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TEST REPORT

Germanischer Lloyd: 2003 (Partial)

Test requirements for electrical / Electronic equipment and systems

NIE	28859RSE.004
Approved by (name / position & signature)	Rafael González / Consultant
Elaboration date	2010-10-21
Identification of item tested	PUBLIC ADDRESS SYSTEM PA SERIES
Trademark	SCM SISTEMAS, S.L.
Model and/or type reference	PUBLIC ADDRESS SYSTEM TYPE PA
Serial number	NOT SUPPLIED
Features	230Vac, 50/60Hz
Description	Amplifier model PA-AMP-60. Microphone model PA-MIC-2. Microphone model PA-MIC-3. Loudspeaker for PA system model PA-ALT-T1. Loudspeaker for PA system model PA-ALT-E1. Loudspeaker for PA system model PA-ALT-E2. Loudspeaker for PA system model PA-ALT-E3. Equipment with metallic enclosure and class I of protection against electrical shock.
Applicant	SCM SISTEMAS, S.L.
Address	C/ Benjamín Franklin, nº 351, nave 6 33211
CIF/NIF/Passport	B-33826058
Contact person.....	Guillermo Florez
Telephone / Fax.....	+34 985 356 263 / +34 985 348 083
e-mail:	guillermo@scmsistemas.com
Test samples supplier	SCM SISTEMAS, S.L.
Address	C/ Benjamín Franklin, nº 351, nave 6 33211
CIF/NIF/Passport	B-33826058
Contact person:	Guillermo Florez
Telephone / Fax.....	+34 985 356 263 / +34 985 348 083
e-mail:	guillermo@scmsistemas.com
Manufacturer	SCM SISTEMAS
Address	C/ Libertad 14-2A. C.P.: 33206, Gijón, Asturias. Spain.
CIF/NIF/Passport	B-33826058
Telephone / Fax.....	+34 985 356 263 / +34 985 348 083

Test method requested

Standard GL 2003

Test procedure POSE000 (General Procedure of Safety Lab)

Non-standardized test method N/A

Report template No. FSE442_00

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Competences and guarantees

AT4 wireless is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, AT4 wireless has a calibration and maintenance programme for its measurement equipment.

AT4 wireless guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated on the report and, it is based on the knowledge and technical facilities available at AT4 wireless at the time of performance of the test.

AT4 wireless is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

General conditions

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or competent Authorities.
3. This document is only valid if complete; no partial reproduction can be made without previous written permission of AT4 wireless.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of AT4 wireless and the Accreditation Bodies.

Uncertainty

Uncertainty (factor $k=2$) was calculated according to the AT4 wireless internal document PODT000.

Usage of samples

Samples undergoing test have been selected by: **the supplier**

Sample M/01 is composed of the following elements:

<u>Control Number</u>	<u>Description</u>	<u>Manufacturer</u>	<u>Model</u>	<u>Serial N°</u>	<u>Date of reception</u>
28859/29	Power amplifier	SCM Sistemas	PA-AMP-60	---	2009-10-21
28859/33	Loudspeaker	SCM Sistemas	PA-ALT-E1	457-201	2009-10-21
28859/35	Loudspeaker	SCM Sistemas	PA-ALT-E3	457-203	2009-10-21
28859/37	Loudspeaker	SCM Sistemas	PA_ALT-E2	457-202	2009-10-21

1. Sample M/01 has undergone the test(s) of the paragraph 1 and 2 of the specified in subclause "Test method requested".

Testing period

The performed test started on 2010-09-13 and finished on 2010-09-15.

The tests have been performed at AT4 wireless laboratory.

Environmental conditions

Date	Temp. Max. (°C)	Temp. Min. (°C)	Hum. Max. (%HR)	Hum. Min. (%HR)	Pressure Max. (mbar)	Pressure Min. (mbar)	Limit
2010-09-13	26.3	23.5	63	42	1027	1020	10 - 35 °C 30 – 90 % 860 – 1060 mbar
2010-09-14	26.4	23.2	59	42	1019	1026	
2010-09-15	26.0	22.5	60	43	1026	1018	

Summary

Considering the results of the performed test according to standard **GL 2003, Paragraphs 1, 2, 4, 13, 14** the item under test is **IN COMPLIANCE** with the requested specifications specified in the standard.

