



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

SHEM-TRF-001 Rev. 02 Sep01, 2023

Report No.: SHCR250300048701

Page: 1 of 78

TEST REPORT

Application No.: SHCR2503000487HS
Applicant: Ningbo Deye Domestic Electrical Appliance Technology Co., Ltd
Address of Applicant: No.568, South Rixian Road, Binhai Economic Development Zone, Cixi, Ningbo, Zhejiang, 315300, P.R.China
Manufacturer: Ningbo Deye Domestic Electrical Appliance Technology Co., Ltd
Address of Manufacturer: No.568, South Rixian Road, Binhai Economic Development Zone, Cixi, Ningbo, Zhejiang, 315300, P.R.China
Factory: Ningbo Deye Domestic Electrical Appliance Technology Co., Ltd
Address of Factory: No.568, South Rixian Road, Binhai Economic Development Zone, Cixi, Ningbo, Zhejiang, 315300, P.R.China
Equipment Under Test (EUT):
EUT Name: Split Type Air Conditioner
Model No.: DW3B1-ACDC-27KR2(EU), DMGA1-ACDC-07KR2(EU)
DMGA1-ACDC-09KR2(EU), DMGA1-ACDC-12KR2(EU)
DMGA1-ACDC-18KR2(EU)
Trade Mark: Deye
Standard(s) : EN 61000-3-3: 2013+ A1:2019+A2:2021
EN IEC 55014-1: 2021
EN IEC 61000-3-2: 2019+A1:2021+A2:2024
EN IEC 55014-2: 2021
Date of Receipt: 2025-03-06
Date of Test: 2025-03-17 to 2025-03-18
Date of Issue: 2025-03-27

Test Result:

Pass*

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

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.

Member of the SGS Group (SGS SA)

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.
588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China



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

SHEM-TRF-001 Rev. 02 Sep01, 2023

Report No.: SHCR250300048701

Page: 2 of 78

Revision Record			
Version	Description	Date	Remark
00	Original	2025-03-27	/

Authorized for issue by:			
Tested By		<i>Wade Zhang</i>	
		Wade Zhang/Project Engineer	
Approved By		<i>Parlam Zhan</i>	
		Parlam Zhan / Reviewer	

2 Test Summary

Emission Part				
Item	Standard	Method	Requirement	Result
Conducted Emissions at AC Mains Power Port (150kHz-30MHz)	EN IEC 55014-1: 2021	CISPR 16-2-1:2014+A1:2017	Table 5	Pass
Discontinuous Disturbance (150kHz-30MHz)		EN IEC 55014-1: 2021	Clause 4.4.2	Pass
Disturbance Power		CISPR 16-2-2:2010	Table 7 & 8	Pass
Harmonic Current Emission	EN IEC 61000-3-2: 2019+A1:2021+A2: 2024	EN IEC 61000-3-2: 2019+A1:2021+A2:2024	Class A	Pass
Voltage Fluctuations and Flicker	EN 61000-3-3: 2013+ A1:2019+A2:2021	EN 61000-3-3: 2013+ A1:2019+A2:2021	Clause 5	Pass

Immunity Part				
Item	Standard	Method	Requirement	Result
Electrostatic Discharge	EN IEC 55014-2: 2021	EN 61000-4-2:2009	4kV Contact Discharge, 8kV Air Discharge	Pass
Radiated Immunity (80MHz-1GHz)		EN IEC 61000-4-3: 2020	3V/m, 80%, 1kHz Amp. Mod.	Pass
Electrical Fast Transients Burst at AC Mains Power Port		EN 61000-4-4:2012	1kV, 5/50ns Tr/Td, 5kHz Repetition Frequency	Pass
Surge at AC Mains Power Port		EN 61000-4-5:2014+A1:2017	1.2/50µs Tr/Td, 1kV Line to Line, 2kV Line to Ground	Pass
Conducted Immunity at AC Mains Power Port (150kHz-80MHz)		EN 61000-4-6: 2014	3Vrms (emf), 80%, 1kHz Amp. Mod.	Pass
Voltage Dips and Interruptions		EN IEC 61000-4-11: 2020	For 50Hz: 0 % UT for 0.5cycle, 40 % UT for 10cycles, 70 % UT for 25cycles, UT is Supply Voltage	Pass

3 Contents

	Page
1 COVER PAGE	1
2 Test Summary	3
3 Contents.....	4
4 General Information	6
4.1 Details of E.U.T.	6
4.2 Description of Support Units.....	6
4.3 Measurement Uncertainty & Decision Rule.....	6
4.4 Test Location	7
4.5 Test Facility	7
4.6 Deviation from Standards.....	7
4.7 Abnormalities from Standard Conditions	7
4.8 EMS Monitor	7
5 Equipment List	8
6 Emission Test Results.....	12
6.1 Conducted Emissions at AC Mains Power Port (150kHz-30MHz)	12
6.1.1 E.U.T. Operation	12
6.1.2 Test Mode Description	12
6.1.3 Test Setup Diagram	12
6.1.4 Measurement Procedure and Data	13
6.2 Discontinuous Disturbance (150kHz-30MHz).....	18
6.2.1 E.U.T. Operation	18
6.2.2 Test Mode Description	18
6.2.3 Test Setup Diagram	19
6.2.4 Measurement Procedure and Data	19
6.3 Disturbance Power	21
6.3.1 E.U.T. Operation	21
6.3.2 Test Mode Description	21
6.3.3 Test Setup Diagram	21
6.3.4 Measurement Procedure and Data	21
6.4 Harmonic Current Emission.....	24
6.4.1 E.U.T. Operation	24
6.4.2 Test Mode Description	24
6.4.3 Test Setup Diagram	24
6.4.4 Measurement Procedure and Data	24
6.5 Voltage Fluctuations and Flicker	41
6.5.1 E.U.T. Operation	41
6.5.2 Test Mode Description	41
6.5.3 Test Setup Diagram	41
6.5.4 Measurement Procedure and Data	41
7 Immunity Test Results.....	46
7.1 Electrostatic Discharge.....	47
7.1.1 Test Setup Diagram	47
7.1.2 E.U.T. Operation	47
7.1.3 Test Mode Description	47
7.1.4 Test Condition and Results:	47
7.2 Radiated Immunity (80MHz-1GHz)	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 AC Mains 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	Surge at AC Mains Power 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	Conducted Immunity at AC Mains Power Port (150kHz-80MHz).....	53
7.5.1	Test Setup Diagram	53
7.5.2	E.U.T. Operation	53
7.5.3	Test Mode Description	53
7.5.4	Test Condition and Results:	53
7.6	Voltage Dips and Interruptions	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
8	Test Setup Photo.....	56
9	EUT Constructional Details (EUT Photos)	67

4 General Information

4.1 Details of E.U.T.

Power supply:	AC220-240V 50Hz
Test voltage:	AC 230V 50Hz

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
--	--	--	--

The EUT has been tested as an independent unit.

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. internal working 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).
3. Sample source: sent by customer.

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: Working status of EUT.

5 Equipment List

Conducted Emissions at AC Mains Power Port (150kHz-30MHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
EMI test receiver	Rohde & Schwarz	ESR7	SHEM162-1	2024/12/18	2025/12/17
Line impedance stabilization network	SCHWARZBECK	NSLK8127	SHEM061-1	2024/12/18	2025/12/17
Line impedance stabilization network	EMCO	3816_2	SHEM019-1	2024/12/18	2025/12/17
Pulse limiter	Rohde & Schwarz	ESH3-Z2	SHEM029-1	2024/12/18	2025/12/17
Shielding Room	ZHONGYU	8*4*3M	SHEM079-2	2023/12/19	2026/12/18
CE test Cable	/	/	SHEM172-2	2024/12/18	2025/12/17
Passive Voltage probe	Rohde & Schwarz	ESH2-Z3	SHEM028-2	2024/12/18	2025/12/17
Capacitive Voltage Probe	SCHWARZBECK	CVP9222 B	SHEM169-1	2024/07/31	2025/07/30
Current Probe	SCHWARZBECK	SW9605	SHEM170-1	2024/07/31	2025/07/30
Test Software	ESE	e3	Version: 6.191211	N/A	N/A
3 Phase LISN	SCHWARZBECK	NNLK 8129 RC	SHME035-4	2024/09/19	2025/09/18
3 Phase LISN	Beijing Kehuan	KH3765-100	SHEM292-1	2024/07/31	2025/07/30

Discontinuous Disturbance (150kHz-30MHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Click analyzer	SCHAFFNER	DIA1512D	SHEM013-1	2024/12/18	2025/12/17
Line impedance stabilization network	SCHWARZBECK	NSLK8127	SHEM061-1	2024/12/18	2025/12/17
Line impedance stabilization network	EMCO	3816_2	SHEM019-1	2024/12/18	2025/12/17
Shielding Room	ZHONGYU	8*4*3M	SHEM079-2	2023/12/19	2026/12/18
Test Software	SCHAFFNER	DIS9966	Version: 2.5	N/A	N/A

Disturbance Power					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
EMI test receiver	Rohde & Schwarz	ESR7	SHEM162-1	2024/12/18	2025/12/17
Absorbing clamp	LUTHI	MDS21	SHEM014-1	2024/12/18	2025/12/17
DE coupling clamp	LUTHI	FTC101	SHEM027-2	N/A	N/A
Attenuator	HUAXIANG	TS2-6dB-2G-B	SHEM208-1	2024/12/18	2025/12/17
Shielding Room	ZHONGYU	8*4*3M	SHEM079-2	2023/12/19	2026/12/18
DP test Cable	/	/	SHEM179-1	2024/12/18	2025/12/17
Test Software	ESE	e3	Version: 6.191211	N/A	N/A



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

SHEM-TRF-001 Rev. 02 Sep01, 2023

Report No.: SHCR250300048701

Page: 9 of 78

Harmonic Current Emission					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Harmonic&Flicker analyzer	AMETEK	PACS-1	SHEM024-2	2024/07/31	2025/07/30
AC Power Source 5KVA	AMETEK	5001iX	SHEM025-2	2024/07/31	2025/07/30
Test Software	AMETEK	CTS4	Version: 4.24.0	N/A	N/A
Harmonic&Flicker analyzer	EM TEST	DPA500	SHEM024-1	2024/07/31	2025/07/30
AC Power Source 6KVA	EM TEST	ACS500	SHEM025-1	2024/07/31	2025/07/30
Test Software	EM TEST	DPA	Version: 5.4.8.0	N/A	N/A
Harmonic & Flicker test system	DEWETRON	DEWE2-A4	SHEM274-1	2024/07/31	2025/07/30

Voltage Fluctuations and Flicker					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Harmonic&Flicker analyzer	AMETEK	PACS-1	SHEM024-2	2024/07/31	2025/07/30
AC Power Source 5KVA	AMETEK	5001iX	SHEM025-2	2024/07/31	2025/07/30
Test Software	AMETEK	CTS4	Version: 4.24.0	N/A	N/A
Harmonic&Flicker analyzer	EM TEST	DPA500	SHEM024-1	2024/07/31	2025/07/30
AC Power Source 6KVA	EM TEST	ACS500	SHEM025-1	2024/07/31	2025/07/30
Test Software	EM TEST	DPA	Version: 5.4.8.0	N/A	N/A
Harmonic & Flicker test system	DEWETRON	DEWE2-A4	SHEM274-1	2024/07/31	2025/07/30

Electrostatic Discharge					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Electrostatic Discharge Simulator	TESEQ	NSG 437	SHEM041-2	2024/07/31	2025/07/30
Electrostatic Discharge Simulator	3CTEST	EDS20H	SHEM199-1	2024/12/18	2025/12/17
Electrostatic discharge simulator	EM TEST	dito	SHEM289-1	2025/02/10	2026/02/09

Radiated Immunity (80MHz-1GHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Signal generator	Rohde & Schwarz	SMB100A	SHEM194-1	2024/12/18	2025/12/17
Power Meter	Rohde & Schwarz	NRP	SHEM057-1	2024/07/31	2025/07/30
Power meter sensor	Rohde & Schwarz	NRP-Z91	SHEM057-4	2024/07/31	2025/07/30
Antenna	SCHWARZBECK	STLP9128D	SHEM130-1	N/A	N/A
Amplifier	MILMEGA	80RF1000-250	SHEM132-1	2024/12/18	2025/12/17
Power meter sensor	Rohde & Schwarz	NRP-Z22	SHEM136-1	2024/07/31	2025/07/30
ElectroMagnetic Field Probe	ETS-Lindgren	HI-6105	SHEM134-1	2024/08/16	2025/08/15

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

SHEM-TRF-001 Rev. 02 Sep01, 2023

Report No.: SHCR250300048701

Page: 10 of 78

Semi/Fully Anechoic	ST	11*6*6M	SHEM078-2	2023/05/06	2026/05/05
Test Software	Rohde & Schwarz	EMC32	Version: 10.20.01	N/A	N/A
Power meter sensor	Rohde & Schwarz	NRP-Z91	SHEM057-5	2024/12/18	2025/12/17

Electrical Fast Transients Burst at AC Mains 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	2024/12/18	2025/12/17
Test Software	EMC-PARTNER	GENECS	Version: 3.29	N/A	N/A
Immunity Test System	TESEQ	NSG 3060	SHEM224-1	2024/07/31	2025/07/30
Coupling / Decoupling Network (CDN)	TESEQ	CDN 3061	SHEM224-3	2024/07/31	2025/07/30
EFT & Surge Generator	PRIMA	PRM61045TB	SHEM200-1	2024/09/27	2025/09/26
CDN for EFT & Surge	PRIMA	PRM-CDN	SHEM200-2	2024/09/27	2025/09/26

