



CE MARKING

*ELECTROMAGNETIC COMPATIBILITY
ELECTRICAL SAFETY
LASER SPECTROSCOPY
ENVIRONMENTAL PHYSIC*



Organizzazione con Sistema
di Gestione certificato
Company with Management
System certified
ISO 9001:2008



Report n. 12071

Manufacturer: **UR Fog S.r.l.**
Via Collegno, 11
10143 Torino
Italy

Product: **UR FOG FAST 01**

PISA, SEPTEMBER 24, 2012

G.S.D. s.r.l.
Via Marmiceto, 8
56121 OSPEDALETTO - PISA
Tel. 050.984254 - Fax 050.984262
P. IVA 01343950505

SENIOR EMC TEST MANAGER
Dr. Gian Luca Genovesi

QUALITY MANAGER
Dr. David Pelliccia

G.S.D. S.r.l.
Via Marmiceto n°8 – 56121 Ospedaletto (Pisa) Italy
Tel +39 050 98.42.54 - Fax +39 050 98.42.62
<http://www.gsd.it>, e-mail: info@gsd.it
P.IVA (VAT) n. 01343950505

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1 MANUFACTURER AND EUT IDENTIFICATION¹	
Manufacturer	UR Fog S.r.l.
Address	Via Collegno, 11 10143 Torino Italy
Test Item Name	UR FOG FAST 01
Date of reception	August, 10, 2012
Sampling	Prototype
Power	230 Vac 50 Hz
Test Item Description	<i>“Sistema Nebbiogeno”</i>

¹A detailed documentation is preserved in the internal fascicle.

2 REFERENCE STANDARDS

Tests and measurements are performed accordingly to the reference standards given in the table below:

<i>TEST</i>	<i>STANDARD</i>
Emission: Conducted	CEI EN 61000-6-3: 2007 +/A1: 2012
Emission: Radiated	CEI EN 61000-6-3: 2007 +/A1: 2012
Emissions: harmonics	EN 61000-3-2:2007 +/A1/A2:2011
Emissions: voltage fluctuations and flicker	CEI EN 61000-3-3:2009
Fast transients (EFT-Bursts)	EN 50130-4:1996 +/A1:1999+/A2:2003
Radio Frequency Electromagnetic Fields radiated susceptibility	EN 50130-4:1996 +/A1:1999+/A2:2003
Radio Frequency common mode	EN 50130-4:1996 +/A1:1999+/A2:2003
Surges	EN 50130-4:1996 +/A1:1999+/A2:2003
Voltage dips and interruptions	EN 50130-4:1996 +/A1:1999+/A2:2003
ESD immunity test	EN 50130-4:1996 +/A1:1999+/A2:2003
Electrical Safety Verifications	CEI EN 60335-1:2008 +/A13:2009, /A14:2012, /A15:2012

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<u>Performance criteria</u>
In order to conform to the emission standards the equipment shall meet the limits of conducted and radiated emission.
• <i>Performance Criterion A</i>
The EUT shall continue to operate as intended during and after the test.
• <i>Performance Criterion B</i>
The EUT shall continue to operate as intended after the test.
• <i>Performance Criterion C</i>
Temporary degradation or loss of function or performance is allowed during the test, provided the function is self recoverable, or can be restored at the end of the test by operation of the controls, as defined in the relevant equipment standard and in the technical specification published by the manufacturer.

3 TEST GENERALITY

Immunity performance criteria are performed accordingly to the reference standards given in the table below:

<i>IMMUNITY TEST</i>	<i>MINIMUM CRITERION</i>
Fast transients (EFT-Bursts)	B
Radio Frequency Electromagnetic Fields radiated susceptibility	A
Radio Frequency common mode	A
Surges	B
Voltage dips and interruptions	B/C
ESD immunity test	B

Evaluation criteria

Functional test

Disposition of test and measure

Test and/or measure disposition is compliance with the relative reference standard. The configuration of the test sample has been varied to achieve maximum disturbance and susceptibility.

Environmental Conditions

Temperature = (296 ± 3) K

Relative humidity = (50 ± 5) %

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<u>Summary of Test Results</u>	
<i>TEST</i>	<i>RESULT</i>
<i>Emission: Conducted</i>	<i>Pass</i>
<i>Emission: Radiated</i>	<i>Pass</i>
<i>Emissions: harmonics</i>	<i>Pass</i>
<i>Emissions: voltage fluctuations and flicker</i>	<i>Pass</i>
<i>Fast transients (EFT-Bursts)</i>	<i>Pass</i>
<i>Radio Frequency Electromagnetic Fields radiated susceptibility</i>	<i>Pass</i>
<i>Radio Frequency common mode</i>	<i>Pass</i>
<i>Surges</i>	<i>Pass</i>
<i>Voltage dips and interruptions</i>	<i>Pass</i>
<i>ESD immunity test</i>	<i>Pass</i>
<i>Electrical Safety Verifications</i>	<i>Pass</i>
<u>Note</u>	
Results are referred to complete system and sub systems. For the results see related sections.	
<u>Extensions</u>	
The results refer only to the sampled EUT and under the specified conditions.	

4 CONDUCTED EMISSIONS

Equipment shall meet the limits below when using a CISPR16 quasi-peak and average detector receivers.

<i>FREQUENCY RANGE</i> (MHz)	<i>QUASI-PEAK LIMIT</i> [dB(μV)]	<i>AVERAGE LIMIT</i> [dB(μV)]
0.15 - 0.50	66÷56 ^(*)	56÷46 ^(*)
0.50 - 5	56	46
5 - 30	60	50

^(*) Limit decreasing linearly with logarithm of frequency

Test Equipment

EQUIPMENT	MANUFACTURER	MODEL	CAL. DUE
EMI Receiver	AGILENT	E4440A	01/2013
EMI Receiver Filter Section	AGILENT	N9039A	01/2013
Screened Room	GSD	CSC01	01/2013
Transient Limiter	HP	11947A	01/2013

Test procedure: CE22R01

Test method

Test method was in accordance with the reference standard.

