

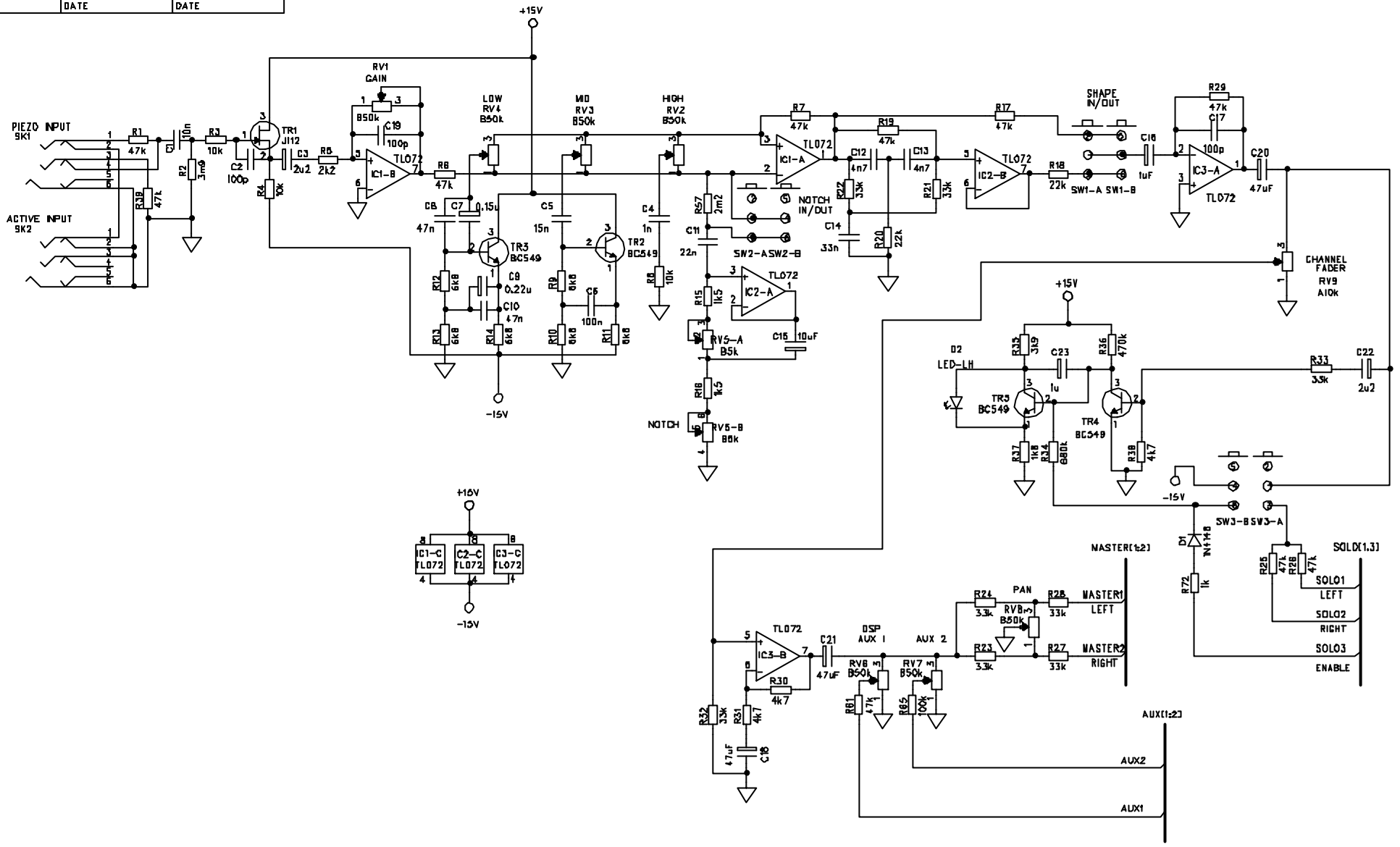
# **TRACE ELLIOT**

## **SERVICE MANUAL**

**DATE :** December 29, 1999  
**Product Code:** N/A  
**Model Number :** TAPA12-300

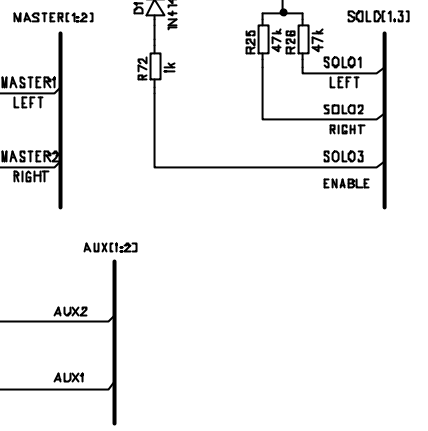
Issued by:  
**Trace Elliot Limited**  
**Blackwater Trading Estate**  
**The Causeway**  
**Maldon**  
**Essex**  
**England**  
**CM4 4GG**

ISSUE CHANGE NOTE DATE	ISSUE CHANGE NOTE DATE	ISSUE CHANGE NOTE DATE
ISSUE CHANGE NOTE DATE	ISSUE CHANGE NOTE DATE	ISSUE CHANGE NOTE DATE

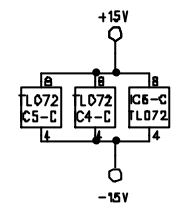
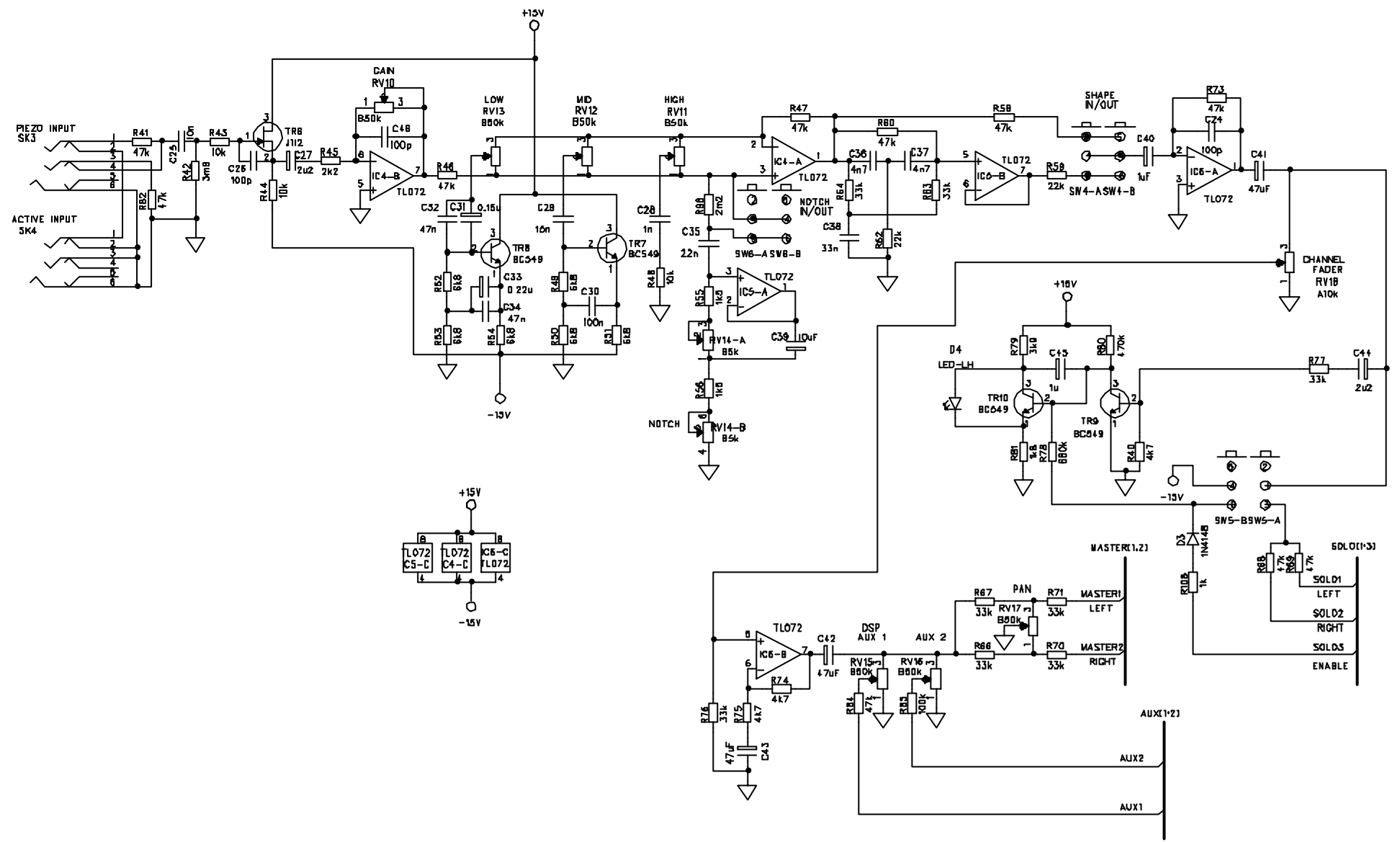


TITLE ACUSTIC CHANNEL 1  
 PROJECT ACUSTIC PA 12-2 MIXER  
 DRAWING No CD00031 Sheet 1/8  
 ISSUE C  
 DATE 11 8 96  
 DRAWN BY JBR

