Laboratories GSD SRL

CE **MARKING / FCC**

ELECTROMAGNETIC COMPATIBILITY
ELECTRICAL SAFETY
LASER SPECTROSCOPY
ENVIRONMENTAL PHYSICS

www.tuv.com TÜVRheinland ID:9105021519

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

SINCERT

G.S.D. Srl PISA - Italy	***Test Report n. 13210-FCC***	Rev. 01

Applicant / Manufacturer	**UR FOG S.r.l.** Via Collegno, 11 10143 Torino Italy
Test Item Name	**UR FOG FAST01**
FCC Rules	Rule Part 15, Subpart B - Unintentional Radiators Class B Limits
Testing Laboratory	**G.S.D. S.r.l.** Via Marmiceto, 8 - 56121 Ospedaletto Pisa (PI) Italy
FCC listed	**Id nr. 424037**

Gentlemen:
Enclosed please find your copy of the Test Data Report for the referenced equipment. Please keep the original on record for submission to the FCC, but only if and when they request it.
In the event the FCC ever requests this submission, please complete all the documentation requirements, (as per the LIST OF EXHIBITS) before sending.
Should you have any questions, please do not hesitate to call.

Location and Date of Issue	Pisa, 2013 June, 25

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

Laboratories GSD SRL

CE **MARKING / FCC**

ELECTROMAGNETIC COMPATIBILITY
ELECTRICAL SAFETY
LASER SPECTROSCOPY
ENVIRONMENTAL PHYSICS

www.tuv.com TÜVRheinland ID:9105021519

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

SINCERT

G.S.D. Srl **PISA - Italy**	***Test Report n. 13210-FCC***	Rev. 01

Test Item Name	**UR FOG FAST01**
To	**Federal Communications Commission**
FCC Rules	Rule Part 15, Subpart B - Unintentional Radiators Class B Limits
At the request of	**UR FOG S.r.l.** Via Collegno, 11 10143 Torino Italy
Attention of	**UR FOG S.r.l.** Via Collegno, 11 10143 Torino Italy
Testing Laboratory	**G.S.D. S.r.l.** Via Marmiceto, 8 - 56121 Ospedaletto Pisa (PI) Italy Tel/Fax +39 050 984254 / +39 050 984262 e-mail: info@gsd.it
Date	Pisa, 2013 June, 25

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

The applicant has been cautioned as to the following:
15.21 Information to User.
The users manual or instruction manual for an intentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
15.27(a) Special Accessories.
Equipment marketed to a consumer must be capable of complying with the necessary regulations in the configuration in which the equipment is marketed. Where special accessories, such as shielded cables and/or special connectors are required to enable an unintentional or intentional radiator to comply with the emission limits in this part, the equipment must be marketed with, i.e. shipped and sold with, those special accessories. However, in lieu of shipping or packaging the special accessories with the unintentional or intentional radiator, the responsible party may employ other methods of ensuring that the special accessories are provided to the consumer, without additional charge. Information detailing any alternative method used to supply the special accessories for a grant of equipment authorization or retained in the verification records, as appropriate. The party responsible for the equipment, as detailed in § 2.909 of this chapter, shall ensure that these special accessories are provided with the equipment. The instruction manual for such devices shall include appropriate instructions on the first page of text concerned with the installation of the device that these special accessories must be used with the device. It is the responsibility of the user to use the needed special accessories supplied with the equipment.

Testimonial and Statement of Certification
This is to certify that:
1. That the application was prepared either by, or under the direct supervision of, the undersigned.
2. That the technical data supplied with the application was taken under my direction and supervision.
3. That the data was obtained on representative units, randomly selected.
4. That, to the best of my knowledge and belief, the facts set forth in the application and accompanying technical data are true and correct.