NOTE: The results presented in this Test Report apply only to the particular item under test established in page 1 of this document, as presented for test on the date(s) shown in section, “USAGE OF SAMPLES, TESTING PERIOD AND ENVIRONMENTAL CONDITIONS”.

Remarks and comments

N/A

Personnel

Tests have been performed by:

· Jesús García

Instruments used

()	0030	Caliber	()	1297	Insulation
()	0055	Probe 100 MHz	()	1298	Plate 3 mm
()	0148	Digital multimeter	()	1299	Dry sand 170-250 cm
(X)	0151	Autotransformer	()	1300	Top 1 liter
()	0152	Autotransformer	()	1301	Burn circuit tester
()	0153	Leakage tester	()	1302	Plate 2 mm
()	0154	Digital multimeter	()	1304	Rain arc R=600 mm
()	0155	Digital multimeter	()	1305	Rain arc R=800 mm
()	0157	Digital multimeter	()	1306	Thickness gauge
()	0158	Digital multimeter	()	1308	Lampholder E-10
()	0159	Register UR180	()	1309	Bushing device
()	0160	Digital thermometer	()	1310	Lampholder E-40
()	0161	Digital thermometer	()	1311	Lampholder G-13
()	0162	Digital thermometer	()	1312	Immersion tank
(X)	0164	Insulation transformer	()	1313	Rod 625 mm2
(X)	0166	Vatimeter	()	1314	Threw gauges
()	0170	Dilectric stength meter	()	1316	Durability tester
()	0172	Low resistance meter	()	1317	Connection tester
()	0173	Electronic load	()	1318	Stop plate
()	0174	Hydra system	(X)	1319	Dielectric strength tester
()	0175	Electronic load module	()	1320	Luminaire test corner
()	0176	Electronic load module	()	1321	Luminaire test grid
()	0177	Electronic load module	()	1322	Impact plate
()	0179	Electronic scale	()	1323	Weight 4,5 Kg
()	0192	Thermocouple	()	1324	Single-phase ballast
()	0193	Thermocouple	()	1325	Manometer 0-1,6 bar
()	0194	Thermocouple	()	1326	Manometer 0-1,6 bar
()	0195	Thermocouple	()	1328	Manometer 0-10 bar
()	0196	Thermocouple	()	1329	Cooker
()	0229	Power supply unit	()	1330	Cooker
()	0230	Control	()	1331	Cooker
()	0249	Oscilloscope	()	1332	Cooker
()	0421	Thermocouple	()	1333	Tank
()	0422	Thermocouple	()	1334	Tank
()	0423	Thermocouple	()	1335	Tank
()	0424	Thermocouple	()	1336	Tank
()	0425	Thermocouple	()	1337	Weight 5 Kg
()	0426	Thermocouple	()	1338	Wooden ball
()	0427	Thermocouple	()	1339	Brass disc
()	0428	Thermocouple	()	1340	Steel ball D 20 mm
()	0429	Thermocouple	()	1341	Lien wire
()	0430	Thermocouple	()	1346	Cotton 100 %
()	0431	Steel ball	()	1348	Impact hammer callibrator
()	0432	Gauges	()	1349	Callibrator of the IH callibrator
()	0433	Test pin	()	1350	Luminaries pressure tester
()	0434	Accessibility probe	()	1351	Bend wire guide
()	0435	Test finger	()	1352	Rain arc R=400 mm
()	0436	Contact indicator	()	1353	Rain arc R=200 mm
()	0437	Dynomometer 0-50 N	()	1365	Grid 7 mm
()	0438	Dynomometer 0-100 N	()	1366	Grid 8 mm
()	0439	Dynomometer 0-250 N	()	1367	Cable set
()	0440	Test hood	()	1368	Cable set
()	0441	Ball pressure apparatus	()	1369	Revolving support
()	0457	Test probe	()	1371	Three-phases power supply
()	0470	Insulation transformer	()	1373	Wire
()	0471	Insulation transformer	()	1374	Variable resistor
()	0489	Telecommunication probe	()	1375	Tin 10 cm
()	0490	Test probe	()	1376	Cotton cloth
()	0493	Test ramp	()	1377	Tin 10 cm
()	0497	Leakage measurement	()	1378	External micrometer
()	0498	Resistance box	()	1380	Top 13-15-17 cm
()	0499	Test pot	()	1381	Tray 600 mm
()	0500	Silicone	()	1382	Edge tester

