




Prüfbericht-Nr.: <i>Test Report No.:</i>	50239500 003	Auftrags-Nr.: <i>Order No.:</i>	244229939	Seite 1 von 27 <i>Page 1 of 27</i>	
Kunden-Referenz-Nr.: <i>Client Reference No.:</i>	2166347	Auftragsdatum: <i>Order date.:</i>	14.04.2020		
Auftraggeber: <i>Client:</i>	Iris Ohyama Europe B.V Gesworenhoeckseweg 1, 5047 TM, Tilburg, Netherlands				
Prüfgegenstand: <i>Test item:</i>	Circulator				
Bezeichnung / Typ-Nr.: <i>Identification / Type No.:</i>	STF-DC15T	STF-DC18T			
Auftrags-Inhalt: <i>Order content:</i>	EMC test				
Prüfgrundlage: <i>Test specification:</i>	EN 55014-1:2017	EN 55014-2:2015			
	EN IEC 61000-3-2:2019	EN 61000-3-3:2013+A1			
Wareneingangsdatum: <i>Date of receipt:</i>	15.04.2020				
Prüfmuster-Nr.: <i>Test sample No.:</i>	A002807739 - 002				
Prüfzeitraum: <i>Testing period:</i>	Refer to test report				
Ort der Prüfung: <i>Place of testing:</i>	EMC laboratory				
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland (Shanghai) Co., Ltd.				
Prüfergebnis*: <i>Test result*:</i>	Pass				
geprüft von / tested by:		kontrolliert von / reviewed by:			
					
07.07.2020	Jim Dai/Senior project engineer	07.07.2020	Hexiong Liu/Department manager		
Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>	Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>
Sonstiges / Other:					
<p>The above model STF-DC15T was already EMC tested as described in the reports 50239500 001-002. Compared with the reports, the standard EN 55014-1:2006+A1+A2 is removed and two standards above have been updated. In electrical characteristics, the above model STF-DC18T is different from the model STF-DC15T. Therefore, the EMC tests were performed on the model STF-DC18T.</p>					
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>		Prüfmuster vollständig und unbeschädigt Test item complete and undamaged			
* Legende:	1 = sehr gut P(ass) = entspricht o.g. Prüfgrundlage(n)	2 = gut 3 = befriedigend F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	4 = ausreichend N/A = nicht anwendbar	5 = mangelhaft N/T = nicht getestet	
Legend:	1 = very good P(ass) = passed a.m. test specifications(s)	2 = good 3 = satisfactory F(ail) = failed a.m. test specifications(s)	4 = sufficient N/A = not applicable	5 = poor N/T = not tested	
<p>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.</p> <p><i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i></p>					

VD4

TEST SUMMARY

4.1.1 HARMONICS ON AC MAINS

Result:

Passed

4.1.2 VOLTAGE CHANGES, VOLTAGE FLUCTUATIONS AND FLICKER ON AC MAINS

Result:

Passed

4.1.3 MAINS TERMINAL CONTINUOUS DISTURBANCE VOLTAGE

Result:

Passed

4.1.4 DISCONTINUOUS INTERFERENCE ON AC MAINS

Result:

N/A

4.2.1 DISTURBANCE POWER

Result:

Passed

4.2.2 RADIATED EMISSION

Result:

Passed

5.1.1 ELECTROSTATIC DISCHARGE

Result:

Passed

5.1.2 RADIO FREQUENCY ELECTROMAGNETIC FIELD

Result:

Passed

5.2.1 FAST TRANSIENTS

Result:

Passed

5.2.2 INJECTED CURRENT

Result:

Passed

5.2.3 SURGES TO AC POWER PORT

Result:

Passed

5.2.4 VOLTAGE DIPS TO AC POWER PORT

Result:

Passed

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1 Test Sites

1.1 Test Facilities

Laboratory: TÜV Rheinland (Shanghai) Co., Ltd.

Address: No.177, 178, Lane 777 West Guangzhong Road, Jing'an District, Shanghai, China

The used test equipment is in accordance with CISPR 16-1 series standards for measurement of radio interference.

Refer to Clause 7 for test and measurement instruments.

3 Test Set-up and Operation Modes

3.1 Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible emission level. The test conditions were adapted accordingly in reference to the instructions for use.

Refer to the related paragraph of this report.

Immunity: The equipment under test (EUT) was configured to have its highest possible susceptibility against the tested phenomena. The test conditions were adapted accordingly in reference to the instructions for use.

