



Compliance Department
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EMC Test Report

Customer: NEEC AUDIO BARCELONA, S.L.

Product type: Self-Powered Mixer

EUT Model: ECLER HMA 120

Serial number: 218340079

Test Report ID Number: BE2015045

Test Report version: 1.0

Total Number of pages: 23

Test standards:

FCC RULES AND REGULATIONS 47 CFR PART 15, SUBPART B (10-01-12 Edition)
DEVICE CLASS A.

Edited by:

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REVISION PAGE

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1.0 Technical Details

1.1 Test standards and results

Overview about the different emission measurements

EMISSION				
Kind of Test	Test Carried Out	Used Standard	Results o.k. not o.k.	Test Page No.
Radiated Emissions (30MHz-1GHz) <i>Electromagnetic Field strength at 3m</i>				
- Enclosure	<input checked="" type="checkbox"/>	<u>FCC 47 CFR PART 15 subpart B</u>	<input checked="" type="checkbox"/> <input type="checkbox"/>	<u>15</u>
Conducted Emissions (150kHz-30MHz) <i>Disturbance Voltage</i>				
- AC power supply port	<input checked="" type="checkbox"/>	<u>FCC 47 CFR PART 15 subpart B</u>	<input checked="" type="checkbox"/> <input type="checkbox"/>	<u>16</u>

Complete Test Results

The measurement was carried out according to the previous mentioned standards. Deviations from the standards are listed at the specified tests.

Exceeding of the limits was observed:

YES

NO

Comment :

The test result is only valid for the equipment tested.

In following cases the compliance with relevant standards for the system has to be ensured again:

- I. Tested product will not be used with other components than those mentioned in this report.
- II. Tested product will not be used in other modes than those described in the manufacturer descriptions.

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IDNEO Technologies S.L. Compliance Department.

Viladecavalls (Barcelona), April 29th, 2015

2.0 General Details

2.1 Test laboratory

Department/group:	EMC Compliance Department
Laboratory address:	IDNEO Technologies S.L. Polígono Industrial, Can Mitjans s/nº, C.P. 08232 Viladecavalls (Barcelona), Spain
Telephone:	+34-93-706-8400
Fax:	+34-93-700-8168
Contact person:	Mr. David Ortiz
Phone contact:	+34-93-700-8471
Email contact:	david.ortiz@idneo.es

2.2 Client details

Company name:	NEEC AUDIO BARCELONA, S.L.
Department/group:	R+D
Company address:	C/ Motors, 166-168 08038 Barcelona - Spain
Contact person:	Sr. Josep M^a. Mas
Phone contact:	+34 93 223 84 00
Fax contact:	+34 93 223 84 04
Email contact:	j.mas@ecler.es

2.3 Dates of order

Incoming date of order : 27/03/2015

Incoming date of the test object : 27/04/2015

Date of test: From: 27/04/2015 Until: 27/04/2015

2.4 Test object

Product type: ECLER HMA 120

Tested model: Self-Powered Mixer

Serial number: 218340079

Brand: ECLER

PCB version: V 0.3

Input ratings: 115-230Vac / 47-63Hz

EUT status: Production sample

Auxiliary Equipment : Pink noise generator. Qty 1
Set for 1/8W of nominal power

XLR FEMALE to RCA STEREO
adapter. Qty 1
Connected from the generator to the
E.U.T. inputs

Cable RCA Stereo. Qty 1
Connected from the generator to the
E.U.T. inputs

Microphone Shure SM58 with
cable. Qty 1
Connected to the D.U.T. microphone
input

Wall volume control (0-10V) with
cable. Qty 1
Connected to EUT remote ports

4X25Ω dummy load with cable. Qty 1
Connected to EUT outputs

EUT (Mode 1):

The set up using during RE and CE testing is described below :

The speaker output of the amplifier were connected to a 100 ohm dummy load.

Both INPUT 1 channels were connected to a pink noise generator.

A microphone was connected to the MIC input.

A WPmVOL remote control was connected to the REMOTE input

2.5 Details about uncertainty measurement.

In case of measurement results close to the limit, there is the possibility, that due to the measurement uncertainty $U_x = k \cdot \sigma_t$ ($\sigma_t = \sqrt{\sigma_1^2 + \sigma_2^2 + \dots + \sigma_n^2}$ standard deviation of the total accumulated error), at a confidence level of 95% ($k = 2$), the limits are indeed exceeded!.

