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Page 1 of 1

VERIFICATION OF EMC COMPLIANCE

Verification No.: GZEM1812000235HSV
Applicant: TCL Air conditioner (Zhong Shan) Co., Ltd.
Address of Applicant: N0.59, Nantou Road West, Nantou Town Zhongshan City,
Guangdong P.R. China
Manufacturer: The same as applicant
Address of Manufacturer: The same as applicant
Factory: The same as applicant
Address of Factory: The same as applicant
Product Description: Air Conditioner
Model No: TAC-18CHSD/*I (Series * = C, D, E, F, G, H, J, K, L, M, N, R, A, Q,
V, Y, Z, BA, BD, BE, BF, BG, BH, BJ, BM, BK, BQ, BR, BU, BV, BY,
BZ, BL, AL, AM, AK, AU, CB, CG, CK, CL, CJ, CM, CA, CX, CD,
DB, DC, DE, DF, DJ, DN, DQ, DU, DX, CH, CN, CU, CV, CW, CP,
CY, CQ, CR, CT, CZ, CE, CF, CI, KA, JA, IA, HA, YK, LC, KC, HC,
JC, KD, HD, LE, JE, KE, DW, SE, GL, EH, IF, KF, LF, VA, VB, VC,
FY, XA11, XA21, XA31, XA41, XA51, XA61, XA71, XA81, XA82,
XA91, XAA1, XP11, XQ11, XS11)

Sufficient samples of the product have been tested and found to be in conformity with
Test Standards: EN 55014-1:2017, EN 55014-2:2015,
EN 61000-3-2:2014, EN 61000-3-3:2013.

As shown in the
Test Report Number(s): GZEM181200023501

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.



Kobe Jian
Lab Manager



Date: 2019-03-18



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Guangzhou Branch**

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Report No.: GZEM181200023501
Page: 1 of 75

TEST REPORT

Application No.: GZEM1812000235HS
Applicant: TCL Air conditioner (Zhong Shan) Co., Ltd.
Address of Applicant: N0.59, Nantou Road West, Nantou Town Zhongshan City, Guangdong P.R. China
Manufacturer: The same as applicant
Address of Manufacturer: The same as applicant
Factory: The same as applicant
Address of Factory: The same as applicant

Equipment Under Test (EUT):

EUT Name: Air Conditioner
Model No.: TAC-18CHSD/*I (Series * = C, D, E, F, G, H, J, K, L, M, N, R, A, Q, V, Y, Z, BA, BD, BE, BF, BG, BH, BJ, BM, BK, BQ, BR, BU, BV, BY, BZ, BL, AL, AM, AK, AU, CB, CG, CK, CL, CJ, CM, CA, CX, CD, DB, DC, DE, DF, DJ, DN, DQ, DU, DX, CH, CN, CU, CV, CW, CP, CY, CQ, CR, CT, CZ, CE, CF, CI, KA, JA, IA, HA, YK, LC, KC, HC, JC, KD, HD, LE, JE, KE, DW, SE, GL, EH, IF, KF, LF, VA, VB, VC, FY, XA11, XA21, XA31, XA41, XA51, XA61, XA71, XA81, XA82, XA91, XAA1, XP11, XQ11, XS11) □

□ Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.

Standard(s) : EN 55014-1:2017, EN 55014-2:2015,
EN 61000-3-2:2014, EN 61000-3-3:2013.

Date of Receipt: 2018-12-29
Date of Test: 2019-01-08 to 2019-01-14
Date of Issue: 2019-03-18

Test Result:	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.

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.



Kobe Jian
Lab Manager


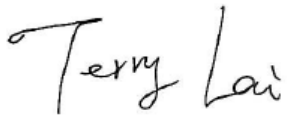
The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.



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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2019-03-18		Original

Authorized for issue by:			
Tested By			2019-01-08 to 2019-01-14
	Damon_Guan /Project Engineer		Date
Checked By			2019-03-18
	Terry_Lai /Reviewer		Date



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2 Test Summary

Emission Part				
Item	Standard	Method	Requirement	Result
Conducted Emissions at Mains Terminals (150kHz-30MHz)	EN 55014-1:2017	CISPR 16-2-1	N/A	Pass
Conducted Emissions at Load Terminals and Additional Terminals	EN 55014-1:2017	CISPR 16-2-1	N/A	Pass
Discontinuous Disturbance (150kHz-30MHz)	EN 55014-1:2017	EN 55014-1:2017	N/A	Pass
Disturbance Power	EN 55014-1:2017	CISPR 16-2-2	N/A	Pass
Harmonic Current Emission	EN 61000-3-2:2014	EN 61000-3-2:2014	Class A	Pass
Voltage Fluctuations and Flicker	EN 61000-3-3:2013	EN 61000-3-3:2013	Clause 5 of EN 61000-3-3	Pass

N/A: Not applicable



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Immunity Part				
Item	Standard	Method	Requirement	Result
Electrostatic Discharge	EN 55014-2:2015	EN 61000-4-2:2009	4kV Contact Discharge 8kV Air Discharge	Pass
Radiated Immunity (80MHz-1GHz)	EN 55014-2:2015	EN 61000-4-3:2006 +A1:2008+A2:2010	3V/m, 80%, 1kHz Amp. Mod.	Pass
Electrical Fast Transients/Burst at Power Port	EN 55014-2:2015	EN 61000-4-4:2012	1kV 5/50ns Tr/Td 5kHz Repetition Frequency	Pass
Electrical Fast Transients/Burst at Signal Port	EN 55014-2:2015	EN 61000-4-4:2012	0.5kV 5/50ns Tr/Td 5kHz Repetition Frequency	Pass
Surge at Power Port	EN 55014-2:2015	EN 61000-4-5:2014	1.2/50µs Tr/Td 1kV Line to Line 2kV Line to Ground	Pass
Voltage Dips and Interruptions	EN 55014-2:2015	EN 61000-4-11:2004	For 50Hz: 0 % UT for 0.5 cycles 40 % UT for 10 cycles 70 % UT for 25 cycles UT is Supply Voltage	Pass
Conducted Immunity at Power Port (150kHz-230MHz)	EN 55014-2:2015	EN 61000-4-6:2014	3Vrms (emf),80%,1kHz Amp. Mod.	Pass
Conducted Immunity at Signal Port (150kHz-230MHz)	EN 55014-2:2015	EN 61000-4-6:2014	1Vrms (emf),80%,1kHz Amp. Mod.	Pass



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Declaration of EUT Family Grouping:

Model No.: TAC-18CHSD/*I (Series * = C, D, E, F, G, H, J, K, L, M, N, R, A, Q, V, Y, Z, BA, BD, BE, BF, BG, BH, BJ, BM, BK, BQ, BR, BU, BV, BY, BZ, BL, AL, AM, AK, AU, CB, CG, CK, CL, CJ, CM, CA, CX, CD, DB, DC, DE, DF, DJ, DN, DQ, DU, DX, CH, CN, CU, CV, CW, CP, CY, CQ, CR, CT, CZ, CE, CF, CI, KA, JA, IA, HA, YK, LC, KC, HC, JC, KD, HD, LE, JE, KE, DW, SE, GL, EH, IF, KF, LF, VA, VB, VC, FY, XA11, XA21, XA31, XA41, XA51, XA61, XA71, XA81, XA82, XA91, XAA1, XP11, XQ11, XS11)

According to the declaration from the applicant, the electrical circuit design, layout, components used and internal wiring were identical for all models, with only difference on the panel of the colour.

Therefore only one model TAC-18CHSD/XA21I was tested in this report.



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4 General Information

4.1 Details of E.U.T.

Power Supply: AC 220-240V, 50Hz
Test Voltage: AC 230V 50Hz
Cable: About 0.8m x 3 wires unscreened AC mains cable.
About 5.0m x 4 wires unscreened signal cable (1; L; N; PE).

4.2 Description of Support Units

The EUT has been tested as an independent unit.

4.3 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Conducted Disturbance Voltage at Mains Terminals	±3.63dB (9kHz to 150kHz)
		±3.22dB (150kHz to 30MHz)
2	Disturbance Power	±3.78dB
3	Radiated Emissions	±5.0dB (30MHz-1GHz)
		±5.0dB (1GHz-6GHz)
4	Radiated Immunity	±2.18dB(80MHz-3GHz)
5	Conducted Immunity	±3.5dB(150kHz-230MHz)
6	Electrostatic Discharge	±6 %
7	EFT (Electrical Fast Transients)	±4 %
8	Surge Immunity	±6%
9	Voltage Dips and Interruptions	±4 %
10	CISPR 20 Immunity	±1.5dB
11	Temperature	±0.4°C
12	Humidity	±1.3%
13	DC power	±0.5 %

4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Branch EMC Laboratory,
198 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District,
Guangzhou, China 510663

Tel: +86 20 82155555 Fax: +86 20 82075059

No tests were sub-contracted.



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4.5 Test Facility

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

● **NVLAP (Lab Code: 200611-0)**

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

● **ACMA**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our NVLAP accreditation.

● **SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO**

Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.

● **CNAS (Lab Code: L0167)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAS-CL01:2006 accreditation criteria for testing laboratories (identical to

ISO/IEC 17025:2005 General Requirements) for the Competence of Testing Laboratories.

● **FCC Recognized 2.948 Listed Test Firm(Registration No.: 282399)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 282399, May 31, 2002.

● **FCC Recognized Accredited Test Firm(Registration No.: 486818)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been accredited and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Designation Number: CN5016, Test Firm Registration Number: 486818, Jul 13, 2017.

● **Industry Canada (Registration No.: 4620B-1)**

The 3m/10m Alternate Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd., has been registered by Certification and Engineering of Industry Canada for radio equipment testing with Registration No. 4620B-1.

● **VCCI (Registration No.: R-12460, C-12584, G-10449 and T-11179)**

The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-12460, C-12584, G-10449 and T-11179 respectively.

● **CBTL (Lab Code: TL129)**

SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2005, the Basic Rules, IECEE 01 and Rules of procedure IECEE 02, and the relevant IECEE CB-Scheme Operational documents.





4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None

4.8 Monitoring of EUT for All Immunity Test

Visual: Motor running or LED displaying of the EUT.



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5 Equipment List

Conducted Emissions at Mains Terminals (150kHz-30MHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Shielding Room	Zhong Yu	8m x 3m x 3.8m	EMC0306	N/A	N/A
Two-Line V-Netwok	R&S	ENV216	EMC0118	2019-01-11	2020-01-10
LISN	R&S	ENV216	EMC2135	2018-09-21	2019-09-20
EMI Test Receiver	Rohde & Schwarz	ESCS30	EMC0506	2018-11-19	2019-11-18
Coaxial Cable	HangTianXing	2m	EMC0107	2017-07-23	2019-07-22
Voltage Probe	SGS	N/A	EMC0106	2018-04-04	2020-04-03
Conical Metal Housing	SGS-EMC	N/A	EMC0167	2018-04-19	2020-04-18
Test Software E3c	Audix	Ver. 5.4.1221b	GZE100-62	N/A	N/A

Conducted Emissions at Load Terminals and Additional Terminals					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Shielding Room	Zhong Yu	8m x 3m x 3.8m	EMC0306	N/A	N/A
Two-Line V-Netwok	R&S	ENV216	EMC0118	2019-01-11	2020-01-10
LISN	R&S	ENV216	EMC2135	2018-09-21	2019-09-20
EMI Test Receiver	Rohde & Schwarz	ESCS30	EMC0506	2018-11-19	2019-11-18
Coaxial Cable	HangTianXing	2m	EMC0107	2017-07-23	2019-07-22
Voltage Probe	SGS	N/A	EMC0106	2018-04-04	2020-04-03
Test Software E3c	Audix	Ver. 5.4.1221b	GZE100-62	N/A	N/A

Discontinuous Disturbance (150kHz-30MHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Click Meter	AFJ	CL55C	EMC2049	2018-06-13	2019-06-12
Coaxial Cable	N/A	1.5m	EMC0206	2018-09-28	2020-09-27
LISN	AFJ	LS16-OPT001	EMC0203	2019-01-11	2020-01-10
Test Software CL55C	AFJ	Ver 7.00	GZE100-67	N/A	N/A



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Disturbance Power					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Shielding Room	Zhong Yu	8m x 3m x 3.8m	EMC0306	N/A	N/A
EMI Test Receiver	Rohde & Schwarz	ESCS30	EMC0506	2018-11-19	2019-11-18
Absorbing Clamp	Beijing Dazhe Co. Ltd.	ZN23201	EMC2040	2019-01-15	2020-01-14
7m Coaxial Cable	SGS	7m	EMC0303	2017-06-30	2019-06-29
6dB Attenuator	HP	8491A	EMC2062	2018-04-04	2020-04-03
Slide Bar Controller	HD-GmbH	HD50	EMC0305	N/A	N/A
Slide Bar RP	HD-GmbH	KMS560	EMC0103	N/A	N/A
Test Software E3c	Audix	Ver. 5.4.1221b	GZE100-62	N/A	N/A

Harmonics current, Voltage Fluctuations and Flicker					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
AC Power Source	California	50001iX	EMC0608	2018-04-08	2019-04-08
Power Analyzer	California	PACS	EMC0607	2018-04-08	2019-04-08
Test Software CTS4	California	Ver 4.14.0	GZE100-66	N/A	N/A

Electrostatic Discharge					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
ESD Simulator	TESEQ AG	NSG 435	EMC2071	2018-03-07	2019-03-06
ESD Ground Plane	SGS	3m x 3m	EMC0804	N/A	N/A
Temperature & Humidity	Shanghai Meteorological Instrument Factory Co., Ltd.	ZJ1-2B	EMC0078	2018-07-05	2019-07-04



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Radiated Immunity (80MHz-1GHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Compact 3m Semi-Anechoic Chamber	ChangZhou ZhongYu	N/A	EMC0525	2016-12-04	2019-12-03
Laser Probe Interface	RF Microwave Instrumentation	FI7000	EMC2089	N/A	N/A
Open Switch And Control Unit	R&S	OSP130	EMC2090	N/A	N/A
Broadband Amplifier(80MHz~1GHz/250W)	R&S	BBA150	EMC2091	2019-01-11	2020-01-10
Broadband Amplifier(800MHz~3GHz/110W)	R&S	BBA150	EMC2092	2019-01-11	2020-01-10
Signal Generator	R&S	SMB100A	EMC2093	2019-01-11	2020-01-10
Laser Probe	RF Microwave Instrumentation	FL7006	EMC2094	2018-02-24	2019-02-23
NRP-Z91 PowerSensor 6GHz	R&S	NPR-Z91	EMC2095	2019-01-11	2020-01-10
NRP-Z91 PowerSensor 6GHz	R&S	NPR-Z91	EMC2096	2019-01-11	2020-01-10
High-Gain Log-preiodicAntenna	R&S	HL046E	EMC2097	2016-02-15	2019-02-14
RI Cable	R&S	7m	EMC2098	2018-05-23	2019-05-22
Oscilloscope	Tektronix	TDS3052C	EMC2055	2019-01-07	2020-01-08
Monitor System	Mitsubish Corp.	M-0552AB	EMC0909	N/A	N/A
Test Software EMC32	Rohde & Schwarz	Ver. 9.26.00	GZE100-63	N/A	N/A

Electrical Fast Transients/Burst at Power Port					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EMC Immunity Test System	TESEQ AG	NSG 3060CDN30611 NA 6	EMC2072	2019-01-11	2020-01-10
Oscilloscope	Tektronix	TDS3052C	EMC2055	2019-01-11	2020-01-10
Test Software WIN 3000	TESEQ AG	Ver 1.3.2	GZE100-68	N/A	N/A



