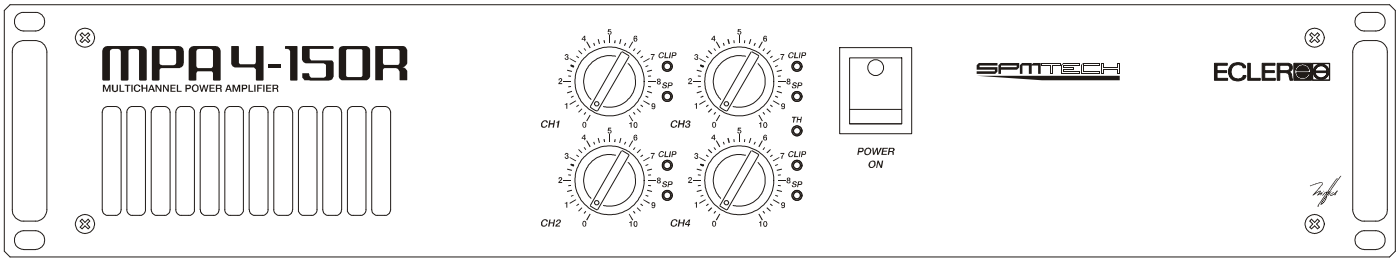
MPA4-150R

SERVICE MANUAL

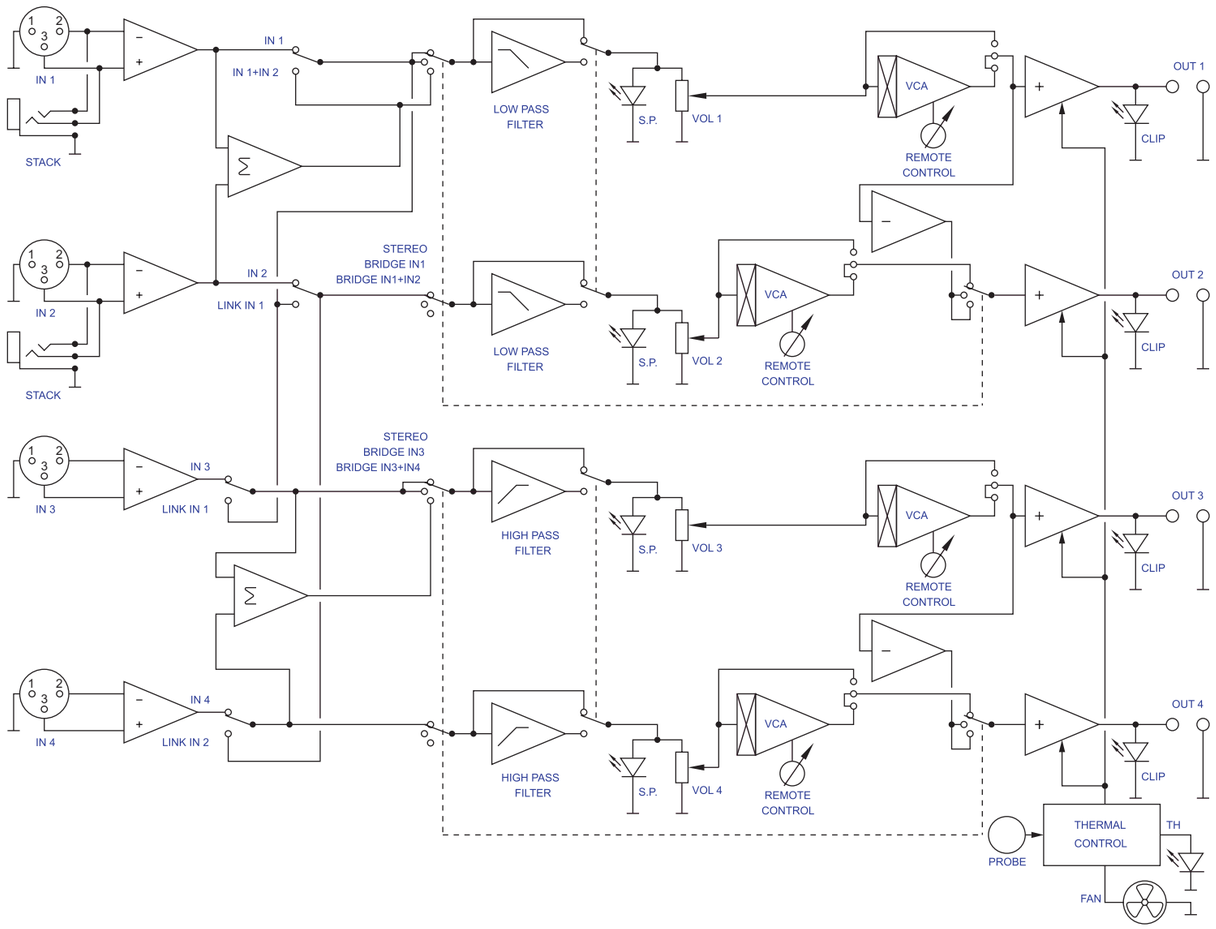


ECLER

AUDIO CREATIVE POWER

SERVICE MANUAL MPA4-150R

INDEX



ECLER

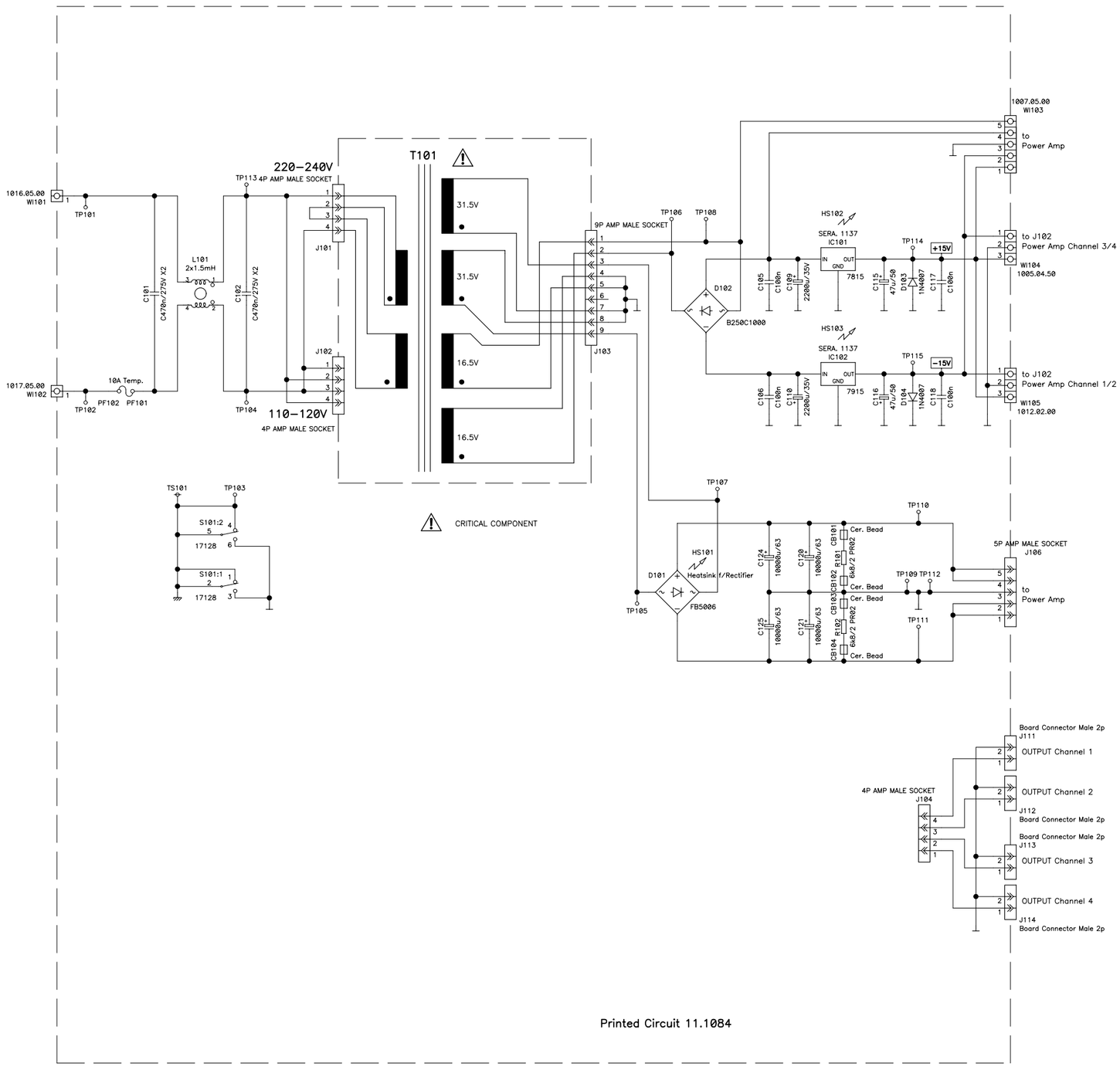
drawn: J. Colomines | date: 060613 | project: EP06-06 | product: MPA4-150R

approved: A.S.

number: 10.0746 | version: 01.00

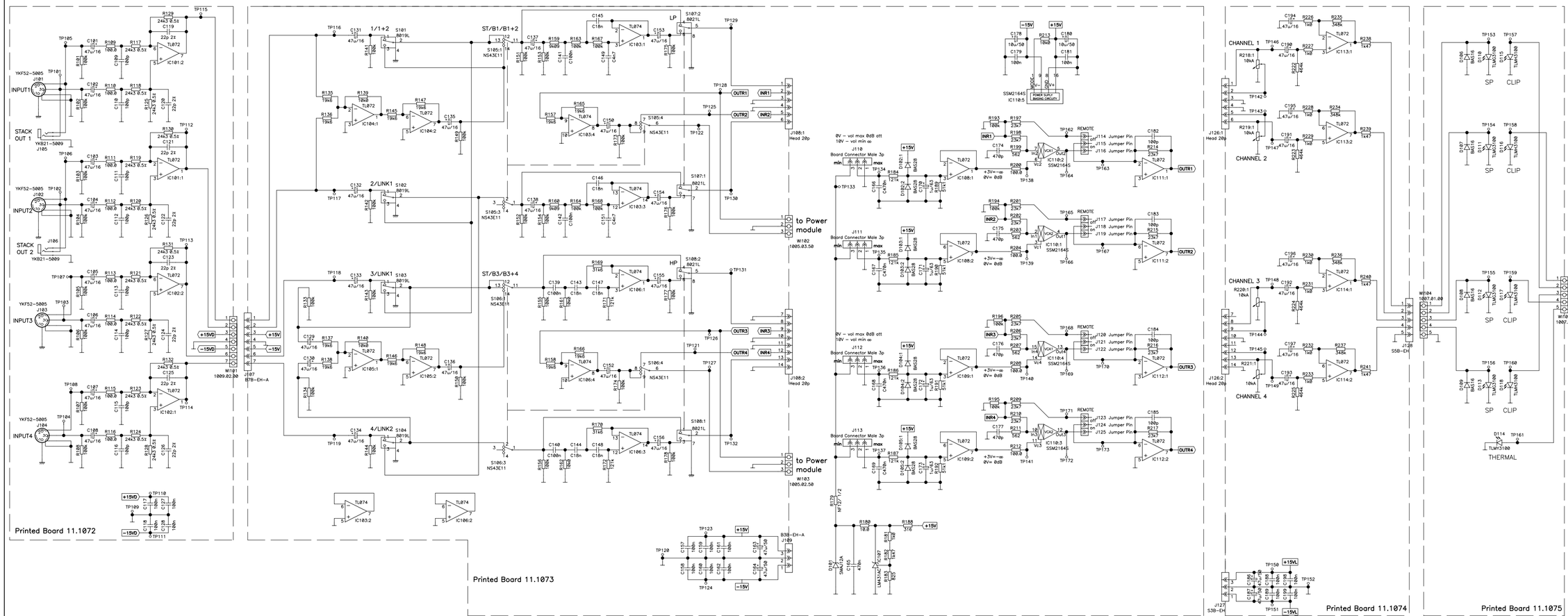
title: BLOCK DIAGRAM

ECLER LABORATORIO DE ELECTRO-ACUSTICA S.A.	drawn by: M. Amoros	date: 060515	approved: Angel Sanuy
	project n: EP06-06	title: Power Sch.	
	product n: MPA4-150 R		
number: 10.0741	version: 01.00	page: 1 of 1	