**TRACE ELLIOT**  
 TRACE ELLIOT LIMITED  
 WALDON ESSEX CM8 7XD  
 ENGLAND  
 TEL (01621) 851851  
 FAX (01621) 881932



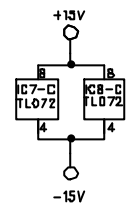
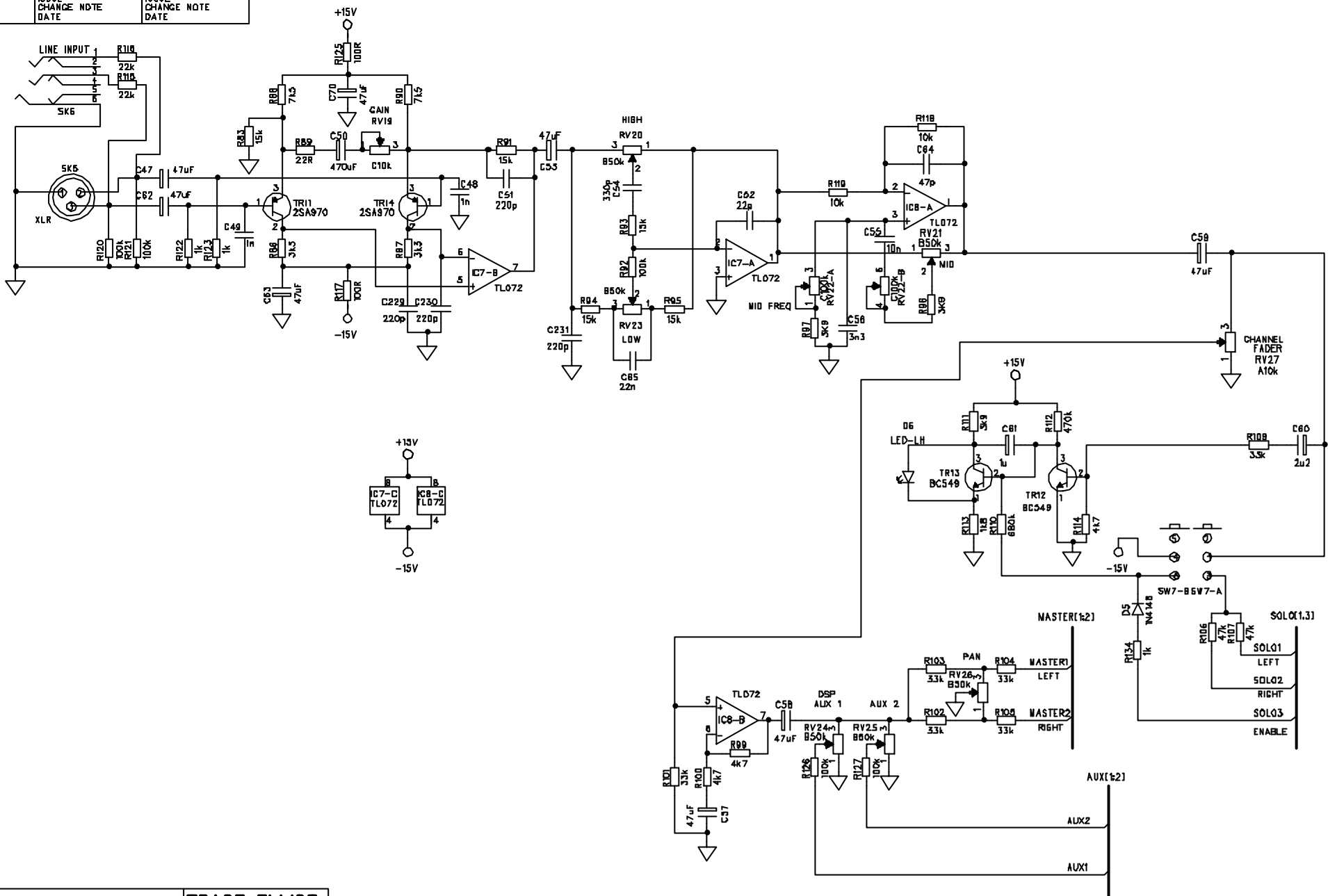
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ISSUE CHANGE NOTE DATE	ISSUE CHANGE NOTE DATE	ISSUE CHANGE NOTE DATE



TITLE ACUSTIC CHANNEL 2  
 PROJECT ACUSTIC PA 12-2 MIXER  
 DRAWING No CD00031 Sheet 2/8  
 ISSUE C  
 DATE 11 8 96  
 DRAWN BY JBR

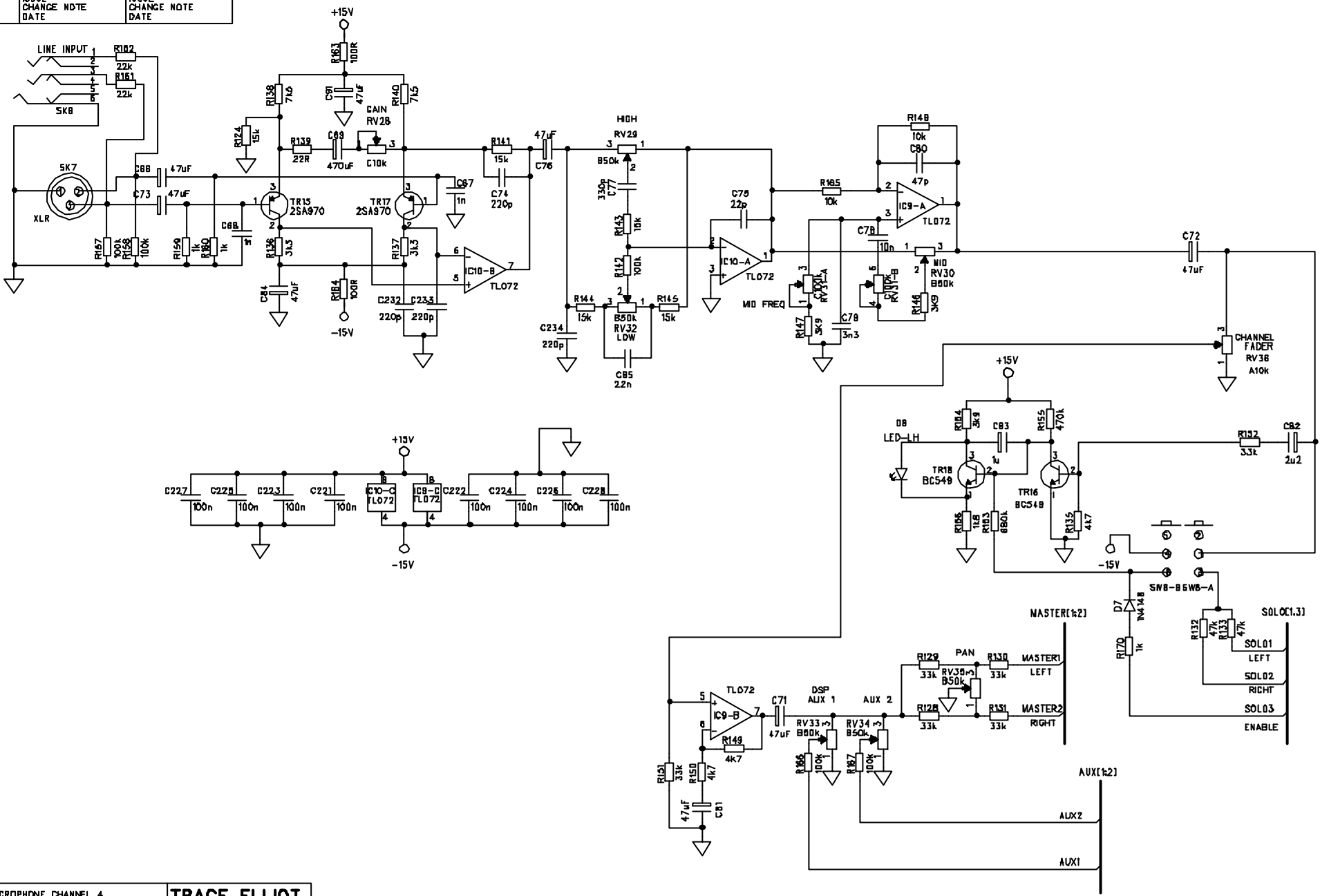
**TRACE ELLIOT**  
 TRACE ELLIOT LIMITED  
 WALTON ESSEX CM8 7XD  
 ENGLAND  
 TEL (01621) 851851  
 FAX (01621) 881932

ISSUE CHANGE NOTE DATE	ISSUE CHANGE NOTE DATE	ISSUE CHANGE NOTE DATE
ISSUE CHANGE NOTE DATE	ISSUE CHANGE NOTE DATE	ISSUE CHANGE NOTE DATE



TITLE	MICROPHONE CHANNEL 3	<b>TRACE ELLIOT</b> TRACE ELLIOT LIMITED NALDON ESSEX CN8 7XD ENGLAND TEL (01621) 851851 FAX (01621) 881932
PROJECT	ACOUSTIC PA 12-2 MIXER	
DRAWING No	CD00031 Sheet 3/8	
ISSUE	C	
DATE	12.8.95	
DRAWN BY	JBR	

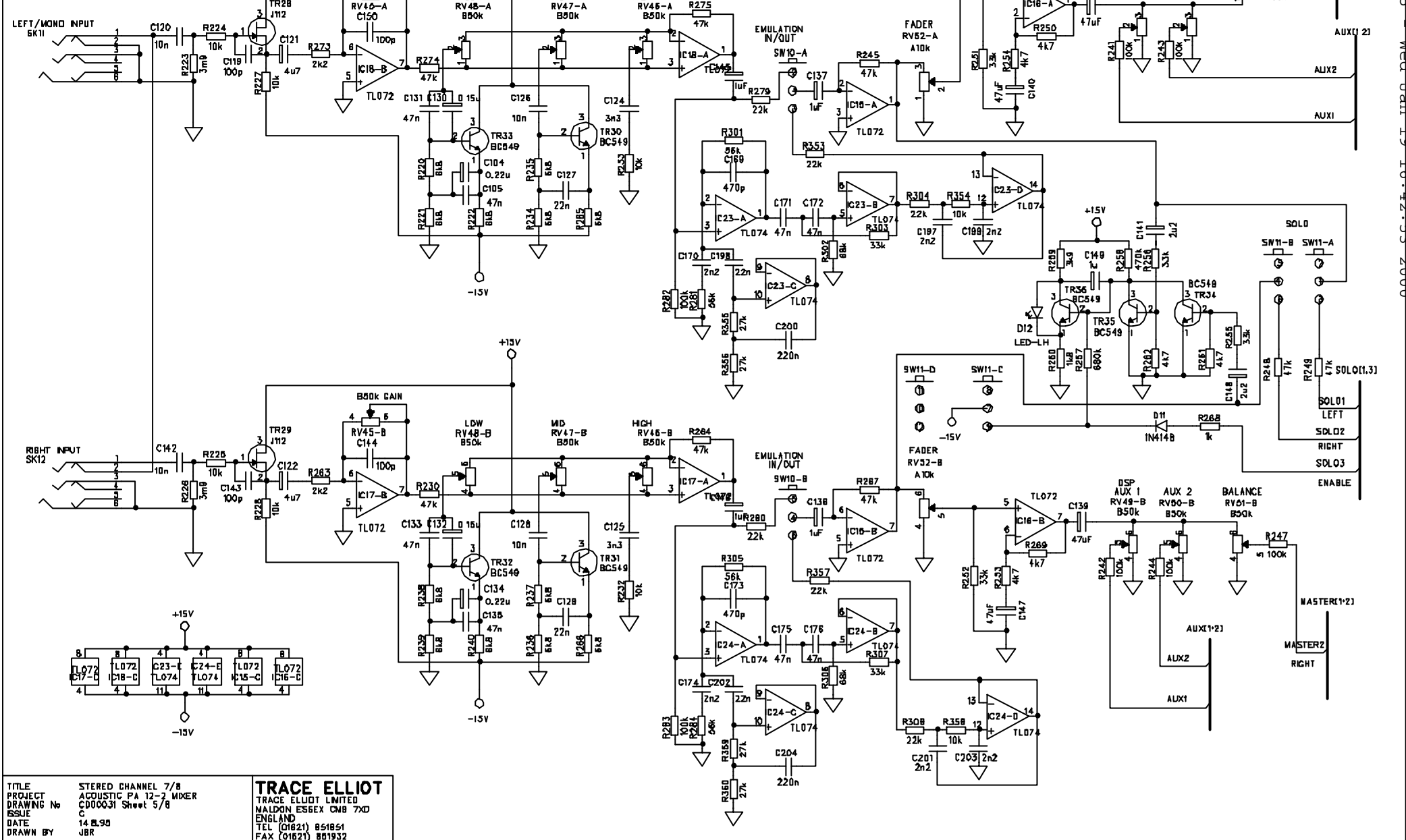
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ISSUE CHANGE NOTE DATE	ISSUE CHANGE NOTE DATE	ISSUE CHANGE NOTE DATE



