Technical Construction File

Tcf No: Applicant:	CE-YA26063002-AL-EMC Yinboshi (Guangdong) Acoustic Technology Co., Ltd.
Address:	No. 14, Yihuan Road, Mashe Village, Lishui Town, Nanhai District, Foshan City, Guangdong Province, China
Manufacturer:	Yinboshi (Guangdong) Acoustic Technology Co., Ltd.
Address:	No. 14, Yihuan Road, Mashe Village, Lishui Town, Nanhai District, Foshan City, Guangdong Province, China
Product:	Soundproof Pod
Model:	S:985mm×990mm×2300mm M:1600mm×1440mm×2300mm
Test standard:	EN IEC 61326-1:2021 EN IEC 61000-3-2:2019/A2:2024 EN 61000-3-3:2013/A2:2021
Conclusion:	The products meet the above standards.
Edit Date:	2026-06-30
Issue date:	2026-06-30

ASSESSMENT REPORT

TCF

Reference No. .....: No: CE-YA26063002-AL-EMC

Tested by(+ signature).....: Project Engineer/Melody Melody

Reviewed by(+ signature).....: Manager/Tracy Tracy

Date of issue .....: 2026-06-30

Client

Name .....: Yinboshi (Guangdong) Acoustic Technology Co., Ltd.

Address .....: No. 14, Yihuan Road, Mashe Village, Lishui Town, Nanhai District,

Foshan City, Guangdong Province, China

Test specification

Standard .....: EN IEC 61326-1:2021, EN IEC 61000-3-2:2019/A2:2024

EN 61000-3-3:2013/A2:2021

Test procedure .....: CE-EMC

Non-standard test method .....: N.A.

Test item description:

Manufacturer.....:Yinboshi (Guangdong) Acoustic Technology Co., Ltd.

Factory.....:Yinboshi (Guangdong) Acoustic Technology Co., Ltd.

Trademark .....: Refer to the nameplate

Model/Type reference .....: Refer to page 1

Rating(s) .....: refer to the nameplate.

General product information: The product is Soundproof Pod

Test Result: PASS.

The product meets the all the test requirements. The details are listed in the following documents.

Test Conditions

Environmental Conditions

The climatic conditions during the tests are within the limits specified by the manufacturer for the operation of the EUT and the test equipment. The climatic conditions during the tests were within the following limits:		
Temperature	**Humidity**	**Atmospheric pressure**
15 °C – 35 °C	30 % - 60 %	860 hPa – 1060 hPa
If explicitly required in the basic standard or applied product standard the climatic values are recorded and documented separately in this test report.		

Performance Criteria

Clause 5		
Criteria	**During test**	**After test**
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 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 reasonable expect from the apparatus if used as intended.	
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 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 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 reasonable expect from the apparatus if used as intended.	
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 instruction for use.	

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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 instruction for use.	

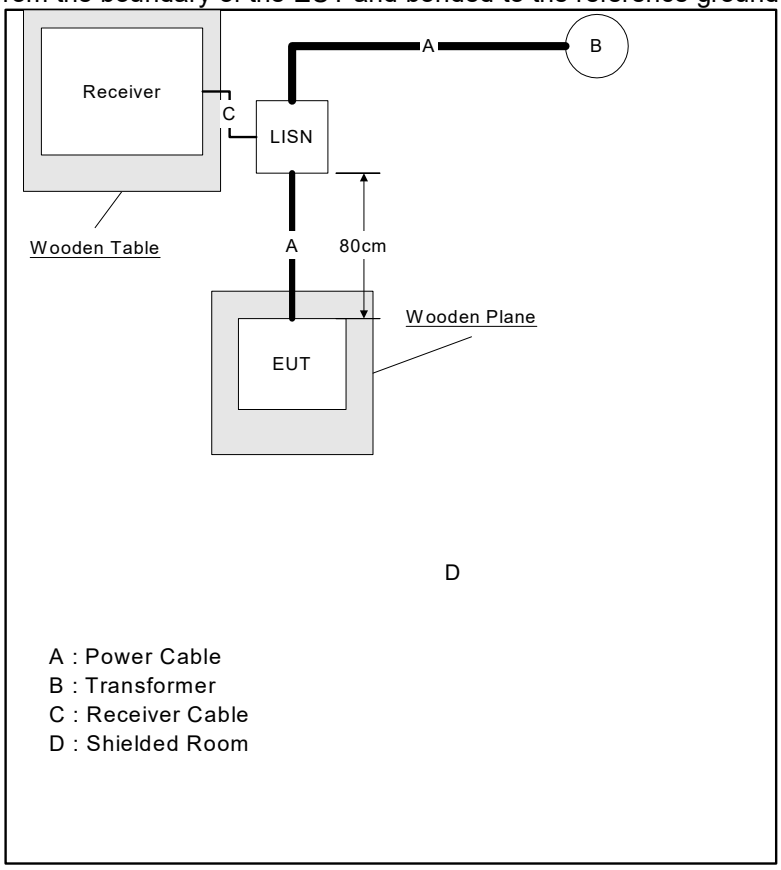
Test Details

Conducted Disturbance

Test Method

The EUT was placed on a 0.8 m non-conductive table for table-top equipment and on a 0.12 m insulated support for floor standing equipment above a ground reference plane all within a test laboratory.

All power was connected to the EUT through an Artificial Mains Network (AMN). Conducted disturbance voltage measurements on mains lines were made at the output of the AMN. The AMN was placed 0.8m from the boundary of the EUT and bonded to the reference ground



plane.

Specification Limits

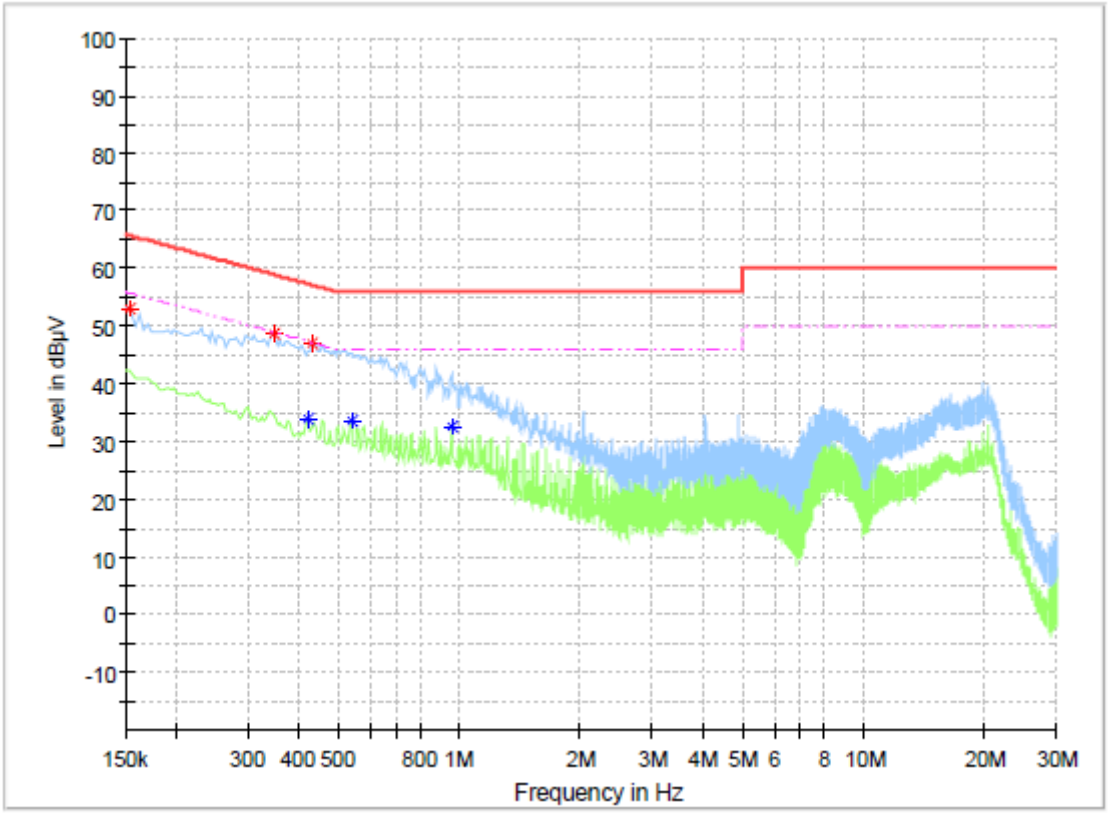
Disturbance voltage limits for class B equipment for AC power input port		
Frequency range	AC mains port dB(μV)	
MHz	Quasi-peak	Average
0.15 to 0.5	66 decreasing linearly with logarithm of frequency to 56	56 decreasing linearly with logarithm of frequency to 46
0.5 to 5	56	46
5 to 30	60	50

Test Location

This test was carried out in shielded room.

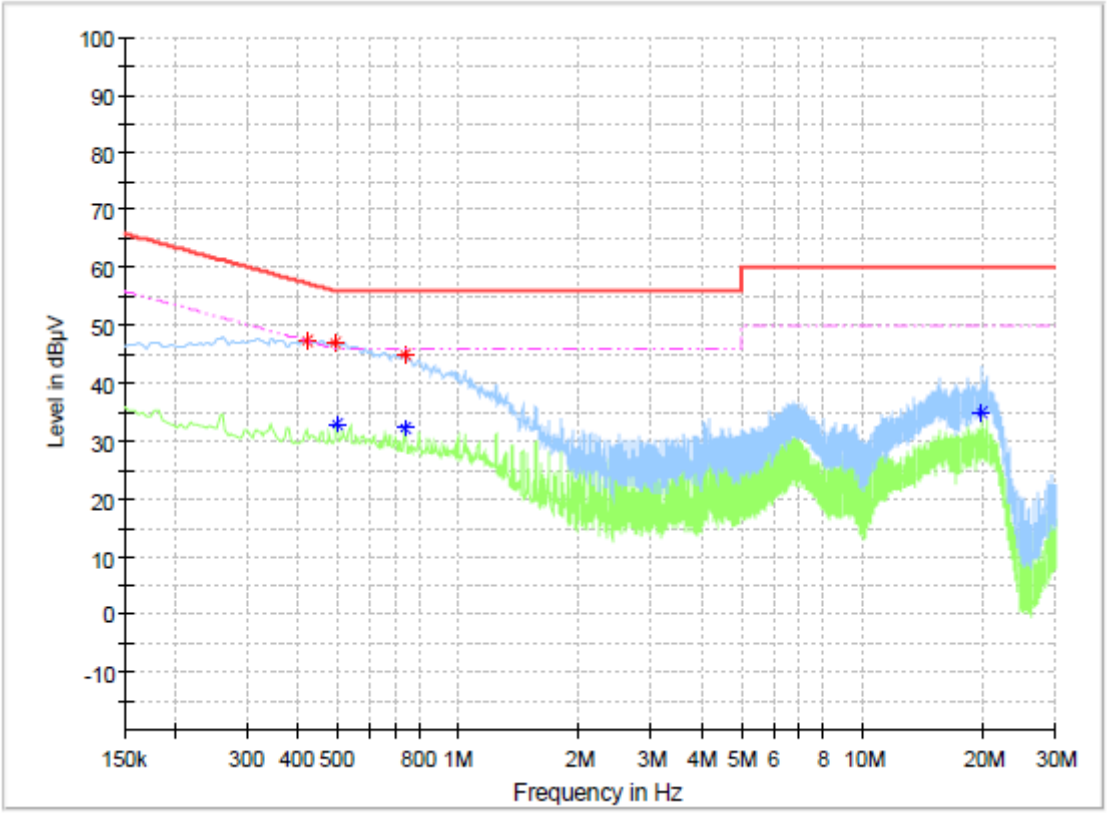
Test Results

Remark : L1



No significant emission was detected within 6 dB to limit.

