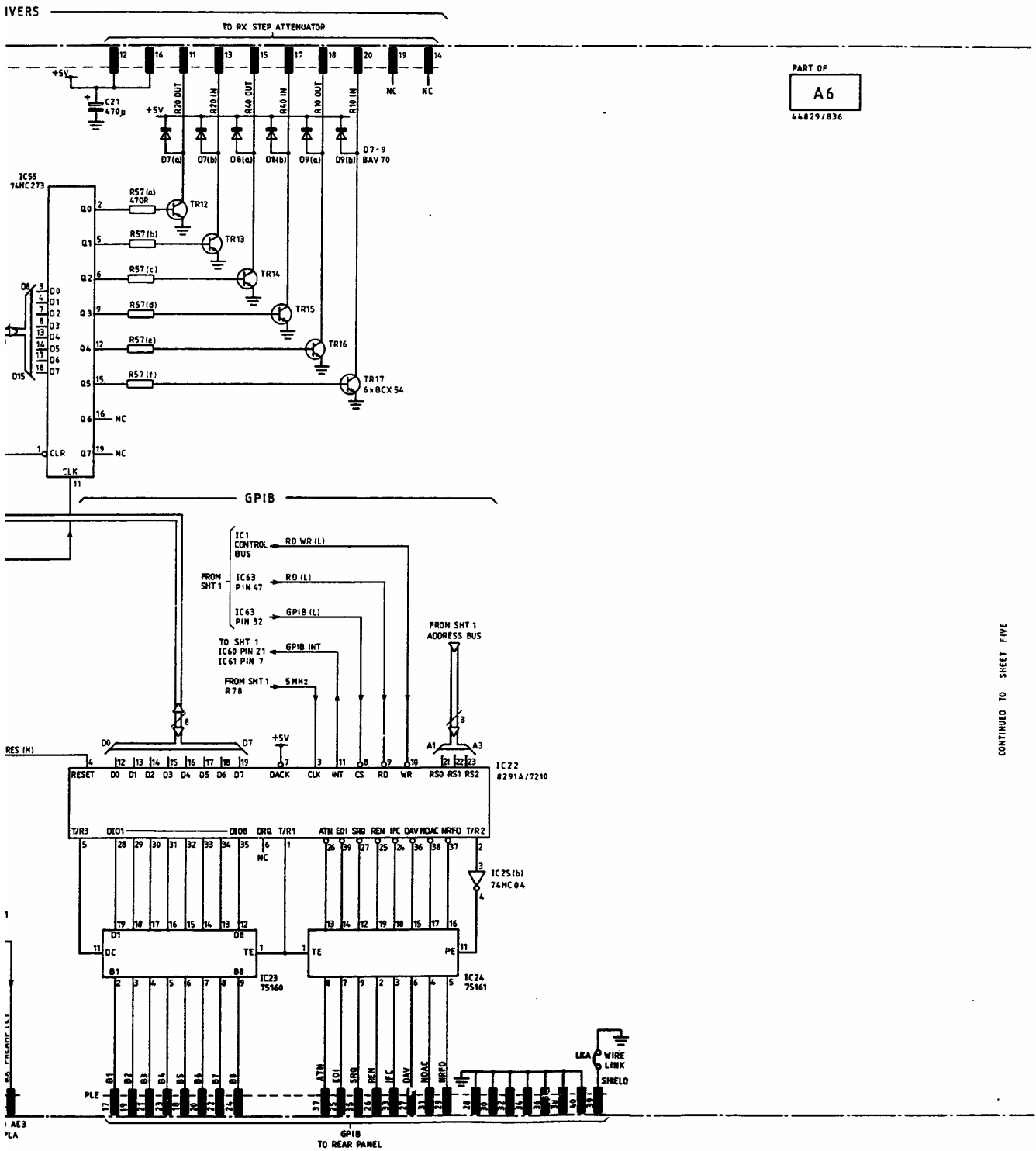
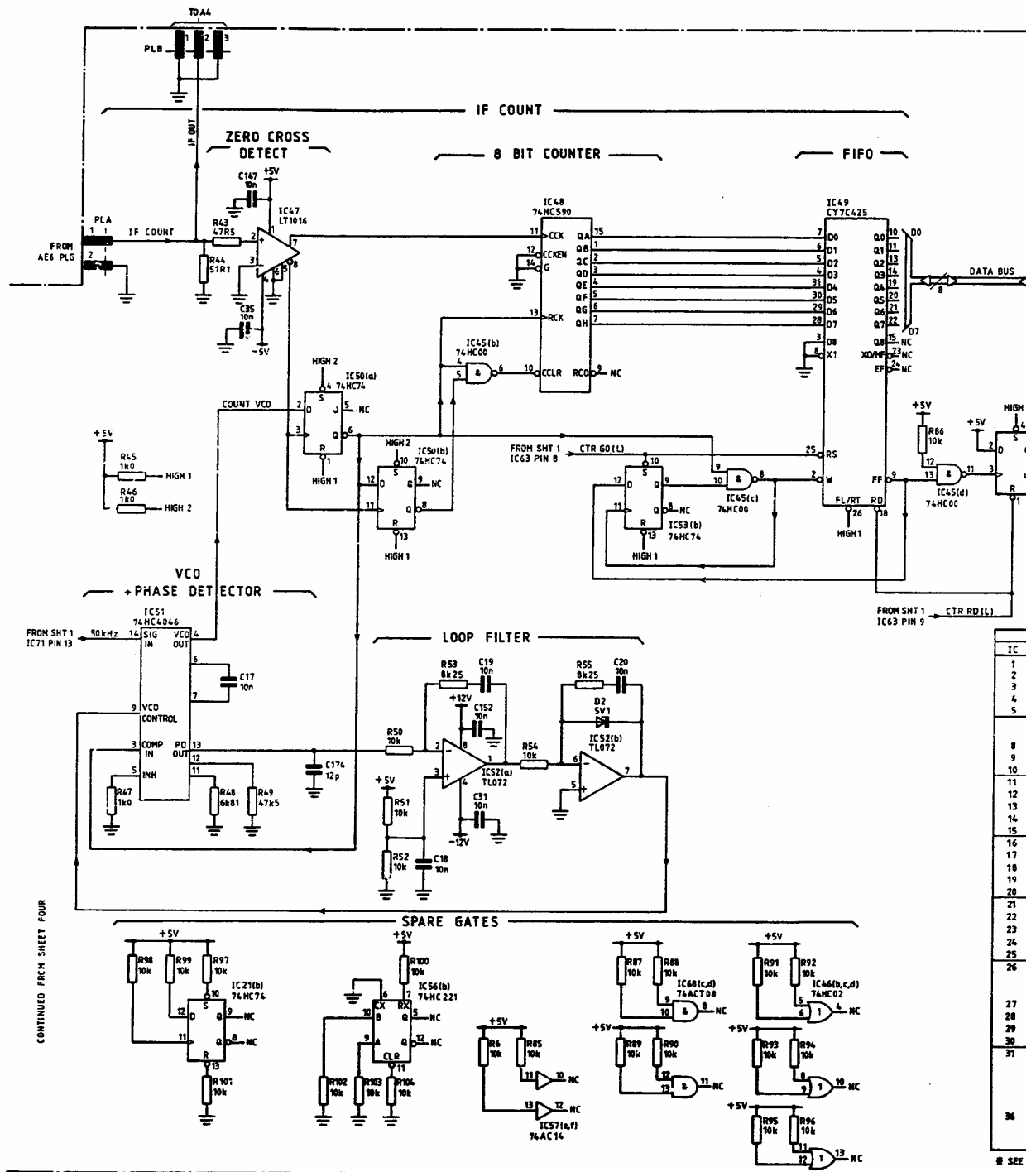


