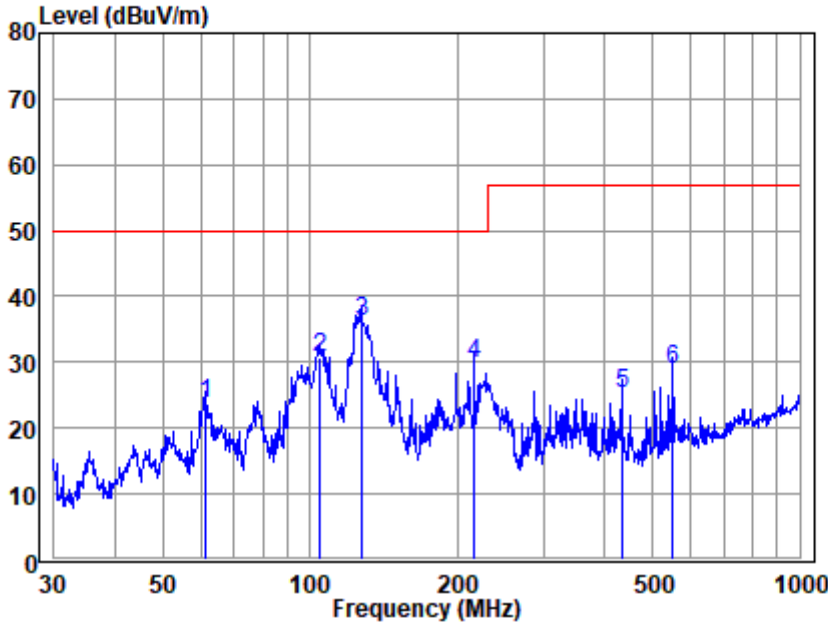
An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.

The red line show in graphic is the limit in standard used in this section.

Level=Read Level + Antenna Factor + Cable Loss - Preamp Factor



Test Mode: 00; Polarity: Horizontal



Antenna Polarity :Horizontal
 EUT/Project :1618BA
 Test mode :00

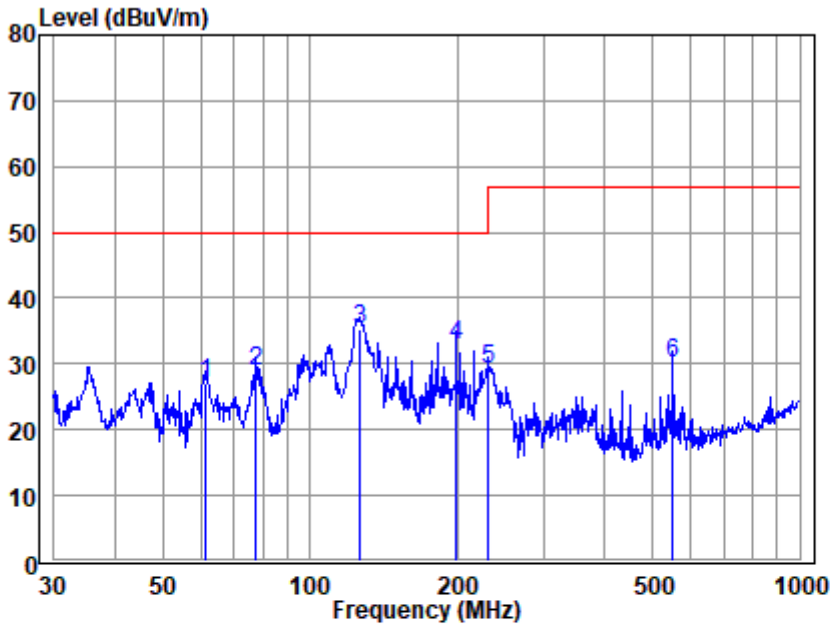
Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
1	61.13	43.00	13.08	1.22	33.60	23.70	50.00	-26.30 QP
2	104.54	52.71	9.60	1.93	33.59	30.65	50.00	-19.35 QP
3	127.22	55.89	11.70	2.19	33.55	36.23	50.00	-13.77 QP
4	216.02	49.79	9.90	3.22	33.24	29.67	50.00	-20.33 QP
5	432.55	37.11	16.66	4.45	32.97	25.25	57.00	-31.75 QP
6	550.95	37.45	18.80	5.57	33.00	28.82	57.00	-28.18 QP

Note: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Test Mode: 00; Polarity: Vertical



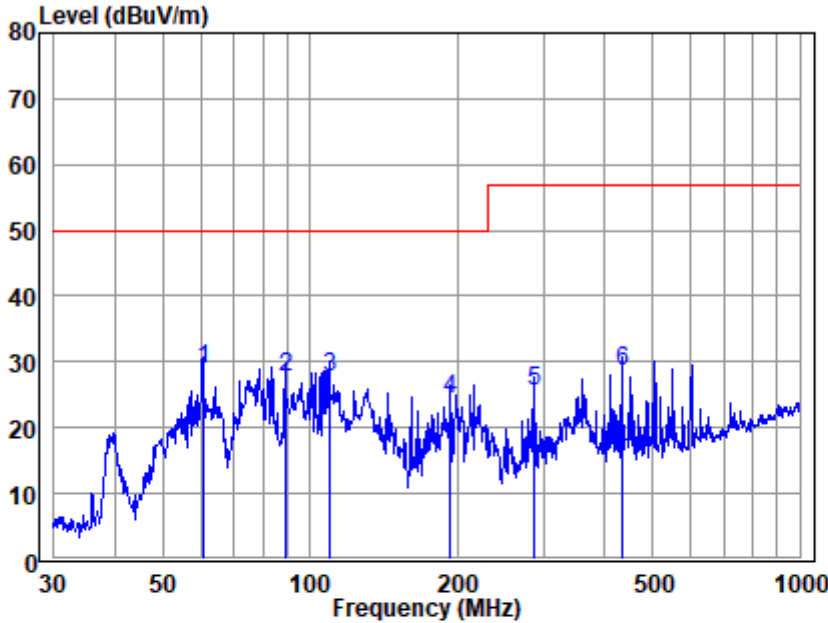
Antenna Polarity :Vertical
 EUT/Project :1618BA
 Test mode :00

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
1	60.92	46.24	13.09	1.22	33.60	26.95	50.00	-23.05 QP
2	77.59	51.09	9.62	1.68	33.52	28.87	50.00	-21.13 QP
3	126.33	54.94	11.62	2.17	33.55	35.18	50.00	-14.82 QP
4	198.59	53.29	9.92	2.95	33.31	32.85	50.00	-17.15 QP
5	230.91	48.46	10.60	3.20	33.18	29.08	57.00	-27.92 QP
6	550.95	38.69	18.80	5.57	33.00	30.06	57.00	-26.94 QP

Note: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



Test Mode: 01; Polarity: Horizontal



Antenna Polarity :Horizontal
 EUT/Project :1618BA
 Test mode :01

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
1 60.49	48.14	13.11	1.21	33.60	28.86	50.00	-21.14	QP
2 88.96	51.72	7.78	1.86	33.59	27.77	50.00	-22.23	QP
3 109.80	49.03	10.29	2.01	33.58	27.75	50.00	-22.25	QP
4 193.09	44.73	10.23	2.73	33.33	24.36	50.00	-25.64	QP
5 287.99	41.75	13.30	3.50	33.02	25.53	57.00	-31.47	QP
6 432.55	40.58	16.66	4.45	32.97	28.72	57.00	-28.28	QP