TITLE	MICROPHONE CHANNEL 4	<b>TRACE ELLIOT</b> TRACE ELLIOT LIMITED NALDON ESSEX CB8 7XD ENGLAND TEL (01621) 851851 FAX (01621) 881932
PROJECT	ACOUSTIC PA 12-2 MIXER	
DRAWING No	C000031 Sheet 4/8	
ISSUE	C	
DATE	12.8.95	
DRAWN BY	JBR	

ISSUE CHANGE NOTE DATE	ISSUE CHANGE NOTE DATE	ISSUE CHANGE NOTE DATE
ISSUE CHANGE NOTE DATE	ISSUE CHANGE NOTE DATE	ISSUE CHANGE NOTE DATE

ISSUE CHANGE NOTE DATE	ISSUE CHANGE NOTE DATE	ISSUE CHANGE NOTE DATE
ISSUE CHANGE NOTE DATE	ISSUE CHANGE NOTE DATE	ISSUE CHANGE NOTE DATE



TITLE STEREO CHANNEL 7/8  
 PROJECT ACOUSTIC PA 12-2 MIXER  
 DRAWING No C000031 Sheet 5/8  
 ISSUE C  
 DATE 14.8.90  
 DRAWN BY JBR

**TRACE ELLIOT**  
 TRACE ELLIOT LIMITED  
 WALTON ESSEX CM8 7XD  
 ENGLAND  
 TEL (01621) 851851  
 FAX (01621) 881932

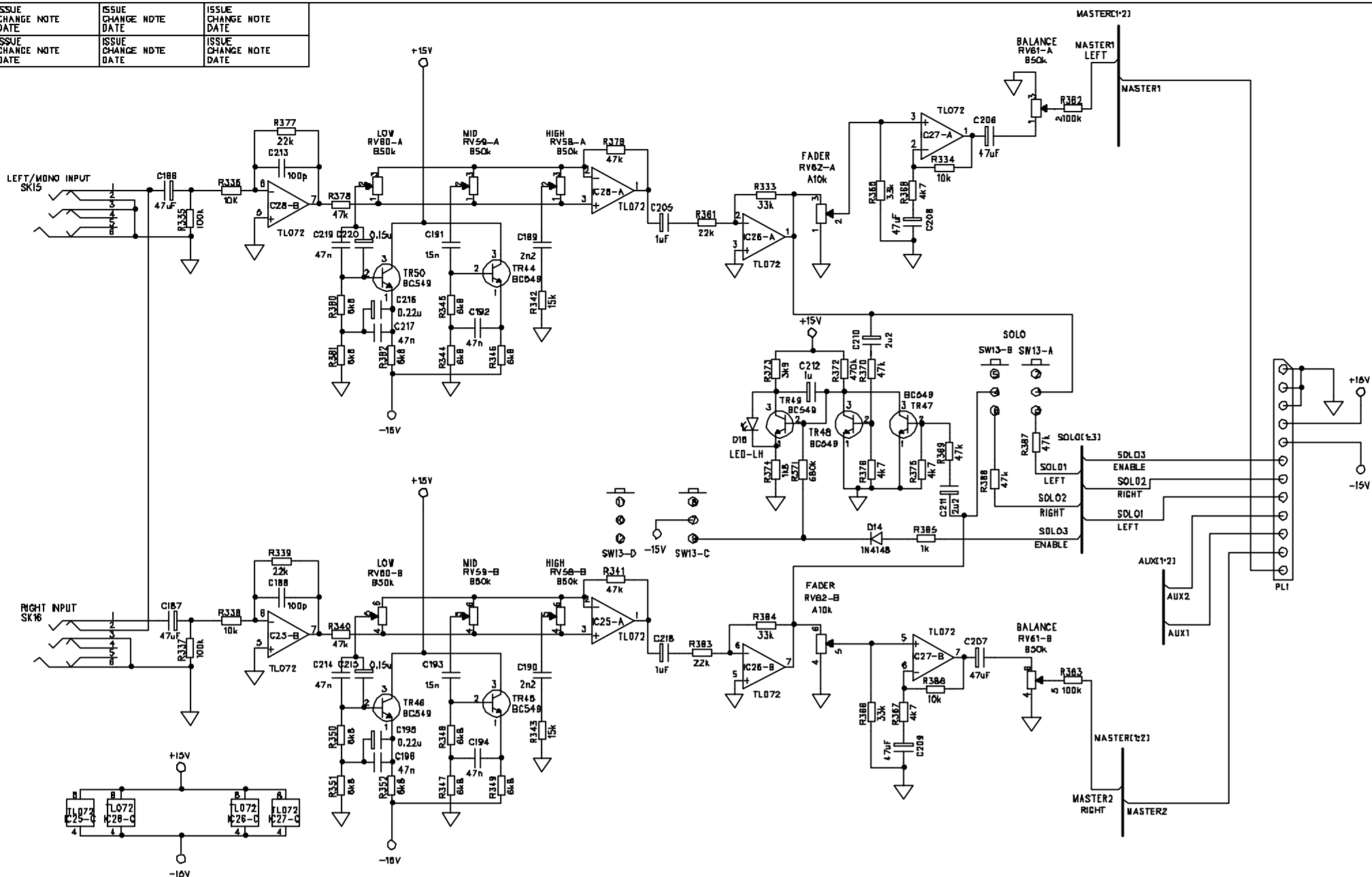
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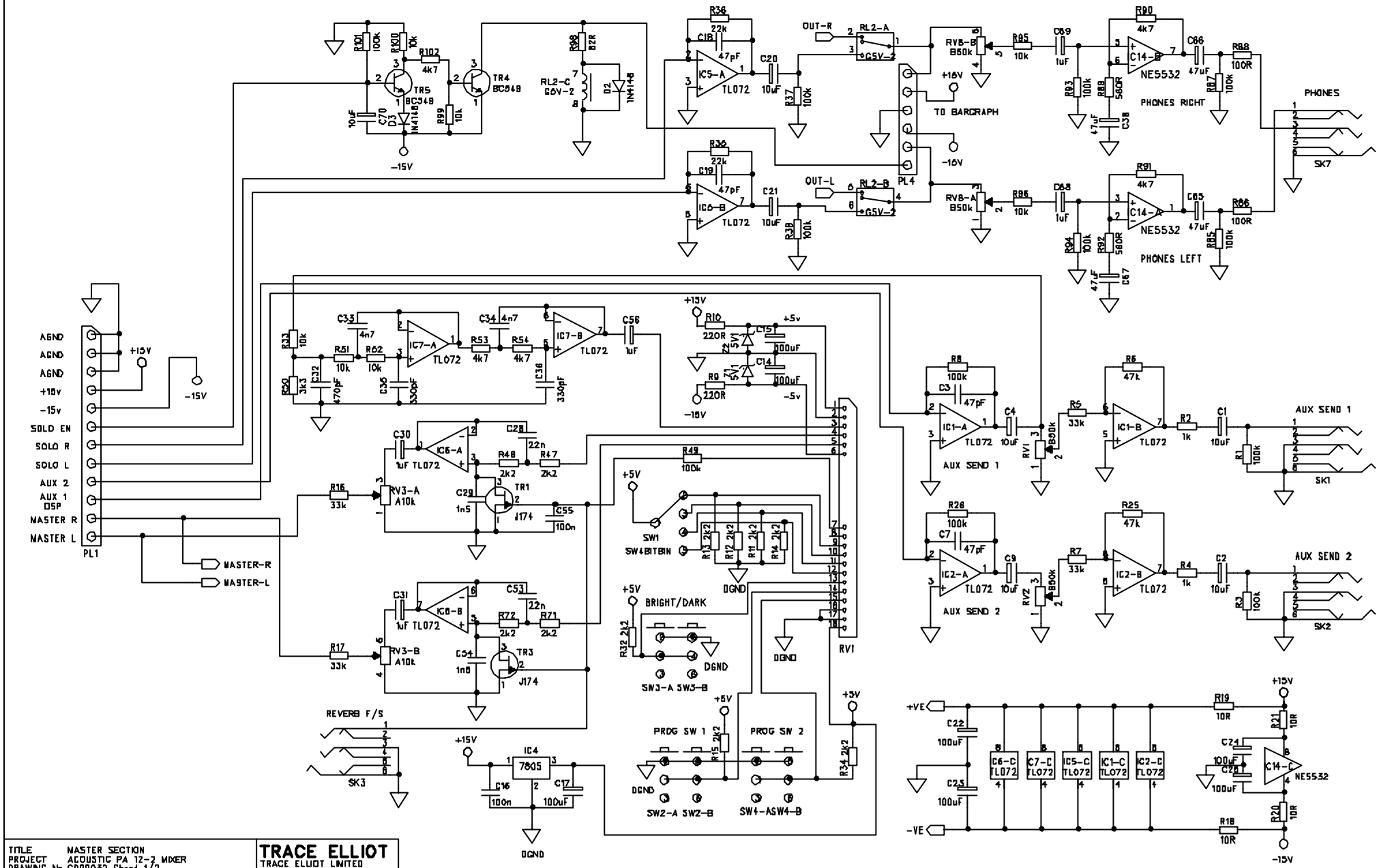
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ISSUE CHANGE NOTE DATE	ISSUE CHANGE NDTE DATE	ISSUE CHANGE NOTE DATE