INDEX

1. MANUFACTURER AND EUT IDENTIFICATION [1]

Applicant	**UR FOG S.r.l.** Via Collegno, 11 10143 Torino Italy
Mailing	**UR FOG S.r.l.** Via Collegno, 11 10143 Torino Italy
EUT Category	**Unintentional Radiator**
Test Item Name	**UR FOG FAST01**
Manufacturer	**UR FOG S.r.l.** Via Collegno, 11 10143 Torino Italy
Testing Laboratory	**G.S.D. S.r.l.** Via Marmiceto, 8 - 56121 Ospedaletto Pisa (PI) Italy Tel/Fax +39 050 984254 / +39 050 984262 e-mail: info@gsd.it
Date of reception	**2013 June, 13**
Date of test	**2013 June 18**
Sampling	**Random from production**
Test Item Description	**"Sistema Nebbiogeno"**
Nominal Input Voltage	**110-130 V~ 50/60 Hz**

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

Fig. 1.1
Equipment under test Front view

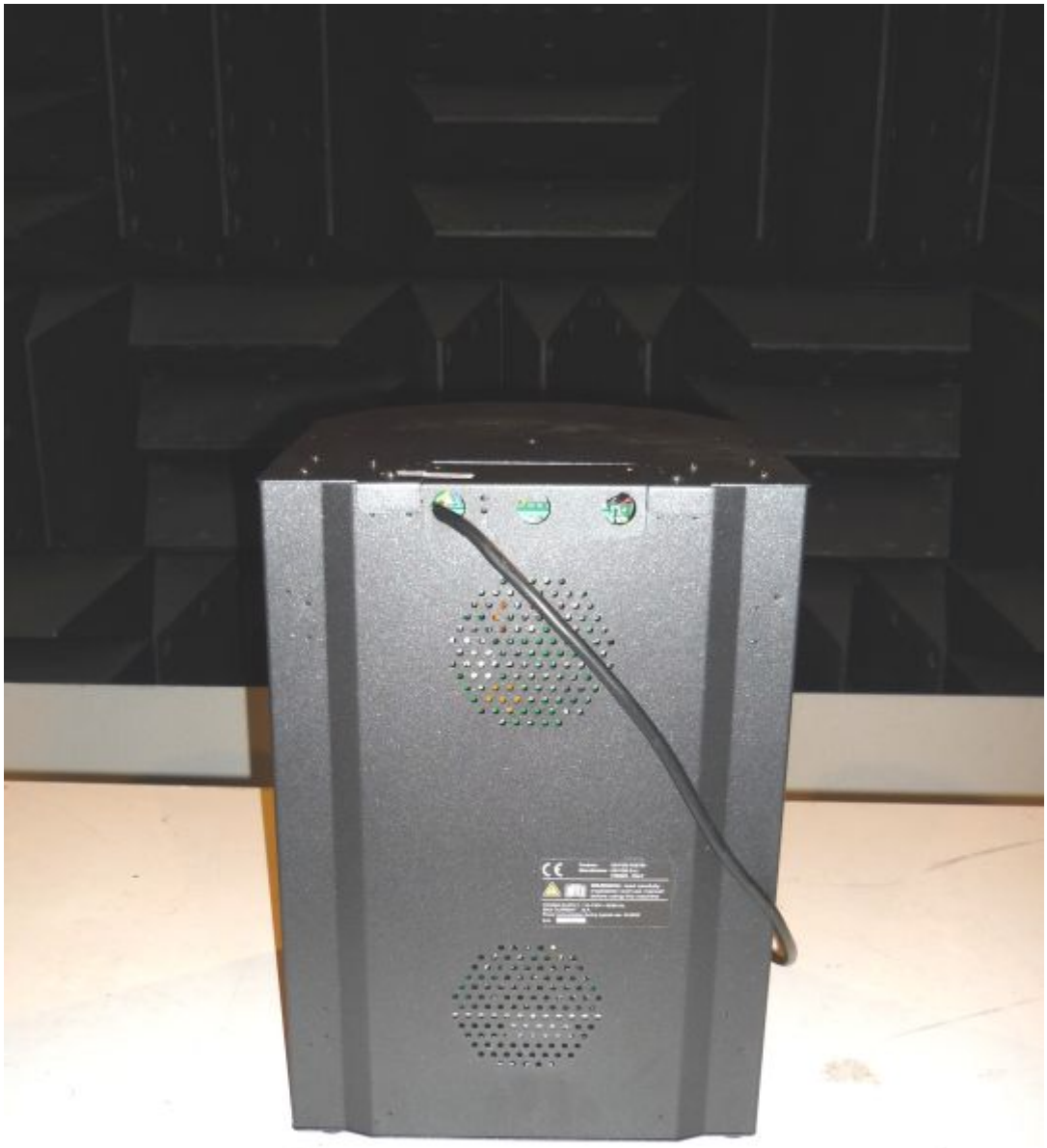


Fig. 1.2
Equipment under test Rear view

2. REFERENCE STANDARDS

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

TEST	*STANDARD*
Emissions: Radiated	FCC Rules ad Regulations, Title 47 (2008) Part 15 – Sub part B ANSI C63.4 – American National Standard for Methods of Measuring of Radio-Noise Emissions from Low Voltage Electrical and Electronic Equipment in the Range of 9 kHz – 40 GHz
Emissions: Conducted	FCC Rules ad Regulations, Title 47 (2008) Part 15 – Sub part B ANSI C63.4 – American National Standard for Methods of Measuring of Radio-Noise Emissions from Low Voltage Electrical and Electronic Equipment in the Range of 9 kHz – 40 GHz

3. TEST GENERALITY

Sub-part 2.1033(b)

Test And Measurement Data