Note: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



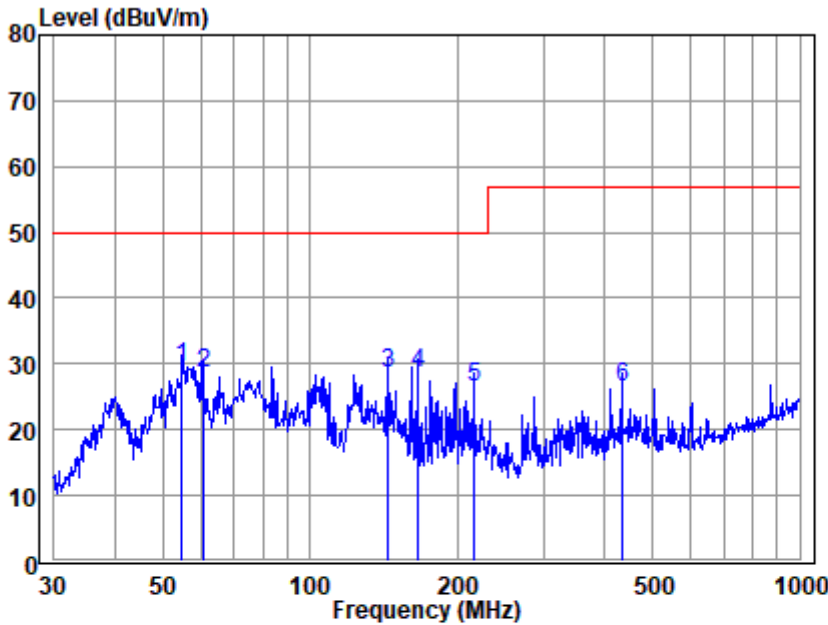
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.
 EEC EMC Lab

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

NO.588 West Jindu Road, Songjiang District, Shanghai China 201612 t (86-21) 61915666 f (86-21) 61915678 www.sgs.com.cn
 中国·上海·松江区金都西路588号 邮编: 201612 t (86-21) 61915666 f (86-21) 61915678 sgs.china@sgs.com

Test Mode: 01; Polarity: Vertical



Antenna Polarity :Vertical
 EUT/Project :1618BA
 Test mode :01

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
1	54.83	48.42	13.55	1.11	33.65	29.43	50.00	-20.57 QP
2	60.49	47.84	13.11	1.21	33.60	28.56	50.00	-21.44 QP
3	143.83	46.60	13.11	2.46	33.51	28.66	50.00	-21.34 QP
4	166.07	46.49	12.97	2.57	33.44	28.59	50.00	-21.41 QP
5	216.02	46.64	9.90	3.22	33.24	26.52	50.00	-23.48 QP
6	432.55	38.36	16.66	4.45	32.97	26.50	57.00	-30.50 QP

Note: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



7 Immunity Test Results

Performance Criteria Description in EN IEC 61000-6-1:2019

- Criterion 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.
- Criterion 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.
- Criterion 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.

Performance Criteria Description in EN IEC 61000-6-2:2019

- Criterion 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.
- Criterion 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.
- Criterion 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.

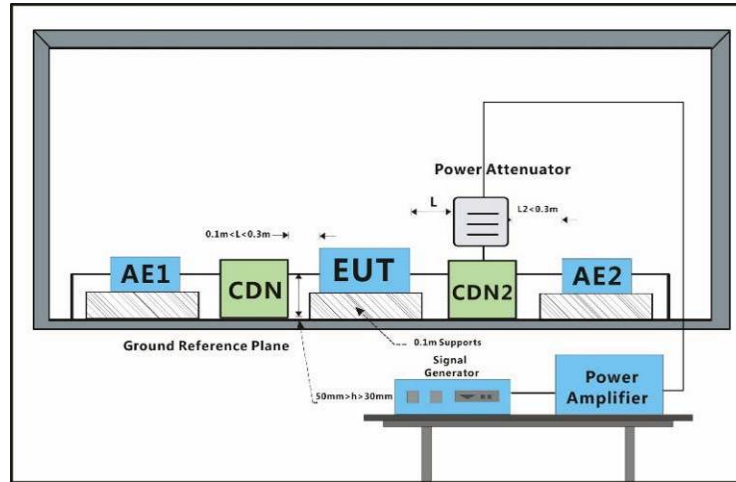


7.1 Conducted Immunity at DC Power Port (150kHz-80MHz)

Test Requirement: EN IEC 61000-6-1: 2019

Test Method: EN 61000-4-6:2014

7.1.1 Test Setup Diagram



7.1.2 E.U.T. Operation

Operating Environment:

Temperature: 22 °C

Humidity: 50 % RH

Atmospheric Pressure: 1020 mbar

7.1.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Charging mode_keep the EUT Charging continual
Final test	01	Discharging mode_keep the EUT Discharging continual

7.1.4 Test Condition and Results:

Performance Criterion: A

Frequency Range: 0.15MHz to 80MHz

Modulation: 80%, 1kHz Amplitude Modulation

Step Size 1%

Port	Level (Vrms)	CDN/Clamp	Dwell time	Result / Observations
DC Network Power Port	3(0.15MHz-80MHz)	CDN	3s	A

A: No degradation in the performance of the EUT was observed



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.
EEC EMC Lab

NO.588 West Jindu Road, Songjiang District, Shanghai China 201612
中国·上海·松江区金都西路588号 邮编: 201612

t (86-21) 61915666
t (86-21) 61915666

f (86-21) 61915678
f (86-21) 61915678

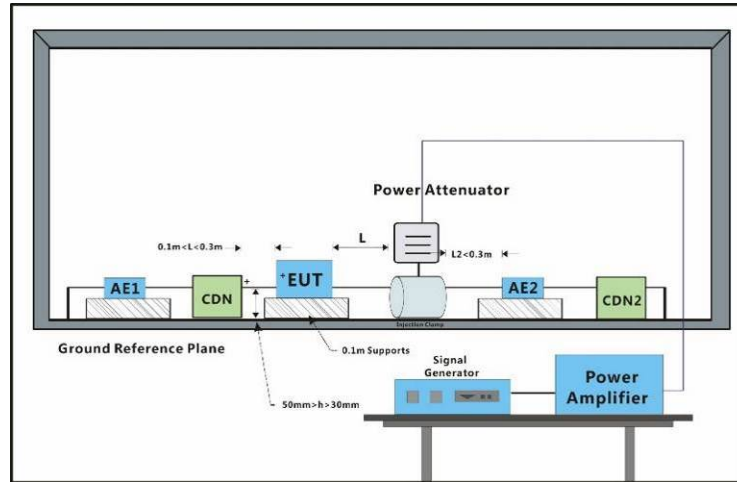
www.sgs.com
sgs.china@sgs.com

7.2 Conducted Immunity at Signal Port (150kHz-80MHz)

Test Requirement: EN IEC 61000-6-1: 2019

Test Method: EN 61000-4-6:2014

7.2.1 Test Setup Diagram



7.2.2 E.U.T. Operation

Operating Environment:

Temperature: 22 °C

Humidity: 50 % RH

Atmospheric Pressure: 1020 mbar

7.2.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Charging mode_keep the EUT Charging continual
Final test	01	Discharging mode_keep the EUT Discharging continual

7.2.4 Test Condition and Results:

Performance Criterion: A

Frequency Range: 0.15MHz to 80MHz

Modulation: 80%, 1kHz Amplitude Modulation

Step Size 1%

Port	Level (Vrms)	CDN/Clamp	Dwell time	Result / Observations
Signal port	3(0.15MHz-80MHz)	Clamp	3s	A