Surge at AC Mains 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	2024/12/18	2025/12/17
Test Software	EMC-PARTNER	GENECS	Version: 3.29	N/A	N/A
Immunity Test System	TESEQ	NSG 3060	SHEM224-1	2024/07/31	2025/07/30
Coupling / Decoupling Network (CDN)	TESEQ	CDN 3061	SHEM224-3	2024/07/31	2025/07/30
EFT & Surge Generator	PRIMA	PRM61045TB	SHEM200-1	2024/09/27	2025/09/26
CDN for EFT & Surge	PRIMA	PRM-CDN	SHEM200-2	2024/09/27	2025/09/26
CDN for unsymmetrical interconnection lines (1.2/50us)	SCHAFFNER	CDN 117	SHEM224-5	2024/07/31	2025/07/30
CDN for symmetric datalines & Resistor network (Surge 1.2/50 or 10/700 us)	SCHAFFNER	CDN 118 & INA172	SHEM224-6 & SHEM224-7	2024/07/31	2025/07/30

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

Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Signal generator	Rohde & Schwarz	SMB100A	SHEM194-1	2024/12/18	2025/12/17
Power Amplifier	HAEFFLY	PAMP250	SHEM023-1	2024/12/18	2025/12/17
6dB Attenuator	HUAXIANG	DTS50-6dB-1G-A	SHEM123-2	2024/12/18	2025/12/17
Power Meter	Rohde & Schwarz	NRP	SHEM057-1	2024/07/31	2025/07/30
Power meter sensor	Rohde & Schwarz	NRP-Z91	SHEM057-4	2024/07/31	2025/07/30
Coupling and Decoupling Network (CDN)	LUTHI	L-801 M2/M3	SHEM023-6	2024/12/18	2025/12/17
Shielding Room	ZHONGYU	5*3*3M	SHEM079-6	2022/12/20	2025/12/19
Coupling and Decoupling Network	Teseq	CDN M016	SHEM168-1	2024/07/31	2025/07/30
Test Software	Rohde & Schwarz	EMC32	Version:	N/A	N/A



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

SHEM-TRF-001 Rev. 02 Sep01, 2023

Report No.: SHCR250300048701

Page: 11 of 78

			10.20.01		
CDN	TESEQ	CDN M532	SHEM250-3	2024/12/18	2025/12/17
Power meter sensor	Rohde & Schwarz	NRP-Z91	SHEM057-5	2024/12/18	2025/12/17
Current Injection Probe	PRANA	IP-DR250	SHEM273-1	2024/12/18	2025/12/17
Test System for Conducted Immunity	TESEQ	NSG 4070	SHEM295-1	2024/12/18	2025/12/17

Voltage Dips and Interruptions

Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Immunity Test System	EMC PARTNER	TRA3000 F-S-D-V	SHEM163-1	2024/12/18	2025/12/17
Test Software	EMC-PARTNER	GENECS	Version: 3.29	N/A	N/A
Immunity Test System	TESEQ	NSG 3060	SHEM224-1	2024/07/31	2025/07/30
Coupling / Decoupling Network (CDN)	TESEQ	CDN 3061	SHEM224-3	2024/07/31	2025/07/30
Manual step transformer	TESEQ	INA 6501	SHEM224-4	2024/07/31	2025/07/30
3 phase voltage dips & interruptions simulator	LIONCEL	VDS-1132A & TGL-332	SHME143-1~SHME143-4	2024/05/06	2025/05/05

General used equipment

Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Atmospheric Pressure Meter	Nanjing XiangRuiDe	DYM3	SHEM082-2	2024-01-18	2027-01-17
Temperature&humidity recorder	ShangHai weather meter work	ZJ 1-2B	SHEM042-9~10	2024-12-22	2025-12-21
Temperature&humidity recorder	ShangHai weather meter work	ZJ 1-2B	SHEM042-5	2024-07-13	2025-07-12
Digital Temperature& humidity recorder	Jianda Renke	RS-WS-N01-6J	SHEM247-1~8	2025-01-06	2026-01-05
Digital Multimeter	FLUKE	17B+	SHEM271-7	2024-07-13	2025-07-12
Autoformer regulator	Guangzhou bao de	TDGC2-5KVA	SHEM150-1	N/A	N/A
Multi-purpose tong tester	FLUKE	317	SHEM001-2	2024-10-30	2025-10-29

6 Emission Test Results

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

Test Requirement: EN IEC 55014-1: 2021

Test Method: CISPR 16-2-1:2014+A1:2017

Limit:

0.15M-0.5MHz 66dB(μV)-56dB(μV) quasi-peak, 59dB(μV)-46dB(μV) average

0.5M-5MHz 56dB(μV) quasi-peak, 46dB(μV) average

5M-30MHz 60dB(μV) quasi-peak, 50dB(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

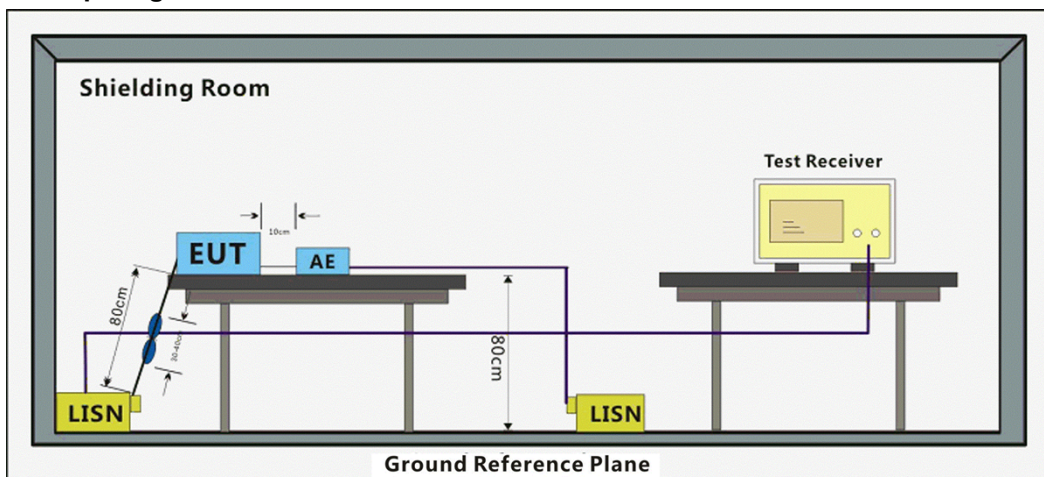
Humidity: 50 % RH

Atmospheric Pressure: 1010 mbar

6.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Normal Working_Keep the EUT(Indoor unit 7+9+12) working in Cooling mode continuously.
Pre-scan	01	Normal Working_Keep the EUT(Indoor unit 7+9+12) working in Heating mode continuously.
Final test	02	Normal Working_Keep the EUT(Indoor unit 7+9+18) working in Cooling mode continuously.
Pre-scan	03	Normal Working_Keep the EUT(Indoor unit 7+9+18) working in Heating mode continuously.

6.1.3 Test Setup Diagram





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

SHEM-TRF-001 Rev. 02 Sep01, 2023

Report No.: SHCR250300048701

Page: 13 of 78

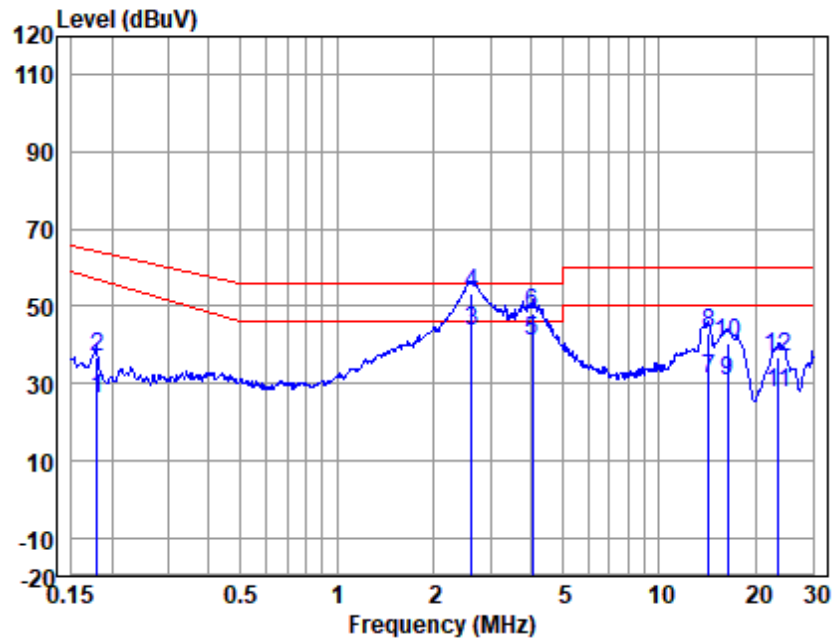
6.1.4 Measurement Procedure and Data

Frequency Range: 150kHz to 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

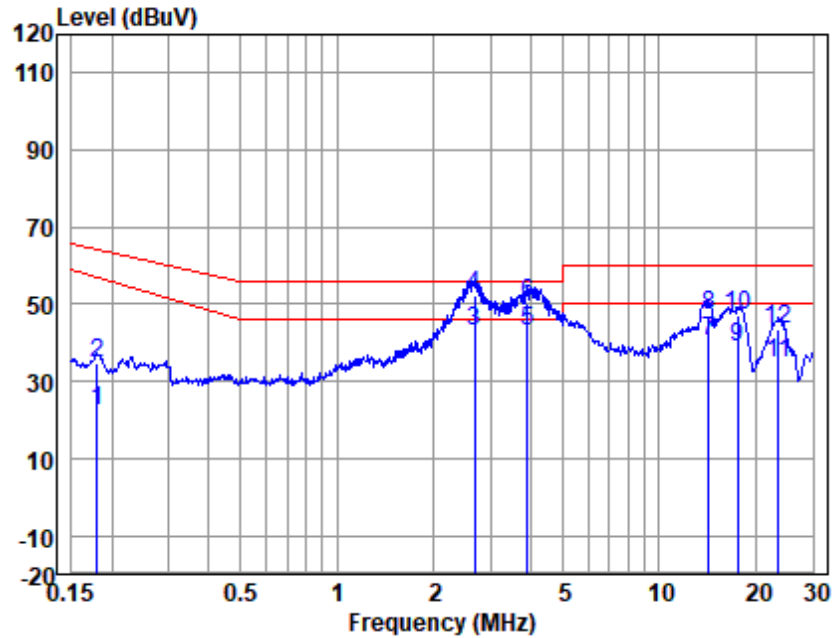


LISN : LINE
EUT/Project No : 0487HS
Test Mode : 00

	Freq (MHz)	Read level (dBuV)	LISN Factor (dB)	Cable Loss (dB)	Emission Level (dBuV)	Limit (dBuV)	Over Limit (dB)	Remark
1	0.18	15.79	0.50	9.90	26.19	57.05	-30.86	Average
2	0.18	26.30	0.50	9.90	36.70	64.50	-27.80	QP
3	2.61	33.39	0.30	9.90	43.59	46.00	-2.41	Average
4	2.61	43.40	0.30	9.90	53.60	56.00	-2.40	QP
5	4.03	30.57	0.30	9.90	40.77	46.00	-5.23	Average
6	4.03	38.22	0.30	9.90	48.42	56.00	-7.58	QP
7	14.21	20.31	0.60	10.00	30.91	50.00	-19.09	Average
8	14.21	32.44	0.60	10.00	43.04	60.00	-16.96	QP
9	16.31	20.12	0.63	10.03	30.78	50.00	-19.22	Average
10	16.31	29.61	0.63	10.03	40.27	60.00	-19.73	QP
11	23.51	16.13	1.20	10.17	27.50	50.00	-22.50	Average
12	23.51	25.70	1.20	10.17	37.07	60.00	-22.93	QP

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

Test Mode: 00; Line: Neutral Line



LISN : NEUTRAL

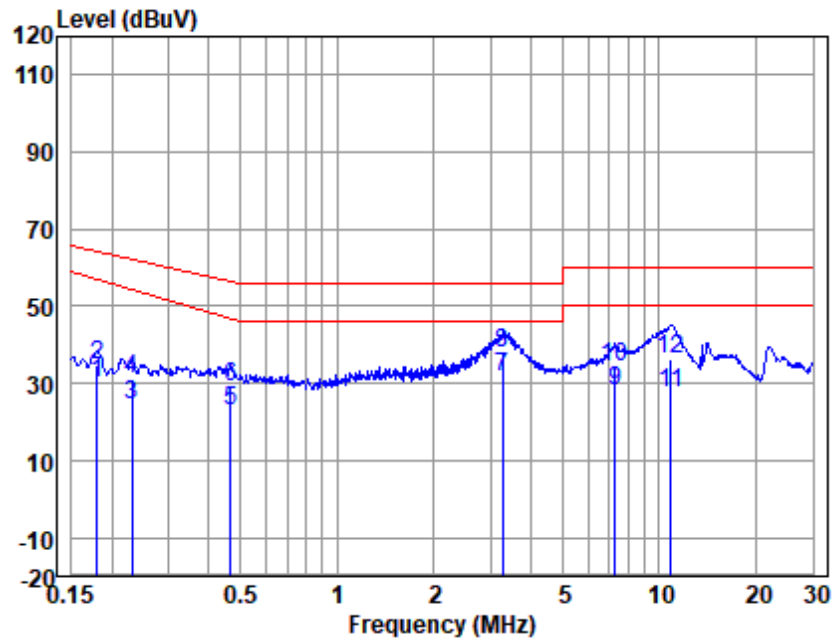
EUT/Project No : 0487HS

Test Mode : 00

	Freq (MHz)	Read level (dBuV)	LISN Factor (dB)	Cable Loss (dB)	Emission Level (dBuV)	Limit (dBuV)	Over Limit (dB)	Remark
1	0.18	11.98	0.42	9.90	22.30	57.05	-34.75	Average
2	0.18	24.43	0.42	9.90	34.75	64.50	-29.75	QP
3	2.68	32.87	0.36	9.90	43.13	46.00	-2.87	Average
4	2.68	42.17	0.36	9.90	52.43	56.00	-3.57	QP
5	3.90	32.64	0.45	9.90	42.99	46.00	-3.01	Average
6	3.90	39.68	0.45	9.90	50.03	56.00	-5.97	QP
7	14.21	29.80	0.51	10.00	40.31	50.00	-9.69	Average
8	14.21	36.74	0.51	10.00	47.25	60.00	-12.75	QP
9	17.57	28.10	0.77	10.05	38.92	50.00	-11.08	Average
10	17.57	36.25	0.77	10.05	47.07	60.00	-12.93	QP
11	23.39	23.22	1.14	10.17	34.53	50.00	-15.47	Average
12	23.39	31.98	1.14	10.17	43.29	60.00	-16.71	QP