All tests and measurement data shown were performed in accordance with FCC Rules and Regulations, Volume II; Part 2 and the following individual Parts: 15.109; Unintentional Radiators.

Standard Test Conditions and Engineering Practices

Except as noted herein, the following conditions and procedures were observed during the testing:
In accordance with ANSI C63.4-2004, and unless otherwise indicated in the specific measurement results, the ambient temperature of the actual EUT was maintained within the range of 10° to 40°C (50° to 104 °F) unless the particular equipment requirements specify testing over a different temperature range. Also, unless otherwise indicated, the humidity levels were in the range of 10% to 90% relative humidity.
Prior to testing, the EUT was tuned up in accordance with the manufacturer's alignment procedures.
All external gain controls were maintained at the position of maximum and/or optimum gain throughout the testing.
Measurement results, unless otherwise noted, are worst-case measurements.

Summary of Test Results

TEST	***RESULT***
Emissions: radiated *Section 15.109 Class B*	*Pass*
Emissions: conducted *Section 15.107 Class B*	*Pass*

Measurement uncertainty

TEST	***EXPANDED UNCERTAINTY***
Conducted Emission – 50Ω/50µH AMN (150 kHz - 30 MHz)	± 3.5 dB
Radiated Emission – Semianechoic chamber (30 MHz - 6 GHz)	± 4.7 dB

Environmental Conditions

PARAMETER	***VALUE***
Temperature	(295 ± 3) K
Relative humidity	(50 ± 5) %

Extensions

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.

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	8546A	JAN 2014
Transient Limiter	HP	11947A	JAN 2014
LISN	GSD	LSN001	JAN 2014