A: No degradation in the performance of the EUT was observed



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.
EEC EMC Lab

NO.588 West Jindu Road, Songjiang District, Shanghai China 201612
中国·上海·松江区金都西路588号 邮编: 201612

t (86-21) 61915666
t (86-21) 61915666

f (86-21) 61915678
f (86-21) 61915678

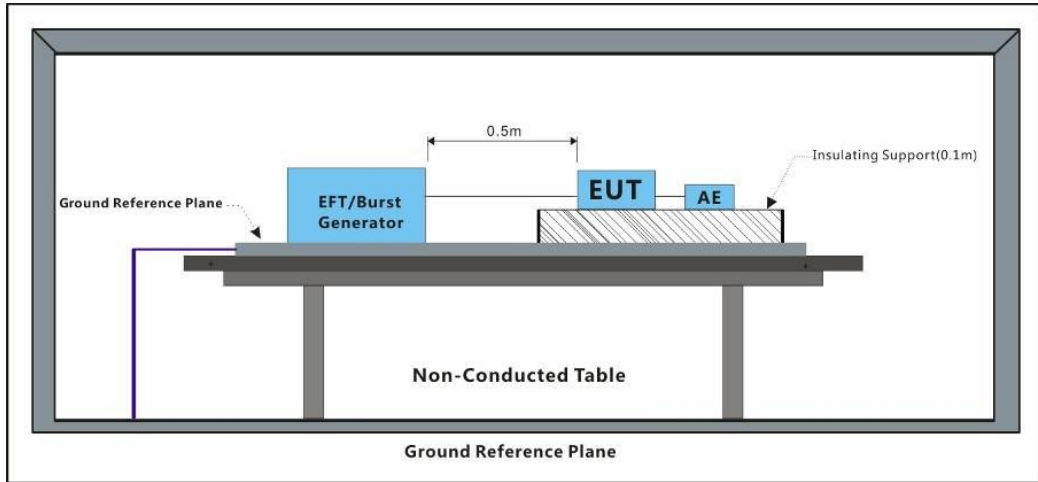
www.sgs.com.cn
sgs.china@sgs.com

7.3 Electrical Fast Transients Burst at DC Power Port

Test Requirement: EN IEC 61000-6-1: 2019

Test Method: EN 61000-4-4:2012

7.3.1 Test Setup Diagram



7.3.2 E.U.T. Operation

Operating Environment:

Temperature: 22 °C

Humidity: 50 % RH

Atmospheric Pressure: 1010 mbar

7.3.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Charging mode_keep the EUT Charging continual
Pre-scan	01	Discharging mode_keep the EUT Discharging continual

7.3.4 Test Condition and Results:

Performance Criterion: B

Repetition Frequency: 5kHz / 100kHz

Burst Period: 300ms

Test Duration: 2 minute per level & polarity

Test Line	Level (kV)	Polarity	CDN/Clamp	Result / Observations
DC power port	0.5	+	CDN	A
DC power port	0.5	-	CDN	A

A: No degradation in the performance of the EUT was observed



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.
EEC EMC Lab

NO.588 West Jindu Road, Songjiang District, Shanghai China 201612
中国·上海·松江区金都西路588号 邮编: 201612

t (86-21) 61915666
t (86-21) 61915666

f (86-21) 61915678
f (86-21) 61915678

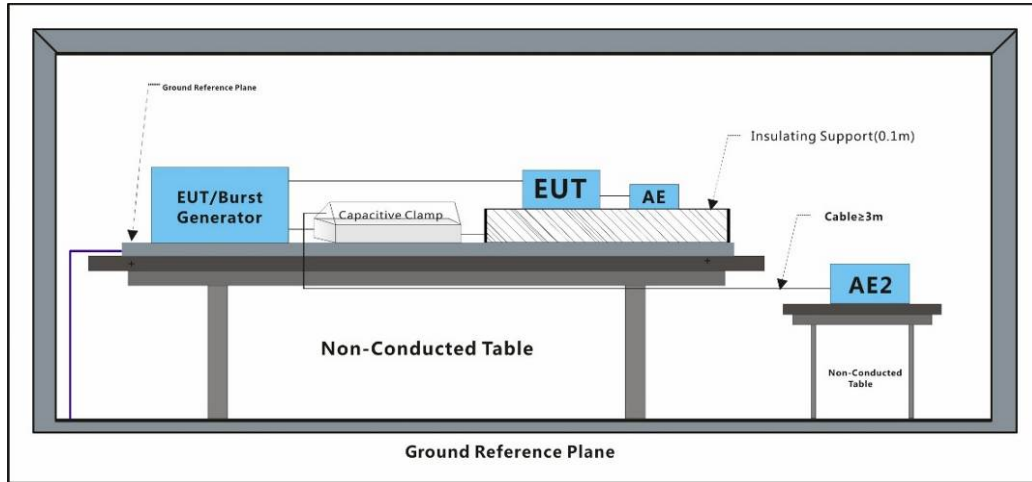
www.sgs.com
www.sgs.com
www.sgs.com
www.sgs.com

7.4 Electrical Fast Transients Burst at Signal Port

Test Requirement: EN IEC 61000-6-1: 2019

Test Method: EN 61000-4-4:2012

7.4.1 Test Setup Diagram



7.4.2 E.U.T. Operation

Operating Environment:

Temperature: 22 °C

Humidity: 50 % RH

Atmospheric Pressure: 1010 mbar

7.4.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Charging mode_keep the EUT Charging continual
Pre-scan	01	Discharging mode_keep the EUT Discharging continual

7.4.4 Test Condition and Results:

Performance Criterion: B

Repetition Frequency: 5kHz / 100kHz

Burst Period: 300ms

Test Duration: 2 minute per level & polarity

Port	Level (kV)	Polarity	CDN/Clamp	Result / Observations
Signal port	0.5	+	Clamp	A
Signal port	0.5	-	Clamp	A

A: No degradation in the performance of the EUT was observed

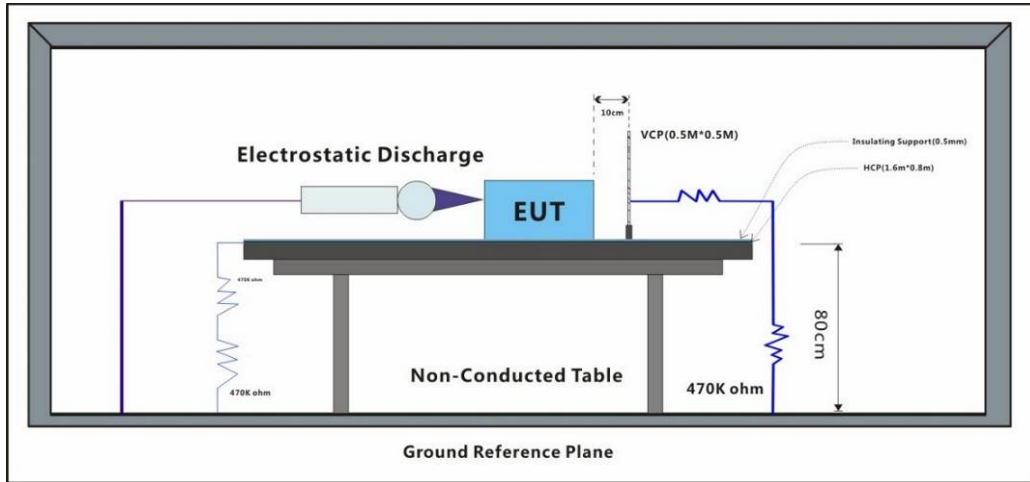


7.5 Electrostatic Discharge

Test Requirement: EN IEC 61000-6-1: 2019

Test Method: EN 61000-4-2:2009

7.5.1 Test Setup Diagram



7.5.2 E.U.T. Operation

Operating Environment:

Temperature: 22 °C

Humidity: 50 % RH

Atmospheric Pressure: 1010 mbar

7.5.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Charging mode_keep the EUT Charging continual
Final test	01	Discharging mode_keep the EUT Discharging continual

7.5.4 Test Condition and Results:

Performance Criterion: B
 Discharge Impedance: 330Ω/150pF
 Number of Discharge: Minimum 10 times at each test point
 Discharge Mode: Single Discharge
 Discharge Period: 1 second minimum

Test Point: 1. All insulated enclosure and seams.
 2. All accessible metal parts of the enclosure.
 3. All side



Discharge type	Level (kV)	Polarity	Test Point	Result / Observations
Air Discharge	2,4,8	+	1	A
Air Discharge	2,4,8	-	1	A
Contact Discharge	4	+	2	A
Contact Discharge	4	-	2	A
Vertical Coupling	4	+	3	A
Vertical Coupling	4	-	3	A

