

HIGH-OUT

MODULE-MUTE-CMD (IF LOW MUTE ON)

FAULT (NORM OPEN COLLECTOR)

D23
BAS16+12V
R103
100KU15A
BA4560

NTC PAD 1

NTC PAD 2

C52
10u/16C7
NOT USEDR115
100KR118
1M0R105
470KD1
NOT USED

U12A

LM393

U12B

LM393

FILTER-CARD-READY CONNECTED TO +12V

MUTE-CMD

R116
10KQ10
2SD2114KR131
10KC87
22p NP0R133
47KU15B
BA4560C84
1u Y5VR136
1M0C85
100p NP0C86
100u/25C90
100n X7RR132
47KR149
47K

LOW-OUT

+12V

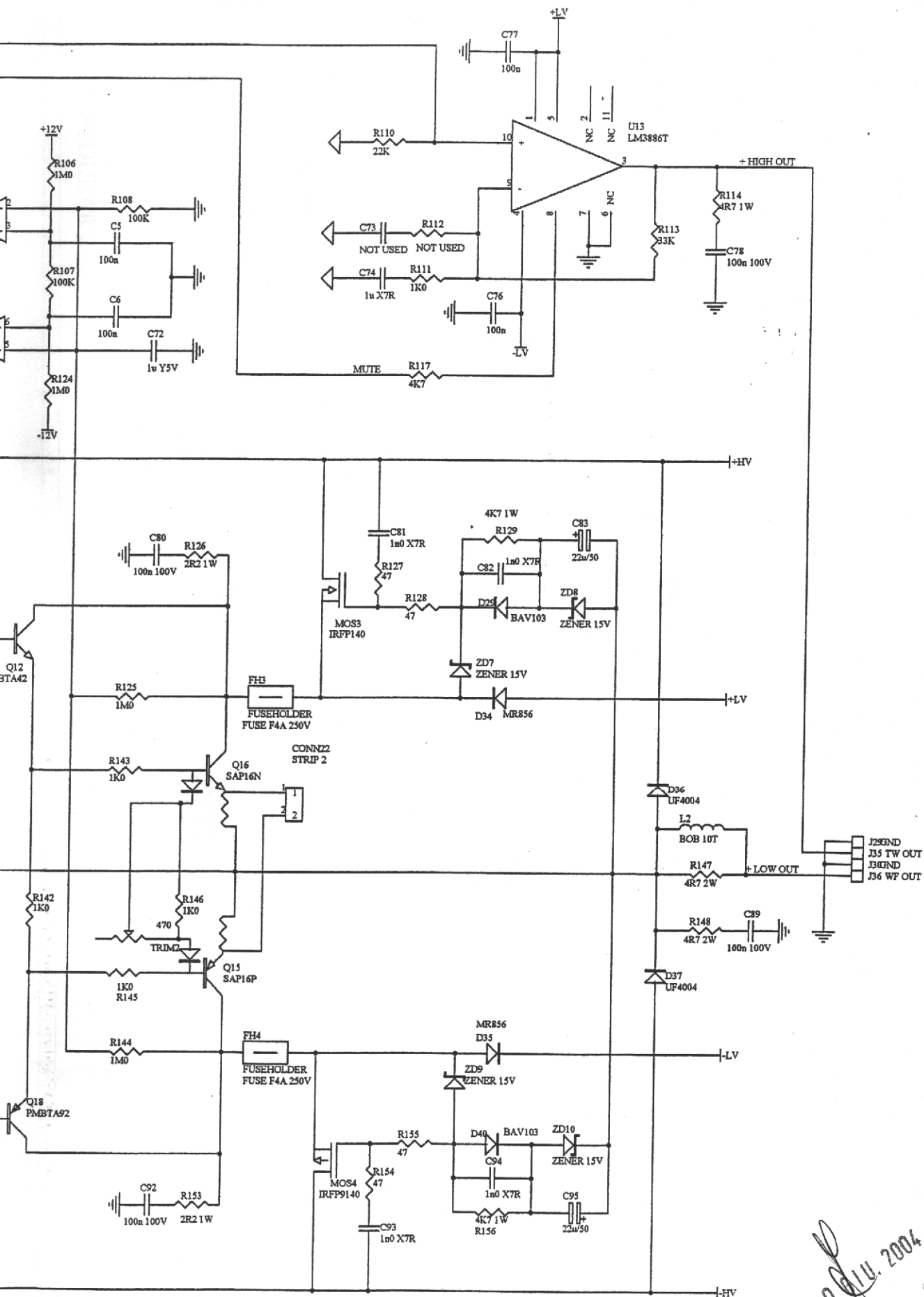
R119
2K2D32
BAV99D30
BAV99D31
BAV99R136
2K2