Test procedure: CE22R01

Test method

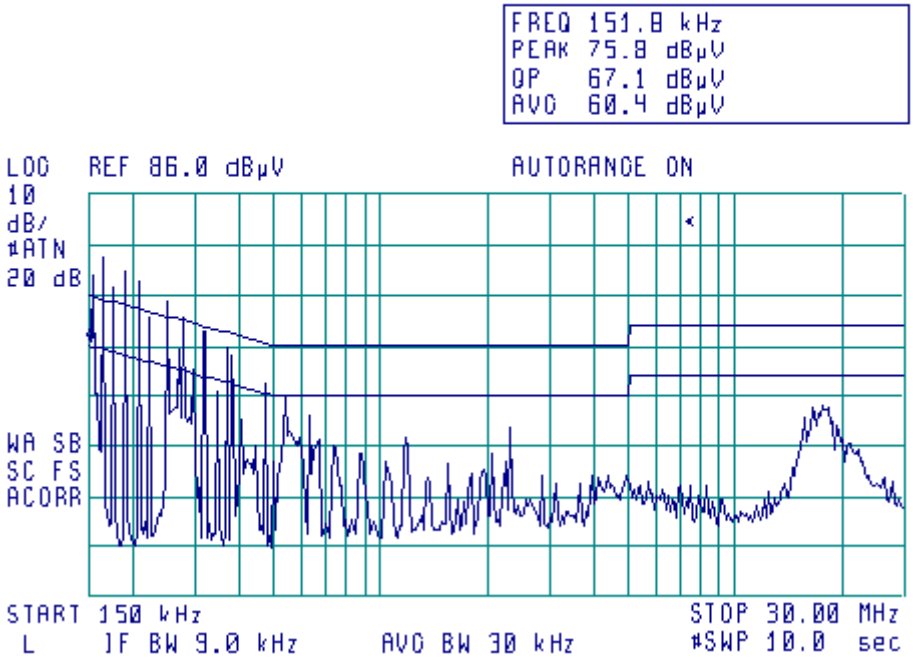
Test method was in accordance with the reference standard.

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

Results

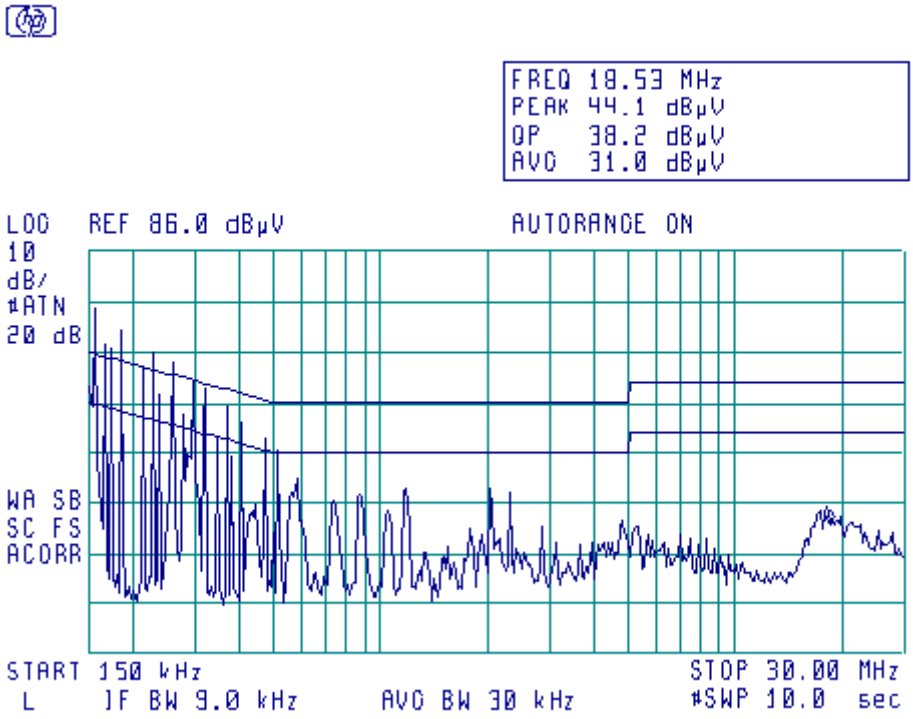
Graphics in following figures show some registrations of the frequency spectrum of the conducted emissions.