EUT modes of operations were tested in order to achieve the maximum level of emission.

Results

Graphics in following figures show some registrations of the frequency spectrum of the conducted emissions.

Job Number 12071
Test Name Conducted Emissions EN 61000-6-3
EUT Name UR Fog S.r.l. - UR FOG FAST 01



FREQ 741.4 kHz
PEAK 50.2 dB μ V
QP 41.3 dB μ V
AVG 14.3 dB μ V

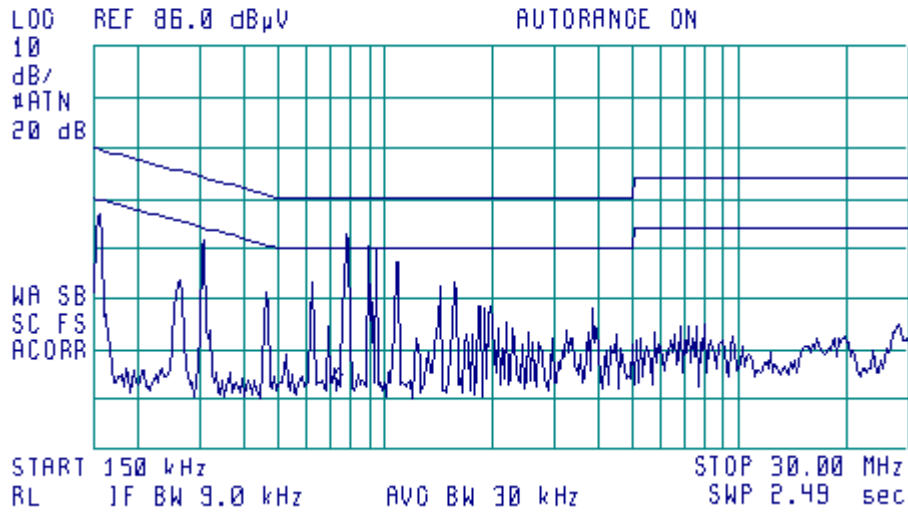


Fig. 4 1

B Band (0.15 – 30 MHz): phase 1

Job Number 12071
Test Name Conducted Emissions EN 61000-6-3
EUT Name UR Fog S.r.l. - UR FOG FAST 01



FREQ 776.4 kHz
PEAK 41.6 dB μ V
QP 40.2 dB μ V
AVG 30.8 dB μ V

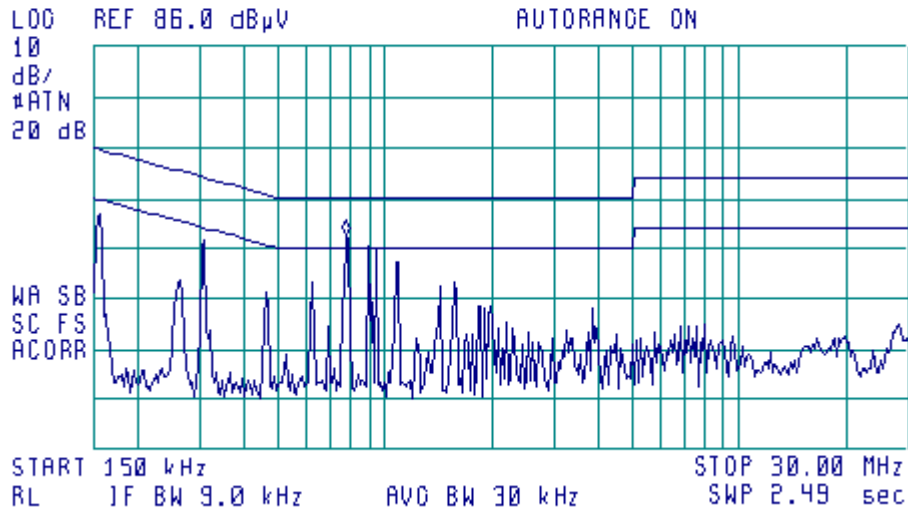


Fig. 4 2

B Band (0.15 – 30 MHz): phase 1

Job Number 12071
Test Name Conducted Emissions EN 61000-6-3
EUT Name UR Fog S.r.l. - UR FOG FAST 01



FREQ 779.2 kHz
PEAK 46.6 dB μ V
QP 36.3 dB μ V
AVG 29.7 dB μ V

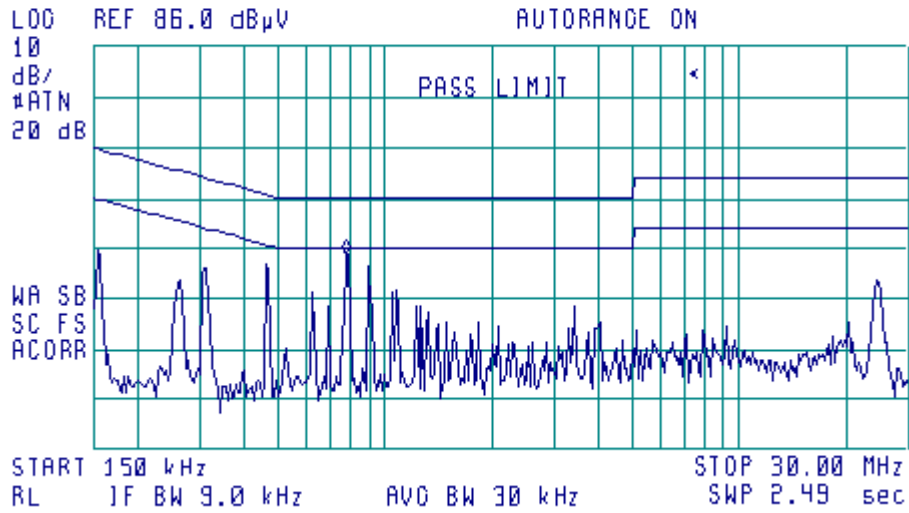


Fig. 4 3

B Band (0.15 – 30 MHz): phase 2

5 RADIATED EMISSIONS

In the following table you can find the limits established by the reference standard:

<i>DISTANCE</i> (m)	<i>FREQUENCY RANGE</i> (MHz)	<i>QUASI-PEAK LIMIT</i> [dB (μ V/m)]
3	30 ÷ 230	40
3	230 ÷ 1000	47

Test Equipment

EQUIPMENT	MANUFACTURER	MODEL	CAL. DUE
EMI Receiver	HP	HP8546A	01/2013
EMI Receiver Filter Section	HP	HP85460A	01/2013
Anechoic Chamber	Comtest	CSA01	01/2013
Bilog Antenna	Schaffner	CBL6112B	01/2013
Horn Antenna	EMCO	3115	01/2013
Controller	Deisel	HD100	01/2013
Turn Table	Deisel	MA240	01/2013

Test procedure: RE22R02Notes

Azimuth position EUT-Antenna corresponding to 0° identifies the rotating table orientation (TT) in which the instrument to be tested shows the front part turned towards the antenna. Positive grades individuate clockwise rotations of TT when this one is observed from the top. For negative degrees, TT rotation is anticlockwise.

Antenna height respect to the mass plane is conventionally individuated with: MA=XXX where XXX indicates the height (always positive for $e > 100$) expressed in cm.

Antenna horizontal polarization is indicated by POL=H.

Antenna vertical polarization is indicated by POL=V.

Accordingly to reference standard, a limit relaxing factor equal to 20 dB for decade for measurements performed at 3 m has been used.

Results and conclusions

In all the operative conditions, equipment complied with the standard limits. Graphics in following figures show the most significant registrations of the performed measurements.

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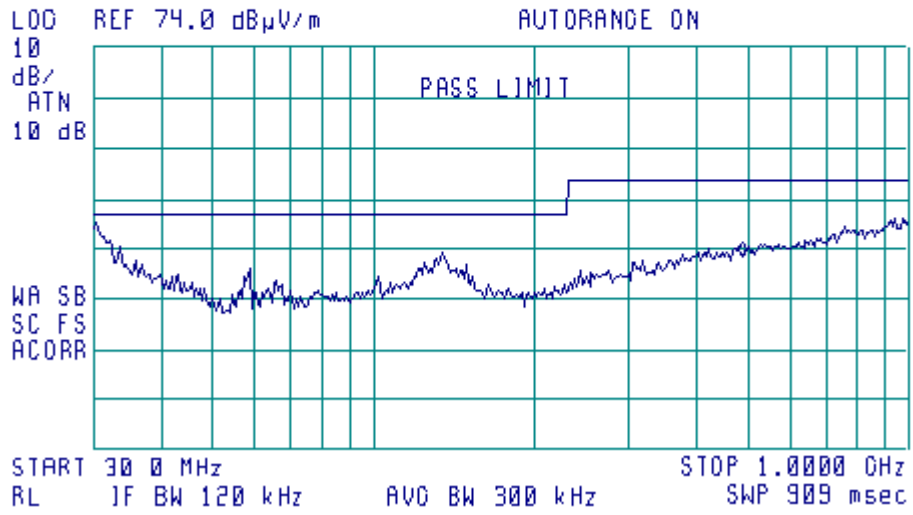
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Job Number 12071
Test Name Radiated Emissions EN 61000-6-3
EUT Name UR Fog S.r.l. - UR FOG FAST 01



ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 487.3 MHz
32.59 dB μ V/m



Notes:
Pol.=V
TT=0°
MA=100cm

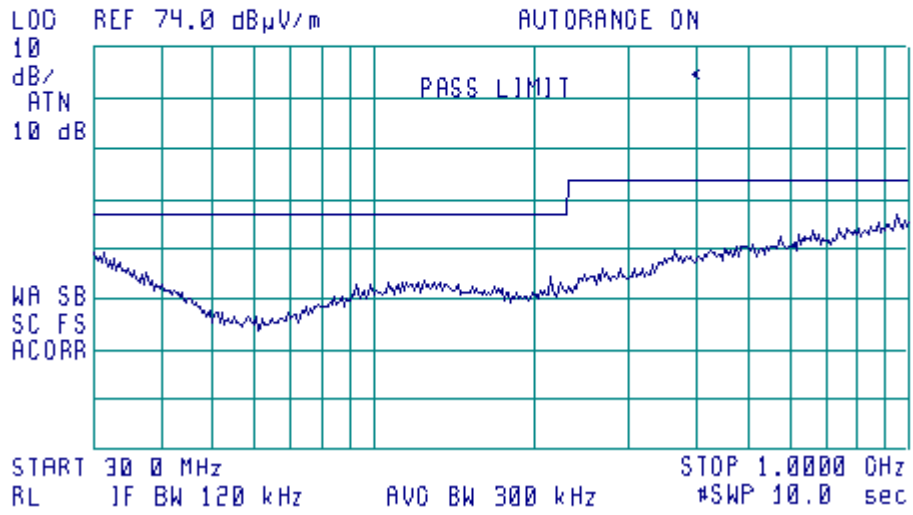
Fig. 5 1

Record of the measurement of radiated emissions.

Job Number 12071
Test Name Radiated Emissions EN 61000-6-3
EUT Name UR Fog S.r.l. - UR FOG FAST 01



ACTV DET: PEAK
MEAS DET: PEAK OP AVG



Notes:
Pol.=H
TT=0°
MA=100cm

Fig. 5 2

Record of the measurement of radiated emissions.