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Electrical Fast Transients/Burst at Signal Port					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EMC Immunity Test System	TESEQ AG	NSG 3060CDN30611 NA 6	EMC2072	2019-01-11	2020-01-10
Oscilloscope	Tektronix	TDS3052C	EMC2055	2019-01-11	2020-01-10
Test Software WIN 3000	TESEQ AG	Ver 1.3.2	GZE100-68	N/A	N/A

Surge at Power Port					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Modular Impulse Surge Generator	EMC PARTNER	MIG0603EN	EMC2059	2019-01-11	2020-01-10
EMC Immunity Test System	TESEQ AG	NSG 3060CDN30611 NA 6	EMC2072	2019-01-11	2020-01-10
Oscilloscope	Tektronix	TDS3052C	EMC2055	2019-01-11	2020-01-10
Test Software WIN 3000	TESEQ AG	Ver 1.3.2	GZE100-68	N/A	N/A

Voltage Dips and Interruptions					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EMC Immunity Test System	TESEQ AG	NSG 3060CDN30611 NA 6	EMC2072	2019-01-11	2020-01-10
Oscilloscope	Tektronix	TDS3052C	EMC2055	2019-01-11	2020-01-10
Test Software WIN 3000	TESEQ AG	Ver 1.3.2	GZE100-68	N/A	N/A



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Conducted Immunity at Power Port (150kHz-230MHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Test System Of CI	TESEQ AG	NSG 4070B-80	EMC2115	2018-07-04	2019-07-04
Test Software NSG4070_Ctrl1	TESEQ AG	Ver.1.3.0.1	GZE100-72	N/A	N/A
CDN S502A	TESEQ AG	CDN S502A	EMC2113	2017-06-19	2020-06-18
CDN ST08A	TESEQ AG	CDN ST08A	EMC2112	2017-07-03	2020-07-02
CDN USB3.0	TESEQ AG	CDN USB3.0	EMC2114	2017-06-19	2020-06-18
Dual Directional coupler	Werlatone Inc.	C1795	EMC1105	2018-06-01	2019-06-01
Oscilloscope	Tektronix	TDS3052C	EMC2055	2019-01-11	2020-01-10
CDN	Elektronik-Feinmechanik	L-801:M2/M3	EMC2048	2018-08-13	2020-08-13
CDN M2	Schaffner Chase	CDN-M2-16	EMC1107	2017-10-26	2020-10-25
Current Probe	Schaffner Chase	CIP9136	EMC1116	2017-10-26	2020-10-25
Current Probe	Schaffner Chase	CSP8445	EMC1117	2017-10-26	2020-10-25

Conducted Immunity at Signal Port (150kHz-230MHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Test System Of CI	TESEQ AG	NSG 4070B-80	EMC2115	2018-07-04	2019-07-04
Test Software NSG4070_Ctrl1	TESEQ AG	Ver.1.3.0.1	GZE100-72	N/A	N/A
CDN S502A	TESEQ AG	CDN S502A	EMC2113	2017-06-19	2020-06-18
CDN ST08A	TESEQ AG	CDN ST08A	EMC2112	2017-07-03	2020-07-02
CDN USB3.0	TESEQ AG	CDN USB3.0	EMC2114	2017-06-19	2020-06-18
Dual Directional coupler	Werlatone Inc.	C1795	EMC1105	2018-06-01	2019-06-01
Oscilloscope	Tektronix	TDS3052C	EMC2055	2019-01-11	2020-01-10
CDN	Elektronik-Feinmechanik	L-801:M2/M3	EMC2048	2018-08-13	2020-08-13
CDN M2	Schaffner Chase	CDN-M2-16	EMC1107	2017-10-26	2020-10-25
Current Probe	Schaffner Chase	CIP9136	EMC1116	2017-10-26	2020-10-25
Current Probe	Schaffner Chase	CSP8445	EMC1117	2017-10-26	2020-10-25

General used equipment					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
DMM	Fluke	73	EMC0006	2018-07-20	2019-07-19
DMM	Fluke	73	EMC0007	2018-07-19	2019-07-18



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6 Emission Test Results

6.1 Conducted Emissions at Mains Terminals (150kHz-30MHz)

Test Requirement:	EN 55014-1:2017
Test Method:	CISPR 16-2-1
Frequency Range:	150kHz to 30MHz
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: 26 °C Humidity: 56.7 % RH Atmospheric Pressure: 1020 mbar

Pre test these modes to find the worst case:

a: Test the EUT in cooling mode, keep swinging at high speed, and adjust the EUT temperature at the lowest temperature position.

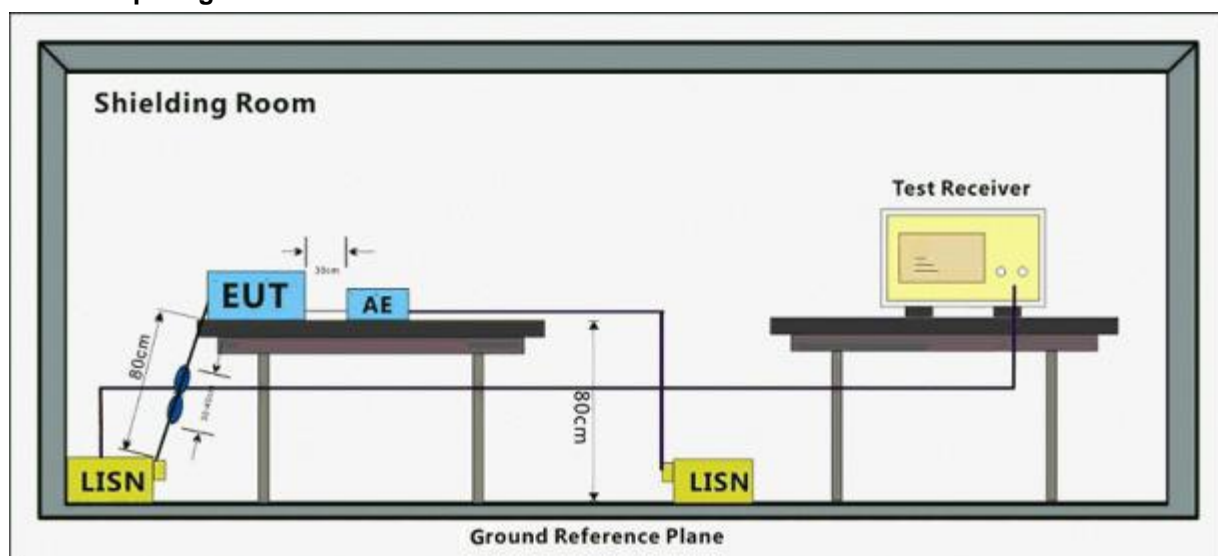
b: Test the EUT in heating mode, keep swinging at high speed, and adjust the EUT temperature at the highest temperature position.

c: Test the EUT in dehumidification mode.

d: Test the EUT in fan mode, keep swinging at high speed.

The worst case for final test: a: Test the EUT in cooling mode, keep swinging at high speed, and adjust the EUT temperature at the lowest temperature position.

6.1.2 Test Setup Diagram



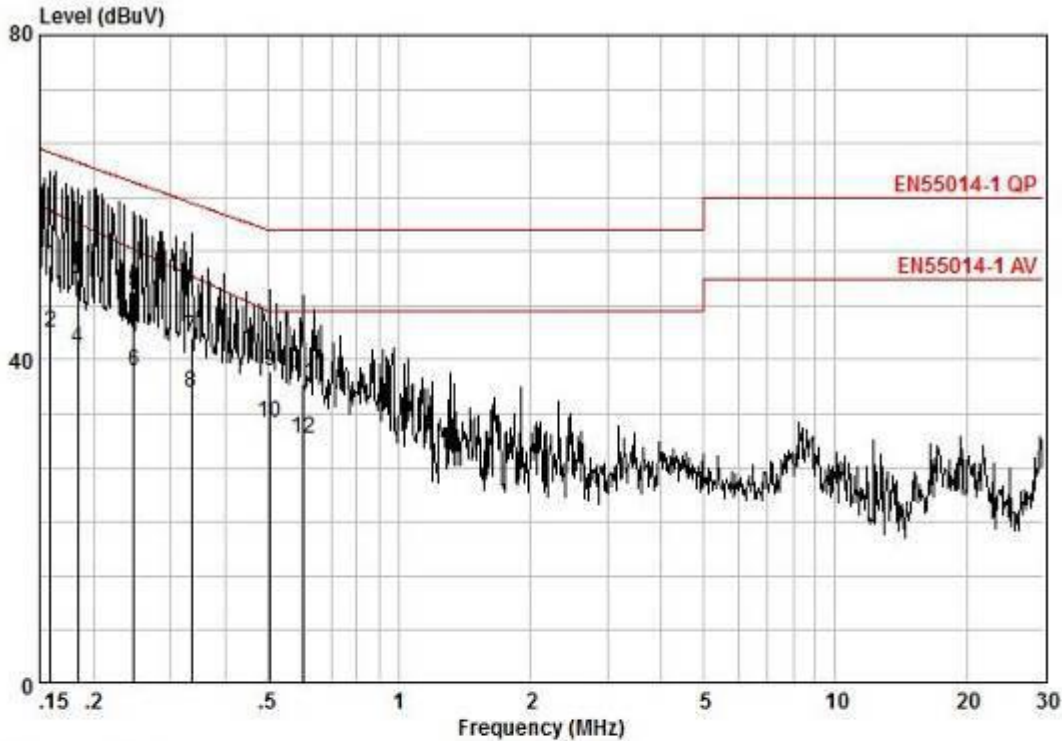
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6.1.3 Measurement Data

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.

Measured Level = Read level + Cable Loss + LISN Factor

Mode:a; Line:Live Line

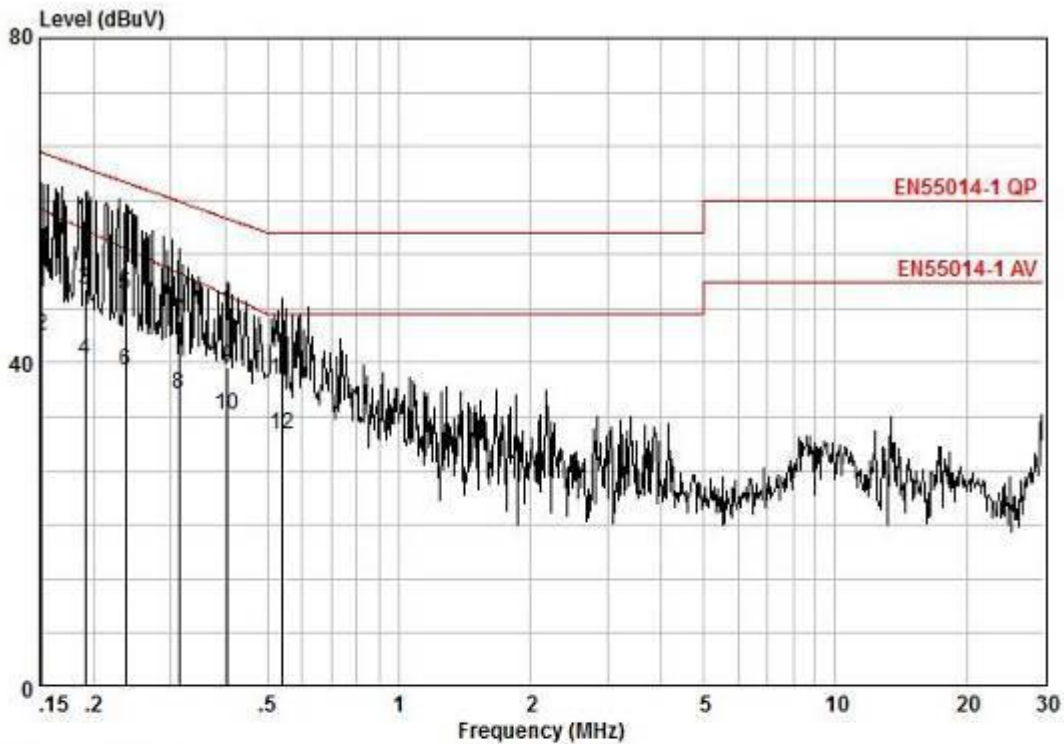


Frequency MHz	read level dBuV	Cable Loss dB	LISN Factor dB	Measured level dBuV	Limit Line dBuV	Over limit dB	Remark
0.16	41.98	0.10	9.49	51.57	65.52	-13.94	QP
0.16	33.69	0.10	9.49	43.28	58.37	-15.09	AVERAGE
0.18	40.35	0.10	9.57	50.02	64.33	-14.30	QP
0.18	31.71	0.10	9.57	41.38	56.83	-15.44	AVERAGE
0.25	38.62	0.12	9.63	48.37	61.86	-13.49	QP
0.25	28.80	0.12	9.63	38.55	53.62	-15.07	AVERAGE
0.33	32.97	0.16	9.64	42.76	59.35	-16.59	QP
0.33	26.12	0.16	9.64	35.91	50.36	-14.45	AVERAGE
0.51	28.80	0.20	9.65	38.65	56.00	-17.35	QP
0.51	22.45	0.20	9.65	32.30	46.00	-13.70	AVERAGE
0.60	27.15	0.23	9.63	37.01	56.00	-18.99	QP
0.60	20.42	0.23	9.63	30.28	46.00	-15.72	AVERAGE



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Mode:a; Line:Neutral Line



Pol : NEUTRAL
 No :
 Model :

Frequency MHz	read level dBUV	Cable Loss dB	LISN Factor dB	Measured level dBUV	Limit Line dBUV	Over limit dB	Remark
0,15	42,12	0,10	9,39	51,61	65,91	-14,31	QP
0,15	33,92	0,10	9,39	43,41	58,89	-15,48	AVERAGE
0,19	39,35	0,10	9,55	49,00	64,02	-15,02	QP
0,19	30,66	0,10	9,55	40,31	56,43	-16,11	AVERAGE
0,24	38,61	0,12	9,58	48,31	62,22	-13,90	QP
0,24	29,36	0,12	9,58	39,06	54,08	-15,02	AVERAGE
0,31	35,31	0,15	9,57	45,03	59,88	-14,85	QP
0,31	26,51	0,15	9,57	36,23	51,05	-14,82	AVERAGE
0,40	29,76	0,18	9,56	39,50	57,77	-18,27	QP
0,40	23,86	0,18	9,56	33,60	48,30	-14,71	AVERAGE
0,54	28,25	0,21	9,56	38,02	56,00	-17,98	QP
0,54	21,49	0,21	9,56	31,26	46,00	-14,74	AVERAGE



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6.2 Conducted Emissions at Load Terminals and Additional Terminals

Test Requirement: EN 55014-1:2017
 Test Method: CISPR 16-2-1
 Limit:
 0.15MHz - 0.5 MHz 80dB(μV) quasi-peak, 70dB(μV) average
 0.5MHz-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: 26 °C Humidity: 56.7 % RH Atmospheric Pressure: 1020 mbar
 Pretest these modes to find the worst case:
 a: Test the EUT in cooling mode, keep swinging at high speed, and adjust the EUT temperature at the lowest temperature position.
 b: Test the EUT in heating mode, keep swinging at high speed, and adjust the EUT temperature at the highest temperature position.
 c: Test the EUT in dehumidification mode.
 d: Test the EUT in fan mode, keep swinging at high speed.
 The worst case for final test: a: Test the EUT in cooling mode, keep swinging at high speed, and adjust the EUT temperature at the lowest temperature position.