Job Number 13210-FCC
Test Name Conducted Emissions FCC 15B
EUT Name UR FOG FAST01



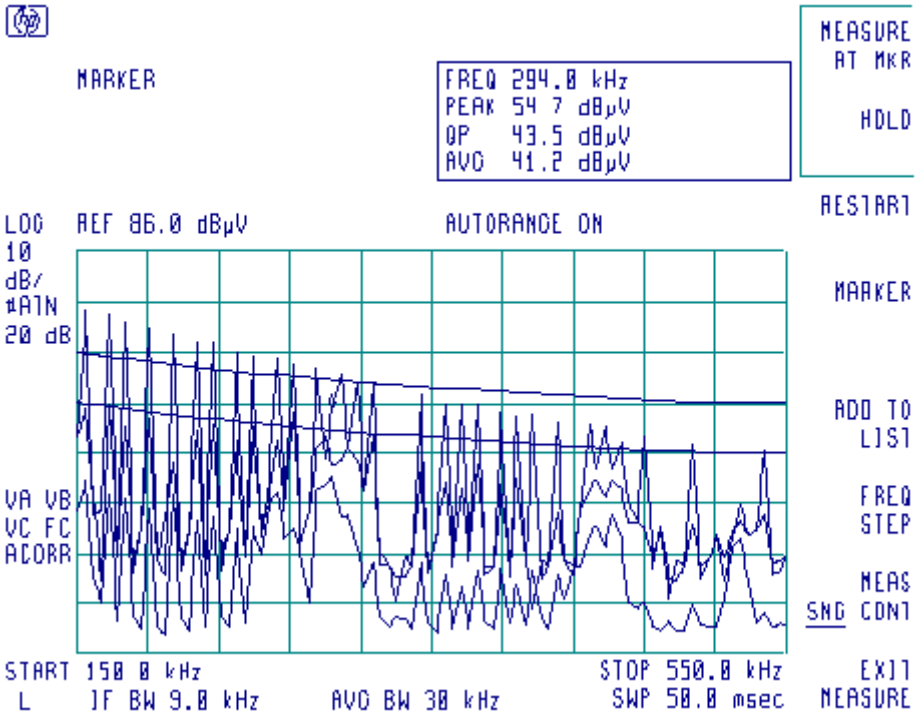
Notes:
Phase 1

Job Number 13210-FCC
Test Name Conducted Emissions FCC 15B
EUT Name UR FOG FAST01



Notes:
Phase 2

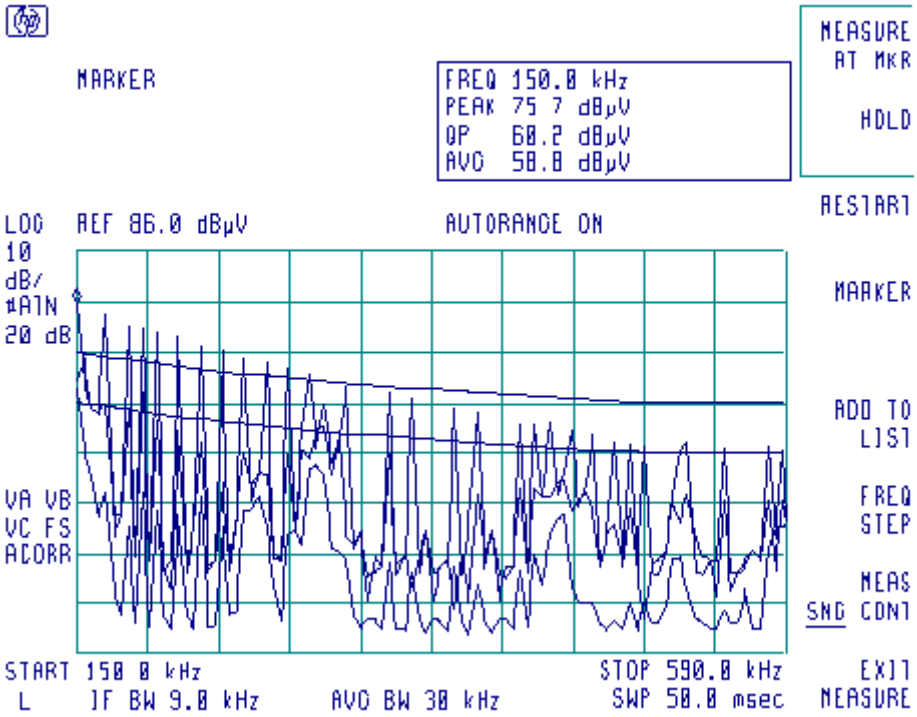
Job Number 13210-FCC
Test Name Conducted Emissions FCC 15B
EUT Name UR FOG FAST01