()	0503	n-hexane	()	1403	Deflex tester
()	0504	Chlohidre anhydride	()	1404	Solution CLNH 0,1 %
()	0505	Electronic scale 1-600	()	1406	Polyester
()	0507	weight 50 g	(X)	1407	Digital vatimeter
()	0508	weight 500 g	()	1409	Immersion resistor
()	0511	Wrap paper	()	1419	Talcun dust
()	0513	Set square	()	1459	Defibrillator
()	0514	Metallic rule	()	1464	Master lamp
()	0515	Flexometer	()	1465	Master lamp
()	0517	Gauze	()	1466	Master lamp
()	0518	Cloth	()	1467	Master lamp
()	0519	Desecator	()	1468	Master lamp
()	0522	Gas-oil	()	1475	Metallic surface 0,1 m2
()	0533	Bunsen burner	()	1480	Climatic chamber
()	0534	Spoon	()	1481	Test circuit EN 60601-2-2
()	0535	Methane gas	()	1488	Peacemaker filter
()	0538	Drop support	()	1490	Test circuit EN 60598-1
()	0539	PWB scrash tester	()	1492	Test ballast EN 60928
()	0542	Ni-cr wire	()	1493	Test ballast EN 60598
()	0543	Radiation tester	()	1506	Peacemaker power supply
()	0544	Triplex clamp	()	1510	Nail finger test
()	0546	Fixing support	()	1511	Grid 3,4,7,8
()	0576	Thermocouple	()	1512	Solution PH 9,21
()	0577	Thermocouple	()	1513	Solution PH 4,01
()	0579	Thermocouple	()	1514	Solution PH 7,00
()	0580	Thermocouple	()	1516	High capacity capacitor
()	0581	Thermocouple	()	1550	Chroming rod
()	0583	Oscilloscope probe x10	()	1560	Register
()	0584	Oscilloscope probe x10	()	1612	High current tester
()	0585	Static sensor	()	1615	Glass ball 1-1,4 mm
()	0586	Vessel	()	1620	Imact tester (figure 22)
()	0606	Double switch	()	1621	Abrasion tester
()	0607	syringe	()	1622	Force remoce tester
()	0610	Weight	()	1623	Anchorage cable tester
()	0612	Dinamometer screwdriver	()	1624	Switch tester
()	0614	Torque tester	()	1635	Luxometer
()	0621	Pulse generator accessory	()	1636	PV probe
()	0629	Pulse generator	()	1653	Leakage tester EN 60598
()	0640	Saline solution	()	1654	Laser power and energy tester
()	0641	Ethylic	()	1655	Laser tester accesory
()	0642	Demineralized water	()	1680	Weight 400 g
()	0643	Semianechoic top	()	1681	Test probe
()	0644	mercury	()	1682	Test probe
()	0648	Vacuum pump	()	1683	Weight 400 g
()	0650	peacemaker system	()	1684	Test probe
()	0652	torque accesory	()	1685	Test probe
()	0674	Hydrophone	()	1686	Test probe
()	0675	Power amplifier	()	1687	Test probe
()	0681	Manometer	()	1688	Test probe
()	0737	Luxometer	()	1689	Test probe
()	0797	Current clamp	()	1690	Test probe
()	0798	Current clamp	()	1691	Test probe
()	0799	Current clamp	()	1692	Test probe
()	0854	Sinusoidal generator	()	1693	Test probe
()	0895	Rubber insulation	()	1694	Test probe
()	0938	Climatic chamber	()	1695	Test probe
()	0943	Oven	()	1696	Test probe
(X)	0979	Impact hammer	()	1697	Test probe
()	1020	Heating test corner	()	1698	Test probe
()	1060	Leakage tester	()	1699	Test probe
()	1066	Test ball 75 mm	()	1700	Test probe
()	1067	Cylinder rod	()	1701	Test probe
()	1068	Glass plate	()	1702	Test probe
()	1070	Three-phases switch	()	1703	Test probe
()	1078	Resistance box	()	1704	Weight 250/1000 g
()	1079	White noise filter	()	1705	Weight 250/1000 g
()	1087	Current clamp	()	1706	Test probe
()	1088	Current clamp	()	1707	Edge tester