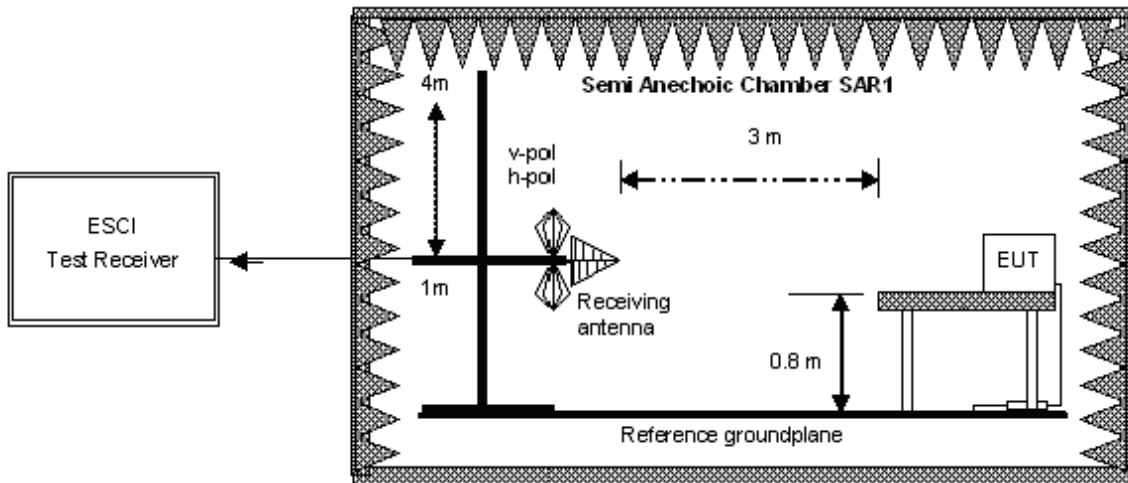
Test measurement	Uncertainty (Expanded Uncertainty)
Radiated Emissions at 3 m distance	±3.9 dB
Conducted Emissions at power port	±2.6 dB