-12V

R139
2K2R150
560R120
360D27
BAS16R121
2K2Q14
PMBTA42D33
BAV99R137
560R138
560Q13
PMBTA92R139
2K2D39
BAV103D38
BAS16R150
560Q11
PMBTA92C79
10p NP0R123
100R141
3K3R140
5K6C88
47p NP0Q17
PMBTA42R151
390R152
100

VDD +12V VSS -12V

MODULAR SERIES



10 JUL 2004

PST 355D

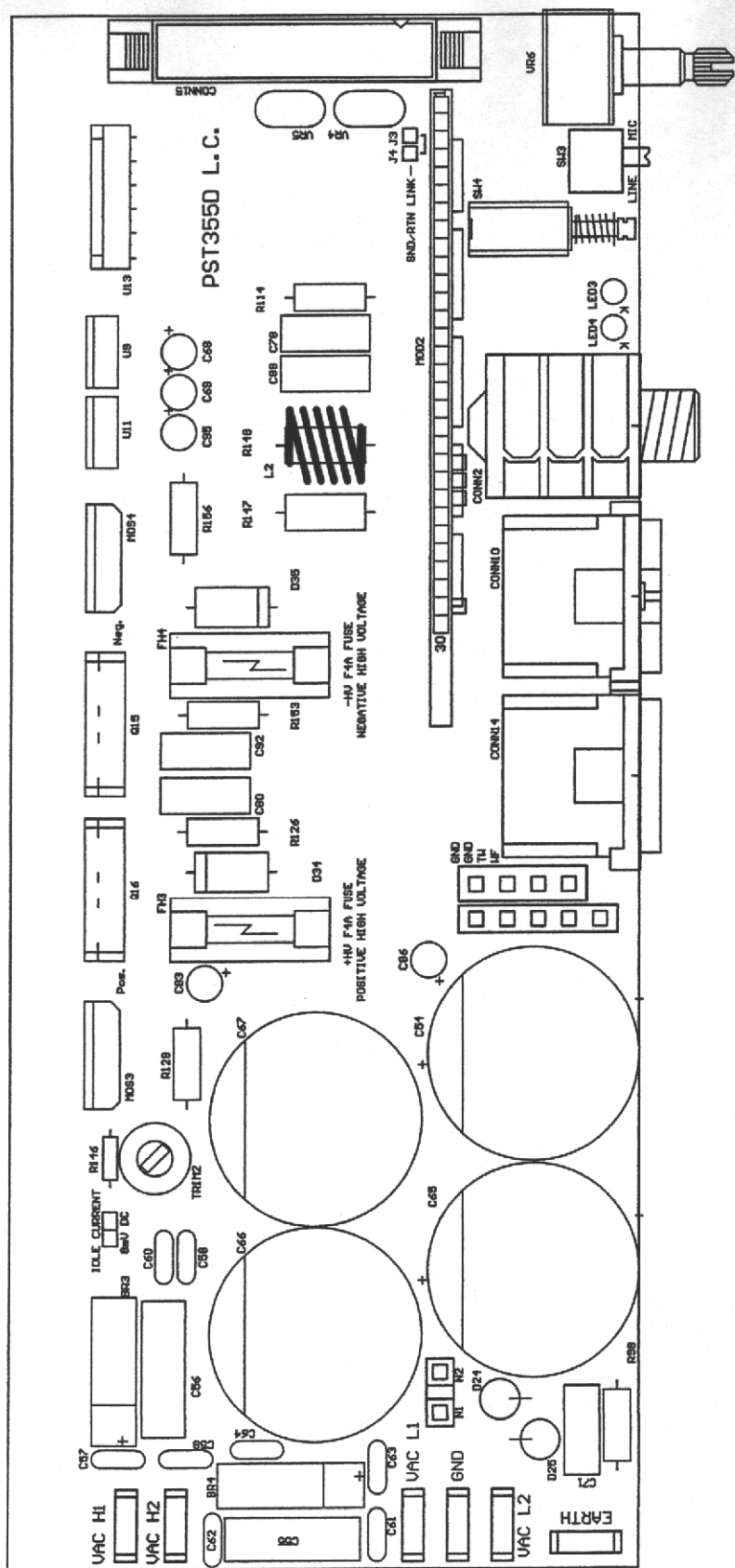
Title OPERA-MODULAR-4-LOW+HIGH AMP		
Size B	Number OPERA_MODULAR_4_AMP.SCH	Revision DEL 20/04/04 REV3
Date: 20-Apr-2004	Sheet of	
File: C:\Program Files\Design Explorer 99 SE\OPERAMODULAR\AMPLI-ELETTRONICA\OPERA MODULAR4\		