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

Test Mode: 02; Line: Live line

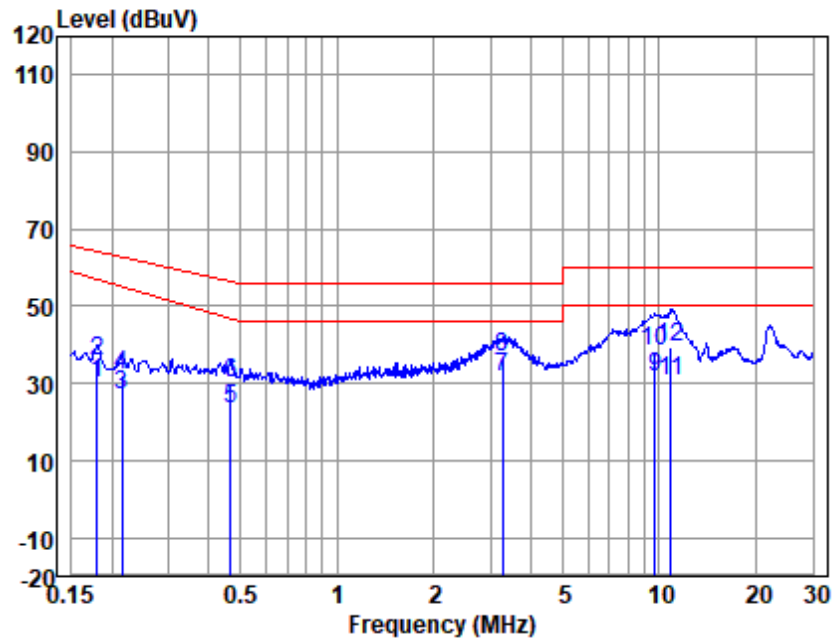


LISN : LINE
EUT/Project No : 0487HS
Test Mode : 02

	Freq (MHz)	Read level (dBuV)	LISN Factor (dB)	Cable Loss (dB)	Emission Level (dBuV)	Limit (dBuV)	Over Limit (dB)	Remark
1	0.18	19.48	0.50	9.90	29.88	57.05	-27.17	Average
2	0.18	24.22	0.50	9.90	34.62	64.50	-29.88	QP
3	0.23	14.22	0.47	9.90	24.59	54.37	-29.78	Average
4	0.23	20.52	0.47	9.90	30.89	62.44	-31.55	QP
5	0.47	12.75	0.31	9.90	22.96	46.76	-23.80	Average
6	0.47	18.84	0.31	9.90	29.05	56.58	-27.53	QP
7	3.26	21.45	0.30	9.90	31.65	46.00	-14.35	Average
8	3.26	27.59	0.30	9.90	37.79	56.00	-18.21	QP
9	7.29	17.69	0.42	10.00	28.11	50.00	-21.89	Average
10	7.29	23.62	0.42	10.00	34.04	60.00	-25.96	QP
11	10.90	16.70	0.60	10.00	27.30	50.00	-22.70	Average
12	10.90	25.84	0.60	10.00	36.44	60.00	-23.56	QP

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

Test Mode: 02; Line: Neutral Line



LISN : NEUTRAL
EUT/Project No : 0487HS
Test Mode : 02

	Freq (MHz)	Read level (dBuV)	LISN Factor (dB)	Cable Loss (dB)	Emission Level (dBuV)	Limit (dBuV)	Over Limit (dB)	Remark
1	0.18	19.69	0.42	9.90	30.01	57.05	-27.04	Average
2	0.18	25.67	0.42	9.90	35.99	64.50	-28.51	QP
3	0.22	16.47	0.40	9.90	26.77	55.11	-28.34	Average
4	0.22	22.07	0.40	9.90	32.37	63.01	-30.64	QP
5	0.47	13.27	0.40	9.90	23.57	46.76	-23.19	Average
6	0.47	19.91	0.40	9.90	30.21	56.58	-26.37	QP
7	3.26	21.10	0.41	9.90	31.41	46.00	-14.59	Average
8	3.26	26.72	0.41	9.90	37.03	56.00	-18.97	QP
9	9.71	21.13	0.58	10.00	31.71	50.00	-18.29	Average
10	9.71	28.02	0.58	10.00	38.60	60.00	-21.40	QP
11	10.90	20.03	0.58	10.00	30.61	50.00	-19.39	Average
12	10.90	28.86	0.58	10.00	39.44	60.00	-20.56	QP

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

6.2 Discontinuous Disturbance (150kHz-30MHz)

Test Requirement: EN IEC 55014-1: 2021

Test Method: EN IEC 55014-1: 2021

Limit:

Provision	Click Rate (N)		
1	All clicks ≤ 20 ms	90 % click ≤ 10 ms	$N \leq 5$
2	$N < 0,2$	$L_q^b = L^a + 44$	Clicks $^c \leq 25\%$ exceed L_q^b
3	$30 > N \geq 0,2$	$L_q^b = L^a + 20 \lg(30/N)$	Clicks $^c \leq 25\%$ exceed L_q^b
^a The limits L of Conducted Emissions apply also to discontinuous disturbances from all equipment which produce: 1) disturbances other than clicks, or 2) clicks with a click rate N equal to or greater than 30 ^b The click limit L_q is calculated by increasing the relevant quasi-peak limit L for continuous disturbances by certain value. The click limit applies to the disturbance assessed according to the upper quartile method ^c a quarter of the number of the clicks registered during the observation time T is allowed to exceed the click limit L_q			

6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C

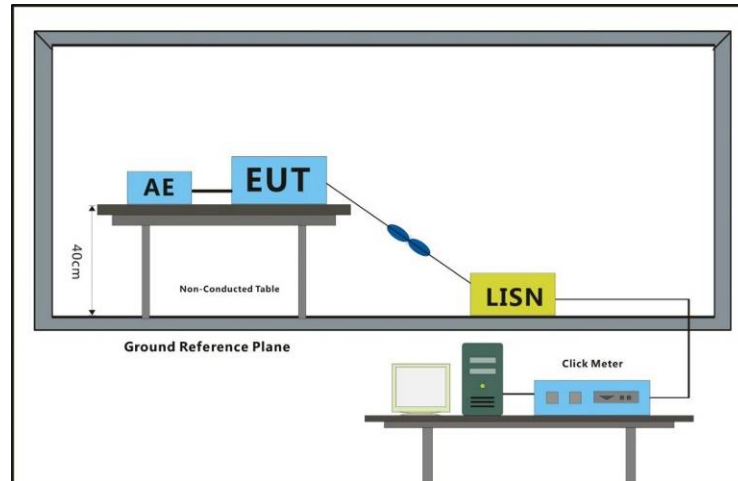
Humidity: 50 % RH

Atmospheric Pressure: 1010 mbar

6.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Normal Working_Keep the EUT(Indoor unit 7+9+12) working in Cooling mode continuously.
Pre-scan	01	Normal Working_Keep the EUT(Indoor unit 7+9+12) working in Heating mode continuously.
Final test	02	Normal Working_Keep the EUT(Indoor unit 7+9+18) working in Cooling mode continuously.
Pre-scan	03	Normal Working_Keep the EUT(Indoor unit 7+9+18) working in Heating mode continuously.

6.2.3 Test Setup Diagram



6.2.4 Measurement Procedure and Data

Frequency Range: 150kHz to 30MHz

Test Mode: 00

Run A Observation time T1= 120mins				
Switching Operation: -			Factor: -	
Frequency (MHz)	150k Hz	500k Hz	1.4MH z	30M Hz
Limit value (L) (dBµV)	66	56	56	60
Short clicks	0	0	0	0
long clicks	0	0	0	0
Total (short + long) n	0	0	0	0
Click Rate:	0.00	0.00	0.00	0.00
☒ EUT has a click rate N of not more than five and which has instantaneous switching (the duration of each click is less than 10ms) shall be deemed to comply the limits, independent of the amplitude of the clicks.				

Test Mode: 02

Run A Observation time T1= 120mins				
Switching Operation: -			Factor: -	
Frequency (MHz)	150k Hz	500k Hz	1.4MH z	30M Hz

Limit value (L) (dB μ V)	66	56	56	60
Short clicks	0	0	0	0
long clicks	0	0	0	0
Total (short + long) n	0	0	0	0
Click Rate:	0.00	0.00	0.00	0.00
☒ EUT has a click rate N of not more than five and which has instantaneous switching (the duration of each click is less than 10ms) shall be deemed to comply the limits, independent of the amplitude of the clicks.				

6.3 Disturbance Power

Test Requirement: EN IEC 55014-1: 2021

Test Method: CISPR 16-2-2:2010

Limit:

30MHz- 300MHz: 45dB(pW)-55dB(pW) quasi-peak, 35dB(pW)-45dB(pW) average

200MHz- 300MHz: 0dB(pW)-10dB(pW) quasi-peak (reduction limit)

Detector: Peak for pre-scan (120kHz resolution bandwidth) 30MHz to 300MHz

6.3.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C

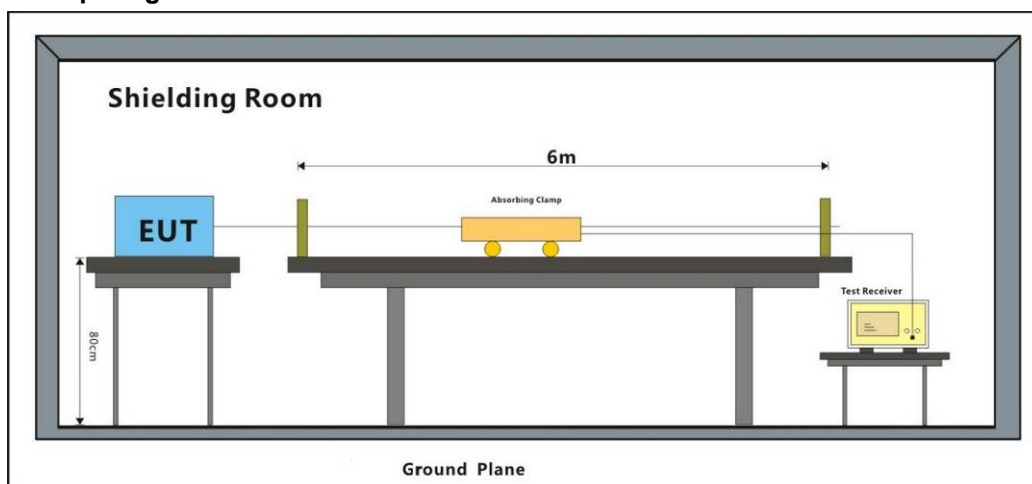
Humidity: 50 % RH

Atmospheric Pressure: 1010 mbar

6.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Normal Working_Keep the EUT(Indoor unit 7+9+12) working in Cooling mode continuously.
Pre-scan	01	Normal Working_Keep the EUT(Indoor unit 7+9+12) working in Heating mode continuously.
Final test	02	Normal Working_Keep the EUT(Indoor unit 7+9+18) working in Cooling mode continuously.
Pre-scan	03	Normal Working_Keep the EUT(Indoor unit 7+9+18) working in Heating mode continuously.

6.3.3 Test Setup Diagram



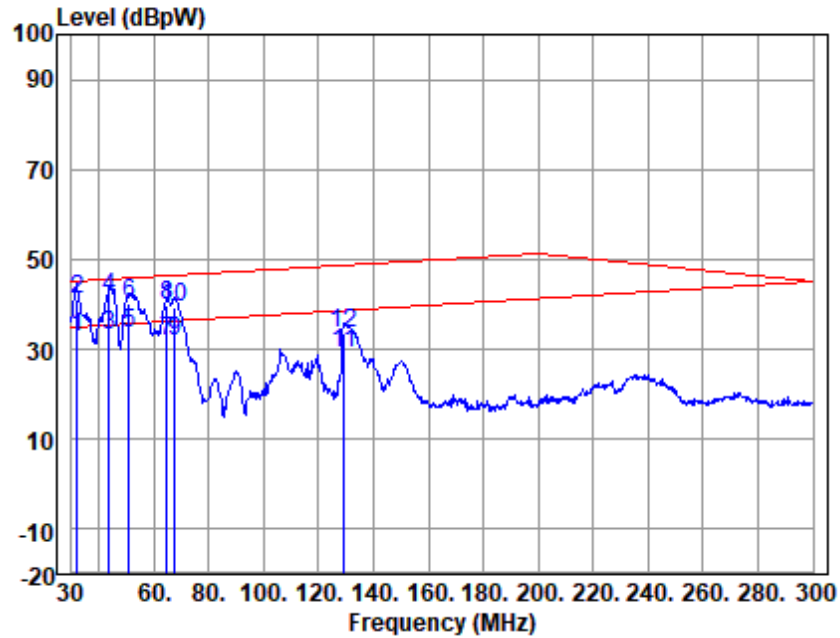
6.3.4 Measurement Procedure and Data

Frequency Range: 30MHz to 300MHz

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 + Clamp Factor

Test Mode: 00



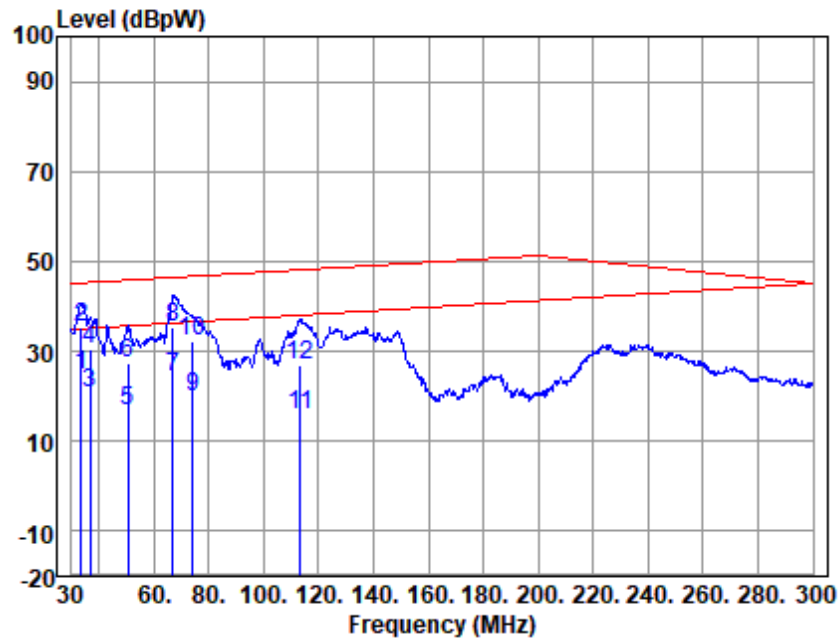
EUT/Project No : 0487HS

Test Mode : 00

	Freq (MHz)	Read level (dBpW)	Aux Factor (dB)	Cable Loss (dB)	Emission Level (dBpW)	Limit (dBpW)	Over Limit (dB)	Remark
1	31.89	7.21	19.34	6.34	32.89	35.08	-2.19	Average
2	31.89	15.62	19.34	6.34	41.30	45.08	-3.78	QP
3	43.77	9.35	17.48	6.48	33.31	35.52	-2.21	Average
4	43.77	17.75	17.48	6.48	41.71	45.52	-3.81	QP
5	51.06	10.21	16.93	6.61	33.75	35.79	-2.04	Average
6	51.06	16.79	16.93	6.61	40.33	45.79	-5.46	QP
7	64.56	7.83	17.13	6.80	31.76	36.29	-4.53	Average
8	64.56	15.64	17.13	6.80	39.57	46.29	-6.72	QP
9	67.53	7.82	17.33	6.85	32.00	36.40	-4.40	Average
10	67.53	15.27	17.33	6.85	39.45	46.40	-6.95	QP
11	129.36	3.99	17.59	7.49	29.07	38.69	-9.62	Average
12	129.36	8.53	17.59	7.49	33.61	48.69	-15.08	QP