Notes:
Phase 1
Stepped measure on range 150kHz – 550kHz

Frequency (MHz)	PK (dBuV)	QP (dBuV)	AVG (dBuV)
0,29	54,71	43,47	41,22
0,27	63,41	54,1	30,84
0,29	62,9	46,84	38,39
0,3	46,88	46,89	33,34
0,23	68,06	51,41	33,24
0,22	67,94	50,45	32,4
0,19	70,66	52,57	35,06
0,17	73,32	55,77	37,9
0,15	74,43	54,7	40,27
0,44	51,43	38,74	29,54
0,45	42,81	40,22	33,66

Job Number 13210-FCC
Test Name Conducted Emissions FCC 15B
EUT Name UR FOG FAST01



Notes:
Phase 2
Stepped measure on range 150kHz - 590kHz

Frequency (MHz)	PK (dBuV)	QP (dBuV)	AVG (dBuV)
0,15	75,72	60,17	58,82
0,15	59,91	64,5	46,83
0,17	73,47	55,77	38,12
0,18	71,12	54,67	31,53
0,19	71,03	57,77	38,16
0,2	69,85	52,32	34,54
0,21	69,25	50,27	33,6
0,28	62,67	45,56	29,77
0,29	50,88	46,69	27,54
0,3	47,04	50,43	43,28
0,3	55,81	51,18	41,54
0,31	48,88	48,38	26,11

0,45	41,91	40,25	33,63
0,58	28,77	22,48	31,01

5. RADIATED EMISSIONS

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

FREQUENCY RANGE *(MHz)*	***Field Strength @ 3m*** *QUASI-PEAK LIMITS* *[dB (μV/m)]*
30 ÷ 88	40
88 ÷ 216	43,5
216 ÷ 960	46
Above 960	54

Test Equipment

EQUIPMENT	MANUFACTURER	MODEL	NEXT CALIBRATION
EMI Receiver	HP	HP8546A	JAN 2014
Semianechoic Room	GSD	CSC01	JAN 2014
Bilog Antenna	Schaffner	CBL6112B	JAN 2014
LISN	GSD	LSN01	JAN 2014