()	1089	Current clamp	()	1708	Small parts cylinder
()	1096	Leakage tester	()	1709	Protection device
()	1098	Impact pendulum	()	1710	Accessibility gauge
()	1099	Weight 0,15 Kg	()	1711	Accessibility gauge
()	1100	Dinamometer screwdriver	()	1712	Test gauge
()	1101	Dinamometer screwdriver	()	1713	Test gauge
()	1102	Conic test probe	()	1714	Bend tester
()	1105	Rain drop tester	()	1715	Drop tester
()	1106	Glowing wire	()	1716	UV tester
()	1107	Wire bend tester	()	1717	Safety tester
()	1108	Test chain	(X)	1754	Digital register
()	1109	Ball 50 mm	()	1759	Ultrasound system
()	1110	Test rod 2,5x100	()	1839	Manometer 0-1 bar
()	1111	Ball 12,5 mm	()	1841	Manometer 0-1,6 bar
()	1112	Ball 50 mm with handle	()	1842	Manometer 0-10 bar
()	1113	Test rod 1x100	()	1843	Manometer 0-10 bar
()	1127	Weight 0,25 Kg	()	1844	Manometer 5-375 mm HG
()	1128	Weight 0,5 Kg	()	1849	Weight 1 Kg
()	1129	Weight 1.5 Kg	()	1859	Temperature winding tester
()	1143	Ammonic chloride	()	1865	Ultrasound system
()	1144	Carbon tetrachloride	()	1870	Low resistance meter
()	1145	Input tester	()	1960	Test mandril
()	1159	Silver wire 0,29 mm	()	1976	Drill tester
()	1160	Silver wire 0,39 mm	()	2039	Spectroradiometer
()	1161	Silver wire 0,52 mm	()	2042	Probe 10:1
()	1162	spraying 12,5 mm	()	2043	Probe 10:1
()	1163	spraying 6,3 mm	(X)	2048	Dinamometer spanner 1,5 Nm
()	1164	Pulse 10 KV generator	()	2049	Dinamometer spanner 6 Nm
()	1165	Dielectric strength clamp	()	2050	Dinamometer spanner 50 Nm
()	1166	Thermocouple	()	2055	Lampholder E-14
()	1167	Weight 500 Gr (20 units)	()	2056	Lampholder E-14
()	1168	Spillage tester	()	2065	Digital termometer
()	1169	Spray tester	()	2074	Weight 5 Kg / 10 Kg
()	1170	Frost tester	()	2123	Dynamometer
()	1171	Silver wire box	()	2133	Lampholder E-27
()	1172	Lampholder	()	2134	Lampholder E-27
()	1173	Lampholder	()	2135	Test probe 315 gr
()	1174	Lampholder	()	2178	Surface 30 x 50 cm
()	1175	Lampholder	()	2190	Iron support tester
()	1176	Thermocouple	()	2211	Solution PA-ACS.ISO 5
()	1177	Test grid	()	2212	Solution PA-ACS-500 G
()	1178	Test grid	()	2213	Solution PA-ACS-ISO 50
()	1194	Calliber 0-350 mm	()	2299	Lampholder E-14
()	1195	Angle meter	()	2300	Lampholder E-14
()	1196	compass	()	2323	Test corner
()	1197	Test rod diammeter 2 mm	(X)	2376	Thermographic camera
()	1198	Test rod diammeter 3 mm	()	2464	Three-variable resistor
()	1199	Test rod diammeter 4 mm	()	2499	Anemometer
()	1200	Test probe Fig 6 UNE 20514	()	2589	Flowmeter
()	1202	Rain simulator	()	2590	Current clamp
()	1204	Drop tester	()	2602	Three-phase vatimeter
()	1205	Dust chamber + manometer	()	2603	Current clamp
()	1213	CTI tester	()	2604	Current clamp
()	1222	Coaxial connector	()	2619	Digital caliber
()	1223	Isopropylic Alcohol	()	2620	Digital multimeter
()	1224	Methylic alcohol	()	2621	Digital multimeter
()	1225	Wire 0,5 mm	()	2622	Digital multimeter
()	1226	Weight DIN 51953	()	2633	Laser tester
()	1227	Weight 2,3 Kg	()	2634	Laser tester accessory
()	1228	Climatic chamber	()	2635	Laser tester accessory
()	1238	White pine wood	()	2749	Impact hammer 2,0 J
()	1239	syringe	()	2808	Microscope
()	1240	Telephone line simulator	()	2809	Lens
()	1241	Radius gauge	()	2810	Lens
()	1242	Radius gauge	()	2811	Lens
()	1243	Radius gauge	()	2838	Oven
()	1244	Thickness gauge	()	2946	Temperature and humidity probe
()	1266	Odometer	()	3235	Digital conductivity meter