A: No degradation in the performance of the EUT was observed



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

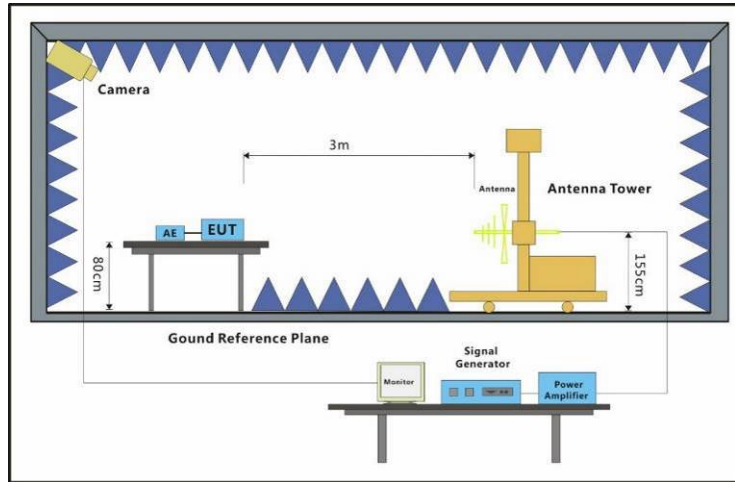
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

7.6 Radiated Immunity (80MHz-1GHz, 1.4GHz-6GHz)

Test Requirement: EN IEC 61000-6-1: 2019

Test Method: EN IEC 61000-4-3: 2020

7.6.1 Test Setup Diagram



7.6.2 E.U.T. Operation

Operating Environment:

Temperature: 22 °C

Humidity: 50 % RH

Atmospheric Pressure: 1010 mbar

7.6.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Charging mode_keep the EUT Charging continual
Final test	01	Discharging mode_keep the EUT Discharging continual

7.6.4 Test Condition and Results:

Performance Criterion:A

Antenna Polarisation:Vertical and Horizontal

Modulation:1kHz,80% Amp. Mod,1% increment

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



Frequency	Level (V/m)	EUT Face	Dwell time	Result / Observations
80MHz-1GHz	3	Front	3s	A
80MHz-1GHz	3	Back	3s	A
80MHz-1GHz	3	Left	3s	A
80MHz-1GHz	3	Right	3s	A
1.4GHz-6GHz	3	Front	3s	A
1.4GHz-6GHz	3	Back	3s	A
1.4GHz-6GHz	3	Left	3s	A
1.4GHz-6GHz	3	Right	3s	A

A: No degradation in the performance of the EUT was observed

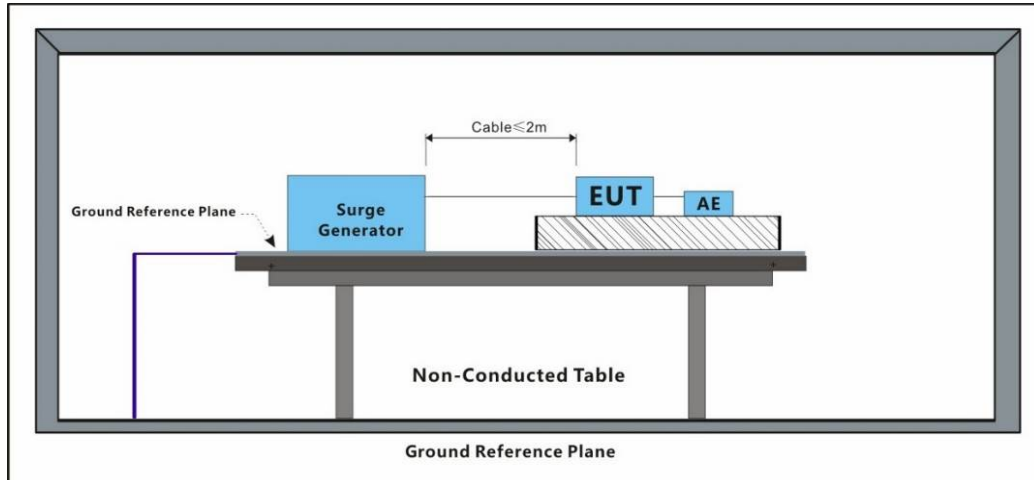


7.7 Surge at DC Port

Test Requirement: EN IEC 61000-6-1: 2019

Test Method: EN 61000-4-5:2014+A1:2017

7.7.1 Test Setup Diagram



7.7.2 E.U.T. Operation

Operating Environment:

Temperature: 22 °C

Humidity: 50 % RH

Atmospheric Pressure: 1010 mbar

7.7.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Charging mode_keep the EUT Charging continual
Pre-scan	01	Discharging mode_keep the EUT Discharging continual

7.7.4 Test Condition and Results:

Performance Criterion: B

Interval: 60s between each surge

No. of surges: 5 positive, 5 negative



Test Line	Level (kV)	Polarity	Result / Observations
P-N	0.5	+	A
P-N	0.5	-	A
P-G	0.5, 1	+	A
P-G	0.5, 1	-	A
N-G	0.5, 1	+	A
N-G	0.5, 1	-	A

A: No degradation in the performance of the EUT was observed

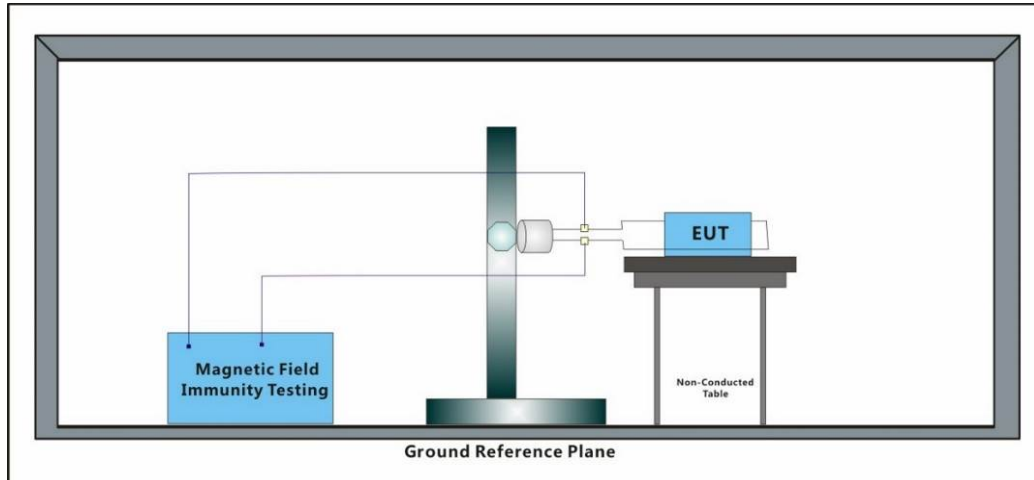


7.8 Power Frequency Magnetic Field

Test Requirement: EN IEC 61000-6-1: 2019

Test Method: EN 61000-4-8:2010

7.8.1 Test Setup Diagram



7.8.2 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1010 mbar

7.8.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Charging mode_keep the EUT Charging continual
Final test	01	Discharging mode_keep the EUT Discharging continual

7.8.4 Test Condition and Results:

Performance Criterion: A

Frequency	Level (A/m)	Axial	Magnetic Field Type	Result / Observations
50/60 Hz	3	X	Continue	A
50/60 Hz	3	Y	Continue	A
50/60 Hz	3	Z	Continue	A