# Circuit diagrams **A6**



CONTINUED TO SHEET FIVE

Fig. 7-98 A6 Step attenuator drivers, ext ref status, control port - circuit



# Circuit diagrams A6

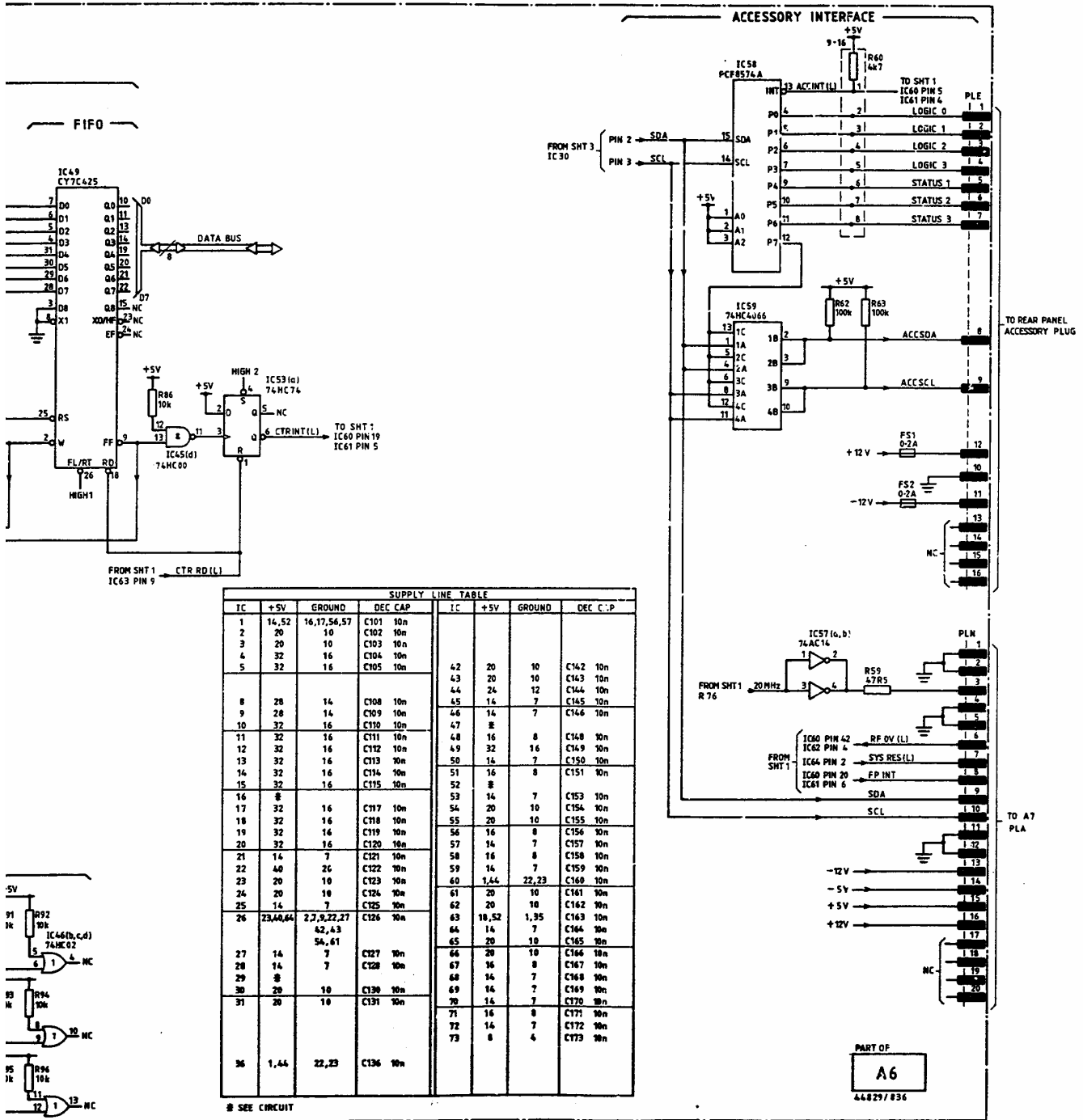
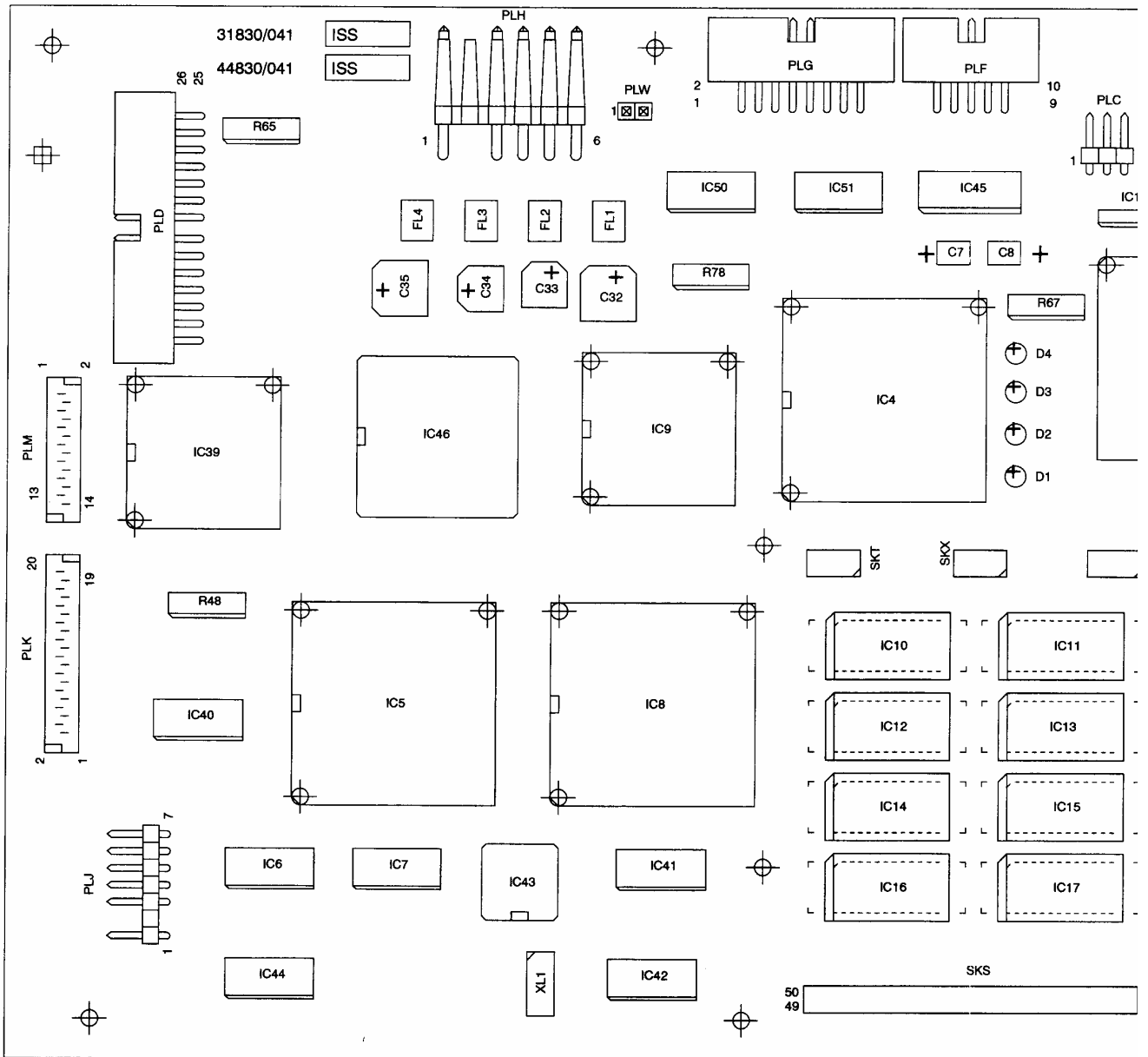


Fig. 7-99 A6 IF counter, VCO phase detector, loop filter, accessory I/F - circuit