Measurement protocols and test setups

3.1 Emissions

3.1.1 Radiated Emission in semianechoic chamber

Test setup



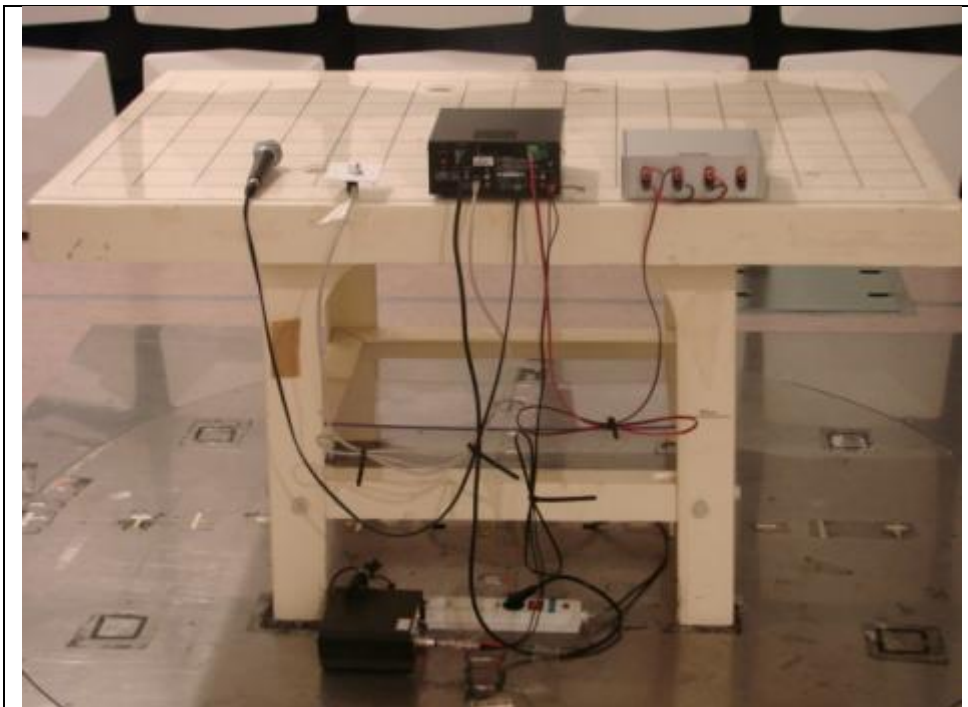
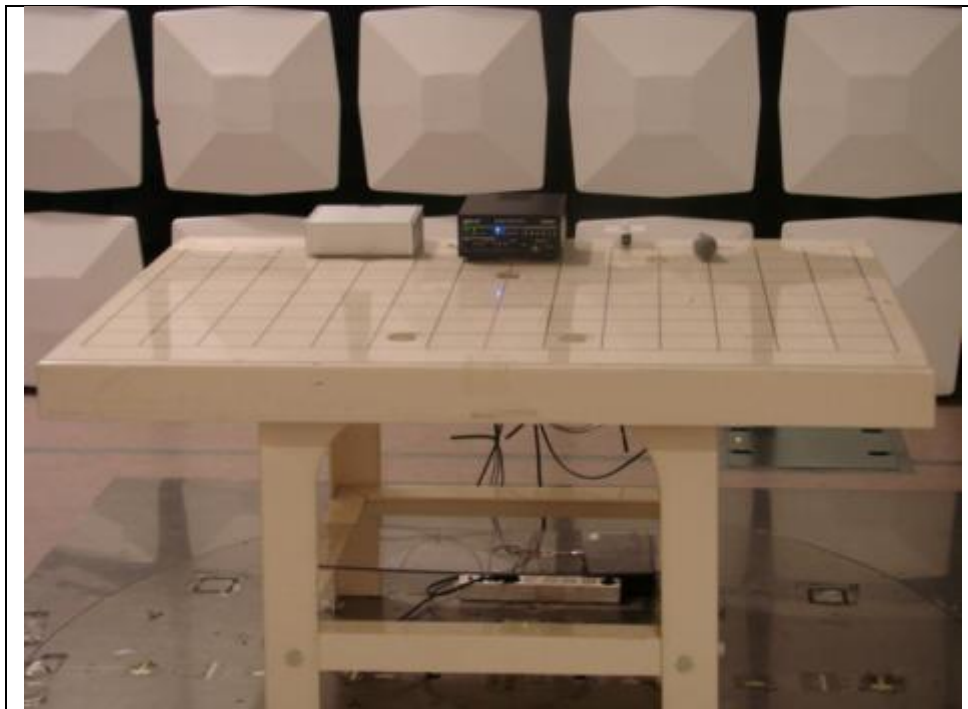
Operation Modes

Following operation modes have been applied to the EUT:	EUT working as described in MODE 1
---	------------------------------------