TITLE STEREO RETURN 11/12  
 PROJECT ACOUSTIC PA 12-2 MIXER  
 DRAWING No CD00031 Sheet 8/8  
 ISSUE C  
 DATE 14.8.98  
 DRAWN BY JBR

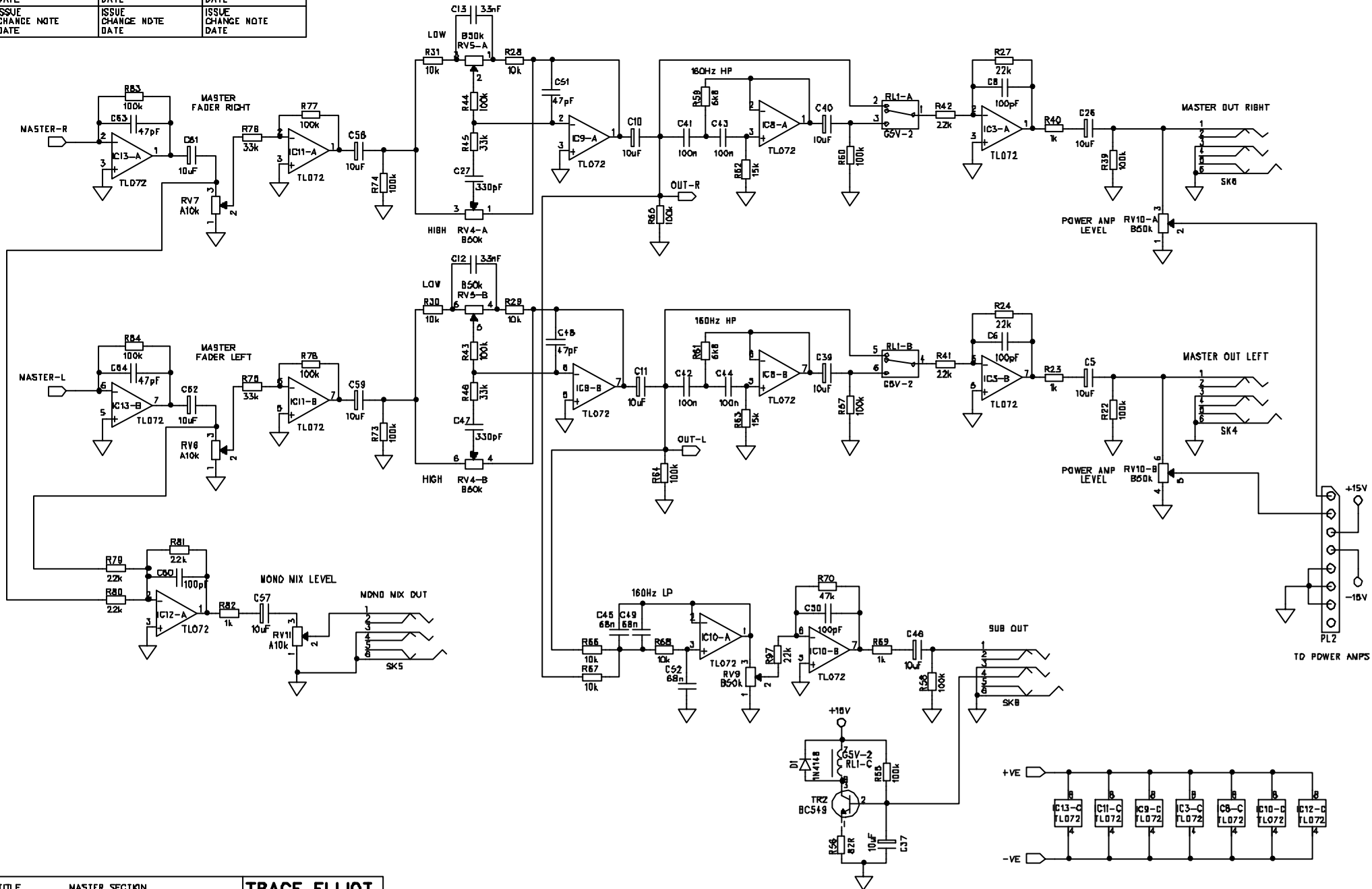
**TRACE ELLIOT**  
 TRACE ELLIOT LIMITED  
 WALDON ESSEX CM8 7XD  
 ENGLAND  
 TEL (01621) 851851  
 FAX (01621) 881932

ISSUE CHANGE DATE	NOTE	ISSUE CHANGE DATE	NOTE	ISSUE CHANGE DATE	NOTE



TITLE	MASTER SECTION	<b>TRACE ELLIOT</b> TRACE ELLIOT LIMITED NALDON ESSEX CM8 7XD ENGLAND TEL (01621) 851851 FAX (01621) 881932
PROJECT	ACOUSTIC PA 12-2 MIXER	
DRAWING No	CD00032 Sheet 1/2	
ISSUE	2	
DATE	4 9 98	
DRAWN BY	JBR	

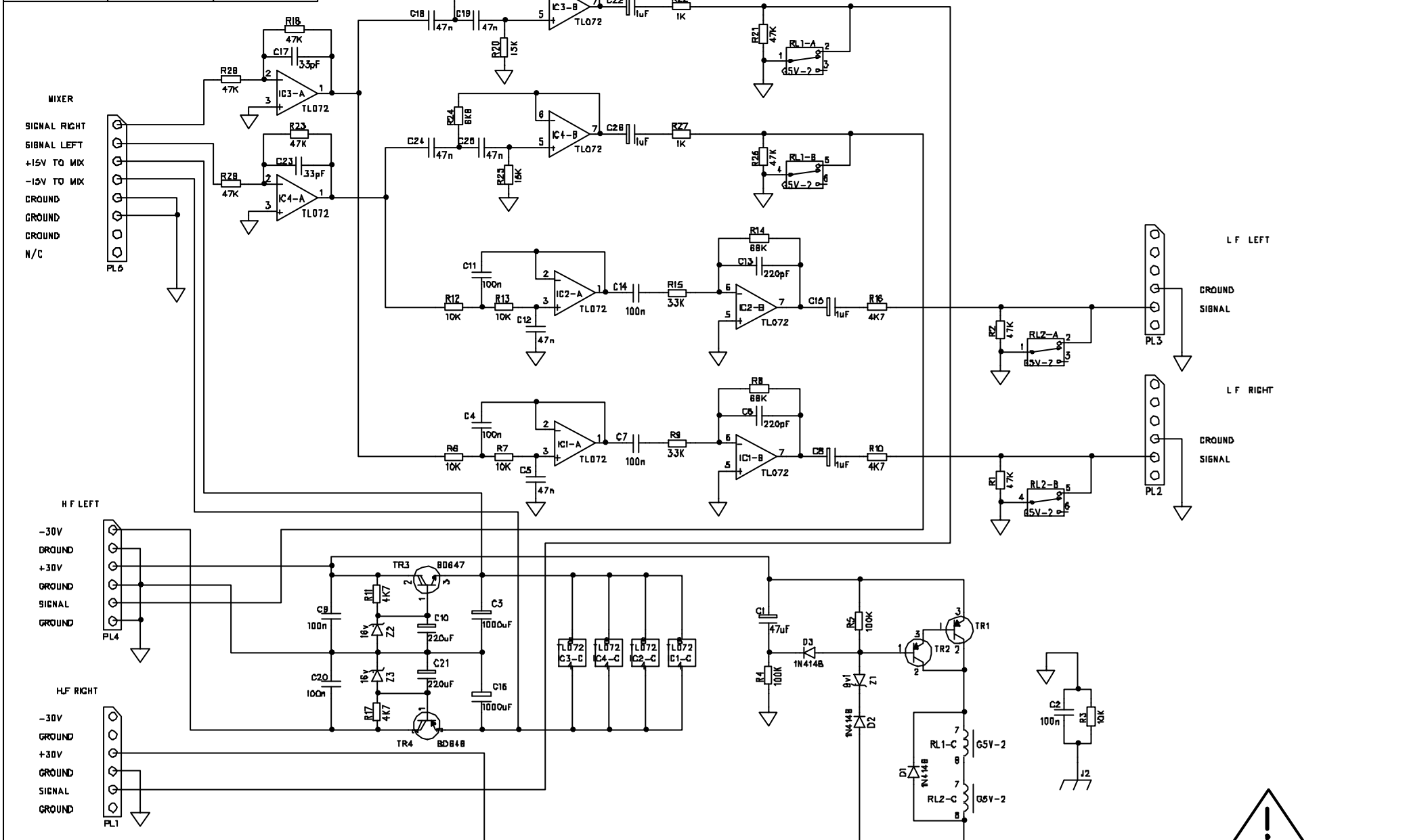
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ISSUE CHANGE NOTE DATE	ISSUE CHANGE NOTE DATE	ISSUE CHANGE NOTE DATE



TITLE	MASTER SECTION	<b>TRACE ELLIOT</b> TRACE ELLIOT LIMITED NALDON ESSEX CM8 7XD ENGLAND TEL (01621) 851851 FAX (01621) 881932
PROJECT	ACOUSTIC PA 12-2 MIXER	
DRAWING No	CD00032 Sheet 2/2	
ISSUE	2	
DATE	4 9 98	
DRAWN BY	JBR	



ISSUE CHANGE DATE	NOTE	ISSUE CHANGE DATE	NOTE	ISSUE CHANGE DATE	NOTE



TITLE CROSSOVER AND INTERFACE PCB  
 PROJECT ACOUSTIC PA 10-2-600  
 DRAWING No CD00035  
 ISSUE B  
 DATE 28 10 95  
 DRAWN BY CLIVE BUTTON

**TRACE ELLIOT LTD**  
 BLACKWATER TRADING ESTATE  
 WALDOW ESSEX CM9 4QB  
 GREAT BRITAIN  
 TEL (01821) 851851  
 FAX (01821) 881978

