Laboratories GSD SRL

CE MARKING

ELECTROMAGNETIC COMPATIBILITY
ELECTRICAL SAFETY
LASER SPECTROSCOPY
ENVIRONMENTAL PHYSICS

G.S.D. S.r.l.
Certified in accordance with
UNI EN ISO 9001:2008
by
TÜV Rheinland Italia S.r.l.
Certificate N. 39 00 1850509

Report n. 14607

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

Test Item Name: **Easy 1 CYL 220V**
S/N ES010031

PISA, JANUARY 23, 2015

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1 MANUFACTURER AND EUT IDENTIFICATION[1]

Customer	**UR Fog S.r.l.**
Address	Via Collegno, 11 10143 Torino Italy
Test Item Name	**Easy 1 CYL 220V** **S/N ES010031**
Date of reception	**December 23, 2014**
Test date	**2015 January 09-20**
Sampling	**Random from production**
Power	**230 Vac; 50 Hz**
Test Item Description	***"Sistema Nebbiogeno"***

[1]A detailed documentation is preserved in the internal fascicle.

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2 REFERENCE STANDARDS

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

TEST	*STANDARD*
Emission: Conducted	CEI EN 50130-4:2012 CEI EN 61000-6-3: 2007 + /A1:2013
Emission: Radiated	CEI EN 50130-4:2012 CEI EN 61000-6-3: 2007 + /A1:2013
Emissions: harmonics	EN 61000-3-2:2007 +/A1/A2:2011
Emissions: voltage fluctuations and flicker	CEI EN 61000-3-2014 + /EC:2014
Fast transients (EFT-Bursts)	CEI EN 50130-4:2012
Radio Frequency Electromagnetic Fields radiated susceptibility	CEI EN 50130-4:2012
Radio Frequency common mode	CEI EN 50130-4:2012
Surges	CEI EN 50130-4:2012
Voltage dips and interruptions	CEI EN 50130-4:2012
ESD immunity test	CEI EN 50130-4:2012
Electrical Safety Verifications	CEI EN 60335-1:2013 +/EC:2014+ /A11:2015

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Performance criteria
In order to conform to the emission standards the equipment shall meet the limits of conducted and radiated emission.
•*Performance Criterion* **A**
The EUT shall continue to operate as intended during and after the test.
•*Performance Criterion* **B**
The EUT shall continue to operate as intended after the test.
•*Performance Criterion* **C**
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.

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3 TEST GENERALITY

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

IMMUNITY TEST	*MINIMUM CRITERION*
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 = (294 ± 4) K

Relative humidity = (50 ± 5) %

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Summary of Test Results

TEST	***RESULT***
Emission: Conducted	*Pass*
Emission: Radiated	*Pass*
Emissions: harmonics	*Pass*
Emissions: voltage fluctuations and flicker	*Pass*
Fast transients (EFT-Bursts)	*Pass*
Radio Frequency Electromagnetic Fields radiated susceptibility	*Pass*
Radio Frequency common mode	*Pass*
Surges immunity test	*Pass*
Voltage dips and interruptions	*Pass*
ESD immunity test	*Pass*
Electrical Safety Verifications	*Pass*

Note

Results are referred to complete system and sub systems. For the results see related sections.

Extensions

The results refer only to the sampled EUT and under the specified conditions.

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4 CONDUCTED EMISSIONS

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

FREQUENCY RANGE (MHz)	*QUASI-PEAK LIMIT* [dB(µV)]	*AVERAGE LIMIT* [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	NEXT CALIBRATION
EMI Receiver	HP	HP8546A	01/2016
EMI Receiver Filter Section	HP	HP85460A	01/2016
Screened Room	GSD	CSC01	01/2016
Transient Limiter	HP	11947A	01/2016

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.

As regards intermittent disturbances, no click were observed: Equipment complied with the test specification limits.

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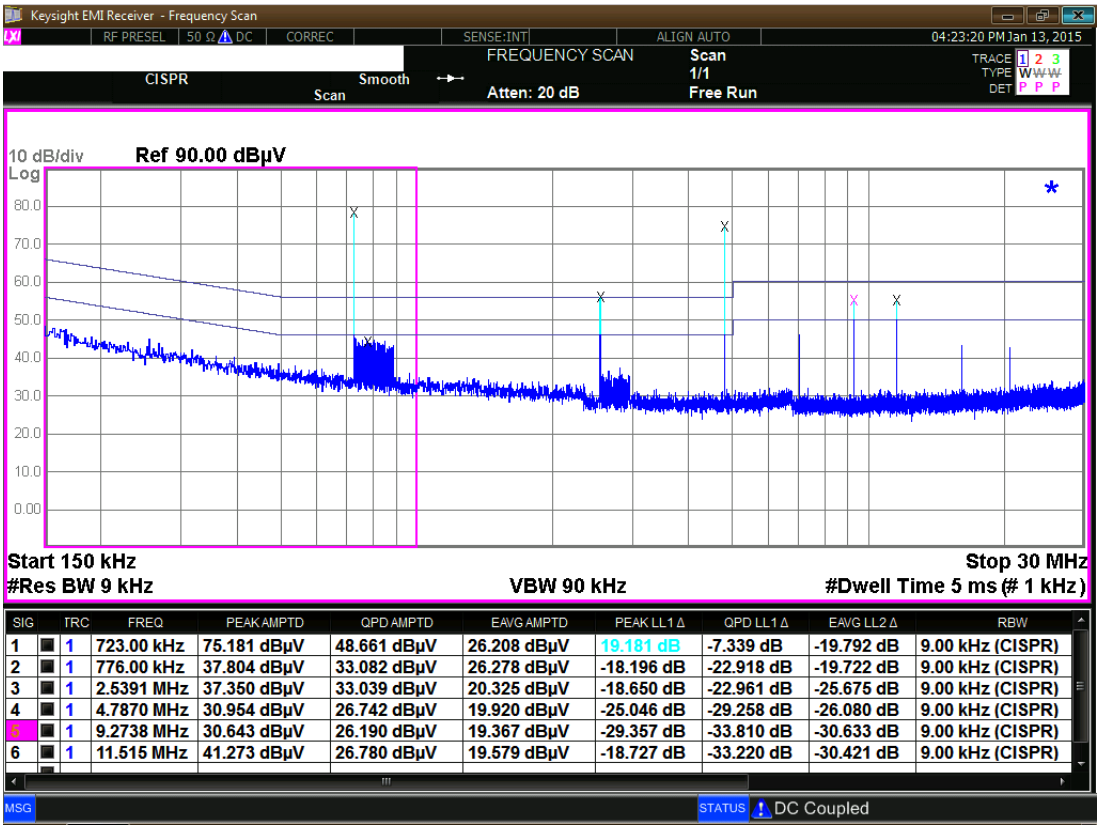
Job Number	14607
Test Name	Conducted Emissions EN 61000-6-3
EUT Name	UR Fog S.r.l. - Easy 1 CYL 220V