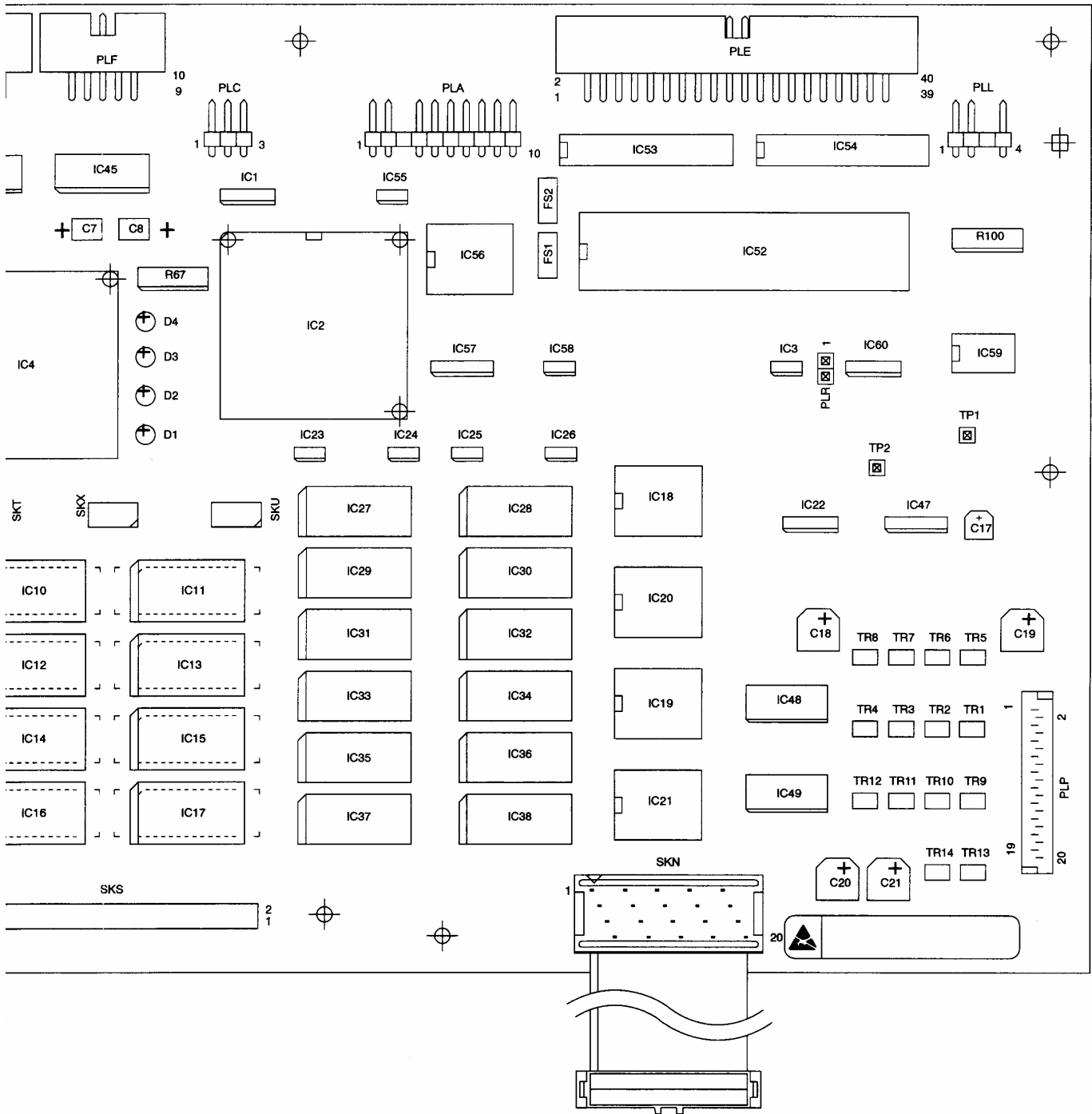
SERVICING DIAGRAMS



IF counter, VCO phase detector, loop filter, accessory I/F **A6**

Drg. No. 44830/04

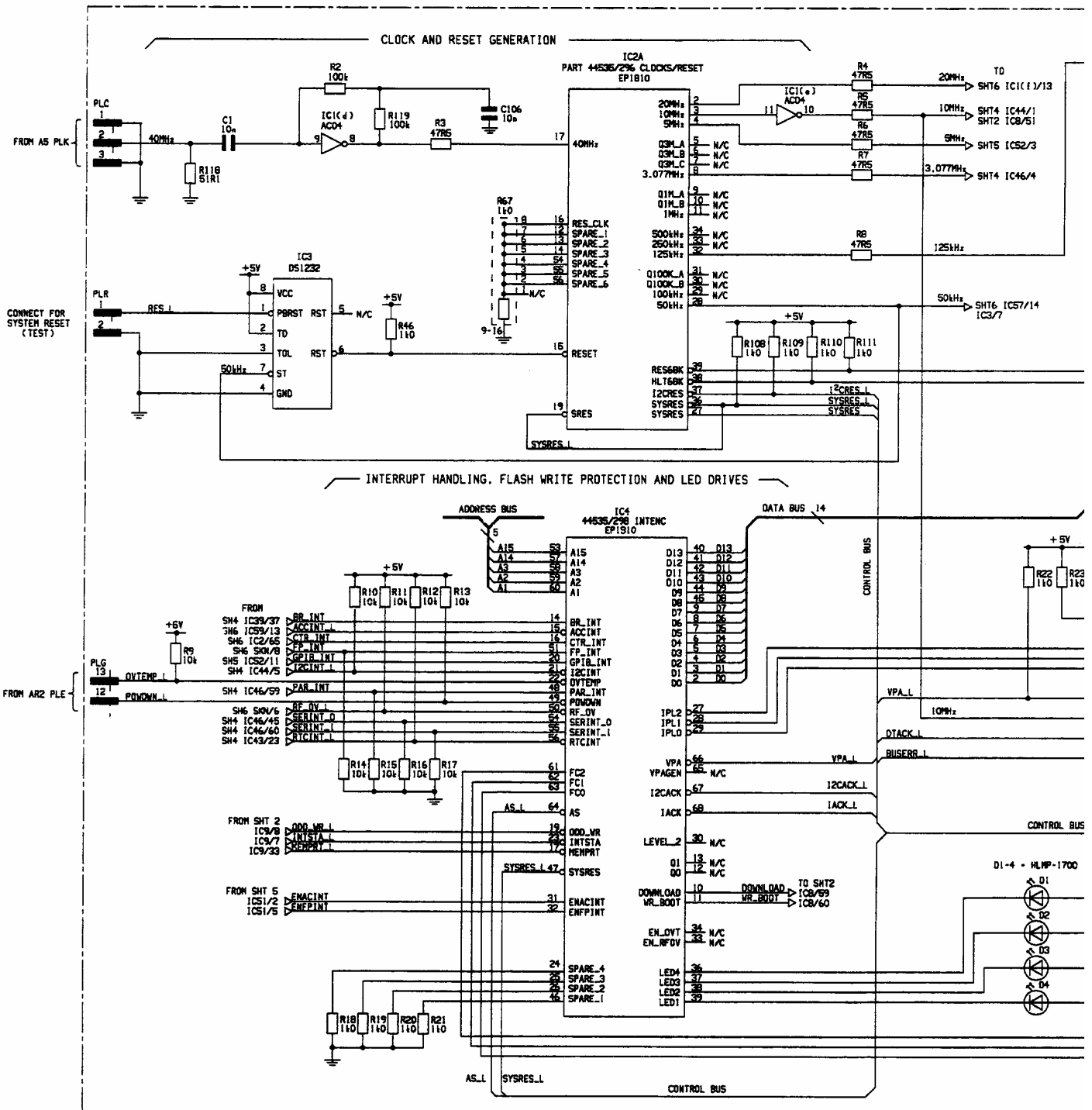
# Component layout A6/2



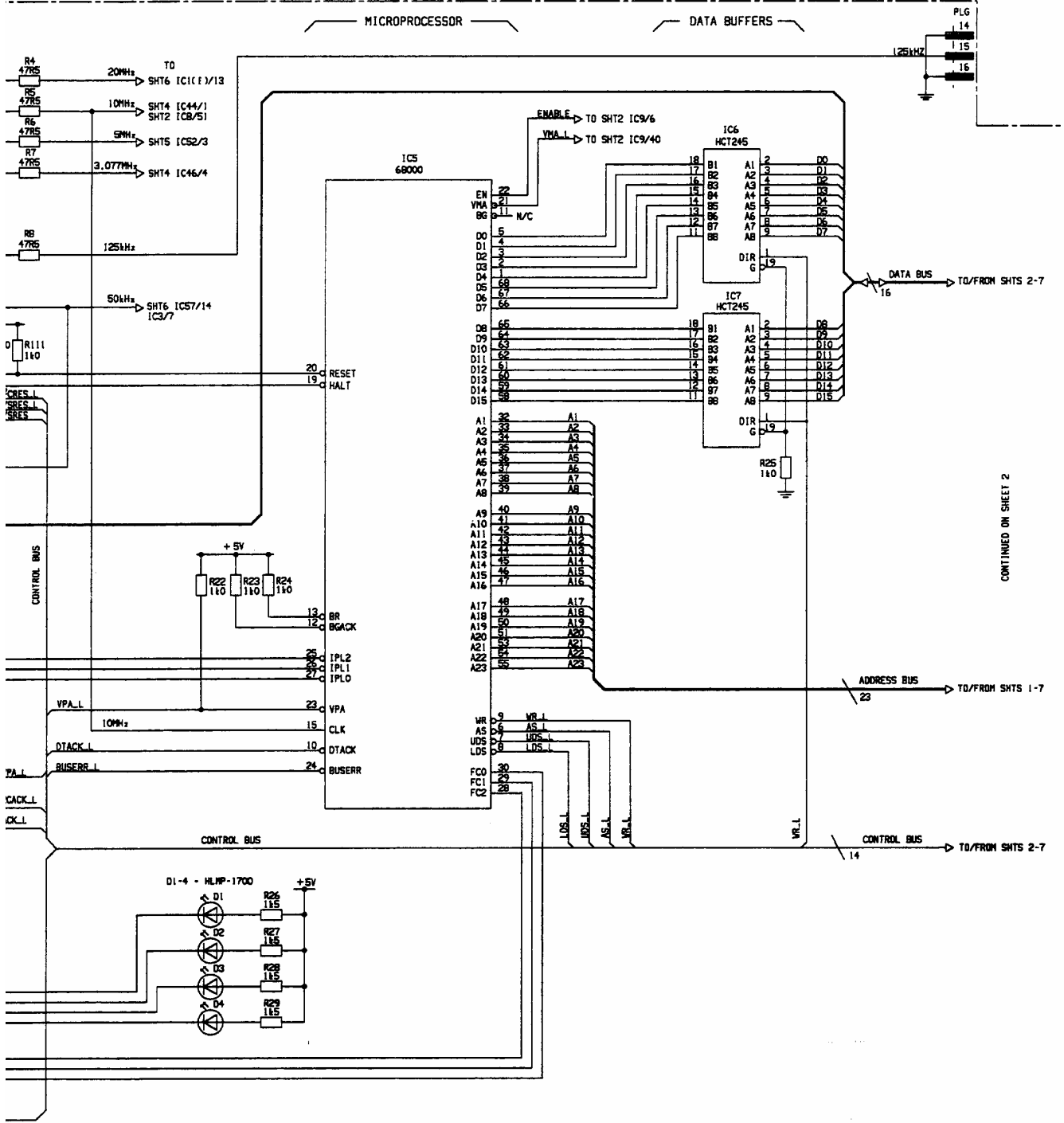
**A6**

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Fig. 7-100 A6/2 CPU - component layout, component side