Refer to the related paragraph of this report.

3.2 Physical Configuration for Testing

Refer to the related paragraph of this report.

3.3 Test Operation and Test Software

Refer to the related paragraph of this report. No software was used.

3.4 Special Accessories and Auxiliary Equipment

None.

3.5 Countermeasures to achieve EMC Compliance

No special measure is employed to achieve the requirement.

4 Test Results EMISSION

4.1 Emission in the Frequency Range up to 30 MHz

4.1.1 Harmonics on AC Mains

Result:	Passed
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Test procedure : EN IEC 61000-3-2:2019

According to Clause 7 of EN IEC 61000-3-2:2019, there is no limit specified for equipment with a rated power of 75W or less, other than lighting equipment. The rated power of the samples are less than 75W. Therefore, the sample is deemed to meet the requirements of EN IEC 61000-3-2:2019 without actual testing.

4.1.2 Voltage changes, voltage fluctuations and flicker on AC mains

Result:	Passed
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Test procedure : EN 61000-3-3:2013+A1

With the check of EUT's circuit diagram and specification (low rated power), it is unlikely to produce significant voltage fluctuations or flicker. According to clause 6.1 of EN 61000-3-3:2013+A1, the EUT is deemed to meet the requirements of EN 61000-3-3:2013+A1 without actual testing.

4.1.3 Mains Terminal Continuous Disturbance Voltage

Result:	Passed
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Date of testing : 17.04.2020
 Test procedure : EN 55014-1:2017 and CISPR 16-1 series standards
 Frequency range : 0.15 – 30 MHz
 Kind of test site : Shielded room
 Ambient condition : Temperature: 23.2 °C; Relative humidity: 52.7 %
 Expanded measurement uncertainty ($k=2$) : 3.39 dB

Test Setup

Input voltage : AC 230 V; 50 Hz
 Artificial hand : N/A
 Operational mode : On
 Earthing : No earthing. (Class II equipment)

The measurement setup was made according to EN 55014-1:2017 clause 5.2 in a shielded room. The measurement equipment like test receivers and Artificial Mains Network (AMN) are in compliance with CISPR 16-1 series standards.

Prior to the measurements the test object operated with enough time (warm-up) in order to stabilize its operating conditions and to ensure reliable measurement values. Furthermore an internal calibration with the test receiver was conducted prior to each measurement.

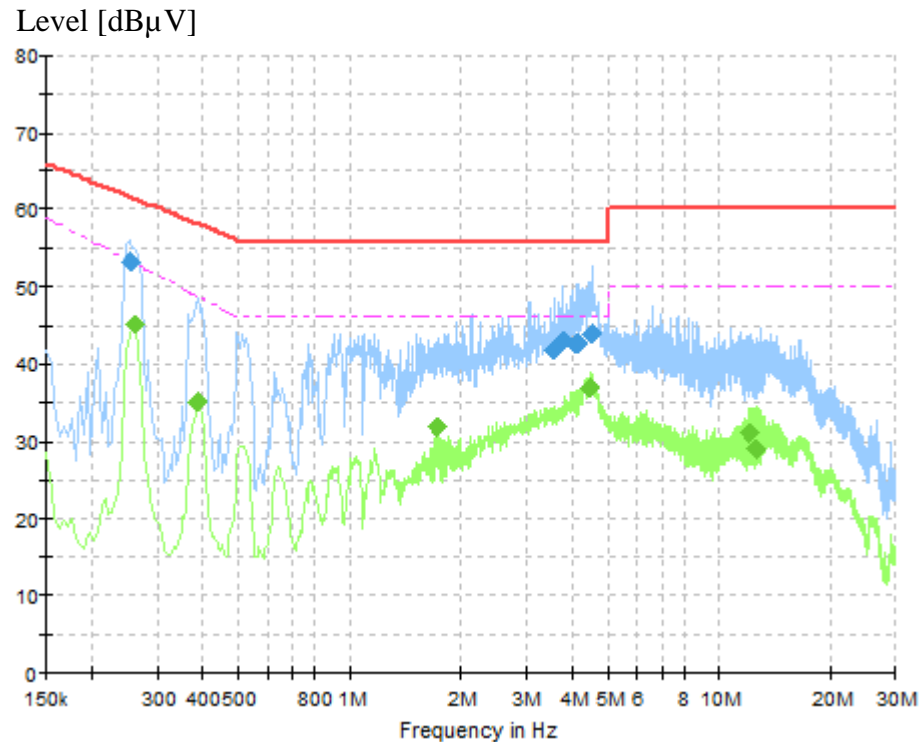
The tested object was set-up on a wooden table. The EUT was set 0.8 m away from the AMN. The cord longer than necessary to be connected to the AMN was folded forth and back parallel so as to form a bundle with a length between 0.3 m and 0.4 m.