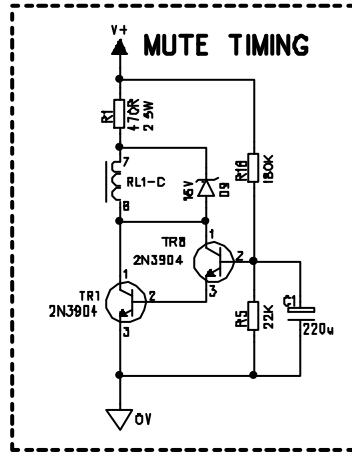
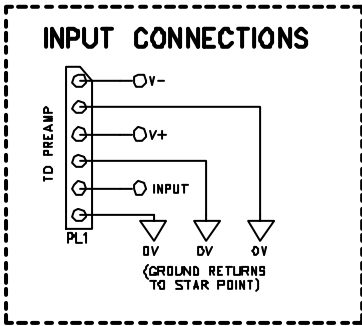
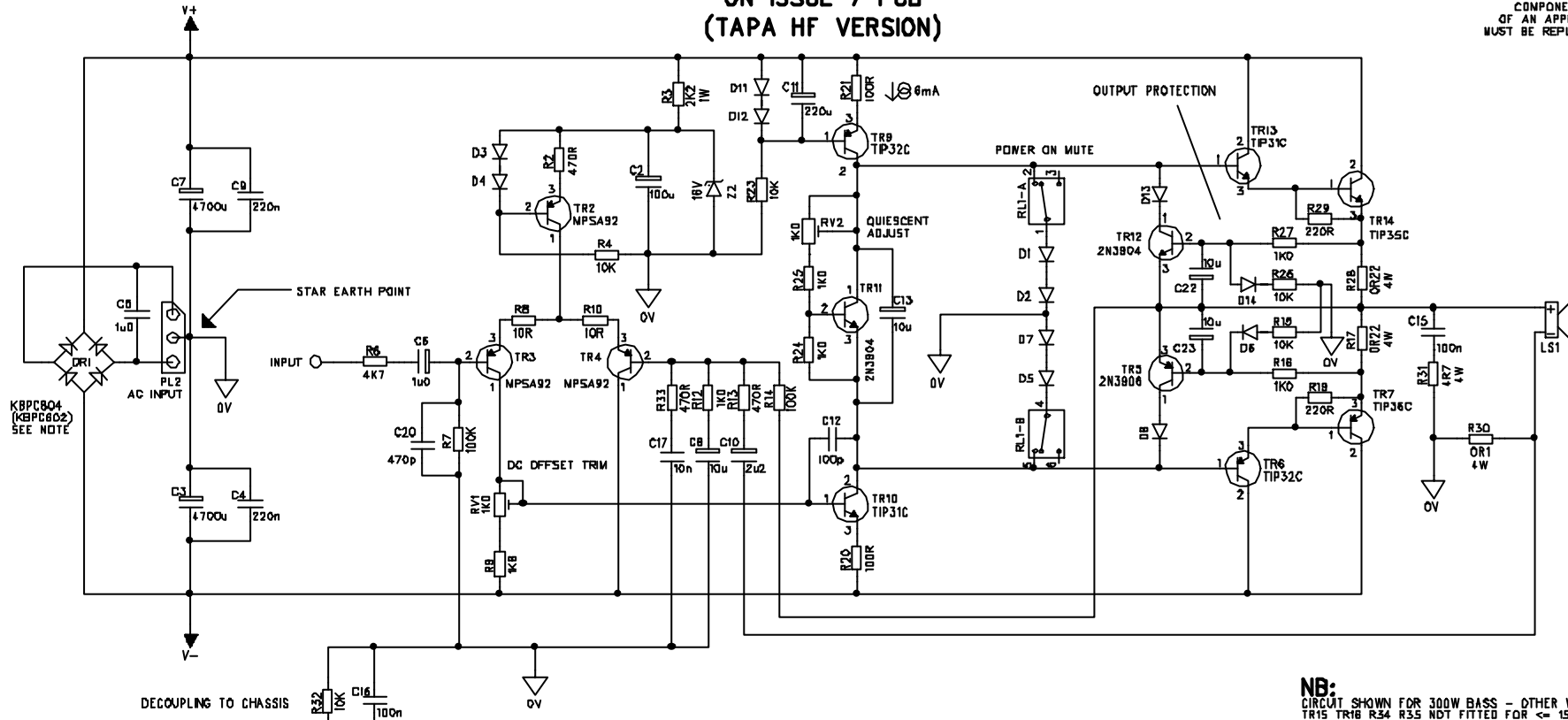
PCB = PC00040

  
 COMPONENTS USED ARE  
 OF AN APPROVED TYPE AND  
 MUST BE REPLACED ACCORDINGLY

ISSUE CHANGE DATE	NOTE	ISSUE CHANGE DATE	NOTE	ISSUE CHANGE DATE	NOTE
ISSUE CHANGE DATE	NOTE	ISSUE CHANGE DATE	NOTE	ISSUE CHANGE DATE	NOTE

## THE BIPOLAR BEAR OUTPUT STAGE CIRCUIT DIAGRAM ON ISSUE 7 PCB (TAPA HF VERSION)

  
 COMPONENTS USED ARE  
 OF AN APPROVED TYPE AND  
 MUST BE REPLACED ACCORDINGLY



**NB:**  
 CIRCUIT SHOWN FOR 300W BASS - OTHER VARIANTS BELOW.  
 TR15 TR16 R34 R35 NOT FITTED FOR <= 150W  
 R10 & R26 = 10K FOR <= 150W  
 R15 & R26 = 27K FOR 200/300W  
 DR1 = KBPC602 FOR <= 150W  
 DR1 = KBPC804 FOR 200/300W  
 D1 D2 D6 D7 D10 D16 = 1N4007  
 ALL OTHER DIODES 1N4148  
 OUTPUT DEVICES TIP35C/TIP36C FOR <= 150W  
 R37 = 10K 1W FOR 100W

**TAPA LF:**  
 R13 = 470R  
 C10 = 10u  
 Z1 = 27V ZENER  
 C19 = 47u 63V

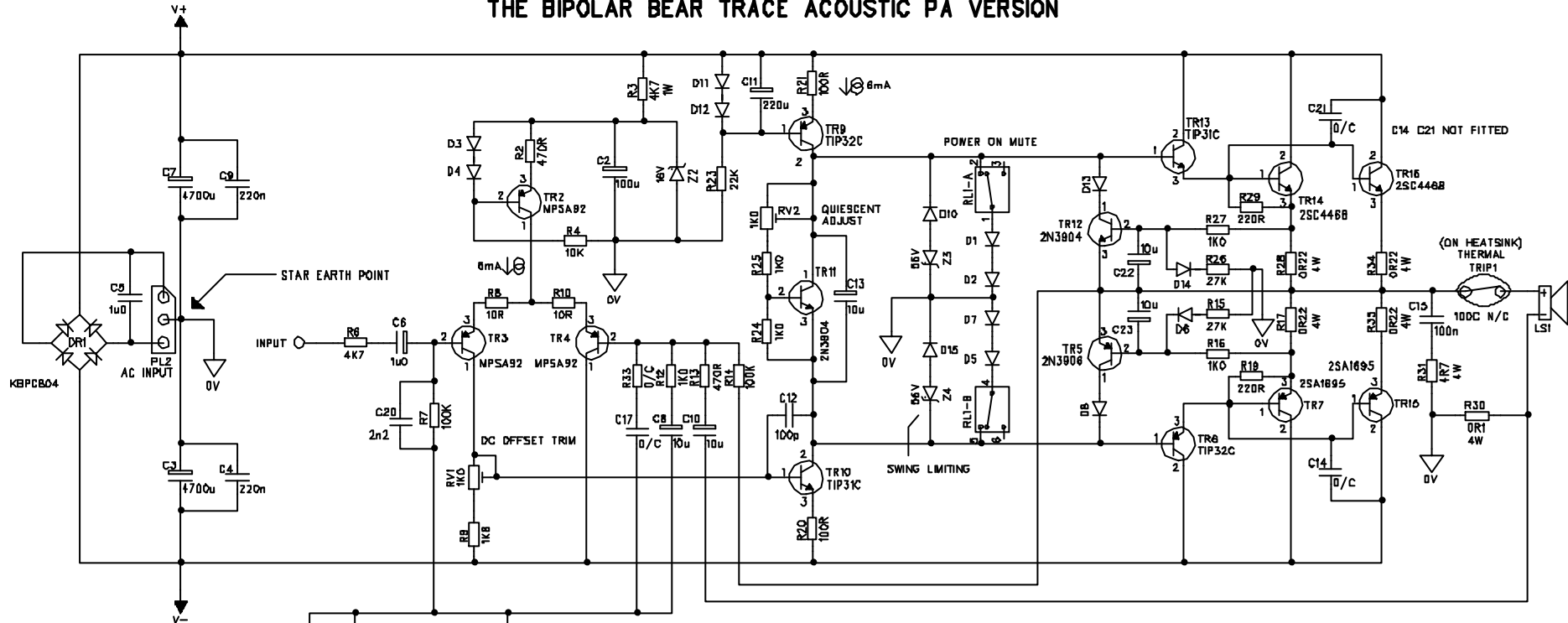
**TEK150:**  
 R30 = S/C LINK  
 R13 C10 NOT FITTED  
 R12 = 3K3  
 C8 = 2u2  
 R15 = 1K0  
 C17 = 10n

**TAPA HF:**  
 ONE PAIR OF TIP35C/TIP36C FOR OUTPUTS  
 FAN DRIVE CIRCUIT NOT FITTED  
 R3 = 2K2 1W  
 R23 = 10K  
 R1 = 470R 2.5W  
 R16 = 10K  
 R13 = 470R  
 R35 = 470R  
 C17 = 10n  
 C20 = 470p

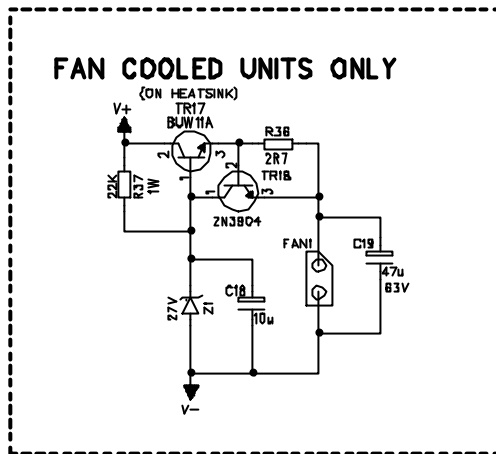
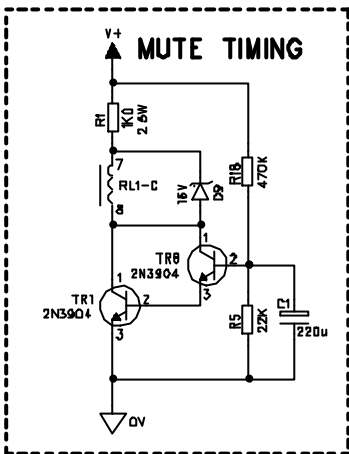
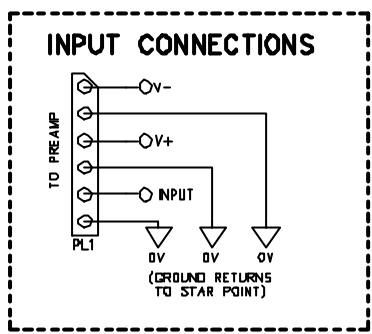
TITLE	THE BIPOLAR BEAR	<b>TRACE ELLIOT</b>
PROJECT	TAPA HF	TRACE ELLIOT LIMITED
DRAWING No	CD00025	WALTON ESSEX CM9 7X0
ISSUE	1	ENGLAND
DATE	7/10/1998	TEL (01821) 851851
DRAWN BY	J B RECKLESS	FAX (01821) 851832