SIG	TRC	FREQ	PEAK AMPTD	QPD AMPTD	EAVG AMPTD	PEAK LL1 Δ	QPD LL1 Δ	EAVG LL2 Δ	RBW
1	1	723.00 kHz	75.181 dBµV	48.661 dBµV	26.208 dBµV	19.181 dB	-7.339 dB	-19.792 dB	9.00 kHz (CISPR)
2	1	776.00 kHz	37.804 dBµV	33.082 dBµV	26.278 dBµV	-18.196 dB	-22.918 dB	-19.722 dB	9.00 kHz (CISPR)
3	1	2.5391 MHz	37.350 dBµV	33.039 dBµV	20.325 dBµV	-18.650 dB	-22.961 dB	-25.675 dB	9.00 kHz (CISPR)
4	1	4.7870 MHz	30.954 dBµV	26.742 dBµV	19.920 dBµV	-25.046 dB	-29.258 dB	-26.080 dB	9.00 kHz (CISPR)
5	1	9.2738 MHz	30.643 dBµV	26.190 dBµV	19.367 dBµV	-29.357 dB	-33.810 dB	-30.633 dB	9.00 kHz (CISPR)
6	1	11.515 MHz	41.273 dBµV	26.780 dBµV	19.579 dBµV	-18.727 dB	-33.220 dB	-30.421 dB	9.00 kHz (CISPR)

Fig. 4 1

B Band (0.15 – 30 MHz): phase 1

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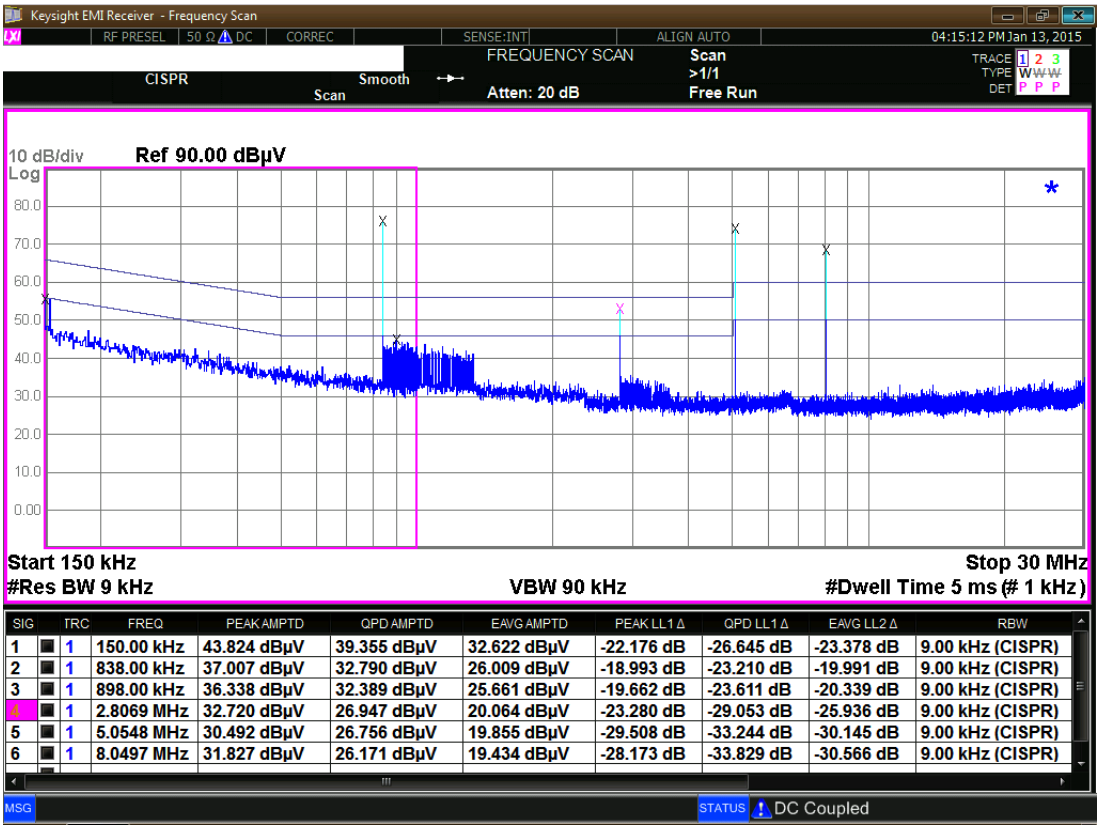
Job Number	14607
Test Name	Conducted Emissions EN 61000-6-3
EUT Name	UR Fog S.r.l. - Easy 1 CYL 220V