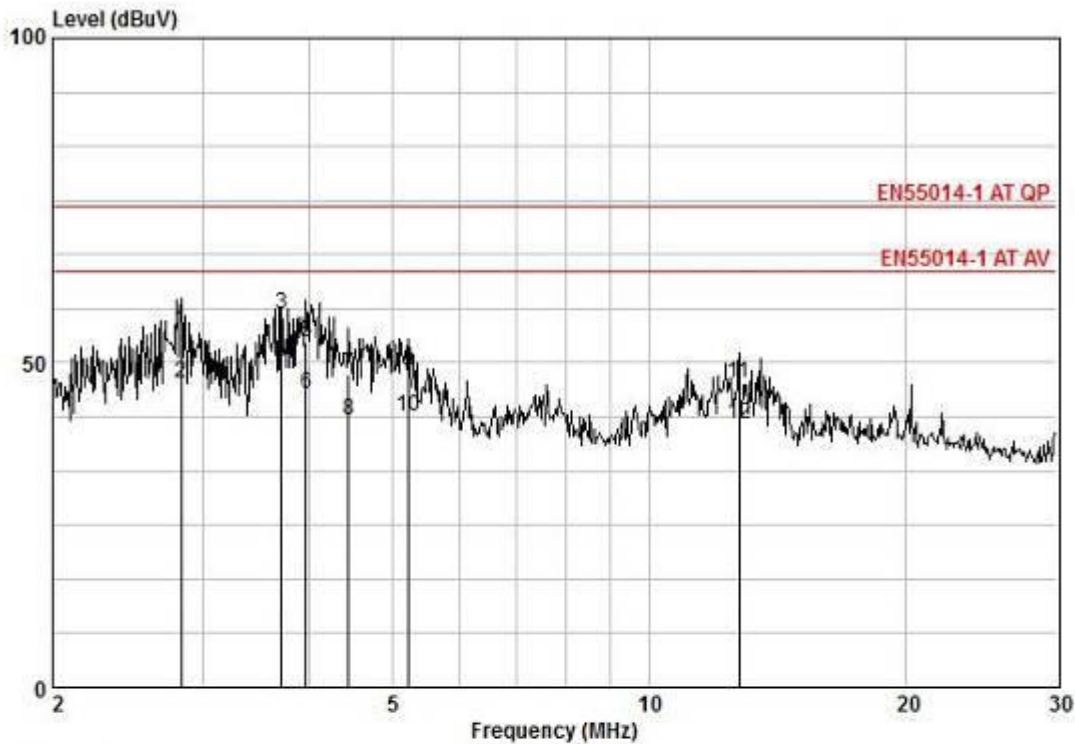
6.2.2 Measurement Data

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.
 Measured Level = Read level + Cable Loss + LISN Factor



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Mode:a

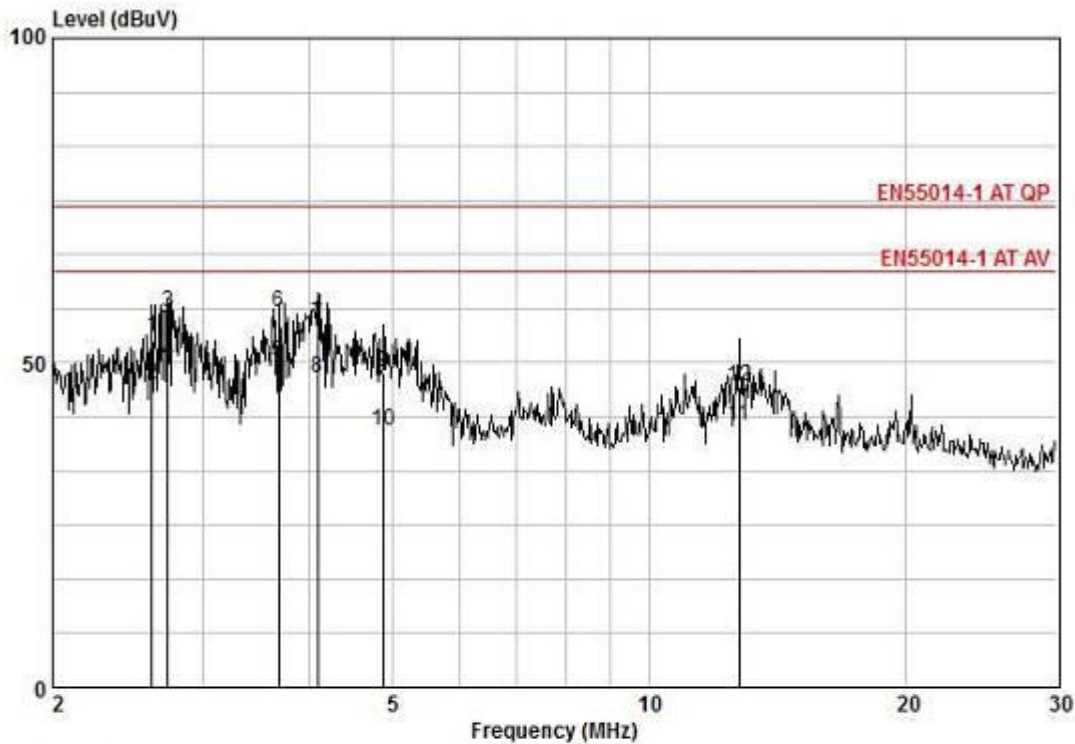


Pol	No	Model	read level dBuV	Cable Loss dB	LISN Factor dB	Measured level dBuV	Limit Line dBuV	Over limit dB	Remark
:	:	:							
:	1	IN							
:	:	:							
Frequency MHz									
2.83			25.21	29.84	0.00	55.05	74.00	-18.95	QP
2.83			17.07	29.84	0.00	46.91	64.00	-17.09	AVERAGE
3.71			27.73	29.64	0.00	57.37	74.00	-16.63	QP
3.71			20.46	29.64	0.00	50.12	64.00	-13.88	AVERAGE
3.97			23.60	29.55	0.00	53.15	74.00	-20.85	QP
3.97			15.71	29.55	0.00	45.26	64.00	-18.74	AVERAGE
4.45			18.86	29.45	0.00	48.31	74.00	-25.69	QP
4.45			11.57	29.45	0.00	41.02	64.00	-22.98	AVERAGE
5.23			19.24	29.29	0.00	48.53	74.00	-25.47	QP
5.23			12.28	29.29	0.00	41.57	64.00	-22.43	AVERAGE
12.75			17.74	29.05	0.00	46.79	74.00	-27.21	QP
12.75			11.45	29.05	0.00	40.50	64.00	-23.50	AVERAGE



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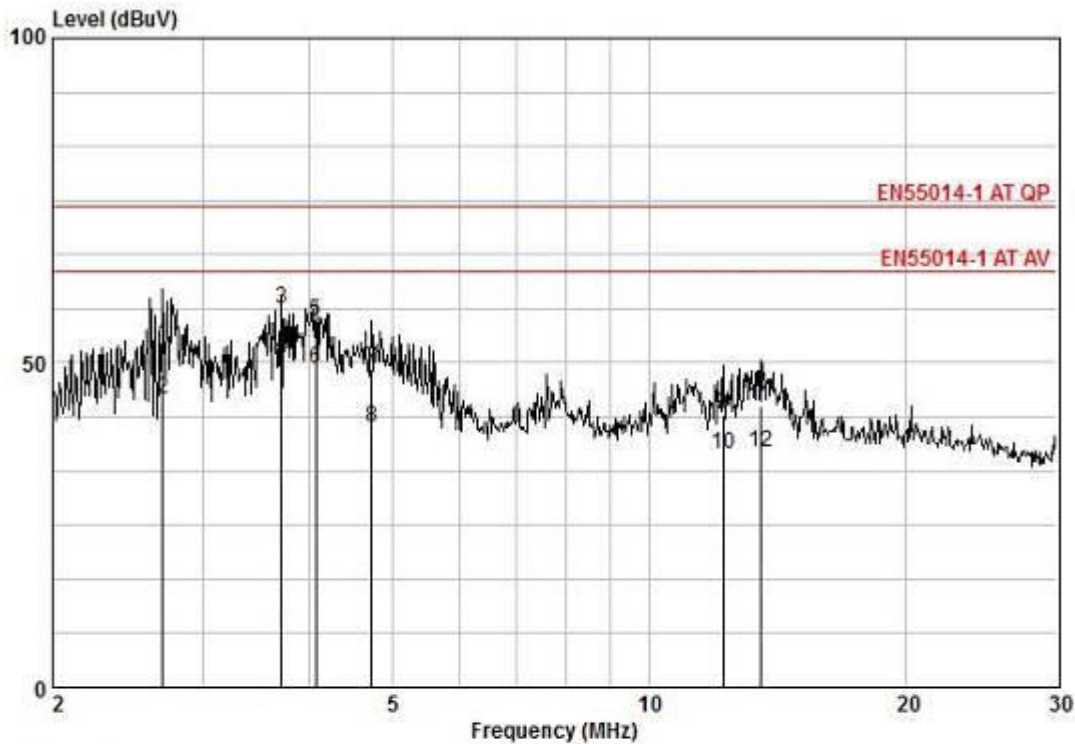
Pol :
 No : 1 OUT
 Model :

Frequency MHz	read level dBUV	Cable Loss dB	LISN Factor dB	Measured level dBUV	Limit Line dBUV	Over limit dB	Remark
2.61	24.07	29.90	0.00	53.97	74.00	-20.03	QP
2.61	16.63	29.90	0.00	46.53	64.00	-17.47	AVERAGE
2.73	27.84	29.87	0.00	57.71	74.00	-16.30	QP
2.73	20.14	29.87	0.00	50.01	64.00	-14.00	AVERAGE
3.68	20.53	29.64	0.00	50.17	64.00	-13.83	AVERAGE
3.68	28.13	29.64	0.00	57.77	74.00	-16.23	QP
4.09	26.42	29.52	0.00	55.94	74.00	-18.06	QP
4.09	18.04	29.52	0.00	47.56	64.00	-16.44	AVERAGE
4.89	19.20	29.35	0.00	48.55	74.00	-25.45	QP
4.89	10.23	29.35	0.00	39.58	64.00	-24.42	AVERAGE
12.75	11.15	29.05	0.00	40.20	64.00	-23.80	AVERAGE
12.75	17.20	29.05	0.00	46.25	74.00	-27.75	QP



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Mode:a



Pol	No	Model	read level dBuV	Cable Loss dB	LISN Factor dB	Measured level dBuV	Limit Line dBuV	Over limit dB	Remark
:	:	:							
:	L	IN							
:	:	:							
Frequency MHz									
2.69			23.11	29.88	0.00	52.99	74.00	-21.01	QP
2.69			14.54	29.88	0.00	44.42	64.00	-19.58	AVERAGE
3.71			28.54	29.64	0.00	58.18	74.00	-15.82	QP
3.71			21.26	29.64	0.00	50.90	64.00	-13.10	AVERAGE
4.07			26.84	29.53	0.00	56.37	74.00	-17.63	QP
4.07			19.44	29.53	0.00	48.97	64.00	-15.03	AVERAGE
4.73			19.64	29.39	0.00	49.03	74.00	-24.97	QP
4.73			10.57	29.39	0.00	39.96	64.00	-24.04	AVERAGE
12.21			12.95	29.03	0.00	41.98	74.00	-32.02	QP
12.21			7.01	29.03	0.00	36.04	64.00	-27.96	AVERAGE
13.50			14.23	29.06	0.00	43.29	74.00	-30.71	QP
13.50			7.26	29.06	0.00	36.32	64.00	-27.68	AVERAGE

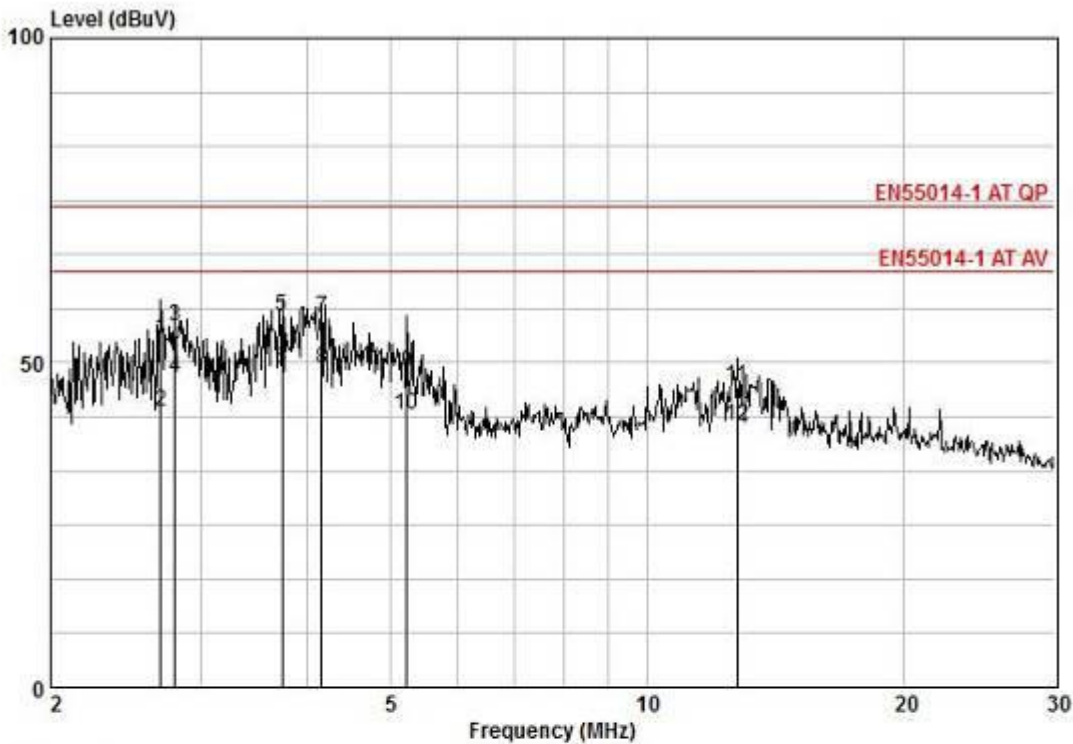


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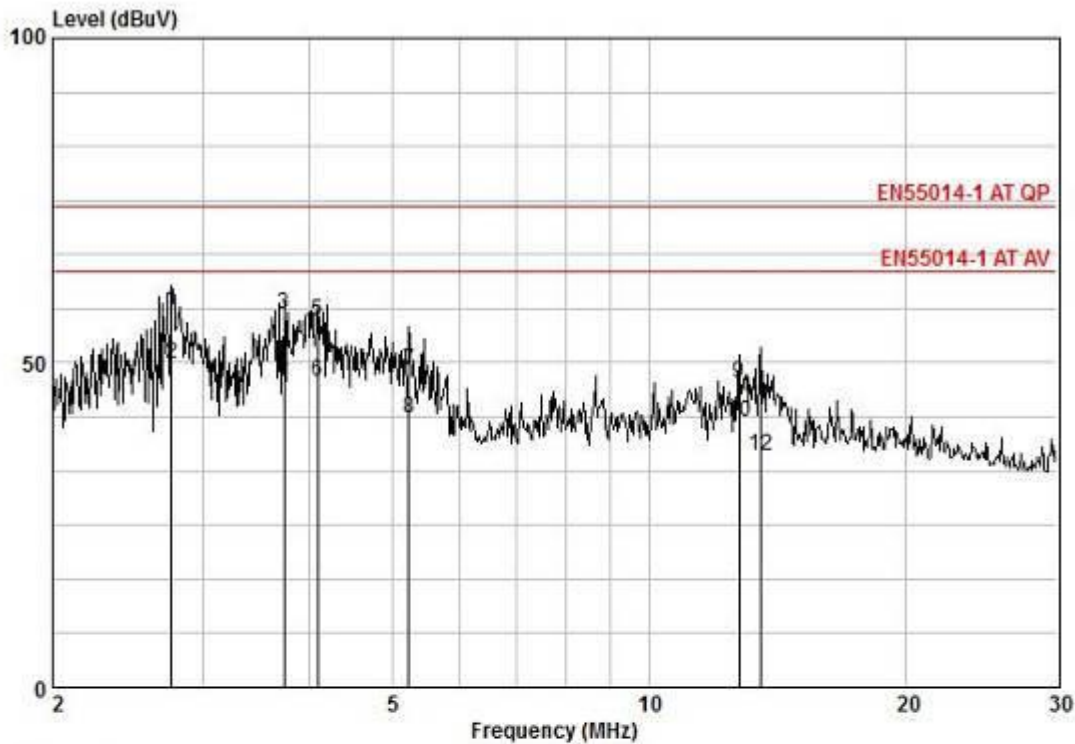
Pol :
 No : L OUT
 Model :