Used	Part Type	Designator	Foot print	Description
1	+5V-1R	J34	PIN	PIN
8	1K0	R1 R2 R80	0805	RESISTOR
		R104 R111		
		R142 R143		
		R145		
1	1K0	R146	R 1/4W	RESISTOR
8	1M0	R94 R95	0805	RESISTOR
		R106 R118		
		R124 R125		
		R130 R144		
2	1N5404	D24 D25	DIODE P17.5 V	3A DIODE
3	1n0	C3 C4 C48	0805	CER CAP
8	1n0	C57 C58	COND P5	CER CAP
		C59 C60		
		C61 C62		
		C63 C64		
4	1n0 X7R	C81 C82	0805	POL CAP
		C93 C94		
1	1u X7R	C74	0805	CER CAP
3	1u Y5V	C53 C72	0805	CER CAP
		C84		
9	2K2	R82 R83	0805	
		R84 R99		
		R100 R119		
		R121 R136		
		R139		
2	2R2 1W	R126 R153	R 1W	RESISTOR
1	2SD2114K	Q10	SOT-23	NPN TRANSISTOR
1	3K3	R141	0805	RESISTOR
4	4K7	R85 R86	0805	RESISTOR
		R87 R117		
2	4K7 1W	R129 R156	R 1W	RESISTOR
1	4R7 1W	R114	R 1W	
2	4R7 2W	R147 R148	R 2W	
1	5K6	R140	0805	RESISTOR
4	10K	R96 R97	0805	
		R116 R131		
2	10p NP0	C79 C91	0805	CER CAP
4	10u/16	C49 C50	1210	CER CAP
		C52 C70		
1	20KA	VR6	POT H 16 X2	POTENTIOMETER
1	22K	R110	0805	
1	22p NP0	C87	0805	POL CAP
4	22u/50	C68 C69	ELECT P2.5 D5	CAPACITOR
		C83 C95		
3	33K	R79 R81	0805	RESISTOR
		R113		
4	47	R127 R128	0805	RESISTOR
		R154 R155		
3	47K	R132 R133	0805	RESISTOR
		R149		
1	47p NP0	C88	0805	CER CAP
3	100	R91 R123	0805	RESISTOR
		R152		
6	100K	R88 R89	0805	RESISTOR
		R103 R107		
		R108 R115		
4	100n 100V	C78 C80	COND P10	POL CAP
		C89 C92		
6	100n	C1 C2 C5	0805	CER CAP
		C6 C76 C77		
1	100n MKT	C71	COND P10	POL CAP
2	100n MKT	C55 C56	COND P15	POL CAP
1	100n X7R	C90	0805	POL CAP
1	100p NP0	C85	0805	CER CAP
1	100u/25	C86	ELECT P2.5 D5	CAPACITOR
2	220	R92 R93	0805	RESISTOR
3	270	R90 R101	0805	
		R102		
2	390	R122 R151	0805	RESISTOR
1	470	TRI M2	PT10V	TRIMMER
1	470K	R105	0805	RESISTOR
5	560	R120 R135	0805	RESISTOR
		R137 R138		
		R150		
1	4053	U8	SO-16	2-CHANNEL ANALOGUE
1	470 1W	R98	R 1W	