Remark : N



No significant emission was detected within 6 dB to limit.

Radiated Disturbance

Test Method

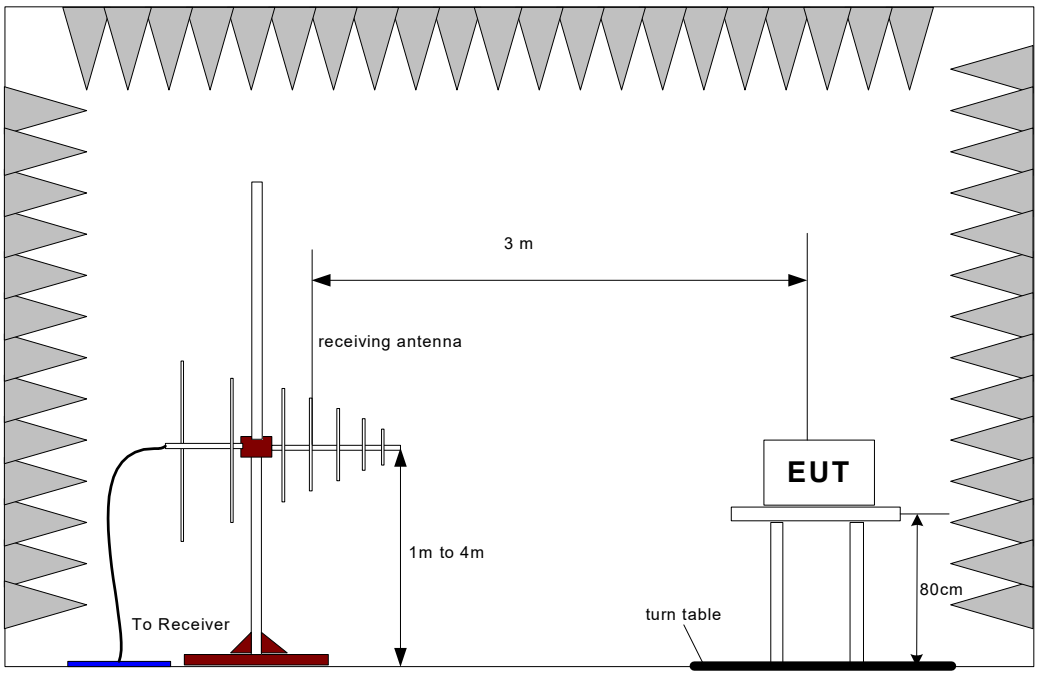
The EUT was set up in a semi-anechoic chamber on a remotely controlled turntable and placed on a non-conductive. Guidance on how to arrange the EUT during the measurements can be found in 5.3.4.3.

Table-top EUT shall be placed at (0,8 ± 0,05) m above the reference plane of the test site
selected for measurement.

Floor standing EUT shall be placed at (0,12 ± 0,04) m above the reference plane of the test
site selected for measurement.

Where the EUT comprises multiple parts, these shall be arranged to minimise, as far as it is
reasonably practical, the test volume. A minimum distance of 0,1 m shall be maintained
between these parts.

A prescan of the EUT emissions profile was made while varying the antenna-to-EUT azimuth and antenna-to-EUT polarization using a peak detector; measurements were taken at a 3m or 10m distance. Using the prescan list of the highest emissions detected, their bearing and associated antenna polarization, the EUT was then formally measured using a Quasi-Peak detector. The readings were maximized by adjusting the antenna height, polarization and turntable azimuth, in accordance with the specification.



Specification Limits

Radiated disturbance limits in the frequency range 30MHz to 1000MHz at a measuring distance of 3 m	
Frequency range MHz	Quasi-peak limits dB(μV/m)
30 to 230	40
230 to 1000	47

Radiated disturbance limits in the frequency range 30MHz to 1000MHz at a measuring distance of 10 m	
Frequency range MHz	Quasi-peak limits dB(μV/m)
30 to 230	30
230 to 1000	37

Radiated disturbance limits in the frequency range 1000MHz to 6000MHz at a measuring distance of 3 m		
Frequency range MHz	Quasi-peak limits dB(μV/m)	Average
1000 to 3000	70	50
3000 to 6000	74	54

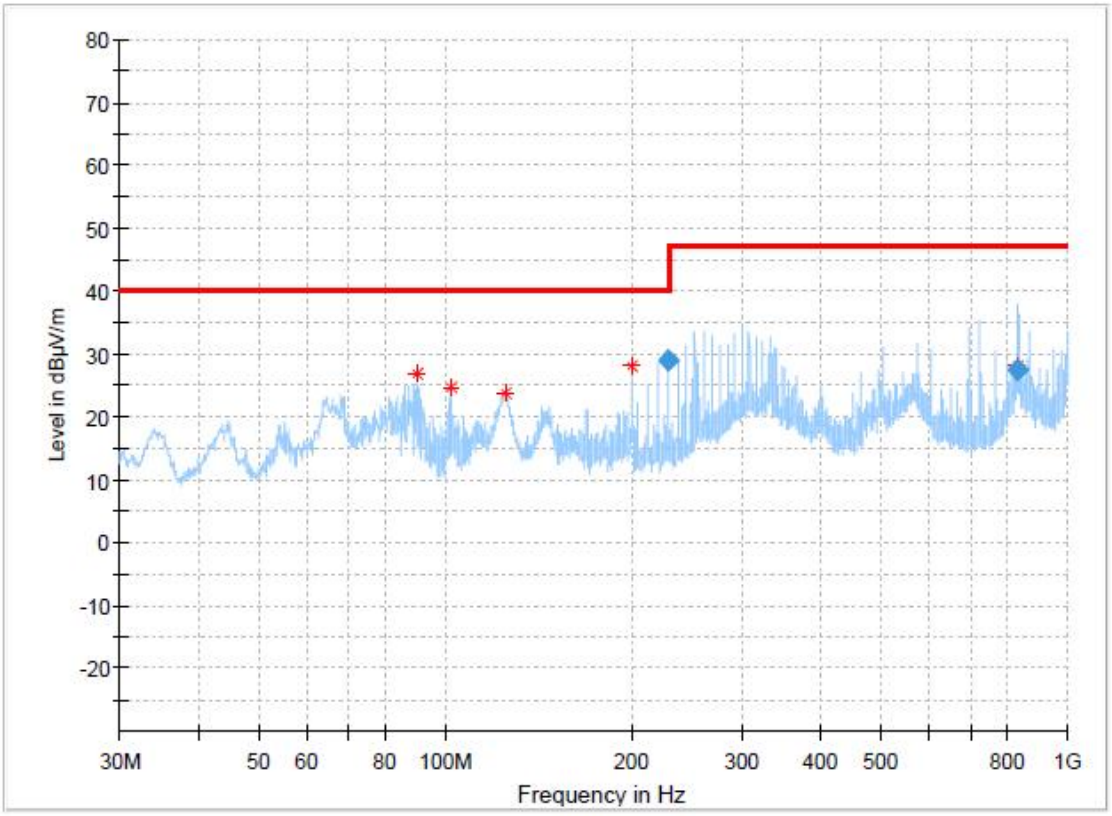
Remark：
Level=Reading Level + Correction Factor
Correction Factor=Antenna Factor + Cable Loss
(The Reading Level is recorded by software which is not shown in the sheet)

Test Location

This test was carried out in 3m SAC Test Location.

