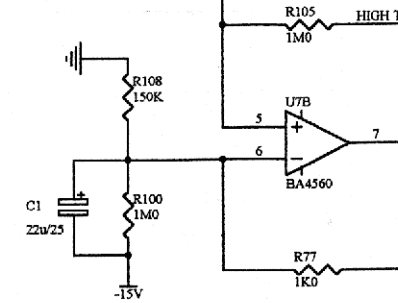
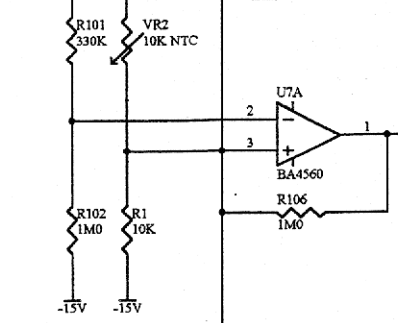
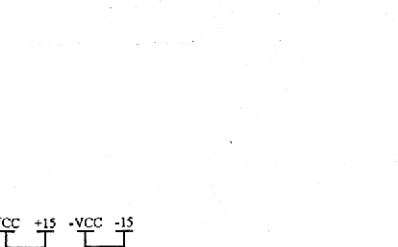
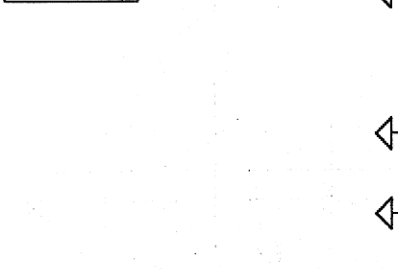
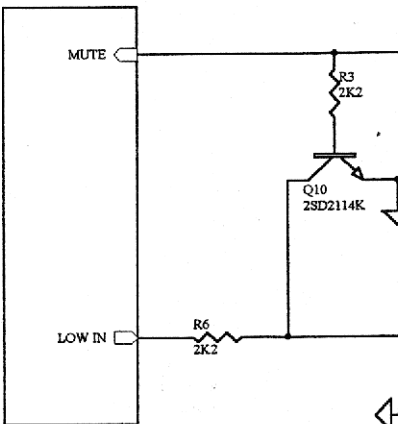


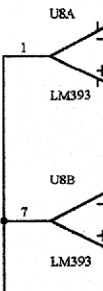
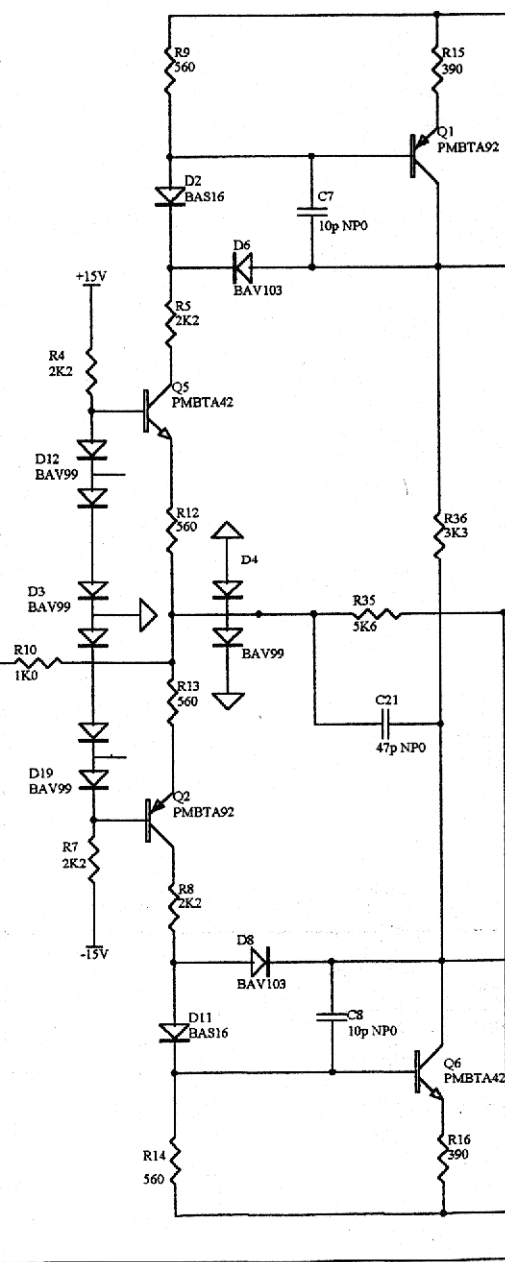
STRIP 2  
CONN16  
TP TEMP