The Interference Voltage was determined according to clause 5.2 of EN 55014-1:2017 while measuring the line and neutral conductor by turns.

The following figures and tables were those measured by an automatic measuring system. Both Quasi-Peak and Average Value were measured. Before final measurement, a survey was made with EUT's input voltage adjusted to determine in which state the maximum disturbance was obtained. The final measurement was made in the state the maximum disturbance was obtained.

In the following figures, “♦” means Quasi-Peak Value and “♦” means Average Value which was measured in final measurement. The quasi-peak values were compared with the quasi-peak limits (red limit line) and the average values were compared with the average line (pink limit line) to determine whether the EUT fulfill this requirement.

Figure 1: Spectral diagrams, conducted emission, 150 kHz - 30 MHz, L



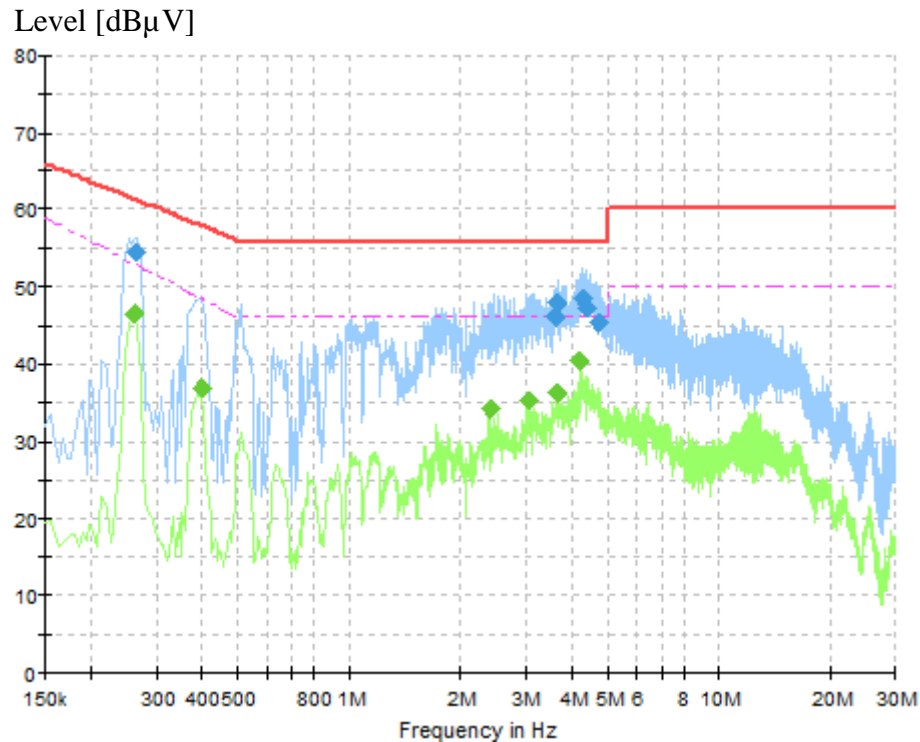
Final quasi-peak measurement results:

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.253500	53.34	61.64	8.31	1000.0	9.000	L1	10.4
3.588000	41.97	56.00	14.03	1000.0	9.000	L1	10.6
3.795000	43.15	56.00	12.85	1000.0	9.000	L1	10.6
4.087500	42.48	56.00	13.52	1000.0	9.000	L1	10.6
4.141500	42.76	56.00	13.24	1000.0	9.000	L1	10.6
4.519500	43.94	56.00	12.06	1000.0	9.000	L1	10.6

Final average measurement results:

Frequency (MHz)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.262500	45.10	52.96	7.86	1000.0	9.000	L1	10.4
0.384000	35.18	48.85	13.67	1000.0	9.000	L1	10.4
1.716000	31.75	46.00	14.25	1000.0	9.000	L1	10.5
4.465500	36.90	46.00	9.10	1000.0	9.000	L1	10.6
12.129000	31.17	50.00	18.83	1000.0	9.000	L1	11.0
12.642000	29.05	50.00	20.95	1000.0	9.000	L1	11.1