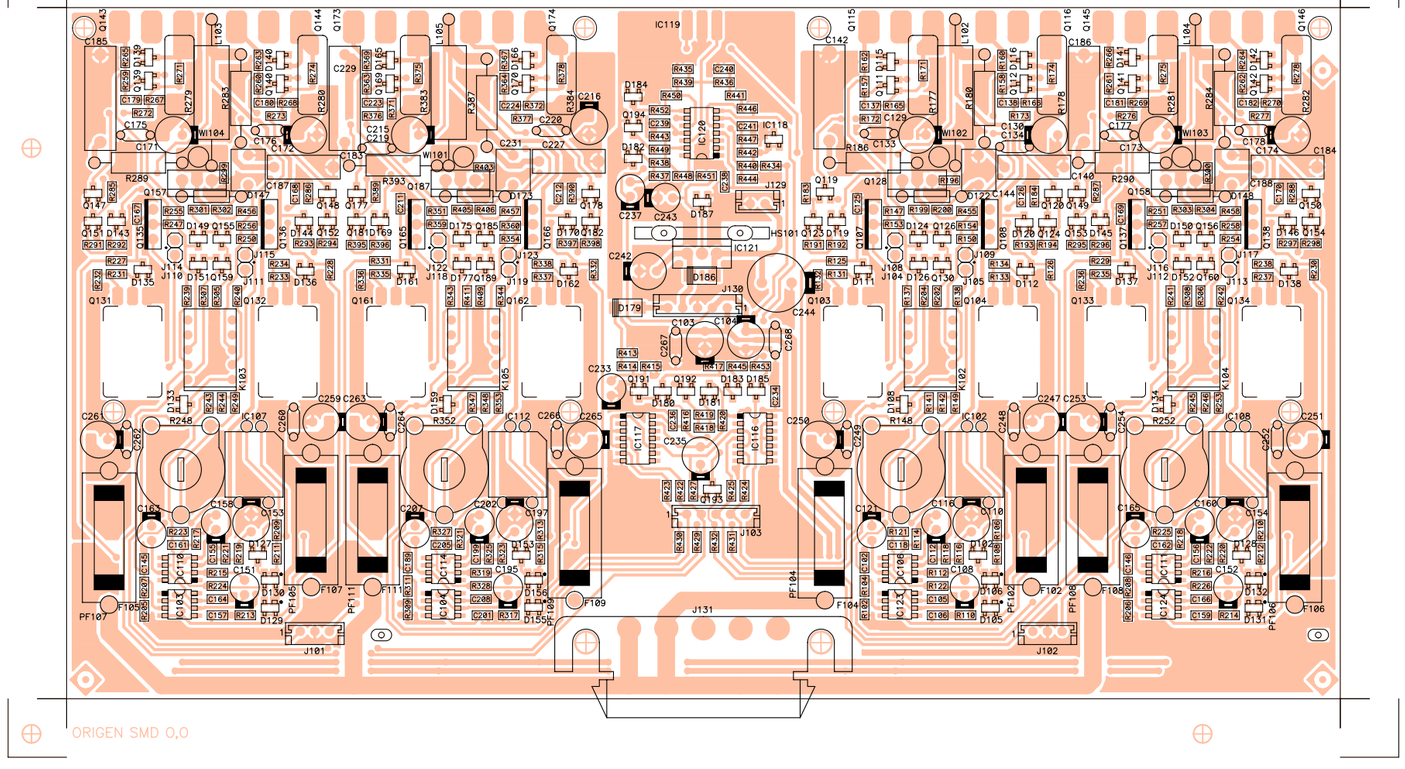


Printed Circuit 11.1084

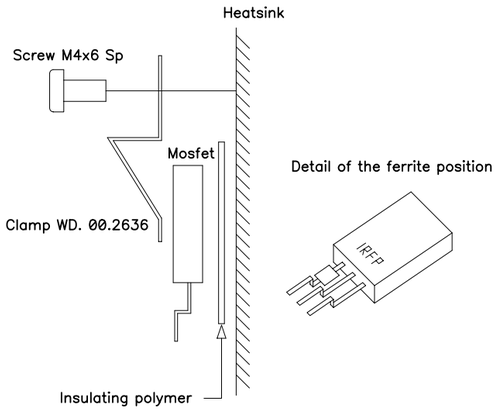
ECLER LABORATORIO DE ELECTRO–ACUSTICA S.A.	drawn by: M. Amoros	date: 060724	approved: Angel Sanuy
	project n: EP06–06	title: Power Supply + Outs	
	product n: MPA 4–150 R		
number: 10.0753	version: 01.00	page: 1 of 1	

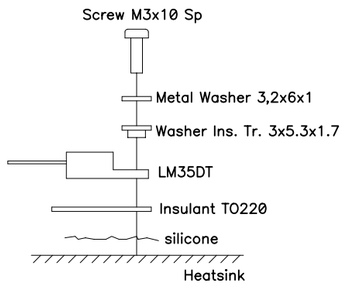


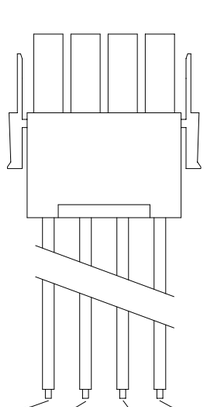
ECLER LABORATORIO DE ELECTRO-ACUSTICA S.A.	drawn by: M. Amoros	date: 060725	approved: Angel Sanuy
	project n: EP06-06	title: Inputs&Pottmtr&Leds	
	product n: MPA4-150 R		
number: 10.0749	version: 01.01	page: 1 of 1	

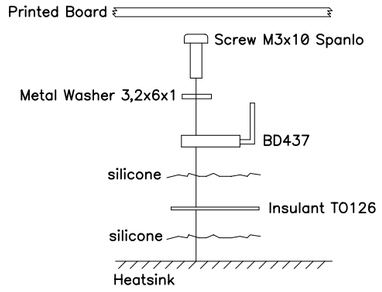


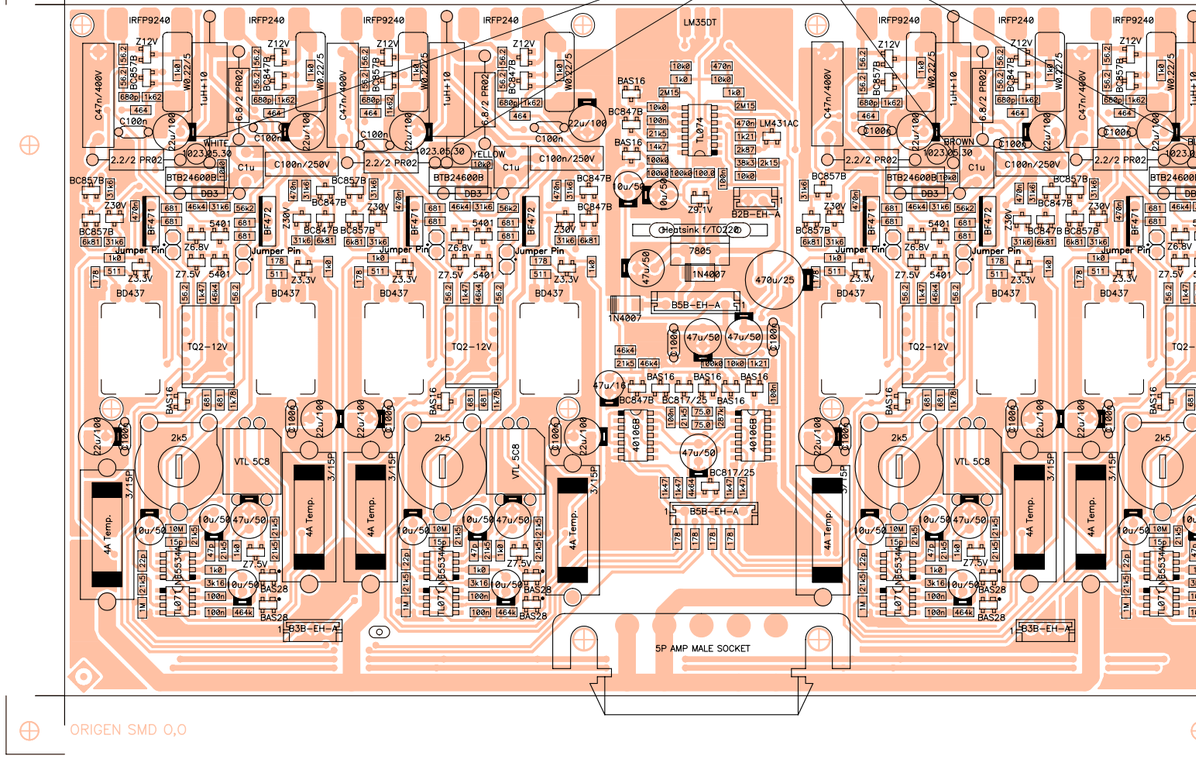
ECLER LABORATORIO DE ELECTRO–ACUSTICA S.A.	related to: circuit no: 11.1065–01.01 schema no: 10.0741–01.00 insertion file no: 81.0109–01.00	side: Component view: Reference	
number: 33.0979	version: 01.01	project n: EP06–06	title: Power ct.
drawn by: M. Amoros	date: 070104	product n: MPA4–150 R approved: Angel Sanuy	

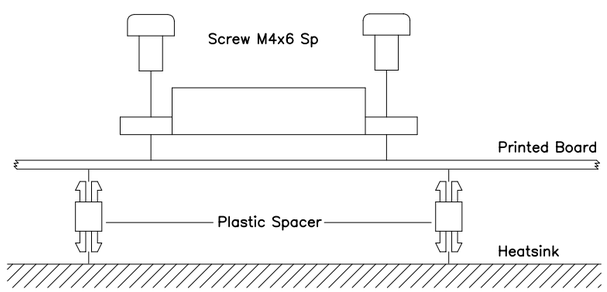












ECLER LABORATORIO DE ELECTRO-ACUSTICA S.A.	related to: circuit no: 11.1065-01.01 schema no: 10.0741-01.00 insertion file no: 81.0109-01.00	side: Component view: Value	
number: 33.0980	version: 01.01	project n: EP06-06	title: Power ct.
drawn by: M. Amoros	date: 070104	product n: MPA4-150 R approved: Angel Sanuy	

PARTS LIST: PRINTED CIRCUIT 11.1065.01.01

Code	Description	Reference
FCXCD1220000	22p	C102
FCCE25047000	47u/50	C103
FCCE25047000	47u/50	C104
FCXCD4100000	100n	C105
FCXCD4100000	100n	C106
FCCE25010000	10u/50	C108
FCCE25047000	47u/50	C110
FCXCD1470000	47p	C112
FCCE25010000	10u/50	C116
FCXCD1150000	15p	C118
FCCE25010000	10u/50	C121
FCXCD4470000	470n	C125
FCXCD4470000	470n	C126
FCCE35022000	22u/100	C129
FCCE35022000	22u/100	C130
FCCC15101000	C100n	C133
FCCC15101000	C100n	C134
FCXCD2680000	680p	C137
FCXCD2680000	680p	C138
FCCDN1100000	C100n/250V	C140
FCCDH7104700	C47n/400V	C142
FCCDK2001000	C1u	C144
FCXCD1220000	22p	C145
FCXCD1220000	22p	C146
FCCE25010000	10u/50	C151
FCCE25010000	10u/50	C152
FCCE25047000	47u/50	C153
FCCE25047000	47u/50	C154
FCXCD1470000	47p	C155
FCXCD1470000	47p	C156
FCXCD4100000	100n	C157
FCCE25010000	10u/50	C158
FCXCD4100000	100n	C159
FCCE25010000	10u/50	C160
FCXCD1150000	15p	C161
FCXCD1150000	15p	C162
FCCE25010000	10u/50	C163
FCXCD4100000	100n	C164
FCCE25010000	10u/50	C165
FCXCD4100000	100n	C166
FCXCD4470000	470n	C167
FCXCD4470000	470n	C168
FCXCD4470000	470n	C169
FCXCD4470000	470n	C170
FCCE35022000	22u/100	C171
FCCE35022000	22u/100	C172
FCCE35022000	22u/100	C173
FCCE35022000	22u/100	C174
FCCC15101000	C100n	C175
FCCC15101000	C100n	C176
FCCC15101000	C100n	C177
FCCC15101000	C100n	C178
FCXCD2680000	680p	C179
FCXCD2680000	680p	C180
FCXCD2680000	680p	C181
FCXCD2680000	680p	C182

PARTS LIST: PRINTED CIRCUIT 11.1065.01.01

Code	Description	Reference
FCCDN1100000	C100n/250V	C183
FCCDN1100000	C100n/250V	C184
FCCDH7104700	C47n/400V	C185
FCCDH7104700	C47n/400V	C186
FCCDK2001000	C1u	C187
FCCDK2001000	C1u	C188
FCXCD1220000	22p	C189
FCCE25010000	10u/50	C195
FCCE25047000	47u/50	C197
FCXCD1470000	47p	C199
FCXCD4100000	100n	C201
FCCE25010000	10u/50	C202
FCXCD1150000	15p	C205
FCCE25010000	10u/50	C207
FCXCD4100000	100n	C208
FCXCD4470000	470n	C211
FCXCD4470000	470n	C212
FCCE35022000	22u/100	C215
FCCE35022000	22u/100	C216
FCCC15101000	C100n	C219
FCCC15101000	C100n	C220
FCXCD2680000	680p	C223
FCXCD2680000	680p	C224
FCCDN1100000	C100n/250V	C227
FCCDH7104700	C47n/400V	C229
FCCDK2001000	C1u	C231
FCCE10000000	47u/16	C233
FCXCD4100000	100n	C234
FCCE25047000	47u/50	C235
FCXCD4100000	100n	C236
FCCE25010000	10u/50	C237
FCXCD4100000	100n	C238
FCXCD4100000	100n	C239
FCXCD4470000	470n	C240
FCXCD4470000	470n	C241
FCCE25047000	47u/50	C242
FCCE25010000	10u/50	C243
FCCE15470000	470u/25	C244
FCCE35022000	22u/100	C247
FCCC15101000	C100n	C248
FCCC15101000	C100n	C249
FCCE35022000	22u/100	C250
FCCE35022000	22u/100	C251
FCCC15101000	C100n	C252
FCCE35022000	22u/100	C253
FCCC15101000	C100n	C254
FCCE35022000	22u/100	C259
FCCC15101000	C100n	C260
FCCE35022000	22u/100	C261
FCCC15101000	C100n	C262
FCCE35022000	22u/100	C263
FCCC15101000	C100n	C264
FCCE35022000	22u/100	C265
FCCC15101000	C100n	C266
FCCC15101000	C100n	C267
FCCC15101000	C100n	C268

PARTS LIST: PRINTED CIRCUIT 11.1065.01.01

Code	Description	Reference
FCCI01065000	Printed Board 11.1065	CI101
FCXZ00007500	Z7.5V	D102
FCXDDBAS2800	BAS28	D105
FCXDDBAS2800	BAS28	D106
FCXDDBAS1600	BAS16	D108
FCXZ00003300	Z3.3V	D111
FCXZ00003300	Z3.3V	D112
FCXZ00012000	Z12V	D115
FCXZ00012000	Z12V	D116
FCXZ00030000	Z30V	D119
FCXZ00030000	Z30V	D120
FCDIDB300000	DB3	D122
FCXZ00006800	Z6.8V	D124
FCXZ00007500	Z7.5V	D126
FCXZ00007500	Z7.5V	D127
FCXZ00007500	Z7.5V	D128
FCXDDBAS2800	BAS28	D129
FCXDDBAS2800	BAS28	D130
FCXDDBAS2800	BAS28	D131
FCXDDBAS2800	BAS28	D132
FCXDDBAS1600	BAS16	D133
FCXDDBAS1600	BAS16	D134
FCXZ00003300	Z3.3V	D135
FCXZ00003300	Z3.3V	D136
FCXZ00003300	Z3.3V	D137
FCXZ00003300	Z3.3V	D138
FCXZ00012000	Z12V	D139
FCXZ00012000	Z12V	D140
FCXZ00012000	Z12V	D141
FCXZ00012000	Z12V	D142
FCXZ00030000	Z30V	D143
FCXZ00030000	Z30V	D144
FCXZ00030000	Z30V	D145
FCXZ00030000	Z30V	D146
FCDIDB300000	DB3	D147
FCDIDB300000	DB3	D148
FCXZ00006800	Z6.8V	D149
FCXZ00006800	Z6.8V	D150
FCXZ00007500	Z7.5V	D151
FCXZ00007500	Z7.5V	D152
FCXZ00007500	Z7.5V	D153
FCXDDBAS2800	BAS28	D155
FCXDDBAS2800	BAS28	D156
FCXDDBAS1600	BAS16	D159
FCXZ00003300	Z3.3V	D161
FCXZ00003300	Z3.3V	D162
FCXZ00012000	Z12V	D165
FCXZ00012000	Z12V	D166
FCXZ00030000	Z30V	D169
FCXZ00030000	Z30V	D170
FCDIDB300000	DB3	D173
FCXZ00006800	Z6.8V	D175
FCXZ00007500	Z7.5V	D177
FCXDD4007000	1N4007	D179
FCXDDBAS1600	BAS16	D180
FCXDDBAS1600	BAS16	D181