Test procedure: RE22R02

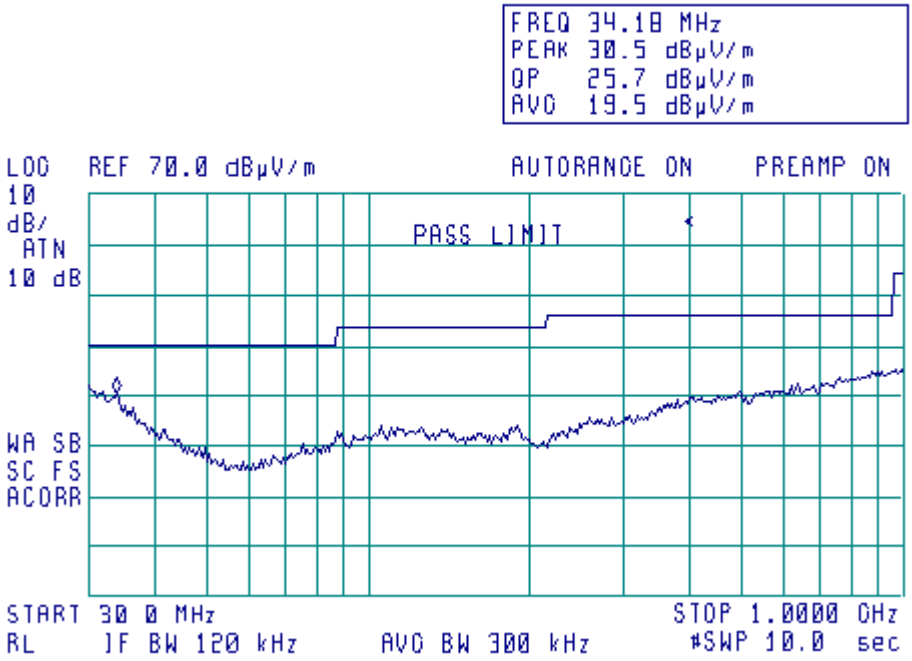
Notes

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.

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.

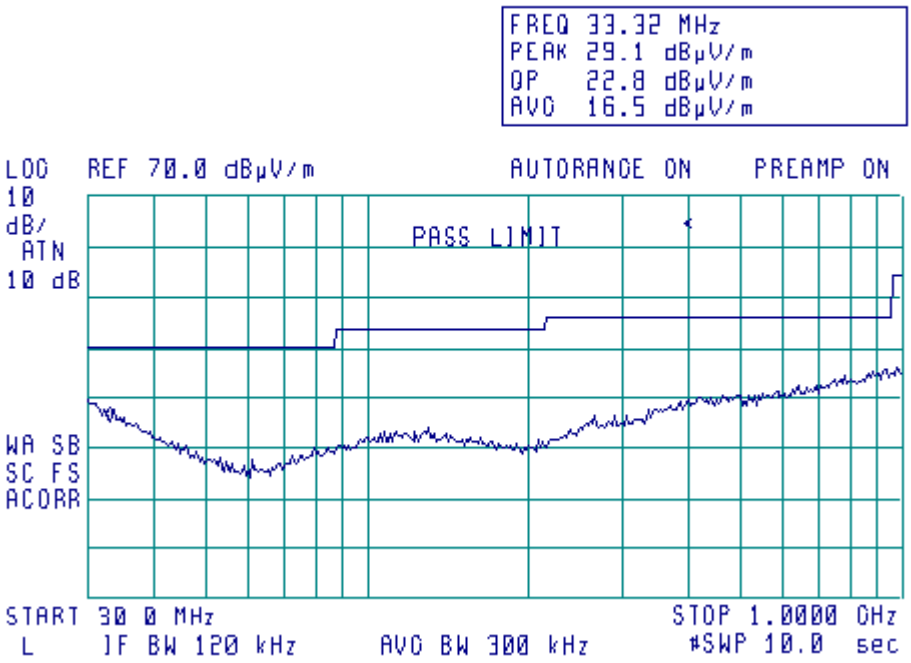
Job Number 13210-FCC
Test Name Conducted Emissions FCC 15B
EUT Name UR FOG FAST01



Frequency (MHz)	PK (dBuV/m)	QP (dBuV/m)	AVG (dBuV/m)
34,18	30,5	25,71	19,49
89,91	23,87	19,85	15,19
188,94	24,75	20,9	16,55
184,53	23,9	18,91	13,7
487,99	32,34	26,55	20,45

Notes:
POL V
MA: 100 cm
TT: 0°
EUT load 1,5A

Job Number 13210-FCC
Test Name Conducted Emissions FCC 15B
EUT Name UR FOG FAST01



Frequency (MHz)	PK (dBuV/m)	QP (dBuV/m)	AVG (dBuV/m)
33,32	29,05	22,77	16,48
52,17	18,14	12,91	6,56
61,44	17,13	11,4	5,14
261,27	26,3	20,14	13,81
302,58	25,67	20,23	13,88
762,59	34,2	27,81	21,55