PREAMP  
PRE SUB12.SCH

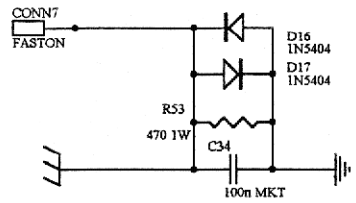
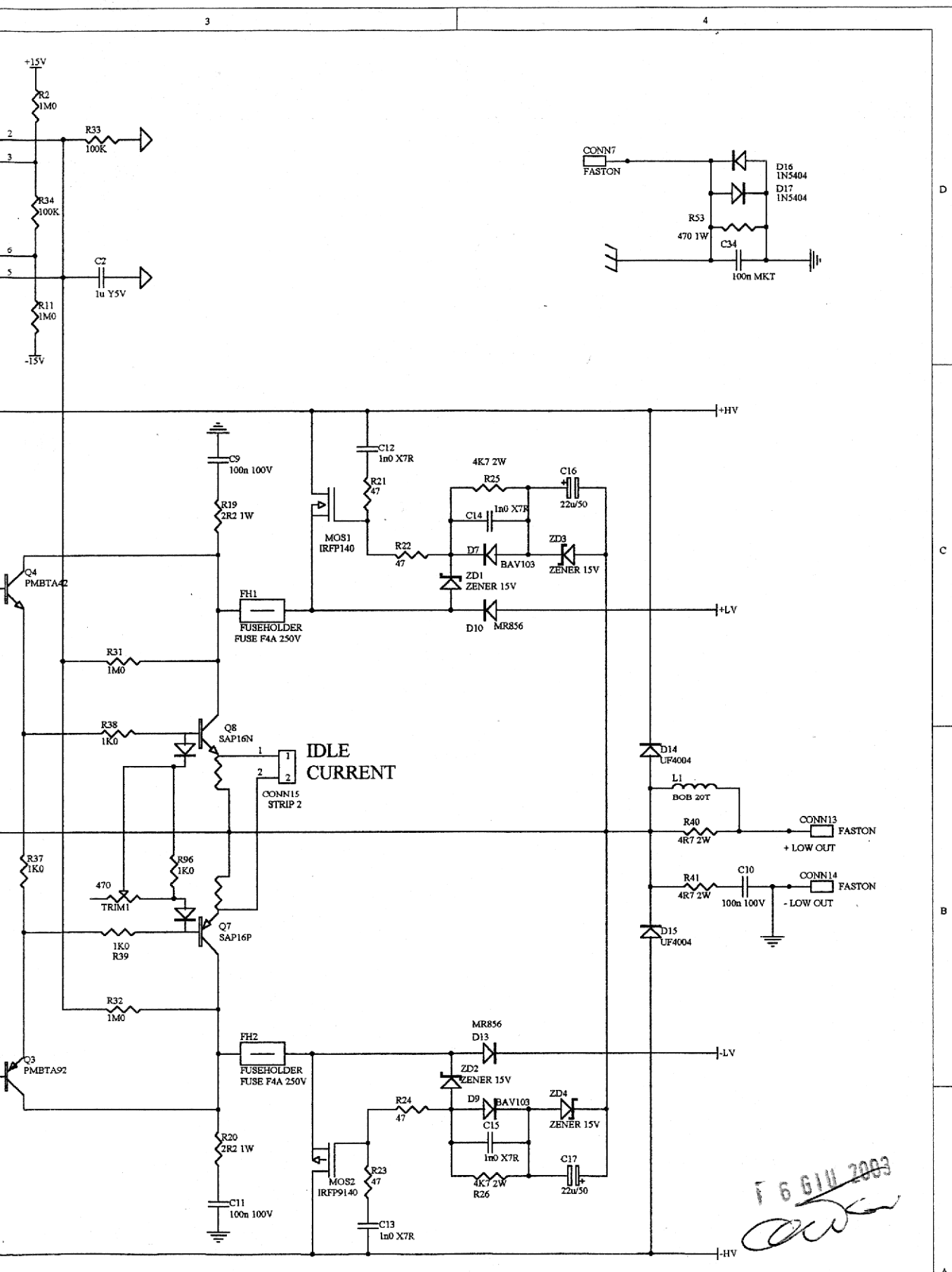