PARTS LIST: PRINTED CIRCUIT 11.1065.01.01

Code	Description	Reference
FCXDDBAS1600	BAS16	D182
FCXDDBAS1600	BAS16	D183
FCXDDBAS1600	BAS16	D184
FCXDDBAS1600	BAS16	D185
FCXDD4007000	1N4007	D186
FCXZ00009100	Z9.1V	D187
FCFUS5020000	4A Temp.	F102
FCFUS5020000	4A Temp.	F104
FCFUS5020000	4A Temp.	F105
FCFUS5020000	4A Temp.	F106
FCFUS5020000	4A Temp.	F107
FCFUS5020000	4A Temp.	F108
FCFUS5020000	4A Temp.	F109
FCFUS5020000	4A Temp.	F111
FCFER4322000	Ferrite	FB103
FCFER4322000	Ferrite	FB104
FCFER4322000	Ferrite	FB105
FCFER4322000	Ferrite	FB106
FCFER4322000	Ferrite	FB107
FCFER4322000	Ferrite	FB108
FCFER4322000	Ferrite	FB109
FCFER4322000	Ferrite	FB110
FP0251600000	Heatsink f/TO220	HS101
FCRAD2788000	Heatsink	HS102
FCOPTVTL5000	VTL 5C8	IC102
FCIC07101000	TL071	IC103
FCIC07101000	TL071	IC104
FCIC55341000	NE5534A	IC106
FCOPTVTL5000	VTL 5C8	IC107
FCOPTVTL5000	VTL 5C8	IC108
FCIC55341000	NE5534A	IC110
FCIC55341000	NE5534A	IC111
FCOPTVTL5000	VTL 5C8	IC112
FCIC55341000	NE5534A	IC114
FCIC40106000	40106B	IC116
FCIC40106000	40106B	IC117
FCIC43101000	LM431AC	IC118
FCIC35DT0000	LM35DT	IC119
FCIC07401000	TL074	IC120
FCREG7805000	7805	IC121
FCIC07101000	TL071	IC123
FCIC07101000	TL071	IC124
FCTIRKON0000	Insulating polymer	IN100
FCTIRKON0000	Insulating polymer	IN101
FCMICTO22000	Insulant TO220	IN102
FCMICTO12600	Insulant TO126	IN103
FCMICTO12600	Insulant TO126	IN104
FCMICTO12600	Insulant TO126	IN105
FCMICTO12600	Insulant TO126	IN106
FCMICTO12600	Insulant TO126	IN107
FCMICTO12600	Insulant TO126	IN108
FCMICTO12600	Insulant TO126	IN109
FCMICTO12600	Insulant TO126	IN114
FCCTM0003000	B3B-EH-A	J101
FCCTM0003000	B3B-EH-A	J102
FCCTM0005000	B5B-EH-A	J103

PARTS LIST: PRINTED CIRCUIT 11.1065.01.01

Code	Description	Reference
FCTERM010000	Jumper Pin	J104
FCTERM010000	Jumper Pin	J105
FCTERM010000	Jumper Pin	J108
FCTERM010000	Jumper Pin	J109
FCTERM010000	Jumper Pin	J110
FCTERM010000	Jumper Pin	J111
FCTERM010000	Jumper Pin	J112
FCTERM010000	Jumper Pin	J113
FCTERM010000	Jumper Pin	J114
FCTERM010000	Jumper Pin	J115
FCTERM010000	Jumper Pin	J116
FCTERM010000	Jumper Pin	J117
FCTERM010000	Jumper Pin	J118
FCTERM010000	Jumper Pin	J119
FCTERM010000	Jumper Pin	J122
FCTERM010000	Jumper Pin	J123
FCCTM0002000	B2B-EH-A	J129
FCCTM0005000	B5B-EH-A	J130
FCCTAMP15000	5P AMP MALE SOCKET	J131
FCREL0030000	TQ2-12V	K102
FCREL0030000	TQ2-12V	K103
FCREL0030000	TQ2-12V	K104
FCREL0030000	TQ2-12V	K105
FRIND0020000	1uH + 10	L102
FRIND0020000	1uH + 10	L103
FRIND0020000	1uH + 10	L104
FRIND0020000	1uH + 10	L105
FCMJ00010000	Jumper	MJ103
FCMJ00010000	Jumper	MJ104
FCMJ00010000	Jumper	MJ105
FCMJ00010000	Jumper	MJ106
FCMJ00010000	Jumper	MJ107
FCMJ00010000	Jumper	MJ108
FCMJ00010000	Jumper	MJ109
FCMJ00010000	Jumper	MJ110
FCPINZAM0000	Clamp WD. 00.2636	MP100
FCPINZAM0000	Clamp WD. 00.2636	MP101
FCTUE0030000	Nut M3	NV100
FCPORF315000	3/15P	PF102
FCPORF315000	3/15P	PF104
FCPORF315000	3/15P	PF105
FCPORF315000	3/15P	PF106
FCPORF315000	3/15P	PF107
FCPORF315000	3/15P	PF108
FCPORF315000	3/15P	PF109
FCPORF315000	3/15P	PF111
FCTR43700000	BD437	Q103
FCTR43700000	BD437	Q104
FCTR47100000	BF471	Q107
FCTR47200000	BF472	Q108
FCXTT0857000	BC857B	Q111
FCXTT0847000	BC847B	Q112
FCTR24300000	IRFP9240	Q115
FCTR24000000	IRFP240	Q116
FCXTT0857000	BC857B	Q119
FCXTT0847000	BC847B	Q120

PARTS LIST: PRINTED CIRCUIT 11.1065.01.01

Code	Description	Reference
FCXTT0857000	BC857B	Q123
FCXTT0847000	BC847B	Q124
FCTRX0540100	5401	Q126
FCTI24600000	BTB24600B	Q128
FCTRX0540100	5401	Q130
FCTR43700000	BD437	Q131
FCTR43700000	BD437	Q132
FCTR43700000	BD437	Q133
FCTR43700000	BD437	Q134
FCTR47100000	BF471	Q135
FCTR47200000	BF472	Q136
FCTR47100000	BF471	Q137
FCTR47200000	BF472	Q138
FCXTT0857000	BC857B	Q139
FCXTT0847000	BC847B	Q140
FCXTT0857000	BC857B	Q141
FCXTT0847000	BC847B	Q142
FCTR24300000	IRFP9240	Q143
FCTR24000000	IRFP240	Q144
FCTR24300000	IRFP9240	Q145
FCTR24000000	IRFP240	Q146
FCXTT0857000	BC857B	Q147
FCXTT0847000	BC847B	Q148
FCXTT0857000	BC857B	Q149
FCXTT0847000	BC847B	Q150
FCXTT0857000	BC857B	Q151
FCXTT0847000	BC847B	Q152
FCXTT0857000	BC857B	Q153
FCXTT0847000	BC847B	Q154
FCTRX0540100	5401	Q155
FCTRX0540100	5401	Q156
FCTI24600000	BTB24600B	Q157
FCTI24600000	BTB24600B	Q158
FCTRX0540100	5401	Q159
FCTRX0540100	5401	Q160
FCTR43700000	BD437	Q161
FCTR43700000	BD437	Q162
FCTR47100000	BF471	Q165
FCTR47200000	BF472	Q166
FCXTT0857000	BC857B	Q169
FCXTT0847000	BC847B	Q170
FCTR24300000	IRFP9240	Q173
FCTR24000000	IRFP240	Q174
FCXTT0857000	BC857B	Q177
FCXTT0847000	BC847B	Q178
FCXTT0857000	BC857B	Q181
FCXTT0847000	BC847B	Q182
FCTRX0540100	5401	Q185
FCTI24600000	BTB24600B	Q187
FCTRX0540100	5401	Q189
FCXTT0847000	BC847B	Q191
FCXTT0817000	BC817/25	Q192
FCXTT0817000	BC817/25	Q193
FCXTT0847000	BC847B	Q194
FCXR56100000	1M	R102
FCXR54215000	21k5	R104

PARTS LIST: PRINTED CIRCUIT 11.1065.01.01

Code	Description	Reference
FCXR54215000	21k5	R106
FCXR54215000	21k5	R108
FCXR55464000	464k	R110
FCXR53100000	1k0	R112
FCXR54215000	21k5	R114
FCXR53100000	1k0	R116
FCXR54215000	21k5	R118
FCXR57100000	10M	R121
FCXR53316000	3k16	R122
FCXR53100000	1k0	R125
FCXR53100000	1k0	R126
FCXR52511000	511	R131
FCXR52178000	178	R132
FCXR52511000	511	R133
FCXR52178000	178	R134
FCXR51562000	56.2	R137
FCXR51562000	56.2	R138
FCXR52681000	681	R141
FCXR52681000	681	R142
FCXR52681000	681	R147
FCRJG4250000	2k5	R148
FCXR53178000	1k78	R149
FCXR52681000	681	R150
FCXR52681000	681	R153
FCXR52681000	681	R154
FCXR51562000	56.2	R157
FCXR51562000	56.2	R158
FCXR51562000	56.2	R160
FCXR51562000	56.2	R162
FCXR53162000	1k62	R165
FCXR53162000	1k62	R166
FCXR53100000	1k0	R171
FCXR52464000	464	R172
FCXR52464000	464	R173
FCXR53100000	1k0	R174
FCRY00010000	W0.22/5	R177
FCRY00010000	W0.22/5	R178
FCRP51680000	6.8/2 PR02	R180
FCXR54316000	31k6	R183
FCXR54316000	31k6	R184
FCRP51220000	2.2/2 PR02	R186
FCXR53681000	6k81	R191
FCXR54316000	31k6	R192
FCXR54316000	31k6	R193
FCXR53681000	6k81	R194
FCXR54100000	10k0	R196
FCXR54464000	46k4	R199
FCXR54316000	31k6	R200
FCXR54464000	46k4	R202
FCXR53147000	1k47	R204
FCXR56100000	1M	R205
FCXR56100000	1M	R206
FCXR54215000	21k5	R207
FCXR54215000	21k5	R208
FCXR54215000	21k5	R209
FCXR54215000	21k5	R210

PARTS LIST: PRINTED CIRCUIT 11.1065.01.01

Code	Description	Reference
FCXR54215000	21k5	R211
FCXR54215000	21k5	R212
FCXR55464000	464k	R213
FCXR55464000	464k	R214
FCXR53100000	1k0	R215
FCXR53100000	1k0	R216
FCXR54215000	21k5	R217
FCXR54215000	21k5	R218
FCXR53100000	1k0	R219
FCXR53100000	1k0	R220
FCXR54215000	21k5	R221
FCXR54215000	21k5	R222
FCXR57100000	10M	R223
FCXR53316000	3k16	R224
FCXR57100000	10M	R225
FCXR53316000	3k16	R226
FCXR53100000	1k0	R227
FCXR53100000	1k0	R228
FCXR53100000	1k0	R229
FCXR53100000	1k0	R230
FCXR52511000	511	R231
FCXR52178000	178	R232
FCXR52511000	511	R233
FCXR52178000	178	R234
FCXR52511000	511	R235
FCXR52178000	178	R236
FCXR52511000	511	R237
FCXR52178000	178	R238
FCXR51562000	56.2	R239
FCXR51562000	56.2	R240
FCXR51562000	56.2	R241
FCXR51562000	56.2	R242
FCXR52681000	681	R243
FCXR52681000	681	R244
FCXR52681000	681	R245
FCXR52681000	681	R246
FCXR52681000	681	R247
FCRJG4250000	2k5	R248
FCXR53178000	1k78	R249
FCXR52681000	681	R250
FCXR52681000	681	R251
FCRJG4250000	2k5	R252
FCXR53178000	1k78	R253
FCXR52681000	681	R254
FCXR52681000	681	R255
FCXR52681000	681	R256
FCXR52681000	681	R257
FCXR52681000	681	R258
FCXR51562000	56.2	R259
FCXR51562000	56.2	R260
FCXR51562000	56.2	R261
FCXR51562000	56.2	R262
FCXR51562000	56.2	R263
FCXR51562000	56.2	R264
FCXR51562000	56.2	R265
FCXR51562000	56.2	R266

PARTS LIST: PRINTED CIRCUIT 11.1065.01.01

Code	Description	Reference
FCXR53162000	1k62	R267
FCXR53162000	1k62	R268
FCXR53162000	1k62	R269
FCXR53162000	1k62	R270
FCXR53100000	1k0	R271
FCXR52464000	464	R272
FCXR52464000	464	R273
FCXR53100000	1k0	R274
FCXR53100000	1k0	R275
FCXR52464000	464	R276
FCXR52464000	464	R277
FCXR53100000	1k0	R278
FCRY00010000	W0.22/5	R279
FCRY00010000	W0.22/5	R280
FCRY00010000	W0.22/5	R281
FCRY00010000	W0.22/5	R282
FCRP51680000	6.8/2 PR02	R283
FCRP51680000	6.8/2 PR02	R284
FCXR54316000	31k6	R285
FCXR54316000	31k6	R286
FCXR54316000	31k6	R287
FCXR54316000	31k6	R288
FCRP51220000	2.2/2 PR02	R289
FCRP51220000	2.2/2 PR02	R290
FCXR53681000	6k81	R291
FCXR54316000	31k6	R292
FCXR54316000	31k6	R293
FCXR53681000	6k81	R294
FCXR53681000	6k81	R295
FCXR54316000	31k6	R296
FCXR54316000	31k6	R297
FCXR53681000	6k81	R298
FCXR54100000	10k0	R299
FCXR54100000	10k0	R300
FCXR54464000	46k4	R301
FCXR54316000	31k6	R302
FCXR54464000	46k4	R303
FCXR54316000	31k6	R304
FCXR54464000	46k4	R305
FCXR54464000	46k4	R306
FCXR53147000	1k47	R307
FCXR53147000	1k47	R308
FCXR56100000	1M	R309
FCXR54215000	21k5	R311
FCXR54215000	21k5	R313
FCXR54215000	21k5	R315
FCXR55464000	464k	R317
FCXR53100000	1k0	R319
FCXR54215000	21k5	R321
FCXR53100000	1k0	R323
FCXR54215000	21k5	R325
FCXR57100000	10M	R327
FCXR53316000	3k16	R328
FCXR53100000	1k0	R331
FCXR53100000	1k0	R332
FCXR52511000	511	R335