6 EMISSIONS: CURRENT HARMONICS

The following table gives the limits given by EN 61000-3-2 standard:

<i>current harmonic order</i> <i>n</i>	<i>maximum current value</i> <i>A</i>
odd current harmonics	
3	2.30
5	1.14
7	0.77
9	0.40
11	0.33
13	0.21
$15 \leq n \leq 39$	0.15 15/n
even current harmonics	
2	1.08
4	0.43
6	0.30
$8 \leq n \leq 40$	0.23 8/n

Test method

The test method was in accordance with the reference standard.
EUT modes of operations were tested in order to achieve the maximum level of emission.

Test equipment

EQUIPMENT	MANUFACTURER	MODEL	CAL. DUE
AC SOURCE	PACIFIC POWER SOURCE	140-AMX	01/2013
ANALYZER	XITRON XITRON TECHNOLOGIES INC	2503AH	01/2013

Test procedure: CE32R00

Results

The equipment complied with the test specification limit.
Graphic in fig. 6.1 shows the registration of the frequency spectrum of the current harmonics emissions

XITRON IEC1000-3-2 TEST REPORT

UUT: 12071	CLASS: IEC1000-3-2 CLASS A, Steady State	STATUS: PASS
TEST DURATION: 3.00	TEST TIME ELAPSED: 3.00 min	REPORT PRINTED: 31/08/12 06:40 PM

Phase A

Vrms: 229.70	Status: PASS Class A
Arms: 0.06	PF: 0.370
Watts: 5.40	Fund: 0.05 Arms

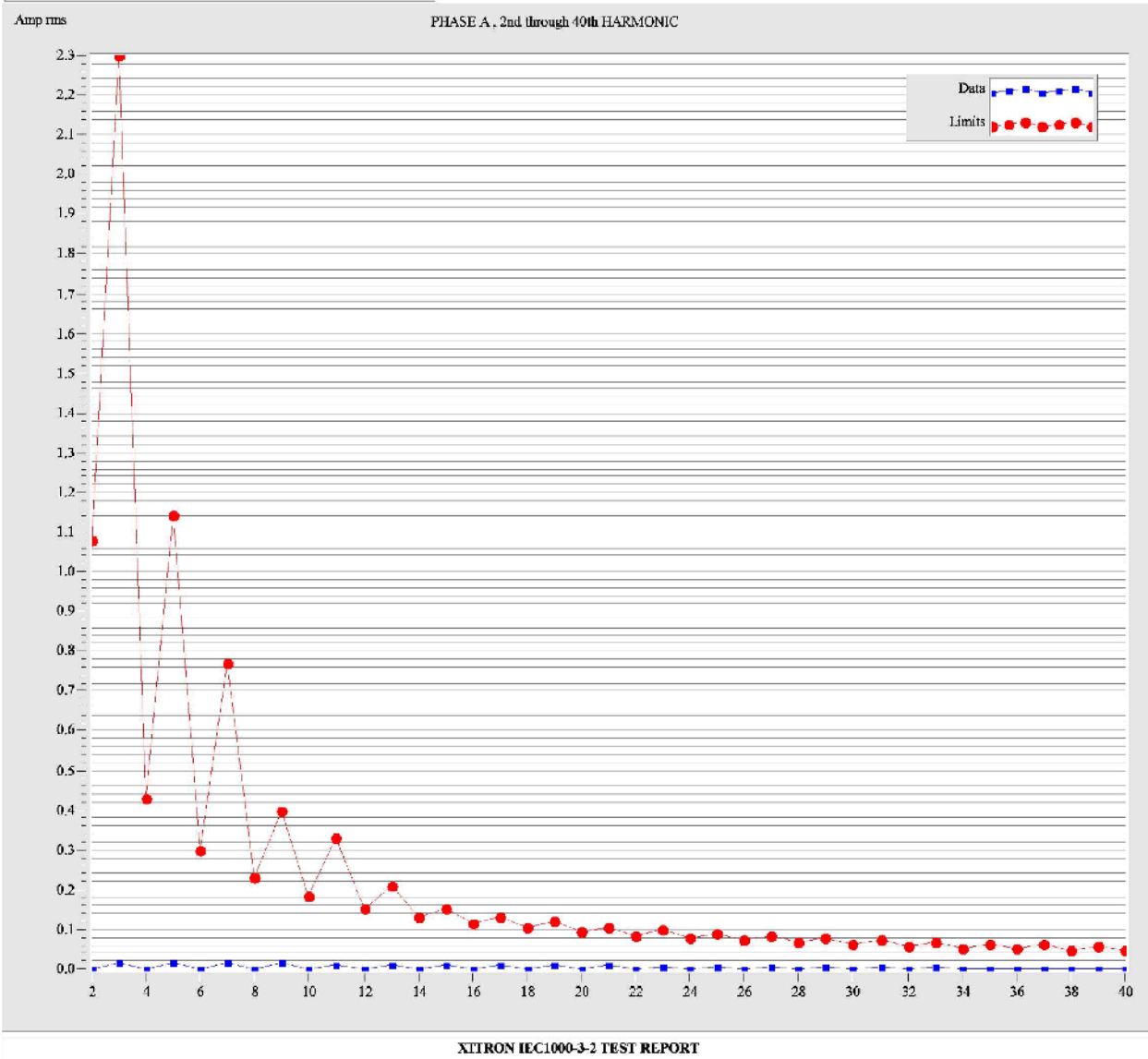


Fig. 6.1
Limit and frequency spectrum of the current harmonic emissions

7 EMISSIONS: FLICKER

The following table give the limits given by EN 61000-3-3 standard:

<i>Variable</i>	<i>Limit</i>
P_{st}	≤ 1.0
P_{lt}	≤ 0.65
d_c	$\leq 3\%$
d_{max}	$\leq 4\%$
$d(t)$	$\leq 3\% (t < 200 \text{ msec})$

Observation period for measure of P_{st} : $T_p = 20 \text{ min.}$

Observation period for measure of P_{lt} : $T_p = 120 \text{ min.}$

Test method

The test method was in accordance with the reference standard.