Notes:
POL H
MA: 100 cm
TT: 0°
EUT load 1,5A

6. PHOTO

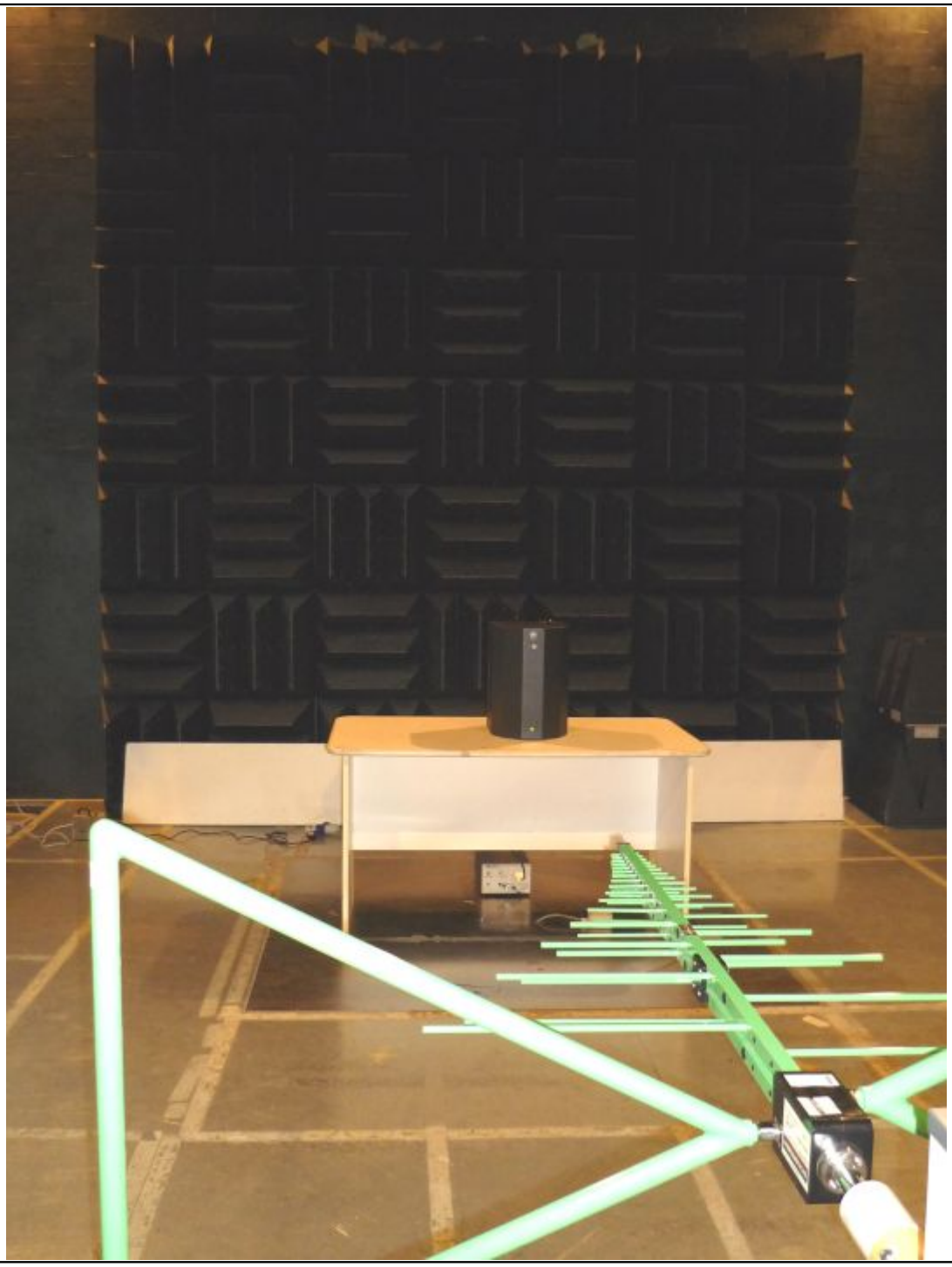


Fig. 6.1

Equipment Under Test: Radiated Emissions Test Set-up

Fig. 6.2

Equipment in conducted emissions test setup