FAULT (NORM OPEN COLLECTOR)



D  
C  
B  
A

1 2



7 6 6 11 2003  
*[Signature]*

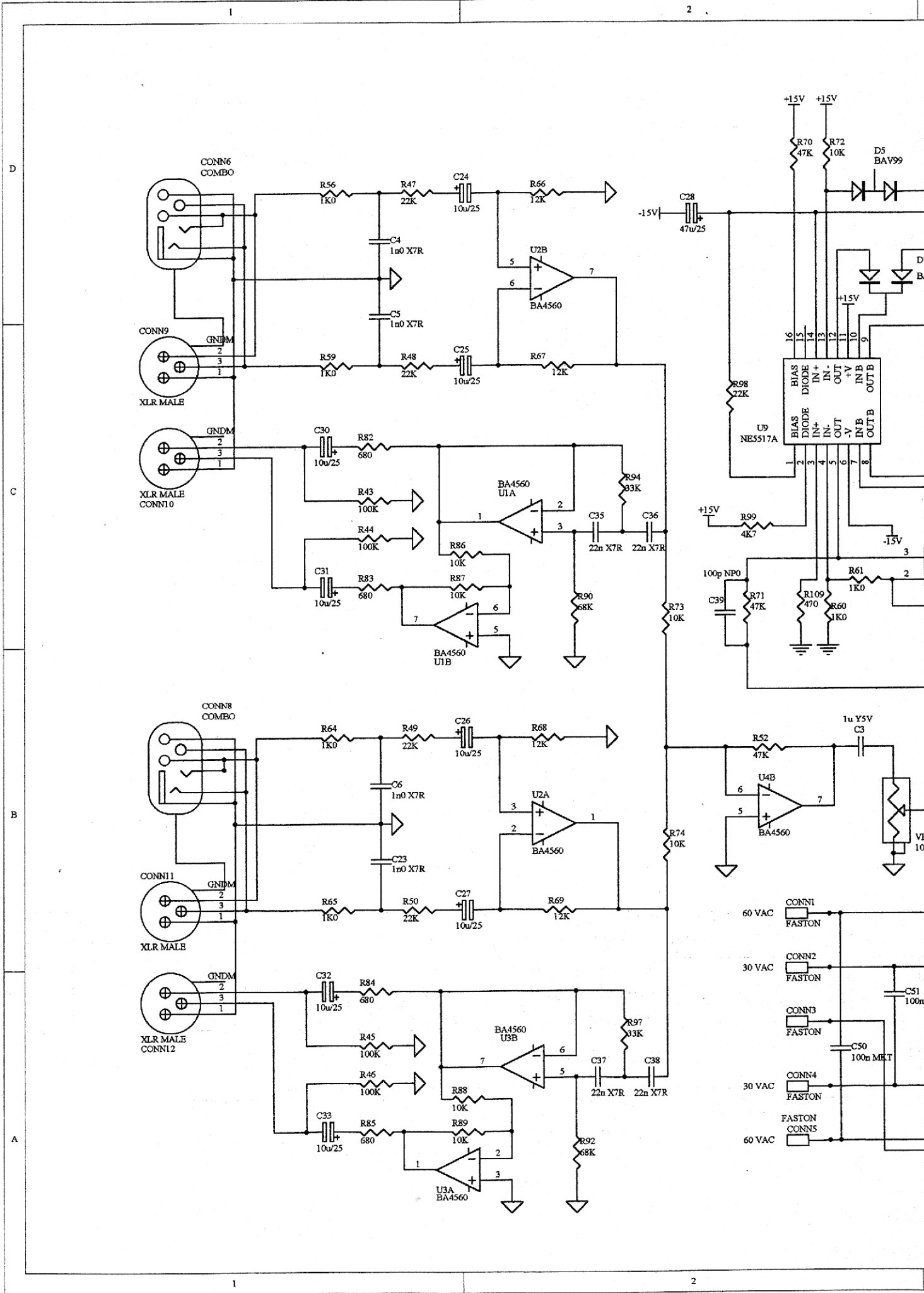
05-06-2003 added CONN16  
 04-06-2003 R37 from 4K7 to 3K3  
 19-12-2002 R34 from 22K to 100K  
 27-11-2002 TRIM1 from 1K0 to 470