PARTS LIST: PRINTED CIRCUIT 11.1065.01.01

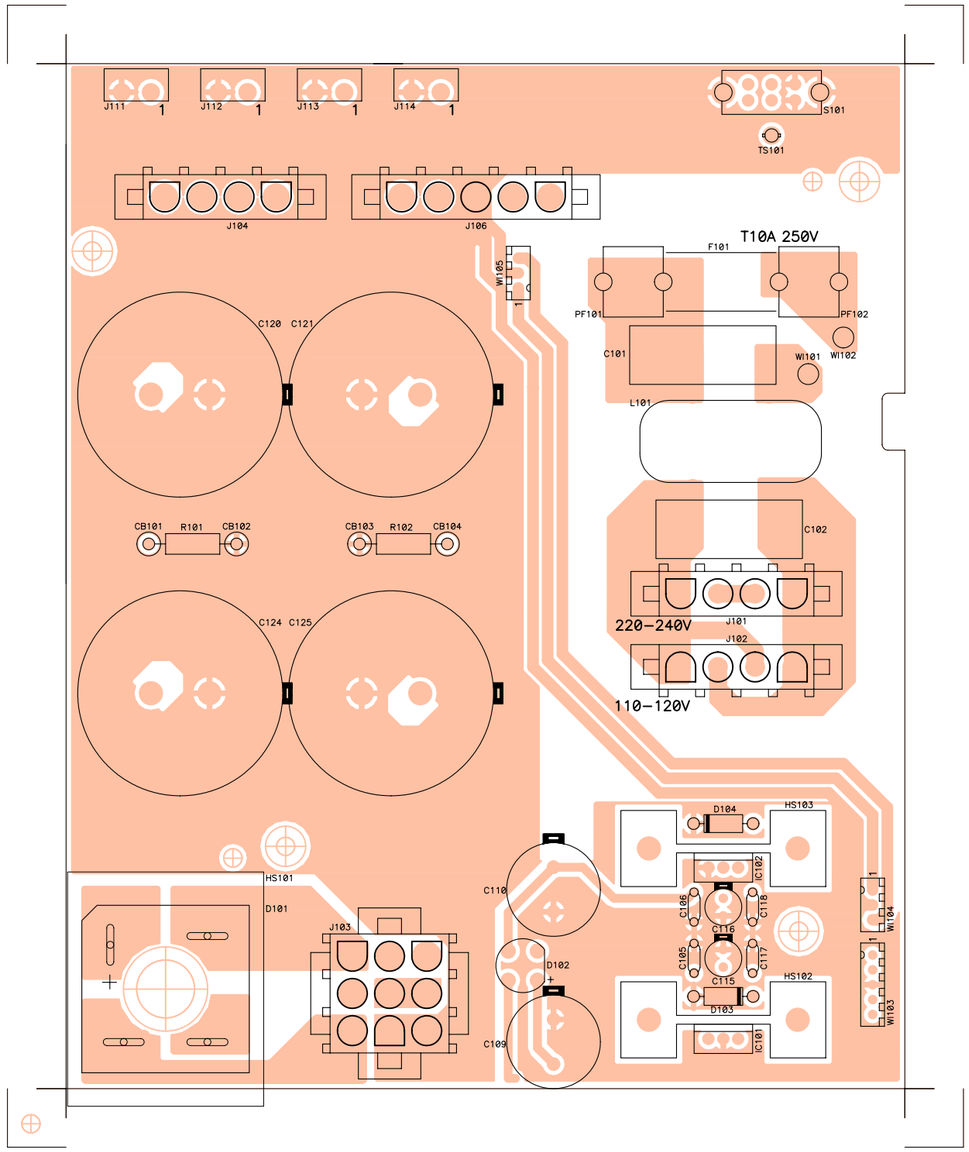
Code	Description	Reference
FCXR52178000	178	R336
FCXR52511000	511	R337
FCXR52178000	178	R338
FCXR51562000	56.2	R343
FCXR51562000	56.2	R344
FCXR52681000	681	R347
FCXR52681000	681	R348
FCXR52681000	681	R351
FCRJG4250000	2k5	R352
FCXR53178000	1k78	R353
FCXR52681000	681	R354
FCXR52681000	681	R359
FCXR52681000	681	R360
FCXR51562000	56.2	R363
FCXR51562000	56.2	R364
FCXR51562000	56.2	R367
FCXR51562000	56.2	R369
FCXR53162000	1k62	R371
FCXR53162000	1k62	R372
FCXR53100000	1k0	R375
FCXR52464000	464	R376
FCXR52464000	464	R377
FCXR53100000	1k0	R378
FCRY00010000	W0.22/5	R383
FCRY00010000	W0.22/5	R384
FCRP51680000	6.8/2 PR02	R387
FCXR54316000	31k6	R389
FCXR54316000	31k6	R390
FCRP51220000	2.2/2 PR02	R393
FCXR53681000	6k81	R395
FCXR54316000	31k6	R396
FCXR54316000	31k6	R397
FCXR53681000	6k81	R398
FCXR54100000	10k0	R403
FCXR54464000	46k4	R405
FCXR54316000	31k6	R406
FCXR54464000	46k4	R409
FCXR53147000	1k47	R411
FCXR54464000	46k4	R413
FCXR54215000	21k5	R414
FCXR54464000	46k4	R415
FCXR54215000	21k5	R416
FCXR55100000	100k0	R417
FCXR51750000	75.0	R418
FCXR51750000	75.0	R419
FCXR55287000	287k	R420
FCXR53147000	1k47	R422
FCXR53147000	1k47	R423
FCXR53147000	1k47	R424
FCXR53147000	1k47	R425
FCXR53464000	4k64	R427
FCXR52178000	178	R429
FCXR52178000	178	R430
FCXR52178000	178	R431
FCXR52178000	178	R432
FCXR53215000	2k15	R434

PARTS LIST: PRINTED CIRCUIT 11.1065.01.01

Code	Description	Reference
FCXR54100000	10k0	R435
FCXR54100000	10k0	R436
FCXR55100000	100k0	R437
FCXR55100000	100k0	R438
FCXR53100000	1k0	R439
FCXR54383000	38k3	R440
FCXR53100000	1k0	R441
FCXR53287000	2k87	R442
FCXR54215000	21k5	R443
FCXR54100000	10k0	R444
FCXR54100000	10k0	R445
FCXR56215000	2M15	R446
FCXR53121000	1k21	R447
FCXR55100000	100k0	R448
FCXR54147000	14k7	R449
FCXR56215000	2M15	R450
FCXR52100000	100.0	R451
FCXR54100000	10k0	R452
FCXR53121000	1k21	R453
FCXR54562000	56k2	R455
FCXR54562000	56k2	R456
FCXR54562000	56k2	R457
FCXR54562000	56k2	R458
FCT804006000	Screw M4x6 SPAN	SC100
FCT804006000	Screw M4x6 SPAN	SC101
FCT804006000	Screw M4x6 SPAN	SC102
FCT804006000	Screw M4x6 SPAN	SC103
FCT804006000	Screw M4x6 SPAN	SC104
FCT804006000	Screw M4x6 SPAN	SC105
FCT803010000	Screw M3x10 SPA	SC106
FCT803010000	Screw M3x10 SPA	SC107
FCT803010000	Screw M3x10 SPA	SC108
FCT803010000	Screw M3x10 SPA	SC109
FCT803010000	Screw M3x10 SPA	SC110
FCT803010000	Screw M3x10 SPA	SC111
FCT803010000	Screw M3x10 SPA	SC112
FCT803010000	Screw M3x10 SPA	SC113
FCT803010000	Screw M3x10 SPA	SC114
FCT804006000	Screw M4x6 SPAN	SC119
FCT804006000	Screw M4x6 SPAN	SC120
FCT750300800	Screw M3x8	SC121
FCSEPDLMSPM0	Plastic Spacer	SP100
FCSEPDLMSPM0	Plastic Spacer	SP101
FCSEPDLMSPM0	Plastic Spacer	SP102
FCSEPDLMSPM0	Plastic Spacer	SP103
FCSEPDLMSPM0	Plastic Spacer	SP104
FCSEPDLMSPM0	Plastic Spacer	SP105
FCSEPDLMSPM0	Plastic Spacer	SP106
FCSEPDLMSPM0	Plastic Spacer	SP107
FCARAT000000	Washer Ins. Tr.3x5.3x1.7	WA100
FCARM3201000	Metal Washer 3.2x6x1	WA101
FCARM3201000	Metal Washer 3.2x6x1	WA102
FCARM3201000	Metal Washer 3.2x6x1	WA103
FCARM3201000	Metal Washer 3.2x6x1	WA104
FCARM3201000	Metal Washer 3.2x6x1	WA105
FCARM3201000	Metal Washer 3.2x6x1	WA106

PARTS LIST: PRINTED CIRCUIT 11.1065.01.01

Code	Description	Reference
FCARM3201000	Metal Washer 3.2x6x1	WA107
FCARM3201000	Metal Washer 3.2x6x1	WA108
FCARM3201000	Metal Washer 3.2x6x1	WA109
FCARDE030000	Toothed Washer f/M3	WA114
FC0H02353000	1023.05.30	WI102



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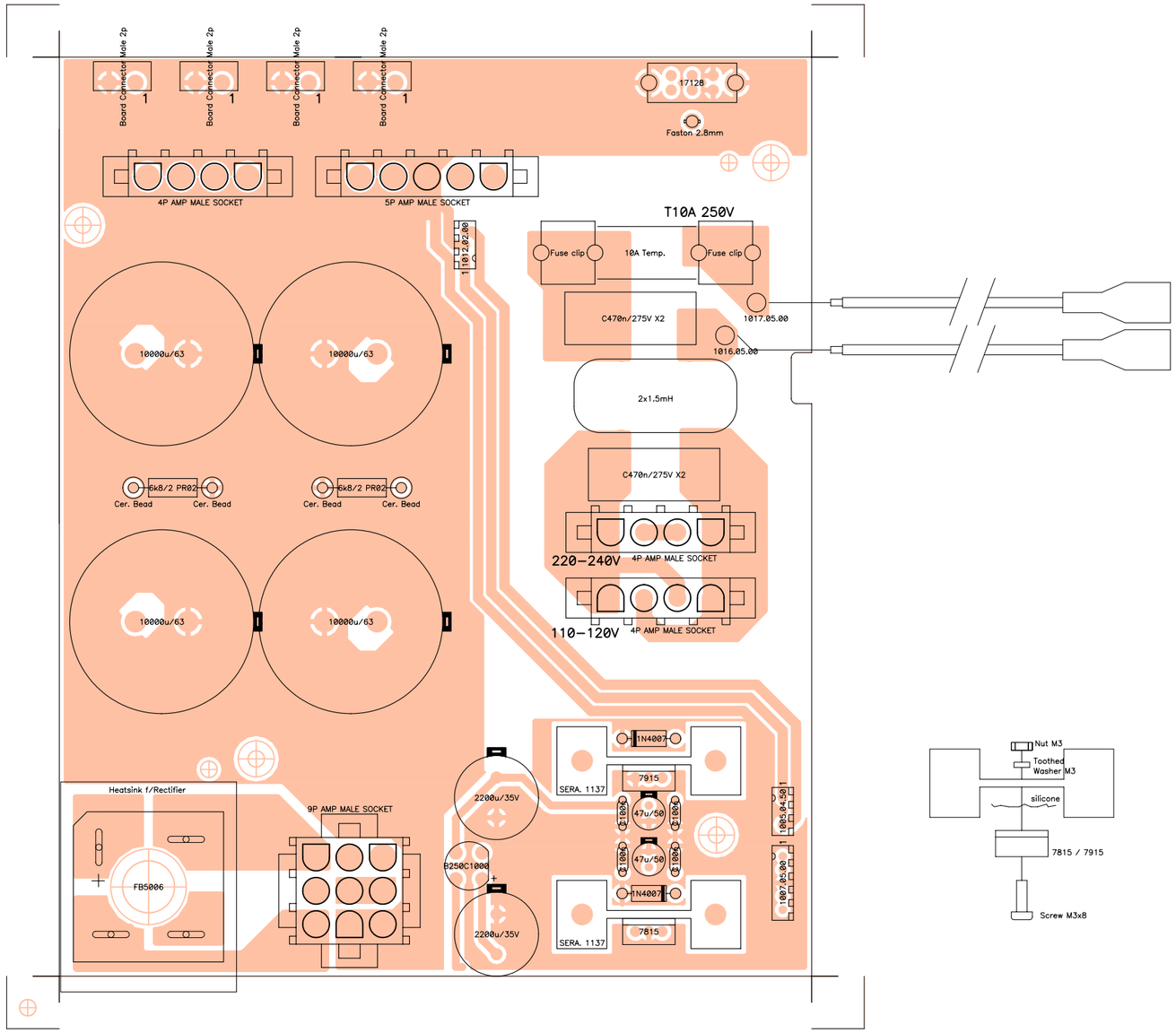
number: 33.0987	version: 01.00	project n: EP06-06	title: Supply + Outs Ct.
drawn by: M. Amoros	date: 060724	product n: MPA 4-150 R approved: Angel Sanuy	



ECLEREE LABORATORIO DE ELECTRO–ACUSTICA S.A.	related to: circuit no: 11.1084–01.00 schema no: 10.0753–01.00 insertion file no:		side: Component
			view: Value
number: 33.0988	version: 01.00	project n: EP06–06	title: Supply + Outs Ct.
drawn by: M. Amoros	date: 060724	product n: MPA 4–150 R	
		approved: Angel Sanuy	