SIG	TRC	FREQ	PEAK AMPTD	QPD AMPTD	EAVG AMPTD	PEAK LL1 Δ	QPD LL1 Δ	EAVG LL2 Δ	RBW
1	1	150.00 kHz	43.824 dBµV	39.355 dBµV	32.622 dBµV	-22.176 dB	-26.645 dB	-23.378 dB	9.00 kHz (CISPR)
2	1	838.00 kHz	37.007 dBµV	32.790 dBµV	26.009 dBµV	-18.993 dB	-23.210 dB	-19.991 dB	9.00 kHz (CISPR)
3	1	898.00 kHz	36.338 dBµV	32.389 dBµV	25.661 dBµV	-19.662 dB	-23.611 dB	-20.339 dB	9.00 kHz (CISPR)
4	1	2.8069 MHz	32.720 dBµV	26.947 dBµV	20.064 dBµV	-23.280 dB	-29.053 dB	-25.936 dB	9.00 kHz (CISPR)
5	1	5.0548 MHz	30.492 dBµV	26.756 dBµV	19.855 dBµV	-29.508 dB	-33.244 dB	-30.145 dB	9.00 kHz (CISPR)
6	1	8.0497 MHz	31.827 dBµV	26.171 dBµV	19.434 dBµV	-28.173 dB	-33.829 dB	-30.566 dB	9.00 kHz (CISPR)

Fig. 4 2

B Band (0.15 – 30 MHz): phase 2

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5 RADIATED EMISSIONS

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

DISTANCE (m)	*FREQUENCY RANGE (MHz)*	*QUASI-PEAK LIMIT [dB (µV/m)]*
3	30 ÷ 230	40
3	230 ÷ 1000	47

Test Equipment

EQUIPMENT	MANUFACTURER	MODEL	NEXT CALIBRATION
EMI Receiver	HP	HP8546A	01/2016
EMI Receiver Filter Section	HP	HP85460A	01/2016
Anechoic Chamber	Comtest	CSA01	01/2016
Bilog Antenna	Schaffner	CBL6112B	01/2016
Horn Antenna	EMCO	3115	01/2016
Controller	Deisel	HD100	01/2016
Turn Table	Deisel	MA240	01/2016

Test procedure: RE22R02

Notes

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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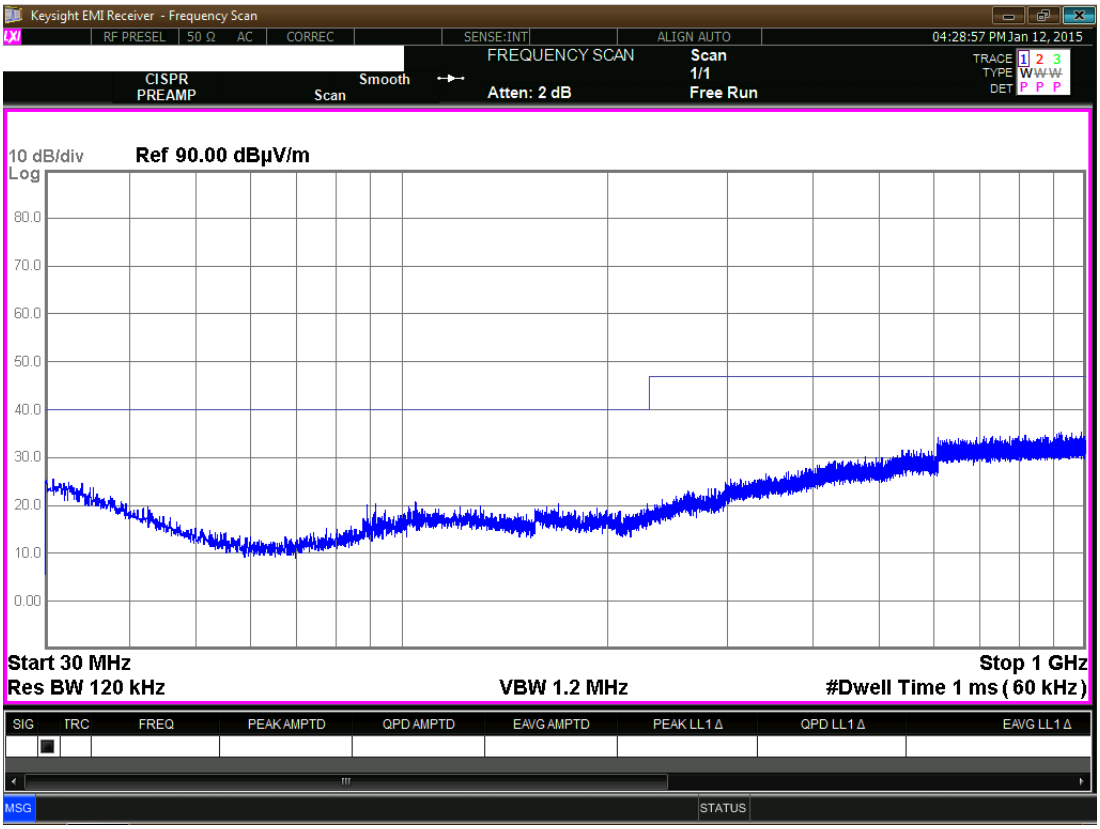
Job Number	14607
Test Name	Radiated Emissions EN 61000-6-3
EUT Name	UR Fog S.r.l. - Easy 1 CYL 220V



Notes:
Pol.=V
TT=0°
MA=100cm

Fig. 5 1

Record of the measurement of radiated emissions.