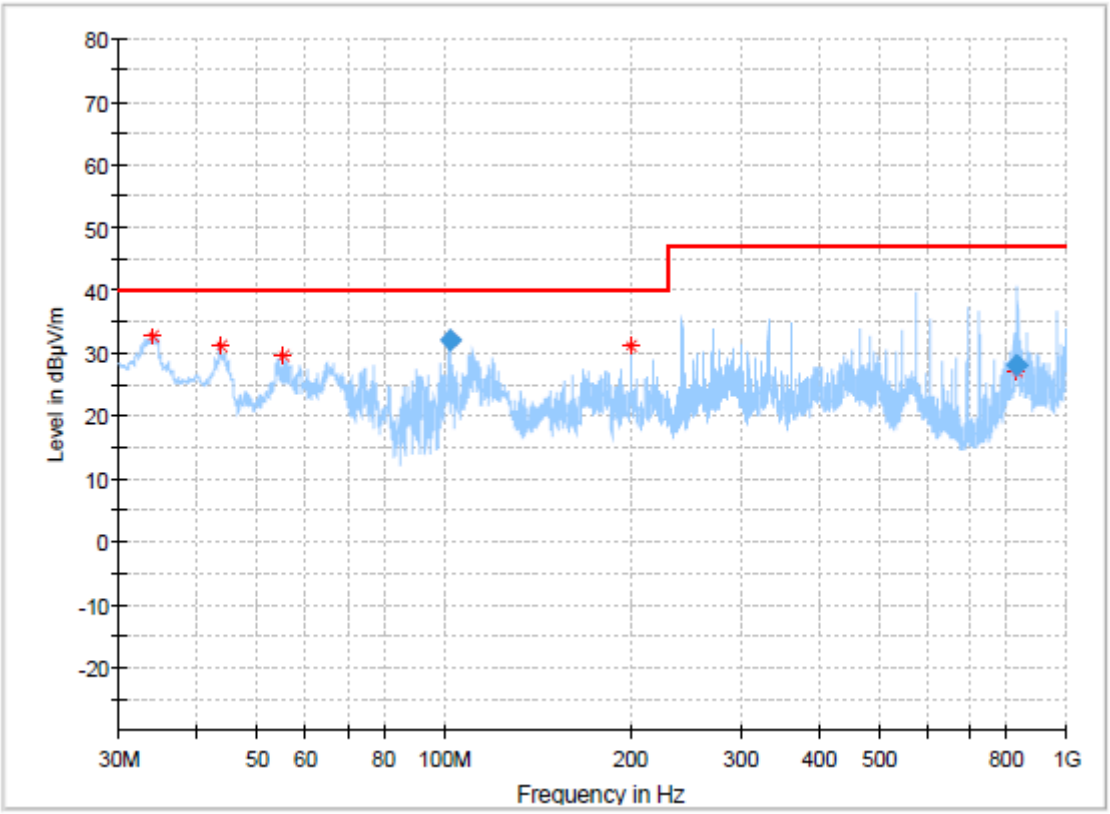
Test Results

Polarity : Horizontal



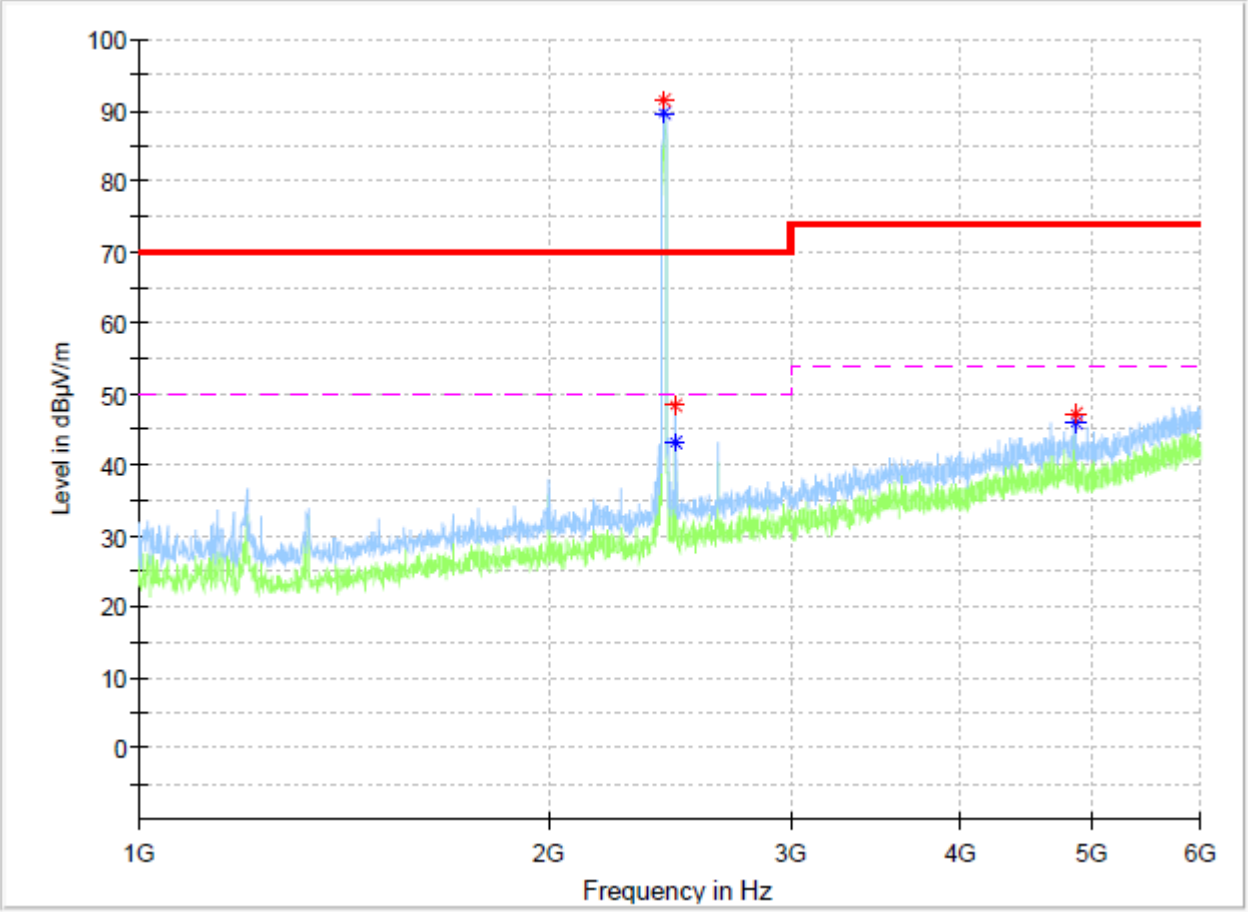
No significant emission was detected within 6 dB to limit.

Polarity : Vertical



No significant emission was detected within 6 dB to limit.

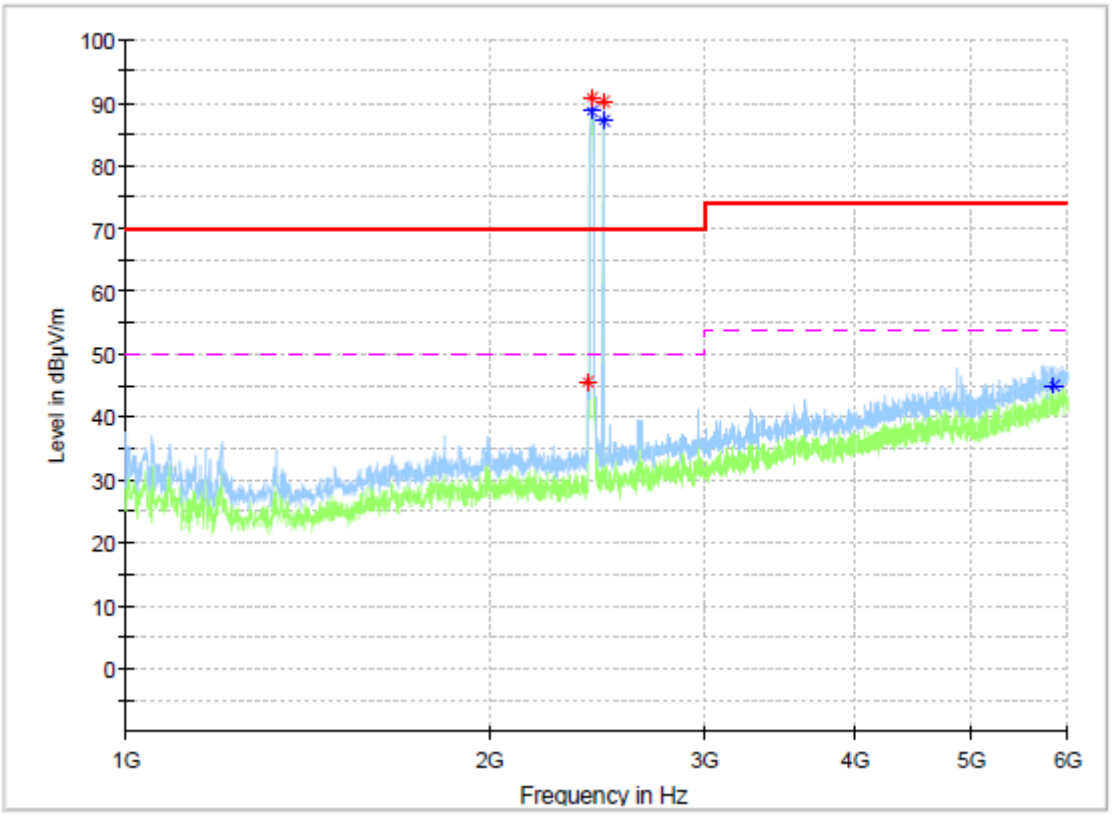
Polarity : Horizontal



No significant emission was detected within 6 dB to limit

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol
2430.000000	---	89.48	50.00	-39.48	H
2430.000000	91.44	---	70.00	-21.44	H
2477.500000	48.46	---	70.00	21.54	H
2477.500000	---	43.11	50.00	6.89	H

Polarity : Vertical



No significant emission was detected within 6 dB to limit

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol
2407.500000	45.64	---	70.00	24.36	V
2426.250000	90.65	---	70.00	-20.65	V
2426.250000	---	88.68	50.00	-38.68	V
2480.000000	90.24	---	70.00	-20.24	V
2480.000000	---	87.14	50.00	-37.14	V

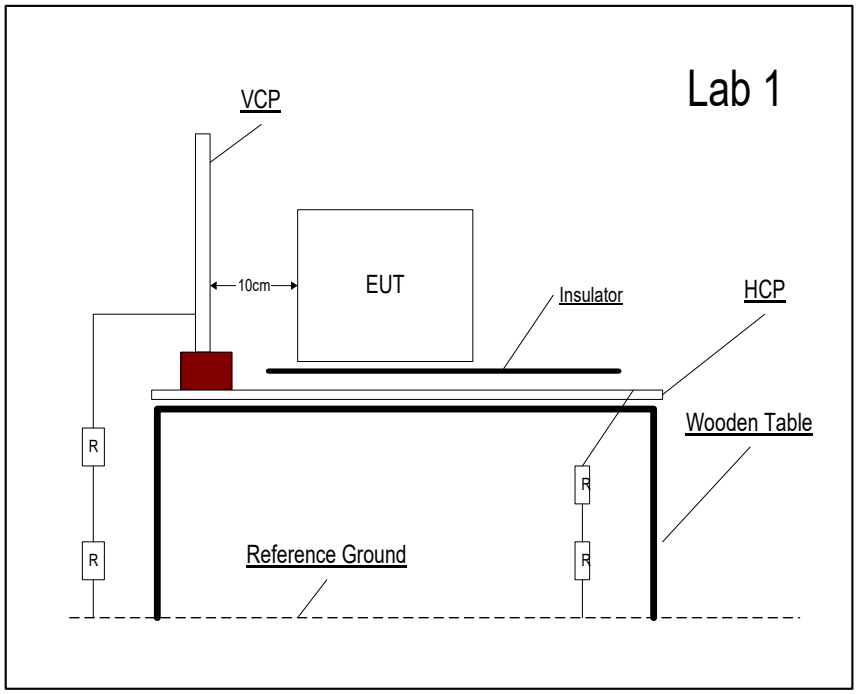
Electrostatic discharge immunity test

Test Method

The equipment under test including associated cabling was configured on but insulated from, using a 0.5mm isolator, a horizontal coupling plane fitted to the top of a 0.8m non-conductive table for table-top equipment; and on a 0.1m insulated support for floor standing equipment; above a ground reference plane all within a test laboratory.

Using the air discharge method for non-metallic parts, contact discharge method for metallic parts with both vertical and horizontal couple plane discharge methods for the sides of the equipment under test, the required electrostatic discharge voltage levels in both voltage polarities were applied at the detailed pulse repartition rate.

During this testing any anomalies in the equipment under tests performance was recorded.



Specification Limits

Required Test Levels				Performance Criteria
Discharge type	Discharge Level (kV)		Number of discharges per location (each polarity)	
	Positive	Negative		
Air – Direct	8	8	10	B
Contact – Direct	4	4	10	B
Contact – Indirect	4	4	10	B

Test Results

Performance assessment of the EUT made during this test: Pass

Detailed results are shown below.

Test Point	Discharge	Results: Met Performance Criteria									
		2kV		4kV		6kV		8kV		15kV	
		+	-	+	-	+	-	+	-	+	-
HCP	Contact	N/A	N/A	A	A	A	A	N/A	N/A	N/A	N/A
VCP	Contact	N/A	N/A	A	A	A	A	N/A	N/A	N/A	N/A
Each conductive location touchable by hand	Contact	N/A	N/A	A	A	A	A	N/A	N/A	N/A	N/A
Each nonconductive location touchable by hand	Air	N/A	N/A	N/A	N/A	N/A	N/A	A	A	N/A	N/A
N/A	Not Appliance										

Remark: No observable change.