EUT modes of operations were tested in order to achieve the maximum level of emission.

Test equipment

EQUIPMENT	MANUFACTURER	MODEL	CAL. DUE
AC SOURCE	PACIFIC POWER SOURCE	140-AMX	01/2013
ANALYZER	XITRON TECHNOLOGIES INC	2503AH	01/2013
REFERENCE IMPEDANCE	GSD	IR001	01/2013
REFERENCE IMPEDANCE	GSD	IRN001A	01/2013

Test procedure: CE32R00

Results

<i>Variable</i>	<i>Measure</i>
P_{st}	0,66
P_{lt}	0,36
d_c	-0.27%
d_{max}	1.10%
$d(t) \geq 3\%$	0.0 ms

The equipment complied with the test specification limit.

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8 ELECTRICAL FAST TRANSIENT (EFT/BURSTS) IMMUNITY TEST

Equipment shall meet the immunity limits below.

Equipment shall meet the immunity limits given in the following table: characteristics of pulses are shown (EN 61000-4-4)

U_p			
RISE TIME	DURATION (at 50%)	BURST DURATION	BURST PERIOD
(nsec)	(nsec)	(msec)	(msec)
5	50	15	300

Test time length: 2 minutes

Test method

Test method was in accordance with §6.2 of the reference standard and §7 - §8 of EN 61000-4-4.

Amplitude limits as in EN 50130-4 is 2KV for AC input and 1KV for signal cables.

Test procedure: CS44R00

Test Equipment

EQUIPMENT	MANUFACTURER	MODEL	CAL. DUE
Burst Generator	KEYTEK	CEMASTER	01/2013
Burst Generator	Compliance Design Inc.	EFT/B 100	01/2013
Capacitive Clamp	Teseo	-	01/2013

Results

APPLICATION (Transients)	SIGNALS	DIFFERENTIAL MODE PHASE	DIFFERENTIAL MODE NEUTRAL	DIFFERENTIAL MODE PE	COMMON MODE
	RESULT (Pass/Fail)	RESULT (Pass/Fail)	RESULT (Pass/Fail)	RESULT (Pass/Fail)	RESULT (Pass/Fail)
+ 2 kV	-	Pass	Pass	Pass	Pass
- 2 kV	-	Pass	Pass	Pass	Pass

The equipment continued to operate as intended after the test.

9 RADIO FREQUENCY ELECTROMAGNETIC FIELDS RADIATED SUSCEPTIBILITY

The following table shows the e.m. field parameters:

<i>AMPLITUDE (UNMODULATED) [*] (V/m)</i>	<i>FREQUENCY (MHz)</i>	<i>MODULATION (Frequency/Deep)</i>	<i>STEP SIZE (%)</i>
10	80 ÷ 2000	1 kHz / AM 80% 1 Hz (0,5 s ON; 0,5 s OFF)	1

[*] R.M.S. EFFECTIVE VALUE

Test Equipment

EQUIPMENT	MANUFACTURER	MODEL	CAL. DUE
RF SIGNAL GENERATOR	HP	8648A	01/2013
FUNCTION GENERATOR	HP	HP33120A	01/2013
AMPLIFIER	AMPLIFIER RESEARCH	30W1000M7	--
AMPLIFIER	AMPLIFIER RESEARCH	75A250	--
AMPLIFIER	GTC	GRF5016A	--
POWER METER	HP	HPE4419B	01/2013
POWER SENSOR	HP	HP8481D	01/2013
POWER SENSOR	HP	HP8482A	01/2013
DIRECTIONAL COUPLER	HP	778D-012	01/2013
DIRECTIONAL COUPLER	AMPLIFIER RESEARCH	DC3010	01/2013
ANTENNA BICONICAL	AH SYSTEMS	SAS-200/543	01/2013
ANTENNA LOG-PERIODIC	AH SYSTEMS	SAS-200/512	01/2013
ANTENNA HORN	EMCO	3115	01/2013
ANECHOIC CHAMBER	COMTEST	CSA01	01/2013
CONTROLLER	DEISEL	HD100	01/2013
TURN TABLE	DEISEL	MA240	01/2013

Test procedure: RS43R02

Results and conclusions			
FRONT RESULT (Pass/Fail)		BACK RESULT (Pass/Fail)	
Vertical Polarization	Horizontal Polarization	Vertical Polarization	Horizontal Polarization
<i>Pass</i>	<i>Pass</i>	<i>Pass</i>	<i>Pass</i>
D_X RESULT (Pass/Fail)		S_X RESULT (Pass/Fail)	
Vertical Polarization	Horizontal Polarization	Vertical Polarization	Horizontal Polarization
<i>Pass</i>	<i>Pass</i>	<i>Pass</i>	<i>Pass</i>
<i>The equipment continued to operate as intended during the test.</i>			

10 RADIO FREQUENCY, COMMON MODE

The following tables give the parameters of test.

<i>FREQUENCY RANGE</i> (MHz)	<i>RF INTENSITY</i> (Volt)	<i>MODULATION</i>
0.15 – 100	10 V	1 kHz / AM 80% 1 Hz (0,5 s ON; 0,5 s OFF)

Test Instrumentation

EQUIPMENT	MANUFACTURER	MODEL	CAL. DUE
RF SIGNAL GENERATOR	HP	8648A	01/2013
AMPLIFIER	AMPLIFIER RESEARCH	75A250	--
POWER METER	HP	HPE4419B	01/2013
POWER SENSOR	HP	HP8481D	01/2013
POWER SENSOR	HP	HP8482A	01/2013
DIRECTIONAL COUPLER	AMPLIFIER RESEARCH	DC3010	01/2013
CDN	GSD	M3	01/2013
CDN	GST	T4	01/2013
CURRENT INJECTION CLAMP	FCC	F-203i	01/2013

Test Procedure: CS406R03

Results

<i>LINE</i>	<i>RESULT</i> (Pass/Fail)
Main Power	Pass

The equipment continued to operate as intended during the test.