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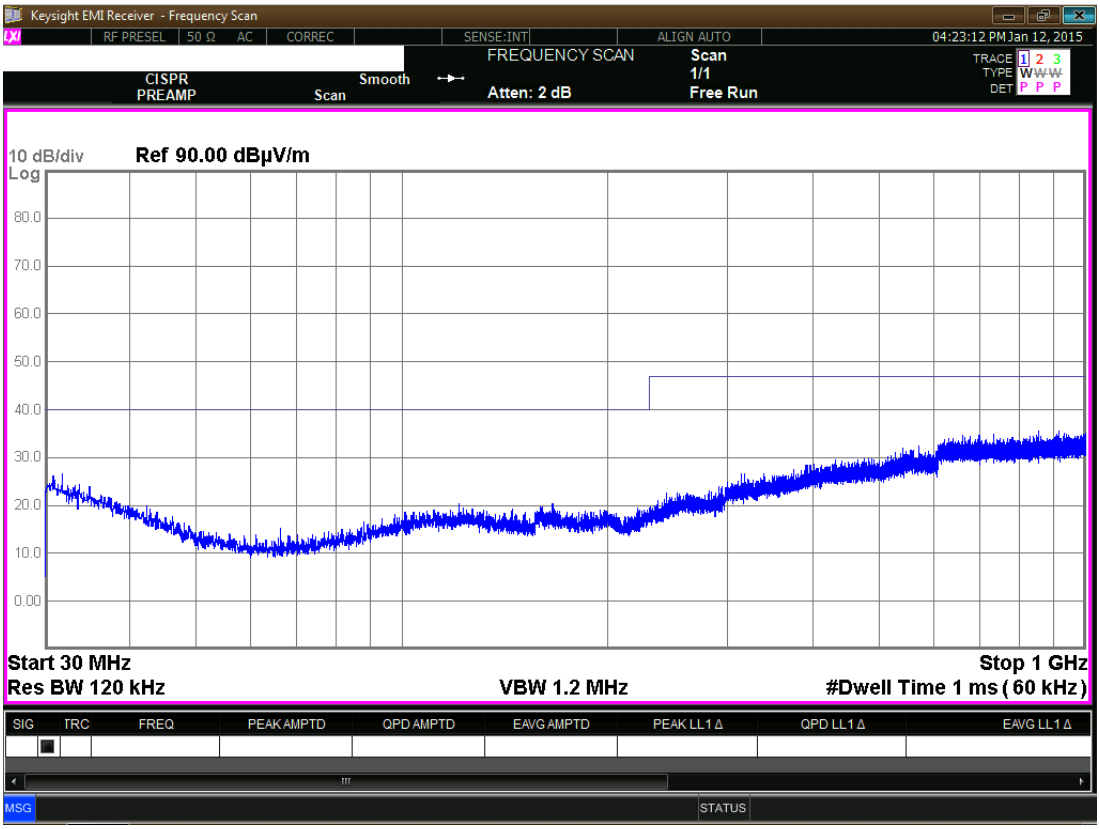
Job Number	14607
Test Name	Radiated Emissions EN 61000-6-3
EUT Name	UR Fog S.r.l. - Easy 1 CYL 220V



Notes:
Pol.=H
TT=0°
MA=100cm

Fig. 5 2

Record of the measurement of radiated emissions.

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6 EMISSIONS: CURRENT HARMONICS

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

current harmonic order n	***maximum current value A***
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	NEXT CALIBRATION
AC SOURCE	PACIFIC POWER SOURCE	140-AMX	01/2016
ANALYZER	EM TEST	DPA 500N	01/2016