A: No degradation in the performance of the EUT was observed

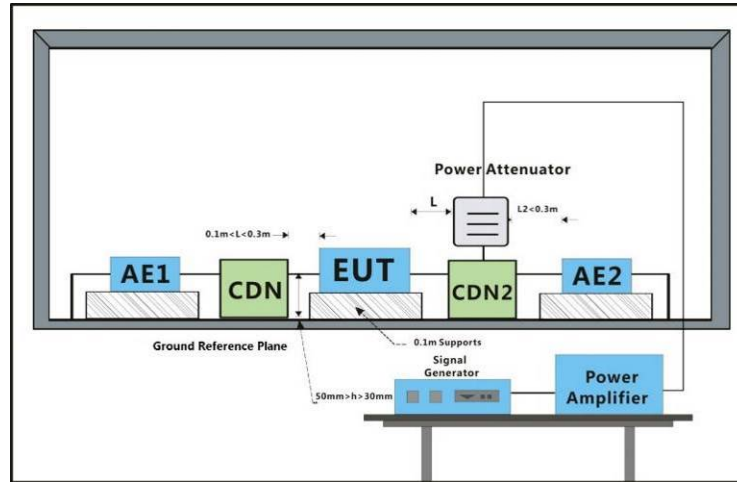


7.9 Conducted Immunity at DC Power Port (150kHz-80MHz)

Test Requirement: EN IEC 61000-6-2: 2019

Test Method: EN 61000-4-6:2014

7.9.1 Test Setup Diagram



7.9.2 E.U.T. Operation

Operating Environment:

Temperature: 22 °C

Humidity: 50 % RH

Atmospheric Pressure: 1020 mbar

7.9.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Charging mode_keep the EUT Charging continual
Final test	01	Discharging mode_keep the EUT Discharging continual

7.9.4 Test Condition and Results:

Performance Criterion: A

Frequency Range: 0.15MHz to 80MHz

Modulation: 80%, 1kHz Amplitude Modulation

Step Size 1%

Port	Level (Vrms)	CDN/Clamp	Dwell time	Result / Observations
DC Port	10V	CDN	3s	A

A: No degradation in the performance of the EUT was observed

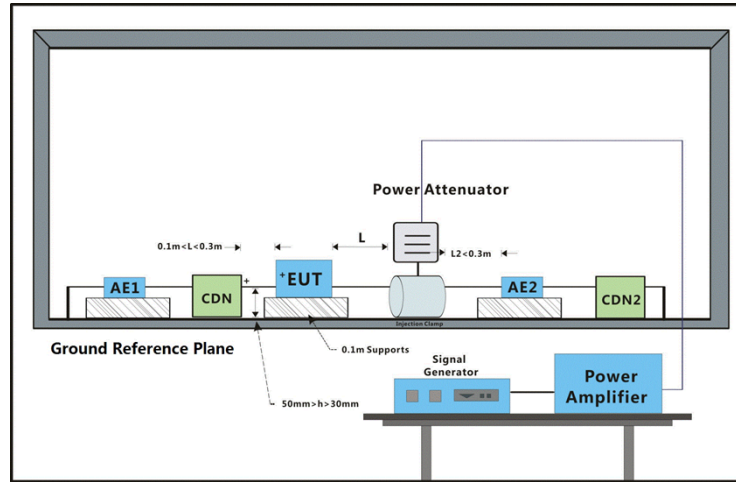


7.10 Conducted Immunity at Signal Port (150kHz-80MHz)

Test Requirement: EN IEC 61000-6-2: 2019

Test Method: EN 61000-4-6:2014

7.10.1 Test Setup Diagram



7.10.2 E.U.T. Operation

Operating Environment:

Temperature: 22 °C

Humidity: 50 % RH

Atmospheric Pressure: 1020 mbar

7.10.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Charging mode_ keep the EUT Charging continual
Final test	01	Discharging mode_ keep the EUT Discharging continual

7.10.4 Test Condition and Results:

Performance Criterion: A

Frequency Range: 0.15MHz to 80MHz

Modulation: 80%, 1kHz Amplitude Modulation

Step Size 1%

Port	Level (Vrms)	CDN/Clamp	Dwell time	Result / Observations
Signal port	10	Clamp	3s	A

A: No degradation in the performance of the EUT was observed

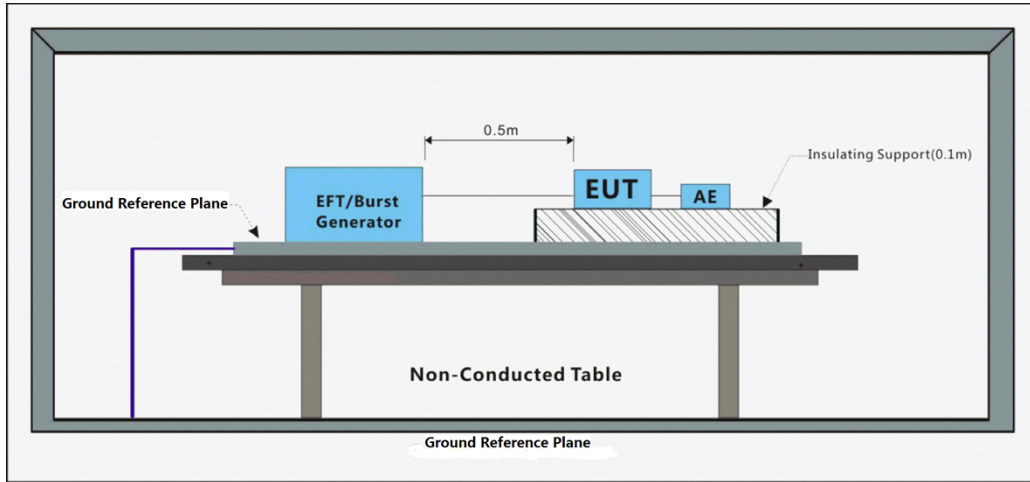


7.11 Electrical Fast Transients Burst at DC Power Port

Test Requirement: EN IEC 61000-6-2: 2019

Test Method: EN 61000-4-4:2012

7.11.1 Test Setup Diagram



7.11.2 E.U.T. Operation

Operating Environment:

Temperature: 22 °C

Humidity: 50 % RH

Atmospheric Pressure: 1010 mbar

7.11.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Charging mode_keep the EUT Charging continual
Pre-scan	01	Discharging mode_keep the EUT Discharging continual

7.11.4 Test Condition and Results:

Performance Criterion: B

Repetition Frequency: 5kHz / 100kHz

Burst Period: 300ms

Test Duration: 2 minute per level & polarity

Test Line	Level (kV)	Polarity	CDN/Clamp	Result / Observations
DC Port	1	+	CDN	A
DC Port	1	-	CDN	A

A: No degradation in the performance of the EUT was observed



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

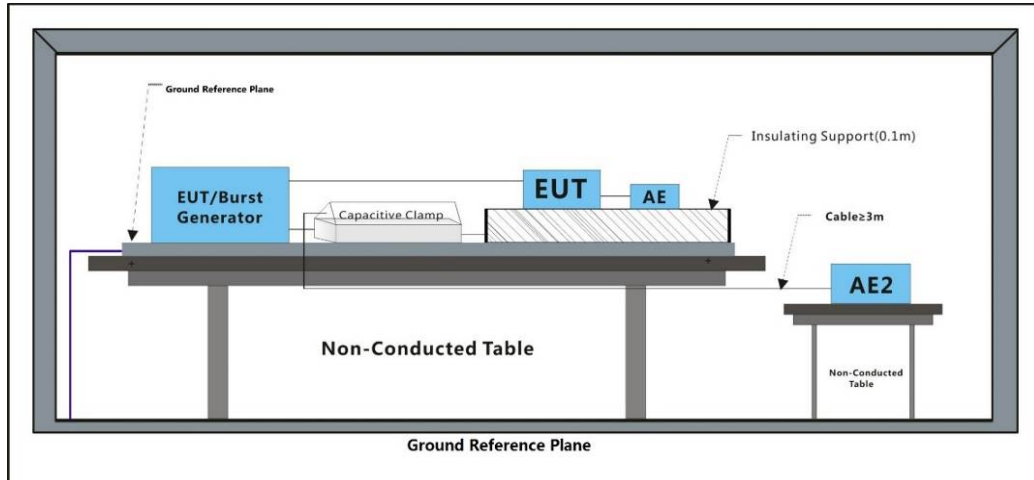
NO.588 West Jindu Road, Songjiang District, Shanghai China 201612 t (86-21) 61915666 f (86-21) 61915678 www.sgs.com.cn
中国·上海·松江区金都西路588号 邮编: 201612 t (86-21) 61915666 f (86-21) 61915678 sgs.china@sgs.com