ISSUE CHANGE NOTE DATE	ISSUE CHANGE NOTE DATE	ISSUE CHANGE NOTE DATE
ISSUE CHANGE NOTE DATE	ISSUE CHANGE NOTE DATE	ISSUE CHANGE NOTE DATE

## THE BIPOLAR BEAR TRACE ACOUSTIC PA VERSION



DECOUPLING TO CHASSIS  
R32 10K C16 100n



**NB:**  
 TR15 TR16 R34 R35 NOT FITTED FOR 150W  
 R30 R15 C10 SET OUTPUT DAMPING FACTOR  
 R33 C17 ARE FOR PRESENCE LIFT (IF REQD)  
 R7 = R14 ALWAYS  
 R15 & R26 = 10K FOR 150W  
 R15 & R26 = 27K FOR 300W  
 R37 = 10K / 1W FOR 100W  
 R37 = 22K / 1W FOR 300W  
 D1 = KBPC82 FOR 150W  
 D1 = KBPC804 FOR 300W  
 D1 D2 D6 D7 D10 D16 = 1N4007  
 D8 = 16V ZENER  
 ALL OTHER DIODES 1N4148  
 OUTPUT DEVICES:  
 TIP35C / TIP36C FOR 150W  
 25C446B / 25A1895 FOR 300W

COMPONENTS USED ARE  
 OF AN APPROVED TYPE AND  
 MUST BE REPLACED ACCORDINGLY

**ON ISSUE 7 PCB**

TITLE L F POWER AMP MODULE  
 PROJECT TRACE ACOUSTIC PA  
 DRAWING No CD00055  
 ISSUE 2  
 DATE 7/10/1996  
 DRAWN BY J B RECKLESS

**TRACE ELLIOT**  
 TRACE ELLIOT LIMITED  
 NALDON ESSEX CM8 7XD  
 ENGLAND  
 TEL (01621) 851851  
 FAX (01621) 881932

PARTS LIST FOR PC00036x1 - 2.4.96 - ACOUSTIC PA CHANNEL BOARD

Item	Description	Part Code	Qty	Where Used
1	BF423	72-TBF423	4	TR11 TR14-15 TR17
2	BC549	72-TBC549C	40	TR2-5 TR7-10 TR12-13 TR16 TR18 TR21-27 TR30-50
3	CAPCER,100p	72-C100P-100VDC	18	C2 C17 C19 C24 C26 C46 C86 C88 C116 C119 C123 C143-144 C150 C156 C182 C188 C213
4	CAPCER,220p	72-C220P-100VDC	8	C51 C74 C229-234
5	CAPCER,330p	72-C330P-100VDC	2	C54 C77
6	CAPCER,470p	72-C470P-100VDC	2	C169 C173
7	CAPCER,47p	72-C47P-100VDC2	2	C64 C80
8	CAPE1,10uF	72-C10-35VER	2	C15 C39
9	CAPE2,1u	72-C1-63VER	8	C23 C45 C61 C83 C114 C149 C181 C212
10	CAPE2,2u2	72-C2.2-63VER	12	C22 C44 C60 C82 C112-113 C141 C148 C153 C180 C210-211
11	CAPE2,470uF	72-C470-16VER	2	C50 C69
12	CAPE2,47uF	72-C47-16VER	42	C18 C20-21 C41-43 C47 C53 C57-59 C62-63 C66 C70-73 C76 C81 C84 C91 C108-111 C138-140 C147 C151-152 C154-155 C178-179 C186-187 C206-209
13	CAPP1,100n	72-C100N-100VP	10	C6 C30 C221-228
14	CAPP1,10n	72-C10N-100VP	12	C1 C25 C55 C78 C87 C94 C96 C115 C120 C126 C128 C142
15	CAPP1,15n	72-C15N-100VP	6	C5 C29 C159 C161 C191 C193
16	CAPP1,1n	72-C1N-100VP	6	C4 C28 C48-49 C67-68
17	CAPP1,22n	72-C22N-100VP	10	C11 C35 C65 C85 C95 C97 C127 C129 C198 C202
18	CAPP1,2n2	72-C2N2-100VP	10	C157-158 C170 C174 C189- 190 C197 C199 C201 C203
19	CAPP1,33n	72-C33N-100VP	2	C14 C38
20	CAPP1,3n3	72-C3N3-100VP	6	C56 C79 C92-93 C124-125
21	CAPP1,47n	72-C47N-100VP	28	C8 C10 C32 C34 C99 C101 C103 C105 C118 C131 C133 C135 C160



				C162 C164-165 C168
				C171-172 C175-176
				C183 C192 C194 C196
				C214 C217 C219
22	CAPP1,4n7	72-C4N7-100VP	4	C12-13 C36-37
23	CAPP2,220n	72-C220N-100VP	2	C200 C204
24	CAPTANT,0.15u	72-C0.15-35VT	10	C7 C31 C98 C117
				C130 C132 C166 C184
				C215 C220
25	CAPTANT,0.22u	72-C0.22-35VT	10	C9 C33 C100 C102
				C104 C134 C163 C167
				C195 C216
26	CAPTANT,1uF	72-C1-35VT	12	C16 C40 C106-107
				C136-137
				C145-146 C177 C185
				C205 C218
26a	CAPTANT,2u2	72-C2.2-35VT	2	C3 C27
26b	CAPTANT,4u7	72-C4.7-35VT	4	C89-90 C121-122
27	CON12	72-HEAD-12W	1	PL1
28	DIODE1,1N4148	72-D-IN4148	8	D1 D3 D5 D7 D9 D11
				D13-14
29	J112	72-FET-J-112	6	TR1 TR6 TR19-20
				TR28-29
30	JACKSTEREO, ACTIVE INPUT	73-SKT-JCK-PERP	2	SK2 SK4
31	JACKSTEREO, LEFT/MONO INPUT	73-SKT-JCK-PERP	4	SK9 SK11 SK13 SK15
32	JACKSTEREO, LINE INPUT	73-SKT-JCK-PERP	2	SK6 SK8
33	JACKSTEREO, PIEZO INPUT	73-SKT-JCK-PERP	2	SK1 SK3
34	JACKSTEREO, RIGHT INPUT	73-SKT-JCK-PERP	4	SK10 SK12 SK14 SK16
35	LED RED 3mm	72-LED-RED-3MM	8	D2 D4 D6 D8 D10 D12
				D15-16
36	POTDUALVERT, B50k	73-POT-B50K-DG	22	RV37-43 RV45-51
				RV53-56 RV58-61
37	POTDUALVERT, B5k	73-POT-B5KX2-6	2	RV5 RV14
38	POTDUALVERT, C100k	73-POT-C100K-DG	2	RV22 RV31

39	POTSINGLEVERT, B50k	73-POT-B50K	26	RV1-4 RV6-8 RV10-13 RV15-17 RV24-26 RV20-21 RV23 RV29-30 RV32-35
40	POTSINVERT,C10K	73-POT-C10K	2	RV19 RV28
41	R1/4W,100R	72-RM100R	4	R117 R125 R163-164
42	R1/4W,100k	72-RM100K	34	R65 R85 R92 R120-121 R126-127 R142 R157-158 R166-167 R191-194 R198-199 R241-244 R246-247 R270-271 R282-283 R310-311 R335 R337 R362-363
43	R1/4W,10k	72-RM10K	32	R3-4 R8 R43-44 R48 R118-119 R148 R165 R173-174 R176-177 R180-181 R224-225 R227-228 R232-233 R272 R287 R289 R313 R334 R336 R338 R354 R358 R386
45	R1/4W,15k	72-RM15K	14	R83 R91 R93-94 R95 R124 R141 R143-144 R145 R292 R294 R342-343
46	R1/4W,1k	72-RM1K	12	R72 R108 R122-123 R134 R159-160 R170 R201 R268 R312 R385
47	R1/4W,1k5	72-RM1K5	4	R15-16 R55-56
48	R1/4W,1k8	72-RM1K8	8	R37 R81 R113 R156 R212 R260 R323 R374
49	R1/4W,22R	72-RM22R	2	R89 R139
50	R1/4W,22k	72-RM22K	24	R18 R20 R59 R62 R115-116 R161-162 R195-196 R279-280 R290 R304 R308-309 R325 R331 R339 R353 R357 R361 R377 R383
51	R1/4W,27k	72-RM27K	4	R355-356 R359-360
52	R1/4W,2k2	72-RM2K2	6	R5 R45 R215 R229 R263 R273
53	R1/4W,2m2	72-RM2M2	2	R57 R98
54	R1/4W,33k	72-RM33K	46	R21-24 R27-28 R32-33 R63-64 R66-67 R70-71 R76-77 R101-105 R109 R128-131 R151-152 R203-204 R207-208 R251-252 R255-256 R285 R303 R307

				R314-315 R332-333
				R365-366 R384
57	R1/4W,3k3	72-RM3K3	4	R86-87 R136-137
58	R1/4W,3k9	72-RM3K9	12	R35 R79 R111 R154
				R211 R259 R322 R373
				R96-97 R146-147
59	R1/4W,3m9	72-RM3M9	6	R2 R42 R172 R175
				R223 R226
60	R1/4W,470k	72-RM470K	8	R36 R80 R112 R155
				R210 R258 R321 R372
61	R1/4W,47k	72-RM47K	56	R1 R6-7 R17 R19
				R25-26 R29 R39 R41
				R46-47 R58 R60-61
				R68-69 R73 R82 R84
				R106-107 R132-133
				R168-169 R178-179
				R197 R200 R216
				R230-231 R245 R248-249
				R264 R267 R274-275
				R286 R291 R293
				R318-319 R326-327
				R340-341 R364
				R369-370 R378-379
				R387-388
62	R1/4W,4k7	72-RM4K7	32	R30-31 R38 R40 R74-75
				R99-100 R114 R135
				R149-150 R171 R202
				R205-206 R213-214 R250
				R253-254 R261-262
				R269
				R288 R316-317 R324
				R367-368 R375-376
63	R1/4W,56k	72-RM56K	4	R281 R284 R301 R305
64	R1/4W,680k	72-RM680K	8	R34 R78 R110 R153
				R209 R257 R320 R371
64a	R1/4W,68K	72-RM68K	2	R302 R306
65	R1/4W,6k8	72-RM6K8	60	R9-14 R49-54
				R182-190 R217-222
				R234-240 R265-266
				R276-278 R295-300
				R328-330 R344-352
				R380-382
66	R1/4W,7k5	72-RM7K5	4	R88 R90 R138 R140
67	SLIDERMONO, A10k	73-SLIDER-A10K-M	4	RV9 RV18 RV27 RV36
68	SLIDERSTEREO, A10k	73-SLIDER-A10K-S	4	RV44 RV52 RV57 RV62
69	SWPUSH4PDT_V, SF1201-4	73-SWT-4POLE-C/O	4	SW9 SW11-13
70	SWPUSHDPDT, SF1202-2	73-SWT-PUSH	9	SW1-8 SW10
71	TL072	72-IC-TL072	26	IC1-22 IC25-28