11 SURGE IMMUNITY TEST

The following table give the parameters of test.

<i>RISE TIME</i> (μsec)	<i>LENGHT OF PULSE</i> (50%) (μsec)	<i>AMPLITUDE</i> (kV)	
1.2	50	± 1 (Line - Line)	± 2 (phase - earth)

Test instrumentation

EQUIPMENT	MANUFACTURER	MODEL	CAL. DUE
SURGE GENERATOR	KEYTEK	CEMASTER	01/2013

Test procedure: CS405R01Results:

<i>LINE</i> (Mains Power/Signal)	<i>AMPLITUDE</i> ^[*] / <i>PHASE</i> (kV / <i>DEGREE</i>)	<i>RESULT</i> (Pass/Fail)
Mains Power: phase1 – phase2	+ 0.5 / +1 @ 0°-90°-270°	Pass
Mains Power: phase1 – phase2	- 0.5 / 1 @ 0°-90°-270°	Pass
Mains Power: phase1 – earth	+ 0.5 / +1 /+2 @ 0°-90°-270°	Pass
Mains Power: phase1 – earth	- 0.5 / 1 / -2 @ 0°-90°-270°	Pass
Mains Power: phase2 – earth	+ 0.5 / +1 /+2 @ 0°-90°-270°	Pass
Mains Power: phase2 – earth	- 0.5 / 1 / -2 @ 0°-90°-270°	Pass

[*] The open circuit voltage

The equipment continued to operate as intended after the test.

12 VOLTAGE DIPS AND SHORT INTERRUPTIONS

The following table give the parameters of test:

<i>TEST</i>	<i>TEST REDUCTION</i> (Reduction %U _r)	<i>LENGTH</i> (Cycles)
Voltage Dips	60%	0,5 / 1 / 5 / 10
Voltage Dips	30%	0,5 / 1 / 5 / 10
Short Interruption	100%	0,5 / 1 / 5

Test instrumentation

EQUIPMENT	MANUFACTURER	MODEL	CAL. DUE
PQF GENERATOR	KEYTEK	CEMASTER	01/2013

Test procedure: CS411R02

Results

<i>LEVEL</i> (% reduction / periods)	<i>RESULT</i> (Pass/Fail)
30 / 0,5 / 1 / 5 / 10	Pass
60 / 0,5 / 1 / 5 / 10	Pass
100 / 0,5 / 1 / 5	Pass

The equipment continued to operate as intended after the test.

13 ELECTROSTATIC DISCHARGE (ESD) IMMUNITY TEST

Equipment shall meet the immunity limits given in the following table: characteristics of pulses are shown (EN 61000-4-2)

<i>VOLTAGE (kV)</i>	<i>FIRST CURRENT PEAK ($\pm 10\%$) (A)</i>	<i>RISE TIME (ns)</i>	<i>CURRENT ($\pm 30\%$) at 30 ns (A)</i>	<i>CURRENT ($\pm 30\%$) at 60 ns (A)</i>
6	22,5	0.7 - 1	12	6
8	30	0.7 - 1	16	8

Test method

Test method was in accordance with §6.1 of the reference standard and §7 - §8 of EN 61000-4-2. 10 positive and 10 negative discharges with intervals of at least 1 second between discharges were applied in each test point.

Test instrumentation

EQUIPMENT	MANUFACTURER	MODEL	CAL. DUE
ESD Generator	Keytek	MZ-15FC	01/2013
Screened Chamber	GSD	CSC01	01/2013

Test procedure: ESD42R01Results

<i>4 kV CONTACT DISCHARGE</i>	<i>DIRECT RESULT (Pass/Fail)</i>	<i>INDIRECT VCP RESULT (Pass/Fail)</i>	<i>INDIRECT HCP RESULT (Pass/Fail)</i>
+ 2, 4, 6 kV	Pass	Pass	Pass
- 2, 4, 6 kV	Pass	Pass	Pass
<i>8 kV AIR DISCHARGE</i>	<i>DIRECT RESULT (Pass/Fail)</i>	<i>INDIRECT VCP RESULT (Pass/Fail)</i>	<i>INDIRECT HCP RESULT (Pass/Fail)</i>
+ 2, 4, 8 kV	Pass	Pass	Pass
- 2, 4, 8 kV	Pass	Pass	Pass

The equipment continued to operate as intended after the test.

14 ELECTRICAL SAFETY	
Reference standard	CEI EN 60335-1:2008, 3 th edition July 2008 +/A13:2009, /A14:2012, /A15:2012 CLASSIFICATION CEI: 61-150 Title: <i>“Household and similar electrical appliances - Safety”</i> <i>Part 1: General requirements</i>
Test place	GSD Laboratories – Pisa
Test procedure	BT335-01-R00
Test performing period	2012 August-September
Number of instruments under test	Nr. 1 system
Evaluation criteria	Test, measurement and visual tests
Test and measurement instructions	For each test and measurement the instructions have been taken from the relative reference standard
Instrument description	Alarm system
Sampling	Prototype
Power Supply/ Nominal Power	230 Vac 50 Hz
Documentation	User’s manual
Auxiliaries devices and/or peripheries	--
Classification	Class I equipment
Environmental conditions	See § 3
Extensions	Test and measurements results refer exclusively to the tested specimen and to the specified test conditions.
Acronyms	P = Pass F = Fail NA = Not applicable -- = No remark required