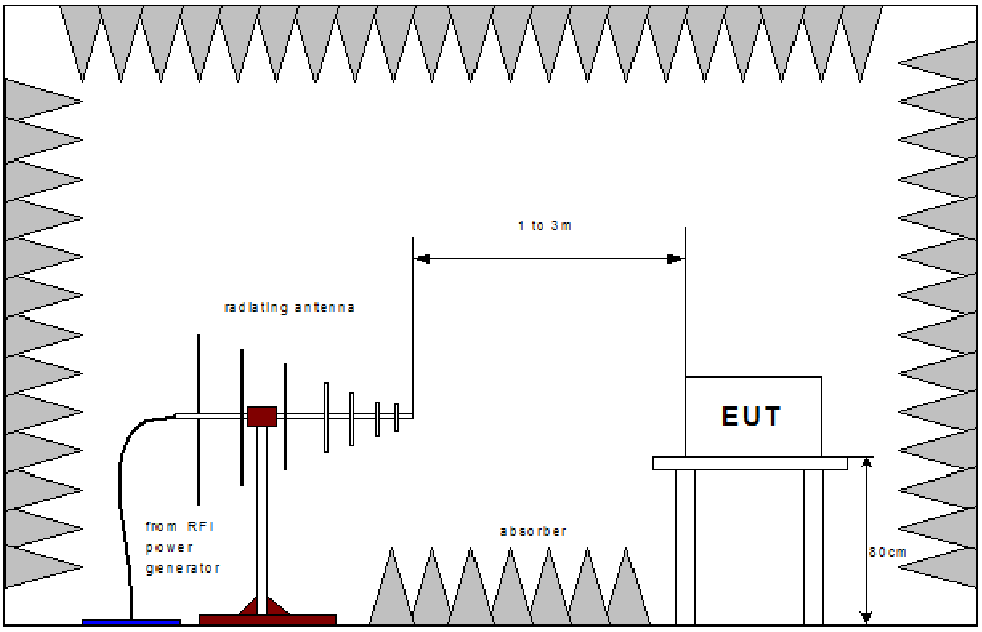
Radiated, radio-frequency, electromagnetic field immunity test

Test Method

The equipment under test including associated cabling was configured, on a 0.8 m non-conductive table for table-top equipment and on a 0.12 m insulated support for floor standing equipment; with a pre-calibrated semi anechoic chamber.

All four side of the equipment under test were subjected to the required RF field strength, modulated as described, swept over the frequency range of test with the antenna positioned in both horizontal and vertical polarizations.

During this testing any anomalies in the equipment under tests performance was recorded.



Specification Limits

Required Test Levels					Performance Criteria
Frequency Range (MHz)	Level (V/m)	Modulation	Step Size (%)	Dwell (s)	
80 to 6000	3	AM (80 %,1 kHz, sine wave)	1	1	A
Note 1. EUT powered at one of the Nominal input voltages and frequencies					

Test Results

Performance assessment of the EUT made during this test: Pass

Detailed results are shown below.

Tabulated Results for RF Electromagnetic Field 80 - 2700 MHz					
Side of the equipment under test	Antenna polarization	Test Level	Dwell Time	Measuring distance	Results
Front, Left, Right, Back sides	Horizontal	3 V/m 80 to 6000MHz	1 s	3 m	A
Front, Left, Right, Back sides	Vertical	3 V/m 80 to 6000MHz	1 s	3 m	A

Remark: No observable change

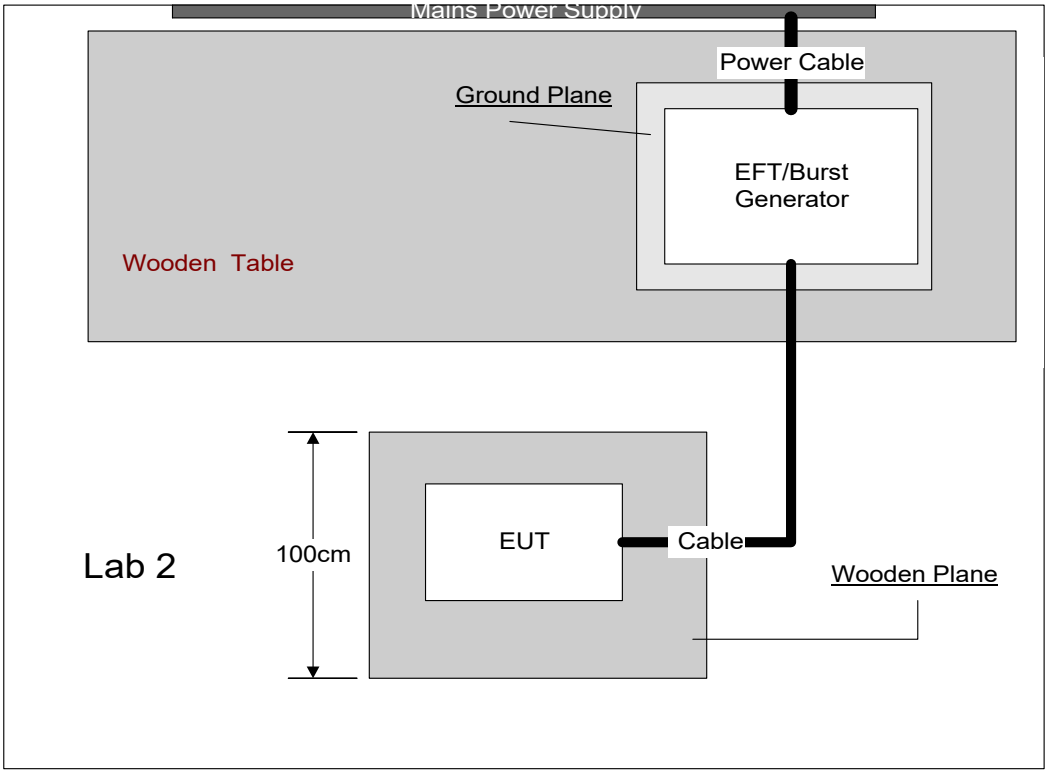
Electrical fast transient /burst immunity test

Test Method

The equipment under test including associated cabling was configured on but insulated from, using a 0.1 m isolator, a horizontal coupling plane fitted to the top of a 0.8 m non-conductive table for table-top equipment; and on a 0.1 m insulated support for floor standing equipment; above a ground reference plane all within a test laboratory.

Using a CDN for power ports, capacitive coupling clamp for signal and control ports and a 33nF coupling capacitor for earth ports, the required fast transient burst voltage levels in both voltage polarities were applied at the detailed pulse repartition rate and duration of test.

During this testing any anomalies in the equipment under tests performance was recorded.



Specification Limits

Required Test Levels Input and output a.c. power ports					
Line Under Test	Level (kV)	Repetition Rate (kHz)	Test Duration	Coupling Method	Performance Criteria
Input and output a.c. power ports	± 2.0	5 kHz	2 min per polarity	Direct	B
For extra low voltage a.c. ports and output a.c. ports, this testing is only applicable to ports interfacing with cables whose total length may exceed 3 m according to the manufacturer's functional specification.					

Required Test Levels ports for network and signal/control lines					
Line Under Test	Level (kV)	Repetition Rate (kHz)	Test Duration	Coupling Method	Performance Criteria
Signal and control lines	± 1.0	5 kHz	2 min per polarity	Clamp	B
Applicable only to ports interfacing with cables whose total length can exceed 3m according to the manufacturer's function specification.					

Test Results

Performance assessment of the EUT made during this test: Pass

Detailed results are shown below.

Tabulated Results for Fast Transient Burst Immunity					
Line under test	Test Level (kV)	Repetition Rate	Test Duration	Coupling Method	Result
Input a.c. power ports	± 2.0 kV	5 kHz	2 min	Direct	A

Remark: During the test of the network port, the signal interrupts. After the test, it can automatically return to normal status.

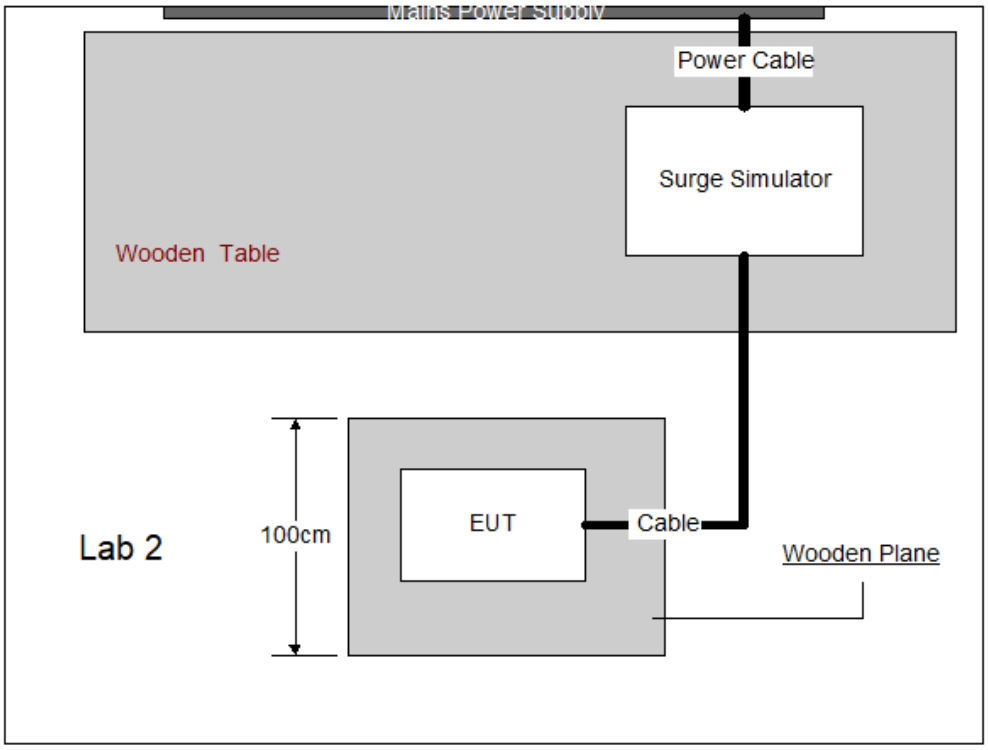
Surge immunity test

Test Method

The equipment under test including associated cabling was configured, on a 0.8 m non-conductive table for table-top equipment and on a 0.1 m insulated support for floor standing equipment above a ground reference plane all within a test laboratory.

Using CDNs for power ports and appropriate coupling methods for applicable signal and control ports, the required number of surges was applied for each surge voltage level using both positive and negative surge voltage polarities. Surges were applied at the power line frequency phase angles and repartition rates detailed.

During this testing any anomalies in the equipment under tests performance was recorded.



Specification Limits

Required Test Levels a.c.Input and CPT ports			Performance Criteria
Line Under Test	Characteristics	Test Levels	
line to line with line to earth with	Wave-shape data 2Ω impedance 12Ω impedance	1.2/50 μs ± 1.0 kV ±2.0 kV	B
Note in addition to the specified test level, all lower levels as detailed in IEC 61000-4-5 should also be satisfied. For CPT ports: Applicable only to ports interfacing with cables whose total length according to the manufacturer's functional specification is greater than 30 m.			

Required Test Levels Ports for network and signal/control lines			Performance Criteria
Line Under Test	Characteristics	Test Levels	
line to earth with	Wave-shape data 42Ω impedance	1.2/50 μs ± 1.0 kV	B
Applicable only to ports interfacing with long distance lines(>30m). Where the normal functioning cannot be achieved because of the impact of the coupling/decoupling network (CDN) on the EUT, the test shall be done with the reduced functionality. A rationale shall be given in the test report for doing so. After the test and the removal of the CDN, the normal function shall not be affected.			

Test Location

This test was carried out in EMS Test Location.

Test Results

Performance assessment of the EUT made during this test: Pass

Detailed results are shown below.