72	TL074	72-IC-TL074	2	IC23-24
73	XLR	73-XLR-PCB-VERT	2	SK5 SK7
74	SPACER FOR LED's	71-SPA-17.46MM	8	

**N.B. - C52 & C75 No component fitted.**

**LED MOUNTING - The 8 x LED's are mounted on 17.5mm plastic spacers**

ITEM 36 - Is a Noble pot Part No - XVO141GPVN30FS-L B50K

ITEM 38 - Is a Noble pot Part No - VO161GPV30F15C100K

ITEM 40 - Is a Noble pot Part No - VO12LPV30F15C10K

ITEM 67 - Is a PCB mount 60mm slider Part No - VJ6012-2PVN15BH-15A10K-D from Kelvin Impex

ITEM 68 - Is a PCB mount 60mm slider Part No - VJ6012-2GPVN15BH-15A10K-D from Kelvin Impex

ITEM 69 - Is a Noble 4 pole c/o push switch Part No - SF1201-4 from Kelvin Impex

ITEM 73 - Is a straight PCB mount XLR socket from REAN - Part No - X902-03

ITEM 74 - Is a Plastic Screws Ltd nylon spacer Part No: 048-4941

**PARTS LIST FOR PC00037x1 - 2.4.96 - ACOUSTIC PA  
MASTER BOARD**

Item	Description	Part Code	Qty	Where Used
1	7805	72-7805-REG	1	IC4
2	BC549	72-TBC549C	3	TR2 TR4-5
3	CAPCER,100pF	72-C100P-100VDC	4	C6 C8 C50 C60
4	CAPCER,330pF	72-C330P-100VDC	4	C27 C35-36 C47
5	CAPCER,470pF	72-C470P-100VDC	1	C32
6	CAPCER,47pF	72-C47P-100VDC2	8	C3 C7 C18-19 C48 C51 C63-64
8	CAPE1,1uF	72-C1-63VER	5	C30-31 C56 C68-69
9	CAPE1,47uF	72-C47-16VER	4	C38 C65-67
10	CAPE2,100uF	72-C100-16VER	7	C14-15 C17 C22-25
11	CAPE2,10uF	72-C10-35VER	20	C1-2 C4-5 C9-11 C20-21 C26 C37 C39-40 C46 C57-59 C61-62 C70
12	CAPP1,100n	72-C100N-100VP	6	C16 C41-44 C55
13	CAPP1,1n5	72-C1N5-100VP	2	C29 C54
14	CAPP1,22n	72-C22N-100VP	2	C28 C53
15	CAPP1,33nF	72-C33N-100VP	2	C12-13
16	CAPP1,4n7	72-C4N7-100VP	2	C33-34
17	CAPP1,68n	72-C68N-100VP	3	C45 C49 C52
18	CON06	72-HEAD-6W-2	1	PL4
19	CON08	72-HEAD-8W-2	1	PL2
20	CON12	72-HEAD-12W	1	PL1
21	DIODE1,1N4148	72-D-IN4148	3	D1-3
22	J175	72-FET-J-175	2	TR1 TR3
23	JACKSTEREO,AUX SEND 1	73-SKT-JCK-PERP	1	SK1
24	JACKSTEREO,AUX SEND 2	73-SKT-JCK-PERP	1	SK2
25	JACKSTEREO, MASTER OUT LEFT	73-SKT-JCK-PERP	1	SK4
26	JACKSTEREO, MASTER OUT RIGHT	73-SKT-JCK-PERP	1	SK6
27	JACKSTEREO, MONO MIX OUT	73-SKT-JCK-PERP	1	SK5
28	JACKSTEREO, PHONES	73-SKT-JCK-PERP	1	SK7
29	JACKSTEREO, REVERB F/S	73-SKT-JCK-PERP	1	SK3
30	JACKSTEREO, SUB OUT	73-SKT-JCK-PERP	1	SK8
31	NE5532	72-NE5532	1	IC14
32	POTDUALVERT, B50k	73-POT-B50K-DG	4	RV4-5 RV8 RV10
33	POTSINGLEVERT, B50k	73-POT-B50K	3	RV1-2 RV9

34	R1/4W,100R	72-RM100R	2	R86 R88
35	R1/4W,100k	72-RM100K	28	R1 R3 R8 R22
				R26 R37-39
				R43-44 R49 R55 R58
				R57 R60 R64-65
				R73-74 R77-78
				R83-85 R87 R93-94
				R101
36	R1/4W,10R	72-RM10R	4	R18-21
37	R1/4W,10k	72-RM10K	14	R28-31 R33 R51-52
				R66-68 R95-96
				R99-100
38	R1/4W,15k	72-RM15K	2	R62-63
39	R1/4W,1k	72-RM1K	6	R2 R4 R23 R40 R69
				R82
40	R1/4W,220R	72-RM220R	2	R9-10
41	R1/4W,22k	72-RM22K	10	R24 R27 R35-36
				R41-42 R79-81
				R97
42	R1/4W,2k2	72-RM2K2	11	R11-15 R32 R34
				R47-48 R71-72
43	R1/4W,33k	72-RM33K	8	R5 R7 R45-46 R75-76
				R16-17
44	R1/4W,3k3	72-RM3K3	1	R50
45	R1/4W,47k	72-RM47K	3	R70 R6 R25
46	R1/4W,4k7	72-RM4K7	5	R53-54 R90-91 R102
47	R1/4W,560R	72-RM560R	2	R89 R92
48	R1/4W,6k8	72-RM6K8	2	R59 R61
49	R1/4W,82R	72-RM82R	2	R56 R98
50	RLYDPDT1,G5V-2	73-RELAY-47W	2	RL1-2
51	RV1,DIGITAL FX	73-REVB-RV-IDM	1	PL3
52	SLIDERMONO, A10K	73-SLIDER-A10K-M	3	RV6-7 RV11
53	SLIDERSTEREO, A10k	73-SLIDER-A10K-S	1	RV3
54	SW4BITBIN, 16 WAY	73-SWT-BINARY	1	SW1
	4 BIT BINARY SWITCH			
55	SWPUSHDPDT, NOBLE SF1201-2	73-SWT-PUSH	3	SW2-4
56	TL072,TL072	72-IL-TL072	12	IC1-3 IC5-13
57	ZENER1,5V1	72-D-BZX79C5V1	2	Z1-2

ITEM 32 - Is a NOBLE 14mm pot - Part No - XVO141GPVN30FS-L B50K

ITEM 52 - Is a PCB mount 60mm slider Part No - VJ6012-2PVN15BH-15A10K-D

ITEM 53 - Is a PCB mount 60mm slider Part No - VJ6012-2GPVN15BH-15A10K-D

ITEM 54 - Is a Noble 4 bit binary, 16 way rotary switch for VERTICAL PCB mounting  
Part No - SBD161PVB20F-1-4-16-16PC ( BINARY CODE )

**PARTS LIST FOR PC00038x1 - 2.4.96 - ACOUSTIC PA - BARGRAPH PCB**

Item	Description	Part Code	Qty	Where Used
1	BGF12,GL112-M9	73-BARGRAPH-12W	2	BG1-2
2	CAPE1,10uF Axial	72-C10-35VEA	4	C1 C2 C4 C6
3	CAPP1,100n	72-C100N-100VP	2	C3 C5
4	( SEE BELOW )		1	PL4
5	DIODE1,1N4148	72-D-IN4148	2	D1 D2
7	IR2406G	73-BARGRAPH-IC	2	IC2 IC3
8	LED RED 3mm	72-LED-RED-3MM	3	D3-5
9	PRESET,22k	72-RM4K7 ( see below )	2	RV1-2
10	R1/4W,100k	72-RM100K	2	R2 R6
11	R1/4W,10R	72-RM10R	2	R12 R13
12	R1/4W,10k	72-RM10K	4	R10-11 R16-17
13	R1/4W,1k	72-RM1K	4	R3-4 R9 R18
14	R1/4W,2k2	72-RM2K2	2	R5 R7
15	R1/4W,4k7	72-RM4K7	3	R14-15 R19
16	R1/4W,680R	72-RM680R	2	R1 R8
17	TL072,TL072	72-IL-TL072	1	IC1
18	ZENER1,5V6	72-D-BZX85C5V6	4	Z1-4
19	5mm Plastic Spacer	71-SPA-5MM	3	LED SPACING
20	11mm Push in Plastic PCB Spacer	Heyco Part No: 054 5519	4	MOUNTING PC00037 ON TO PC00037

ITEM 1 - GL112-M9 ( BARGRAPH ) From - Hero Electronics 01525-405015 -12 week lead time

ITEM 7 - IR2406G ( sharp IC ) From - Hero Electronics - 12 week lead time

ITEM 4 - 6 x 100mm long 7/02 wires hardwired into PCB and terminating in 6 way housing. Part No: 72-SKT-IDC-6W

ITEM 9 - 22K 10mm Horizontal preset. - Fit 4k7 resistor in place of preset.

N.B. The LED's have to be spaced off the PCB using a 5mm spacer.