7.12 Electrical Fast Transients Burst at Signal Port

Test Requirement: EN IEC 61000-6-2: 2019

Test Method: EN 61000-4-4:2012

7.12.1 Test Setup Diagram



7.12.2 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1010 mbar

7.12.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Charging mode_keep the EUT Charging continual
Pre-scan	01	Discharging mode_keep the EUT Discharging continual

7.12.4 Test Condition and Results:

Performance Criterion: B

Repetition Frequency: 5kHz / 100kHz

Burst Period: 300ms

Test Duration: 2 minute per level & polarity

Port	Level (kV)	Polarity	CDN/Clamp	Result / Observations
Signal port	1	+	Clamp	A
Signal port	1	-	Clamp	A

A: No degradation in the performance of the EUT was observed



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

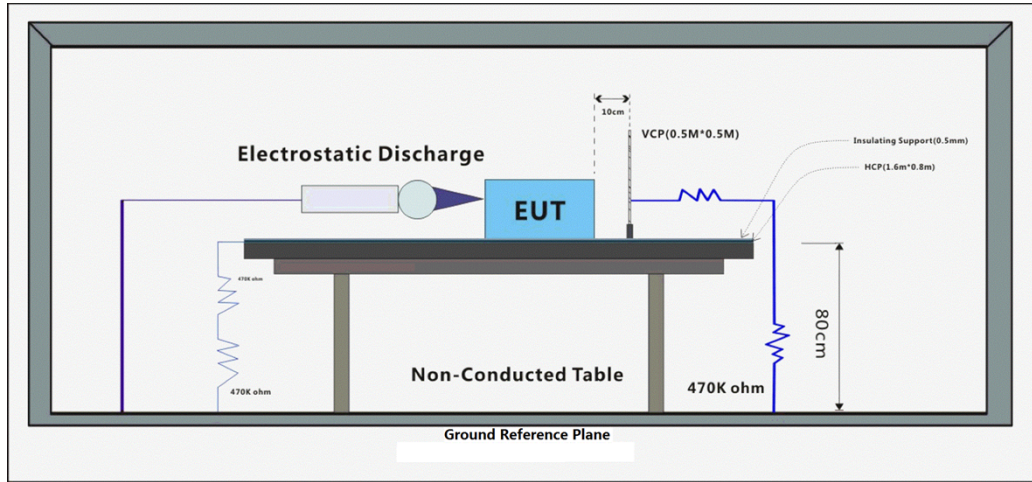
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

7.13 Electrostatic Discharge

Test Requirement: EN IEC 61000-6-2: 2019

Test Method: EN 61000-4-2:2009

7.13.1 Test Setup Diagram



7.13.2 E.U.T. Operation

Operating Environment:

Temperature: 22 °C

Humidity: 50 % RH

Atmospheric Pressure: 1010 mbar

7.13.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Charging mode_keep the EUT Charging continual
Final test	01	Discharging mode_keep the EUT Discharging continual

7.13.4 Test Condition and Results:

Performance Criterion: B

Discharge Impedance: 330 Ω/150pF

Number of Discharge: Minimum 10 times at each test point

Discharge Mode: Single Discharge

Discharge Period: 1 second minimum

Test Point 1: All insulated enclosure & seams.

Test Point 2: All accessible metal parts of the enclosure.

Test Point 3: All sides.



Discharge type	Level (kV)	Polarity	Test Point	Result / Observations
Air Discharge	2,4,8	+	1	A
Air Discharge	2,4,8	-	1	A
Contact Discharge	4	+	2	A
Contact Discharge	4	-	2	A
Vertical Coupling	4	+	3	A
Vertical Coupling	4	-	3	A

A: No degradation in the performance of the EUT was observed



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

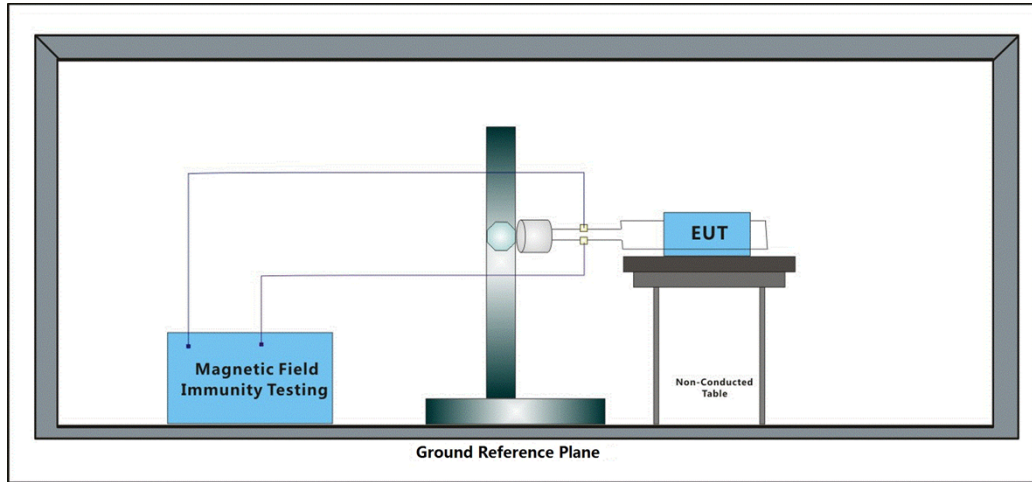
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

7.14 Power Frequency Magnetic Field

Test Requirement: EN IEC 61000-6-2: 2019

Test Method: EN 61000-4-8:2010

7.14.1 Test Setup Diagram



7.14.2 E.U.T. Operation

Operating Environment:

Temperature: 22 °C

Humidity: 50 % RH

Atmospheric Pressure: 1010 mbar

7.14.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Charging mode_keep the EUT Charging continual
Final test	01	Discharging mode_keep the EUT Discharging continual

7.14.4 Test Condition and Results:

Performance Criterion:A

Frequency	Level (A/m)	Axial	Magnetic Field Type	Result / Observations
50/60 Hz	30	X	Continue	A
50/60 Hz	30	Y	Continue	A
50/60 Hz	30	Z	Continue	A

A: No degradation in the performance of the EUT was observed

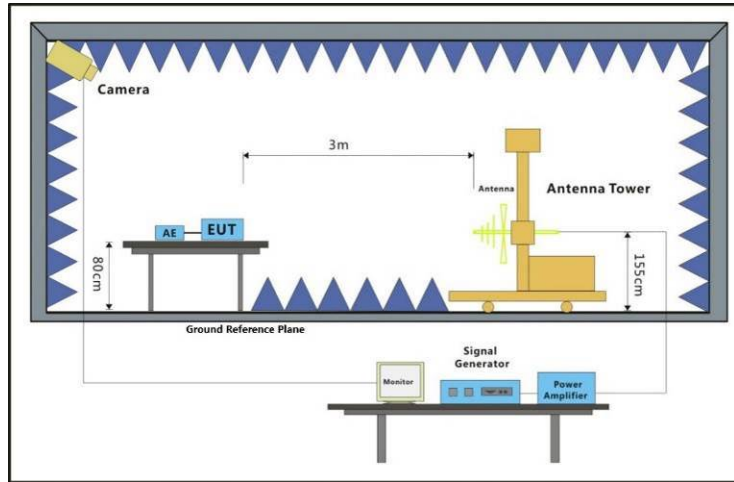


7.15 Radiated Immunity (80MHz-1GHz, 1.4GHz-6GHz)

Test Requirement: EN IEC 61000-6-2: 2019

Test Method: EN IEC 61000-4-3: 2020

7.15.1 Test Setup Diagram



7.15.2 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1010 mbar

7.15.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Charging mode_keep the EUT Charging continual
Final test	01	Discharging mode_keep the EUT Discharging continual