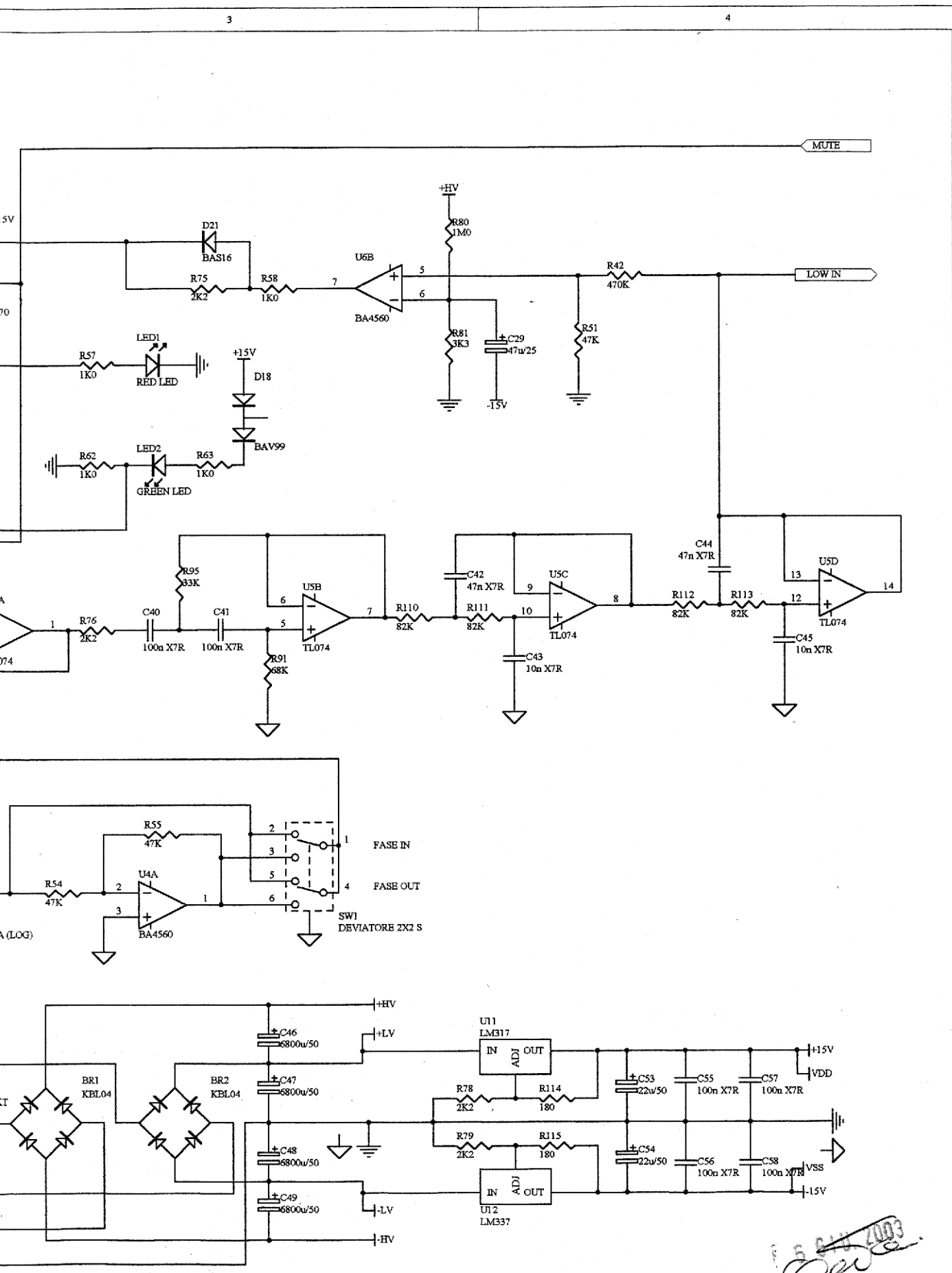
Title  
 OPERA SUB12 AMP

Size	Number	Revision
B	AMP SUB12.SCH	

Date: 6-Jun-2003 Sheet of  
 File: C:\WINDOWS\Desktop\OPERA SUB 12 Drawn By:

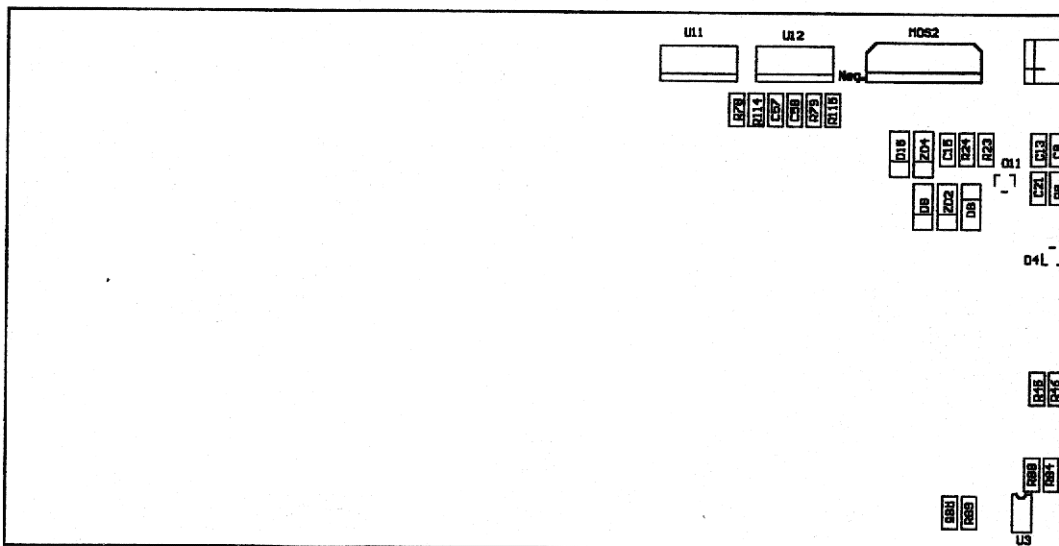
PST345D

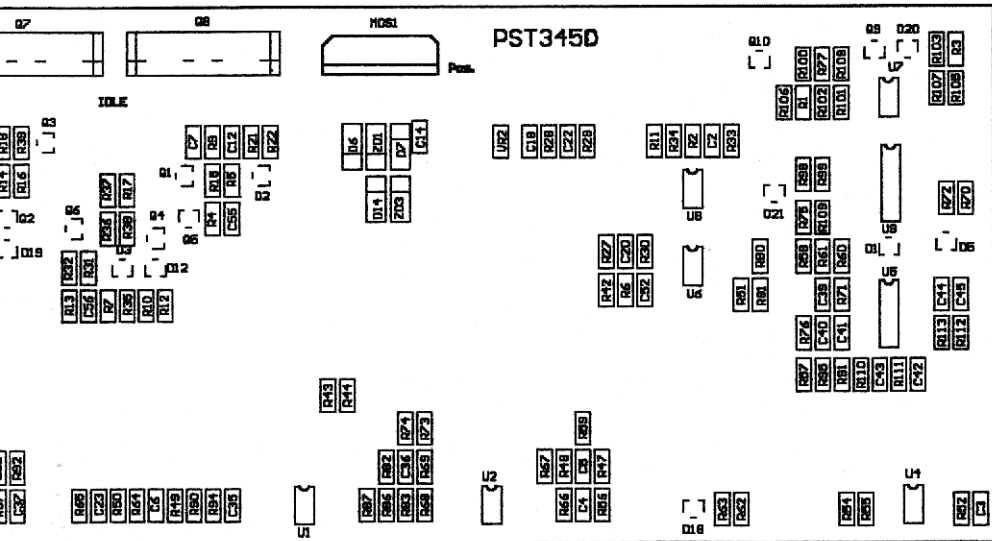




6 JUN 2003  
*[Signature]*

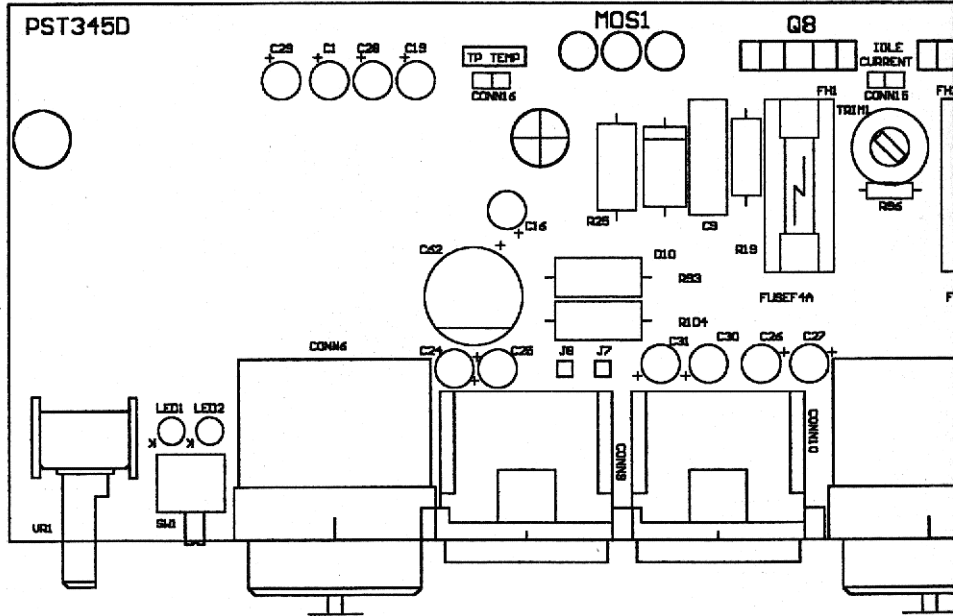
Title		
OPERA SUB12 PREAMP		
Size	Number	Revision
Cread A	PRE SUB12.SCH	
Date:	6-Jun-2003	Sheet of
File:	C:\WINDOWS\Desktop\OPERA.SUB 12.ddb	Drawn By:

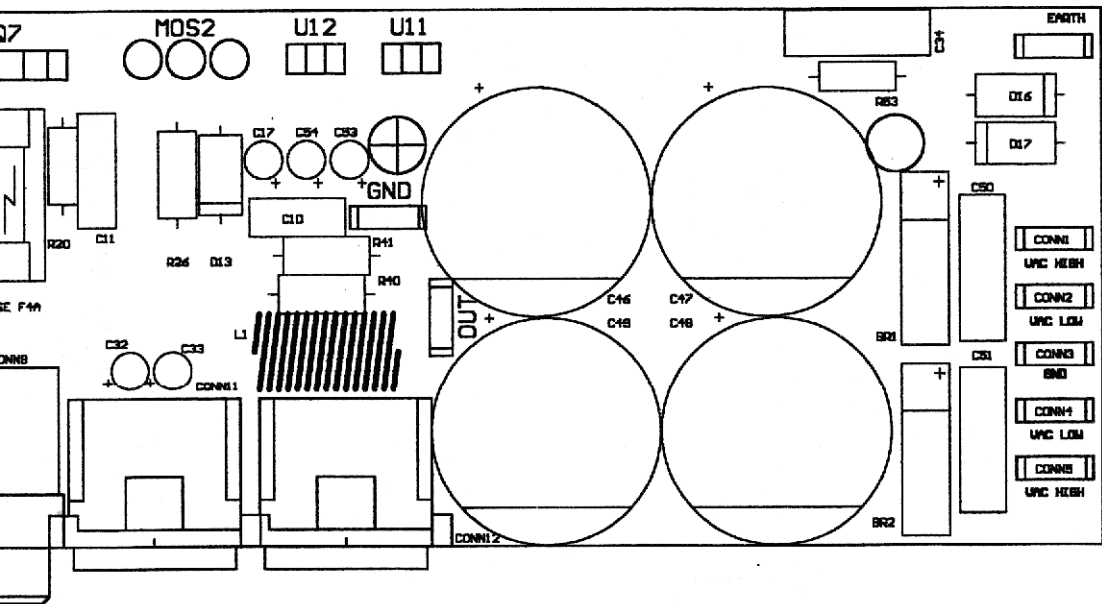




2003

PST345D





6/20/2003



1 Bill of Material for AMP SUB12.Bom			
3 Used Part Type	Designator	Footprint	Description
5 15 1K0	R10 R37	0805	
	R38 R39		
	R56 R57		
	R58 R59		
	R60 R61		
	R62 R63		
	R64 R65		
	R77		
13 1 1K0	R96	R 1/4W	RESISTOR
14 9 1M0	R2 R11 R31	0805	RESISTOR
	R32 R80		
	R100 R102		
	R105 R106		
18 2 1N5404	D16 D17	DIODE P17.5	3A DIODE
19 8 1n0 X7R	C4 C5 C6	0805	CER CAP
	C12 C13		
	C14 C15		
	C23		
23 3 1u Y5V	C2 C3 C52	0805	POL CAP
24 11 2K2	R3 R4 R5	0805	RESISTOR
	R6 R7 R8		
	R75 R76		
	R78 R79		
	R103		
29 2 2R2 1W	R19 R20	R 1W	RESISTOR
30 1 2SD2114K	Q10	SOT-23	NPN TRANSISTOR
31 3 3K3	R27 R36	0805	RESISTOR
	R81		
33 1 4K7	R99	0805	
34 2 4K7 2W	R25 R26	R 2W	RESISTOR
35 2 4R7 2W	R40 R41	R 2W	
36 1 5K6	R35	0805	RESISTOR
37 8 10K	R1 R72 R73	0805	RESISTOR
	R74 R86		
	R87 R88		
	R89		
41 1 10K NTC	VR2	0805	
42 2 10n X7R	C43 C45	0805	POL CAP
43 2 10p NP0	C7 C8	0805	CER CAP
44 8 10u/25	C24 C25	ELECT P2.5 D5	CAPACITOR
	C26 C27		
	C30 C31		
	C32 C33		
48 4 12K	R66 R67	0805	RESISTOR
49	R68 R69		
50 6 22K	R30 R47	0805	
51	R48 R49		
52	R50 R98		
53 5 22n X7R	C20 C35	0805	POL CAP
54	C36 C37		
55	C38		
56 1 22u/25	C1	ELECT P2.5 D5	CAPACITOR
57 4 22u/50	C16 C17	ELECT P2.5 D5	CAPACITOR
58	C53 C54		
59 3 33K	R94 R95	0805	
60	R97		
61 4 47	R21 R22	0805	RESISTOR
62	R23 R24		
63 8 47K	R28 R29	0805	
64	R51 R52		
65	R54 R55		
66	R70 R71		
67 2 47n X7R	C42 C44	0805	POL CAP
68 1 47p NP0	C21	0805	CER CAP
69 2 47u/25	C28 C29	ELECT P2.5 D5	
70 3 68K	R90 R91	0805	
71	R92		
72 4 82K	R110 R111	0805	RESISTOR
73	R112 R113		
74 2 100	R17 R18	0805	RESISTOR
75 7 100K	R33 R34	0805	RESISTOR
76	R43 R44		
77	R45 R46		
78	R107		
79 1 100KA (LOG)	VR1	POT H 12	POTENTIOMETER
80 3 100n 100V	C9 C10 C11	COND P10	POL CAP
81 3 100n MKT	C34 C50	COND P15	POL CAP
82	C51		
83 7 100n X7R	C22 C40	0805	CER CAP