## PARTS LIST FOR PC00062x2 - 29.8.96

## ACOUSTIC PA - CROSSOVER/INTERFACE PCB

Description	Part Code	Qty	Where Used
7815	72-7815-REG	1	IC1
7915	72-7915-REG	1	IC2
BF423	72-TBF423	2	TR1-2
CAPCER,220pF	72-C220P-100VDC	1	C18
CAPCER,33pF	72-C33P-100VDC	2	C5-6
CAPE1,1uF	72-C1-63VER	3	C16-17 C19
CAPE1,47uF	72-C47-16VER	1	C9
CAPE3,1000uF, 16V	72-C1000-16VER	2	C1-2
CAPP1,100n	72-C100N-100VP	5	C3-4 C7 C14-15
CAPP1,47n	72-C47N-100VP	5	C8 C10-13
CON06	72-HEAD-6W-2	3	PL1-2 PL5
CON08	72-HEAD-8W-2	2	PL3-4
DIODE1,1N4148	72-D-IN4148	3	D1-3
R1/4W,100K	72-RM100K	2	R12-13
R1/4W,10K	72-RM10K	4	R6-8 R18
R1/4W,15K	72-RM15K	2	R19 R21
R1/4W,1K	72-RM1K	2	R20 R22
R1/4W,33K	72-RM33K	1	R17
R1/4W,47K	72-RM47K	7	R1-4 R9-11
R1/4W,4K7	72-RM4K7	1	R23
R1/4W,68K	72-RM68K	1	R16
R1/4W,6K8	72-RM6K8	2	R14-15
R7W,22R 7W	NEW PART	1	R5
RLYDPDT1	73-RELAY-47W	2	RL1-2
TL072	72-IC-TLO72	3	IC3-5
ZENER1,3v6	72-D-BZX55C3V6	1	Z1
HEATSINK	71-HS-TEG	2	FOR 7815 & 7915

Resistor - 22R 7W WW Mounted on end.

Fit HEATSINK to 7815 & 7915 using heatsink compound.



**PARTS LIST FOR TRACE ACOUSTIC PA  
'BOTTOM END' AMPLIFIER  
USING PC00026 ISSUE 7  
Please label the pcb 'TAPA LF'**

Description	Part Code	Qty	Where Used
DIODE 1N4007	72-D-1N4007	14	D1.....D8 D10.....D15
ZENER DIODE 16 VOLT	72-D-BZX55C16V	2	Z2 D9
ZENER DIODE 56 VOLT	72-D-BZX55C56V	2	Z3 Z4
ZENER DIODE 33 VOLT	72-D-BZX55C33V	1	Z1
ZERO OHM LINKS	72-RCZERO	14	
RES 1/4W 100K	72-RM100K	2	R7 R14
RES 1/4W 100R	72-RM100R	2	R20 R21
RES 1/4W 10K	72-RM10K	2	R4 R32
RES 1/4W 10R	72-RM10R	2	R8 R10
RES 1/4W 1K0	72-RM1K	5	R12 R16 R24 R25 R27
RES 1/4W 1K8	72-RM1K8	1	R9
RES 1/4W 220R	72-RM220R	2	R19 R29
RES 1/4W 22K	72-RM22K	2	R5 R23
RES 1 WATT 22K	72-RM22K-1WATT	1	R37
RES 1/4W 27K	72-RM27K	2	R15 R26
RES 1/4W 2R7	72-RM2R7	1	R36
RES 1/4W 470K	72-RM470K	1	R18
RES 1/4W 470R	72-RM470R	2	R2 R13
RES 1/4W 4K7	72-RM4K7	1	R6
RES 1 WATT 4K7	72-RM4K7-1WATT	1	R3
CAP RADIAL 1u0 63V	72-C1-63VER	1	C6
CAP RADIAL 10u 63V	72-C10-63VER	6	C8 C10 C13 C18 C22 C23
CAP RADIAL 100u 16V	72-C100-16VER	1	C2
CAP RADIAL 47u 63V	72-C47-63VER	1	C19
CAP RADIAL 220u 25V	72-C220-25VER	2	C1 C11
CAP CERAMIC 100p 100V	72-C100P-100VCD	1	C12
CAP BOX POLY 2n2 100V	72-C2N2-100VP	1	C20
CAP BOX POLY 100n 100V	72-C100N-100VP	2	C15 C16
CAP BOX POLY 220n 250V	72-C220N-250VP	2	C4 C9
CAP BOX POLY 1uF 250V	72-C1-250VP	1	C5
TRANSISTOR MPSA92	72-TMPSA92	3	TR2 TR3 TR4
TRANSISTOR 2N3904	72-T2N3904	5	TR1 TR8 TR11 TR12

			TR18
TRANSISTOR 2N3906	72-T2N3906	1	TR5
TRANSISTOR TIP31C	72-TIP31C	2	TR10 TR13
TRANSISTOR TIP32C	72-TIP32C	2	TR6 TR9
PRESET 1K0	72-PRESET-1K	2	RV1 RV2
RELAY 47W/6 12V DPCO	73-RELAY-47W	1	RL1
PCB TERMINAL 2 WAY	73-TERM-PCB-2WAY	1	FAN OUTPUT
HEADER 6 WAY 0.1"	72-HEAD-6W-2	1	PL1
HEADER 3 WAY 0.2"	72-HEAD-3W-3	1	PL2
HEADER 2 WAY 0.2"	72-HEAD-2W-2	1	LS1
RES W/W 0R22 4W	72-RWW0R22-4W	4	R17 R28 R34 R35
RES W/W 4R7 4W	72-RWW4R7-4W	1	R31
RES W/W 0R1 4W	72-RWW0R1-4W	1	R30
RES W/W 1K0 2.5W	72-RWW1K-2.5W	1	R1
CAP 4700u 80V SNAP IN	72-CAP-470080V	2	C3 C7
RECTIFIER KBPC804	72-BRIDGE-3	1	DR1 (fit to heatsink)
HEATSINK FINNED	71-HS-TEG	1	fit to DR1
TRANSISTOR 2SC4468	72-T2SC4468	2	TR14 TR16
TRANSISTOR 2SA1695	72-T2SA1695	2	TR7 TR15
TRANSISTOR BUW11A	72-TBUW11A	1	TR17
HEATSINK KR70	74-HS-KR70-1	2	fit to output devices
TRANSISTOR CLIP	74-HS-KR70-CLIP1	5	fit to output devices
THERMAL TRIP 100C	73-SWT-THERM-2	1	fit to heatsink, wire to TRIP1
FIXINGS:	71-SCR-M3X8PP/TT	10	for heatsinks and trip
	71-SCR-M3X16PP	1	for KBPC602
	71-NUT-M3ZINC	1	for KBPC602
	71-WAS-M3AZINC	1	for KBPC602
	71-WAS-M3SCOIL	1	for KBPC602
	71-WAS-M3NYL	8	for heatsinks under PCB
	45-MISC	0.5	

**PARTS LIST FOR TRACE ACOUSTIC PA  
'TOP END' AMPLIFIER  
USING PC00026 ISSUE 7  
Please label the pcb 'TAPA HF'**

Description	Part Code	Qty	Where Used
DIODE 1N4007	72-D-1N4007	12	D1 D2 D3 D4 D5 D6 D7 D8 D11 D12 D13 D14
ZENER DIODE 16 VOLT	72-D-BZX55C16V	2	Z2 D9
ZERO OHM LINKS	72-RCZERO	14	
RES 1/4W 100K	72-RM100K	2	R7 R14
RES 1/4W 100R	72-RM100R	2	R20 R21
RES 1/4W 10K	72-RM10K	3	R4 R15 R23 R26 R32
RES 1/4W 10R	72-RM10R	2	R8 R10
RES 1/4W 180K	72-RM180K	1	R18
RES 1/4W 1K0	72-RM1K	5	R12 R16 R24 R25 R27
RES 1/4W 1K8	72-RM1K8	1	R9
RES 1/4W 220R	72-RM220R	2	R19 R29
RES 1/4W 22K	72-RM22K	1	R5
RES 1 WATT 2K2	72-RM2K2-1WATT	1	R3
RES 1/4W 470R	72-RM470R	3	R2 R13 R33
RES 1/4W 4K7	72-RM4K7	1	R6
CAP RADIAL 100u 16V	72-C100-16VER	1	C2
CAP BOX POLY 100n 100V	72-C100N-100VP	2	C15 C16
CAP CERAMIC 100p 100V	72-C100P-100VCD	1	C12
CAP RADIAL 10u 63V	72-C10-63VER	4	C8 C13 C22 C23
CAP BOX POLY 10n 100V	72-C10N-100VP	1	C17
CAP BOX POLY 1uF 250V	72-C1-250VP	1	C5
CAP RADIAL 1u0 63V	72-C1-63VER	1	C6
CAP RADIAL 2u2 63V	72-C2.2-63VER	1	C10
CAP RADIAL 220u 25V	72-C220-25VER	2	C1 C11
CAP BOX POLY 220n 250V	72-C220N-250VP	2	C4 C9
CAP CERAMIC 470p 100V	72-C470P-100VCD	1	C20
TRANSISTOR MPSA92	72-TMPSA92	3	TR2 TR3 TR4
TRANSISTOR 2N3904	72-T2N3904	4	TR1 TR8 TR11 TR12
TRANSISTOR 2N3906	72-T2N3906	1	TR5
TRANSISTOR TIP31C	72-TIP31C	2	TR10 TR13
TRANSISTOR TIP32C	72-TIP32C	2	TR6 TR9

PRESET 1K0	72-PRESET-1K	2	RV1 RV2
RELAY 47W/6 12V DPCO	73-RELAY-47W	1	RL1
HEADER 6 WAY 0.1"	72-HEAD-6W-2	1	PL1
HEADER 3 WAY 0.2"	72-HEAD-3W-3	1	PL2
HEADER 2 WAY 0.2"	72-HEAD-2W-2	1	LS1
RES W/W 0R22 4W	72-RWW0R22-4W	2	R17 R28
RES W/W 4R7 4W	72-RWW4R7-4W	1	R31
RES W/W 0R1 4W	72-RWW0R1-4W	1	R30
RES W/W 470R 2.5W	72-RWW470R-2.5W	1	R1
CAP 4700u 35V SNAP IN	72-CAP-470035V	2	C3 C7
RECTIFIER KBPC602	72-BRIDGE-2	1	DR1
TRANSISTOR TIP35C	72-TIP35C	1	TR14
TRANSISTOR TIP36C	72-TIP36C	1	TR7
HEATSINK KR70	74-HS-KR70-1	2	fit to output devices
TRANSISTOR CLIP	74-HS-KR70-CLIP1	2	fit to output devices
THERMAL TRIP 100C	73-SWT-THERM-2	1	fit to heatsink, wire to TRIP1
FIXINGS:	71-SCR-M3X8PP/TT	10	for heatsinks and trip
	71-SCR-M3X16PP	1	for KBPC602
	71-NUT-M3ZINC	1	for KBPC602
	71-WAS-M3AZINC	1	for KBPC602
	71-WAS-M3SCOIL	1	for KBPC602
	71-WAS-M3NYL	8	for heatsinks under PCB
	45-MISC	0.5	