Tabulated Results for Surge Immunity (a.c.Power Ports)							
Line Name	Coupling	Level	Polarity	Phase Angle	No of Pulses	Repetition Rate	Result
Power line	Live to Neutral	1.0/2.0 kV	NEGATIVE	0, 90, 180,270	5	60 sec	A
Power line	Live to Neutral	1.0/2.0 kV	POSITIVE	0, 90, 180,270	5	60 sec	A
Power line	Live to Earth	2.0/4.0 kV	NEGATIVE	0, 90, 180,270	5	60 sec	A
Power line	Live to Earth	2.0/4.0 kV	POSITIVE	0, 90, 180,270	5	60 sec	A
Power line	Neutral to Earth	2.0/4.0 kV	NEGATIVE	0, 90, 180,270	5	60 sec	A
Power line	Neutral to Earth	2.0/4.0 kV	POSITIVE	0, 90, 180,270	5	60 sec	A

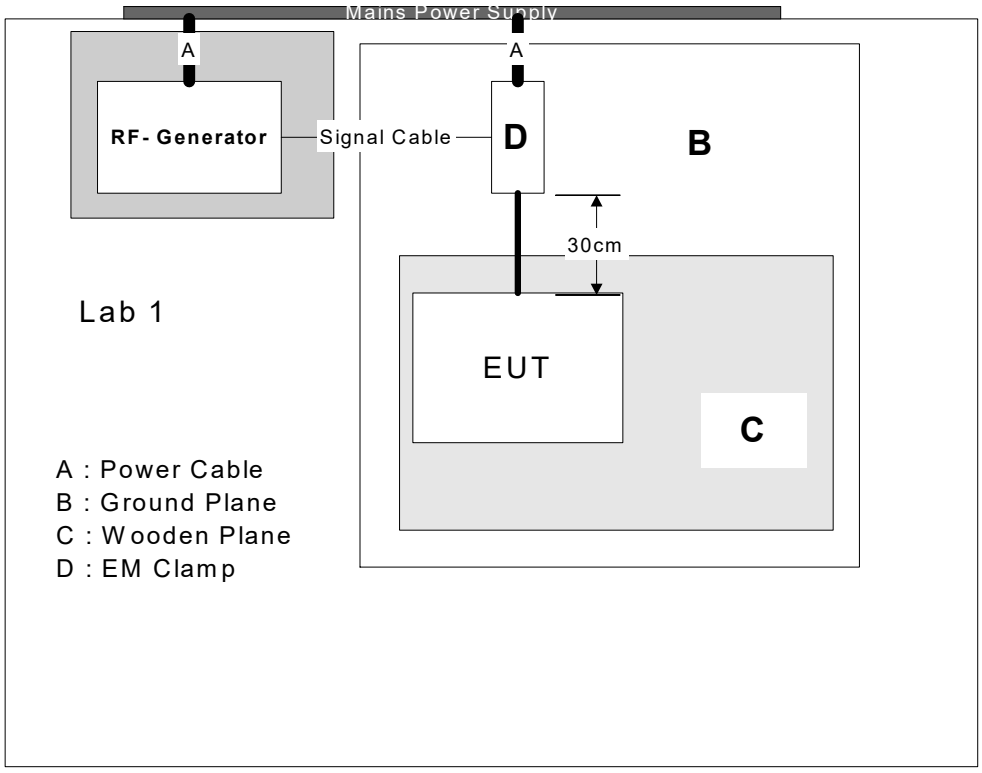
Immunity to conducted disturbances, induced by radio-frequency fields

Test Method

The equipment under test was configured, on but insulated from, using a 0.1 m isolator, a horizontal coupling plane fitted to the top of a 0.1 m non-conductive table for table-top equipment, above a ground reference plane all within a test laboratory.

All associated cabling was configured, on but insulated from, using a 50 mm isolator, the same horizontal coupling plane as the equipment under test.

Using CDNs, EM Clamps or current clamps as appropriate, the power ports and applicable signal and control ports were subjected to the required, pre calibrated RF injected signal strength, modulated as described, swept over the frequency range of test.
During this testing any anomalies in the equipment under tests performance was recorded.



Specification Limits

Required Test Levels Input and output a.c. power ports						
Line Under Test	Frequency Range (MHz)	Level (V)	Modulation	Step Size (%)	Dwell (s)	Performance Criteria
Input and output a.c. power ports	0.15 to 80	3	AM (80 %,1 kHz, sine wave)	1	1	A
For extra low voltage a.c ports and output a.c. ports, this testing is only applicable to ports interfacing with cables whose total length may exceed 3 m according to the manufacturer's functional specification.						

Required Test Levels Ports for network and signal/control lines						
Line Under Test	Frequency Range (MHz)	Level (V)	Modulation	Step Size (%)	Dwell (s)	Performance Criteria
Signal and control port	0.15 to 80	3	AM (80 %,1 kHz, sine wave)	1	1	A
Applicable only to ports interfacing with cables whose total length may exceed 3m according to the manufacturer’s function specification.						

Test Results

Performance assessment of the EUT made during this test: Pass

Detailed results are shown below.

Tabulated Results for Injected current, a.c. power ports						
Line and sensitive frequency under test	Test Level	Step	Dwell Time	Coupling Method	Modulation	Result
Power line	3V	1%	1s	CDN	1kHz, 80%	A

Remark: No observable change.

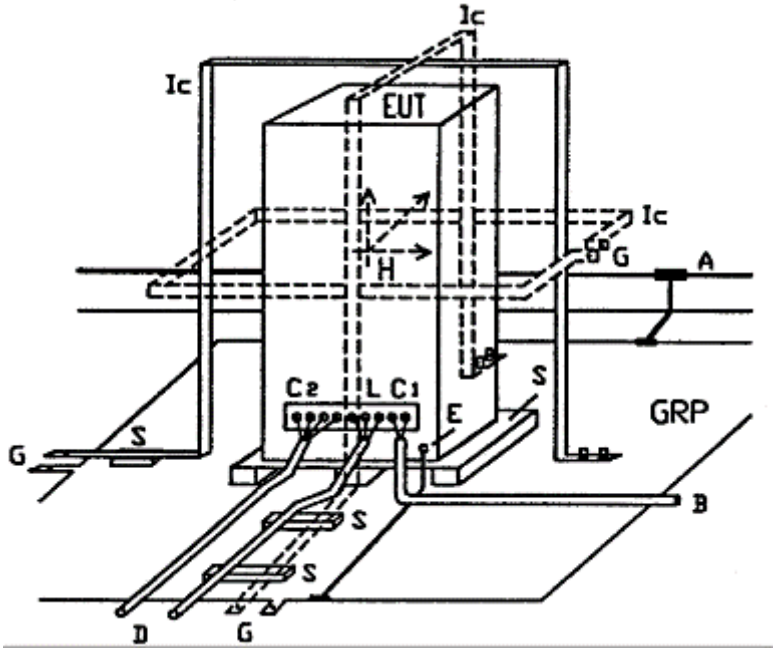
Power-frequency magnetic field immunity test

Test Method

The equipment under test including associated cabling was configured on a non-conductive support at the volumetric center of the immunity coils. A pre calibrated input level was then applied to magnetic immunity coils at the detailed frequency and level for the required test period.

The EUT was retested with the magnetic field applied in all 3 orthogonal planes of the EUT.

During this testing any anomalies in the equipment under tests performance was recorded.



Specification Limits

Required Test Levels			Performance Criteria
Application	Level (A/m)	Duration	
Continuous Field	30(for systems ≤32A)	dependent on EUT operating cycle	A
Supplementary information: Note 1. EUT powered at one of the Nominal input voltages and frequencies			

Test Results

Performance assessment of the EUT made during this test: Pass

Detailed results are shown below.

Tabulated Results for Power Frequency Magnetic Immunity

Tabulated Results for Power Frequency Magnetic Immunity					
Orientation	Operating Frequency	Test Frequency	Test Level	Duration	Result
X axis	50 Hz	50 Hz	30A/m	3 min	A
Y axis	50 Hz	50 Hz	30A/m	3 min	A
Z axis	50 Hz	50 Hz	30A/m	3 min	A
X axis	60 Hz	60 Hz	30A/m	3 min	A
Y axis	50 Hz	50 Hz	30A/m	3 min	A
Z axis	60 Hz	60 Hz	30A/m	3 min	A

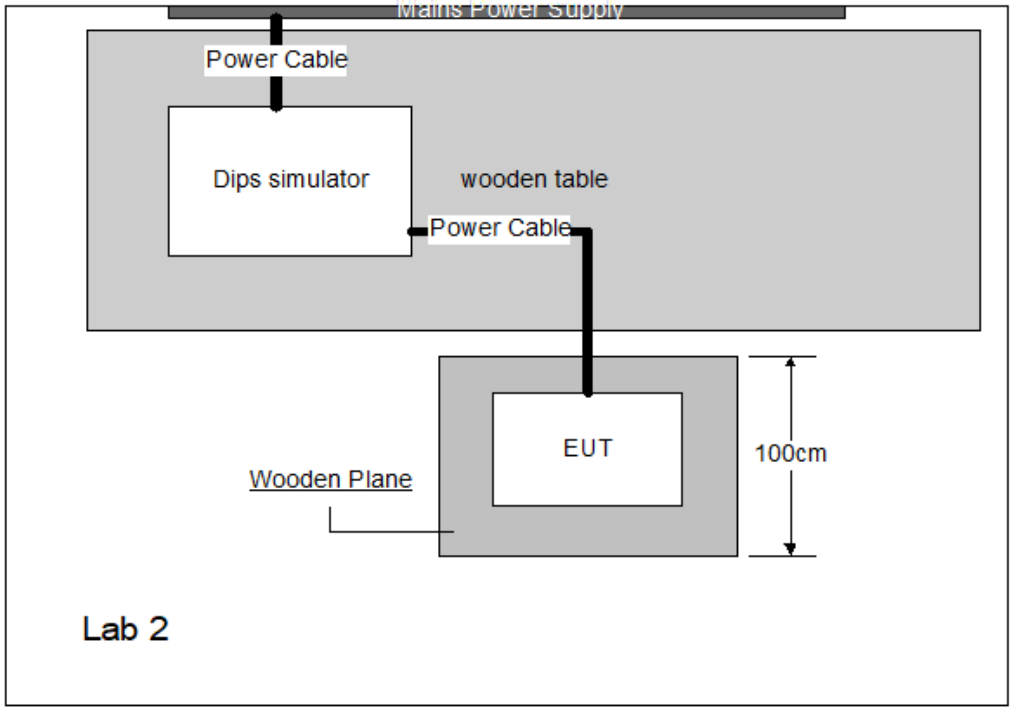
Remark: No observable change.

Voltage dips, short interruptions and voltage variations immunity tests

Test Method

The equipment under test including associated cabling was configured, on a 0.8 m non-conductive table for table-top equipment and on a 0.1 m insulated support for floor standing equipment above a ground reference plane all within a test laboratory.

Using a programmable power supply the equipment under test was subjected to the detailed supply voltage dips and interruptions. The required supply phase synchronization and test repetition rate, detailed, was controlled by the programmable power supply.
During this testing any anomalies in the equipment under tests performance was recorded.



Specification Limits

Voltage Dips and short interruptions				
Voltage Dips in % UT	Test level in % UT	Duration		Performance Criteria
		50Hz	60Hz	
100	0	1 cycle	1 cycle	B
60	40	10 cycles	12 cycles	B
30	70	25 cycles	30 cycles	B
100	0	250 cycles	300 cycles	C
UT is the rated voltage of the Equipment Under Test				

Test Results

Performance assessment of the EUT made during this test: Pass

Detailed results are shown below.

Tabulated Results for Voltage Dip and Short Interruption					
Line under test	Vnom	Operating Frequency	Test Level	Duration	Result
Power line	230 V~	50 Hz	0% of Vnom	1 cycle	A
Power line	230 V~	50 Hz	40% of Vnom	10 cycles	A
Power line	230 V~	50 Hz	70% of Vnom	25 cycles	A
Power line	230 V~	50 Hz	0% of Vnom	250 cycles	B

Remark: During 25/30 cycles interruption test, the EUT stopped working. After the test, it can automatically return to normal status.