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

Test Mode: 02



EUT/Project No : 0487HS

Test Mode : 02

	Freq (MHz)	Read level (dBpW)	Aux Factor (dB)	Cable Loss (dB)	Emission Level (dBpW)	Limit (dBpW)	Over Limit (dB)	Remark
1	33.51	-0.76	18.90	6.37	24.51	35.14	-10.63	Average
2	33.51	10.17	18.90	6.37	35.44	45.14	-9.70	QP
3	36.75	-4.18	18.46	6.40	20.68	35.26	-14.58	Average
4	36.75	5.73	18.46	6.40	30.59	45.26	-14.67	QP
5	50.52	-6.78	16.97	6.61	16.80	35.77	-18.97	Average
6	50.52	4.01	16.97	6.61	27.59	45.77	-18.18	QP
7	66.99	0.01	17.30	6.84	24.15	36.38	-12.23	Average
8	66.99	11.32	17.30	6.84	35.46	46.38	-10.92	QP
9	74.01	-3.97	17.04	6.94	20.01	36.64	-16.63	Average
10	74.01	8.49	17.04	6.94	32.47	46.64	-14.17	QP
11	113.43	-9.08	17.69	7.39	16.00	38.10	-22.10	Average
12	113.43	2.01	17.69	7.39	27.09	48.10	-21.01	QP

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

6.4 Harmonic Current Emission

Test Requirement: EN IEC 61000-3-2: 2019+A1:2021+A2:2024

Test Method: EN IEC 61000-3-2: 2019+A1:2021+A2:2024

6.4.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C

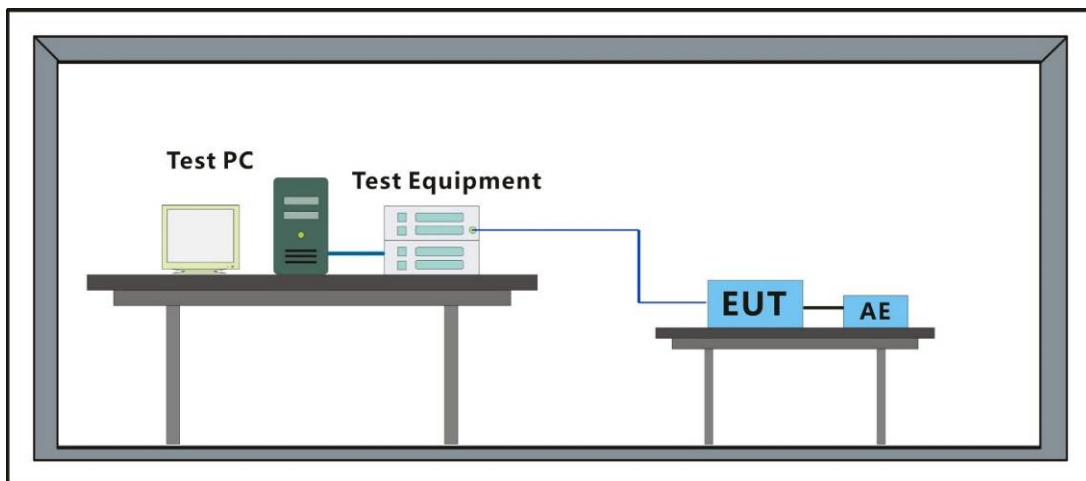
Humidity: 50 % RH

Atmospheric Pressure: 1010 mbar

6.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Normal Working_Keep the EUT(Indoor unit 7+9+12) working in Cooling mode continuously.
Final test	01	Normal Working_Keep the EUT(Indoor unit 7+9+12) working in Heating mode continuously.
Final test	02	Normal Working_Keep the EUT(Indoor unit 7+9+18) working in Cooling mode continuously.
Final test	03	Normal Working_Keep the EUT(Indoor unit 7+9+18) working in Heating mode continuously.

6.4.3 Test Setup Diagram



6.4.4 Measurement Procedure and Data

Frequency Range: 100Hz to 2kHz

Test Mode: 00

Average harmonic current results

Hn	I _{eff} [A]	% of Limit	Limit [A]	Result
1	3.274			
2	3.961E-3	0.367	1.08	PASS
3	68.702E-3	2.987	2.30	PASS
4	4.563E-3	1.061	430.00E-3	PASS
5	59.581E-3	5.226	1.14	PASS
6	3.131E-3	1.044	300.00E-3	PASS
7	48.099E-3	6.247	770.00E-3	PASS
8	2.990E-3	1.300	230.00E-3	PASS
9	35.765E-3	8.941	400.00E-3	PASS
10	2.532E-3	1.376	184.00E-3	PASS
11	25.620E-3	7.764	330.00E-3	PASS
12	2.391E-3	1.560	153.33E-3	PASS
13	15.933E-3	7.587	210.00E-3	PASS
14	2.351E-3	1.789	131.43E-3	PASS
15	9.741E-3	6.494	150.00E-3	PASS
16	1.556E-3	1.353	115.00E-3	PASS
17	7.820E-3	5.908	132.35E-3	PASS
18	1.155E-3	1.130	102.22E-3	PASS
19	6.490E-3	5.481	118.42E-3	PASS
20	1.060E-3	1.152	92.00E-3	PASS
21	5.458E-3	3.396	160.71E-3	PASS
22	1.039E-3	1.242	83.64E-3	PASS
23	4.766E-3	3.248	146.74E-3	PASS
24	970.253E-6	1.266	76.66E-3	PASS
25	3.718E-3	2.754	135.00E-3	PASS
26	929.161E-6	1.313	70.77E-3	PASS
27	2.908E-3	2.326	124.99E-3	PASS
28	898.590E-6	1.368	65.71E-3	PASS
29	3.337E-3	2.867	116.39E-3	PASS
30	901.978E-6	1.471	61.33E-3	PASS
31	3.017E-3	2.771	108.87E-3	PASS
32	820.534E-6	1.427	57.50E-3	PASS
33	2.373E-3	2.320	102.27E-3	PASS
34	1.122E-3	2.073	54.12E-3	PASS
35	2.332E-3	2.418	96.44E-3	PASS
36	824.779E-6	1.614	51.11E-3	PASS
37	2.253E-3	2.470	91.21E-3	PASS
38	1.086E-3	2.244	48.42E-3	PASS
39	1.907E-3	2.204	86.53E-3	PASS
40	790.982E-6	1.720	46.00E-3	PASS

Maximum harmonic current results

Hn	I _{eff} [A]	% of Limit	Limit [A]	Result
1	7.682			
2	132.233E-3	8.163	1.62	PASS
3	417.510E-3	12.102	3.45	PASS
4	49.069E-3	7.608	645.00E-3	PASS
5	326.750E-3	19.108	1.71	PASS
6	41.839E-3	9.297	450.00E-3	PASS
7	220.182E-3	19.063	1.15	PASS
8	28.025E-3	8.123	345.00E-3	PASS
9	121.274E-3	20.212	600.00E-3	PASS
10	20.105E-3	7.284	276.00E-3	PASS
11	55.569E-3	11.226	495.00E-3	PASS
12	15.295E-3	6.650	229.99E-3	PASS
13	33.260E-3	10.559	315.00E-3	PASS
14	13.234E-3	6.713	197.15E-3	PASS
15	34.869E-3	15.497	225.00E-3	PASS
16	11.662E-3	6.761	172.50E-3	PASS
17	26.325E-3	13.260	198.52E-3	PASS
18	10.468E-3	6.827	153.33E-3	PASS
19	16.788E-3	9.451	177.63E-3	PASS
20	9.587E-3	6.947	138.00E-3	PASS
21	13.630E-3	8.481	160.71E-3	PASS
22	8.822E-3	7.032	125.46E-3	PASS
23	13.958E-3	9.512	146.74E-3	PASS
24	7.959E-3	6.921	114.99E-3	PASS
25	11.977E-3	8.872	135.00E-3	PASS
26	7.424E-3	6.993	106.16E-3	PASS
27	8.611E-3	6.889	124.99E-3	PASS
28	7.089E-3	7.193	98.57E-3	PASS
29	8.151E-3	7.003	116.39E-3	PASS
30	6.684E-3	7.266	92.00E-3	PASS
31	7.974E-3	7.324	108.87E-3	PASS
32	6.186E-3	7.172	86.25E-3	PASS
33	6.847E-3	6.695	102.27E-3	PASS
34	6.191E-3	7.626	81.18E-3	PASS
35	6.273E-3	6.505	96.44E-3	PASS
36	5.694E-3	7.427	76.66E-3	PASS
37	6.000E-3	6.578	91.21E-3	PASS
38	5.657E-3	7.789	72.63E-3	PASS
39	5.869E-3	6.782	86.53E-3	PASS
40	5.260E-3	7.624	69.00E-3	PASS

Maximum harmonic voltage results

Hn	Ueff [V]	Ueff [%]	Limit [%]	Result
1	231.00	100.435		
2	342.97E-3	0.149	0.2	PASS
3	612.42E-3	0.266	0.9	PASS
4	164.35E-3	0.071	0.2	PASS
5	662.91E-3	0.288	0.4	PASS
6	146.17E-3	0.064	0.2	PASS
7	468.76E-3	0.204	0.3	PASS
8	96.66E-3	0.042	0.2	PASS
9	315.88E-3	0.137	0.2	PASS
10	94.21E-3	0.041	0.2	PASS
11	247.74E-3	0.108	0.1	FAIL
12	81.75E-3	0.036	0.1	PASS
13	195.71E-3	0.085	0.1	PASS
14	77.46E-3	0.034	0.1	PASS
15	213.46E-3	0.093	0.1	PASS
16	47.87E-3	0.021	0.1	PASS
17	127.58E-3	0.055	0.1	PASS
18	44.06E-3	0.019	0.1	PASS
19	147.56E-3	0.064	0.1	PASS
20	34.89E-3	0.015	0.1	PASS
21	127.10E-3	0.055	0.1	PASS
22	34.77E-3	0.015	0.1	PASS
23	96.63E-3	0.042	0.1	PASS
24	40.98E-3	0.018	0.1	PASS
25	129.69E-3	0.056	0.1	PASS
26	28.13E-3	0.012	0.1	PASS
27	103.04E-3	0.045	0.1	PASS
28	38.25E-3	0.017	0.1	PASS
29	118.43E-3	0.051	0.1	PASS
30	47.54E-3	0.021	0.1	PASS
31	86.83E-3	0.038	0.1	PASS
32	28.58E-3	0.012	0.1	PASS
33	98.70E-3	0.043	0.1	PASS
34	38.38E-3	0.017	0.1	PASS
35	68.37E-3	0.030	0.1	PASS
36	73.18E-3	0.032	0.1	PASS
37	111.22E-3	0.048	0.1	PASS
38	79.11E-3	0.034	0.1	PASS
39	109.85E-3	0.048	0.1	PASS
40	33.23E-3	0.014	0.1	PASS

Power and THD results - DS: 5568



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

SHEM-TRF-001 Rev. 02 Sep01, 2023

Report No.: SHCR250300048701

Page: 28 of 78

True power P:	1.743kW	Apparent power S:	1.743kVA
Reactiv power Q:	46.98var	Power factor:	1.000
THD (U):	0.002	THD (I):	0.025
Crest Factor (U):	1.41	Crest Factor (I):	1.48