Circuit diagrams **A6/2**



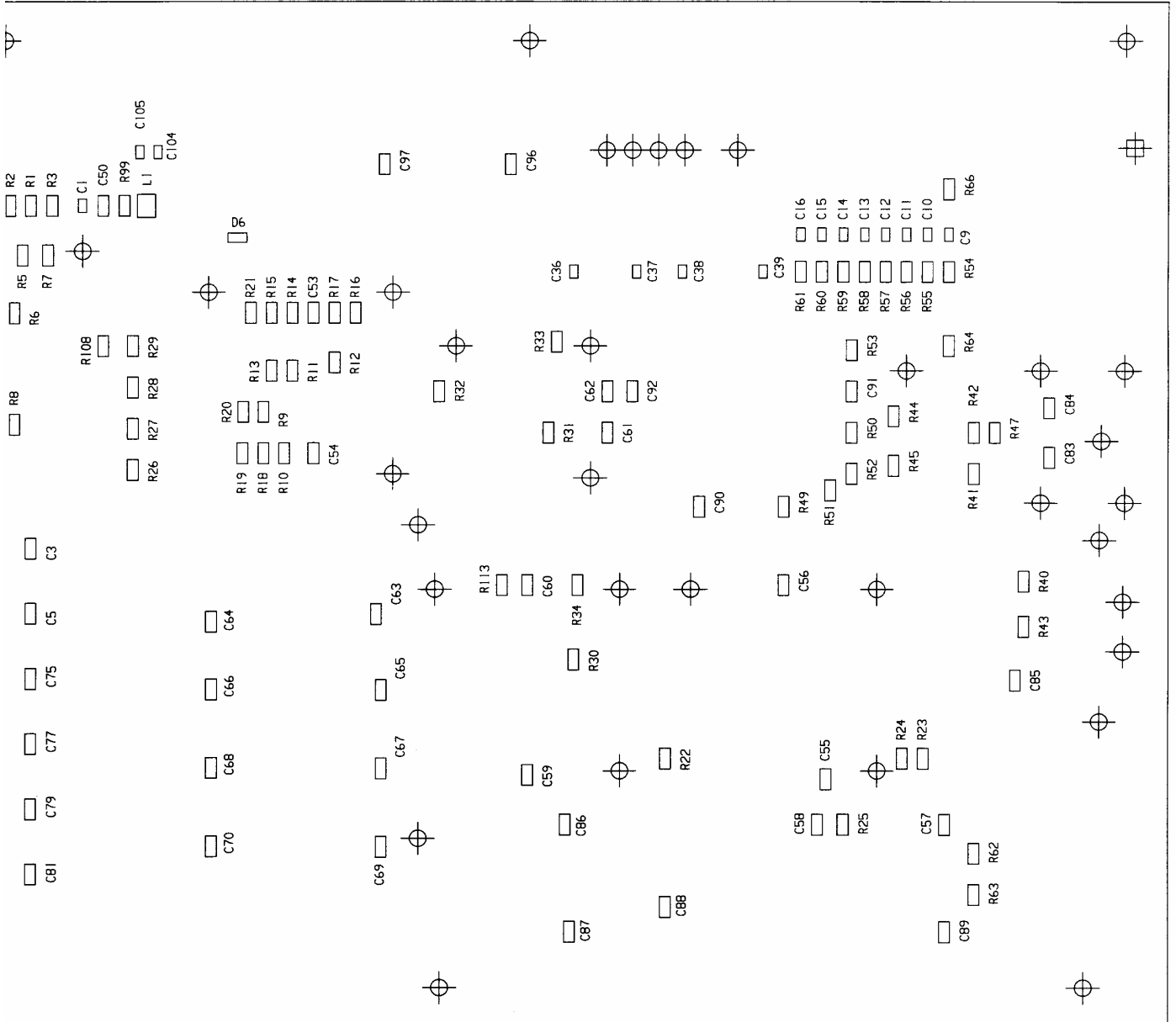
CONTINUED ON SHEET 2

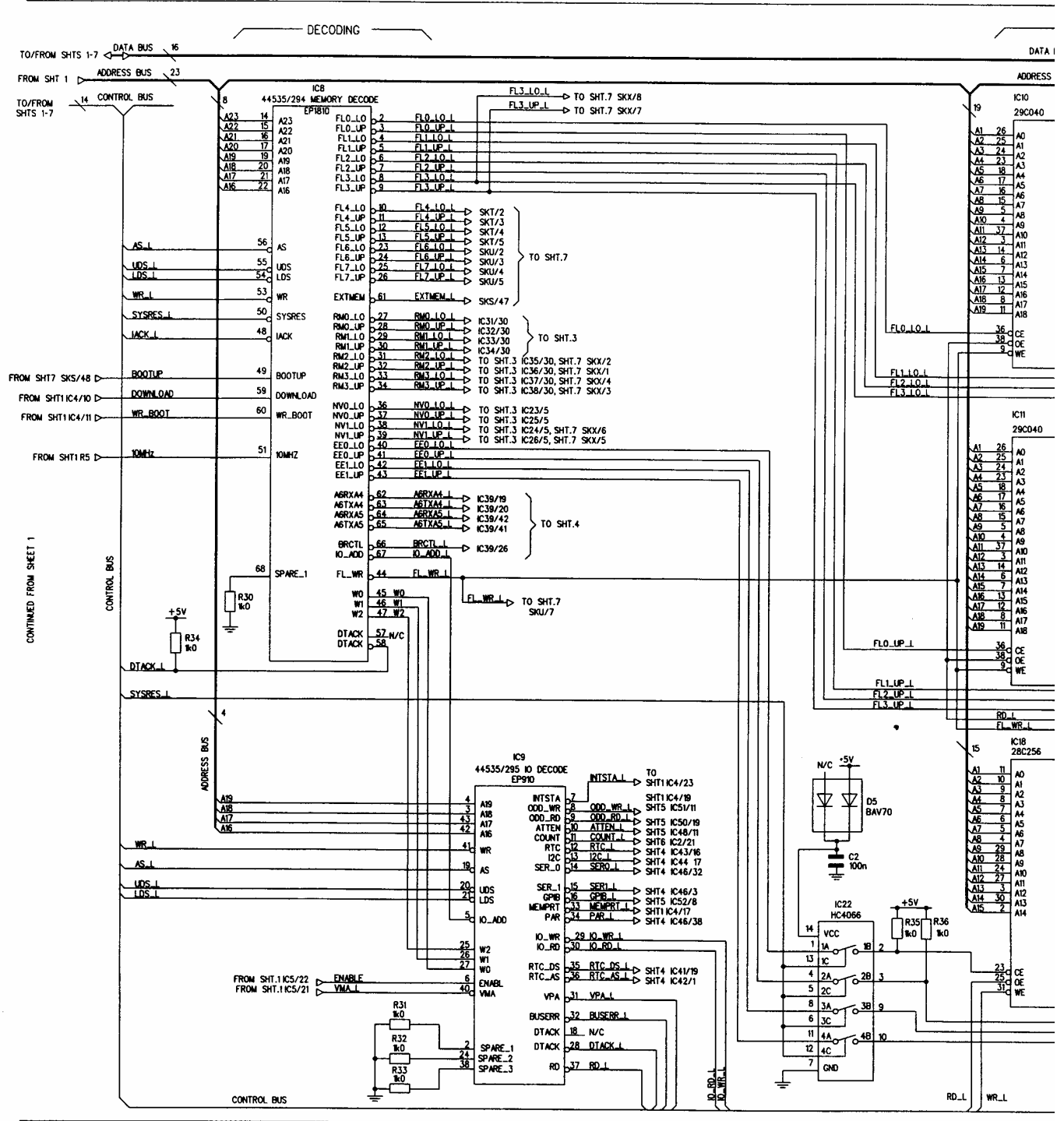
Fig. 7-101 A6/2 CPU - interrupt handling - circuit





# Component layout A6/2





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46882-168

# Circuit diagrams A6/2

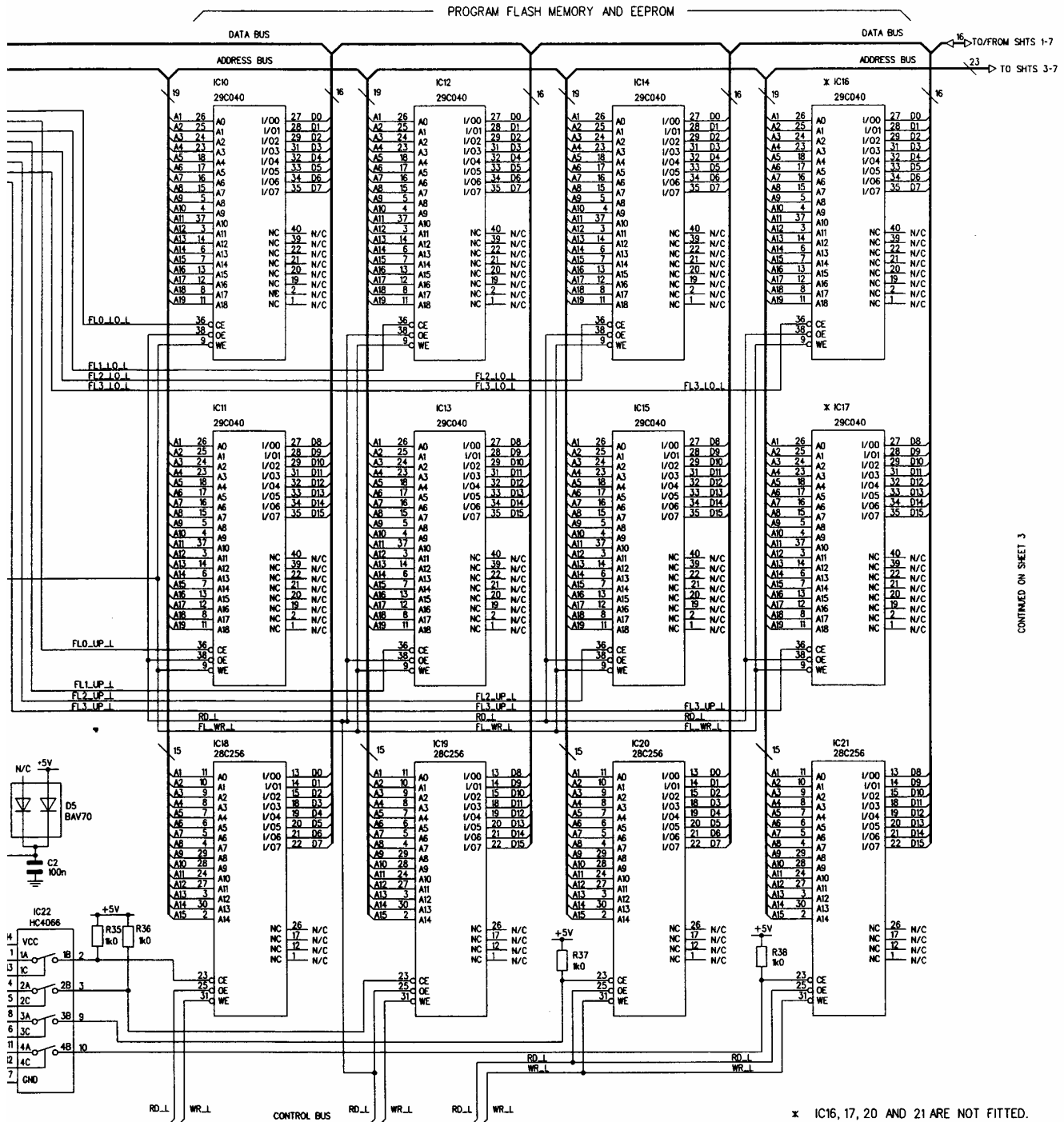
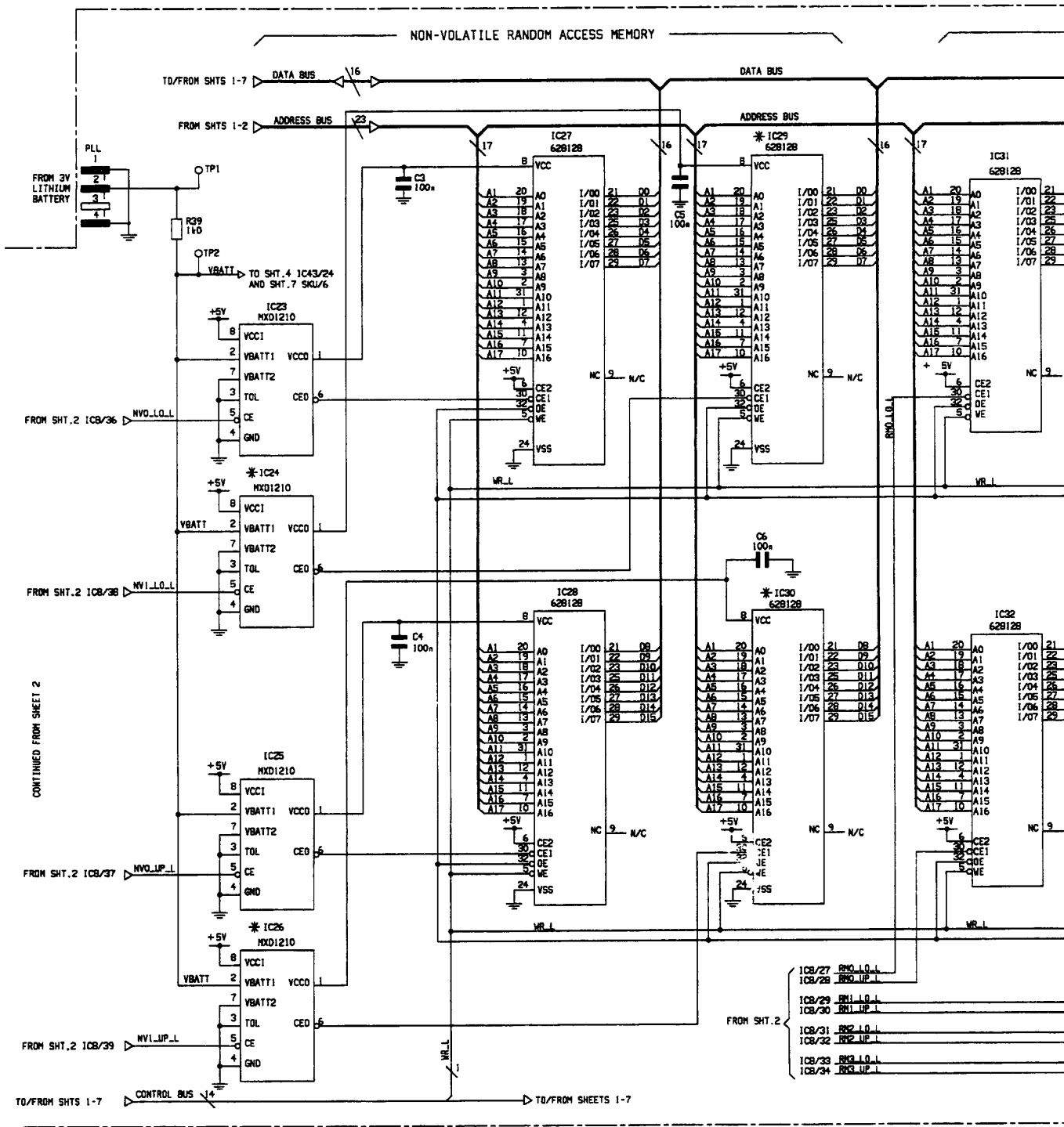