7.15.4 Test Condition and Results:

Performance Criterion: A

Antenna Polarisation: Vertical and Horizontal

Modulation: 1kHz,80% Amp. Mod,1% increment

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



Frequency	Level (V/m)	EUT Face	Dwell time	Result / Observations
80MHz-1GHz	10	Front	3s	A
80MHz-1GHz	10	Back	3s	A
80MHz-1GHz	10	Left	3s	A
80MHz-1GHz	10	Right	3s	A
1.4GHz-6GHz	3	Front	3s	A
1.4GHz-6GHz	3	Back	3s	A
1.4GHz-6GHz	3	Left	3s	A
1.4GHz-6GHz	3	Right	3s	A

A: No degradation in the performance of the EUT was observed

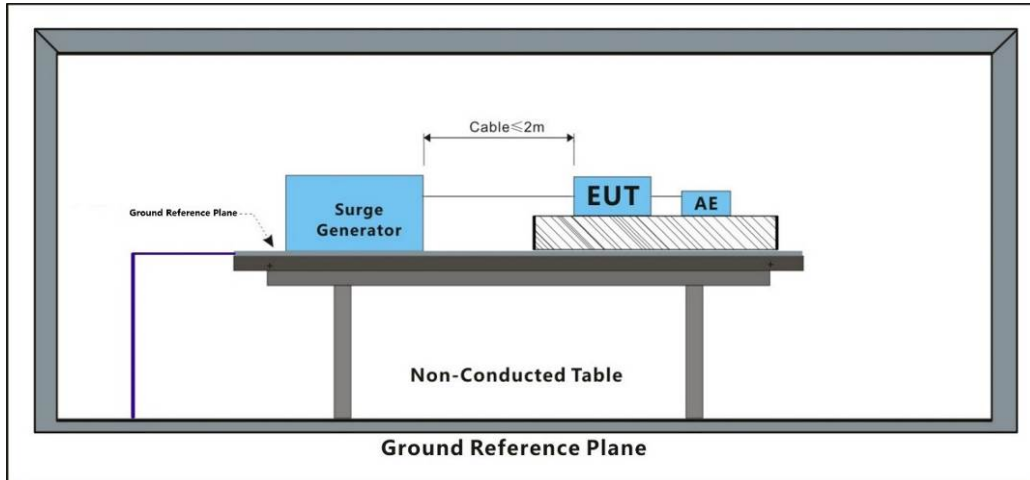


7.16 Surge at DC Power Port

Test Requirement: EN IEC 61000-6-2: 2019

Test Method: EN 61000-4-5:2014+A1:2017

7.16.1 Test Setup Diagram



7.16.2 E.U.T. Operation

Operating Environment:

Temperature: 22 °C

Humidity: 50 % RH

Atmospheric Pressure: 1010 mbar

7.16.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Charging mode_keep the EUT Charging continual
Pre-scan	01	Discharging mode_keep the EUT Discharging continual

7.16.4 Test Condition and Results:

Performance Criterion: B

Interval: 60s between each surge

Generator source impedance: 2Ω

CDN coupling impedance(Line-to-ground):10Ω

No. of surges: 5 positive, 5 negative at 0°, 90°, 180°, 270°.



Test Line	Level (kV)	Polarity	Result / Observations
P-N	0.5	+	A
P-N	0.5	-	A
P-G	1	+	A
P-G	1	-	A
N-G	1	+	A
N-G	1	-	A

A: No degradation in the performance of the EUT was observed



8 Test Setup Photo

Conducted Emissions at DC Power Port (150kHz-30MHz)



Conducted Emissions at Other Wired Port (150kHz-30MHz)



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

Radiated Emissions (30MHz-1GHz)



Conducted Immunity at DC Power Port (150kHz-80MHz)



Conducted Immunity at Signal Port (150kHz-80MHz)



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

Electrical Fast Transients Burst at DC Power Port



Electrical Fast Transients Burst at Signal Port



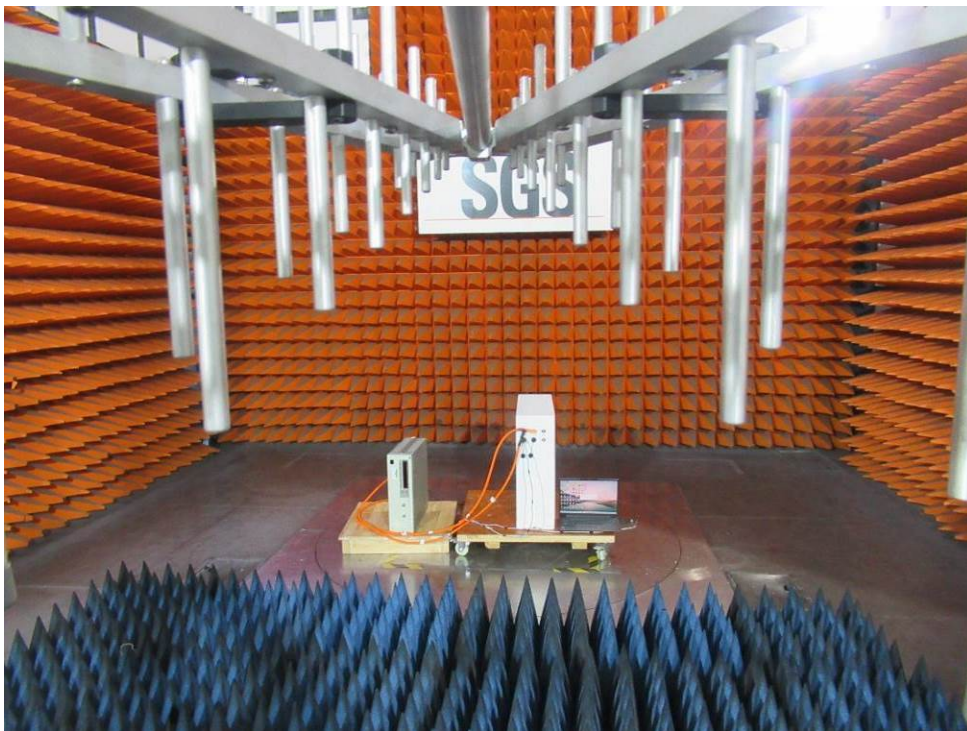
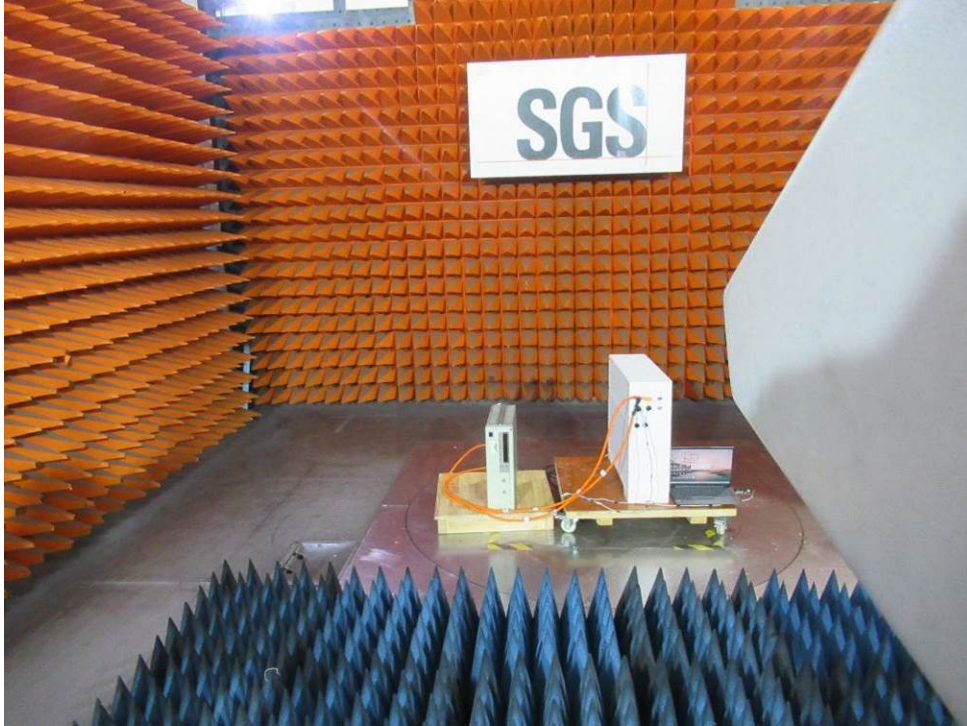
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