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

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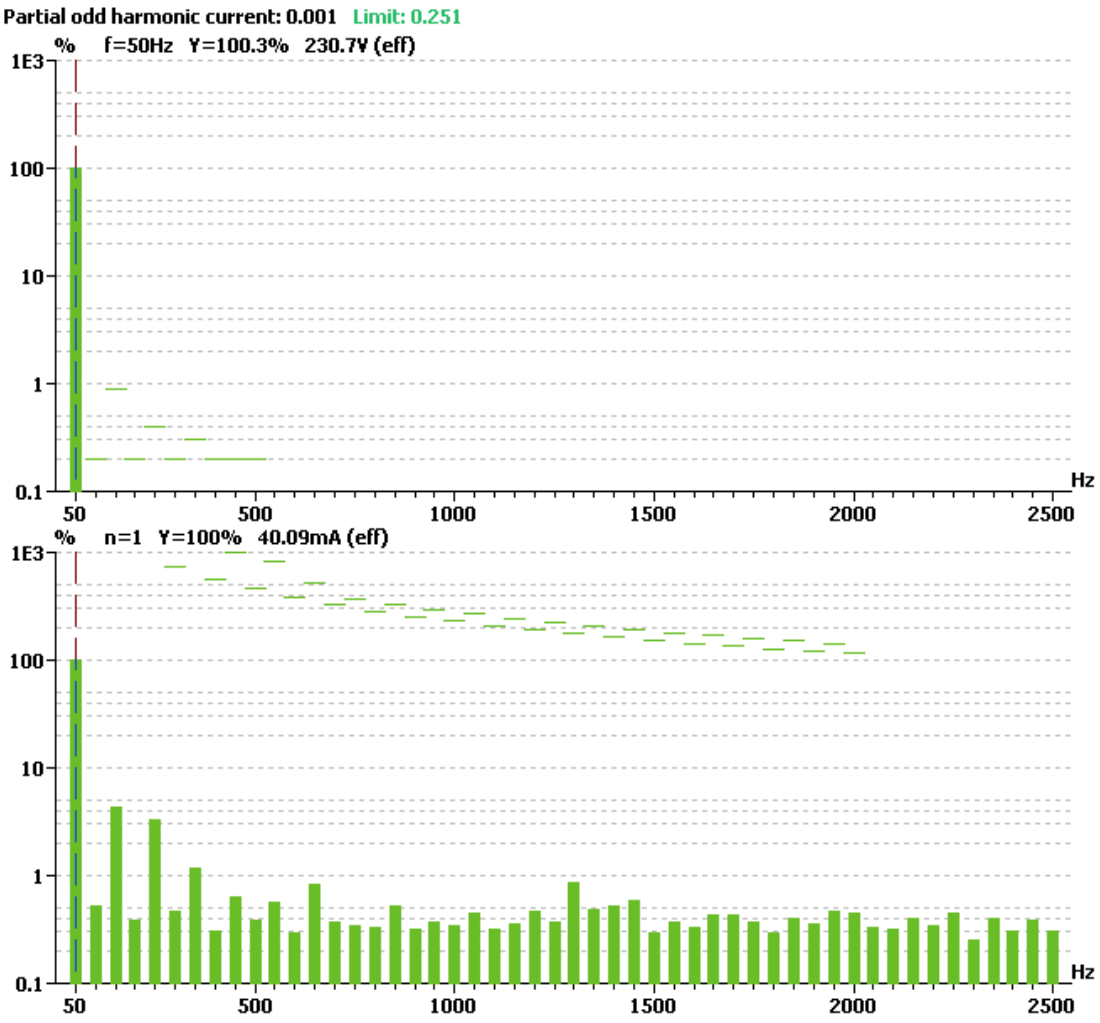

Fig. 6 1
Limit and frequency spectrum of the current harmonic emissions

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7 EMISSIONS: FLICKER

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

Variable	*Limit*
P_{st}	≤ 1.0
P_{lt}	≤ 0.65
d_c	≤ 3%
d_{max}	≤ 4%
d(t)	≤ 3% (t < 200 msec)

Observation period for measure of P_{st}: T_p = 20 min.
Observation period for measure of P_{lt}: T_p = 120 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	NEXT CALIBRATION
AC SOURCE	PACIFIC POWER SOURCE	140-AMX	01/2016
ANALYZER	EM TEST	DPA 500N	01/2016
REFERENCE IMPEDANCE	GSD	IR001	01/2016
REFERENCE IMPEDANCE	GSD	IRN001A	01/2016

Test procedure: CE32R00

Results

Variable	*Measure*
P_{st}	0.33
P_{lt}	0.31
d_c	0.399%
d_{max}	0.470%
d(t) ≥ 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 (ns)	*DURATION (at 50%) (ns)*	*BURST DURATION (ms)*	*BURST PERIOD (ms)*
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	NEXT CALIBRATION
Burst Generator	KEYTEK	CEMASTER	01/2016
Burst Generator	Compliance Design Inc.	EFT/B 100	01/2016
Capacitive Clamp	Teseo	-	01/2016

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.

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9 Radio Frequency Electromagnetic Fields Radiated Susceptibility

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

Amplitude (unmodulated) [*] *(V/m)*	*Frequency (MHz)*	*Modulation (Frequency/Deep)*	*Step Size (%)*
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	Next Calibration
RF Signal Generator	HP	8648A	01/2016
Function Generator	HP	HP33120A	01/2016
Amplifier	Amplifier Research	30W1000M7	--
Amplifier	Amplifier Research	75A250	--
Amplifier	GTC	GRF5016A	--
Power Meter	HP	HPE4419B	01/2016
Power Sensor	HP	HP8481D	01/2016
Power Sensor	HP	HP8482A	01/2016
Directional Coupler	HP	778D-012	01/2016
Directional Coupler	Amplifier Research	DC3010	01/2016
Antenna Biconical	AH Systems	SAS-200/543	01/2016
Antenna Log-Periodic	AH Systems	SAS-200/512	01/2016
Antenna Horn	EMCO	3115	01/2016
Anechoic Chamber	Comtest	CSA01	01/2016
Controller	Deisel	HD100	01/2016
Turn Table	Deisel	MA240	01/2016

Test procedure: RS43R02

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Results and conclusions

FRONT ***RESULT** (Pass/Fail)*		***BACK*** ***RESULT** (Pass/Fail)*	
Vertical Polarization	Horizontal Polarization	Vertical Polarization	Horizontal Polarization
Pass	*Pass*	*Pass*	*Pass*

RIGHT ***RESULT** (Pass/Fail)*		***LEFT*** ***RESULT** (Pass/Fail)*	
Vertical Polarization	Horizontal Polarization	Vertical Polarization	Horizontal Polarization
Pass	*Pass*	*Pass*	*Pass*

The equipment continued to operate as intended during the test.