Fig. 7-103 A6/2 Decoding, Flash memory, EEPROM - circuit



# Circuit diagrams A6/2

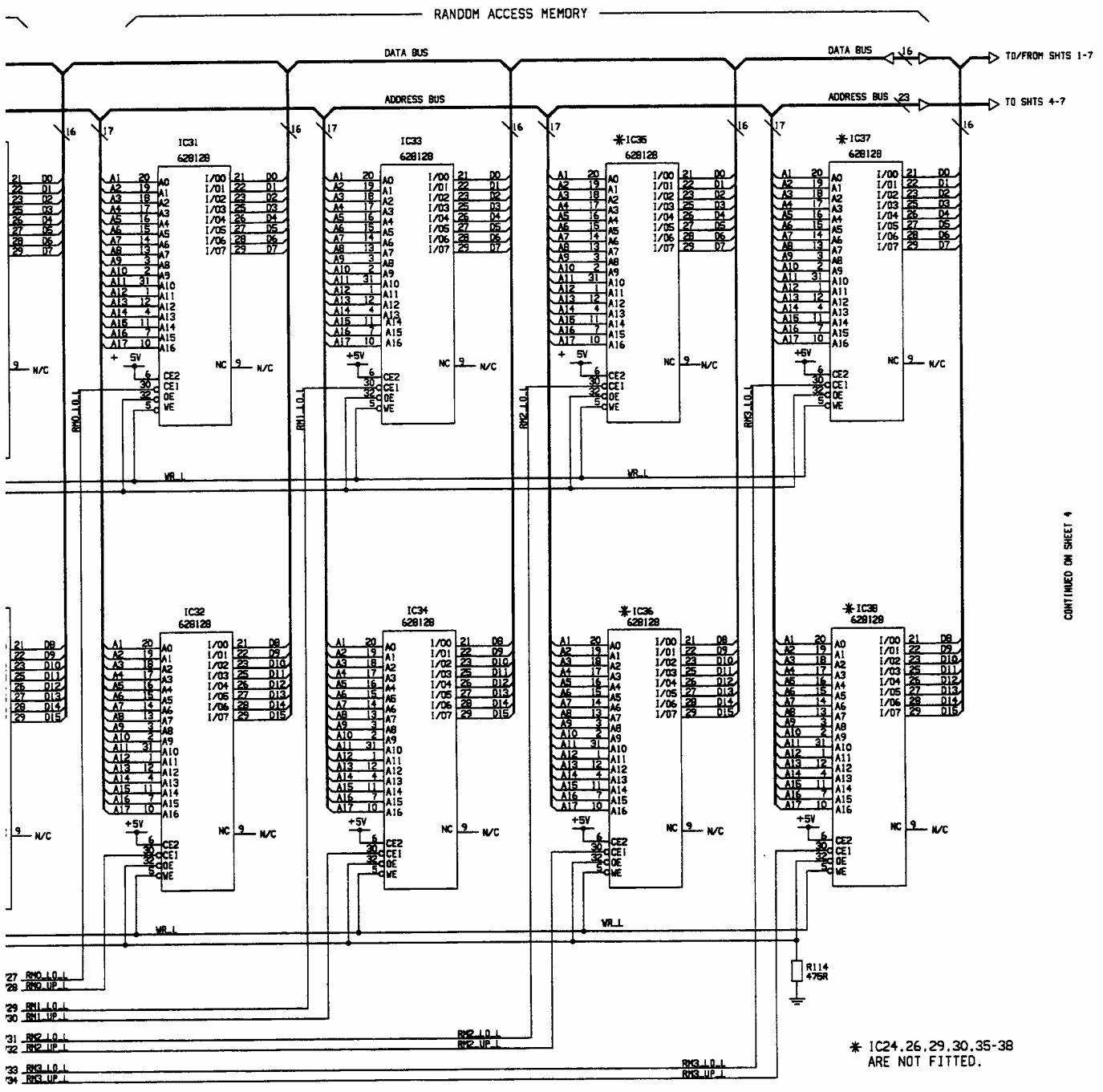
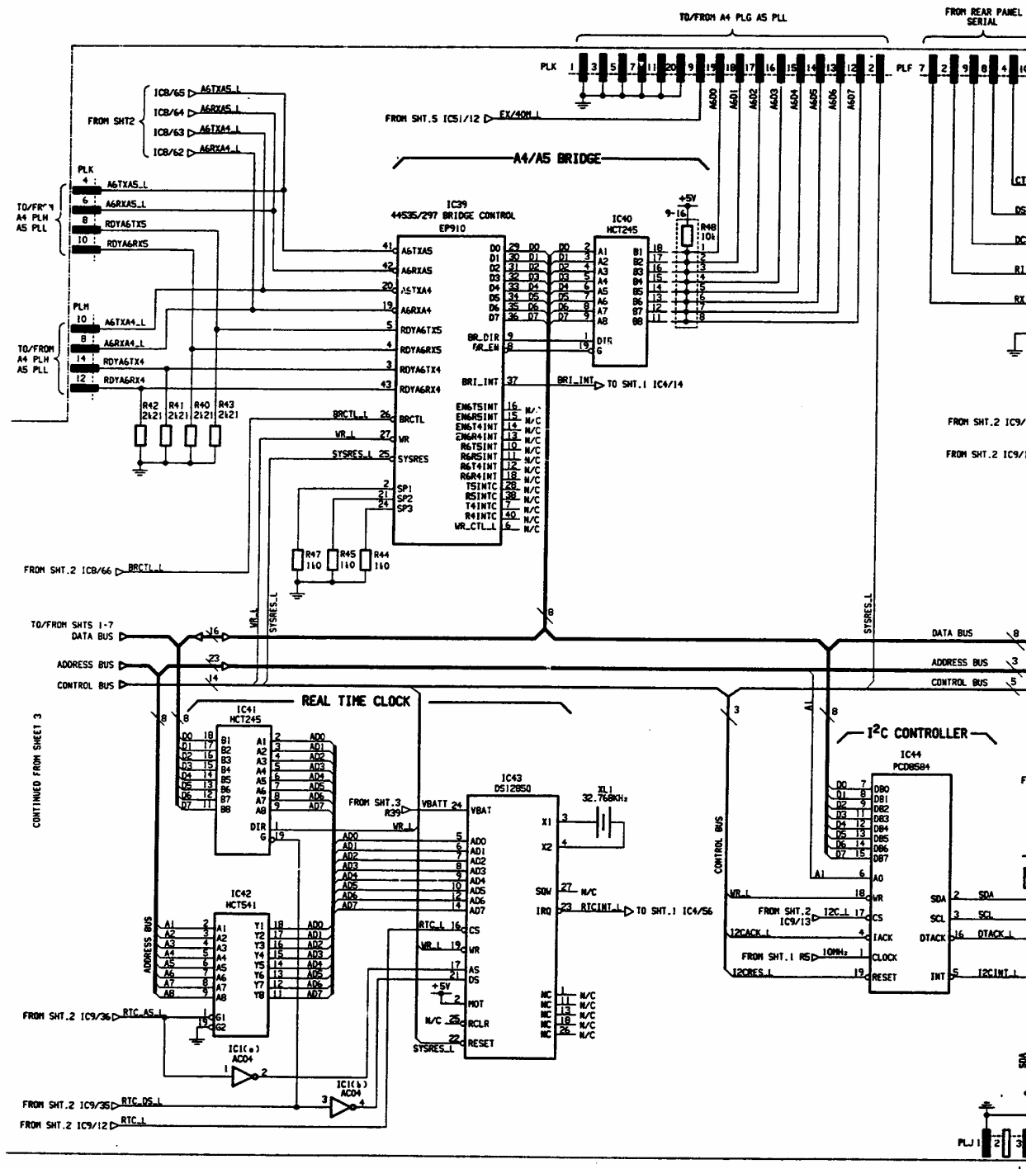