(X)	1269	Leakage tester	()	3261	Lampholder E-14
()	1270	Rain automatic tester	()	3262	Lampholder E-14
()	1271	Rain arc R=1000 mm	()	3263	Lampholder E-27
()	1272	Leakage tester	()	3264	Lampholder E-27
()	1273	Pull/torque tester	()	3297	DC power supply
()	1276	Flowmeter	()	3338	Weight 1 Kg
()	1277	Fuse tester	()	3357	Spectroradiometer
()	1278	Fuse tester	()	3382	Autotransformer
()	1279	Fuse tester	()	3383	Autotransformer
()	1280	Fuse tester	()	3384	Autotransformer
()	1281	Mercury	()	3385	Autotransformer
(X)	1282	Chronometer	()	3386	Cooper sheet
()	1283	Digital control	()	3387	Scrash tester
()	1284	Leakage tester	()	3388	Wooden support
()	1289	Electronic relay circuit	()	3389	Wooden support 9 mm
()	1292	Clanaing product	()	3390	Cotton cloth 26/28 M2/kg
()	1293	Acetone	()	3391	Glue
()	1294	Distilled water	()	3392	Impact structure
()	1295	Caustic sode	()	3449	Absorbent paper
()	1296	Ice cube	()	3456	Temperature and humidity probe
			()	3476	Bunsen burner support

Testing verdicts	
Not applicable	N/A
Pass	P
Fail	F
Not measured	N/M
Particulars: test item vs. test requirements	
Equipment mobility	Fixed installation
Operating condition.....	Continuous
Mains supply tolerance (%).....	N/A
Tested for IT power systems	No
IT testing, phase-phase voltage (V) :	N/A
Class of equipment	Class III
Mass of equipment (kg).....	< 1 Kg
Protection against ingress of water	IP X0
Copy of the marking plate	
See annex B	