Frequency MHz	read level dBuV	Cable Loss dB	LISN Factor dB	Measured level dBuV	Limit Line dBuV	Over limit dB	Remark
2.69	23.75	29.88	0.00	53.63	74.00	-20.37	QP
2.69	12.51	29.88	0.00	42.39	64.00	-21.61	AVERAGE
2.80	25.73	29.85	0.00	55.58	74.00	-18.42	QP
2.80	17.90	29.85	0.00	47.75	64.00	-16.25	AVERAGE
3.74	27.47	29.62	0.00	57.09	74.00	-16.91	QP
3.74	19.42	29.62	0.00	49.04	64.00	-14.96	AVERAGE
4.16	27.45	29.51	0.00	56.96	74.00	-17.04	QP
4.16	19.48	29.51	0.00	48.99	64.00	-15.01	AVERAGE
5.23	19.18	29.29	0.00	48.47	74.00	-25.53	QP
5.23	12.57	29.29	0.00	41.86	64.00	-22.14	AVERAGE
12.75	17.34	29.05	0.00	46.39	74.00	-27.61	QP
12.75	11.38	29.05	0.00	40.43	64.00	-23.57	AVERAGE



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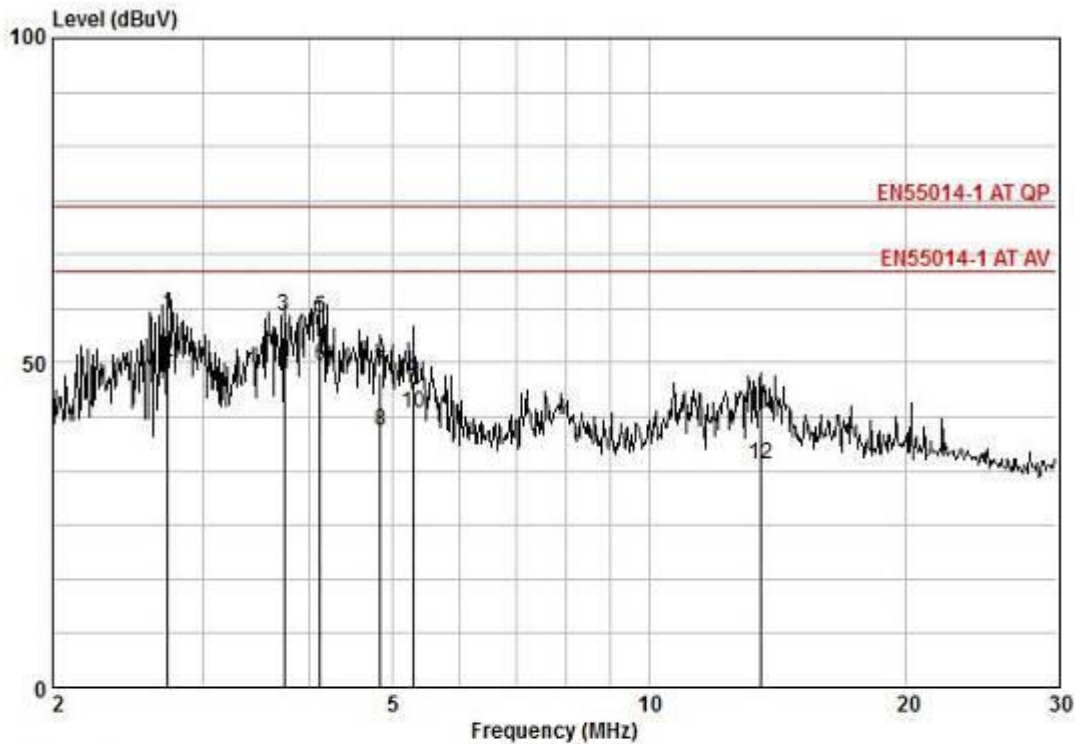


Frequency MHz	read level dBuV	Cable Loss dB	LISN Factor dB	Measured level dBuV	Limit Line dBuV	Over limit dB	Remark
2.76	28.29	29.86	0.00	58.15	74.00	-15.85	QP
2.76	20.06	29.86	0.00	49.94	64.00	-14.06	AVERAGE
3.74	27.75	29.62	0.00	57.37	74.00	-16.63	QP
3.74	16.51	29.62	0.00	46.13	64.00	-15.87	AVERAGE
4.09	26.83	29.52	0.00	56.35	74.00	-17.65	QP
4.09	17.51	29.52	0.00	47.03	64.00	-16.97	AVERAGE
5.23	19.46	29.29	0.00	48.75	74.00	-25.25	QP
5.23	12.21	29.29	0.00	41.50	64.00	-22.50	AVERAGE
12.75	17.86	29.05	0.00	46.91	74.00	-27.09	QP
12.75	11.90	29.05	0.00	40.95	64.00	-23.05	AVERAGE
13.50	14.23	29.06	0.00	43.29	74.00	-30.71	QP
13.50	6.76	29.06	0.00	35.82	64.00	-28.18	AVERAGE



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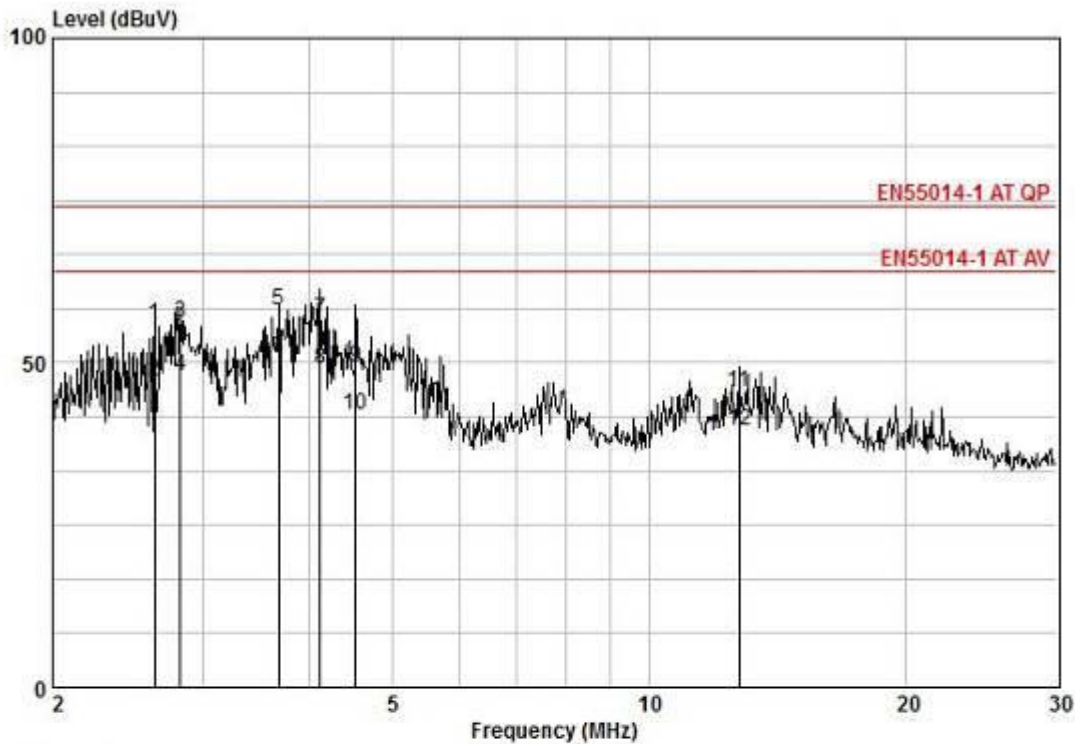
Frequency MHz	read level dBuV	Cable Loss dB	LISN Factor dB	Measured level dBuV	Limit Line dBuV	Over limit dB	Remark
2.73	27.68	29.87	0.00	57.55	74.00	-16.46	QP
2.73	20.37	29.87	0.00	50.24	64.00	-13.77	AVERAGE
3.74	27.57	29.62	0.00	57.19	74.00	-16.81	QP
3.74	19.46	29.62	0.00	49.10	64.00	-14.90	AVERAGE
4.12	27.55	29.52	0.00	57.07	74.00	-16.93	QP
4.12	19.96	29.52	0.00	49.50	64.00	-14.50	AVERAGE
4.85	19.11	29.36	0.00	48.47	74.00	-25.53	QP
4.85	10.05	29.36	0.00	39.41	64.00	-24.59	AVERAGE
5.30	17.82	29.28	0.00	47.10	74.00	-26.91	QP
5.30	12.85	29.28	0.00	42.13	64.00	-21.88	AVERAGE
13.50	13.39	29.06	0.00	42.45	74.00	-31.55	QP
13.50	5.39	29.06	0.00	34.45	64.00	-29.55	AVERAGE

Pol :
 No : PE IN
 Model :



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Mode:a



Pol	No	Model	read level dBUV	Cable Loss dB	LISN Factor dB	Measured level dBUV	Limit Line dBUV	Over limit dB	Remark
:	:	PE OUT							
2,64			26,08	29,89	0,00	55,97	74,00	-18,03	QP
2,64			17,20	29,89	0,00	47,09	64,00	-16,91	AVERAGE
2,82			26,19	29,84	0,00	56,03	74,00	-17,97	QP
2,82			17,96	29,84	0,00	47,82	64,00	-16,18	AVERAGE
3,68			28,27	29,64	0,00	57,91	74,00	-16,09	QP
3,68			21,00	29,64	0,00	50,64	64,00	-13,36	AVERAGE
4,12			27,12	29,52	0,00	56,64	74,00	-17,36	QP
4,12			19,46	29,52	0,00	48,98	64,00	-15,02	AVERAGE
4,53			19,80	29,43	0,00	49,23	74,00	-24,77	QP
4,53			12,53	29,43	0,00	41,96	64,00	-22,04	AVERAGE
12,75			16,54	29,05	0,00	45,59	74,00	-28,41	QP
12,75			10,59	29,05	0,00	39,64	64,00	-24,36	AVERAGE



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6.3 Discontinuous Disturbance (150kHz-30MHz)

Test Requirement:	EN 55014-1:2017	
Test Method:	EN 55014-1:2017	
Frequency Range:	150kHz to 30MHz	
Limit:		
0.15MHz	Limit=66dB(μV)+Lq	
	Lq= 44 dB	N < 0.2
	Lq= 20 lg(30/N) dB	0.2 ≤ N < 30
0.5MHz	Limit=56dB(μV)+Lq	
	Lq= 44 dB	N < 0.2
	Lq= 20 lg(30/N) dB	0.2 ≤ N < 30
1.4MHz	Limit=56dB(μV)+Lq	
	Lq= 44 dB	N < 0.2
	Lq=20 lg(30/N) dB	0.2 ≤ N < 30
30MHz	Limit=60dB(μV)+Lq	
	Lq= 44 dB	N < 0.2
	Lq= 20 lg(30/N) dB	0.2 ≤ N < 30
	Lq is click limit, N is click rates	
Detector:	Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz	



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6.3.1 E.U.T. Operation

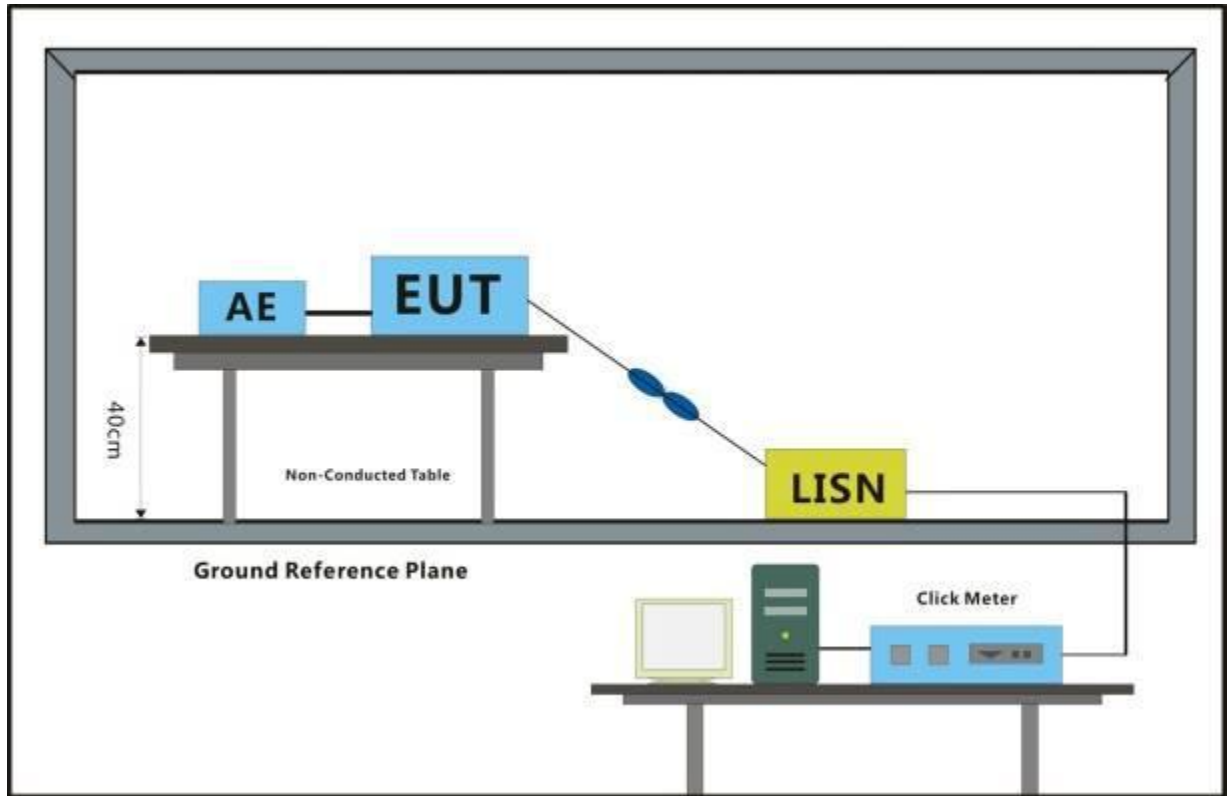
Operating Environment:

Temperature: 22 °C Humidity: 54.8 % RH Atmospheric Pressure: 1020 mbar

- Pre test these modes to find the worst case:
- a: Test the EUT in cooling mode, keep swinging at high speed, and adjust the EUT temperature at the lowest temperature position.
 - b: Test the EUT in heating mode, keep swinging at high speed, and adjust the EUT temperature at the highest temperature position.
 - c: Test the EUT in dehumidification mode.
 - d: Test the EUT in fan mode, keep swinging at high speed.

The worst case for final test: c: Test the EUT in dehumidification mode.