Fig. 7-104 A6/2 Random access memory - circuit



# Circuit diagrams A6/2

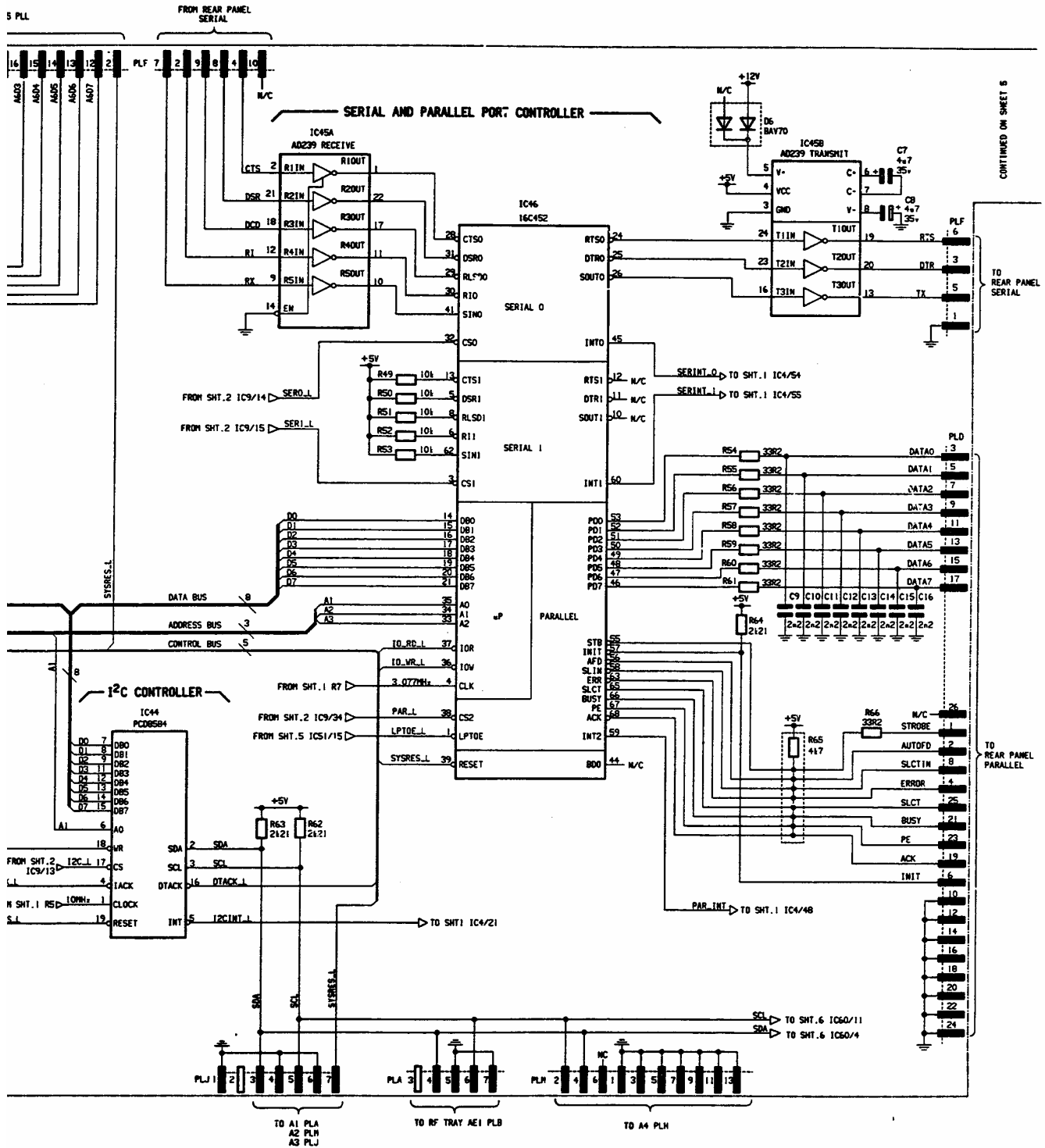
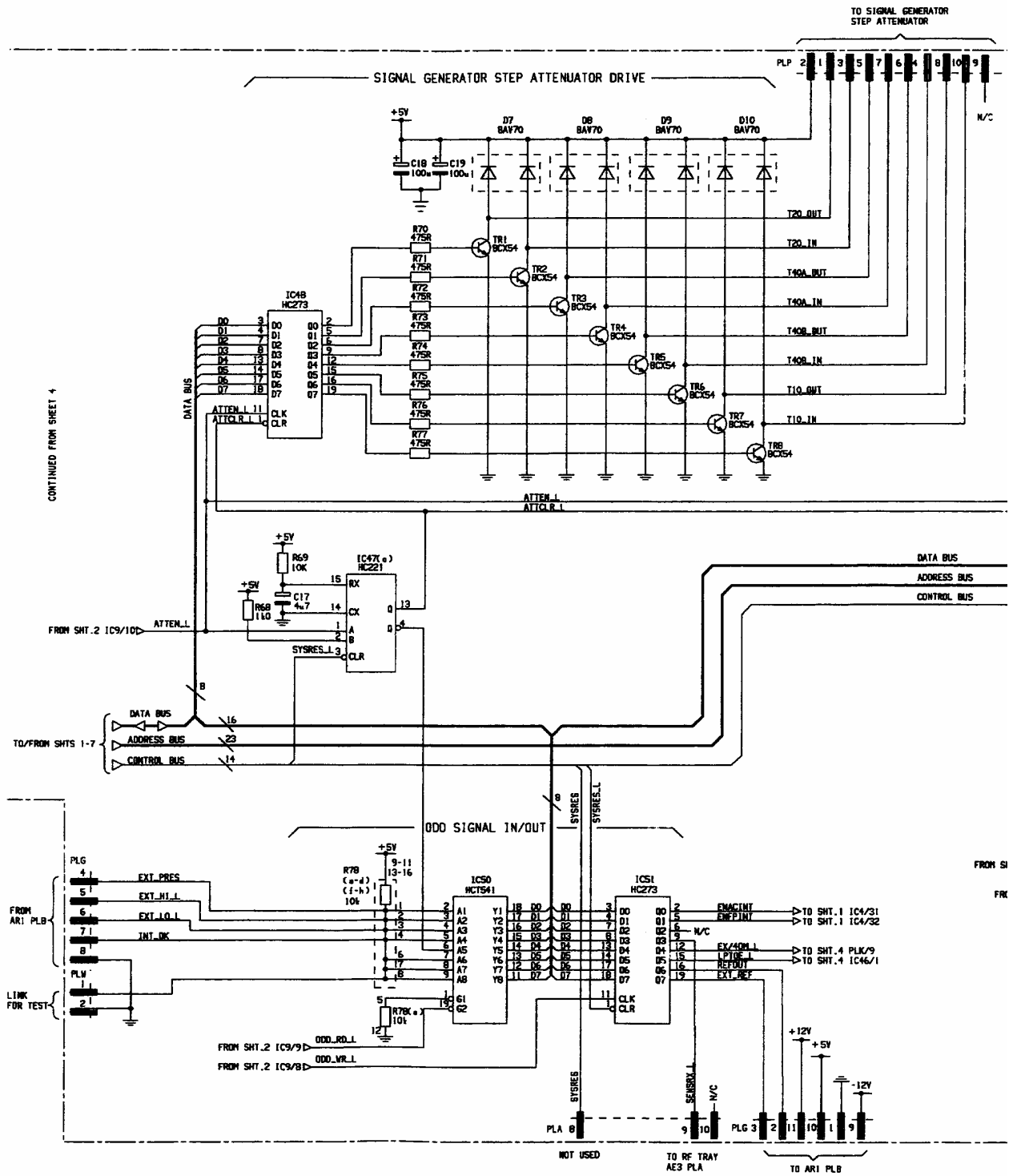


Fig. 7-105 A6/2 A4/A5 bridge, serial/parallel port controller, real-time clock - circuit