Figure 2: Spectral diagrams, conducted emission, 150 kHz - 30 MHz, N



Final quasi-peak measurement results:

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.267000	54.56	61.21	6.65	1000.0	9.000	N	10.4
3.601500	46.19	56.00	9.81	1000.0	9.000	N	10.6
3.669000	47.94	56.00	8.06	1000.0	9.000	N	10.6
4.263000	48.43	56.00	7.58	1000.0	9.000	N	10.6
4.402500	47.29	56.00	8.71	1000.0	9.000	N	10.6
4.722000	45.45	56.00	10.55	1000.0	9.000	N	10.6

Final average measurement results:

Frequency (MHz)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.262500	46.51	52.96	6.45	1000.0	9.000	N	10.4
0.397500	36.98	48.48	11.50	1000.0	9.000	N	10.4
2.404500	34.08	46.00	11.92	1000.0	9.000	N	10.5
3.070500	35.22	46.00	10.78	1000.0	9.000	N	10.6
3.669000	36.27	46.00	9.73	1000.0	9.000	N	10.6
4.177500	40.36	46.00	5.64	1000.0	9.000	N	10.6

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4.1.4 Discontinuous Interference on AC Mains

Result:

N/A

The EUT's discontinuous disturbance is mainly caused by switching for mains connection or disconnection. Therefore, according to EN 55014-1:2017 clause 5.4.3.2, these kinds of discontinuous disturbance are exempted from the click definition and this test is not applicable to the EUT.

4.2 Emission in the Frequency Range above 30 MHz

4.2.1 Disturbance Power

Result:

Passed

Date of testing : 23.04.2020
 Port : AC Mains
 Basic standard : EN 55014-1:2017
 Frequency range : 30 – 300 MHz
 Limit : EN 55014-1:2017, Table 7 and Table 8
 Ambient condition : Temperature: 23.2 °C; Relative humidity: 52.7 %
 Expanded measurement : 4.32 dB
 uncertainty ($k=2$)

Test Setup

Input voltage : AC 230 V; 50 Hz
 Operational mode : On
 Earthing : No earthing. (as class II equipment)

Measuring configuration and description

The measurement setup was made according to EN 55014-1:2017 clause 5.3.3.

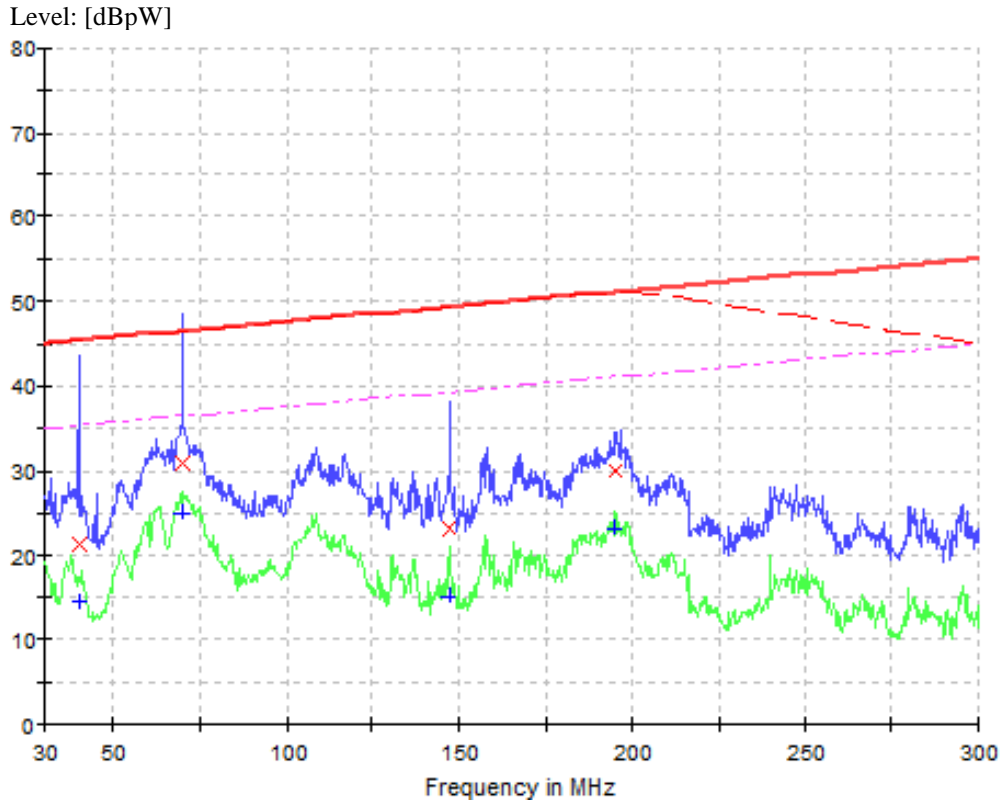
The measurement equipment like test receivers and absorption clamp are in compliance with CISPR 16-1 series standards. Prior to the measurements the test objects operated with enough time (warm-up) in order to stabilize their operating conditions and to ensure reliable measurement values. Furthermore an internal calibration with the test receiver was conducted prior to each measurement.