6.3.2 Test Setup Diagram



6.3.3 Measurement Data



Mode:c

Test Report
✕

File

Title: Test#: 1

Date: Time: 120:02.209

Required:

Executed by:

Description:

Model: Default

SN:

Type:

Report:

Work Dir:

First Pass		Rx1 150kHz	Rx2 500kHz	Rx3 1.4MHz	Rx4 30MHz
CISPR	Short	0	0	0	0
14-1	Long	0	0	0	0
	Fast Long	0	0	0	0
	Total Clicks	0	0	0	0
Continuous Int. Events		0	0	0	0
<input type="checkbox"/> Correction	TIME (s)	0.00	0.00	0.00	0.00
Manual <input type="checkbox"/> Switch Op		0	0	0	0
	2 Click	0	0	0	0
	Limit dBuV	66.0	56.0	56.0	60.0
7.4.2.2	N	0.00	0.00	0.00	0.00
	Limit dBuV	66.0	56.0	56.0	60.0
	Allowed Clicks	0	0	0	0

Second Pass		Rx1 150kHz	Rx2 500kHz	Rx3 1.4MHz	Rx4 30MHz
Preview	Short	0	0	0	0
	Long	0	0	0	0
	Total Clicks	0	0	0	0
Continuous Int. Events		0	0	0	0
	TIME (s)	0.00	0.00	0.00	0.00
	2 Click	0	0	0	0

Sw Op f= 1.00 Click Rate

Rx1 150kHz	No Clicks
Rx2 500kHz	No Clicks
Rx3 1.4MHz	No Clicks
Rx4 30MHz	No Clicks

Test Conditions

Remote	Input Offset	External Attenuator
NONE	0.0	0 dB

Att. Rx1 150kHz	Att. Rx2 500kHz	Att. Rx3 1.4MHz	Att. Rx4 30MHz
20dB	10dB	10dB	10dB

PASS
 PASS



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6.4 Disturbance Power

Test Requirement: EN 55014-1:2017
 Test Method: CISPR 16-2-2
 Frequency Range: 30MHz to 300MHz
 Limit:
 30MHz- 300MHz 45dB(pw)-55dB(pw) quasi-peak, 35dB(pw)-45dB(pw) average
 Detector: Peak for pre-scan (120kHz resolution bandwidth) 30M to 300MHz

6.4.1 E.U.T. Operation

Operating Environment:

Temperature: 26 °C Humidity: 56.7 % RH Atmospheric Pressure: 1020 mbar

Pre test these modes to find the worst case:
 a: Test the EUT in cooling mode, keep swinging at high speed, and adjust the EUT temperature at the lowest temperature position.

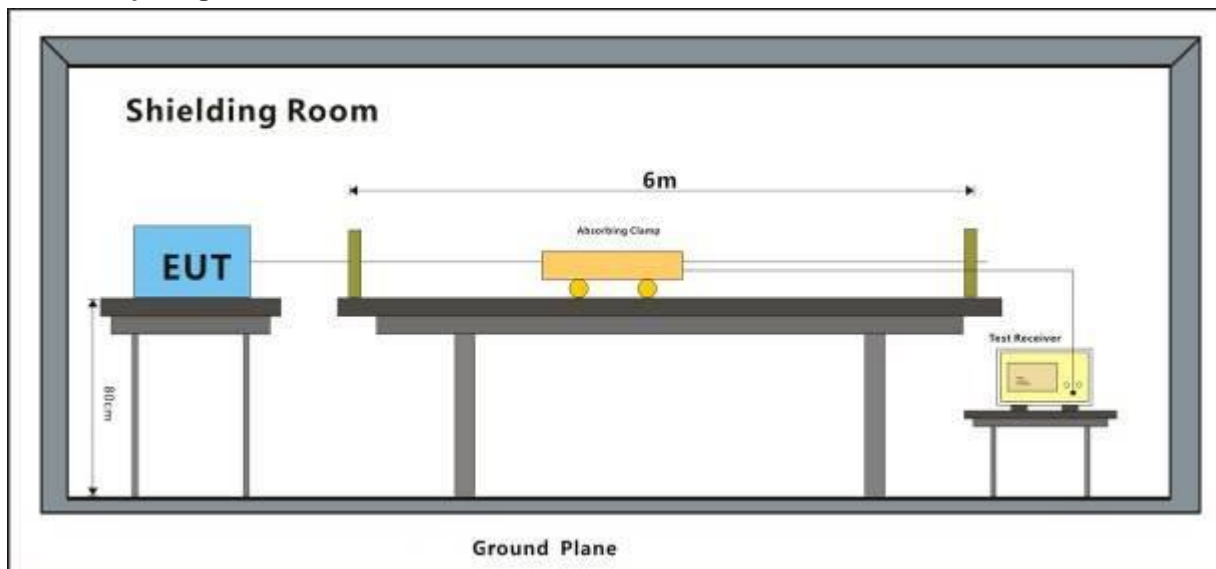
b: Test the EUT in heating mode, keep swinging at high speed, and adjust the EUT temperature at the highest temperature position.

c: Test the EUT in dehumidification mode.

d: Test the EUT in fan mode, keep swinging at high speed.

The worst case for final test:
 a: Test the EUT in cooling mode, keep swinging at high speed, and adjust the EUT temperature at the lowest temperature position.

6.4.2 Test Setup Diagram



6.4.3 Measurement Data

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.

Measured Level = Read level + Cable Loss + Clamp Factor



Mode:a
 Level (dBpW)



No : AC
 Mode :

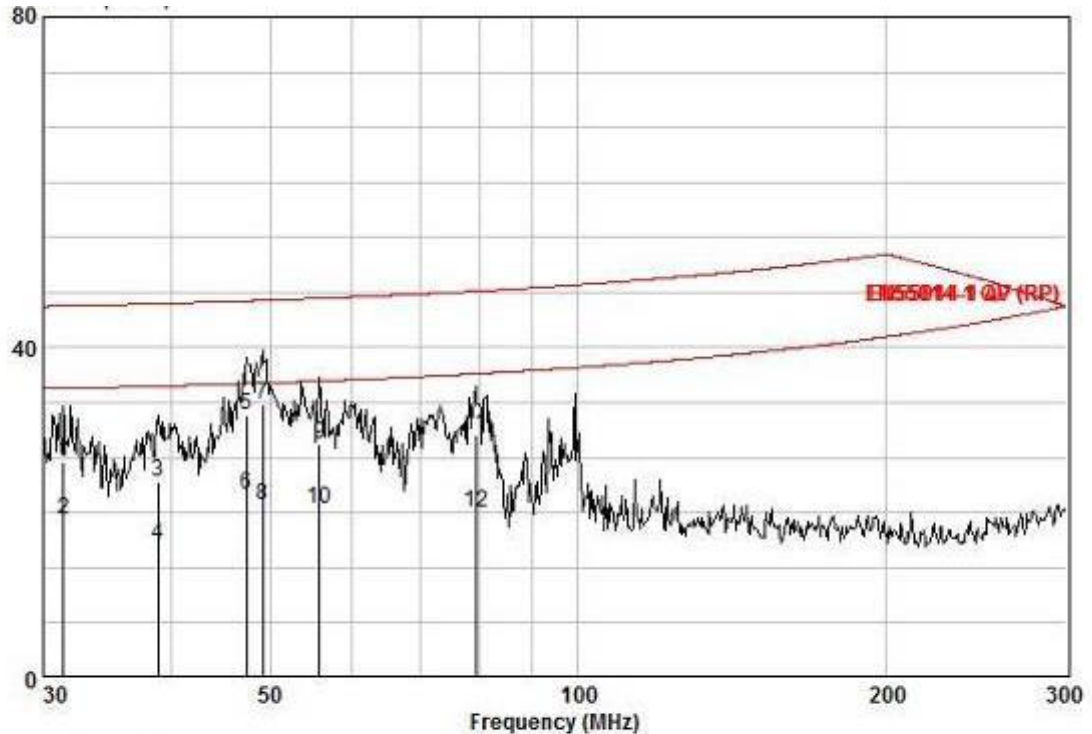
Frequency MHz	Read level dBuV	Cable Loss dB	Clamp Factor dSpW/dBuV	Measured level dSpW	Limit Line dSpW	Over limit dB	Remark
32.819	22.42	0.70	3.10	26.22	45.10	-18.88	QP
32.819	10.79	0.70	3.10	14.59	35.10	-20.51	AVERAGE
48.431	23.80	0.87	6.03	30.70	45.68	-14.98	QP
48.431	13.43	0.87	6.03	20.33	35.68	-15.35	AVERAGE
52.859	23.92	0.90	6.36	31.18	45.85	-14.66	QP
52.859	14.10	0.90	6.36	21.36	35.85	-14.48	AVERAGE
59.037	23.57	0.90	5.01	29.48	46.08	-16.60	QP
59.037	12.36	0.90	5.01	18.27	36.08	-17.81	AVERAGE
64.435	24.48	0.95	3.73	29.15	46.28	-17.13	QP
64.435	14.60	0.95	3.73	19.27	36.28	-17.01	AVERAGE
96.322	31.15	1.18	2.38	34.72	47.46	-12.74	QP
96.322	18.63	1.18	2.38	22.20	37.46	-15.26	AVERAGE



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Mode:a

Level (dBpW)



No : CONTROL IN
 Mode :

Frequency MHz	Read level dBuV	Cable Loss dB	Clamp Factor dBpW/dBuV	Measured level dBpW	Limit Line dBpW	Over limit dB	Remark
31.414	22.45	0.70	3.10	26.25	45.05	-18.80	QP
31.414	15.35	0.70	3.10	19.15	35.05	-15.90	AVERAGE
38.826	19.05	0.70	4.11	23.86	45.33	-21.47	QP
38.826	11.23	0.70	4.11	16.04	35.33	-19.29	AVERAGE
47.437	25.05	0.85	5.85	31.75	45.65	-13.89	QP
47.437	15.50	0.85	5.85	22.20	35.65	-13.44	AVERAGE
49.218	26.17	0.88	6.16	33.22	45.71	-12.49	QP
49.218	13.95	0.88	6.16	21.00	35.71	-14.71	AVERAGE
55.863	21.25	0.90	6.09	28.23	45.96	-17.73	QP
55.863	13.55	0.90	6.09	20.53	35.96	-15.43	AVERAGE
79.455	25.88	1.09	2.54	29.52	46.83	-17.32	QP
79.455	16.46	1.09	2.54	20.10	36.83	-16.74	AVERAGE



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Mode:a
 Level (dBpW)



No : CONTROL OUT
 Mode :

Frequency MHz	Read level dBuV	Cable Loss dB	Clamp Factor dSpW/dBuV	Measured level dBpW	Limit Line dBpW	Over limit dB	Remark
30.069	32.86	0.70	3.10	36.66	45.00	-8.34	QP
30.069	21.88	0.70	3.10	25.68	35.00	-9.32	AVERAGE
38.826	23.68	0.70	4.11	28.49	45.33	-16.84	QP
38.826	16.09	0.70	4.11	20.90	35.33	-14.43	AVERAGE
48.208	28.28	0.87	5.99	35.14	45.67	-10.54	QP
48.208	17.22	0.87	5.99	24.08	35.67	-11.60	AVERAGE
72.131	26.15	1.02	3.35	30.52	46.56	-16.04	QP
72.131	18.65	1.02	3.35	23.02	36.56	-13.54	AVERAGE
81.306	27.61	1.11	2.39	31.11	46.90	-15.79	QP
81.306	17.69	1.11	2.39	21.19	36.90	-15.71	AVERAGE
98.883	23.52	1.19	2.53	27.25	47.55	-20.31	QP
98.883	11.75	1.19	2.53	15.48	37.55	-22.07	AVERAGE



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6.5 Harmonic Current Emission

Test Requirement: EN 61000-3-2:2014
 Test Method: EN 61000-3-2:2014

6.5.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 54.7 % RH Atmospheric Pressure: 1020 mbar

Pre test these modes to find the worst case:

- a: Test the EUT in cooling mode, keep swinging at high speed, and adjust the EUT temperature at the lowest temperature position.

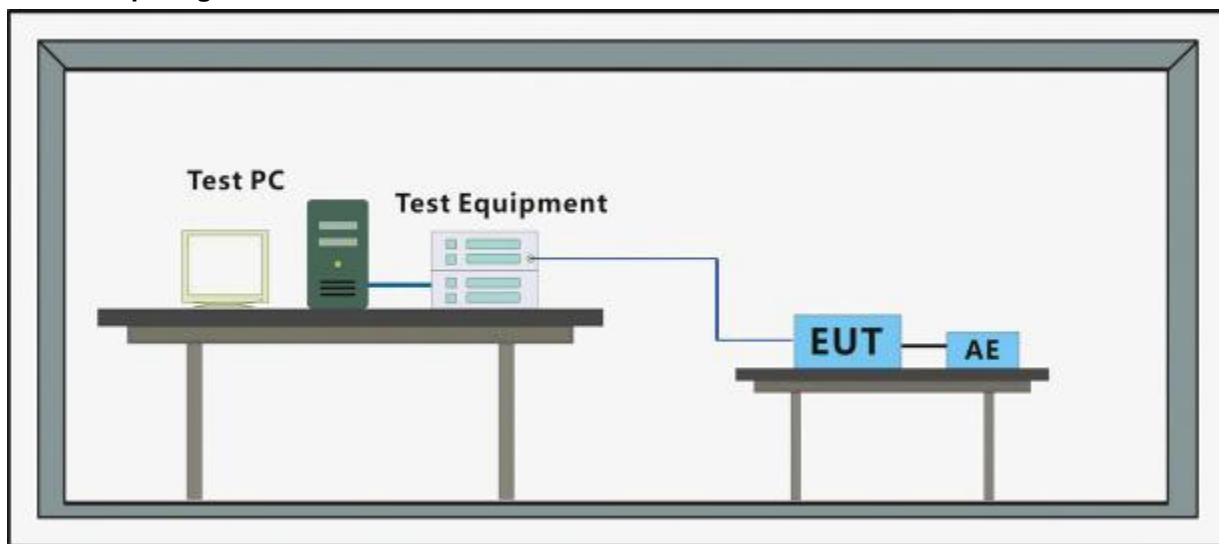
- b: Test the EUT in heating mode, keep swinging at high speed, and adjust the EUT temperature at the highest temperature position.

- c: Test the EUT in dehumidification mode.

- d: Test the EUT in fan mode, keep swinging at high speed.

The worst case for final test: c: Test the EUT in dehumidification mode.