Circuit diagrams **A6/2**

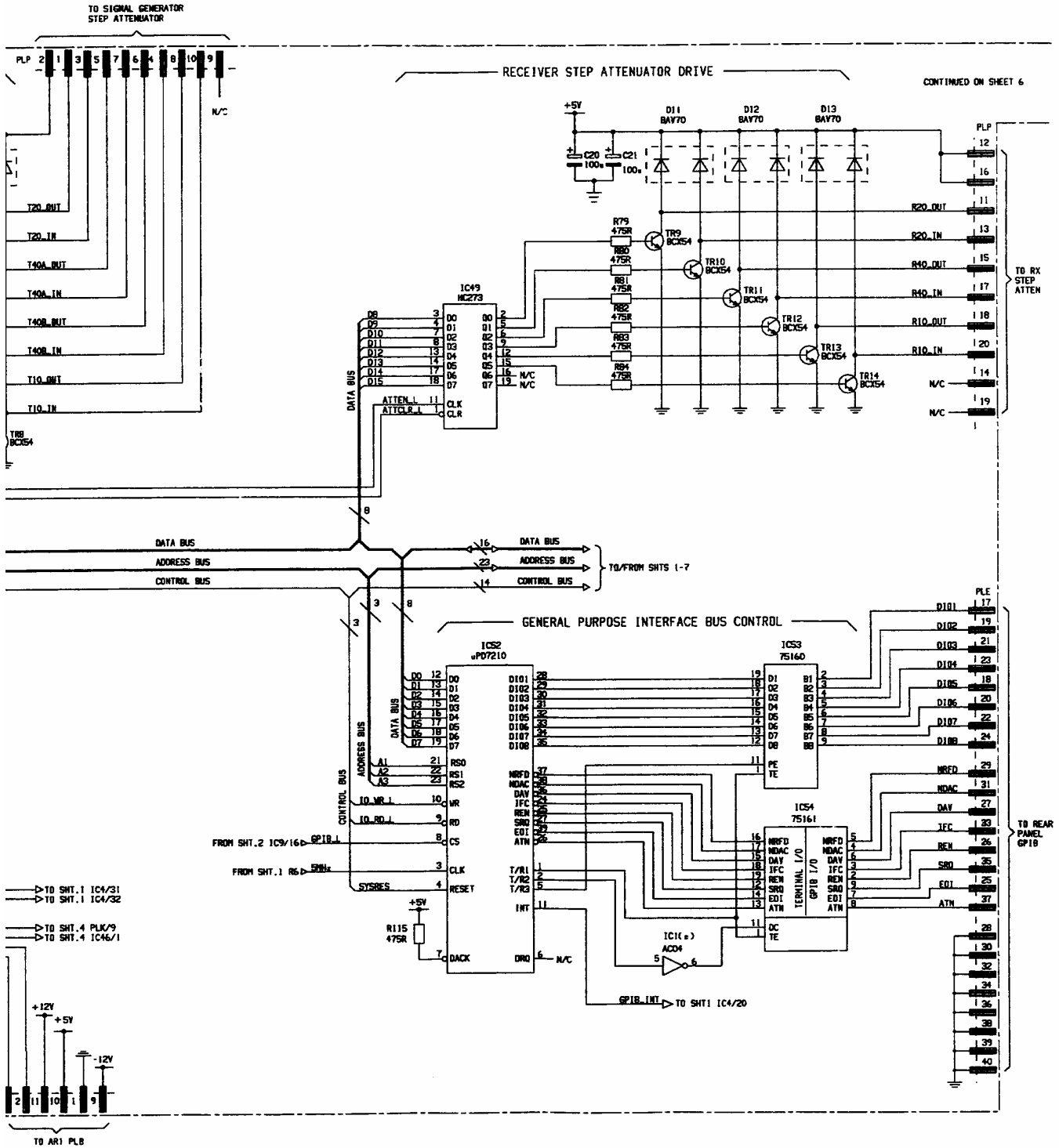
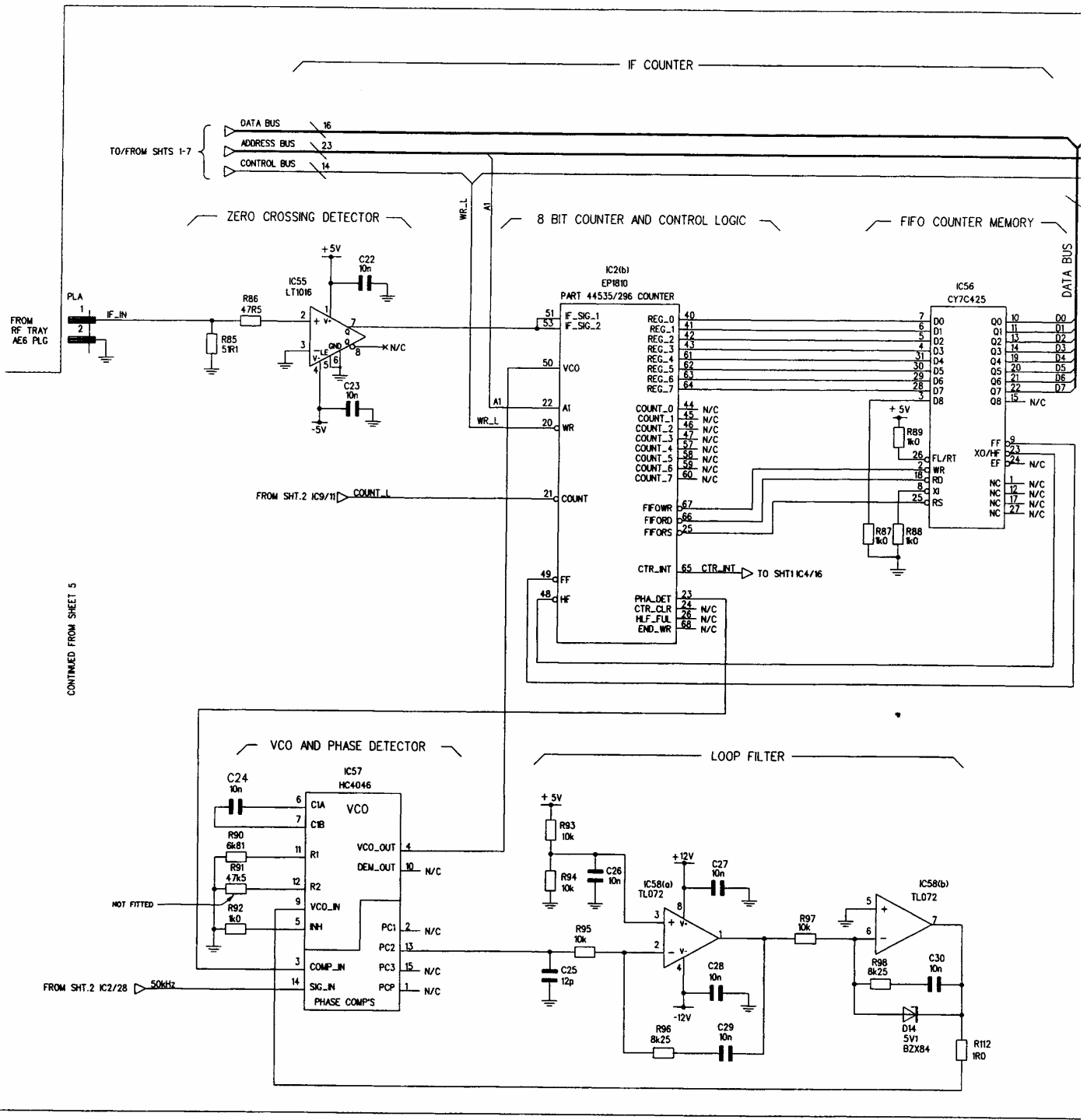


Fig. 7-106 A6/2 Step attenuator drive, ODD signal I/O, GP IIF bus control - circuit



CONTINUED FROM SHEET 5

# Circuit diagrams A6/2

CONTINUED ON SHEET 7

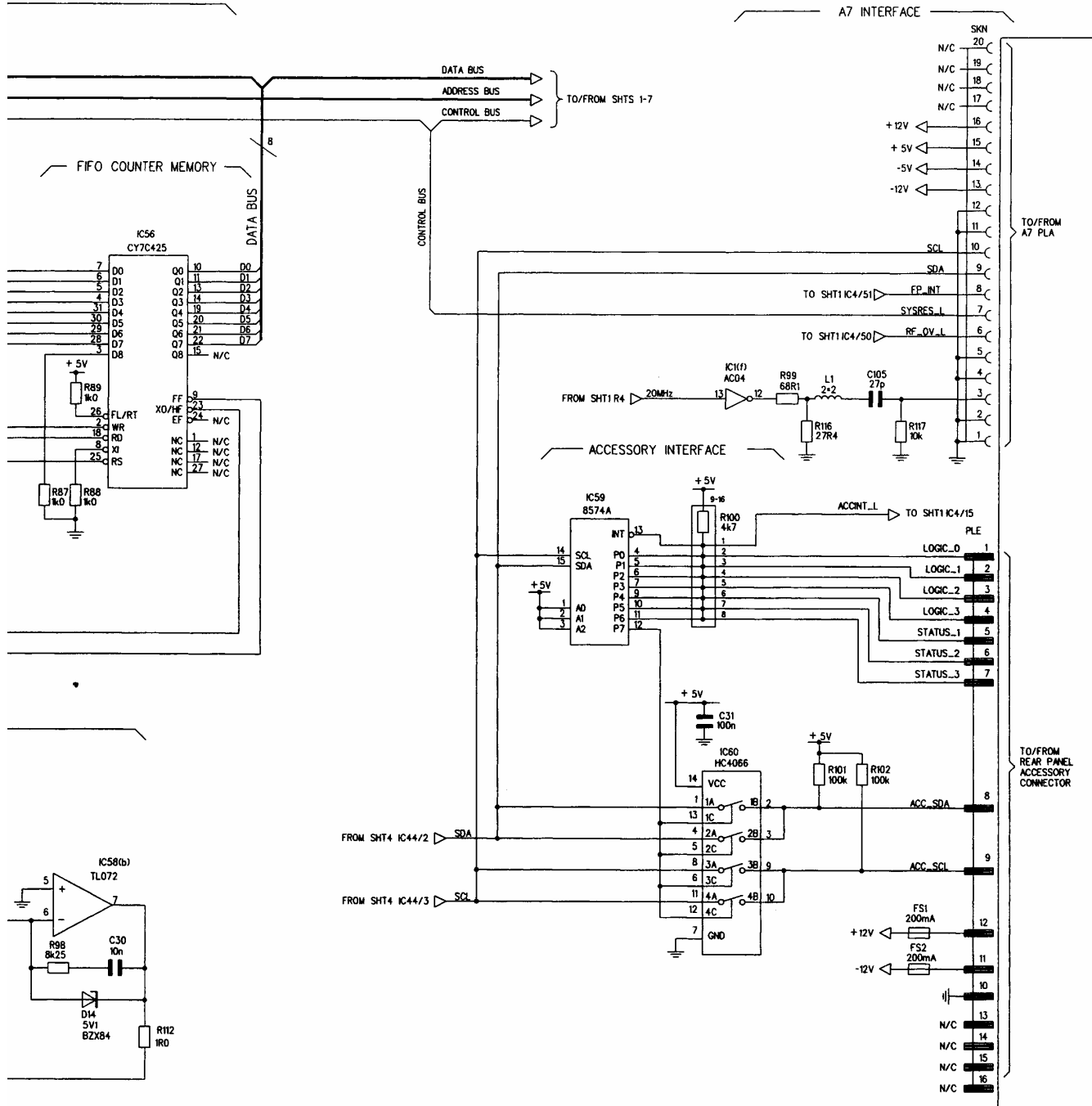
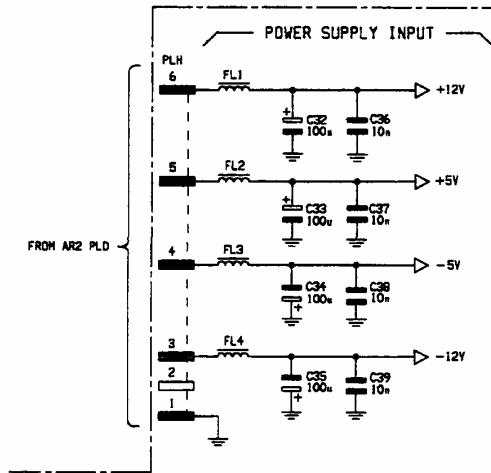


Fig. 7-107 A6/2 IF counter, VCO & phase detector, loop filter, accessory I/F - circuit