The disturbance power was determined according to clause 5.3.3 of EN 55014-1:2017. The length of power cord of EUT plus that of the extension cord was 6.0 m. The absorption clamp was moved along the extended lead to find the maximum disturbance.

The measurement was performed by operating the EUT in normal operation mode. Both Quasi-Peak and Average Value were measured. Before final measurement, a survey was made with EUT's input voltage adjusted to determine in which state the maximum disturbance was obtained. The final measurement was made in the state the maximum disturbance was obtained.

In the following figures, “ \times ” means Quasi-Peak Value and “+” means Average Value which was measured in final measurement. The quasi-peak values were compared with the quasi-peak limits (red limit line) and the average values were compared with the average line (pink limit line) to determine whether the EUT fulfill this requirement.

Figure 3: Spectral diagrams, disturbance power, AC mains, 30 – 300 MHz



Final quasi-peak measurement results:

Frequency (MHz)	QuasiPeak (dBpW)	Meas. Time (ms)	Bandwidth (kHz)	Corr. (dB)	Margin - QPK (dB)	Limit - QPK (dBpW)
39.990000	21.4	1000.0	120.000	8.0	24.0	45.4
69.960000	30.8	1000.0	120.000	8.8	15.7	46.5
147.180000	23.2	1000.0	120.000	5.7	26.1	49.3
195.240000	29.9	1000.0	120.000	4.8	21.2	51.1

Final average measurement results:

Frequency (MHz)	CAverage (dBpW)	Meas. Time (ms)	Bandwidth (kHz)	Corr. (dB)	Margin - CAV (dB)	Limit - CAV (dBpW)
39.990000	14.6	1000.0	120.000	8.0	20.8	35.4
69.960000	25.0	1000.0	120.000	8.8	11.5	36.5
147.180000	15.2	1000.0	120.000	5.7	24.1	39.3
195.240000	23.1	1000.0	120.000	4.8	18.1	41.1

4.2.2 Radiated emission

Result:

Passed

Test procedure : EN 55014-1:2017 and CISPR 16-2-3
Test port : Enclosure
Frequency range : 300 – 1000 MHz

According to a) of EN 55014-1:2017 clause 4.3.4.2:

“The EUT shall be also deemed to comply with the requirement of this standard in the frequency range from 300 MHz to 1 000 MHz without further testing if both conditions 1) and 2) below are fulfilled:

- 1) the disturbance power emission from the EUT is lower than the limits of Table 7 and Table 8;
- 2) the maximum clock frequency is less than 30 MHz”

The EUT is deemed to meet the requirements without actual testing, as the EUT fulfilled the two conditions from test results of clause 4.2.1 and the circuit diagram.

5 Test Results I M M U N I T Y

During the immunity tests, the EUT was operated under conditions specified by clause 3.1 of this report.

Performance 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.

Performance 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 to persist after the test. 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.

Performance criterion C: Temporary loss of function is allowed, provided the function is selfrecoverable or can be restored by the operation of the controls, or by any operation specified in the instructions for use.

Date of testing: 24.04.2020

Room temperature: 21.0 – 21.3 °C
Relative Humidity: 58.6 % - 59.9 %

According to the electrical characteristics and EN 55014-2:2015, the EUT belongs to category IV equipment.

5.1 Enclosure

5.1.1 Electrostatic Discharge

Result:

Passed

The immunity against electrostatic discharge was tested in accordance with EN 55014-2:2015. Test setup and ESD-Generator are according to IEC 61000-4-2 which is specified by EN 55014-2:2015.