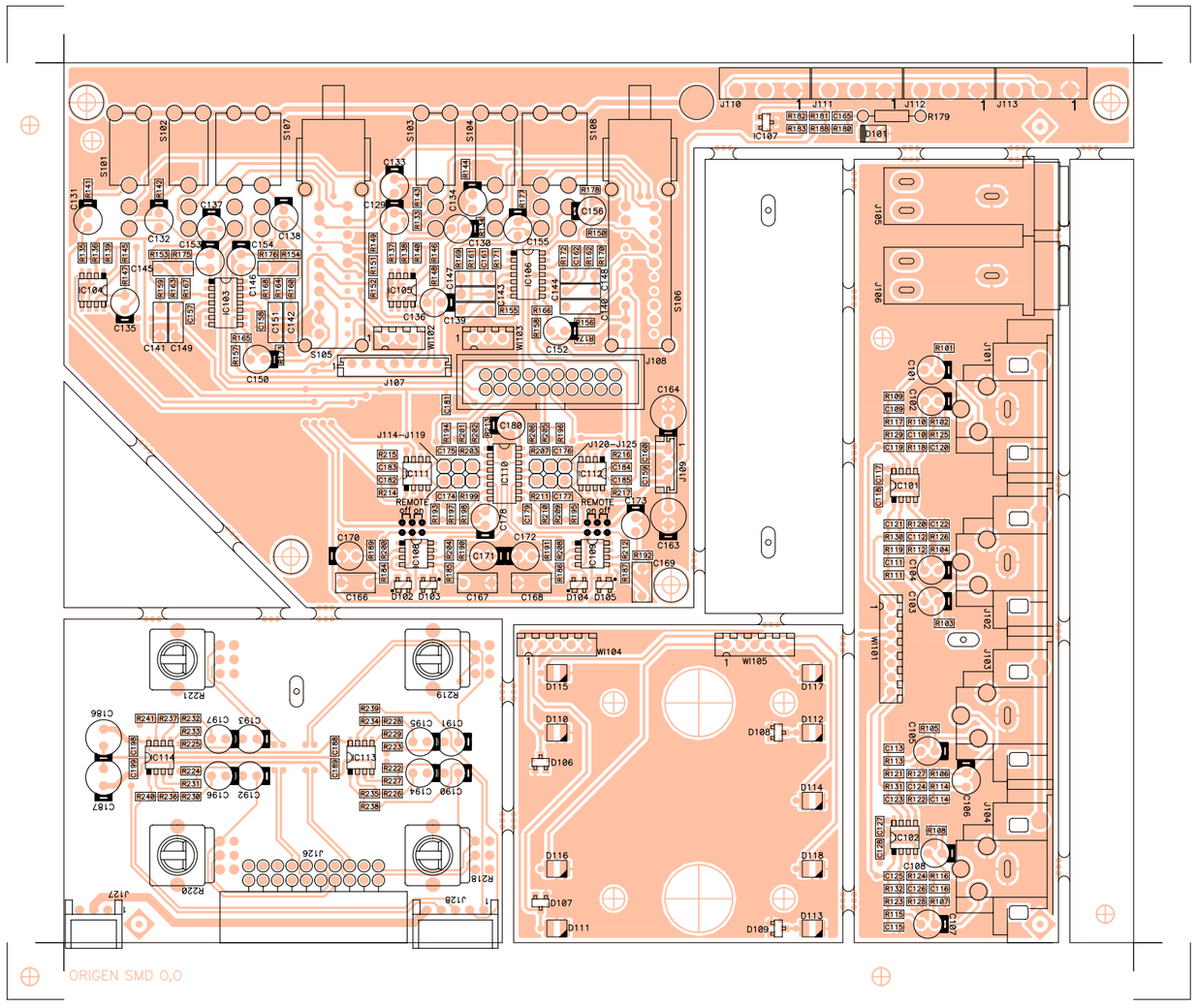
IMPORTANT NOTE: Apply Clear Silicone Sealant among the 10000u/63V electrolitic capacitors

PARTS LIST: PRINTED CIRCUIT 11.1084.01.00

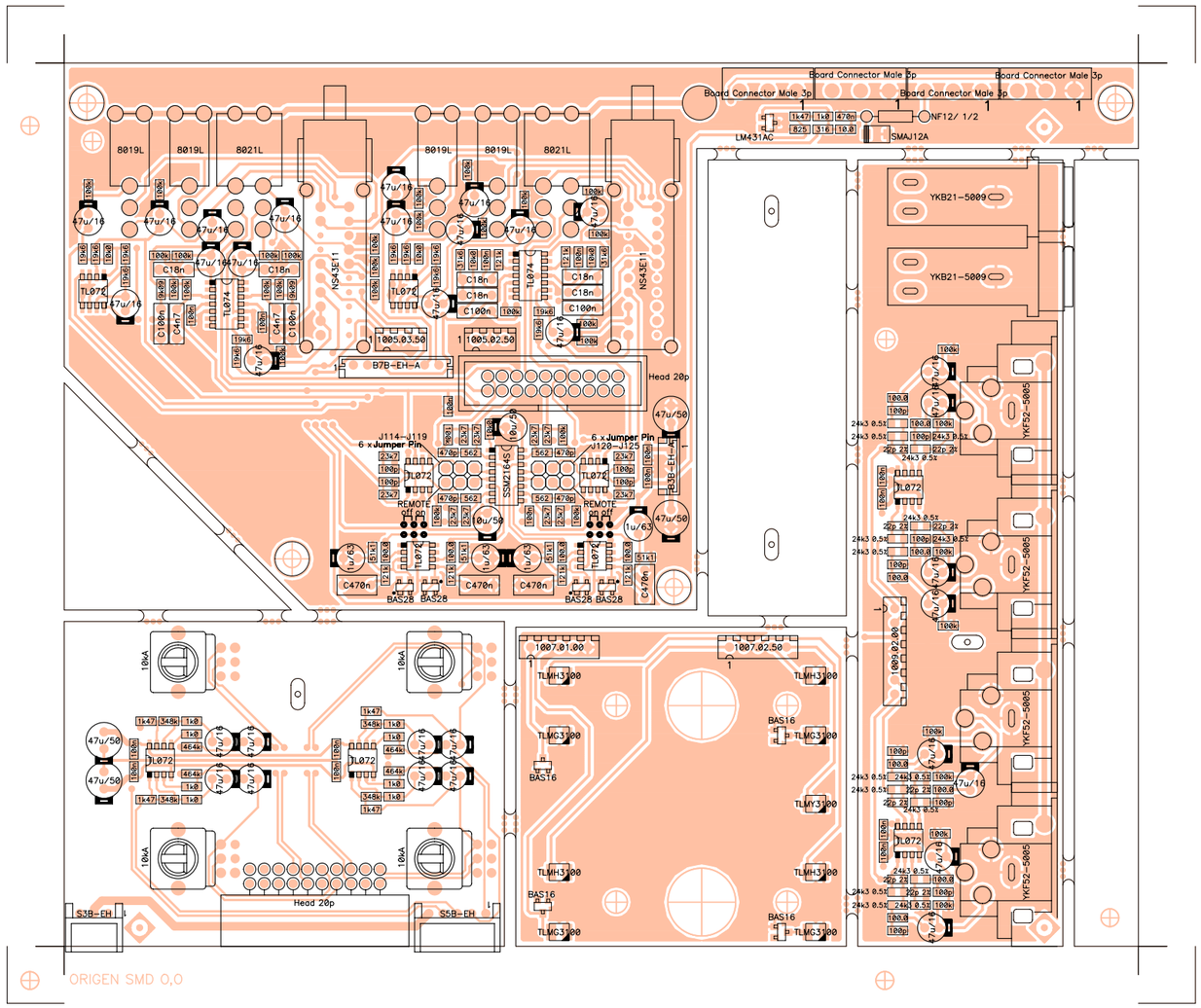
Code	Description	Reference
FCCDH7147000	C470n/275V X2	C101
FCCDH7147000	C470n/275V X2	C102
FCCC15101000	C100n	C105
FCCC15101000	C100n	C106
FCCE21220000	2200u/35V	C109
FCCE21220000	2200u/35V	C110
FCCE25047000	47u/50	C115
FCCE25047000	47u/50	C116
FCCC15101000	C100n	C117
FCCC15101000	C100n	C118
FCCE32100000	10000u/63	C120
FCCE32100000	10000u/63	C121
FCCE32100000	10000u/63	C124
FCCE32100000	10000u/63	C125
FCPERL255000	Cer. Bead	CB101
FCPERL255000	Cer. Bead	CB102
FCPERL255000	Cer. Bead	CB103
FCPERL255000	Cer. Bead	CB104
FCCI01084000	Printed Circuit 11.1084	CI101
FCREC5006000	FB5006	D101
FCREC2510000	B250C1000	D102
FCDD14007000	1N4007	D103
FCDD14007000	1N4007	D104
FCFUS8030000	10A Temp.	F101
FCRAD1151500	Heatsink f/Rectifier	HS101
FCRAD1263600	SERA. 1137	HS102
FCRAD1263600	SERA. 1137	HS103
FCREG7815000	7815	IC101
FCREG7915000	7915	IC102
FCCTAMP04000	4P AMP MALE SOCKET	J101
FCCTAMP04000	4P AMP MALE SOCKET	J102
FCCTAMP09000	9P AMP MALE SOCKET	J103
FCCTAMP04000	4P AMP MALE SOCKET	J104
FCCTAMP05000	5P AMP MALE SOCKET	J106
FCREG1016000	Board Connector Male 2p	J111
FCREG1016000	Board Connector Male 2p	J112
FCREG1016000	Board Connector Male 2p	J113
FCREG1016000	Board Connector Male 2p	J114
FCBB2X350000	2x1.5mH	L101
FCTUE0030000	Nut M3	NV101
FCTUE0030000	Nut M3	NV102
FCPORF020000	Fuse clip	PF101
FCPORF020000	Fuse clip	PF102
FCRP54680000	6k8/2 PR02	R101
FCRP54680000	6k8/2 PR02	R102
FCINTD400000	17128	S101
FCT380401200	Screw M4x12 TR	SC100
FCT750300800	Screw M3x8	SC101
FCT750300800	Screw M3x8	SC102
FCTERMF28000	Faston 2.8mm	TS101
FCARDE030000	Toothed Washer f/M3	WA101
FCARDE030000	Toothed Washer f/M3	WA102
FCARS4000000	Security washer M4	WA103
FC2F01650000	1016.05.00	WI101
FC2F01750000	1017.05.00	WI102
FC4K00750000	1007.05.00	WI103

PARTS LIST: PRINTED CIRCUIT 11.1084.01.00

Code	Description	Reference
FC4I00545000	1005.04.50	WI104
FC0C01220000	1012.02.00	WI105



ECLER LABORATORIO DE ELECTRO-ACUSTICA S.A.	related to: circuit no: 11.1076-02.00 schema no: 10.0749-01.01 insertion file no: 81.0110-01.00	side: Component view: Reference	
number: 33.0985	version: 01.01	project n: EP06-06	title: Inputs + Leds&Potemtrs
drawn by: M. Amoros	date: 060725	product n: MPA4-150 R	
		approved: Angel Sanuy	



IMPORTANT NOTE: Apply Clear Silicone Sealant in all header conectors

ECLER LABORATORIO DE ELECTRO-ACUSTICA S.A.	related to: circuit no: 11.1076-02.00 schema no: 10.0749-01.01 insertion file no: 81.0110-01.00	side: Component view: Value	
number: 33.0986	version: 01.01	project n: EP06-06	title: Inputs + Leds&Potemtrs
drawn by: M. Amoros	date: 060725	product n: MPA4-150 R	
		approved: Angel Sanuy	

PARTS LIST: PRINTED CIRCUIT 11.1076.02.00

Code	Description	Reference
FCCE10000000	47u/16	C101
FCCE10000000	47u/16	C102
FCCE10000000	47u/16	C103
FCCE10000000	47u/16	C104
FCCE10000000	47u/16	C105
FCCE10000000	47u/16	C106
FCCE10000000	47u/16	C107
FCCE10000000	47u/16	C108
FCXCD2100000	100p	C109
FCXCD2100000	100p	C110
FCXCD2100000	100p	C111
FCXCD2100000	100p	C112
FCXCD2100000	100p	C113
FCXCD2100000	100p	C114
FCXCD2100000	100p	C115
FCXCD2100000	100p	C116
FCXCD4100000	100n	C117
FCXCD4100000	100n	C118
FCXCD1220100	22p 2%	C119
FCXCD1220100	22p 2%	C120
FCXCD1220100	22p 2%	C121
FCXCD1220100	22p 2%	C122
FCXCD1220100	22p 2%	C123
FCXCD1220100	22p 2%	C124
FCXCD1220100	22p 2%	C125
FCXCD1220100	22p 2%	C126
FCXCD4100000	100n	C127
FCXCD4100000	100n	C128
FCCE10000000	47u/16	C129
FCCE10000000	47u/16	C130
FCCE10000000	47u/16	C131
FCCE10000000	47u/16	C132
FCCE10000000	47u/16	C133
FCCE10000000	47u/16	C134
FCCE10000000	47u/16	C135
FCCE10000000	47u/16	C136
FCCE10000000	47u/16	C137
FCCE10000000	47u/16	C138
FCCDK1100000	C100n	C139
FCCDK1100000	C100n	C140
FCCDK1100000	C100n	C141
FCCDK1100000	C100n	C142
FCCDK5018000	C18n	C143
FCCDK5018000	C18n	C144
FCCDK5018000	C18n	C145
FCCDK5018000	C18n	C146
FCCDK5018000	C18n	C147
FCCDK5018000	C18n	C148
FCCDK1004700	C4n7	C149
FCCE10000000	47u/16	C150
FCCDK1004700	C4n7	C151
FCCE10000000	47u/16	C152
FCCE10000000	47u/16	C153
FCCE10000000	47u/16	C154
FCCE10000000	47u/16	C155
FCCE10000000	47u/16	C156

PARTS LIST: PRINTED CIRCUIT 11.1076.02.00

Code	Description	Reference
FCXCD4100000	100n	C157
FCXCD4100000	100n	C158
FCXCD4100000	100n	C159
FCXCD4100000	100n	C160
FCXCD4100000	100n	C161
FCXCD4100000	100n	C162
FCCE25047000	47u/50	C163
FCCE25047000	47u/50	C164
FCXCD4470000	470n	C165
FCCDK1470000	C470n	C166
FCCDK1470000	C470n	C167
FCCDK1470000	C470n	C168
FCCDK1470000	C470n	C169
FCCE30001000	1u/63	C170
FCCE30001000	1u/63	C171
FCCE30001000	1u/63	C172
FCCE30001000	1u/63	C173
FCXCD2470000	470p	C174
FCXCD2470000	470p	C175
FCXCD2470000	470p	C176
FCXCD2470000	470p	C177
FCCE25010000	10u/50	C178
FCXCD4100000	100n	C179
FCCE25010000	10u/50	C180
FCXCD4100000	100n	C181
FCXCD2100000	100p	C182
FCXCD2100000	100p	C183
FCXCD2100000	100p	C184
FCXCD2100000	100p	C185
FCCE25047000	47u/50	C186
FCCE25047000	47u/50	C187
FCXCD4100000	100n	C188
FCXCD4100000	100n	C189
FCCE10000000	47u/16	C190
FCCE10000000	47u/16	C191
FCCE10000000	47u/16	C192
FCCE10000000	47u/16	C193
FCCE10000000	47u/16	C194
FCCE10000000	47u/16	C195
FCCE10000000	47u/16	C196
FCCE10000000	47u/16	C197
FCXCD4100000	100n	C198
FCXCD4100000	100n	C199
FCCI01076000	Printed Board 11.1076	CI101
FCDDKE120000	SMAJ12A	D101
FCXDDBAS2800	BAS28	D102
FCXDDBAS2800	BAS28	D103
FCXDDBAS2800	BAS28	D104
FCXDDBAS2800	BAS28	D105
FCXDDBAS1600	BAS16	D106
FCXDDBAS1600	BAS16	D107
FCXDDBAS1600	BAS16	D108
FCXDDBAS1600	BAS16	D109
FCLEDSMD3000	TLMG3100	D110
FCLEDSMD3000	TLMG3100	D111
FCLEDSMD3000	TLMG3100	D112