Test Equipment			
INSTRUMENT	MANUFACTURER	MODEL	CAL. DUE
Electrical Tests Device	SCHLEIG - VOLTA	GLP2	01/2013
Data acquisition system	HEWLETT-PAKARD	HP34970A	01/2013
Multiplexer	HEWLETT-PAKARD	HP34901A	01/2013
Digital Multimeter	ESCORT	EDM-83BS	01/2013
Digital Multimeter	FLUKE	87	01/2013
Digital Multimeter	GW	GDM-351	01/2013
Analog Multimeter	ICE	680 R	01/2013
Power analyser	XITRON	2503AH	01/2013
Power meter	HEWLETT-PAKARD	HP436A	01/2013
Test Finger	GSD	PF01-950	01/2013
Articulate Test Finger	GSD	APF01-950	01/2013
Impact Hammer	GSD	IH02-950	01/2013
Still sphere	GSD	SS02-1	01/2013
Current probe	ESCORT	ECT - 689	01/2013
Digital Oscilloscope	TEKTRONIX	TDS 520B	01/2013
Analogue Oscilloscope	GW	GOS-652	01/2013
Thermocouples	RS	219-4309	01/2013
Isolating Transformer	GSD	XF03	--
High tension probe	FLUKE	80K-40HV	01/2013
High tension probe	TEKTRONIX	P6015A	01/2013
Active differential probe	TEKTRONIX	P5200	01/2013
Climatic Chamber	GSD	HC01	01/2013
Test probe	GSD	TP01-950	01/2013
Variac	GSD	VC01	--
Leakage current test equipment	GSD	MD 01	01/2013
Dielectric strength test equipment	GSD	HP01	01/2013
Dynamometer	GSD	DYM02-1	01/2013
Thermometer / Hygrometer mechanic	BERLIN	Polymeter 1	01/2013
Continuity earth test equipment	GSD	IT01	01/2013
HV transformer	GSD	HV01	--
Power Supply	HEWLETT-PAKARD	HP6291A	01/2013
Variac	BELOTTI	T-10NC3	--
Digital Thermometer	RS	206-3750	01/2013
Climatic Chamber	Angelantoni	CH 1200 C	01/2013

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14.1 ELECTRIC STRENGTH TEST			
Classification:	Class I equipment		
Limits:	Test voltage to apply for one minute at insulation under test: 3000 V _{AC} (between metalized case and the two phases); 1500 V _{AC} (between ground and the two phases)		
Test procedure:	BT335-01-R00/RD		
Test set-up:	Test performed on the whole equipment		
Measure uncertainty:	≤ 3% of test voltage ≤ 6% of test current		
Operative set-up:	Not connected to power supply		
Compliance criteria:	There shall be no breakdown of insulation, nor superficial, nor disruptive		
Result:	No breakdown of insulation observed. EUT complies with standard prescriptions.		
TEST INSTRUMENTATION			
Instrument	Manufacturer	Model	Cal. Due
Electrical tests device	Volta/Schleig	GLP2	01/2013
Instrument for dielectric rigidity test	GSD	HP01	01/2013
Insulator transformer	GSD	XF03	--
“Variation voltage supply” tests device	GSD	VC01	01/2013
High Voltage probe	Fluke	80k-40	01/2013
Multimeter	Hewlett Packard	HP34970A	01/2013
Multimeter	Fluke	Fluke 87	01/2013
Multimeter	Escort	EDM-83BS	01/2013

14.2 EARTH CIRCUIT RESISTANCE			
Classification:	Class I equipment		
Limits:	R < 0.1 Ω between the parts connected to earth and the same protection earth		
Test procedure:	BT335-01-R00/IP		
Test set-up:	Test performed on the whole equipment		
Measure uncertainty:	5%		
Operative set-up:	not connected to power supply		
Compliance criteria:	Resistance must not be above the specified limits		
Result:	Maximum measured resistance = 0.09 Ω Measure complies with the test specification limit		
TEST INSTRUMENTATION			
Instrument	Manufacturer	Model	Cal. Due
Electrical tests device	Volta/Schleig	GLP2	01/2013
Insulator transformer	GSD	XF03	--
“Variation voltage supply” tests device	GSD	VC01	01/2013
High Voltage probe	Fluke	80k-40	01/2013
Multimeter	Hewlett Packard	HP34970A	01/2013
Multimeter	Fluke	Fluke 87	01/2013
Multimeter	Escort	EDM-83BS	01/2013

14.3 RESIDUAL VOLTAGE			
Classification:	Class I equipment		
Limits:	V < 35 Vac (peak) or 60 Vdc after 1 sec		
Test procedure:	BT335-01-R00/RV		
Test set-up:	Test performed on the whole equipment		
Measure uncertainty:	5%		
Operative set-up:	not connected to power supply		
Compliance criteria:	Resistance must not be above the specified limits		
Result:	Residual Voltage under limit. Measure complies with standard prescriptions.		
TEST INSTRUMENTATION			
Instrument	Manufacturer	Model	Cal. Due.
Digital oscilloscope	Tektronix	TDS520B	01/2013
Active differential probe	Tektronix	P5200	01/2013
Insulator transformer	GSD	XF03	--
“Variation voltage supply” tests device	GSD	VC01	01/2013
Multimeter	Hewlett Packard	HP34970A	01/2013
Multimeter	Fluke	Fluke 87	01/2013
Multimeter	Escort	EDM-83BS	01/2013
Multimeter	ICE	S. Tester 68R	01/2013
Variac mono-phase	GSD	VC02	–