During the test, the EUT was placed on a 0.1 m high insulating support above the ground plane. The minimum distance between the EUT and all other conductive structures except the ground plane beneath the EUT is more than 0.5 m.

The reference ground plane is an aluminium sheet of 0.25 mm minimum thickness. The reference ground plane is connected to the protective earth. The size of the ground plane is 2 m x 2 m.

Vertical coupling plane (VCP) of dimensions 0.5 m x 0.5 m is placed parallel to and positioned at a distance of 0.1 m from the EUT.

Charge voltage : ± 4.0 kV (Contact Discharge), ± 8.0 kV (Air Discharge)
Polarity : Positive / negative
Number of discharges : 20 discharges (10 with positive and 10 with negative polarity) to each selected point
Type of equipment : Floor-standing
Atmospheric pressure : 101.2 kPa
Performance criteria : B

Table 1: ESD test results, positive / negative polarity

Position	Kind of Discharge	Result	Remarks
Enclosure(non-metal)	Air discharge ± 8 kV	Pass	During the test, the EUT worked as intended and no degradation of performance
Display lamp	Air discharge ± 8 kV	Pass	
Button	Air discharge ± 8 kV	Pass	
Power line	Air discharge ± 8 kV	Pass	
Remote controller	Air discharge ± 8 kV	Pass	
Coupling plane (VCP)	Contact discharge ± 4.0 kV	Pass	

5.1.2 Radio Frequency Electromagnetic Field

Result:

Passed

The immunity against radio-frequency electromagnetic fields in the frequency range between 80 MHz and 1000 MHz was tested in accordance to IEC 61000-4-3 which is specified by clause 5.1 in EN 55014-2:2015.

The test set-up, the RF signal generator, the power amplifier and the antennas were in accordance with IEC 61000-4-3. The test was performed in an anechoic chamber with a test distance of 2.2 m. The field uniformity of the anechoic chamber is regularly calibrated to meet 0-6dB field uniformity criterion as specified in IEC 61000-4-3.

Test level : 3 V/m
 Frequency range : 80-1000 MHz
 Modulation : 80 % AM, 1 kHz
 Frequency sweep speed : Frequency step: 1 %; Dwell time: 3 s
 Performance criteria : A

Table 2: Radiated susceptibility test results, field strength 3 V/m

Field polarization	Position	Observation	Remarks
Horizontal polarization	Front side	During the test, the EUT worked as intended and no degradation of performance	Pass
	Rear side		
	Left side		
	Right side		
Vertical polarization	Front side	During the test, the EUT worked as intended and no degradation of performance	Pass
	Rear side		
	Left side		
	Right side		

5.2 Power Ports, Signal and Control Ports

5.2.1 Fast Transients

Result:

Passed

The immunity against fast transients on AC power port was tested in accordance to EN 55014-2:2015. Test setup and the fast transient noise generator was according to IEC 61000-4-4 which is specified by EN 55014-2:2015.

The EUT is placed on 0.1 m wood support above the reference ground plane. And the minimum distance between the EUT and all other conductive structures except the ground plane beneath the EUT is more than 0.5 m.

The length between the coupling device and the EUT is less than 0.5 m. The excess length of the cable shall be folded to avoid a flat coil and situated at a distance of 0.1 m above the ground reference plane.

The reference ground plane is an aluminium sheet of 0.25 mm minimum thickness. The reference ground plane is connected to the protective earth. The size of the ground plane is 2 m x 2 m.

Test voltage : 1 kV
Polarity : negative/positive
Repetition frequency : 5 kHz
Test duration : ≥ 120 sec
Tr/Tn : 5 ns/50 ns
Performance criteria : B

Table 3: Fast transients test results, positive / negative polarity

Tested ports or lines	Result	Remarks
AC power input port	± 1 kV, Pass	During the test, the EUT worked as intended and no degradation of performance

5.2.2 Injected Current

Result:

Passed

The immunity against injected current into AC power port was tested according to EN 55014-2:2015 in a shielded room. Test setup and the test generator were according to IEC 61000-4-6 which is specified by EN 55014-2:2015.

The EUT is placed on a ground reference plane and shall be insulated from it by an insulating support 0.1 m thick. And the minimum distance between the EUT and all other conductive structures except the ground plane beneath the EUT is more than 0.5 m.