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10 RADIO FREQUENCY, COMMON MODE

The following tables give the parameters of test.

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

Test Instrumentation

EQUIPMENT	MANUFACTURER	MODEL	NEXT CALIBRATION
RF SIGNAL GENERATOR	HP	8648A	01/2016
AMPLIFIER	AMPLIFIER RESEARCH	75A250	--
POWER METER	HP	HPE4419B	01/2016
POWER SENSOR	HP	HP8481D	01/2016
POWER SENSOR	HP	HP8482A	01/2016
DIRECTIONAL COUPLER	AMPLIFIER RESEARCH	DC3010	01/2016
CDN	GSD	M3	01/2016
CDN	GST	T4	01/2016
CURRENT INJECTION CLAMP	FCC	F-203I	01/2016

Test Procedure: CS406R03

Results

LINE	*RESULT (Pass/Fail)*
Main Power	*Pass*

The equipment continued to operate as intended during the test.

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11 SURGE IMMUNITY TEST

The following table give the parameters of test.

RISE TIME *(μs)*	*LENGTH OF PULSE (50%)* *(μs)*	*AMPLITUDE* *(kV)*	
1.2	50	± 1 (Line - Line)	± 2 (phase - earth)

Test instrumentation

EQUIPMENT	MANUFACTURER	MODEL	NEXT CALIBRATION
SURGE GENERATOR	KEYTEK	CEMASTER	01/2016

Test procedure: CS405R01

Results:

LINE *(Mains Power/Signal)*	*AMPLITUDE*[*] */ PHASE* *(kV / DEGREE)*	*RESULT* *(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.

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12 VOLTAGE DIPS AND SHORT INTERRUPTIONS

The following table give the parameters of test:

TEST	*TEST REDUCTION* *(Reduction %U_r)*	*LENGTH* *(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	NEXT CALIBRATION
PQF GENERATOR	KEYTEK	CEMASTER	01/2016

Test procedure: CS411R02

Results

LEVEL *(% reduction / periods)*	*RESULT* *(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.

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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).

VOLTAGE (kV)	*FIRST CURRENT PEAK (±10%) (A)*	*RISE TIME (ns)*	*CURRENT (±30%) at 30 ns (A)*	*CURRENT (±30%) at 60 ns (A)*
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	NEXT CALIBRATION
ESD Generator	Keytek	MZ–15FC	01/2016
Screened Chamber	GSD	CSC01	01/2016

Test procedure: ESD42R01

Results

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

The equipment continued to operate as intended after the test.

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14 ELECTRICAL SAFETY

Reference standard	CEI EN 60335-1:2008, 3th edition July 2008 +/A13:2009, /A14:2012, /A15:2012 CLASSIFICATION CEI: 61-150 Title: *"Household and similar electrical appliances - Safety"* *Part 1: General requirements*
Test place	GSD Laboratories – Pisa
Test procedure	BT335-01-R00
Test performing period	2015 January 09-20
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	*"Sistema Nebbiogeno"*
Sampling	Random from production
Power Supply/ Nominal Power	230 Vac; 50 Hz
Documentation	User's manual rev. 1.0.0 September 2013
Auxiliaries devices and/or peripheries	--
Classification	Class I (electric) 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

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Test Equipment

INSTRUMENT	MANUFACTURER	MODEL	NEXT CALIBRATION
Electrical Tests Device	SCHLEIG - VOLTA	GLP2	01/2016
Data acquisition system	HEWLETT-PAKARD	HP34970A	01/2016
Multiplexer	HEWLETT-PAKARD	HP34901A	01/2016
Digital Multimeter	ESCORT	EDM-83BS	01/2016
Digital Multimeter	FLUKE	87	01/2016
Digital Multimeter	GW	GDM-351	01/2016
Analog Multimeter	ICE	680 R	01/2016
Power analyser	XITRON	2503AH	01/2016
Power meter	HEWLETT-PAKARD	HP436A	01/2016
Test Finger	GSD	PF01-950	01/2016
Articulate Test Finger	GSD	APF01-950	01/2016
Impact Hammer	GSD	IH02-950	01/2016
Still sphere	GSD	SS02-1	01/2016
Current probe	ESCORT	ECT - 689	01/2016
Digital Oscilloscope	TEKTRONIX	TDS 520B	01/2016
Analogue Oscilloscope	GW	GOS-652	01/2016
Thermocouples	RS	219-4309	01/2016
Isolating Transformer	GSD	XF03	--
High tension probe	FLUKE	80K–40HV	01/2016
High tension probe	TEKTRONIX	P6015A	01/2016
Active differential probe	TEKTRONIX	P5200	01/2016
Climatic Chamber	GSD	HC01	01/2016
Test probe	GSD	TP01-950	01/2016
Variac	GSD	VC01	--
Leakage current test equipment	GSD	MD 01	01/2016
Dielectric strength test equipment	GSD	HP01	01/2016
Dynamometer	GSD	DYM02-1	01/2016
Thermometer / Hygrometer mechanic	BERLIN	Polymeter 1	01/2016
Continuity earth test equipment	GSD	IT01	01/2016
HV transformer	GSD	HV01	--
Power Supply	HEWLETT-PAKARD	HP6291A	01/2016
Variac	BELOTTI	T-10NC3	--
Digital Thermometer	RS	206-3750	01/2016
Climatic Chamber	Angelantoni	CH 1200 C	01/2016