Accessories used for these measurements: ***described in clause 2.4.***

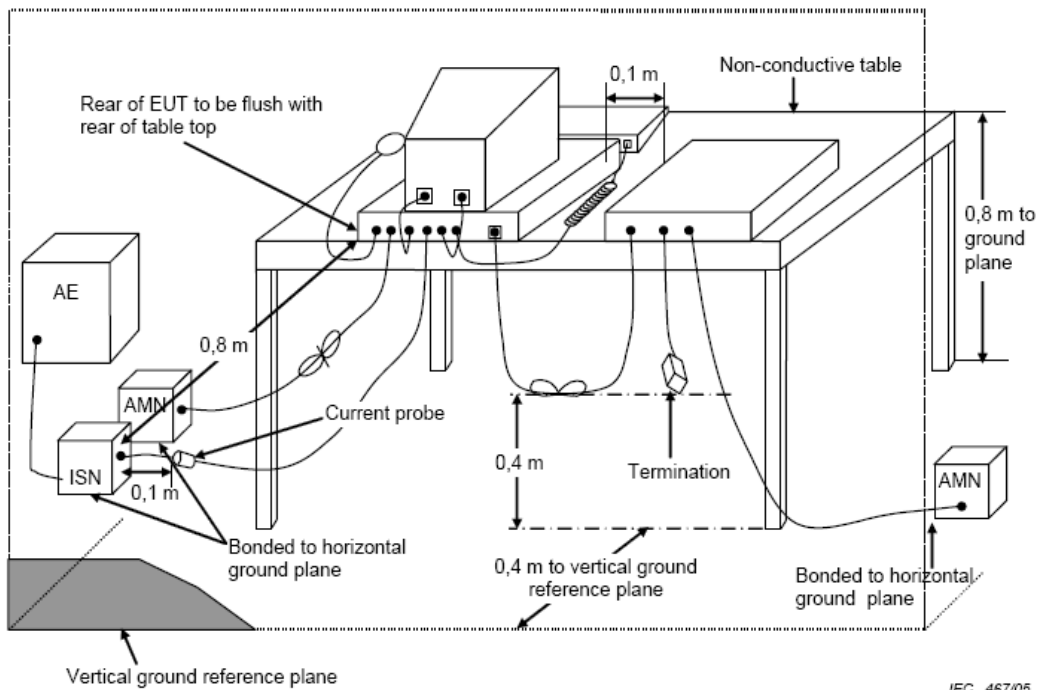
Test set up photo for EUT

Enclosure



3.1.2 Conducted Emissions at AC power port

Test setup



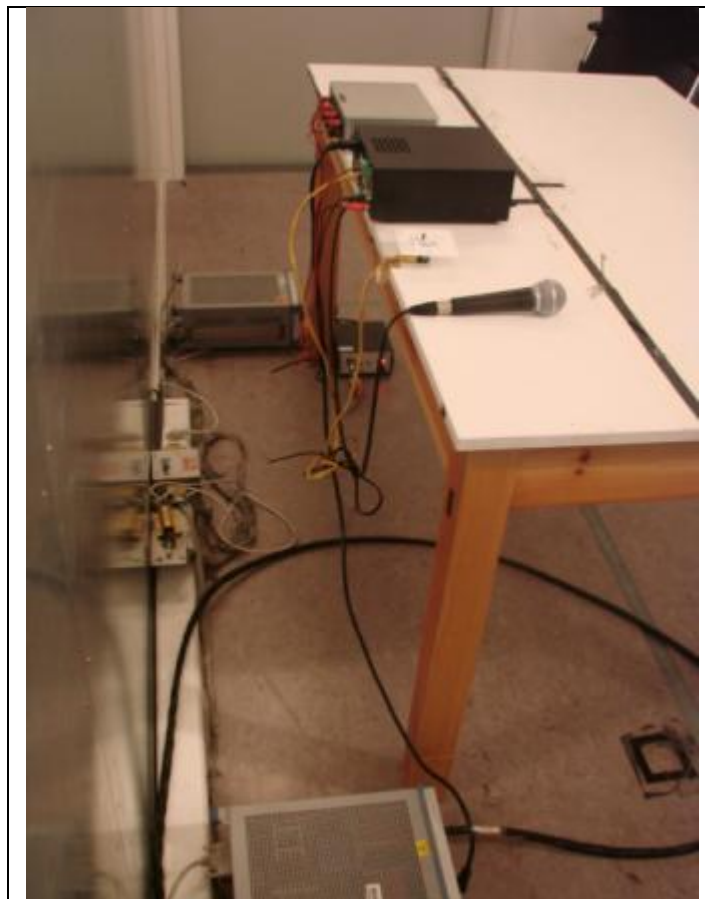
Operation Modes

Following operation modes have been applied to the EUT:	EUT working as described in MODE 1
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Accessories used for these measurements: **described in clause 2.4.**