The EUT comprised a single unit. The coupling and decoupling networks were inserted on the power supply connection. The coupling and decoupling networks was placed on the ground reference plane, making direct contact with it at about 0.1-0.3 meter from EUT. The cable between EUT and CDN is as short as possible and not bundled nor wrapped. The height of cable between the EUT and the coupling and decoupling networks above the ground reference plane was 50 mm.

Voltage level : 3 V (rms) (unmodulated)
 Environmental phenomena : r.f. current, common mode, 1 kHz, 80 % AM
 Source impedance : 150 Ω
 Frequency range : 0.15 – 80 MHz
 Frequency step : 1 %
 Dwell time : 3 s
 Performance criteria : A

Table 4: Injected current test results

Tested ports or lines	Result	Remarks
AC power input port	Pass	During the test, the EUT worked as intended and no degradation of performance

5.2.3 Surges to AC Power Port

Result:

Passed

The immunity against surges to AC power port was tested in accordance to EN 55014-2:2015. Test setup and the Combination Wave Generator (CWG) was according to IEC 61000-4-5 which is specified by EN 55014-2:2015.

The EUT is placed on 0.1 m wood table above the ground plane.

Open-circuit test voltage : 1 kV (Line to line)
 T_v/T_n : 1.2/50 μ s (open-circuit voltage)
 8/20 μ s (short-circuit current)
 Test numbers : 5 positive and 5 negative pulses
 Repetition rate : 1 surge/min
 Coupling phase : 90° (positive pulses)
 270° (negative pulses)
 Performance criteria : B

Table 5: Surges to AC input power port, positive / negative polarity

Tested ports or lines	Result	Remarks
Phase to neutral 1kV	± 1 kV Pass	During the test, the EUT worked as intended and no degradation of performance

5.2.4 Voltage dips to AC Power Port

Result:

Passed

The immunity against voltage dips to AC power port was tested in accordance to EN 55014-2:2015. Test setup and the test generator are according to IEC 61000-4-11 which is specified by EN 55014-2:2015.

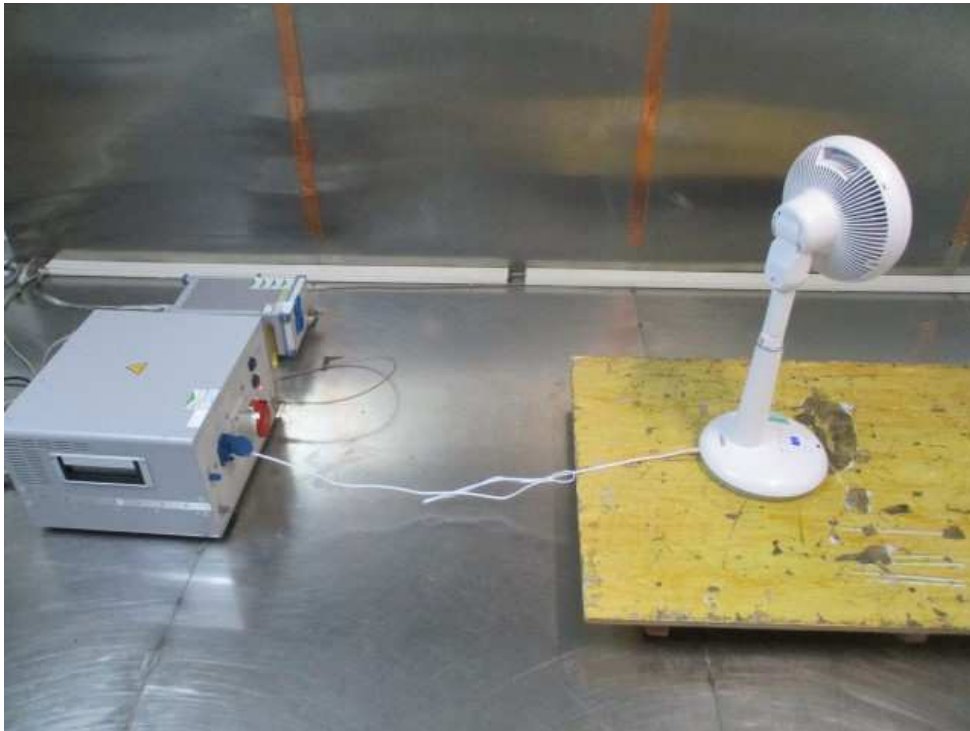
Performance criteria : C
 Test level (in % U_T) and : 0 0.5 cycle
 duration (in periods of the : 40 10 cycles
 rated frequency) : 70 25 cycles