APPENDIX A: Results of test according to GL 2003

GL 2003			
Clause	Requirement – Test	Result – Remark	Verdict
1.	Visual inspection		P
1.1	Test procedure		P
1.2	Test conditions	According to expected environmental condition	P
1.3	General instructions for test performance	No visible damage before the test.	P
1.4	Test result		P
2.	Performance test		P
2.1	Test procedure		P
2.2	Test conditions		P
2.3	General instructions for test performance		P
2.4	Test result		P
4	Power supply variations		P
4.1	Procedure		P
4.2	Test conditions		P
4.3	General instructions for test performance		P
4.4	Test result		P
13.	Insulation resistance		P
13.1	Test procedure		P
13.2	Test conditions	> 65Vdc. 500V	P
13.3	General instructions for test performance		P
13.4	Test results		P
14.	High voltage		P
14.1	Test procedure		P
14.2	Test conditions		P
14.3	General instructions for test performance		P
14.4	Test results		P

4.	TABLE: electrical data (in normal conditions)				P
Test condition	Measured voltage	Deviation	Test Voltage	Remarks	
Normal condition	230V	±10%	253 / 207 V	No damage or failure in the equipment.	
Normal condition	110V	±10%	121 / 99 V	No damage or failure in the equipment.	

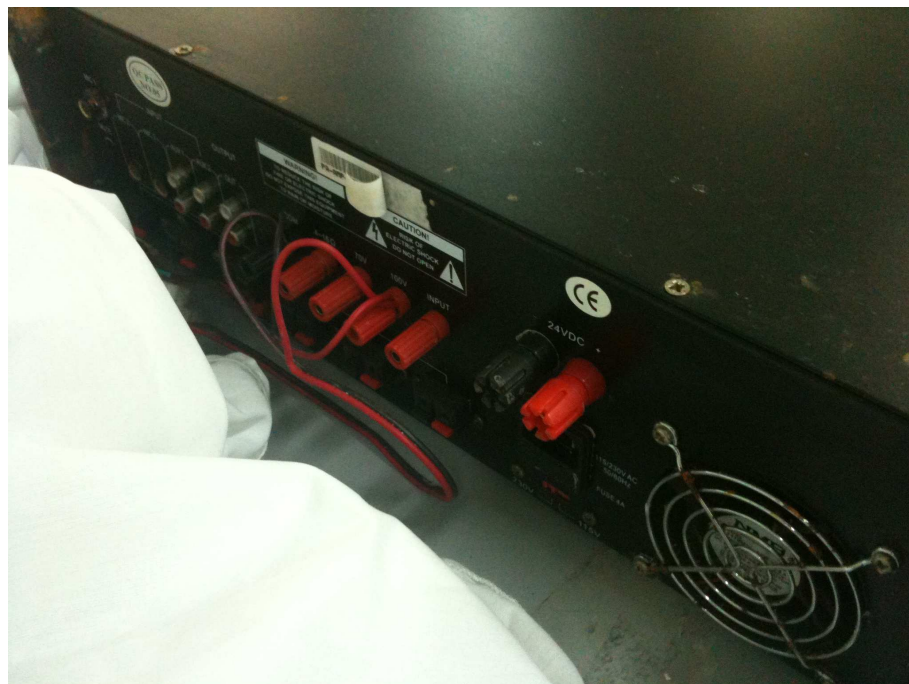
13	TABLA: Insulation resistance test				P
test voltage applied between:	Minimum value before the treatment (MΩ)	Measured value (MΩ)	Minimum value after the treatment (MΩ)	Measured value (MΩ)	
Live parts and insulating enclosure	100	2000	10	800	
supplementary information					
Test voltage: 500V					
Protective earth connected to ground.					

14.	TABLE: electric strength tests, impulse tests and voltage surge tests			P
test voltage applied between:	test voltage (V)		breakdown Yes / No	
Live parts and insulating enclosure	1500Vac		No	
supplementary information				
Test voltage a.c. / d.c.				