Test Mode: 01

Average harmonic current results

Hn	I _{eff} [A]	% of Limit	Limit [A]	Result
1	3.495			
2	18.835E-3	1.744	1.08	PASS
3	23.645E-3	1.028	2.30	PASS
4	11.301E-3	2.628	430.00E-3	PASS
5	7.725E-3	0.678	1.14	PASS
6	8.639E-3	2.880	300.00E-3	PASS
7	8.397E-3	1.091	770.00E-3	PASS
8	7.217E-3	3.138	230.00E-3	PASS
9	7.398E-3	1.850	400.00E-3	PASS
10	5.433E-3	2.953	184.00E-3	PASS
11	4.677E-3	1.417	330.00E-3	PASS
12	4.500E-3	2.935	153.33E-3	PASS
13	4.080E-3	1.943	210.00E-3	PASS
14	3.265E-3	2.484	131.43E-3	PASS
15	3.345E-3	2.230	150.00E-3	PASS
16	2.427E-3	2.110	115.00E-3	PASS
17	2.576E-3	1.946	132.35E-3	PASS
18	2.310E-3	2.260	102.22E-3	PASS
19	2.908E-3	2.456	118.42E-3	PASS
20	2.089E-3	2.271	92.00E-3	PASS
21	2.150E-3	1.338	160.71E-3	PASS
22	1.910E-3	2.284	83.64E-3	PASS
23	2.073E-3	1.413	146.74E-3	PASS
24	1.887E-3	2.462	76.66E-3	PASS
25	2.257E-3	1.672	135.00E-3	PASS
26	1.747E-3	2.469	70.77E-3	PASS
27	2.335E-3	1.868	124.99E-3	PASS
28	1.493E-3	2.272	65.71E-3	PASS
29	1.870E-3	1.606	116.39E-3	PASS
30	1.339E-3	2.184	61.33E-3	PASS
31	1.444E-3	1.326	108.87E-3	PASS
32	1.465E-3	2.548	57.50E-3	PASS
33	2.029E-3	1.984	102.27E-3	PASS
34	1.393E-3	2.574	54.12E-3	PASS
35	1.477E-3	1.532	96.44E-3	PASS
36	1.265E-3	2.474	51.11E-3	PASS
37	1.996E-3	2.189	91.21E-3	PASS
38	1.297E-3	2.678	48.42E-3	PASS
39	1.232E-3	1.423	86.53E-3	PASS
40	1.199E-3	2.607	46.00E-3	PASS

Maximum harmonic current results

Hn	I _{eff} [A]	% of Limit	Limit [A]	Result
1	7.107			
2	133.689E-3	8.252	1.62	PASS
3	80.674E-3	2.338	3.45	PASS
4	51.608E-3	8.001	645.00E-3	PASS
5	39.213E-3	2.293	1.71	PASS
6	33.859E-3	7.524	450.00E-3	PASS
7	29.754E-3	2.576	1.15	PASS
8	25.693E-3	7.447	345.00E-3	PASS
9	23.288E-3	3.881	600.00E-3	PASS
10	20.398E-3	7.391	276.00E-3	PASS
11	18.956E-3	3.830	495.00E-3	PASS
12	16.930E-3	7.361	229.99E-3	PASS
13	15.877E-3	5.040	315.00E-3	PASS
14	14.372E-3	7.290	197.15E-3	PASS
15	13.315E-3	5.918	225.00E-3	PASS
16	12.291E-3	7.125	172.50E-3	PASS
17	11.750E-3	5.919	198.52E-3	PASS
18	11.016E-3	7.184	153.33E-3	PASS
19	10.457E-3	5.887	177.63E-3	PASS
20	9.697E-3	7.027	138.00E-3	PASS
21	9.633E-3	5.994	160.71E-3	PASS
22	8.946E-3	7.130	125.46E-3	PASS
23	8.734E-3	5.952	146.74E-3	PASS
24	8.376E-3	7.284	114.99E-3	PASS
25	8.328E-3	6.169	135.00E-3	PASS
26	7.788E-3	7.337	106.16E-3	PASS
27	7.795E-3	6.236	124.99E-3	PASS
28	7.256E-3	7.362	98.57E-3	PASS
29	7.322E-3	6.291	116.39E-3	PASS
30	6.686E-3	7.268	92.00E-3	PASS
31	6.694E-3	6.148	108.87E-3	PASS
32	6.642E-3	7.700	86.25E-3	PASS
33	6.643E-3	6.495	102.27E-3	PASS
34	6.209E-3	7.648	81.18E-3	PASS
35	5.892E-3	6.110	96.44E-3	PASS
36	5.885E-3	7.676	76.66E-3	PASS
37	6.178E-3	6.773	91.21E-3	PASS
38	5.641E-3	7.767	72.63E-3	PASS
39	5.460E-3	6.310	86.53E-3	PASS
40	5.444E-3	7.889	69.00E-3	PASS

Maximum harmonic voltage results

Hn	Ueff [V]	Ueff [%]	Limit [%]	Result
1	231.06	100.462		
2	99.15E-3	0.043	0.2	PASS
3	89.86E-3	0.039	0.9	PASS
4	19.02E-3	0.008	0.2	PASS
5	32.19E-3	0.014	0.4	PASS
6	12.21E-3	0.005	0.2	PASS
7	56.43E-3	0.025	0.3	PASS
8	16.74E-3	0.007	0.2	PASS
9	83.83E-3	0.036	0.2	PASS
10	20.10E-3	0.009	0.2	PASS
11	81.29E-3	0.035	0.1	PASS
12	17.73E-3	0.008	0.1	PASS
13	34.20E-3	0.015	0.1	PASS
14	12.89E-3	0.006	0.1	PASS
15	57.13E-3	0.025	0.1	PASS
16	16.60E-3	0.007	0.1	PASS
17	83.23E-3	0.036	0.1	PASS
18	13.34E-3	0.006	0.1	PASS
19	90.51E-3	0.039	0.1	PASS
20	15.07E-3	0.007	0.1	PASS
21	59.43E-3	0.026	0.1	PASS
22	15.14E-3	0.007	0.1	PASS
23	39.67E-3	0.017	0.1	PASS
24	13.78E-3	0.006	0.1	PASS
25	73.79E-3	0.032	0.1	PASS
26	14.23E-3	0.006	0.1	PASS
27	87.83E-3	0.038	0.1	PASS
28	14.19E-3	0.006	0.1	PASS
29	65.84E-3	0.029	0.1	PASS
30	13.86E-3	0.006	0.1	PASS
31	40.20E-3	0.017	0.1	PASS
32	12.66E-3	0.006	0.1	PASS
33	50.60E-3	0.022	0.1	PASS
34	13.13E-3	0.006	0.1	PASS
35	70.96E-3	0.031	0.1	PASS
36	11.63E-3	0.005	0.1	PASS
37	70.68E-3	0.031	0.1	PASS
38	12.12E-3	0.005	0.1	PASS
39	52.15E-3	0.023	0.1	PASS
40	11.50E-3	0.005	0.1	PASS

Power and THD results - DS: 43



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

SHEM-TRF-001 Rev. 02 Sep01, 2023

Report No.: SHCR250300048701

Page: 32 of 78

True power P:	1.641kW	Apparent power S:	1.641kVA
Reactiv power Q:	25.16var	Power factor:	1.000
THD (U):	0.001	THD (I):	0.004
Crest Factor (U):	1.414	Crest Factor (I):	1.41

Test Mode: 02

Average harmonic current results

Hn	I _{eff} [A]	% of Limit	Limit [A]	Result
1	7.188			
2	124.808E-3	11.556	1.08	PASS
3	47.922E-3	2.084	2.30	PASS
4	83.665E-3	19.457	430.00E-3	PASS
5	74.055E-3	6.496	1.14	PASS
6	82.319E-3	27.440	300.00E-3	PASS
7	52.561E-3	6.826	770.00E-3	PASS
8	49.877E-3	21.686	230.00E-3	PASS
9	49.752E-3	12.438	400.00E-3	PASS
10	49.319E-3	26.804	184.00E-3	PASS
11	40.475E-3	12.265	330.00E-3	PASS
12	23.680E-3	15.444	153.33E-3	PASS
13	54.287E-3	25.851	210.00E-3	PASS
14	20.187E-3	15.359	131.43E-3	PASS
15	37.892E-3	25.261	150.00E-3	PASS
16	27.256E-3	23.701	115.00E-3	PASS
17	42.523E-3	32.129	132.35E-3	PASS
18	42.027E-3	41.114	102.22E-3	PASS
19	24.992E-3	21.105	118.42E-3	PASS
20	46.116E-3	50.126	92.00E-3	PASS
21	24.909E-3	15.499	160.71E-3	PASS
22	55.308E-3	66.126	83.64E-3	PASS
23	16.713E-3	11.389	146.74E-3	PASS
24	54.330E-3	70.872	76.66E-3	PASS
25	18.419E-3	13.644	135.00E-3	PASS
26	51.306E-3	72.496	70.77E-3	PASS
27	16.334E-3	13.067	124.99E-3	PASS
28	47.626E-3	72.480	65.71E-3	PASS
29	18.683E-3	16.053	116.39E-3	PASS
30	38.790E-3	63.249	61.33E-3	PASS
31	17.609E-3	16.174	108.87E-3	PASS
32	31.442E-3	54.681	57.50E-3	PASS
33	20.203E-3	19.754	102.27E-3	PASS
34	24.853E-3	45.923	54.12E-3	PASS
35	18.692E-3	19.383	96.44E-3	PASS
36	18.132E-3	35.476	51.11E-3	PASS
37	17.182E-3	18.837	91.21E-3	PASS
38	15.589E-3	32.195	48.42E-3	PASS
39	26.415E-3	30.525	86.53E-3	PASS
40	13.000E-3	28.261	46.00E-3	PASS

Maximum harmonic current results

Hn	I _{eff} [A]	% of Limit	Limit [A]	Result
1	7.312			
2	138.250E-3	8.534	1.62	PASS
3	74.165E-3	2.150	3.45	PASS
4	89.679E-3	13.904	645.00E-3	PASS
5	88.726E-3	5.189	1.71	PASS
6	85.372E-3	18.972	450.00E-3	PASS
7	75.456E-3	6.533	1.15	PASS
8	52.310E-3	15.162	345.00E-3	PASS
9	71.717E-3	11.953	600.00E-3	PASS
10	52.588E-3	19.054	276.00E-3	PASS
11	57.937E-3	11.704	495.00E-3	PASS
12	26.025E-3	11.315	229.99E-3	PASS
13	66.365E-3	21.068	315.00E-3	PASS
14	22.515E-3	11.421	197.15E-3	PASS
15	44.631E-3	19.836	225.00E-3	PASS
16	30.193E-3	17.503	172.50E-3	PASS
17	47.643E-3	23.998	198.52E-3	PASS
18	44.319E-3	28.904	153.33E-3	PASS
19	27.912E-3	15.714	177.63E-3	PASS
20	48.639E-3	35.246	138.00E-3	PASS
21	27.920E-3	17.373	160.71E-3	PASS
22	56.964E-3	45.404	125.46E-3	PASS
23	20.457E-3	13.940	146.74E-3	PASS
24	56.720E-3	49.326	114.99E-3	PASS
25	21.779E-3	16.133	135.00E-3	PASS
26	53.634E-3	50.525	106.16E-3	PASS
27	19.525E-3	15.621	124.99E-3	PASS
28	49.486E-3	50.207	98.57E-3	PASS
29	21.465E-3	18.443	116.39E-3	PASS
30	40.207E-3	43.706	92.00E-3	PASS
31	19.945E-3	18.320	108.87E-3	PASS
32	33.715E-3	39.090	86.25E-3	PASS
33	22.856E-3	22.348	102.27E-3	PASS
34	26.674E-3	32.858	81.18E-3	PASS
35	21.441E-3	22.234	96.44E-3	PASS
36	19.781E-3	25.802	76.66E-3	PASS
37	19.695E-3	21.592	91.21E-3	PASS
38	17.428E-3	23.995	72.63E-3	PASS
39	28.383E-3	32.800	86.53E-3	PASS
40	14.430E-3	20.913	69.00E-3	PASS

Maximum harmonic voltage results

Hn	Ueff [V]	Ueff [%]	Limit [%]	Result
1	230.88	100.384		
2	82.80E-3	0.036	0.2	PASS
3	82.73E-3	0.036	0.9	PASS
4	29.39E-3	0.013	0.2	PASS
5	45.08E-3	0.020	0.4	PASS
6	27.17E-3	0.012	0.2	PASS
7	50.43E-3	0.022	0.3	PASS
8	28.47E-3	0.012	0.2	PASS
9	55.54E-3	0.024	0.2	PASS
10	26.98E-3	0.012	0.2	PASS
11	51.64E-3	0.022	0.1	PASS
12	17.79E-3	0.008	0.1	PASS
13	64.80E-3	0.028	0.1	PASS
14	19.14E-3	0.008	0.1	PASS
15	32.51E-3	0.014	0.1	PASS
16	31.18E-3	0.014	0.1	PASS
17	60.39E-3	0.026	0.1	PASS
18	42.16E-3	0.018	0.1	PASS
19	59.43E-3	0.026	0.1	PASS
20	31.67E-3	0.014	0.1	PASS
21	60.24E-3	0.026	0.1	PASS
22	32.22E-3	0.014	0.1	PASS
23	54.39E-3	0.024	0.1	PASS
24	27.85E-3	0.012	0.1	PASS
25	44.34E-3	0.019	0.1	PASS
26	35.12E-3	0.015	0.1	PASS
27	43.90E-3	0.019	0.1	PASS
28	29.28E-3	0.013	0.1	PASS
29	57.74E-3	0.025	0.1	PASS
30	29.63E-3	0.013	0.1	PASS
31	70.19E-3	0.031	0.1	PASS
32	33.44E-3	0.015	0.1	PASS
33	134.08E-3	0.058	0.1	PASS
34	42.07E-3	0.018	0.1	PASS
35	110.72E-3	0.048	0.1	PASS
36	35.49E-3	0.015	0.1	PASS
37	50.08E-3	0.022	0.1	PASS
38	33.86E-3	0.015	0.1	PASS
39	53.23E-3	0.023	0.1	PASS
40	38.66E-3	0.017	0.1	PASS

Power and THD results - DS: 647



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

SHEM-TRF-001 Rev. 02 Sep01, 2023

Report No.: SHCR250300048701

Page: 36 of 78

True power P:	1.68kW	Apparent power S:	1.685kVA
Reactiv power Q:	120.7var	Power factor:	0.997
THD (U):	0.001	THD (I):	0.034
Crest Factor (U):	1.415	Crest Factor (I):	1.399