Table 6: Test condition and test result for voltage dips

Test level (in % U_T)	Duration	Performance criteria	Result	Remarks
0	0.5 cycle (10 ms)	C	Pass	During the test, the EUT worked as intended and no degradation of performance
40	10 cycles (200 ms)	C	Pass	During the test, the EUT worked as intended and no degradation of performance
70	25 cycles (500 ms)	C	Pass	During the test, the EUT worked as intended and no degradation of performance

6 Photographs of the Test Set-Up

Photograph 1: Set-up for measurement of disturbance voltage



Photograph 2: Set-up for measurement of disturbance power



Photograph 3: Set-up for immunity test of electrostatic discharge



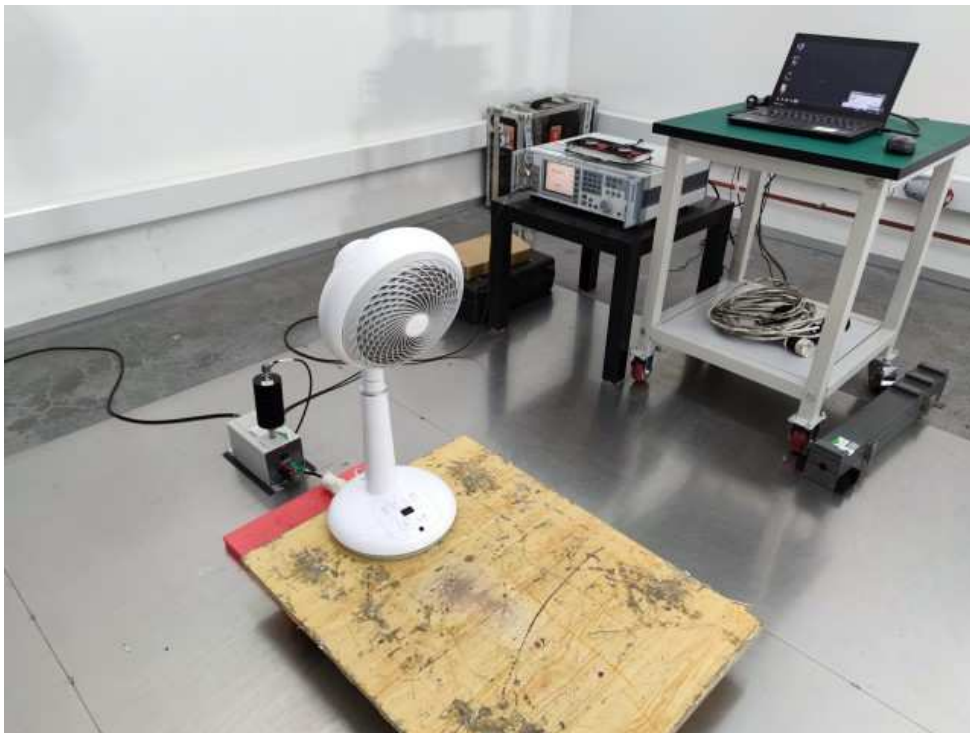
Photograph 4: Set-up for immunity test of radio frequency electromagnetic field



Photograph 5: Set-up for immunity test of fast transients and surge



Photograph 6: Set-up for immunity test of injected current



Photograph 7: Set-up for immunity test of voltage dips



7 List of Test and Measurement Instruments

Description	Model	Manufacturer	Last Date DD.MM.YYYY	Due Date DD.MM.YYYY
EMI test receiver	ESCI	Rohde&Schwarz	06.03.2020	06.03.2021
Artificial mains network	ENV432	Rohde&Schwarz	01.11.2019	01.11.2020
Absorbing clamp	MDS-21	Rohde&Schwarz	23.05.2019	23.05.2020
ESD generator	NSG 437	Teseq	15.08.2019	15.08.2020
Barometer	DYM3	Ningbo Jiangshan Glass	04.04.2018	04.04.2021
EMC test system	NSG 3040	Teseq	01.11.2019	01.11.2020
Coupling/decoupling network	CDN M016	Schaffner	09.02.2018	09.02.2021
Conducted immunity test system	NSG 4070B-75	Teseq	17.09.2019	17.09.2020
3-phase voltage dips simulator	CSS-20P3	Shanghai Skylark	30.10.2019	30.10.2020
EMC measurement software	EMC32 (Ver 10.20.01)	Rohde&Schwarz	NA*	NA*

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End of test report