PARTS LIST: PRINTED CIRCUIT 11.1076.02.00

Code	Description	Reference
FCLEDSMD3000	TLMG3100	D113
FCLEDSMD2500	TLMY3100	D114
FCLEDSMD2000	TLMH3100	D115
FCLEDSMD2000	TLMH3100	D116
FCLEDSMD2000	TLMH3100	D117
FCLEDSMD2000	TLMH3100	D118
FCIC07201000	TL072	IC101
FCIC07201000	TL072	IC102
FCIC07401000	TL074	IC103
FCIC07201000	TL072	IC104
FCIC07201000	TL072	IC105
FCIC07401000	TL074	IC106
FCIC43101000	LM431AC	IC107
FCIC07201000	TL072	IC108
FCIC07201000	TL072	IC109
FCIC21641000	SSM2164S	IC110
FCIC07201000	TL072	IC111
FCIC07201000	TL072	IC112
FCIC07201000	TL072	IC113
FCIC07201000	TL072	IC114
FCBASX090000	YKF52-5005	J101
FCBASX090000	YKF52-5005	J102
FCBASX090000	YKF52-5005	J103
FCBASX090000	YKF52-5005	J104
FCBASJ020000	YKB21-5009	J105
FCBASJ020000	YKB21-5009	J106
FCCTM0007000	B7B-EH-A	J107
FCHEA1002000	Head 20p	J108
FCCTM0003000	B3B-EH-A	J109
FCREG1017000	Board Connector Male 3p	J110
FCREG1017000	Board Connector Male 3p	J111
FCREG1017000	Board Connector Male 3p	J112
FCREG1017000	Board Connector Male 3p	J113
FCTERM010000	Jumper Pin	J114
FCTERM010000	Jumper Pin	J115
FCTERM010000	Jumper Pin	J116
FCTERM010000	Jumper Pin	J117
FCTERM010000	Jumper Pin	J118
FCTERM010000	Jumper Pin	J119
FCTERM010000	Jumper Pin	J120
FCTERM010000	Jumper Pin	J121
FCTERM010000	Jumper Pin	J122
FCTERM010000	Jumper Pin	J123
FCTERM010000	Jumper Pin	J124
FCTERM010000	Jumper Pin	J125
FCHEA0020000	Head 20p	J126
FCCTM1003000	S3B-EH	J127
FCCTM1005000	S5B-EH	J128
FCMJ00010000	Jumper	MJ101
FCMJ00010000	Jumper	MJ102
FCMJ00010000	Jumper	MJ103
FCMJ00010000	Jumper	MJ104
FCXR55100000	100k	R101
FCXR55100000	100k	R102
FCXR55100000	100k	R103
FCXR55100000	100k	R104

PARTS LIST: PRINTED CIRCUIT 11.1076.02.00

Code	Description	Reference
FCXR55100000	100k	R105
FCXR55100000	100k	R106
FCXR55100000	100k	R107
FCXR55100000	100k	R108
FCXR52100000	100.0	R109
FCXR52100000	100.0	R110
FCXR52100000	100.0	R111
FCXR52100000	100.0	R112
FCXR52100000	100.0	R113
FCXR52100000	100.0	R114
FCXR52100000	100.0	R115
FCXR52100000	100.0	R116
FCXR64243000	24k3 0.5%	R117
FCXR64243000	24k3 0.5%	R118
FCXR64243000	24k3 0.5%	R119
FCXR64243000	24k3 0.5%	R120
FCXR64243000	24k3 0.5%	R121
FCXR64243000	24k3 0.5%	R122
FCXR64243000	24k3 0.5%	R123
FCXR64243000	24k3 0.5%	R124
FCXR64243000	24k3 0.5%	R125
FCXR64243000	24k3 0.5%	R126
FCXR64243000	24k3 0.5%	R127
FCXR64243000	24k3 0.5%	R128
FCXR64243000	24k3 0.5%	R129
FCXR64243000	24k3 0.5%	R130
FCXR64243000	24k3 0.5%	R131
FCXR64243000	24k3 0.5%	R132
FCXR55100000	100k	R133
FCXR55100000	100k	R134
FCXR54196000	19k6	R135
FCXR54196000	19k6	R136
FCXR54196000	19k6	R137
FCXR54196000	19k6	R138
FCXR54100000	10k0	R139
FCXR54100000	10k0	R140
FCXR55100000	100k	R141
FCXR55100000	100k	R142
FCXR55100000	100k	R143
FCXR55100000	100k	R144
FCXR54196000	19k6	R145
FCXR54196000	19k6	R146
FCXR54196000	19k6	R147
FCXR54196000	19k6	R148
FCXR55100000	100k	R149
FCXR55100000	100k	R150
FCXR55100000	100k	R151
FCXR55100000	100k	R152
FCXR55100000	100k	R153
FCXR55100000	100k	R154
FCXR55100000	100k	R155
FCXR55100000	100k	R156
FCXR54196000	19k6	R157
FCXR54196000	19k6	R158
FCXR53909000	9k09	R159
FCXR53909000	9k09	R160

PARTS LIST: PRINTED CIRCUIT 11.1076.02.00

Code	Description	Reference
FCXR54100000	10k0	R161
FCXR54100000	10k0	R162
FCXR55100000	100k	R163
FCXR55100000	100k	R164
FCXR54196000	19k6	R165
FCXR54196000	19k6	R166
FCXR55100000	100k	R167
FCXR55100000	100k	R168
FCXR54316000	31k6	R169
FCXR54316000	31k6	R170
FCXR55121000	121k	R171
FCXR55121000	121k	R172
FCXR55100000	100k	R173
FCXR55100000	100k	R174
FCXR55100000	100k	R175
FCXR55100000	100k	R176
FCXR55100000	100k	R177
FCXR55100000	100k	R178
FCRF22120000	NF12/ 1/2	R179
FCXR51100000	10.0	R180
FCXR53100000	1k0	R181
FCXR53147000	1k47	R182
FCXR52825000	825	R183
FCXR55121000	121k	R184
FCXR55121000	121k	R185
FCXR55121000	121k	R186
FCXR55121000	121k	R187
FCXR52316000	316	R188
FCXR54511000	51k1	R189
FCXR54511000	51k1	R190
FCXR54511000	51k1	R191
FCXR54511000	51k1	R192
FCXR55100000	100k	R193
FCXR55100000	100k	R194
FCXR55100000	100k	R195
FCXR55100000	100k	R196
FCXR54237000	23k7	R197
FCXR54237000	23k7	R198
FCXR52562000	562	R199
FCXR52100000	100.0	R200
FCXR54237000	23k7	R201
FCXR54237000	23k7	R202
FCXR52562000	562	R203
FCXR52100000	100.0	R204
FCXR54237000	23k7	R205
FCXR54237000	23k7	R206
FCXR52562000	562	R207
FCXR52100000	100.0	R208
FCXR54237000	23k7	R209
FCXR54237000	23k7	R210
FCXR52562000	562	R211
FCXR52100000	100.0	R212
FCXR54100000	10k0	R213
FCXR54237000	23k7	R214
FCXR54237000	23k7	R215
FCXR54237000	23k7	R216

PARTS LIST: PRINTED CIRCUIT 11.1076.02.00

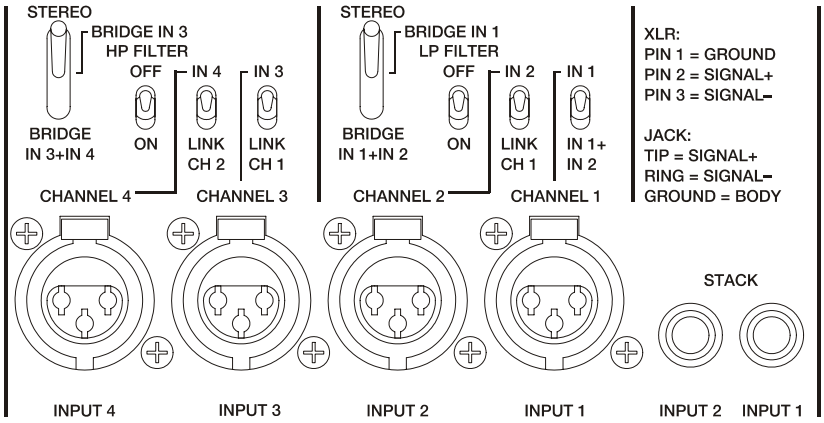
Code	Description	Reference
FCXR54237000	23k7	R217
FCPR21006000	10kA	R218
FCPR21006000	10kA	R219
FCPR21006000	10kA	R220
FCPR21006000	10kA	R221
FCXR55464000	464k	R222
FCXR55464000	464k	R223
FCXR55464000	464k	R224
FCXR55464000	464k	R225
FCXR53100000	1k0	R226
FCXR53100000	1k0	R227
FCXR53100000	1k0	R228
FCXR53100000	1k0	R229
FCXR53100000	1k0	R230
FCXR53100000	1k0	R231
FCXR53100000	1k0	R232
FCXR53100000	1k0	R233
FCXR55348000	348k	R234
FCXR55348000	348k	R235
FCXR55348000	348k	R236
FCXR55348000	348k	R237
FCXR53147000	1k47	R238
FCXR53147000	1k47	R239
FCXR53147000	1k47	R240
FCXR53147000	1k47	R241
FCINTAP13000	8019L	S101
FCINTAP13000	8019L	S102
FCINTAP13000	8019L	S103
FCINTAP13000	8019L	S104
FCINTAP09000	NS43E11	S105
FCINTAP09000	NS43E11	S106
FCINTAP14000	8021L	S107
FCINTAP14000	8021L	S108
FC4M00920000	1009.02.00	WI101
FC4I00535000	1005.03.50	WI102
FC4I00525000	1005.02.50	WI103
FC4K00710000	1007.01.00	WI104
FC4K00725000	1007.02.50	WI105

PRELIMINARY:

1. Check the Ground Link switch.
   - When the main power switch is turned off, there should be no continuity between the amplifier's frame and power ground.
2. Be sure that the correct cable types are used.
3. Verify that the unit's power supplies, outputs and frame are not shorted.
4. Main power switch OFF.
5. Prepare a sine wave generator providing a 0dB 1kHz output signal, but do not turn it on yet.
6. Plug the signal generator into Channel 1's XLR-type input.
7. Connect four 4Ω load impedances to each output 1, 2, 3 and 4. In case you have not four impedances available, just use two, connecting them to each couple of outputs, depending of the test step you are running.
8. Connect the millivoltmeter and the oscilloscope to the amplifier's channels 1 and 2.
9. Turn down all of the potentiometers.
10. Configure Mini-jumpers to set REMOTE CONTROL to ON. See configuration scheme for details.
11. Connect the amplifier's mains plug to a variac outlet, and leave its output down to 0 volts.

SWITCH POSITIONS:

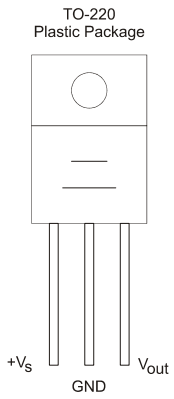
SWITCH	POSITION
IN1/IN1+IN2	IN1
IN2/LINK CH1	LINK CH1
LP FILTER ON/OFF	OFF
STEREO / BRIDGE IN1 / BRIDGE IN1+IN2	STEREO
IN3/LINK CH1	LINK CH1
IN4/LINK CH2	LINK CH2
HP FILTER ON/OFF	OFF
STEREO / BRIDGE IN3 / BRIDGE IN3+IN4	STEREO



VERIFICATION:

1. Turn the tested unit's main power switch ON.
2. Increase gradually the variac's output, until reaching 230V mains voltage. While increasing, observe carefully the unit, in order to detect any malfunction (heavy vibrations on the transformer, DC voltage on the amplifier module output, etc.)
3. Check that the red neon is lit.
4. Check that all of the CLIP-indicating LED's are burning.
5. Turn on the signal generator.
6. Verify that all the SIGNAL PRESENT LED's are also lit.
7. Turn up channel one's input potentiometer. Check that it turns easily and smoothly. At its maximum position, check that Vo=25Vrms
8. The output signal monitored on OUTPUT1 should be only dependent from the channel 1's input signal.
9. Turn up channel two's input potentiometer. Check that it turns easily and smoothly. At its maximum position, check that Vo=25Vrms
10. The output signal monitored on OUTPUT2 should be only dependent from the channel 2's input signal.
11. Both output signals should be in identical phase.
12. Now change the ST/BRIDGE IN1/BRIDGE IN1+IN2 selector to BRIDGE IN1+IN2 position
13. OUTPUT1 and OUTPUT2 should now have opposite phase, and their output level drops down 6dB.
14. Channel 2's Signal Present indicating LED turns off.
15. The unit's gain level is now controlled only by channel one's input potentiometer. Turn it up and leave it at its maximum position.
16. Check the amplifier's frequency response. Using a 0'5V input signal, verify that the output level remains equal between 20Hz and 20kHz, and the waveform suffers no distortion at any frequency. Also check that with a 50kHz input signal, the output level drops only 1 or 2dB, and no visible distortion is detected.
17. Apply a 1kHz square wave signal. Moreover, shunt a 1µ5 capacitor to channel 1's 4Ω output load. While monitoring the output signal on the oscilloscope, vary the input signal level in order to see a two- or three-cycled ringing on the flat sections of the square output waveform. Repeat this same process with channel two.
18. Select again a sine wave output on the signal generator.
19. Now connect the millivoltmeter and oscilloscope probes to the amplifier's outputs 3 and 4.
20. Turn up channel three's input potentiometer. Check that it turns easily and smoothly. At its maximum position, check that Vo=25Vrms
21. The output signal monitored on the output should be only dependent from the channel 3's input signal.
22. Turn up channel four's input potentiometer. Check that it turns easily and smoothly. At its maximum position, check that Vo=25Vrms
23. The output signal monitored on the output should be only dependent from the channel 4's input signal.
24. Both output signals should be in identical phase.
25. Now change the ST/BRIDGE IN3/BRIDGE IN3+IN4 selector to BRIDGE IN3+IN4 position
26. OUTPUT3 and OUTPUT4 should now have opposite phase, and their output level drops down 6dB.
27. Channel 4's Signal Present indicating LED turns off.