Test Mode: 03

Average harmonic current results

Hn	I _{eff} [A]	% of Limit	Limit [A]	Result
1	7.136			
2	125.250E-3	11.597	1.08	PASS
3	44.991E-3	1.956	2.30	PASS
4	83.715E-3	19.469	430.00E-3	PASS
5	73.101E-3	6.412	1.14	PASS
6	82.735E-3	27.578	300.00E-3	PASS
7	49.948E-3	6.487	770.00E-3	PASS
8	49.924E-3	21.706	230.00E-3	PASS
9	47.127E-3	11.782	400.00E-3	PASS
10	49.717E-3	27.020	184.00E-3	PASS
11	37.975E-3	11.507	330.00E-3	PASS
12	23.723E-3	15.472	153.33E-3	PASS
13	52.875E-3	25.179	210.00E-3	PASS
14	20.411E-3	15.530	131.43E-3	PASS
15	36.769E-3	24.513	150.00E-3	PASS
16	27.590E-3	23.992	115.00E-3	PASS
17	42.143E-3	31.842	132.35E-3	PASS
18	42.139E-3	41.224	102.22E-3	PASS
19	24.319E-3	20.536	118.42E-3	PASS
20	46.330E-3	50.358	92.00E-3	PASS
21	24.671E-3	15.351	160.71E-3	PASS
22	55.549E-3	66.414	83.64E-3	PASS
23	16.102E-3	10.973	146.74E-3	PASS
24	54.539E-3	71.144	76.66E-3	PASS
25	17.997E-3	13.331	135.00E-3	PASS
26	51.571E-3	72.871	70.77E-3	PASS
27	15.727E-3	12.582	124.99E-3	PASS
28	47.707E-3	72.602	65.71E-3	PASS
29	17.893E-3	15.374	116.39E-3	PASS
30	39.083E-3	63.726	61.33E-3	PASS
31	16.777E-3	15.410	108.87E-3	PASS
32	31.742E-3	55.203	57.50E-3	PASS
33	19.701E-3	19.264	102.27E-3	PASS
34	25.161E-3	46.491	54.12E-3	PASS
35	18.631E-3	19.320	96.44E-3	PASS
36	18.356E-3	35.914	51.11E-3	PASS
37	17.156E-3	18.809	91.21E-3	PASS
38	17.174E-3	35.469	48.42E-3	PASS
39	25.623E-3	29.610	86.53E-3	PASS
40	14.764E-3	32.096	46.00E-3	PASS

Maximum harmonic current results

Hn	I _{eff} [A]	% of Limit	Limit [A]	Result
1	7.223			
2	142.381E-3	8.789	1.62	PASS
3	70.179E-3	2.034	3.45	PASS
4	89.828E-3	13.927	645.00E-3	PASS
5	84.703E-3	4.953	1.71	PASS
6	85.527E-3	19.006	450.00E-3	PASS
7	71.089E-3	6.155	1.15	PASS
8	52.810E-3	15.307	345.00E-3	PASS
9	70.277E-3	11.713	600.00E-3	PASS
10	52.668E-3	19.082	276.00E-3	PASS
11	57.666E-3	11.650	495.00E-3	PASS
12	26.095E-3	11.346	229.99E-3	PASS
13	66.426E-3	21.088	315.00E-3	PASS
14	23.215E-3	11.776	197.15E-3	PASS
15	45.461E-3	20.205	225.00E-3	PASS
16	29.338E-3	17.008	172.50E-3	PASS
17	47.826E-3	24.091	198.52E-3	PASS
18	45.075E-3	29.398	153.33E-3	PASS
19	27.726E-3	15.609	177.63E-3	PASS
20	48.748E-3	35.325	138.00E-3	PASS
21	27.953E-3	17.393	160.71E-3	PASS
22	57.877E-3	46.132	125.46E-3	PASS
23	20.213E-3	13.774	146.74E-3	PASS
24	56.382E-3	49.032	114.99E-3	PASS
25	21.560E-3	15.971	135.00E-3	PASS
26	53.111E-3	50.032	106.16E-3	PASS
27	17.882E-3	14.306	124.99E-3	PASS
28	49.620E-3	50.342	98.57E-3	PASS
29	20.571E-3	17.675	116.39E-3	PASS
30	40.792E-3	44.341	92.00E-3	PASS
31	18.604E-3	17.088	108.87E-3	PASS
32	33.594E-3	38.950	86.25E-3	PASS
33	21.220E-3	20.749	102.27E-3	PASS
34	26.873E-3	33.102	81.18E-3	PASS
35	21.126E-3	21.906	96.44E-3	PASS
36	20.481E-3	26.715	76.66E-3	PASS
37	19.207E-3	21.057	91.21E-3	PASS
38	19.437E-3	26.762	72.63E-3	PASS
39	28.514E-3	32.951	86.53E-3	PASS
40	18.321E-3	26.552	69.00E-3	PASS

Maximum harmonic voltage results

Hn	Ueff [V]	Ueff [%]	Limit [%]	Result
1	230.88	100.383		
2	86.70E-3	0.038	0.2	PASS
3	82.06E-3	0.036	0.9	PASS
4	29.32E-3	0.013	0.2	PASS
5	45.14E-3	0.020	0.4	PASS
6	29.35E-3	0.013	0.2	PASS
7	48.55E-3	0.021	0.3	PASS
8	30.64E-3	0.013	0.2	PASS
9	57.18E-3	0.025	0.2	PASS
10	26.35E-3	0.011	0.2	PASS
11	47.65E-3	0.021	0.1	PASS
12	21.76E-3	0.009	0.1	PASS
13	63.73E-3	0.028	0.1	PASS
14	19.75E-3	0.009	0.1	PASS
15	37.58E-3	0.016	0.1	PASS
16	32.29E-3	0.014	0.1	PASS
17	59.45E-3	0.026	0.1	PASS
18	39.97E-3	0.017	0.1	PASS
19	52.51E-3	0.023	0.1	PASS
20	34.50E-3	0.015	0.1	PASS
21	56.52E-3	0.025	0.1	PASS
22	32.29E-3	0.014	0.1	PASS
23	48.11E-3	0.021	0.1	PASS
24	29.84E-3	0.013	0.1	PASS
25	37.28E-3	0.016	0.1	PASS
26	33.34E-3	0.014	0.1	PASS
27	47.23E-3	0.021	0.1	PASS
28	30.70E-3	0.013	0.1	PASS
29	52.67E-3	0.023	0.1	PASS
30	34.46E-3	0.015	0.1	PASS
31	53.86E-3	0.023	0.1	PASS
32	33.29E-3	0.014	0.1	PASS
33	64.36E-3	0.028	0.1	PASS
34	40.17E-3	0.017	0.1	PASS
35	56.32E-3	0.024	0.1	PASS
36	37.98E-3	0.017	0.1	PASS
37	39.83E-3	0.017	0.1	PASS
38	44.14E-3	0.019	0.1	PASS
39	46.09E-3	0.020	0.1	PASS
40	37.82E-3	0.016	0.1	PASS

Power and THD results - DS: 671



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

SHEM-TRF-001 Rev. 02 Sep01, 2023

Report No.: SHCR250300048701

Page: 40 of 78

True power P:	1.67kW	Apparent power S:	1.675kVA
Reactiv power Q:	122.1var	Power factor:	0.997
THD (U):	0.001	THD (I):	0.036
Crest Factor (U):	1.414	Crest Factor (I):	1.404

6.5 Voltage Fluctuations and Flicker

Test Requirement: EN 61000-3-3: 2013+ A1:2019+A2:2021

Test Method: EN 61000-3-3: 2013+ A1:2019+A2:2021

6.5.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C

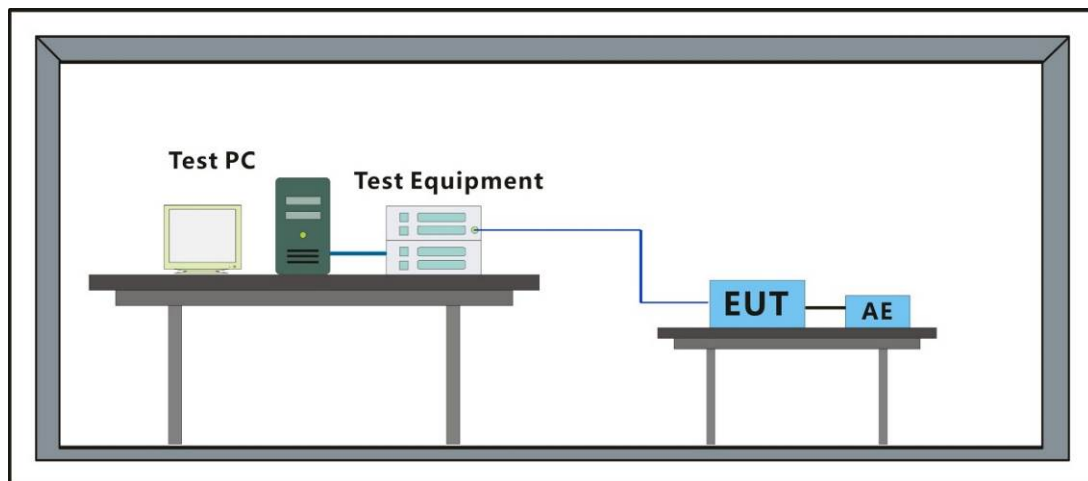
Humidity: 50 % RH

Atmospheric Pressure: 1010 mbar

6.5.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Normal Working_Keep the EUT(Indoor unit 7+9+12) working in Cooling mode continuously.
Final test	01	Normal Working_Keep the EUT(Indoor unit 7+9+12) working in Heating mode continuously.
Final test	02	Normal Working_Keep the EUT(Indoor unit 7+9+18) working in Cooling mode continuously.
Final test	03	Normal Working_Keep the EUT(Indoor unit 7+9+18) working in Heating mode continuously.

6.5.3 Test Setup Diagram



6.5.4 Measurement Procedure and Data



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

SHEM-TRF-001 Rev. 02 Sep01, 2023

Report No.: SHCR250300048701

Page: 42 of 78

Test Mode: 00

Maximum Flicker results

	EUT values	Limit	Result
Pst	0.492	1.00	PASS
Plt	0.396	0.65	PASS
dc [%]	1.613	3.30	PASS
dmax [%]	1.811	6.00	PASS
dt [s]	0.000	0.50	PASS



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

SHEM-TRF-001 Rev. 02 Sep01, 2023

Report No.: SHCR250300048701

Page: 43 of 78

Test Mode: 01

Maximum Flicker results

	EUT values	Limit	Result
Pst	0.559	1.00	PASS
Plt	0.473	0.65	PASS
dc [%]	1.612	3.30	PASS
dmax [%]	1.786	6.00	PASS
dt [s]	0.000	0.50	PASS



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

SHEM-TRF-001 Rev. 02 Sep01, 2023

Report No.: SHCR250300048701

Page: 44 of 78

Test Mode: 02

Maximum Flicker results

	EUT values	Limit	Result
Pst	0.546	1.00	PASS
Plt	0.480	0.65	PASS
dc [%]	1.704	3.30	PASS
dmax [%]	1.775	6.00	PASS
dt [s]	0.000	0.50	PASS



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

SHEM-TRF-001 Rev. 02 Sep01, 2023

Report No.: SHCR250300048701

Page: 45 of 78

Test Mode: 03

Maximum Flicker results

	EUT values	Limit	Result
Pst	0.631	1.00	PASS
Plt	0.486	0.65	PASS
dc [%]	1.551	3.30	PASS
dmax [%]	1.916	6.00	PASS
dt [s]	0.000	0.50	PASS

7 Immunity Test Results

Performance Criteria Description

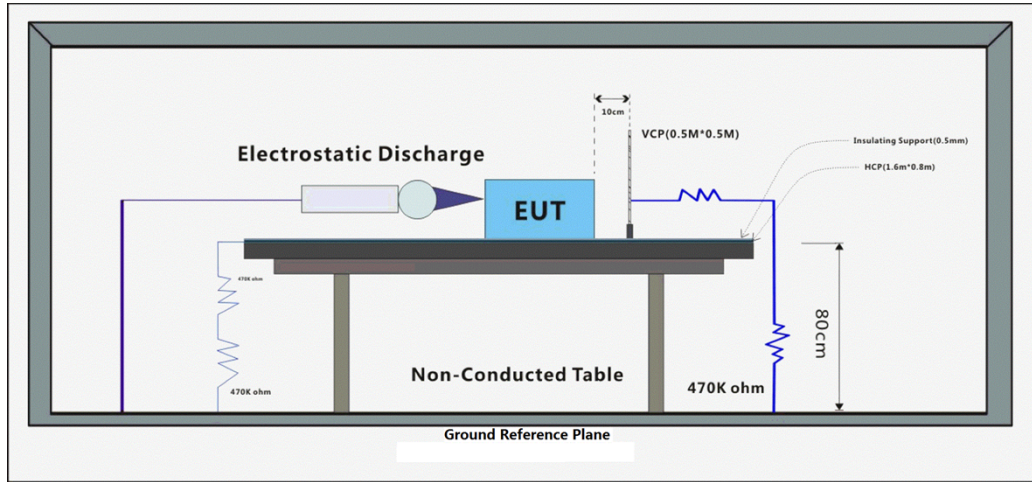
- Criterion A:** The apparatus shall continue to operate as intended during the test. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and from what the user may reasonably expect from the apparatus if used as intended.
- Criterion B:** The apparatus shall continue to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. During the test, degradation of performance is allowed, however. No change of actual operating state or stored data is allowed. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation and from what the user may reasonably expect from the apparatus if used as intended.
- Criterion C:** Temporary loss of function is allowed, provided the function is self recoverable or can be restored by the operation of the controls, or by any operation specified in the instructions for use.

7.1 Electrostatic Discharge

Test Requirement: EN IEC 55014-2: 2021

Test Method: EN 61000-4-2:2009

7.1.1 Test Setup Diagram



7.1.2 E.U.T. Operation

Operating Environment:

Temperature: 22 °C

Humidity: 50 % RH

Atmospheric Pressure: 1010 mbar

7.1.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Normal Working_Keep the EUT(Indoor unit 7+9+12) working in Cooling mode continuously.
Final test	01	Normal Working_Keep the EUT(Indoor unit 7+9+12) working in Heating mode continuously.
Final test	02	Normal Working_Keep the EUT(Indoor unit 7+9+18) working in Cooling mode continuously.
Final test	03	Normal Working_Keep the EUT(Indoor unit 7+9+18) working in Heating mode continuously.