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14.1 ELECTRIC STRENGTH TEST

Classification:	Class I equipment
Limits:	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*	*Next calibration*
Electrical tests device	Volta/Schleig	GLP2	01/2016
Instrument for dielectric rigidity test	GSD	HP01	01/2016
Insulator transformer	GSD	XF03	--
"Variation voltage supply" tests device	GSD	VC01	01/2016
High Voltage probe	Fluke	80k-40	01/2016
Multimeter	Hewlett Packard	HP34970A	01/2016
Multimeter	Fluke	Fluke 87	01/2016
Multimeter	Escort	EDM-83BS	01/2016

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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 = 0.065 Ω Measure complies with the test specification limit

TEST INSTRUMENTATION

Instrument	*Manufacturer*	*Model*	*Next calibration*
Electrical tests device	Volta/Schleig	GLP2	01/2016
Insulator transformer	GSD	XF03	--
"Variation voltage supply" tests device	GSD	VC01	01/2016
High Voltage probe	Fluke	80k-40	01/2016
Multimeter	Hewlett Packard	HP34970A	01/2016
Multimeter	Fluke	Fluke 87	01/2016
Multimeter	Escort	EDM-83BS	01/2016

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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*	*Next Calibration*
Digital oscilloscope	Tektronix	TDS520B	01/2016
Active differential probe	Tektronix	P5200	01/2016
Insulator transformer	GSD	XF03	--
"Variation voltage supply" tests device	GSD	VC01	01/2016
Multimeter	Hewlett Packard	HP34970A	01/2016
Multimeter	Fluke	Fluke 87	01/2016
Multimeter	Escort	EDM-83BS	01/2016
Multimeter	ICE	S.Tester 68R	01/2016
Variac mono-phase	GSD	VC02	–

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14.4 LEAKAGE CURRENT MEASUREMENT

Classification:	Class I equipment
Limits:	I < 0,7 mA
Test procedure:	BT335-01-R01/LC
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 < 0,038 mA Measure complies with the test specification limit

TEST INSTRUMENTATION

Instrument	*Manufacturer*	*Model*	*Next calibration*
Electrical tests device	Volta/Schleig	GLP2	01/2016
Insulator transformer	GSD	XF03	--
"Variation voltage supply" tests device	GSD	VC01	01/2016
MD device for leakage current measurement	GSD	MD35/01	01/2016
Multimeter	Hewlett Packard	HP34970A	01/2016
Multimeter	Fluke	Fluke 87	01/2016
Multimeter	Escort	EDM-83BS	01/2016

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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*	*Next calibration*
Electrical tests device	Volta/Schleig	GLP2	01/2016
HV generator	Ital Elettronica	P24	01/2016
Insulator transformer	GSD	XF03	--
Limit-maker resistance	GSD	RL01	01/2016
“Variation voltage supply” tests device	GSD	VC01	01/2016
High Voltage probe	Fluke	80K-40	01/2016
Multimeter	Hewlett Packard	HP34970A	01/2016
Multimeter	Fluke	Fluke 87	01/2016
Multimeter	Escort	EDM-83BS	01/2016

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15 PHOTOS

Fig. 15 1
EUT front view

Fig. 15 2
EUT rear view

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Fig. 15 3
EUT Label

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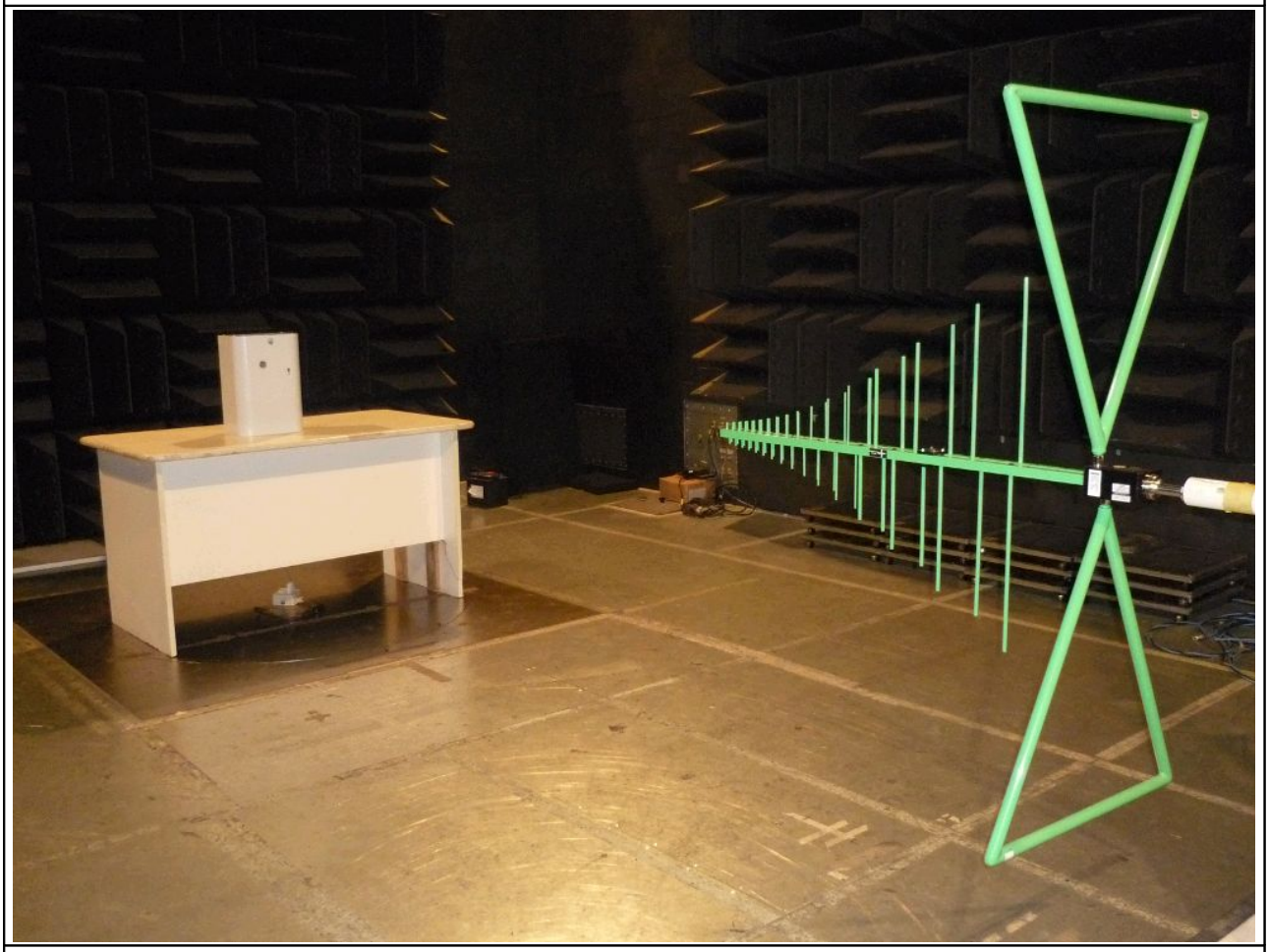