Test Equipment Information

General Test Equipment Used

Conducted Emission Test

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.
Receiver (9K-3GHz)	Rohde & Schwarz	ESCI	100727
LISN	Rohde & Schwarz	ENV216	3506.6550.05
LISN	SCHWARZBECK	NSLK8163	05018
LISN	SCHWARZBECK	NNLK-8140	00136
LISN	SCHWARZBECK	NNLK-8140	00137
LISN	SCHWARZBECK	NNLK-8140	00138
LISN	SCHWARZBECK	NNLK-8140	00139
ISN	Rohde & Schwarz	ENY81	100389
ISN	Rohde & Schwarz	ENY81-CA6	101887
RF Switch Box	Compliance Direction Systems Inc.	RSU-M314-N	08042801

Radiated Emission Test（SAC-3 area)

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.
EMI Test Receiver	Rohde & Schwarz	ESR 26	101702
Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9162	00341
Horn Antenna	Schwarzbeck	BBHA 9120D	02152
Loop Antenna	Schwarzbeck	FMZB 1519	1519-013
Pre-amplifier	Rohde & Schwarz	SCU08F1	101016
Pre-amplifier	Rohde & Schwarz	SCU 18	100759
3m Semi-anechoic chamber	TDK	SAC-3	----

Harmonic Test / Flicker Test

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.
3-phase analyzer for Harmonics and Flicker	EMTEST	DPA 503N	P2003237205
Multifunctional threephase voltage source	EMTEST	NetWave 67.3-400	P2009239095
3-phase Flicker impedance	EMTEST	AIF 503N63.1	P2009239213

Electrostatic Discharge Test(ESD area)

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.
ESD Generator	EMTEST	ESD NX30	23124

Radiated Immunity Test (SAC-3 area)

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.
Signal Generator	Rohde & Schwarz	SMB100B	101903
Power Amplifier	Rohde & Schwarz	BBA150-BC 500	104061
Power Amplifier	Rohde & Schwarz	BBA150-D1 10E100	104048
Microwave Log-Periodic Antenna	Schwarzbeck	STLP9129 SET	3074
Average Power Sensor	Rohde & Schwarz	NRP6AN	101424
Average Power Sensor	Rohde & Schwarz	NRP6AN	101425

3m FAC Chamber	TDK	CAC-3	--

Electrical Fast Transients Test(EMS area)

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.
Compact Simulator	EMTEST	UCS 500N7.7	P1949235471
3-phase coupling/decoupling network	EMTEST	CNI 503B9.4	P1740204286
Capacitive Coupling Clamp	EMTEST	CCI	P2009239178

Surges Test(EMS area)

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.
Compact Simulator	EMTEST	UCS 500N7.7	P1949235471
3-phase coupling/decoupling network	EMTEST	CNI 503B9.4	P1740204286
Telecom Surge Module	EMTEST	Tsurge 7	P1908227146
Coupling/decoupling network for signal/datalinescoupling/decoupling network	EMTEST	CNV 504 N1	P1949235473
coupling/decoupling network for unshielded symmetrical lines	EMTEST	CNV 508T5	P2004237741
Railway coupler	EMTEST	PCN 7-R s-1	P2012240055

Conducted Immunity Test(EMS area)

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.
Compact immunity test systemr	TESEQ	NSG 4070C-110	56172
6dB Attenuator	TESEQ	ATN 6150	20011501
Coupling/ Decoupling Network	EM TEST	CDN M016S	56466
Coupling/ Decoupling Network	EMTEST	CDN M5-100-750 VS	54984
Current injection probe	EMTEST	CIP 9136A	56220
EM Clamp	TESE Q	KEMA 801A	56676

Variation of power frequency Test (EMS area)

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.
Multifunctional threephase voltage source	EMTEST	NetWave 67.3-400	P2009239095
3-phase Flicker impedance	EMTEST	AIF 503N63.1	P2009239213

Power-frequency magnetic field Test(EMS area)

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.
Multifunctional threephase voltage source	EMTEST	NetWave 67.3-400	P2009239095
Helmholtz Coils	Schwarzbeck	HHS 5215-100	HHS 5215-100 #111

Measurement Uncertainty

For a 95% confidence level, the measurement uncertainties for defined systems are:

System Measurement Uncertainty	
Test Items	Extended Uncertainty
Uncertainty for Conducted Emission in shielding room 150kHz-30MHz (for test using AMN ENV216 or ENV4200 or NSLK8163)	±3.22dB
Uncertainty for Radiated Emission in 3m chamber 30MHz-1000MHz	Horizontal: ±5.13dB; Vertical: ±5.20dB;
Uncertainty for Radiated Emission in 3m chamber 1000MHz-18000MHz	Horizontal: ±5.02dB; Vertical: ±5.02dB;
Uncertainty for Harmonic test	3.16%
Uncertainty for Flicker test	4.69%
Uncertainty for RS test	49%, K=2
Uncertainty for CS test	28%(CDN); 45%(EM Clamp) K=2
Uncertainty for ESD test	The immunity measurement system uncertainty is within standard requirement and is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95%.
Uncertainty for EFT test	
Uncertainty for Surges test	
Uncertainty for PMF test	
Uncertainty for Voltage Dips, Voltage Variations and Short Interruptions Test	

Remark:

Measurement Uncertainty Decision Rule

Determination of conformity with the specification limits is based on the decision rule according to IEC Guide 115: 2007, clause 4.4.3 and 4.5.1.

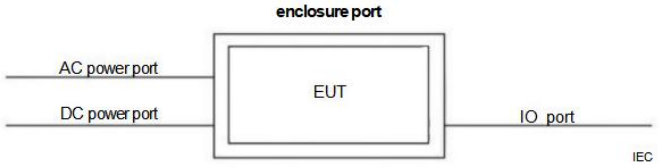
EN IEC 61326-1-2021			
Clause	Requirement-Test	Result-Remark	Verdict
1	**Scope**		
	This part of IEC 61326 specifies requirements for immunity and emissions regarding electro- magnetic compatibility (EMC)for electrical equipment,operating from a supply or battery of less than 1000 V AC or 1500 V DC or from the circuit being measured.Equipment intended for professional,industrial-process,industrial-manufacturing and educational use is covered by this part.It includes equipment and computing devices for		**P**

EN IEC 61326-1-2021			
Clause	Requirement-Test	Result-Remark	Verdict
	- measurement and test; - control; - LABORATORY use; - accessories intended for use with the above (such as sample handling equipment), intended to be used in industrial and non-industrial locations.		P
	Computing devices and assemblies and similar equipment within the scope of information technology equipment (ITE)and complying with applicable ITE EMC standards can be used in systems within the scope of this part of IEC61326 without additional testing,if they are suitable for the intended electromagnetic environment.		P
	It is generally considered that this product family standard takes precedence over the corresponding generic EMC standards.		P
	The following equipment is covered by this document.		P
	a)Electrical measurement and test equipment		P
	This is equipment which,by electrical means,measures,indicates or records one or more electrical or non-electrical quantities,also non-measuring equipment such as signal generators,measurement standards,power supplies and transducers.		P
	b)Electrical control equipment		P
	This is equipment which controls one or more output quantities to specific values,with each value determined by manual settings,by local or remote programming,or by one or more input variables.This includes industrial process measurement and control(IPMC) equipment,which consists of devices such as:		P
	-process controllers and regulators;		P

EN IEC 61326-1-2021			
Clause	Requirement-Test	Result-Remark	Verdict
	-programmable controllers;		P
	-power supply units for equipment and systems(centralized or dedicated);		P
	-analogue/digital indicators and recorders;		P
	-process instrumentation;		P
	-transducers,positioners,intelligent actuators,etc.		P
	c)Electrical LABORATORY equipment,including In Vitro Diagnostic(IVD)medical equipment This is equipment used to prepare or analyse materials,or measure,indicate or monitor physical quantities.This equipment might also be used in areas other than laboratories.		P
	d)Equipment a),b)or c)as above when being equipped with components having radio functionality,for example for wireless communication.		P
	Equipment within the scope of this document might be operated in different electromagnetic environments;depending on the electromagnetic environment different emission and immunity test requirements are applicable.		P
	This document considers three types of electromagnetic environments:		P
	● BASIC ELECTROMAGNETIC ENVIRONMENT;		P
	● INDUSTRIAL ELECTROMAGNETIC ENVIRONMENT;		P
	● CONTROLLED ELECTROMAGNETIC ENVIRONMENT.		P
	Corresponding immunity test requirements are described in Clause 6.		P
	In terms of emission requirements,equipment shall be classified in Class A or Class B equipment,as per the requirements and procedure of CISPR 11.The corresponding emission		P

EN IEC 61326-1-2021			
Clause	Requirement-Test	Result-Remark	Verdict
	requirements are described in Clause 7.		
	The specified emission and immunity requirements aim at achieving electromagnetic compatibility between equipment covered in this document and other equipment that might operate at locations with electromagnetic environments considered in this document. Guidance for an assessment concerning the risk for achieving EMC is given in Annex B.		P
2	**Normative references**		-
	The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document.For dated references,only the edition cited applies.For undated references,the latest edition of the referenced document (including any amendments)applies.		P
	IEC 60050-161:1990, International Electrotechnical Vocabulary (IEV)-Part 161: Electromagnetic compatibility		P
	IEC61000-3-3:2013,Electromagnetic compatibility (EMC)-Part 3-3:Limits -Limitation of voltage changes,voltage fluctuations and flicker in public low-voltage supply systems,for equipment with rated current ≤16A per phase and not subject to conditional connection		P
	IEC61000-3-11:2017,Electromagnetic compatibility (EMC)-Part 3-11:Limits-Limitation of voltage changes,voltage fluctuations and flicker in public low-voltage supply systems - Equipment with rated current ≤75A and subject to conditional connection		P
	IEC61000-4-11:2020,Electromagnetic compatibility(EMC)-Part 4-11:Testing and measurement techniques-Voltage dips,short		P

EN IEC 61326-1-2021			
Clause	Requirement-Test	Result-Remark	Verdict
	interruptions and voltage variations immunity tests for equipment with input current up to 16A per phase		
3	**Terms,definitions and abbreviations**		-
3.1	Terms and definitions		P
	For the purposes of this document,the terms and definitions given in IEC 60050-161 and the following apply.		P
3.1.1	class A equipment		P
	equipment suitable for use in all locations other than those allocated in residential environments and those directly connected to a low voltage power supply network which supplies buildings used for domestic purposes		P
3.1.2	class B equipment		P
	equipment suitable for use in locations in residential environments and in establishments directly connected to a low voltage power supply network which supplies buildings used for domestic purposes		P
3.1.3	controlled electromagnetic environment		N
	environment usually characterized by recognition and control of EMC threats by users of the equipment or by design of the installation		P
3.1.4	enclosure port		N
	physical boundary of equipment through which electromagnetic fields may radiate or impinge		P
3.1.5	functional performance		P
	operational performance characteristics defining the ability of equipment to achieve the intended functions		P
3.1.6	industrial electromagnetic environment		N
	environment existing at locations characterized by a separate power network,in most cases supplied from a		N