12 MAY 2004

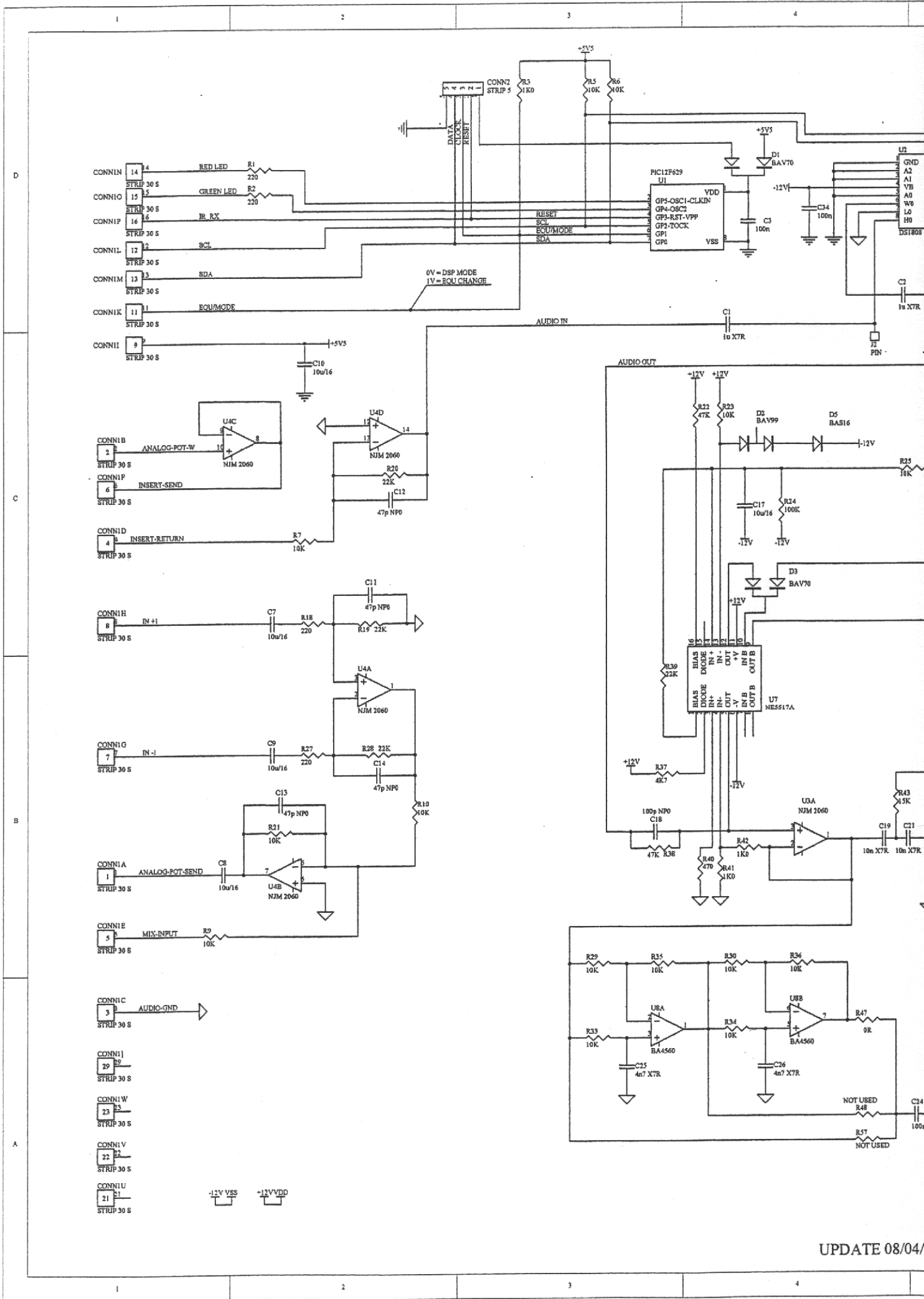
1	BA4560	C66 C67	SO- 8	DUAL OP AMP
5	BAS16	U15	SOT- 23	SI NGLE DI ODE
		D21 D22		
		D23 D27		
		D38		
1	BAV70	D26	SOT- 23	2 DI ODE COMMON K
4	BAV99	D30 D31	SOT- 23	2 DI ODE AK
		D32 D33		
4	BAV103	D28 D29	D- 64	DI ODE
		D39 D40		
1	BOB 10T	L2	BOB 10T	I NDUCTOR
1	DEVI ATORE 2X2 S	SW8	DEV 2X2 H	DOPPI O DEVI ATORE S
6	FASTON	CONN16	FASTON 6, 3 V	FASTON
		CONN17		
		CONN18		
		CONN19		
		CONN20		
		CONN21		
1	FI LTER- CARD	MOD2	FILTER- CARD- 415	FILTER CARD
1	FLAT26	CONN15	FLAT 26 V ESP	FLAT CONNETCTOR
2	FUSEHOLDER	FH3 FH4	FUSEHOLDER 5X20	
3	GND	J28 J29	PIN	PIN
		J30		
1	GREEN- LED	J31	PIN	PIN
1	GREEN LED	LED4	LED 3V	LED
1	I NT- PUSH 2X2	SW4	I NT- PUSHX2 - MPN	I NTERRU TTORE PUSH
1	I R- RX	J33	PIN	PIN
1	I RFP140	MOS3	TO247V- MOS	N MOS
1	I RFP9140	MOS4	TO247V- MOS	P MOS
1	JACK STEREO SW	CONN2	JACK S 6, 3 H ST	STEREO JACK
2	KBL04	BR3 BR4	BRI DGE 4A SI P	4A BRI DGE
1	LM317	U9	TO220V	POS REGULATOR