14.4 LEAKAGE CURRENT MEASUREMENT			
Classification:	Class I equipment		
Limits:	I < 0,7 mA		
Test procedure:	BT335-01-R01/LC		
Test set-up:	Circuit Selv		
Measure uncertainty:	5% of measured current		
Operative set-up:	normal operation		
Compliance criteria:	Resistance must not be above the specified limits		
Result:	Maximum value measured: I < 0,5 mA Measure complies with the test specification limit		
TEST INSTRUMENTATION			
Instrument	Manufacturer	Model	Cal. Due.
Electrical tests device	Volta/Schleig	GLP2	01/2013
Insulator transformer	GSD	XF03	--
“Variation voltage supply” tests device	GSD	VC01	01/2013
MD device for leakage current measurement	GSD	MD35/01	01/2013
Multimeter	Hewlett Packard	HP34970A	01/2013
Multimeter	Fluke	Fluke 87	01/2013
Multimeter	Escort	EDM-83BS	01/2013

14.5 INSULATION RESISTANCE TEST			
Classification:	Class I equipment		
Limits:	R > 2 MΩ		
Test procedure:	BT950/R01/IR		
Test set-up:	Test performed on the whole equipment		
Measure uncertainty:	≤ 3% of test voltage ≤ 6% of test current		
Operative set-up:	not connected to power supply		
Compliance criteria:	Resistance, calculated as the ratio between the applied tension and the absorbed current, must be above 2 MΩ		
Result:	R > 20 MΩ . Measure complies with standard prescriptions.		
TEST INSTRUMENTATION			
Instrument	Manufacturer	Model	Cal. Due
Electrical tests device	Volta/Schleig	GLP2	01/2013
HV generator	Ital Elettronica	P24	01/2013
Insulator transformer	GSD	XF03	--
Limit-maker resistance	GSD	RL01	01/2013
“Variation voltage supply” tests device	GSD	VC01	01/2013
High Voltage probe	Fluke	80K-40	01/2013
Multimeter	Hewlett Packard	HP34970A	01/2013
Multimeter	Fluke	Fluke 87	01/2013
Multimeter	Escort	EDM-83BS	01/2013

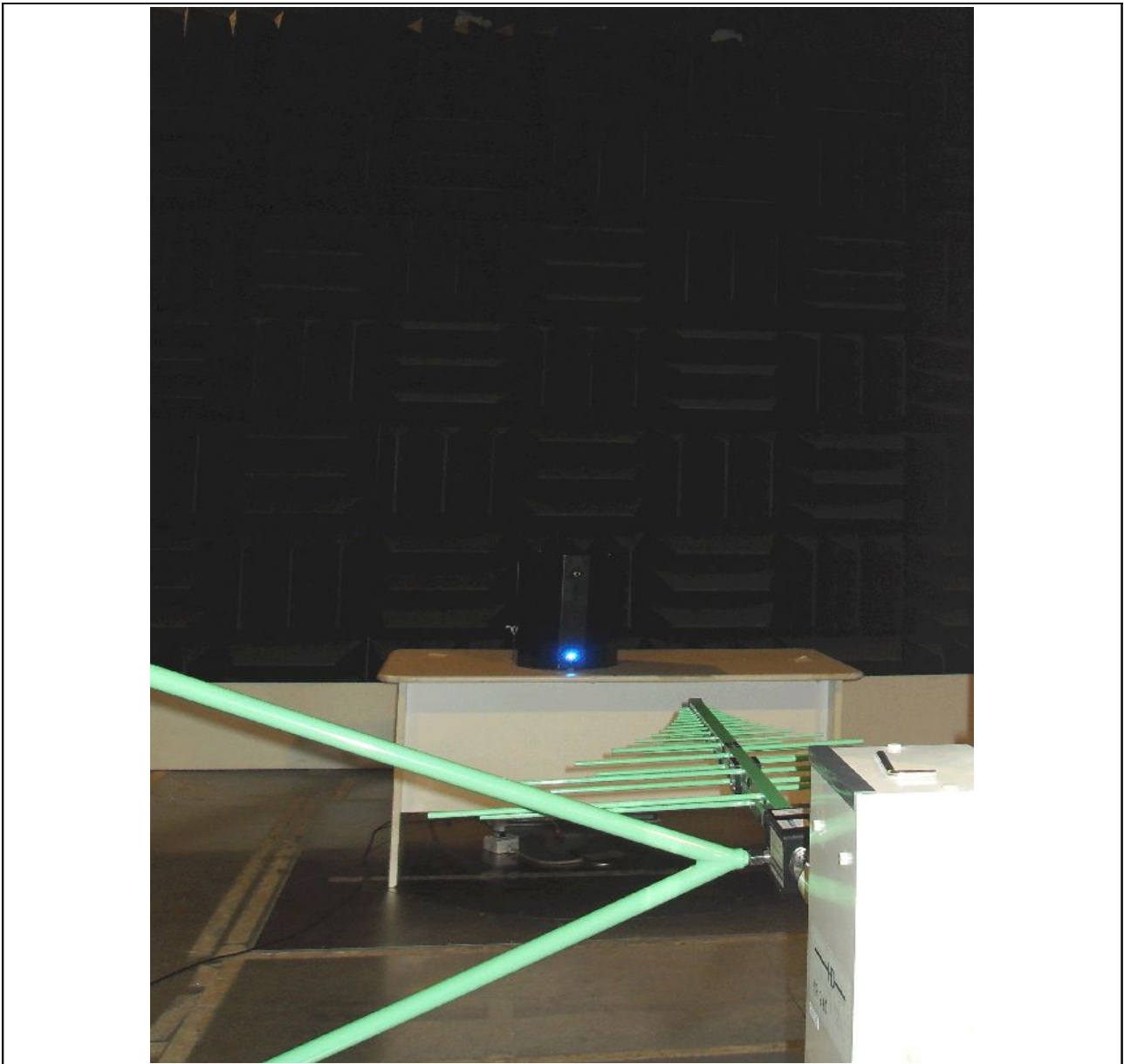
15 PHOTOS



Fig. 15 1
EUT front view



Fig. 15 2
EUT rear view



*Fig. 15 3
Radiated Emissions Test Setup inside Semianechoic Chamber*