EN IEC 61326-1-2021			
Clause	Requirement-Test	Result-Remark	Verdict
	high-or medium-voltage transformer,dedicated for the supply of installations feeding manufacturing or similar plants with one or more of the following conditions:		
	-frequent switching of heavy inductive or capacitive loads;		N
	-high currents and associated magnetic fields;		P
	-presence of Industrial, Scientific and Medical (ISM) equipment (for example, welding machines)		P
3.1.7	laboratory		P
	test and measurement area that is specifically used for analysis,testing and servicing and where equipment is operated by trained personnel		P
3.1.8	long-distance lines		N
	lines within a building which are longer than 30 m,or which leave the building(including lines of outdoor installations)		N
3.1.9	port		P
	any particular interface of the specific equipment or system with the external electromagnetic environment		P
	EXAMPLE See Figure 1 for an example of Equipment Under Test (EUT).		P
	 Figure 1-Examples of ports		P
3.1.10	power port		N
	port at which a conductor or cable,carrying the electrical input/output power needed for the operation (functioning),is connected to the equipment		N
3.1.11	type test		P

EN IEC 61326-1-2021			
Clause	Requirement-Test	Result-Remark	Verdict
	conformity test made on one or more items representative of the production		P
3.1.12	auxiliary equipment		P
	equipment necessary to provide the equipment under test(EUT)with the signals required for normal operation and equipment to verify the performance of the EUT		P
3.1.13	performance level		P
	specified operation of equipment under conditions of intended use		P
3.1.14	degradation (in performance)		P
	an undesired departure in the operational performance of any device,equipment or system from its intended performance		P
	Note 1 to entry:The term "degradation"can apply to temporary or permanent failure.		N
3.1.15	loss of performance		P
	operation of equipment outside a specified PERFORMANCE LEVEL		P
3.1.16	loss of function		P
	operation of equipment with one(or more)of the equipment's function unusable		P
3.2	Abbreviations		P
	AE AUXILIARY EQUIPMENT EMC electromagnetic compatibility ESD electrostatic discharge EUT equipment under test I/O input/output RF radio frequency UPS uninterruptable power supply		P
4	**General**		**P**
	Equipment and systems within the scope of this document can be subjected to various kinds of electromagnetic disturbances,sources of which include power, measurement or control lines or those radiated from the environment.The		P

EN IEC 61326-1-2021			
Clause	Requirement-Test	Result-Remark	Verdict
	types and levels of disturbances depend on the particular conditions in which the systems,subsystems or equipment are installed and operated.		
	Equipment within the scope of this document can also be a source of electromagnetic disturbances over a wide frequency range.These disturbances can be conducted through power and signal lines,or be directly radiated,and can affect the performance of other equipment,or influence the external electromagnetic environment.		P
	For emissions,the objective of the requirements given in this document is to ensure that the disturbances generated by the equipment and systems,when operated normally,do not exceed a level which could prevent other systems from operating as intended.The emission limits are considered in 7.2.		P
	NOTE 1 Higher immunity levels than those specified can be necessary for particular applications(for example, when reliable operation of the equipment is essential for safety)or when the equipment is intended for use in harsher electromagnetic environments.Also,additional tests and different performance criteria can be necessary for particular applications		P
	NOTE 2 In special cases,for example when highly susceptible equipment is being used near the EUT,additional mitigation measures could have to be employed to reduce the influencing electromagnetic emission further below the specified limits.		P
	The manufacturer may select to perform all tests on either a single EUT or divide the tests among multiple EUTs.If the latter,each test result shall be traceable to the EUT		P

EN IEC 61326-1-2021			
Clause	Requirement-Test	Result-Remark	Verdict
	tested.The testing sequence is optional.		
5	**EMC test plan**		**P**
5.1	General		P
	An EMC test plan shall be established prior to testing.At a minimum,it shall contain the elements defined in 5.2 to 5.5.		P
	It may be determined from consideration of the electrical characteristics and usage of a particular item of equipment that some tests are inappropriate and therefore unnecessary.In such cases,the decision not to test shall be recorded in the EMC test plan.		P
5.2	Configuration of EUT during testing		P
5.2.1	General		P
	Measurement,control and LABORATORY equipment often consists of systems with no fixed configuration.The kind,number and installation of different subassemblies within the equip- ment may vary from system to system.Thus,it is reasonable,and also recommended,not to test every possible arrangement.		P
	To realistically simulate EMC conditions(related both to emission and immunity),the equipment assembly shall represent a typical installation as specified by the manufacturer. Such tests shall be carried out as TYPE TESTS under normal conditions as specified by the manufacturer.		P
5.2.2	Composition of EUT		P
	All equipment, racks, modules, boards, etc. significant to EMC and belonging to the EUT shall be documented.If relevant,the software version shall be documented.		P
5.2.3	Assembly of EUT		P
	If an EUT has a variety of internal and external configurations,the TYPE TESTS shall be made with one or more typical		P

EN IEC 61326-1-2021			
Clause	Requirement-Test	Result-Remark	Verdict
	configurations that represent normal use in the intended environment.All types of modules shall be tested at least once.The rationale for this selection shall be documented in the EMC test plan.		
5.2.4	I/O PORTS		P
	Where there are multiple I/O PORTS,which are all of the same type,connecting a cable to just one of those PORTS is sufficient,provided that it can be shown that the additional cables would not affect the results significantly.		P
5.2.5	Cabling and earthing(grounding)		N
	The cables and earth(ground)shall be connected to the EUT in accordance with the manufacturer's specifications.There shall be no additional earth connections.		N
5.2.6	AuXILIARY EQUIPMENT		P
	When a variety of equipment is provided for use with the EUT,at least one of each type of equipment shall be selected to simulate actual operating conditions.AUXILIARY EQUIPMENT may be simulated.		P
5.3	Operation conditions of EUT during testing		P
5.3.1	Operation modes		P
	A selection of representative operation modes shall be made,taking into account that not all functions,but only the most typical functions of the electronic equipment can be tested.The estimated worst-case operating modes for normal applicationshall be selected.		P
5.3.2	Environmental conditions		P
	The tests shall be carried out within the manufacturer's specified environmental operating range (for example,ambient temperature,humidity,atmospheric pressure), and within the rated ranges of supply voltage and frequency.The requirements of		N

EN IEC 61326-1-2021			
Clause	Requirement-Test	Result-Remark	Verdict
	IEC61000-4-2 for environmental conditions shall take precedence over those of the EUT specification (for example the humidity requirements for ESD).		
5.3.3	EUT software during test		N
	The software/firmware and its version used for the operation of the EUT shall be documented. This software shall represent the estimated worst-case operating mode for normal application.		P
5.4	Specification of FUNCTIONAL PERFORMANCE		P
	For immunity tests,FUNCTIONAL PERFORMANCE for each operating mode and test shall be specified,where possible,as quantitative values,as well as for non-operational states such as 'standby'or'battery charging',when an unintended change of state could occur through electromagnetic disturbances.If that is not possible,the FUNCTIONAL PERFORMANCE should be described in the test plan with supporting justification.		P
5.5	Test description		P
	Each test to be applied shall be specified in the EMC test plan.The description of the tests, the test methods,the characteristics of the tests,and the test set-ups are given in the basic standards,which are referred to in 6.2 and 7.2.Additional information needed for the practical implementation of the tests is given in this document.The contents of the referenced standards need not be reproduced in the test plan.In some cases,the EMC test plan shall specify the application in detail.		P
	NOTE Not all known disturbance phenomena have been specified for testing purposes in this document,but only those which are considered as most critical.		P

EN IEC 61326-1-2021			
Clause	Requirement-Test	Result-Remark	Verdict
6	**Immunity requirements**		P
6.1	Conditions during the tests		P
	The configuration of the EUT and the modes of operation used during the execution of each test shall be precisely noted in the test report.		N
	Tests shall be applied to the relevant PORTS in accordance with Table 1,Table 2 or Table 3.		P
6.2	Immunity test requirements		P
	Table 1 gives the immunity requirements for equipment intended to be used in a BASIC ELECTROMAGNETIC ENVIRONMENT.		P
	Table 2 gives the immunity requirements for equipment intended to be used in an INDUSTRIAL ELECTROMAGNETIC ENVIRONMENT.		P
	Table 3 gives the immunity requirements for equipment intended to be used in a cONTROLLED ELECTROMAGNETIC ENVIRONMENT.		P
	Annex A gives the immunity requirements for PORTABLE TEST AND MEASUREMENT EQUIPMENT that is powered by battery or from the circuit being measured.		P
	The performance criteria A,B,and C that are mentioned in the following tables are described in 6.4.		P

EN IEC 61326-1-2021			
Clause	Requirement-Test	Result-Remark	Verdict
	Table 1 – Immunity test requirements for equipment intended to be used in a BASIC ELECTROMAGNETIC ENVIRONMENT		P

PORT	Phenomenon	Basic standard	Test value	Perform-ance criterion
ENCLOSURE	ESD	IEC 61000-4-2	±4 kV contact discharge ±8 kV air discharge	B B
	Electromagnetic field	IEC 61000-4-3	3 V/m (80 MHz to 1 GHz; 1,4 GHz to 6 GHz) [a]	A
	Power frequency magnetic field [b]	IEC 61000-4-8	3 A/m (50 Hz, 60 Hz)	A
AC power	Burst	IEC 61000-4-4	±1 kV (5 kHz or 100 kHz)	B
(including protective earth)	Surge	IEC 61000-4-5	±0,5 kV line-to-line ±1 kV line-to-ground	B B
	Conducted RF	IEC 61000-4-6	3 V (150 kHz to 80 MHz)	A
	Voltage dip	IEC 61000-4-11	0 % during half cycle 0 % during 1 cycle 70 % during 25/30 cycles [c]	B B C
	Short interruptions	IEC 61000-4-11	0 % during 250/300 cycles [c]	C
DC power [d, e]	Burst	IEC 61000-4-4	±1 kV (5 kHz or 100 kHz)	B
(including protective earth)	Surge	IEC 61000-4-5	±0,5 kV line-to-line ±1 kV line-to-ground	B B
	Conducted RF	IEC 61000-4-6	3 V (150 kHz to 80 MHz)	A
I/O signal/control [e]	Burst [d]	IEC 61000-4-4	±0,5 kV (5 kHz or 100 kHz)	B
(including functional earth)	Surge [f]	IEC 61000-4-5	±1 kV line-to-ground	B
	Conducted RF [d]	IEC 61000-4-6	3 V (150 kHz to 80 MHz)	A
I/O signal/control [e]	Burst [d]	IEC 61000-4-4	±1 kV (5 kHz or 100 kHz)	B
connected directly to mains supply	Surge [f]	IEC 61000-4-5	±0,5 kV line-to-line ±1 kV line-to-ground	B B
	Conducted RF [d]	IEC 61000-4-6	3 V (150 kHz to 80 MHz)	A

[a] In case testing is performed also in the frequency range from 1 GHz to 1,4 GHz, the same test level is recommended.

[b] Only to magnetically sensitive equipment.

[c] For example, "25/30 cycles" means "25 cycles for 50 Hz test" or "30 cycles for 60 Hz test".

[d] Only in the case of lines >3 m.

[e] DC POWER PORTS intended to be connected to a low voltage DC supply (≤ 60 V), where secondary circuits (isolated from the AC mains supply) are not subject to transient overvoltages (i.e. reliably-grounded, capacitively-filtered DC secondary circuits) shall be regarded as I/O signal/control PORTS.

[f] Only in the case of LONG-DISTANCE LINES.