Fig. 15 4
Radiated Emissions Test Setup inside Semianechoic Chamber

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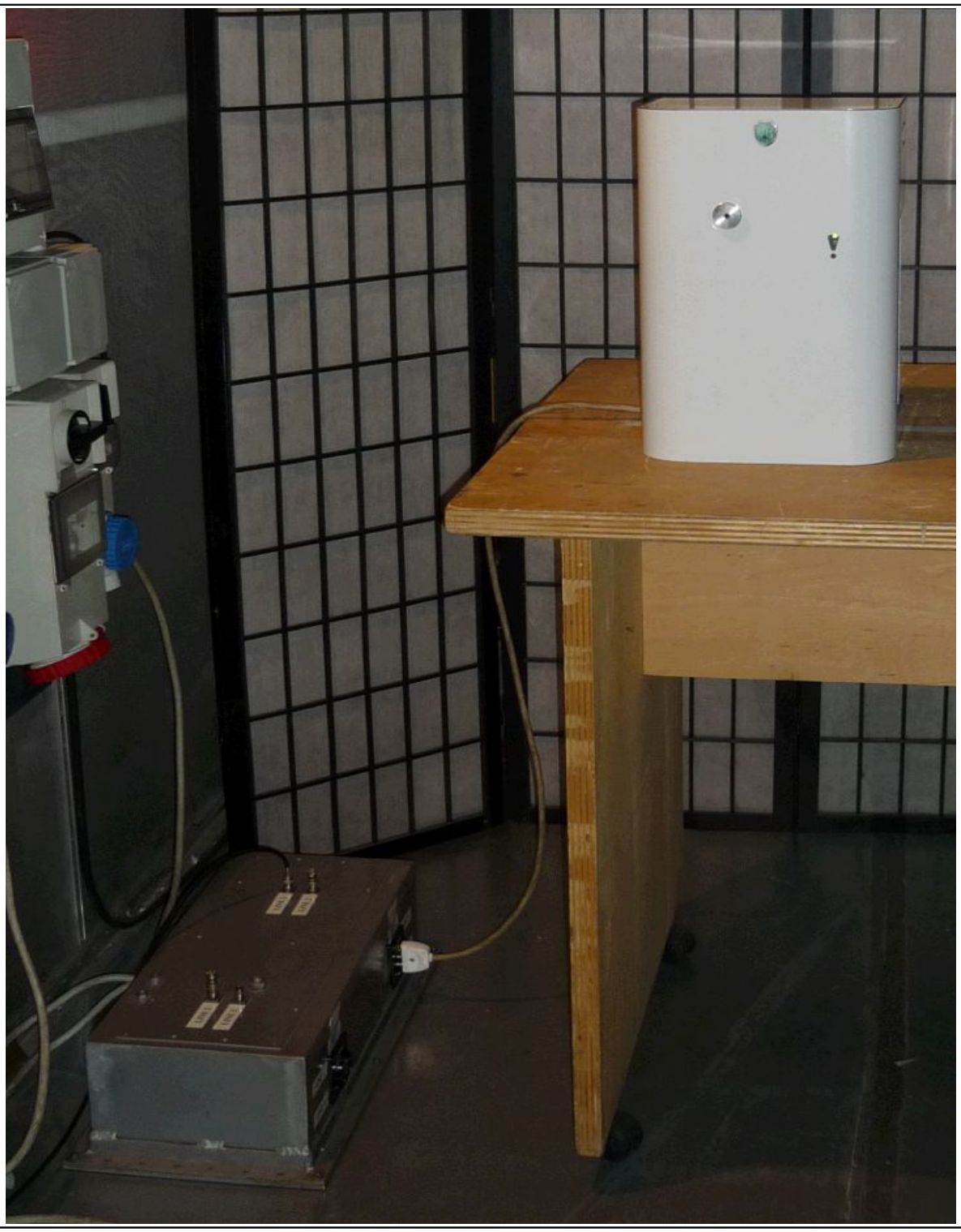

Fig. 15 5
Conducted Emissions Test Setup

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