28. The unit's gain level is now controlled only by channel three's input potentiometer. Turn it up and leave it at its maximum position.
29. Check the amplifier’s frequency response. Using a 0’5V input signal, verify that the output level remains equal between 20Hz and 20kHz, and the waveform suffers no distortion at any frequency. Also check that with a 50kHz input signal, the output level drops only 1 or 2dB, and no visible distortion is detected.
30. Apply a 1kHz square wave signal. Moreover, shunt a 1µ5 capacitor to channel 3's 4Ω output load. While monitoring the output signal on the oscilloscope, vary the input signal level in order to see a two- or three-cycled ringing on the flat sections of the square output waveform. Repeat this same process with channel four.
31. Select again a sine wave output on the signal generator.
32. At this point, all clip indicators should be lighting. If necessary, add a little bit of level to the input signal.
33. Set the IN1/IN1+IN2 selector to IN1+IN2, and verify that the output signal level drops 6dB on all outputs.
34. Return the switch back to IN1.
35. To verify the thermal protection circuits, short the thermal probe pins +Vs and Vout, and verify that the relay releases and opens up, while the THERMAL LED indicator lights on and the cooling fan increases its speed until it reaches maximum airflow.



REMOTE CONTROL VERIFICATION

1- Release all of the input circuit selection switches. ↑.
2- Attenuation potentiometers should all be turned up to their maximum level (right).
3- Apply a 0dB 1kHz signal on channel 1 input.
4- Check the output signal on channel 1's output. Vo=26 Vrms.
5- Connect the tool equipped with a potentiometer to REMOTE CONTROL CH1.
6- Check the potentiometer sweep, its response curve and attenuation.
7- Repeat this procedure on the rest of inputs and outputs, and on remote controls.
8- When done, leave the REMOTE CONTROL configuration again OFF.

PROTECTIONS

1. Disconnect the 4Ω load impedances.
2. Switch the signal generator off, and select a 1kHz - 1V output signal, but leave its amplitude control turned down.
3. Release all of the input circuitry selector switches ↑.
4. Load channel 1's output with a 1Ω impedance.
5. Turn on the signal generator, apply the signal to INPUT 1.
6. Increase its output amplitude level until the unit's output signal starts to clip. At this point, Vo=15Vpp. (first step)
7. Decrease gradually the mains voltage using the variac, just until the unit's output signal is no longer clipping.
8. Then continue increasing smoothly the generator's output level, until the unit's output level starts clipping again, which should occur when Vo=27Vpp (second step).

Note: In both clipping cases, however, the clipped signal should be clear and free of ringings and other oscillations.

9. Repeat the same process with the remaining channels.

BURNING TEST

Leave the tested unit connected to its correspondent mains voltage, applying input signal and connecting load impedances, and running at its burn test level for at least 24 hours.

SAFETY VERIFICATION TESTS.

Preliminary:

Unplug the unit to be tested from the mains outlet.
Short all ground terminals from signal inputs, outputs and other external connectors, except the mains plug's ground.
Turn on the unit's main power switch.

Ground continuity test:

Connect the tester's probes between the mains ground contact and the unit's backside main ground test point. When applying a 10A current, verify that the ground impedance is lower than 0.1Ω.

Electrical insulation test:

Connect the electrical insulation tester probes between the mains outlet ground contact and both shorted mains input poles. Adjust the tester's current limit down to 10mA. Apply 1500Vac during 5 seconds.
The unit's insulation should be able to resist this voltage, without generating spurious sparks or a sparkover effect, and the tester may not detect any disfunction.

CAUTION: Do not disconnect nor touch the test probes until the test has finished completely!

VERIFICATION USING MUSIC

Note: As this is a four-channel amplifier, with a versatile input signal selection system which enhances its connectivity options, the previous procedures have checked that the input circuitry selection options are functioning correctly when running with input signals.

1. Release all of the input circuitry selector switches. ↑
2. Verify the outputs 1 and 2's STACK function by testing their jack-type output connections.
3. Verify individually each of the inputs and their outputs.
4. Turn the amplifier off and on again with the main power switch.
5. Even when signal is applied onto the tested channel's input, while the unit is passing its STANDBY run-up time, the speaker should remain quiet.
6. Verify the sweep of all potentiometers, which should turn easily and smoothly, without producing noise or scratches.
7. Verify the sound quality (do not allow any kind of scratch or distortion)
8. Check the unit's low pass filters on channels 1 and 2. f_c=160Hz.
9. Check the unit's high pass filters on channels 3 and 4. f_c=160Hz.
10. To ensure that all electrical junctions are well-fixed, hit the tested unit softly against your working table.
11. Short the output terminals while carrying amplified signal, and verify that once the short-circuit is removed, the unit recovers normal functioning.
12. Without input signal, and with the potentiometers turned all down first, and also turning them up to maximum level, verify that the unit's output signal is free of hum and noise when listening the output signal through loudspeakers.

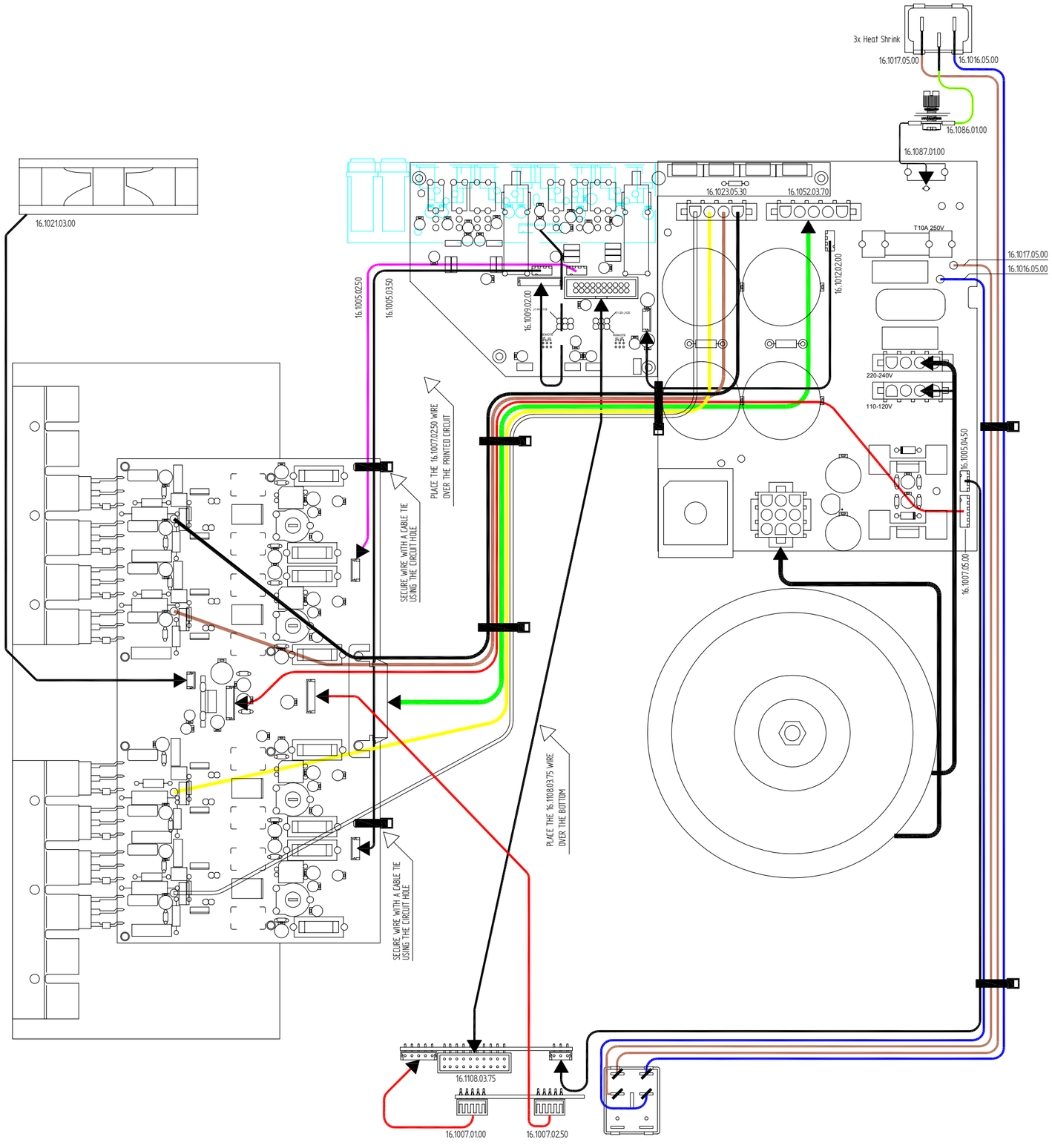
QUALITY CONTROL

All mechanical parts should be visually revised, in order to detect scratches on the unit's painting; all screws should be on their place, correctly tight and unmarked. Check out the unit's general presentation.

POWER 20-20kHz 1% THD

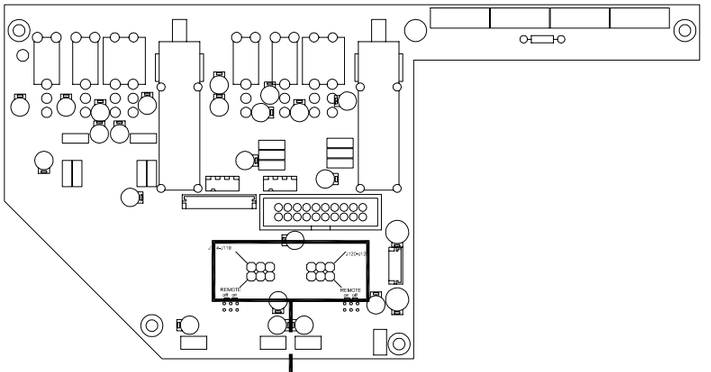
1 Channel @ 4Ω	160 WRMS
1 Channel @ 8Ω	100 WRMS
All Channels @ 4Ω	120 WRMS
All Channels @ 8Ω	83 WRMS
1 Bridged channel @ 8Ω	300 WRMS
All Bridged channels @ 8Ω	250 WRMS
Frequency response (-1dB)	7Hz - 30kHz
Filter (Hi-Lo) 3rd order Butterworth	160Hz
* THD+Noise @ 1kHz Full Pwr.	<0.05%
* Intermodulation distortion 50Hz & 7kHz, 4:1	<0.06%
* TIM 100	<0.04%
* S+N/N 20Hz -20kHz @ 1W/4Ω	>90dB
* CMRR	>55dB
Damping factor 1kHz @ 8Ω	>160
Slew Rate	±18V/µs
* Channel crosstalk @ 1kHz	>55dB
Input Sensitivity / Impedance	0dBV/>20kΩ
Anticlip	2% THD
Mains Voltage	See characteristics in the back of the unit.
Power consumption (max. Out)	1095VA
Dimensions	482.6x88x391mm
Weight	12.6kg

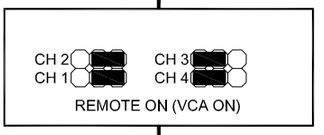
* VCA OFF

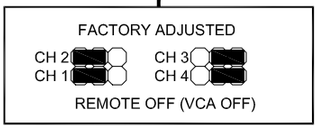


ECLEREE	drawn: J. Colomines	date: 061220	project: EP06-06	product: MPA4-150R
number: 31.0222 version 01.01	approved:	title: WIRING DIAGRAM		

REMOTE CONTROL

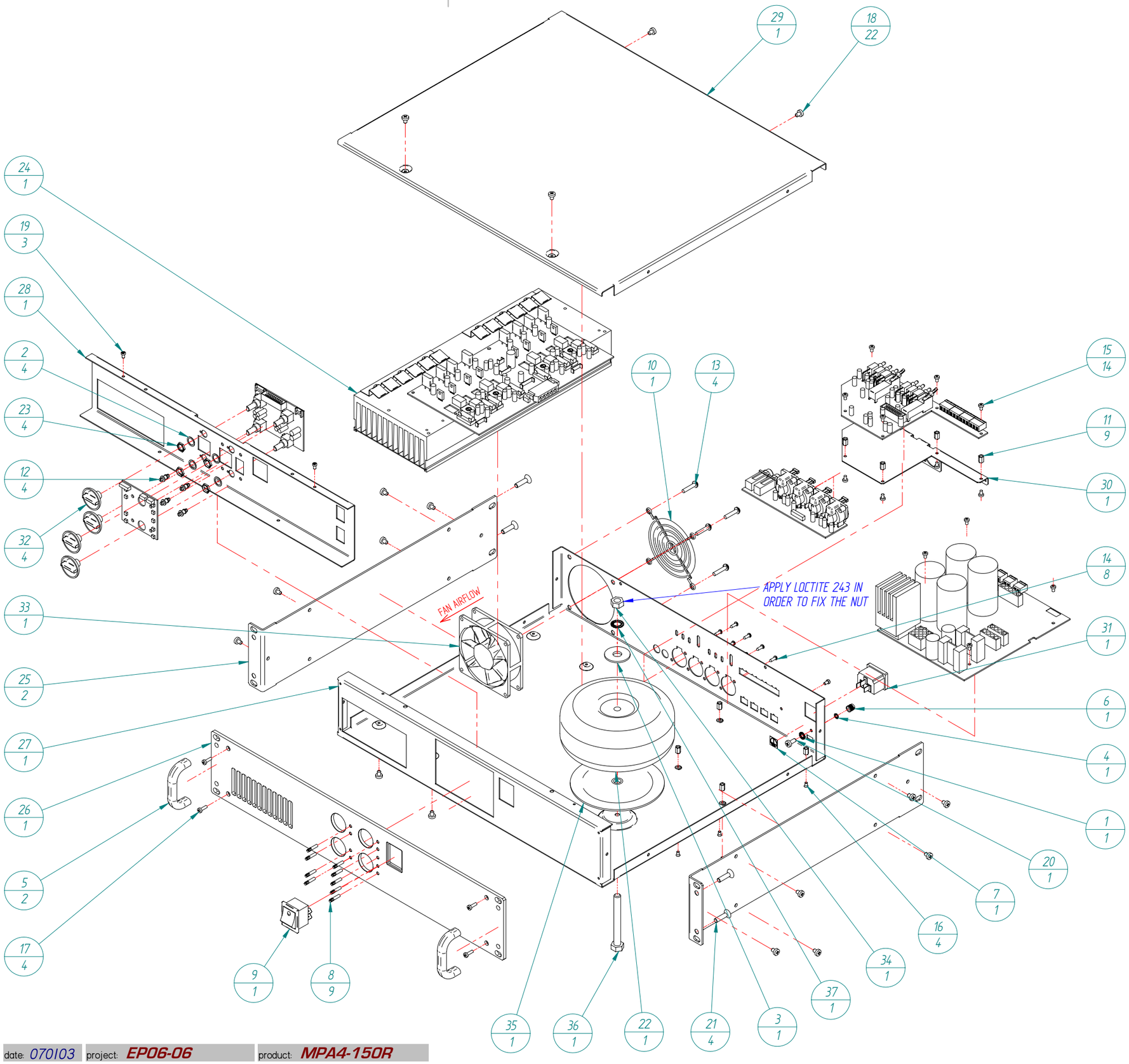






ECLER	drawn: J. Colomines	date: 060706	project: EP06-06	product: MPA4-150R
number: 31.0223 version 01.00	approved:	title: CONFIGURATION DIAGRAM		