7.1.4 Test Condition and Results:

Performance Criterion: B

Discharge Impedance: 330 Ω / 150 pF

Discharge Voltage: Air Discharge: 8 kV; Contact Discharge:4 kV; VCP/HCP: 4 kV.

Polarity: Positive & Negative

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.



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

SHEM-TRF-001 Rev. 02 Sep01, 2023

Report No.: SHCR250300048701

Page: 48 of 78

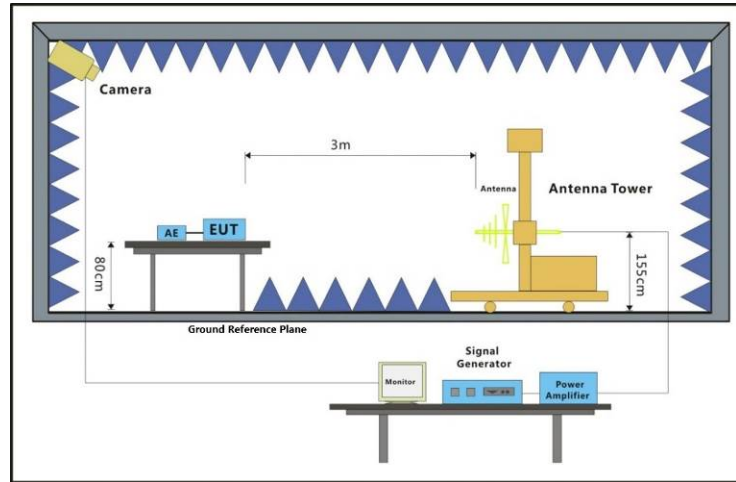
Discharge type	Level (kV)	Polarity	Test Point	Result / Observations
Air Discharge	8	+	1	A
Air Discharge	8	-	1	A
Contact Discharge	4	+	2	A
Contact Discharge	4	-	2	A
Vertical Coupling	4	+	3	A
Vertical Coupling	4	-	3	A
A: No degradation in the performance of the EUT was observed				

7.2 Radiated Immunity (80MHz-1GHz)

Test Requirement: EN IEC 55014-2: 2021

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

7.2.1 Test Setup Diagram



7.2.2 E.U.T. Operation

Operating Environment:

Temperature: 22 °C

Humidity: 50 % RH

Atmospheric Pressure: 1010 mbar

7.2.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Normal Working_Keep the EUT(Indoor unit 7+9+12) working in Cooling mode continuously.
Final test	01	Normal Working_Keep the EUT(Indoor unit 7+9+12) working in Heating mode continuously.
Final test	02	Normal Working_Keep the EUT(Indoor unit 7+9+18) working in Cooling mode continuously.
Final test	03	Normal Working_Keep the EUT(Indoor unit 7+9+18) working in Heating mode continuously.

7.2.4 Test Condition and Results:

Performance Criterion: A

Frequency Range: 80MHz to 1GHz

Antenna Polarisation: Vertical and Horizontal

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

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

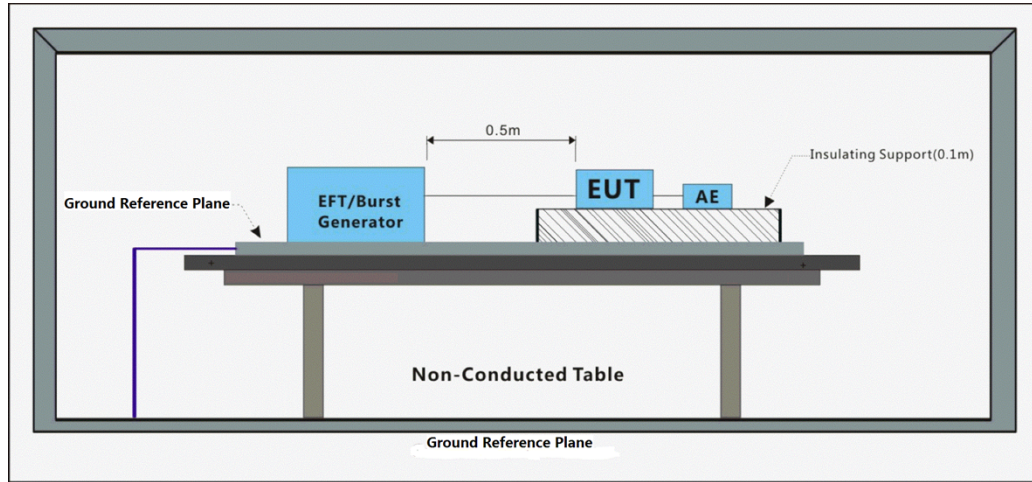
A: No degradation in the performance of the EUT was observed

7.3 Electrical Fast Transients Burst at AC Mains Power Port

Test Requirement: EN IEC 55014-2: 2021

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	Normal Working_Keep the EUT(Indoor unit 7+9+12) working in Cooling mode continuously.
Final test	01	Normal Working_Keep the EUT(Indoor unit 7+9+12) working in Heating mode continuously.
Final test	02	Normal Working_Keep the EUT(Indoor unit 7+9+18) working in Cooling mode continuously.
Final test	03	Normal Working_Keep the EUT(Indoor unit 7+9+18) working in Heating mode continuously.

7.3.4 Test Condition and Results:

Performance Criterion: B

Repetition Frequency: 5kHz

Burst Period: 300ms

Test Duration: 2 minute per level & polarity

Test Level: 1.0kV

Polarity: Positive & Negative

Test Line	Level (kV)	Polarity	CDN/Clamp	Result / Observations
AC power port	1	+	CDN	A
AC power port	1	-	CDN	A

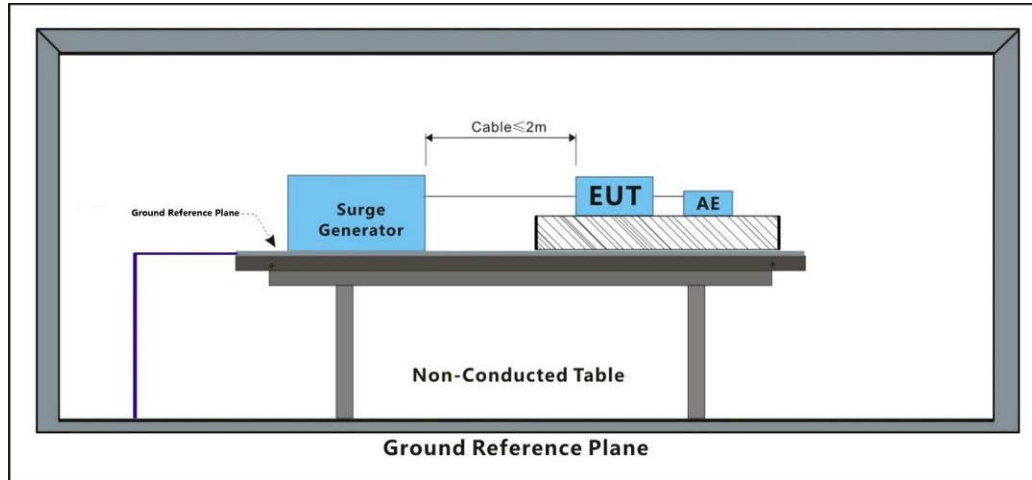
A: No degradation in the performance of the EUT was observed

7.4 Surge at AC Mains Power Port

Test Requirement: EN IEC 55014-2: 2021

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

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	Normal Working_Keep the EUT(Indoor unit 7+9+12) working in Cooling mode continuously.
Final test	01	Normal Working_Keep the EUT(Indoor unit 7+9+12) working in Heating mode continuously.
Final test	02	Normal Working_Keep the EUT(Indoor unit 7+9+18) working in Cooling mode continuously.
Final test	03	Normal Working_Keep the EUT(Indoor unit 7+9+18) working in Heating mode continuously.

7.4.4 Test Condition and Results:

Performance Criterion: B

Interval: 60s between each surge

Test Level: ±1kV Live to Neutral; ±2kV Live, Neutral to Earth

Polarity: Positive & Negative

Generator source impedance: 2Ω

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

Trigger Mode: Internal

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



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

SHEM-TRF-001 Rev. 02 Sep01, 2023

Report No.: SHCR250300048701

Page: 52 of 78

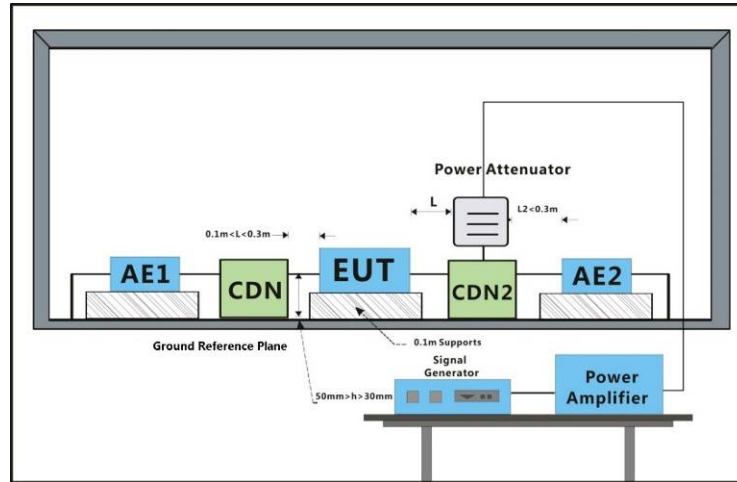
Test Line	Level (kV)	Polarity	Phase (deg)	Result / Observations
L-N	1	+	90°	A
L-N	1	-	270°	A
L-PE	2	+	90°	A
L-PE	2	-	270°	A
N-PE	2	+	90°	A
N-PE	2	-	270°	A
A: No degradation in the performance of the EUT was observed				

7.5 Conducted Immunity at AC Mains Power Port (150kHz-80MHz)

Test Requirement: EN IEC 55014-2: 2021

Test Method: EN 61000-4-6: 2014

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	Normal Working_Keep the EUT(Indoor unit 7+9+12) working in Cooling mode continuously.
Final test	01	Normal Working_Keep the EUT(Indoor unit 7+9+12) working in Heating mode continuously.
Final test	02	Normal Working_Keep the EUT(Indoor unit 7+9+18) working in Cooling mode continuously.
Final test	03	Normal Working_Keep the EUT(Indoor unit 7+9+18) working in Heating mode continuously.

7.5.4 Test Condition and Results:

Performance Criterion: A

Step Size: 1%

Frequency Range: 0.15MHz to 80MHz

Modulation: 80%, 1kHz Amplitude Modulation

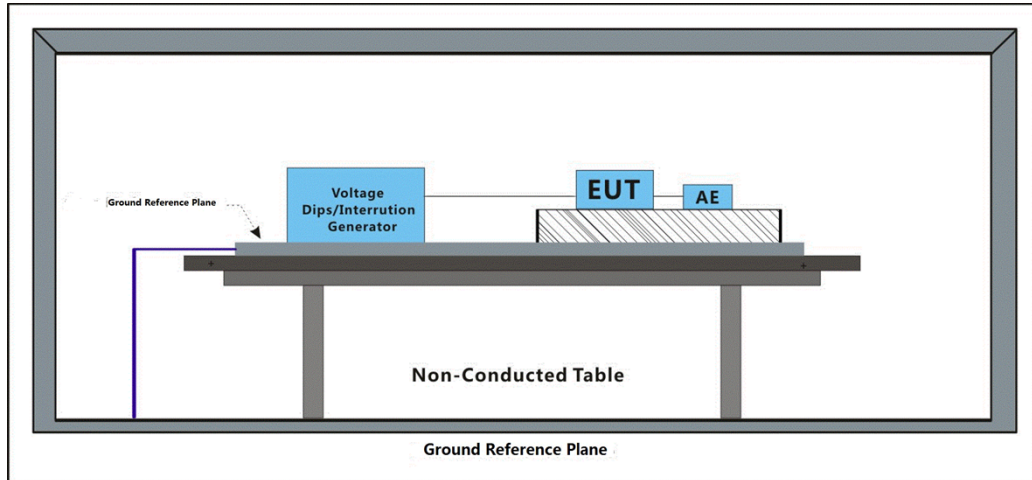
Cable Port	Level (Vrms)	CDN/Clamp	Dwell time	Result / Observations
AC power port	3	CDN	3s	A
A: No degradation in the performance of the EUT was observed				

7.6 Voltage Dips and Interruptions

Test Requirement: EN IEC 55014-2: 2021

Test Method: EN IEC 61000-4-11: 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	Normal Working_Keep the EUT(Indoor unit 7+9+12) working in Cooling mode continuously.
Final test	01	Normal Working_Keep the EUT(Indoor unit 7+9+12) working in Heating mode continuously.
Final test	02	Normal Working_Keep the EUT(Indoor unit 7+9+18) working in Cooling mode continuously.
Final test	03	Normal Working_Keep the EUT(Indoor unit 7+9+18) working in Heating mode continuously.

7.6.4 Test Condition and Results:

Performance Criterion:

For 50Hz: 0% of UT (Rated Voltage) for 0.5 Cycle: C; 40% of UT for 10 Cycles: C; 70% of UT for 25 Cycles: C.

For 60Hz: 0% of UT (Rated Voltage) for 0.5 Cycle: C; 40% of UT for 12 Cycles: C; 70% of UT for 30 Cycles: C.