EN IEC 61326-1-2021			
Clause	Requirement-Test	Result-Remark	Verdict

Table 2 – Immunity test requirements for equipment intended to be used in an INDUSTRIAL ELECTROMAGNETIC ENVIRONMENT

PORT	Phenomenon	Basic standard	Test value	Performance criterion
ENCLOSURE	ESD	IEC 61000-4-2	±4 kV contact discharge ±8 kV air discharge	B B
	Electromagnetic field	IEC 61000-4-3	10 V/m (80 MHz to 1 GHz) 3 V/m (1,4 GHz to 6 GHz) [a]	A A
	Power frequency magnetic field [b]	IEC 61000-4-8	30 A/m (50 Hz, 60 Hz)	A
AC power (including protective earth)	Burst	IEC 61000-4-4	±2 kV (5 kHz or 100 kHz)	B
	Surge	IEC 61000-4-5	±1 kV line-to-line ±2 kV line-to-ground	B B
	Conducted RF	IEC 61000-4-6	3 V (150 kHz to 80 MHz), see NOTE	A
	Voltage dip	IEC 61000-4-11	0 % during 1 cycle 40 % during 10/12 cycles [c] 70 % during 25/30 cycles [c]	B C C
	Short interruptions	IEC 61000-4-11	0 % during 250/300 cycles [c]	C
DC power [d, e] (including protective earth)	Burst	IEC 61000-4-4	±2 kV (5 kHz or 100 kHz)	B
	Surge	IEC 61000-4-5	±1 kV line-to-line ±2 kV line-to-ground	B B
	Conducted RF	IEC 61000-4-6	3 V (150 kHz to 80 MHz) see NOTE	A
I/O signal/control [e] (including functional earth)	Burst [d]	IEC 61000-4-4	±1 kV (5 kHz or 100 kHz)	B
	Surge [f]	IEC 61000-4-5	±1 kV line-to-ground	B
	Conducted RF [d]	IEC 61000-4-6	3 V (150 kHz to 80 MHz) see NOTE	A
I/O signal/control [e] (connected directly to mains supply)	Burst [d]	IEC 61000-4-4	±2 kV (5 kHz or 100 kHz)	B
	Surge [f]	IEC 61000-4-5	±1 kV line-to-line ±2 kV line-to-ground	B B
	Conducted RF [d]	IEC 61000-4-6	3 V (150 kHz to 80 MHz) see NOTE	A

NOTE Equipment considered in this table is typically used in industrial installations with the cabling arranged on metallic structures. This reduces coupling of electromagnetic fields into cables and hence justifies a lower immunity level compared to that given in the generic immunity standard IEC 61000-6-2. The level of 3 V is used for more than 15 years without immunity issues and hence proved to be sufficient.

[a] In case testing is performed also in the frequency range from 1 GHz to 1,4 GHz, the same test level as above 1,4 GHz is recommended.

[b] Only to magnetically sensitive equipment.

[c] For example, "25/30 cycles" means "25 cycles for 50 Hz test" or "30 cycles for 60 Hz test".

[d] Only in the case of lines > 3 m.

[e] DC power PORTS intended to be connected to a low voltage DC supply (≤ 60 V), where secondary circuits (isolated from the AC mains supply) are not subject to transient overvoltages (i.e. reliably-grounded, capacitively-filtered DC secondary circuits) shall be regarded as I/O signal/control PORTS.

[f] Only in the case of LONG-DISTANCE LINES.

P

Table 3 – Immunity test requirements for equipment intended to be used in a CONTROLLED ELECTROMAGNETIC ENVIRONMENT

PORT	Phenomenon	Basic standard	Test value	Performance criterion
ENCLOSURE	ESD	IEC 61000-4-2	±4 kV contact discharge ±8 kV air discharge	B B
	Electromagnetic field	IEC 61000-4-3	1 V/m (80 MHz to 1 GHz; 1,4 GHz to 6 GHz) [a]	A
AC power (including protective earth)	Burst	IEC 61000-4-4	±1 kV (5 kHz or 100 kHz)	B
	Surge	IEC 61000-4-5	±0,5 kV line-to-line ±1 kV line-to-ground	B B
	Conducted RF	IEC 61000-4-6	1 V (150 kHz to 80 MHz)	A
DC power [b, c] (including protective earth)	Burst	IEC 61000-4-4	±1 kV (5 kHz or 100 kHz)	B
	Conducted RF	IEC 61000-4-6	1 V (150 kHz to 80 MHz)	A
I/O signal/control [c] (including functional earth)	Burst [b]	IEC 61000-4-4	±0,5 kV (5 kHz or 100 kHz)	B
	Conducted RF [b]	IEC 61000-4-6	1 V (150 kHz to 80 MHz)	A

[a] In case testing is performed also in the frequency range from 1 GHz to 1,4 GHz, the same test level is recommended.

[b] Only in the case of lines > 3 m.

[c] DC power PORTS intended to be connected to a low voltage DC supply (≤ 60 V), where secondary circuits (isolated from the AC mains supply) are not subject to transient overvoltages (i.e. reliably-grounded, capacitively-filtered DC secondary circuits) shall be regarded as I/O signal/control PORTS.

N

6.3	Random aspects		N
	The duration of each test and/or the number of tests shall be sufficient to ensure that the performance criterion is met		N

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	consistently.Due care shall be taken to avoid a false test pass due to random effects,forexample,due to a timing relationship between the test stimulus and the operation of the EUT.		
	NOTE This is of particular concern for EUTs with functionality that can be defined or controlled by software or firmware.		P
	For instance,in the case of electrostatic discharge testing of digital equipment,the EUT should be exposed to at least 10 discharges at each polarity,test point and test level to exclude random effects.In case of burst testing,it may be advisable to extend the testing time to more than 1 minute.		N
6.4	Performance criteria		P
6.4.1	General		N
	The general principles(performance criteria)for the evaluation of the immunity test results are the following.Permissible LOSSES OF PERFORMANCE are allowed only if specified in the test plan before testing,and clearly provided to the user in the product specification.If the PERFORMANCE LEVEL or the permissible LOss OF PERFORMANCE is not specified,either of these may be derived from the product specification or user documentation and what the user may reasonably expect from the equipment if used as intended.		N
6.4.2	Performance criterion A		N
	The equipment shall continue to operate as intended during and after the test.No DEGRADATION OF PERFORMANCE or Loss OF FUNCTION is allowed below a PERFORMANCE LEVEL specified in the user documentation, when the equipment is		N

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	used as intended.In the case of applying immunity tests with continuous electromagnetic phenomena, the PERFORMANCE LEVEL may be replaced by a permissible Loss OF PERFORMANCE which shall recover, without user intervention. A permissible LOss OF PERFORMANCE is allowed within the PERFORMANCE LEVEL only when this information is clearly provided to the end user via documentation,such as the product user manual.No change in the operating state is allowed nor is loss of data.		
6.4.3	Performance criterion B		N
	The equipment shall continue to operate as intended after the test.No DEGRADATION OF PERFORMANCE or LOSs OF FUNCTION is allowed below a PERFORMANCE LEVEL specified in the user documentation,when the equipment is used as intended.During the test,the equipment PERFORMANCE LEVEL may be replaced by a permissible LOss OF PERFORMANCE if such LOss OF PERFORMANCE is detailed in the EMC test plan.A permissible LOSs OF PERFORMANCE is allowed within the PERFORMANCE LEVEL only when this information is clearly provided to the end user via documentation,such as the product user manual.An unintended change of the operating state is allowed if self-recoverable.No loss of stored data is allowed.		P
	The following are examples of performance criterion B:		P
	· Data transfer is controlled or checked by		P

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	parity check or by other means.In the case of malfunction,such as caused by a surge impulse,the data transfer will be repeated automatically.A reduced data transfer rate at this time is allowable degradation.		
	· During testing,an analogue function value may deviate in excess of the specified limits.After the test,the deviation vanishes.		P
	· In the case of a monitor used only for man-machine monitoring,it is allowable that some degradation takes place,such as momentary display interference during the application of burst impulses.		P
6.4.4	Performance criterion C		P
	Loss OF FUNCTION is allowed,provided the function is self-recoverable or can be restored by the operation of the controls. Recovery procedure shall be included in the user documentation.No permanent damage to the equipment is allowed.		P
	The following are examples of performance criterion C:		P
	· In the case of an interruption in the mains longer than the specified buffer time,the power supply unit of the equipment is switched off.The switch-on may be automatic or carried out by the operator.		P
	· After a programme interruption caused by a disturbance,the processor functions of the equipment stops at a defined position and is not left in a "crashed state".An operator's action may be necessary.		P
	· The test results in an opening of an over-current protection equipment that can be reset by the operator.		P
7	**Emission requirements**		P

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7.1	Conditions during measurements		P
	The measurements shall be made in the operating mode in accordance with the EMC test plan (see Clause 5).		N
	The description of the tests,the test methods,and the test set-ups are given in the reference standards as stated in 7.2.The contents of the reference standards are not reproduced here; however,modifications or additional information needed for the practical implementation of application of the tests may be given in the other parts of IEC61326 (all parts).		N
7.2	Emission limits		N
	The equipment shall be classified,and respective information shall be provided for the applicable group and class as specified in CISPR 11:2015/AMD1:2016/AMD2:2019, Clause 5.Equipment classification and choice of respective limits shall be determined after taking into account the intended environment and emission requirement in the areas of use.		P
	Annex H('Statistical assessment of series produced equipment against the requirements of CISPR standards')of CISPR 11:2015 does not apply.		N
	For Group 1 CLASS A EQUIPMENT,the limits,the measuring methods and the provisions given in CISPR 11:2015/AMD1:2016/AMD2:2019 Subclause 6.2 apply.For Group 2 CLASS A EQUIPMENT,the limits,the measuring methods and the provisions given in CISPR 11:2015/AMD1:2016/AMD 2:2019,Subclause 6.3 apply.		P
	For Group 1 CLASS BEQUIPMENT,the		P

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	limits,the measuring methods and the provisions given in CISPR 11:2015/AMD1:2016/AMD2:2019 Subclause 6.2 apply.For Group 2 CLASS B EQUIPMENT,the limits,the measuring methods and the provisions given in CISPR 11:2015/AMD1:2016/AMD2:2019 Subclause 6.3 apply.In addition,for CLASS B EQUIPMENT with input current up to 16 A,IEC61000-3-2 and IEC61000-3-3 apply.For higher input currents up to 75A per phase,IEC61000-3-12 and IEC61000-3-11 apply.		
8	**Test results and test report**		P
	The test results shall be documented in a comprehensive test report with sufficient detail to provide for test repeatability.		P
	The test reportshall contain the following minimum information:		P
	- EUT description(plus EUT identifier);		P
	-test facility name and location;		N
	-EMC test plan;		N
	-test requirements,i.e.which type of electromagnetic environment is considered;		P
	-performance criteria;		N
	- test data and results;		P
	-if applicable,characteristics of equipment operation deviation from FUNCTIONAL PERFORMANCE encountered during testing;		P
	-modifications to the EUT (if any);		P
	-test equipment and test set-up.		P
9	**Instructions for use**		P
	The manufacturer shall indicate the electromagnetic environment for which the EUT is intended to be used and the standard(s)that was/were applied.		P
	The manufacturer shall give information that		N

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	emissions,which exceed the levels required by this document,can occur when the EUT is connected to a test object.		
	If a PERFORMANCE LEVEL or any permissible performance loss(as allowed in 6.4)is valid under the electromagnetic immunity conditions(see 6.2),then this level shall be described in the user documentation.		N