1	LM337	U11	TO220V	NEG REGULATOR
1	LM393	U12	SO- 8	OP- AMP
1	LM3886T	U13	ZI P- 11V	POWER AMPLI FI ER
1	LM7805	U10	D- PACK	POSITI VE REGULATOR
2	MR856	D34 D35	DI ODE P17. 5	3A DI ODE
3	NOT USED	C73 R3	0805	CER CAP
		R112		
1	NOT USED	C7	1210	CER CAP
1	NOT USED	D1	SOT- 23	SI NGLE DI ODE
8	PIN	J1 J2 J3	PIN	PIN
		J4 J16 J17		
		J18 J19		
4	PIN	J21 J22	VI TE 3MA	PIN
		J26 J27		
3	PMBTA42	Q12 Q14	SOT- 23	NPN TRANSI STOR
		Q17		
3	PMBTA92	Q11 Q13	SOT- 23	PNP TRANSI STOR
		Q18		
2	PTC 10R/ 54V 160° B59970C160A70	VR4 VR5	NTC- PTC P5	
1	RED- LED	J32	PIN	PIN
1	RED LED	LED3	LED 3V	LED
1	SAP16N	Q16	TO247V5	NPN TRANSI STOR
1	SAP16P	Q15	TO247V5	PNP TRANSI STOR
1	STRI P 2	CONN22	STRI P 2	STRI P CONNECTOR
1	TW OUT	J35	PIN	PIN
2	UF4004	D36 D37	D- 64	HIGH SPEED DI ODE
1	WF OUT	J36	PIN	PIN
1	XLR FEMALE	CONN10	XLR F H N	XLR FEMALE CONNECT
1	XLR MALE	CONN14	XLR M H N	XLR MALE CONNECTOF
2	ZENER 5V1	ZD5 ZD6	D- 64	SMD ZENER
4	ZENER 15V	ZD7 ZD8	D- 64	SMD ZENER
		ZD9 ZD10		