*[Handwritten Signature]*  
6/10/2003

84		C41 C55		
85		C56 C57		
86		C58		
87 2	100p NPO	C18 C39	0805	CER CAP
88 1	100u/25	C19	ELECT P2.5 D5	CAPACITOR
89 1	100u/35V	C62	ELECT P5 D13	CAPACITOR
90 1	150K	R108	0805	RESISTOR
91 2	150R 2W	R93 R104	R 2W	
92 2	180	R114 R115	0805	RESISTOR
93 1	330K	R101	0805	RESISTOR
94 2	390	R15 R16	0805	RESISTOR
95 1	470	R109	0805	
96 1	470	TRIM1	PT10V	TRIMMER
97 1	470K	R42	0805	RESISTOR
98 4	560	R9 R12 R13	0805	RESISTOR
99		R14		
100 4	680	R82 R83	0805	RESISTOR
101		R84 R85		
102 1	470 1W	R53	R 1W	
103 4	6800u/50	C46 C47	ELECT SNAP30	ELECT CAPACITOR
104		C48 C49		
105 6	BA4560	U1 U2 U3	SO-8	DUAL OP AMP
106		U4 U6 U7		
107 3	BAS16	D2 D11 D21	SOT-23	SINGLE DIODE
108 2	BAV70	D1 D20	SOT-23	2 DIODE COMMON K
109 6	BAV99	D3 D4 D5	SOT-23	2 DIODE AK
110		D12 D18		
111		D19		
112 4	BAV103	D6 D7 D8	D-64	DIODE
113		D9		
114 1	BC817-40	Q9	SOT-23	NPN TRANSISTOR
115 1	BOB 20T	L1	BOB 20T	INDUCTOR
116 2	COMBO	CONN6	COMBO-H	CONNETTORE COMBO
117		CONN8		
118 1	DEVIATORE 2X2 S	SW1	DEV 2X2 H	DOPPIO DEVIATORE
119 2	FAN OUT	J7 J8	PIN	PIN
120 8	FASTON	CONN1	FASTON 6,3 V	FASTON
121		CONN2		
122		CONN3		
123		CONN4		
124		CONN5		
125		CONN7		
126		CONN13		
127		CONN14		
128 2	FUSEHOLDER	FH1 FH2	FUSEHOLDER 5X20	
129 1	GREEN LED	LED2	LED 3V	LED
130 1	IRFP140	MOS1	TO247V-MOS	N MOS
131 1	IRFP9140	MOS2	TO247V-MOS	P MOS
132 2	KBL04	BR1 BR2	BRIDGE 8A SIP	4A BRIDGE
133 1	LM317	U11	TO220V	POS REGULATOR
134 1	LM337	U12	TO220V	NEG REGULATOR
135 1	LM393	U8	SO-8	OP-AMP
136 2	MR856	D10 D13	DIODE P17.5	3A DIODE
137 1	NE5517A	U9	SO-16	OTA
138 3	PMBTA42	Q4 Q5 Q6	SOT-23	NPN TRANSISTOR
139 3	PMBTA92	Q1 Q2 Q3	SOT-23	PNP TRANSISTOR
140 1	RED LED	LED1	LED 3V	LED
141 1	SAP16N	Q8	TO247V5	NPN TRANSISTOR
142 1	SAP16P	Q7	TO247V5	PNP TRANSISTOR
143 2	STRIP 2	CONN15	STRIP 2	STRIP CONNECTOR
144		CONN16		
145 1	TL074	U5	SO-14	
146 2	UF4004	D14 D15	D-64	HIGH SPEED DIODE
147 4	XLR MALE	CONN9	XLR M H N	XLR MALE CONNECTOR
148		CONN10		
149		CONN11		
150		CONN12		
151 4	ZENER 15V	ZD1 ZD2	D-64	SMD ZENER
152		ZD3 ZD4		

5 6 6/10. 2003  