N°	Qty.	Code	Description
1	1	FCARDE040000	TOOTHED WASHER M4
2	4	FCARDEPOTE00	ROTARY POT. WASHER M9
3	1	FCARM1050000	WASHER 10,5X30X2,5M
4	1	FCARS4000000	SEGMENTED WASHER M4
5	2	FCASAPWM1000	FRONTAL HANDLE
6	1	FCBOR0030000	GROUND TERMINAL
7	1	FCETIZTT0000	EARTH TAG
8	9	FCGUIAL10000	LIGHT PIPE GUIDE VERTICAL
9	1	FCINTRED3000	MAINS SWITCH W/LIGHT
10	1	FCREJ0800000	FAN GRILLE 80x80
11	9	FCSEP3080000	SPACER M3x8
12	4	FCSOPMSP4000	PLASTIC SPACER MSP-4N
13	4	FCT060512000	SCREW 5,1x20
14	8	FCT400290900	SCREW 2,9x9,5 D7981F BLACK
15	14	FCT803005000	SCREW DIN 7985 M3x5 COMBI
16	4	FCT803005500	SCREW D965 M3x5 BLACK
17	4	FCT803010000	SCREW DIN7985 M3x10 SPANLO
18	22	FCT804006000	SCREW M4x6 SPANLO BLACK
19	3	FCT850300500	SCREW M3x5 REDUCED HEAD
20	1	FCT850411000	SCREW M4x10 TRILOB. WHITE
21	4	FCTALL516000	SCREW DIN7991 M5x16 ALLEN
22	1	FCTFTMPA8000	TOROIDAL TRANSFORMER
23	4	FCTUPOT00000	ROTARY POT. NUT M9
24	1	FMMOMPA4150R	POWER AMP MODULE MPA4-150R
25	2	FP0282500000	LEFT/RIGHT SIDE
26	1	FP0295100000	FRONT PANEL
27	1	FP0295600000	BASE CHASSIS
28	1	FP0295700000	FRONTAL MECHANICAL SUPORT
29	1	FP0295800000	TOP COVER
30	1	FP0295900000	INPUT BOARD MEC. SUPPORT ANGLE
31	1	FRBASRE10200	MAINS SOCKET CABLE=500
32	4	FRBOTRD24100	ROTARY KNOB D24 ROTATED INDEX
33	1	FRVEN080B000	FAN 80x80 12VDC CABLE=300
34	1	GENERIC	TRANSFORMER NUT M8
35	1	GENERIC	TRANSFORMER RUBBER DISC
36	1	GENERIC	SCREW M8 TRANSFORMER
37	1	GENERIC	TRANSFORMER TOOTHED WASHER M8



ECLEREE

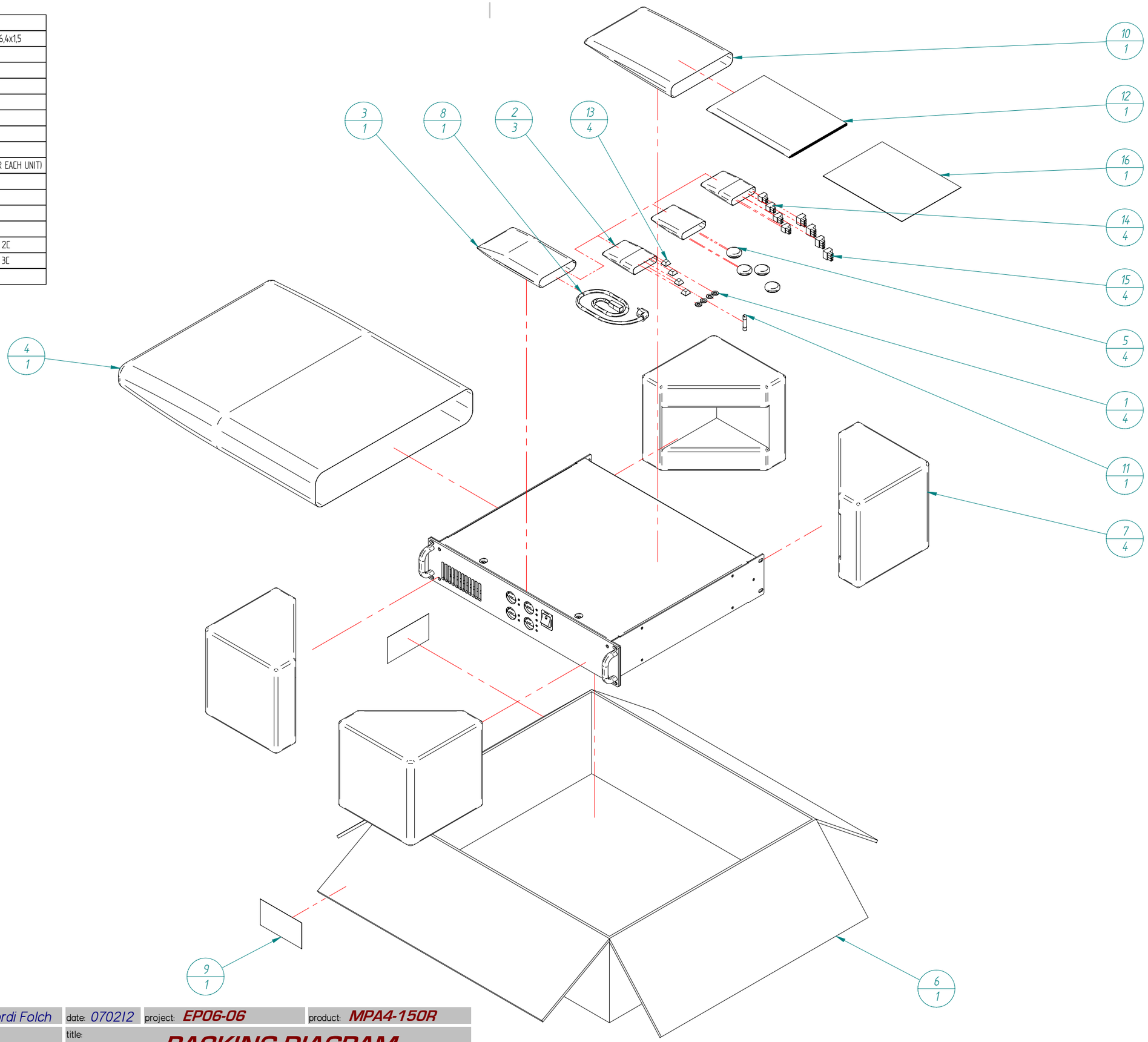
drawn: Jordi Folch | date: 070103 | project: EP06-06 | product: MPA4-150R

approved:

title: **MECHANICAL DIAGRAM**

number: 30.0227 | version 01.01

Nº	Qty.	Code	Description
1	4	FCARANY06000	WASHER M6 NYLON BLACK 12x6,4x1,5
2	3	FCBOL0010000	BAG 60x80
3	1	FCBOL0020000	PLASTIC BAG 120x180
4	1	FCBOLS020000	STANDARD BAG 75x65
5	4	FCBOTD240100	ROT. KNOB PROTECTION COVER
6	1	FCCAJSTA2300	PACKING CARDBOARD BOX
7	4	FCCANT116000	INTERIOR REINFORCEMENT
8	1	FCCONX017600	MAINS CORD 3x1,5 ST EU
9	1	FCETI0951140	PRODUCT LABEL PACK (ONE FOR EACH UNIT)
10	1	FCFUNMAN0000	USER MANUAL BAG
11	1	FCFUS8030000	FUSE 10AT 10x38
12	1	FCMANMPA150R	USER MANUAL MPA4/6-150R
13	4	FCPIE1125500	RUBBER FOOT
14	4	FCREG1006000	CONNECTING TERMINAL STRIPS 2C
15	4	FCREG1007000	CONNECTING TERMINAL STRIPS 3C
16	1	FCTARJG00000	WARRANTY CARD



ECLER

drawn: Jordi Folch | date: 070212 | project: EP06-06 | product: MPA4-150R

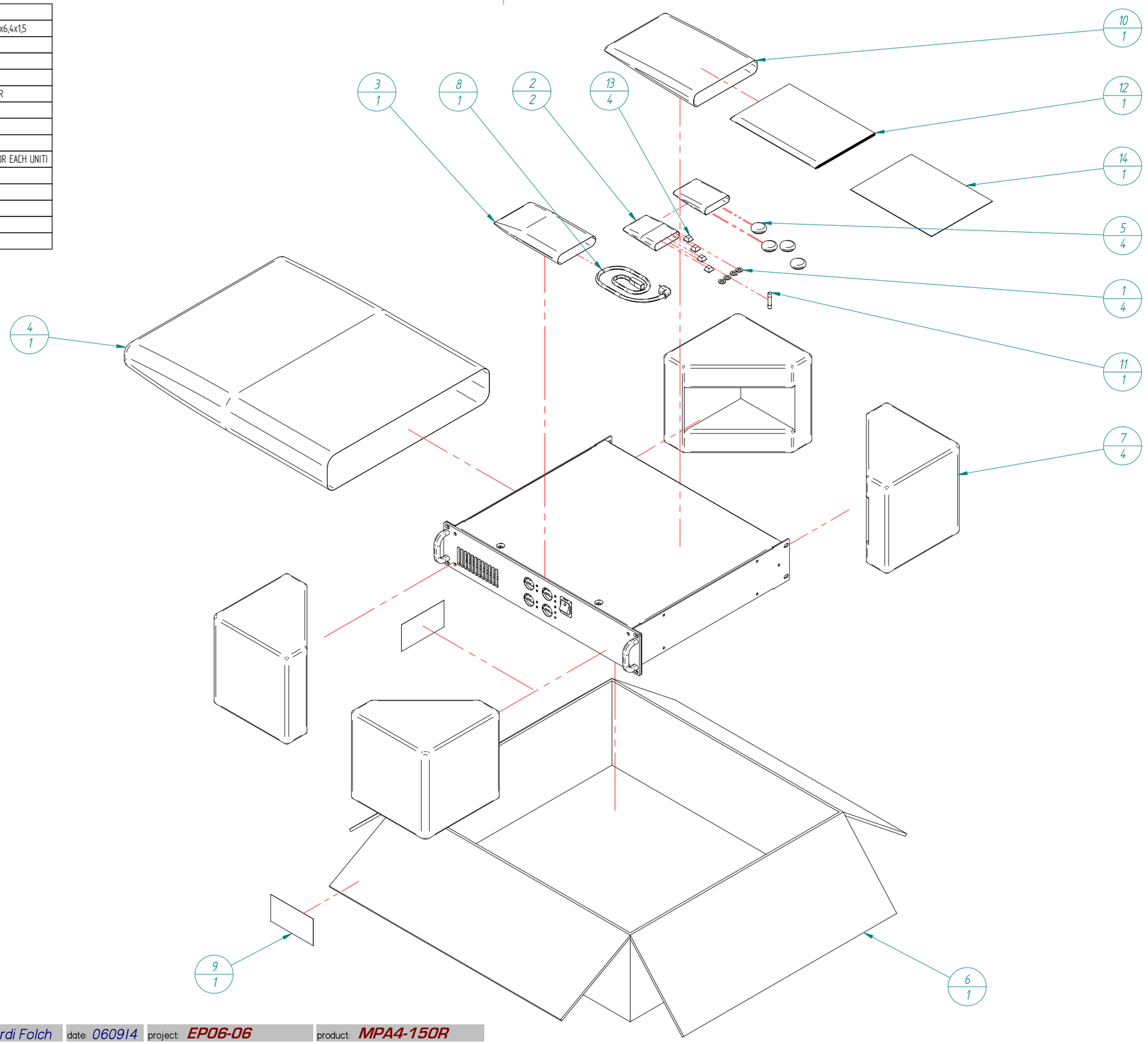
approved:

number: 32.0145 | version 01.01

title:

PACKING DIAGRAM

Nº	Qty.	Code	Description
1	4	FCARANY06000	WASHER M6 NYLON BLACK 12x6,4x1,5
2	2	FCBOL0010000	BAG 60x80
3	1	FCBOL0020000	PLASTIC BAG 120x180
4	1	FCBOLS020000	STANDARD BAG 75x65
5	4	FCBOTD240100	ROT. KNOB PROTECTION COVER
6	1	FCCAJSTA2300	PACKING CARDBOARD BOX
7	4	FCCANT116000	INTERIOR REINFORCEMENT
8	1	FCCONX017600	MAINS CORD 3x1,5 ST EU
9	1	FCET10951140	PRODUCT LABEL PACK (ONE FOR EACH UNIT)
10	1	FCFUNMAN0000	USER MANUAL BAG
11	1	FCFUS8030000	FUSE 10AT 10x38
12	1	FCMANMPA150R	USER MANUAL MPA4/6-150R
13	4	FCPIE1125500	RUBBER FOOT
14	1	FCTARJG00000	WARRANTY CARD



OLD VERSION

ECLER

drawn: Jordi Folch | date: 060914 | project: EP06-06 | product: MPA4-150R

approved:

title: PACKING DIAGRAM

number: 32.0145 | version 01.00