6.5.2 Test Setup Diagram



6.5.3 Measurement Data



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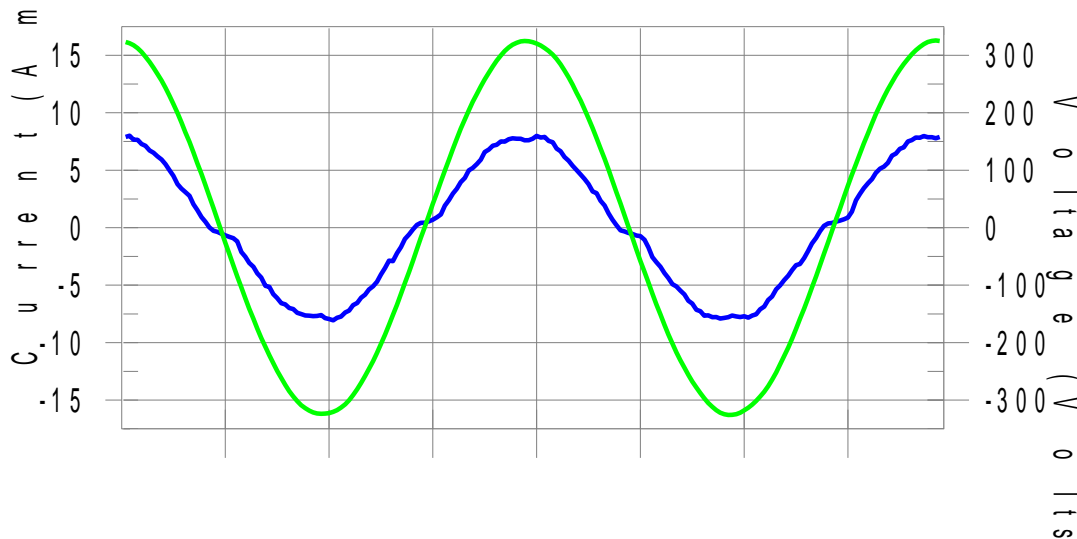


Mode:a

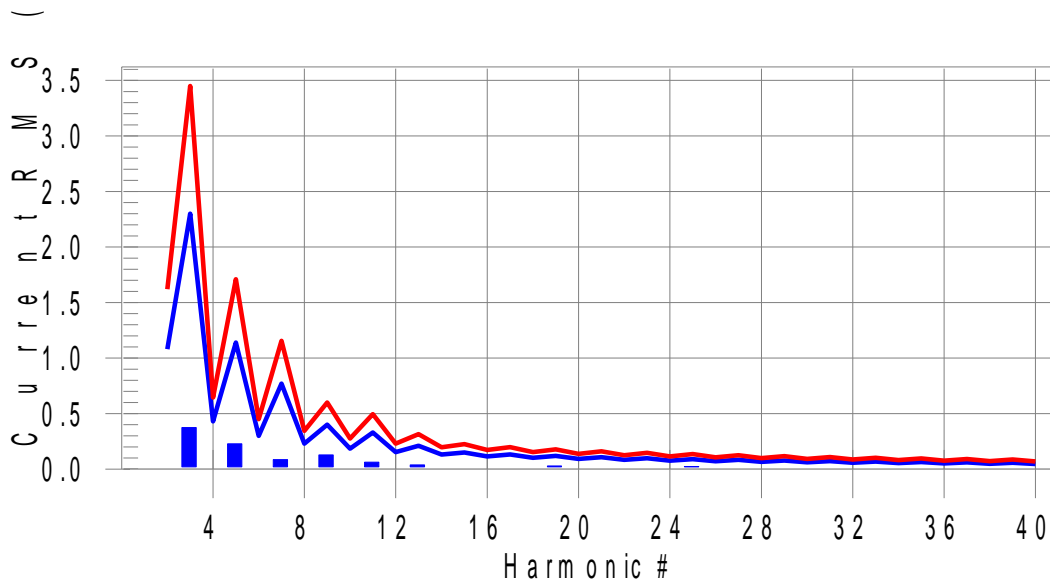
Harmonics – Class-A per Ed. 4.0 (2014)(Run time)

Test Result: Pass Source qualification: Normal

Current & voltage waveforms



Harmonics and Class A limit line European Limits



Test result: Pass Worst harmonic was #9 with 32.0% of the limit.



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Current Test Result Summary (Run time)

Test Result: Pass Source qualification: Normal
 THC(A): 0.474 I-THD(%): 8.8 POHC(A): 0.000 POHC Limit(A): 0.251
 Highest parameter values during test:
 V_RMS (Volts): 229.92 Frequency(Hz): 50.00
 I_Peak (Amps): 8.312 I_RMS (Amps): 5.437
 I_Fund (Amps): 5.410 Crest Factor: 1.534
 Power (Watts): 1241.6 Power Factor: 0.995

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.005	1.080	N/A	0.007	1.620	N/A	Pass
3	0.375	2.300	16.3	0.377	3.450	10.9	Pass
4	0.003	0.430	N/A	0.009	0.645	N/A	Pass
5	0.228	1.140	20.0	0.230	1.710	13.5	Pass
6	0.003	0.300	N/A	0.006	0.450	N/A	Pass
7	0.086	0.770	11.1	0.087	1.155	7.5	Pass
8	0.003	0.230	N/A	0.004	0.345	N/A	Pass
9	0.128	0.400	32.0	0.130	0.600	21.6	Pass
10	0.002	0.184	N/A	0.002	0.276	N/A	Pass
11	0.063	0.330	19.1	0.065	0.495	13.2	Pass
12	0.002	0.153	N/A	0.004	0.230	N/A	Pass
13	0.038	0.210	18.3	0.039	0.315	12.4	Pass
14	0.002	0.131	N/A	0.004	0.197	N/A	Pass
15	0.008	0.150	N/A	0.009	0.225	N/A	Pass
16	0.001	0.115	N/A	0.002	0.173	N/A	Pass
17	0.006	0.132	N/A	0.007	0.198	N/A	Pass
18	0.002	0.102	N/A	0.002	0.153	N/A	Pass
19	0.029	0.118	N/A	0.030	0.178	N/A	Pass
20	0.001	0.092	N/A	0.002	0.138	N/A	Pass
21	0.015	0.107	N/A	0.015	0.161	N/A	Pass
22	0.001	0.084	N/A	0.002	0.125	N/A	Pass
23	0.018	0.098	N/A	0.018	0.147	N/A	Pass
24	0.002	0.077	N/A	0.002	0.115	N/A	Pass
25	0.023	0.090	N/A	0.024	0.135	N/A	Pass
26	0.001	0.071	N/A	0.002	0.107	N/A	Pass
27	0.016	0.083	N/A	0.017	0.125	N/A	Pass
28	0.002	0.066	N/A	0.002	0.099	N/A	Pass
29	0.007	0.078	N/A	0.008	0.116	N/A	Pass
30	0.002	0.061	N/A	0.003	0.092	N/A	Pass
31	0.005	0.073	N/A	0.006	0.109	N/A	Pass
32	0.001	0.058	N/A	0.002	0.086	N/A	Pass
33	0.013	0.068	N/A	0.013	0.102	N/A	Pass
34	0.001	0.054	N/A	0.002	0.081	N/A	Pass
35	0.011	0.064	N/A	0.011	0.096	N/A	Pass
36	0.001	0.051	N/A	0.002	0.077	N/A	Pass
37	0.005	0.061	N/A	0.005	0.091	N/A	Pass
38	0.001	0.048	N/A	0.001	0.073	N/A	Pass
39	0.012	0.058	N/A	0.012	0.087	N/A	Pass
40	0.001	0.046	N/A	0.002	0.069	N/A	Pass



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6.6 Voltage Fluctuations and Flicker

Test Requirement: EN 61000-3-3:2013

Test Method: EN 61000-3-3:2013

6.6.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 54.7 % RH Atmospheric Pressure: 1020 mbar

Pre test these modes to find the worst case:

- a: Test the EUT in cooling mode, keep swinging at high speed, and adjust the EUT temperature at the lowest temperature position.

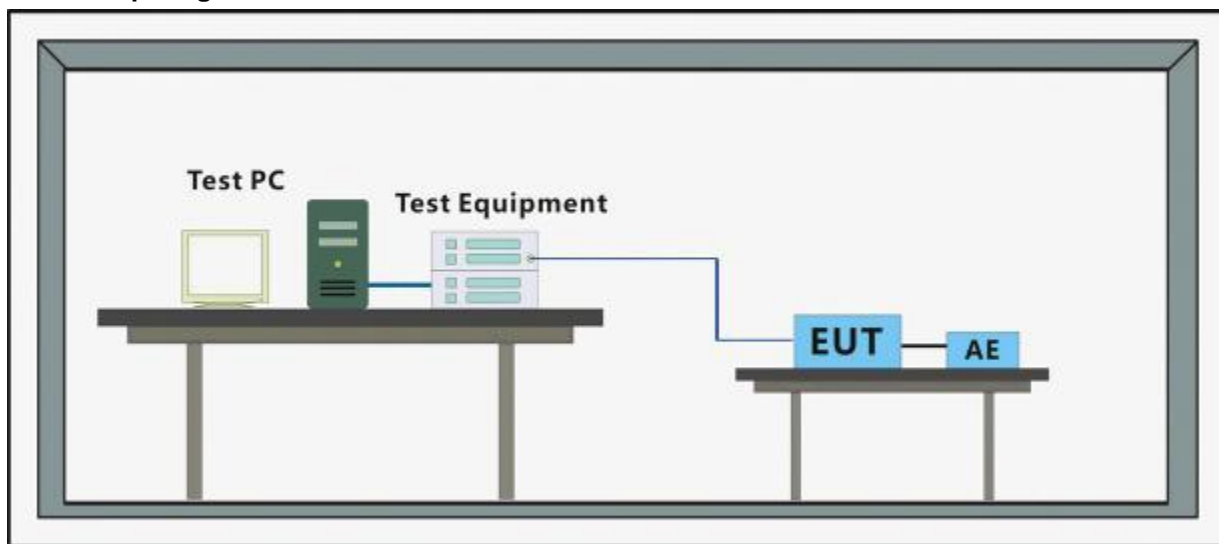
- b: Test the EUT in heating mode, keep swinging at high speed, and adjust the EUT temperature at the highest temperature position.

- c: Test the EUT in dehumidification mode.

- d: Test the EUT in fan mode, keep swinging at high speed.

The worst case for final test: c: Test the EUT in dehumidification mode.

6.6.2 Test Setup Diagram



6.6.3 Measurement Data





Mode:c

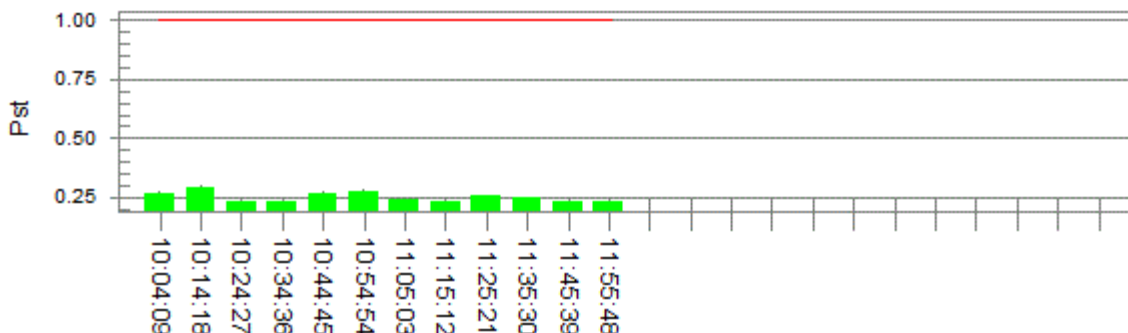
Flicker Test Summary per EN 61000-3-3 (Run time)

Test Result: Pass

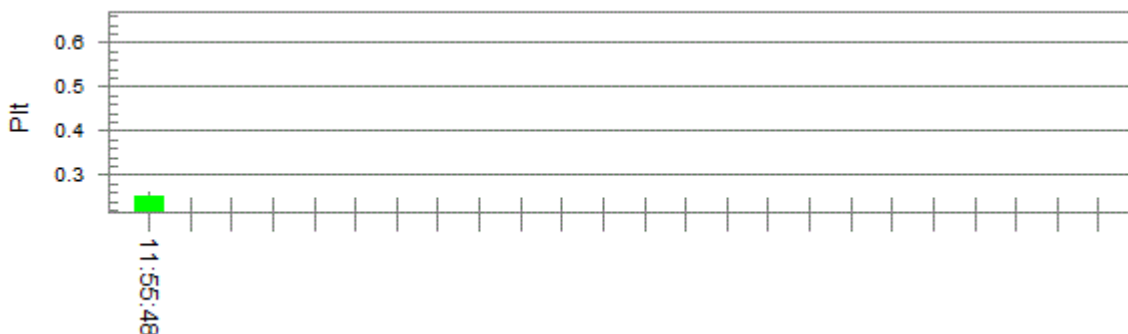
Status: Test Completed

Pst_t and limit line

European Limits



Plt and limit line



Parameter values recorded during the test:

Vrms at the end of test (Volt):	228.25			
Highest dt (%):	0.43	Test limit (%):	N/A	N/A
T-max (mS):	0	Test limit (mS):	500.0	Pass
Highest dc (%):	0.33	Test limit (%):	3.30	Pass
Highest dmax (%):	0.47	Test limit (%):	6.00	Pass
Highest Pst (10 min. period):	0.275	Test limit:	1.000	Pass
Highest Plt (2 hr. period):	0.232	Test limit:	0.650	Pass



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7 Immunity Test Results

7.1 Performance Criteria Description in EN 55014-2:2015

- 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.



7.2 Electrostatic Discharge

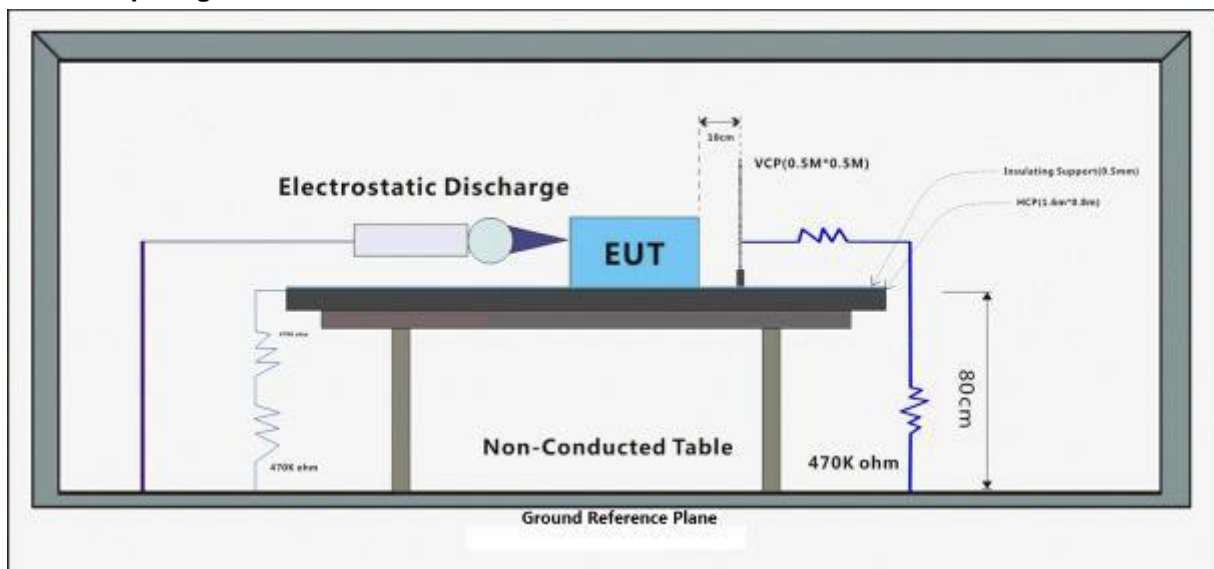
Test Requirement: EN 55014-2:2015
 Test Method: EN 61000-4-2:2009
 Performance Criterion: B
 Discharge Impedance: 330Ω/150pF
 Number of Discharge: Minimum 10 times at each test point
 Discharge Mode: Single Discharge
 Discharge Period: 1 second minimum

7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 54.8 % RH Atmospheric Pressure: 1020 mbar
 Test Mode:
 a: Test the EUT in cooling mode, keep swinging at high speed, and adjust the EUT temperature at the lowest temperature position.
 b: Test the EUT in heating mode, keep swinging at high speed, and adjust the EUT temperature at the highest temperature position.
 c: Test the EUT in dehumidification mode.
 d: Test the EUT in fan mode, keep swinging at high speed.
 e: Test the EUT in idle mode.
 f: Test the EUT in continuously emitting mode for IR remote controller.