Electrostatic Discharge



Radiated Immunity (80MHz-1GHz, 1.4GHz-6GHz)

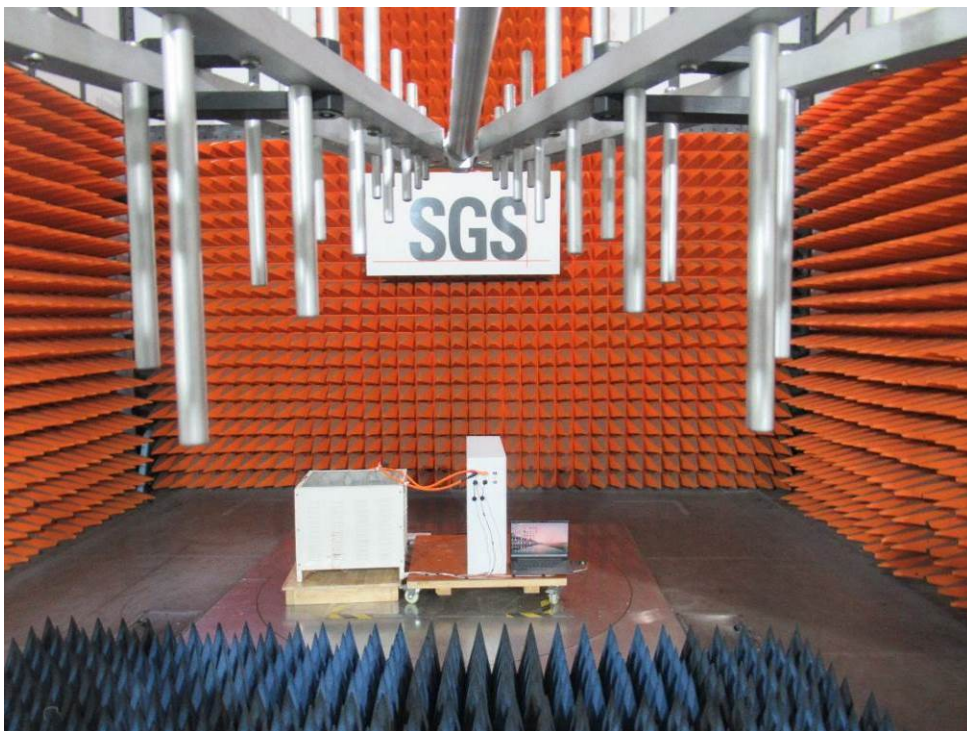
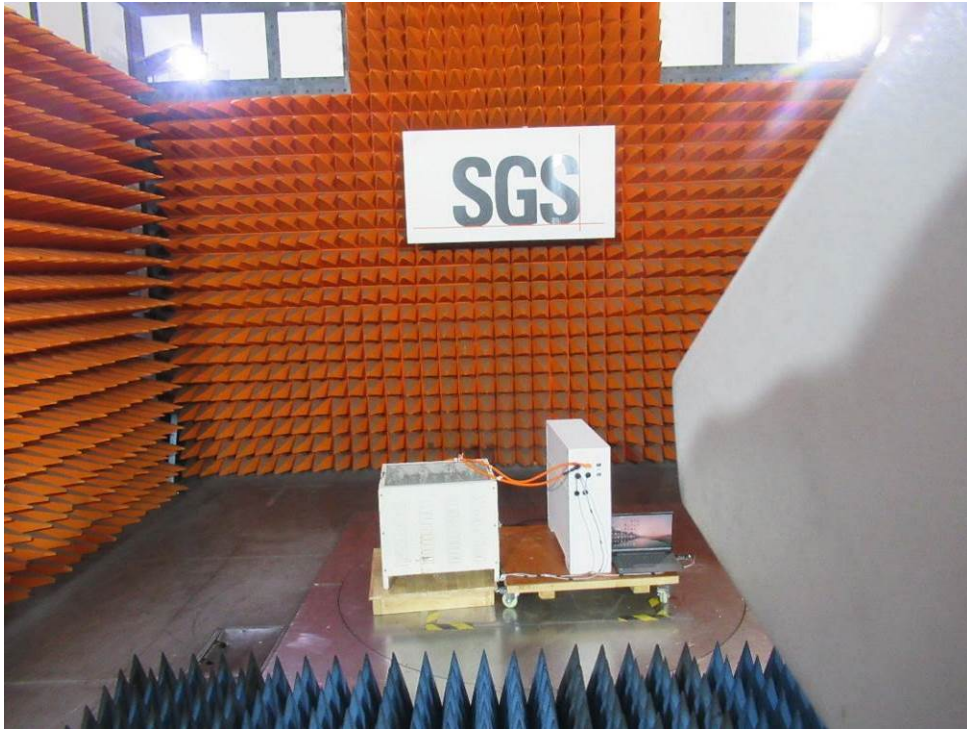


SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.
EEC EMC Lab

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

NO.588 West Jindu Road, Songjiang District, Shanghai China 201612 t (86-21) 61915666 f (86-21) 61915678 www.sgsgroup.com.cn
中国·上海·松江区金都西路588号 邮编: 201612 t (86-21) 61915666 f (86-21) 61915678 sgs.china@sgs.com



Surge at DC Port



Power Frequency Magnetic Field



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com



9 EUT Constructional Details (EUT Photos)







Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com



-- End of the Report --





Ref. Certif. No.

BE-45560

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

CB TEST CERTIFICATE

Product

Rechargeable Lithium-ion Battery Pack

Name and address of the applicant

Ningbo AUX Solar Technology Co., Ltd.
No.17 Fenglin Road, Cicheng Town, Jiangbei District, Ningbo City,
Zhejiang Province, China

Name and address of the manufacturer

Ningbo AUX Solar Technology Co., Ltd.
No.17 Fenglin Road, Cicheng Town, Jiangbei District, Ningbo City,
Zhejiang Province, China

Name and address of the factory

Ningbo AUX Solar Technology Co., Ltd.
No. 888 Xinrong Road, Sumeng Town, Wucheng District, Jinhua
City, Zhejiang Province, China

Note: When more than one factory, please report on page 2

Additional Information on page 2

Ratings and principal characteristics

ABL-T05H-H01: 102,4 V, 52 Ah; ABL-T10H-H01: 204,8 V, 52 Ah;
ABL-T15H-H01: 307,2 V, 52 Ah; ABL-T20H-H01: 409,6 V, 52 Ah

Trademark (if any)

AUXSOL

Customer's Testing Facility (CTF) Stage used

-

Model / Type Ref.

ABL-T05H-H01, ABL-T10H-H01, ABL-T15H-H01, ABL-T20H-H01

Additional information (if necessary may also be reported on page 2)

-
 Additional Information on page 2

A sample of the product was tested and found to be in conformity with

IEC 62619:2022
National Differences:

As shown in the Test Report Ref. No. which forms part of this Certificate

-
SHES230701404001

This CB Test Certificate is issued by the National Certification Body

SGS Belgium NV - Division SGS CEBEC
Riverside Business Park
Bld Internationalelaan 55, Building K
B-1070 Brussels, Belgium

SGS

Date: 2023-07-27

Signature: Mark Lohmann