12 MAR 2004

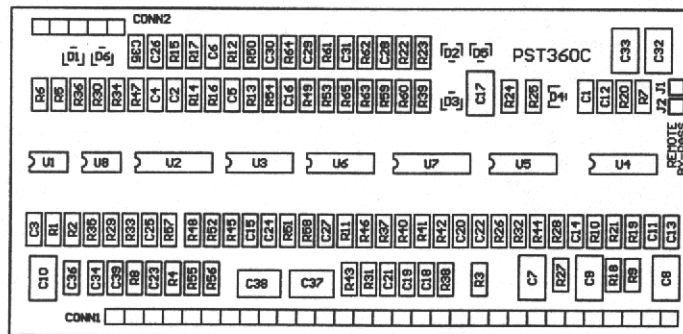


10 JUN 2004

AEB S.r.l. ACQUSTIC ENGINEERING BUREAU		AEB	
ENGINEER: M. MINELLI	TITLE: AMP_OPERA_MODULAR_4_REV3	DATE: 10-Jun-2004	
PHONE: +39 051.988.870	FAX: +39 051.988.725	PART NO: PST355D	LAYER Mechanical Layer 4
FILE NAME: PST_355D.PCB		REV: 0D	GERBER:



R51 FROM 4K7 TO 6K8



AEB S.r.l. ACQUSTIC ENGINEERING BUREAU		
ENGINEER: M. MINELLI	TITLE:	
PHONE: +39 051.969.870 FAX: +39 051.969.725	FILTER-CARD OPERA MODULAR	
PART NO: PST360C	DATE: 22-Jan-2004	LAYER: Mechanical Layer 4
FILE NAME: PST360C.Pcb	REV: C	GERBER:

23 JAN 2004

Bill of Material for FILTER-CARD-415-B.Bom

Used	Part Type	Designator	Footprint	Description
=====	=====	=====	=====	=====
3	0R	R11 R47 R53	0805	RESISTOR
4	1K0	R3 R4 R41 R42	0805	
1	1n X7R	C39	0805	POL CAP
2	1u X7R	C1 C2	0805	POL CAP
3	4K7	R14 R15 R37	0805	RESISTOR
3	4n7 X7R	C25 C26 C31	0805	POL CAP
2	4u7/16	C32 C33	1210	CER CAP
1	6K8	R51	0805	RESISTOR
2	8K2	R61 R64	0805	
17	10K	R5 R6 R7 R9 R10 R21 R23 R25 R29 R30 R33 R34 R35 R36 R60 R62 R63	0805	
7	10n X7R	C4 C5 C19 C20 C21 C22 C30	0805	POL CAP
7	10u/16	C7 C8 C9 C10 C17 C37 C38	1210	CER CAP
1	12K	R52	0805	RESISTOR
4	15K	R12 R43 R44 R58	0805	RESISTOR
2	18K	R31 R32	0805	
6	22K	R19 R20 R28 R39 R54 R65	0805	RESISTOR
1	22n X7R	C29	0805	POL CAP
5	47K	R16 R17 R22 R38 R59	0805	RESISTOR
6	47p NP0	C11 C12 C13 C14 C15 C16	0805	CER CAP
1	82K	R55	0805	RESISTOR
4	100K	R8 R13 R24 R26	0805	
4	100n	C3 C34 C35 C36	0805	CER CAP
3	100n X7R	C23 C24 C27	0805	POL CAP
2	100p NP0	C6 C18	0805	CER CAP
1	180K	R56	0805	RESISTOR
4	220	R1 R2 R18 R27	0805	RESISTOR
1	220n X7R	C28	0805	POL CAP
1	470	R40	0805	
1	BA4560	U8	SO-8	DUAL OP AMP
2	BAS16	D5 D6	SOT-23	SINGLE DIODE
3	BAV70	D1 D3 D4	SOT-23	2 DIODE COMMON K
1	BAV99	D2	SOT-23	2 DIODE AK
1	DS1808	U2	SO-16	AUDIO DIGITAL POT
1	NE5517A	U7	SO-16	OTA
4	NJM 2060	U3 U4 U5 U6	SO-14	QUAD OP-AMP
6	NOT USED	R45 R46 R48 R49	0805	RESISTOR

14 APR 2004

		R50 R57		
1	PIC12F629	U1	SO-8	PIC MICROPROCESSOR
2	PIN	J1 J2	PIN	PIN
1	STRIP 5	CONN2	STRIP 5	STRIP CONNECTOR
1	STRIP 30 S	CONN1	STRIP 30	STRIP CONNECTOR

174 APR 2004