7.2.2 Test Setup Diagram



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7.2.3 Test Results

Test Point:

Observations:

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	8	+	1	A
Air Discharge	8	-	1	A
Contact Discharge	4	+	2	A
Contact Discharge	4	-	2	A
Horizontal Coupling	4	+	3	A
Horizontal Coupling	4	-	3	A
Vertical Coupling	4	+	3	A
Vertical Coupling	4	-	3	A

Results:

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



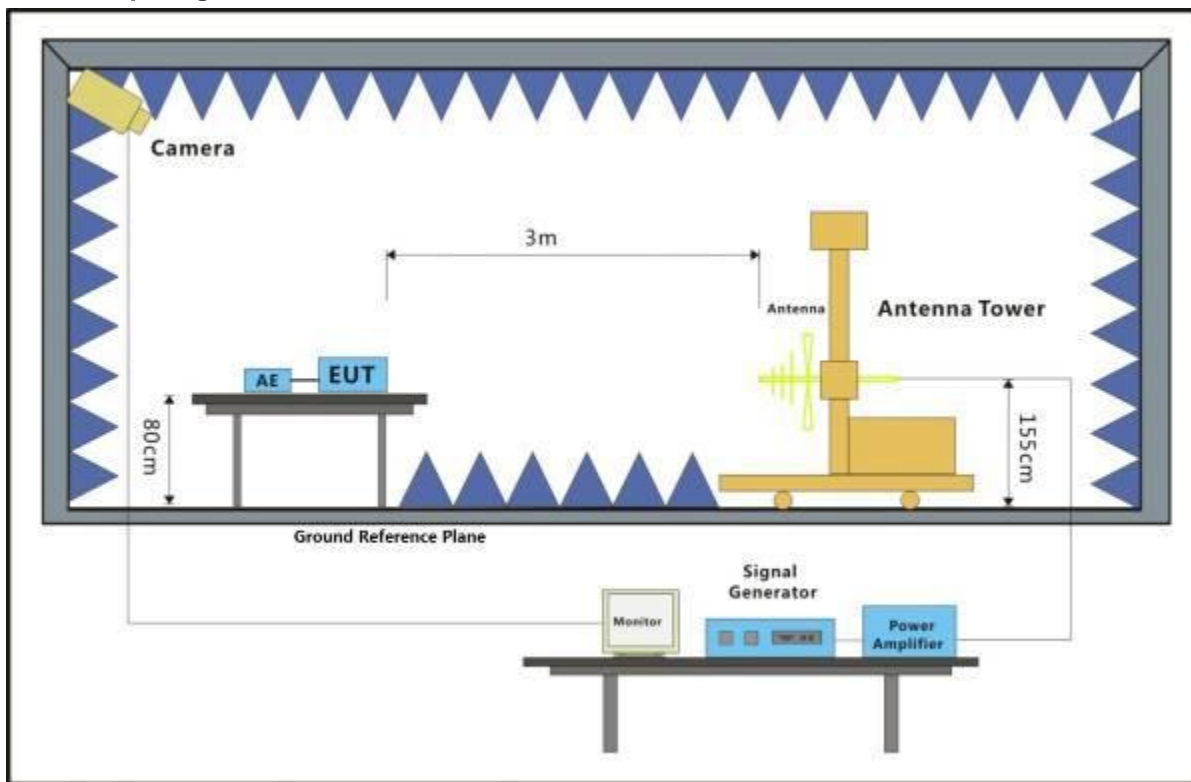
7.3 Radiated Immunity (80MHz-1GHz)

Test Requirement: EN 55014-2:2015
 Test Method: EN 61000-4-3:2006 +A1:2008+A2:2010
 Performance Criterion: A
 Frequency Range: 80MHz to 1GHz
 Antenna Polarisation: Vertical and Horizontal
 Modulation: 1kHz,80% Amp. Mod,1% increment

7.3.1 E.U.T. Operation

Operating Environment:
 Temperature: 21 °C Humidity: 52 % RH Atmospheric Pressure: 1020 mbar
 Test Mode: e: Test the EUT in idle mode.
 f: Test the EUT in continuously emitting mode for IR remote controller.

7.3.2 Test Setup Diagram



7.3.3 Test Results

Frequency	Level (V/m)	EUT Face	Dwell time	Result / Observations
80MHz-1GHz	3	Front	2s	A
80MHz-1GHz	3	Back	2s	A
80MHz-1GHz	3	Left	2s	A
80MHz-1GHz	3	Right	2s	A
80MHz-1GHz	3	Top	2s	A
80MHz-1GHz	3	Underside	2s	A

Results:

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



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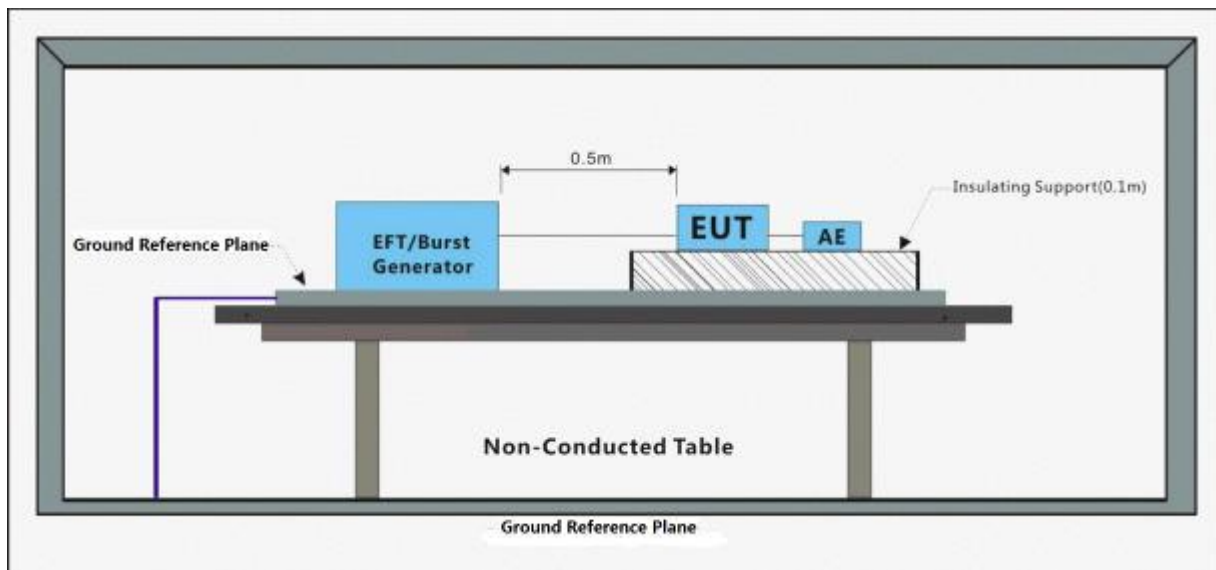
7.4 Electrical Fast Transients/Burst at Power Port

Test Requirement: EN 55014-2:2015
 Test Method: EN 61000-4-4:2012
 Performance Criterion: B
 Repetition Frequency: 5kHz
 Burst Period: 300ms
 Test Duration: 2 minute per level & polarity

7.4.1 E.U.T. Operation

Operating Environment:
 Temperature: 20 °C Humidity: 55 % RH Atmospheric Pressure: 1020 mbar
 Test Mode:
 a: Test the EUT in cooling mode, keep swinging at high speed, and adjust the EUT temperature at the lowest temperature position.
 b: Test the EUT in heating mode, keep swinging at high speed, and adjust the EUT temperature at the highest temperature position.
 c: Test the EUT in dehumidification mode.
 d: Test the EUT in fan mode, keep swinging at high speed.
 e: Test the EUT in idle mode.

7.4.2 Test Setup Diagram



7.4.3 Test Results

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

Results:

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



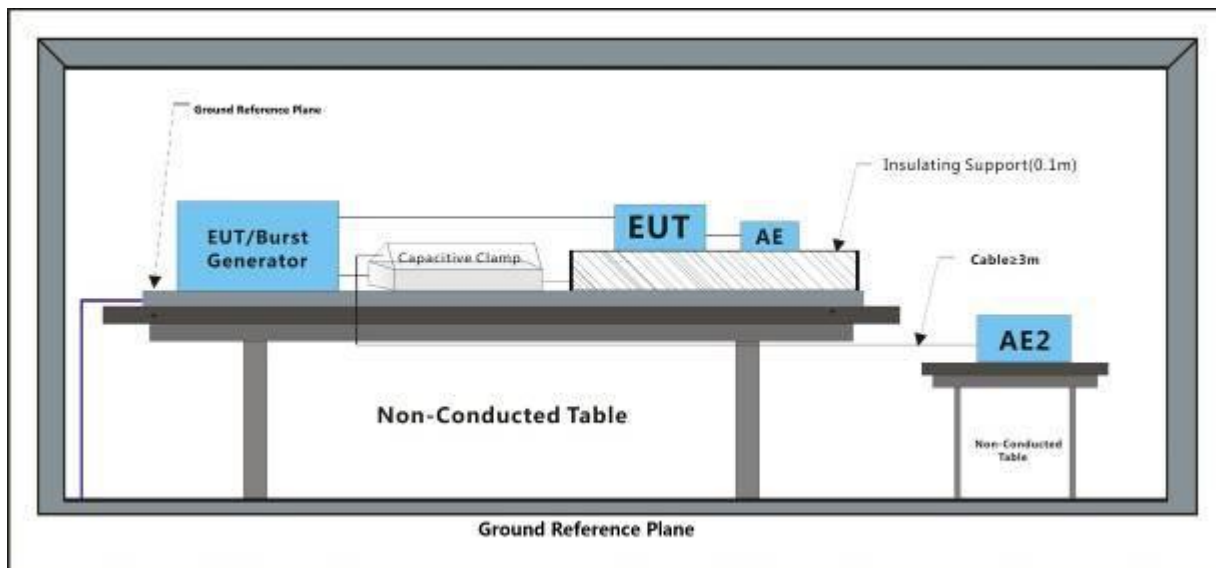
7.5 Electrical Fast Transients/Burst at Signal Port

Test Requirement: EN 55014-2:2015
 Test Method: EN 61000-4-4:2012
 Performance Criterion: B
 Repetition Frequency: 5kHz
 Burst Period: 300ms
 Test Duration: 2 minute per level & polarity

7.5.1 E.U.T. Operation

Operating Environment:
 Temperature: 20 °C Humidity: 55 % RH Atmospheric Pressure: 1020 mbar
 Test Mode:
 a: Test the EUT in cooling mode, keep swinging at high speed, and adjust the EUT temperature at the lowest temperature position.
 b: Test the EUT in heating mode, keep swinging at high speed, and adjust the EUT temperature at the highest temperature position.
 c: Test the EUT in dehumidification mode.
 d: Test the EUT in fan mode, keep swinging at high speed.
 e: Test the EUT in idle mode.

7.5.2 Test Setup Diagram



7.5.3 Test Results

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

Results:

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



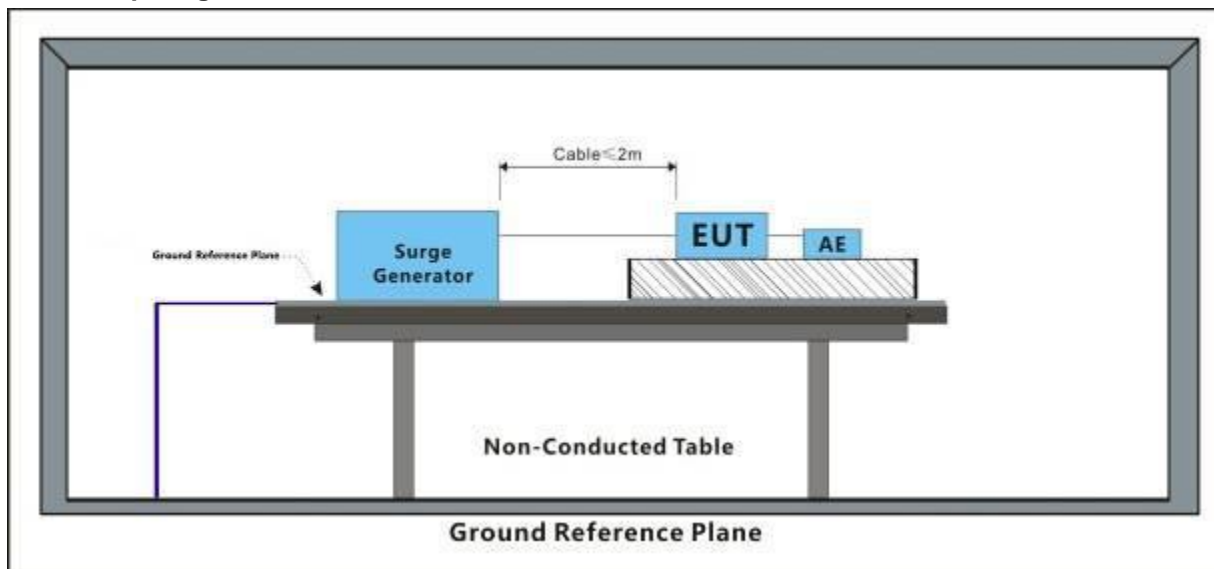
7.6 Surge at Power Port

Test Requirement: EN 55014-2:2015
 Test Method: EN 61000-4-5:2014
 Performance Criterion: B
 Interval: 60s between each surge
 No. of surges: 5 positive at 90°, 5 negative at 270°.

7.6.1 E.U.T. Operation

Operating Environment:
 Temperature: 20 °C Humidity: 55 % RH Atmospheric Pressure: 1020 mbar
 Test Mode:
 a: Test the EUT in cooling mode, keep swinging at high speed, and adjust the EUT temperature at the lowest temperature position.
 b: Test the EUT in heating mode, keep swinging at high speed, and adjust the EUT temperature at the highest temperature position.
 c: Test the EUT in dehumidification mode.
 d: Test the EUT in fan mode, keep swinging at high speed.
 e: Test the EUT in idle mode.

7.6.2 Test Setup Diagram





7.6.3 Test Results

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

Results:

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



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7.7 Voltage Dips and Interruptions

Test Requirement:	EN 55014-2:2015
Test Method:	EN 61000-4-11:2004
Performance Criterion:	For 50Hz: 0% of UT (Rated Voltage) for 0.5 Cycle: C; 40% of UT for 10 Cycle: C; 70% of UT for 25 Cycle: C
No. of Dips / Interruptions:	3 per Level
Time between dropout	10s

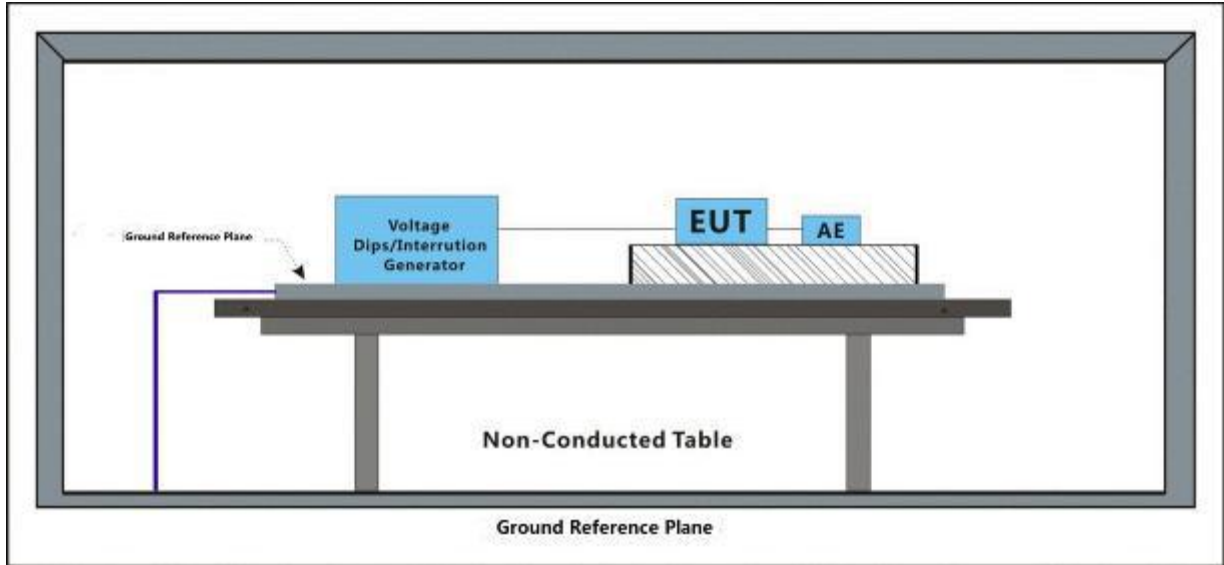
7.7.1 E.U.T. Operation

Operating Environment:

Temperature:	20 °C	Humidity:	55 % RH	Atmospheric Pressure:	1020 mbar
Test Mode:	a: Test the EUT in cooling mode, keep swinging at high speed, and adjust the EUT temperature at the lowest temperature position. b: Test the EUT in heating mode, keep swinging at high speed, and adjust the EUT temperature at the highest temperature position. c: Test the EUT in dehumidification mode. d: Test the EUT in fan mode, keep swinging at high speed. e: Test the EUT in idle mode.				