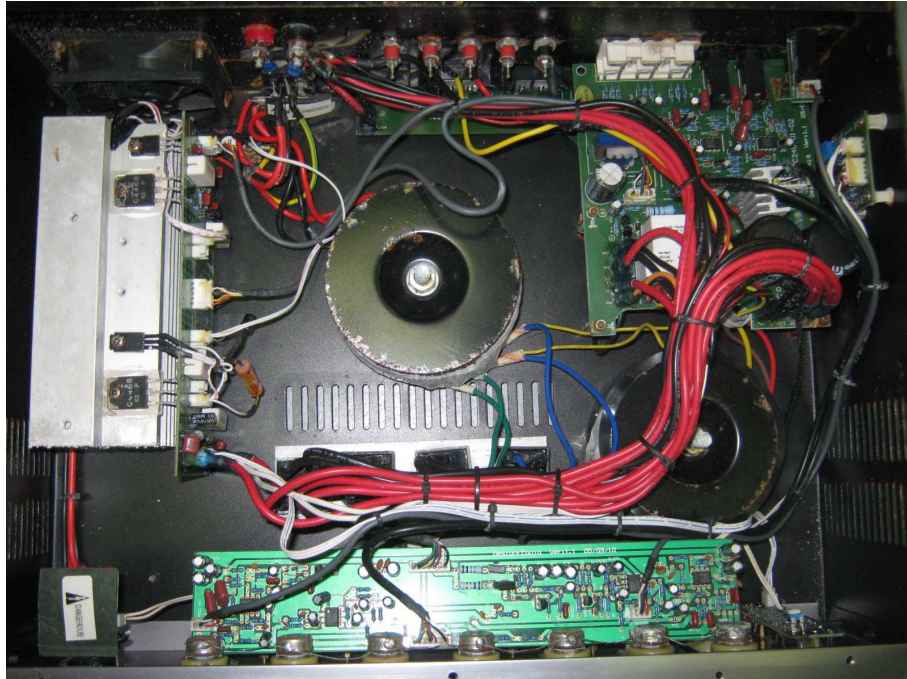
ANNEX B: Photographs



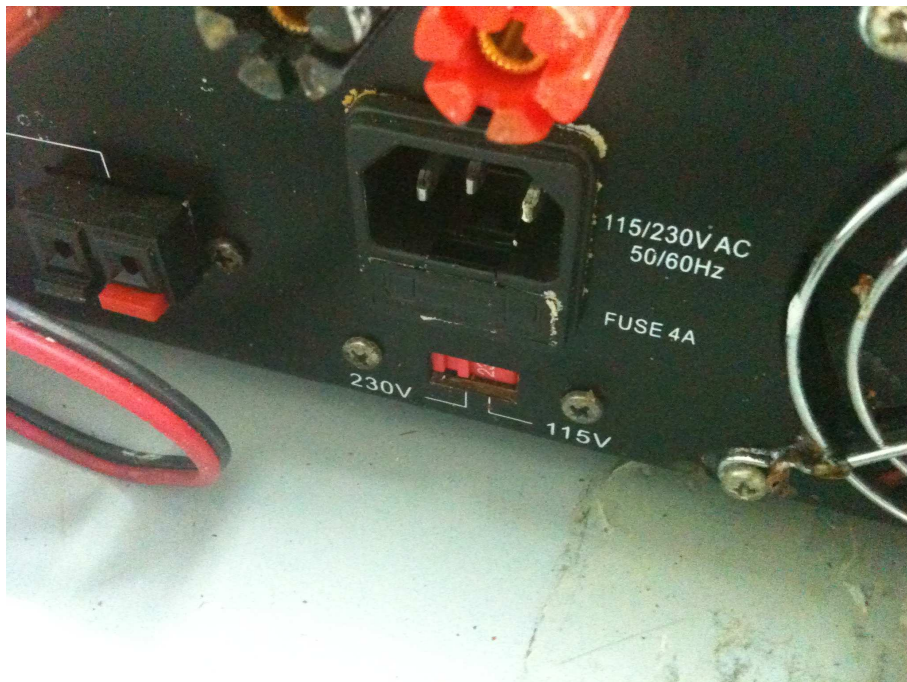
GENERAL VIEW



GENERAL VIEW



INSIDE VIEW



GENERAL VIEW