Test set up photo for EUT

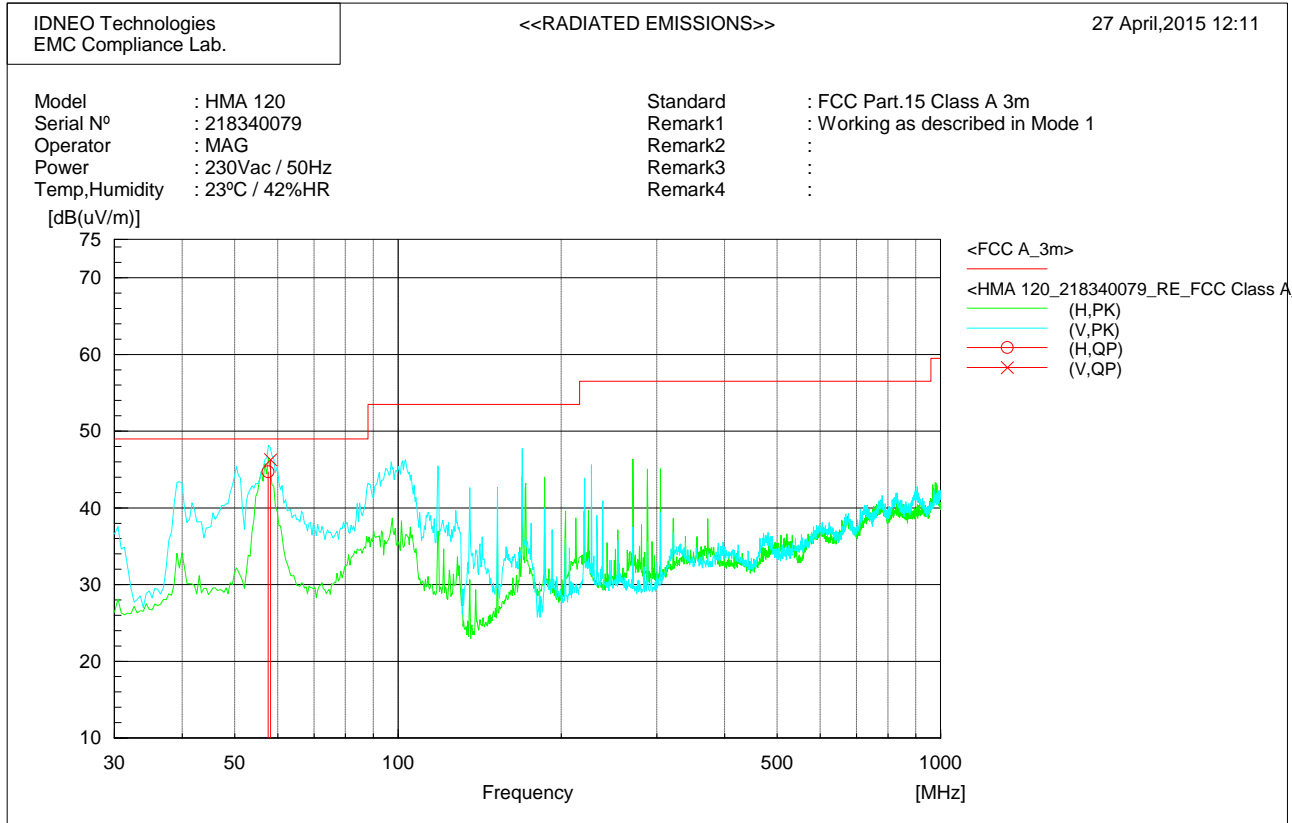
AC power supply port



4. Measurements

4.1 Emission measurements

4.1.1 Radiated Emissions from 30MHz to 1GHz



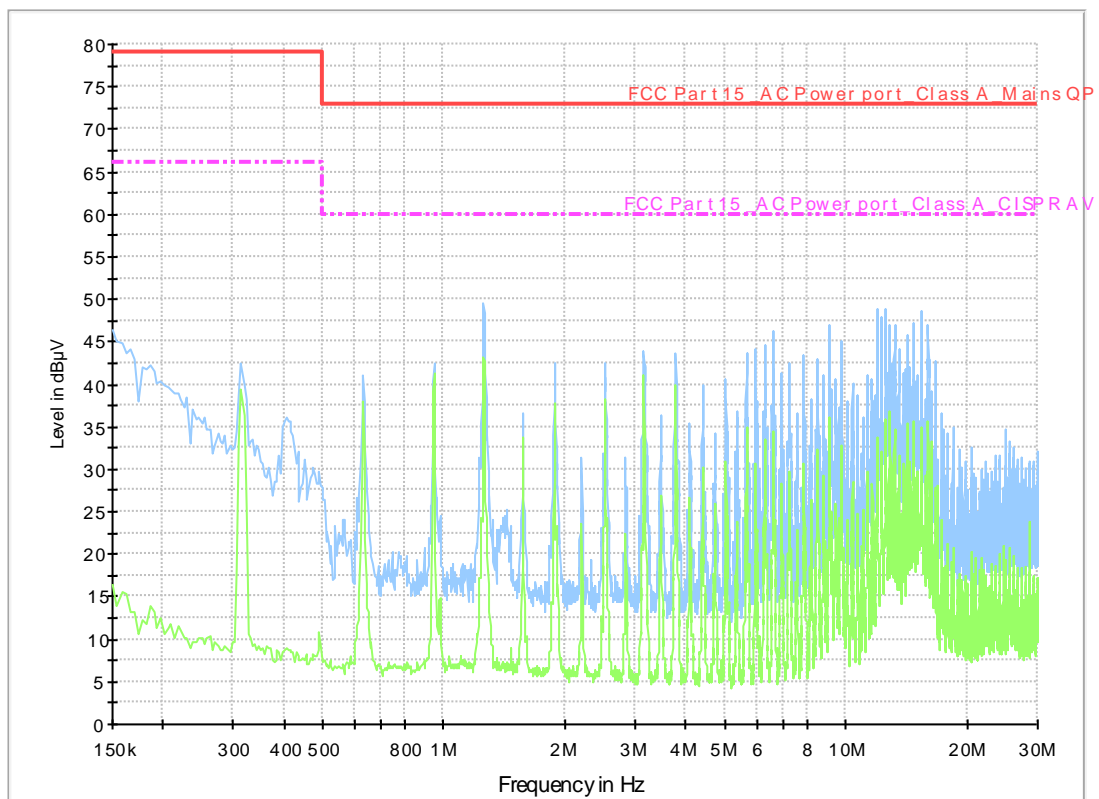
Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB (uV)]	c.f [dB (1/m)]	Result QP [dB (uV/m)]	Limit [dB (uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]
1	57.577	H	24.0	20.7	44.7	49.0	4.3	390.0	299.7
2	58.197	V	28.7	17.6	46.3	49.0	2.7	105.0	290.6

4.1.2 Conducted Emissions EUT

4.1.2.1 Conducted emissions at AC power port

EUT Name:	ECLER HMA 120
Serial Number:	218340079
Test Description:	Conducted Emissions test
Operating Conditions:	23°C / 51% HR
Operator Name:	MAG
Comment:	Working as describe in Mode 1 / Input rating 110Vac/60Hz
Test Report ID.:	BE2015045
Date:	27/04/2015



5.0 Measurement Remarks

Deviations from the applied test specification

- no deviations -

Remarks:

The device has max. oscillator frequency at 16.9344MHz. Therefore radiated emission testing has been performed up to 1GHz.

Used Components:

N/A

Other Participants:

Two NEEC members were present during the EMC tests.

6.0 Photos of equipment under test