7.7.2 Test Setup Diagram



7.7.3 Test Results

Level % UT	Phase (deg)	Duration	No. of Dips / Interruptions	Result / Observations
0	0°	0.5 Cycles	3	A
0	180°	0.5 Cycles	3	A
40	0°	10 Cycles	3	A
40	180°	10 Cycles	3	A
70	0°	25 Cycles	3	A
70	180°	25 Cycles	3	A

Results:

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



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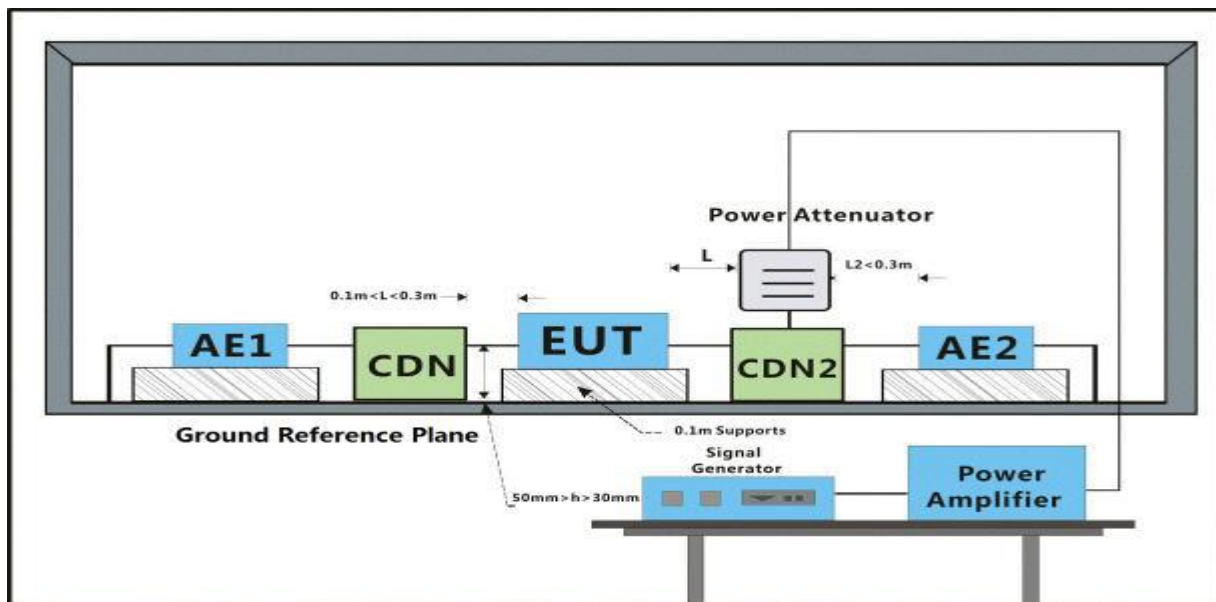
7.8 Conducted Immunity at Power Port (150kHz-230MHz)

Test Requirement: EN 55014-2:2015
 Test Method: EN 61000-4-6:2014
 Performance Criterion: A
 Frequency Range: 0.15MHz to 230MHz
 Modulation: 80%, 1kHz Amplitude Modulation
 Step Size 1%

7.8.1 E.U.T. Operation

Operating Environment:
 Temperature: 20 °C Humidity: 55 % RH Atmospheric Pressure: 1020 mbar
 Test Mode:
 a: Test the EUT in cooling mode, keep swinging at high speed, and adjust the EUT temperature at the lowest temperature position.
 b: Test the EUT in heating mode, keep swinging at high speed, and adjust the EUT temperature at the highest temperature position.
 c: Test the EUT in dehumidification mode.
 d: Test the EUT in fan mode, keep swinging at high speed.
 e: Test the EUT in idle mode.

7.8.2 Test Setup Diagram



7.8.3 Test Results

Cable port	Level (Vrms)	CDN/Clamp	Dwell time	Result / Observations
AC power port	3	CDN	2s	A

Results:

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



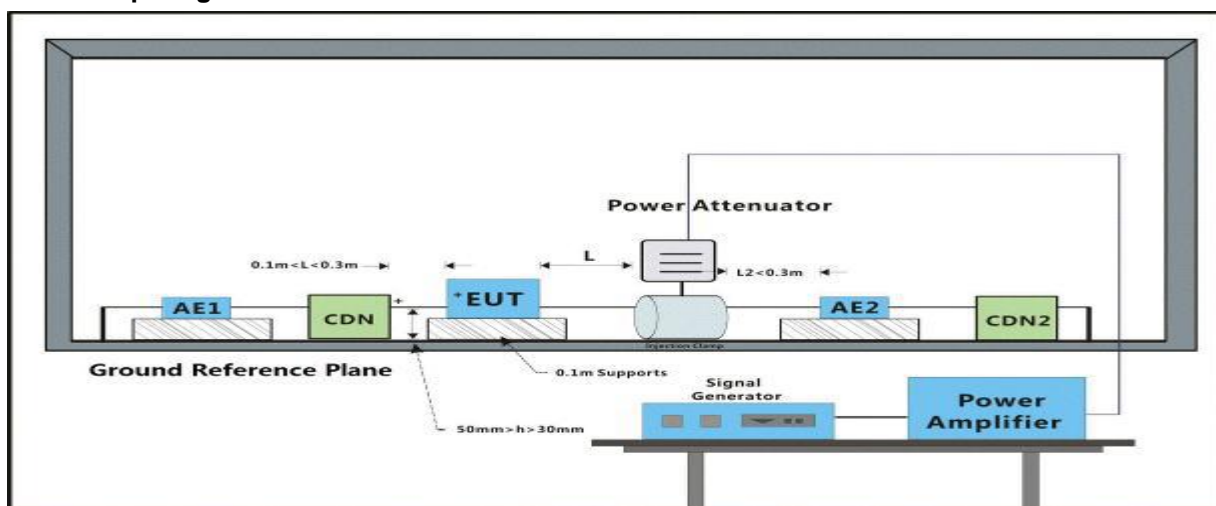
7.9 Conducted Immunity at Signal Port (150kHz-230MHz)

Test Requirement: EN 55014-2:2015
 Test Method: EN 61000-4-6:2014
 Performance Criterion: A
 Modulation: 80%, 1kHz Amplitude Modulation
 Step Size 1%
 Performance Criterion: A
 Frequency Range: 0.15MHz to 230MHz
 Modulation: 80%, 1kHz Amplitude Modulation
 Step Size 1%

7.9.1 E.U.T. Operation

Operating Environment:
 Temperature: 20 °C Humidity: 55 % RH Atmospheric Pressure: 1020 mbar
 Test Mode:
 a: Test the EUT in cooling mode, keep swinging at high speed, and adjust the EUT temperature at the lowest temperature position.
 b: Test the EUT in heating mode, keep swinging at high speed, and adjust the EUT temperature at the highest temperature position.
 c: Test the EUT in dehumidification mode.
 d: Test the EUT in fan mode, keep swinging at high speed.
 e: Test the EUT in idle mode.

7.9.2 Test Setup Diagram



7.9.3 Test Results

Port	Level (Vrms)	CDN/Clamp	Dwell time	Result / Observations
Signal port	1	Clamp	1s	A

Results:

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



8 Photographs

8.1 Conducted Emissions at Mains Terminals (150kHz-30MHz) Test Setup



8.2 Conducted Emissions at Load Terminals and Additional Terminals Test Setup



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8.3 Discontinuous Disturbance (150kHz-30MHz) Test Setup



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8.4 Disturbance Power Test Setup



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8.5 Harmonics Current, Voltage Fluctuations and Flicker Test Setup



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8.6 Electrostatic Discharge Test Setup



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8.7 Radiated Immunity (80MHz-1GHz) Test Setup



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8.8 Electrical Fast Transients/Burst at Power Port Test Setup



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8.9 Electrical Fast Transients/Burst at Signal Port Test Setup



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8.10 Surge at Power Port Test Setup



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8.11 Voltage Dips and Interruptions Test Setup



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8.12 Conducted Immunity at Power Port (150kHz-230MHz) Test Setup



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8.13 Conducted Immunity at Signal Port (150kHz-230MHz) Test Setup

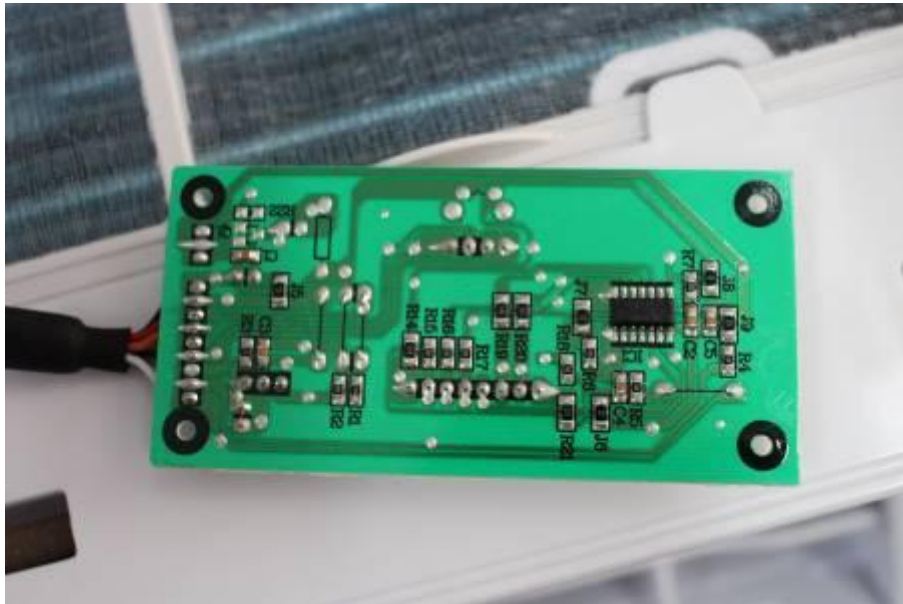


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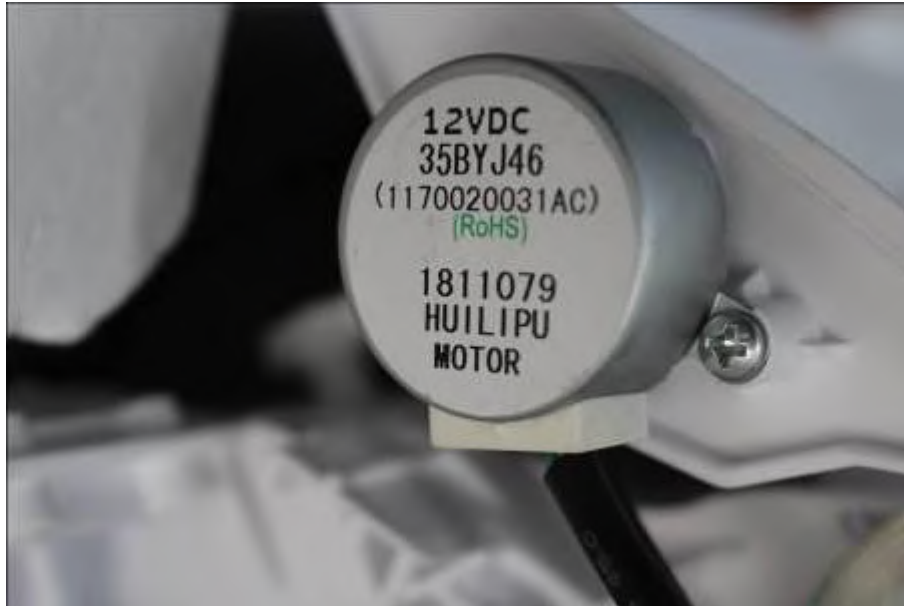


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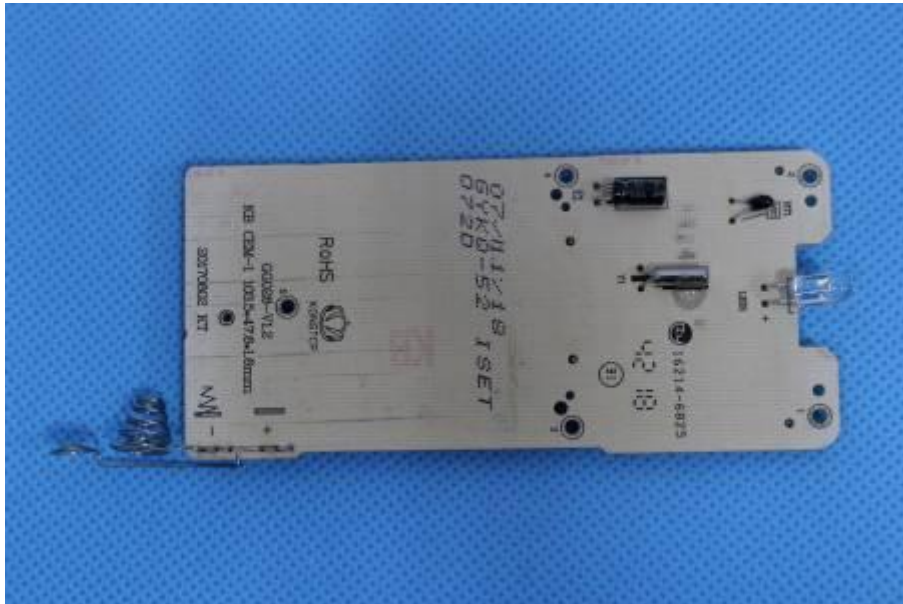
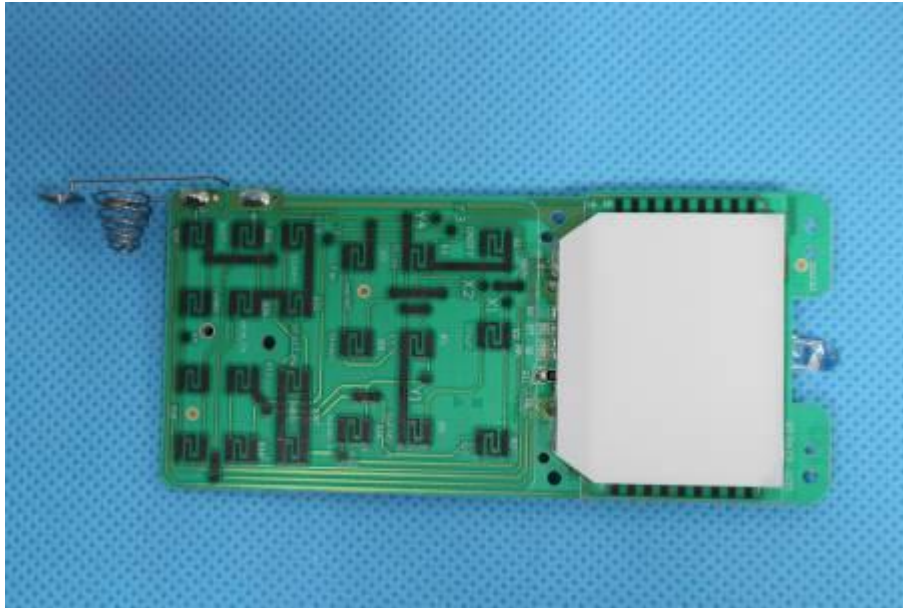
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--End of Report--



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