No. of Dips / Interruptions: 3 per Level

Time between dropout: 10s

Level % UT	Phase (deg)	Duration	No. of Dips / Interruptions	Result / Observations
0	0°	0.5 Cycle for 50Hz	3	A



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

SHEM-TRF-001 Rev. 02 Sep01, 2023

Report No.: SHCR250300048701

Page: 55 of 78

0	180°	0.5 Cycle for 50Hz	3	A
40	0°	10 Cycles for 50Hz	3	A
40	180°	10 Cycles for 50Hz	3	A
70	0°	25 Cycles for 50Hz	3	A
70	180°	25 Cycles for 50Hz	3	A
A: No degradation in the performance of the EUT was observed				

8 Test Setup Photo

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



Discontinuous Disturbance (150kHz-30MHz)



Disturbance Power



Harmonic Current Emission



Voltage Fluctuations and Flicker



Electrostatic Discharge



Radiated Immunity (80MHz-1GHz)



Electrical Fast Transients Burst at AC Mains Power Port



Surge at AC Mains Power Port



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



Voltage Dips and Interruptions

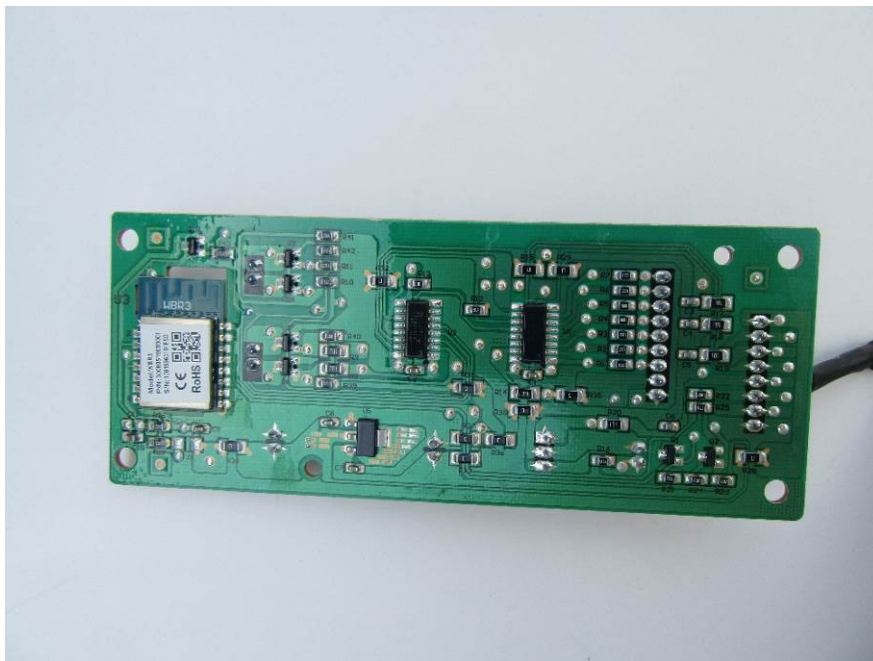
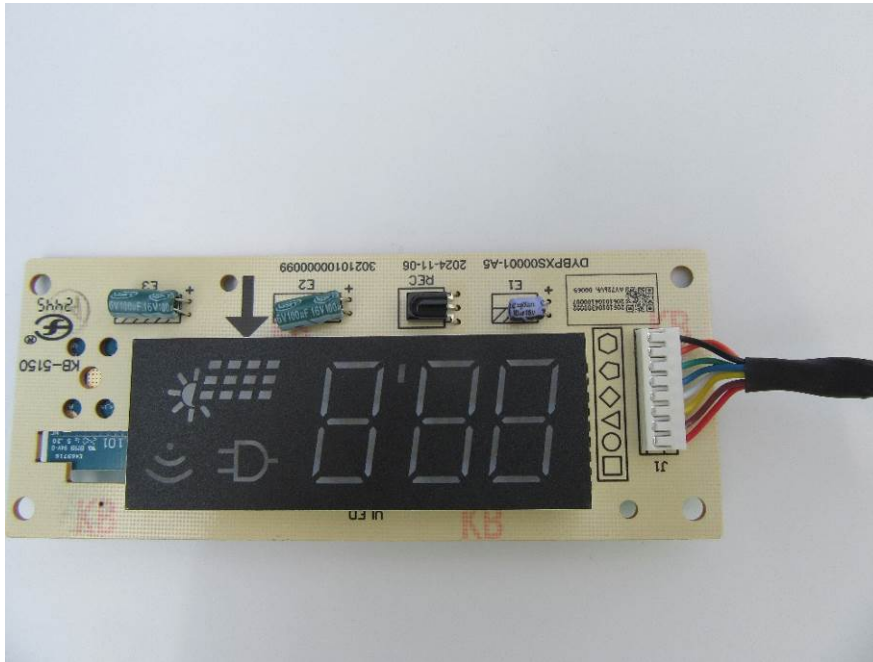


9 EUT Constructional Details (EUT Photos)



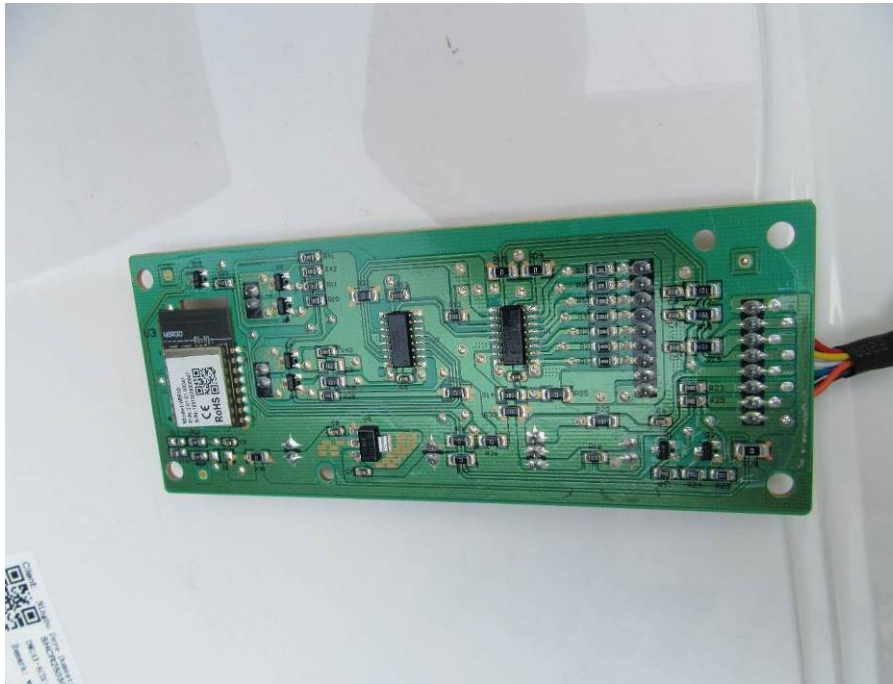


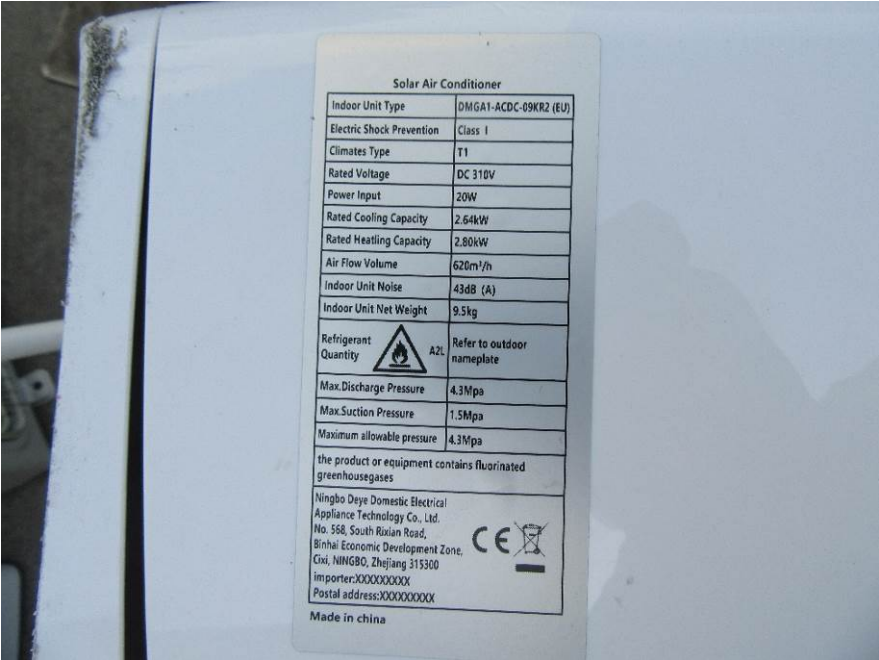


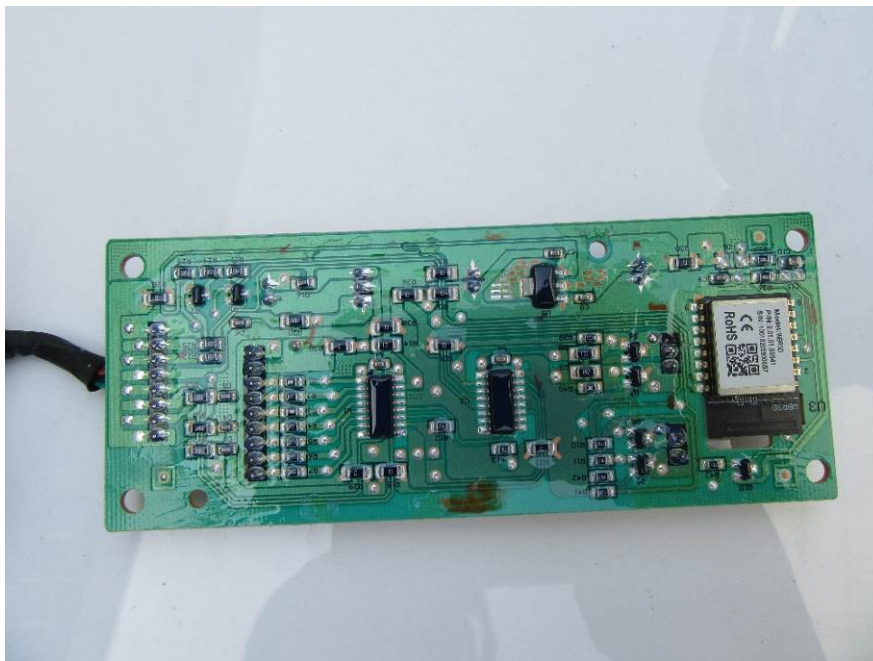
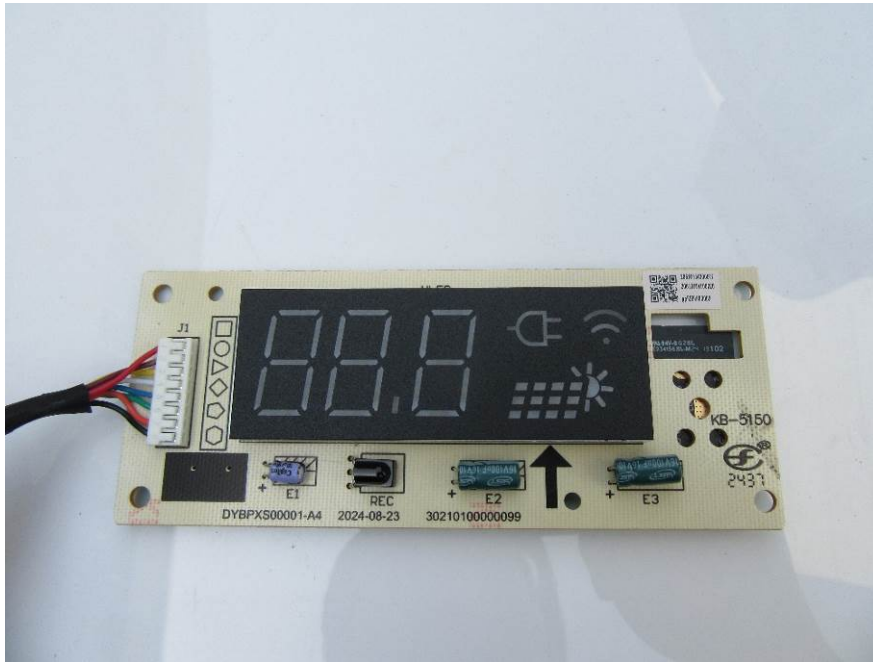














SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

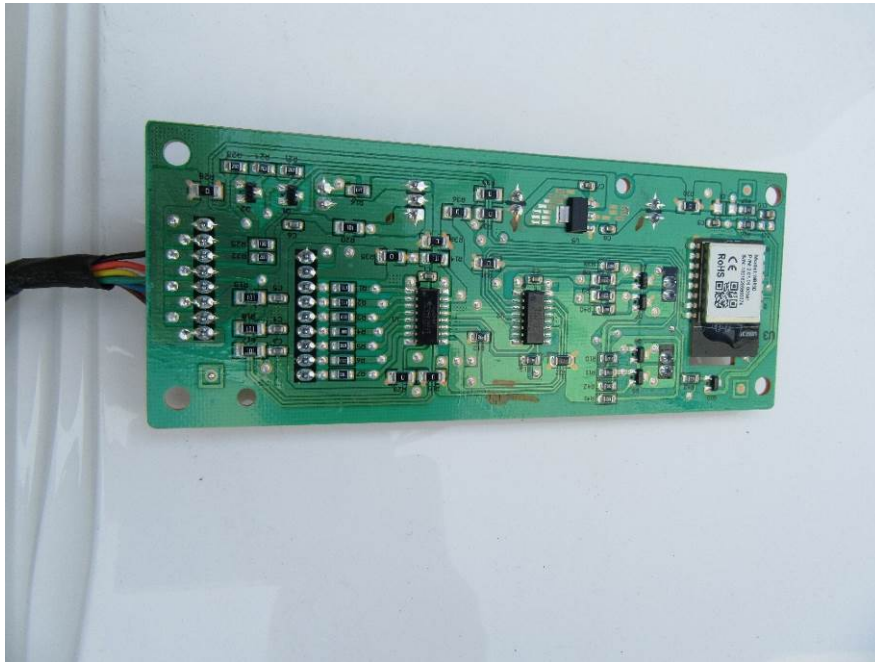
SHEM-TRF-001 Rev. 02 Sep01, 2023

Report No.: SHCR250300048701

Page: 76 of 78







- End of the Report -