ECLER HMA 120



ECLER HMA 120 – Control panel



ECLER HMA 120 – I/O ports



ECLER HMA 120 – Opened

AUXILIARY EQUIPMENT



Wall volume control (0-10V) with cable supplied by customer



Pink Noise Generator – General view



4X25Ω dummy load with cable supplied by customer



AC power cord supplied by customer



Microphone Shure SM58 with cable supplied by customer

7.0 List of measurement equipments

ID	MODEL	TYPE	MANUFACT	SERIAL_NR	LOCATION
421	ESCI	EMI receiver	Rohde & Schwarz	121994001829	CR1
425	ENV216	LISN	Rodhe&Schwarz	121994001801	CR1
433	VULB9163	Comb Broadband antenna	Schwarzbeck	226	SAR1
435	DC-12.4Ghz	6dB Attenuator	Huber Suhner	6806.17.A	SAR1
512	645	Temperature/Humidity Meter	Testo	830003/04	CR1
540	ESCI	EMI Receiver	R&S	121994001882	CR1
550	W10.03	Cable Conducted EMI	R&S	1502.9687	CR1
562	K-219940018/002/003	Cable EMI radiated emissions SAR1-CR1	Sucoflex	#	SAR1
652	335 3609	Cable EMF low emissions	Huber Suhner	335 3609	SAR1
650	ENV216	LISN	Rodhe&Schwarz	100300	CR1
691	THERMO-HYGRO	RS 413-7617	RS	CR1	CR1
693	THERMO-HYGRO	RS 413-7617	RS	SAR1	SAR1
694	Enviroflex 393	EMI cable with ferrites	Huber Suhner	SAR1	SAR1
699	ESU26	EMI receiver	Rohde & Schwarz	100203	CR1