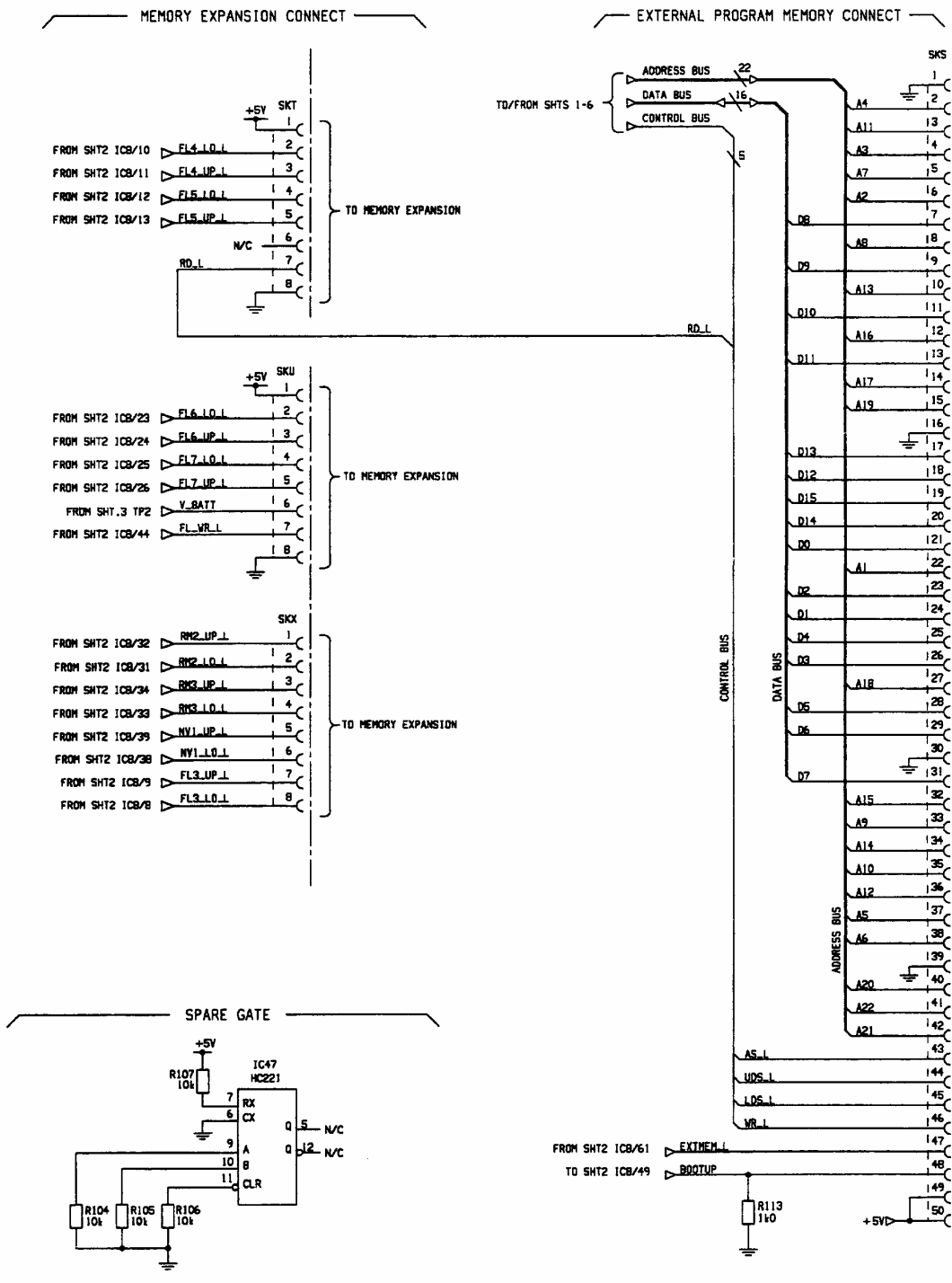


SUPPLY LINE TABLE				
IC	TYPE	+5V PINS)	GND PINS)	DECOUPLING CAPACITOR
1	74AC14	14	7	C50
2	44535/296	18, 52	1, 35	C51, 52
4	44535/298	18, 52	1, 35	C53, 54
5	68000	14, 52	16, 17, 56, 57	C55, 56
6	74HCT245	20	10	C57
7	74HCT245	20	10	C58
8	44535/294	18, 52	1, 35	C59, 60
9	44535/295	1, 44	22, 23	C61, 62
10	29C040	10	30	C63
11	29C040	10	30	C64
12	29C040	10	30	C65
13	29C040	10	30	C66
14	29C040	10	30	C67
15	29C040	10	30	C68
16	29C040	10	30	C69
17	29C040	10	30	C70
18	28C256	32	16	C71
19	28C256	32	16	C72
20	28C256	32	16	C73
21	28C256	32	16	C74
31	628128	8	24	C75
32	628128	8	24	C76
33	628128	8	24	C77
34	628128	8	24	C78
35	628128	8	24	C79
36	628128	8	24	C80
37	628128	8	24	C81
38	628128	8	24	C82
39	44535/297	1, 44	22, 23	C83, 84
40	74HCT245	20	10	C85
41	74HCT245	20	10	C86
42	74HCT541	20	10	C87
43	DS12850	28	15	C88
44	PC08594	20	10	C89
46	16C452	23, 40, 64	2, 7, 9, 22, 27, 42, 43, 54, 61	C90, 91, 92
47	74HC221	16	8	C93
48	74HC273	20	10	C94
49	74HC273	20	10	C95
50	74HCT541	20	10	C96
51	74HC273	20	10	C97
52	μP07210	40	20	C98
53	75160	20	10	C99
54	75161	20	10	C100
56	CY7C425	32	16	C101
57	74HC4046	16	8	C102
59	8574A	16	8	C103

IC'S ARE DECOUPLED AT +5V TO GROUND BY A 100µF CAPACITOR AS INDICATED

# Circuit diagrams A6/2

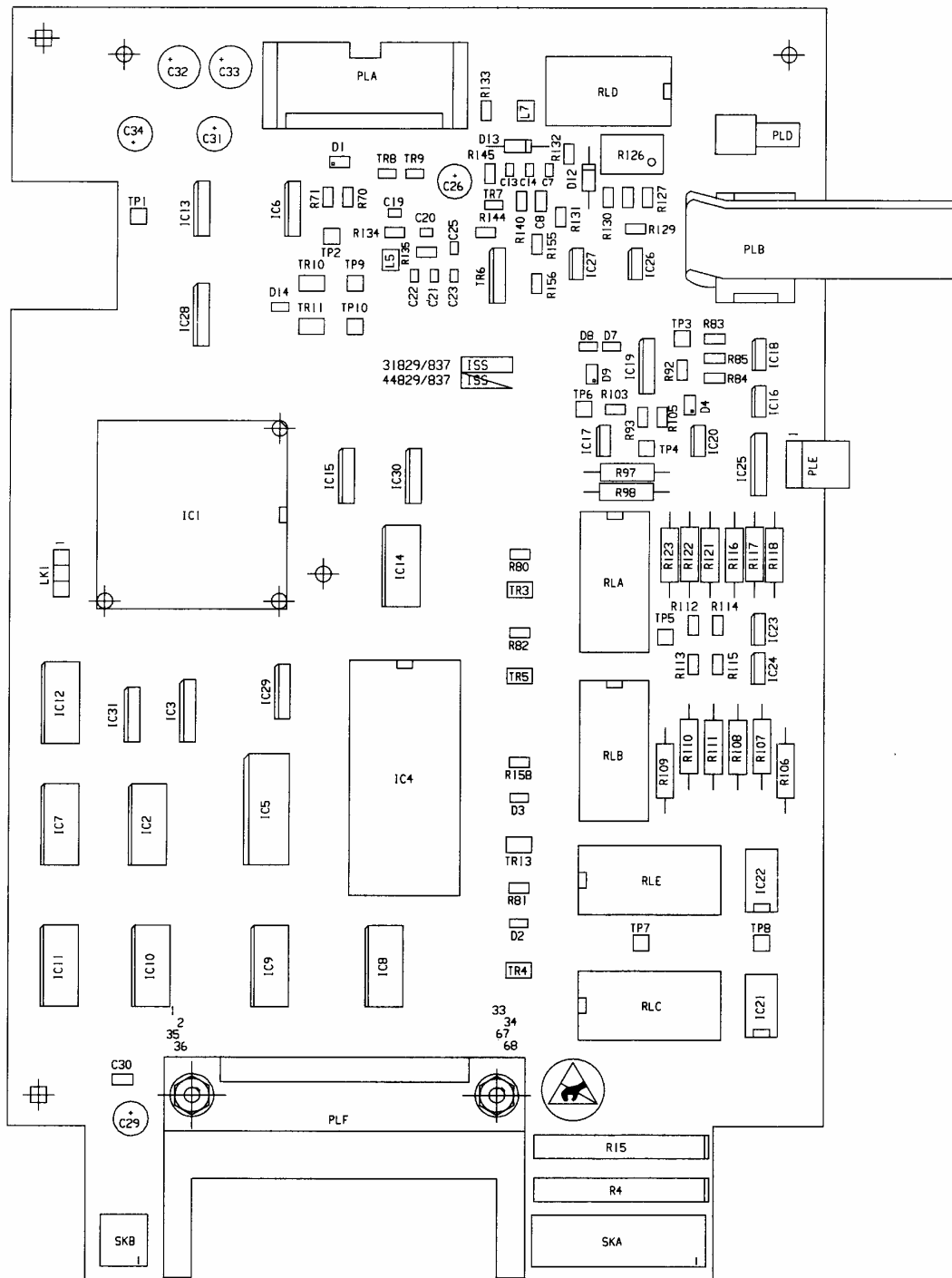
DECOUPLING CAPACITOR
C50
C51, 52
C53, 54
C55, 56
C57
C58
C59, 60
C61, 62
C63
C64
C65
C66
C67
C68
C69
C70
C71
C72
C73
C74
C75
C76
C77
C78
C79
C80
C81
C82
C83, 84
C85
C86
C87
C88
C89
C90, 91, 92
C93
C94
C95
C96
C97
C98
C99
C100
C101
C102
C103



DR AS INDICATED

Fig. 7-108 A6/2 Power supply and decoupling, memory connect - circuit

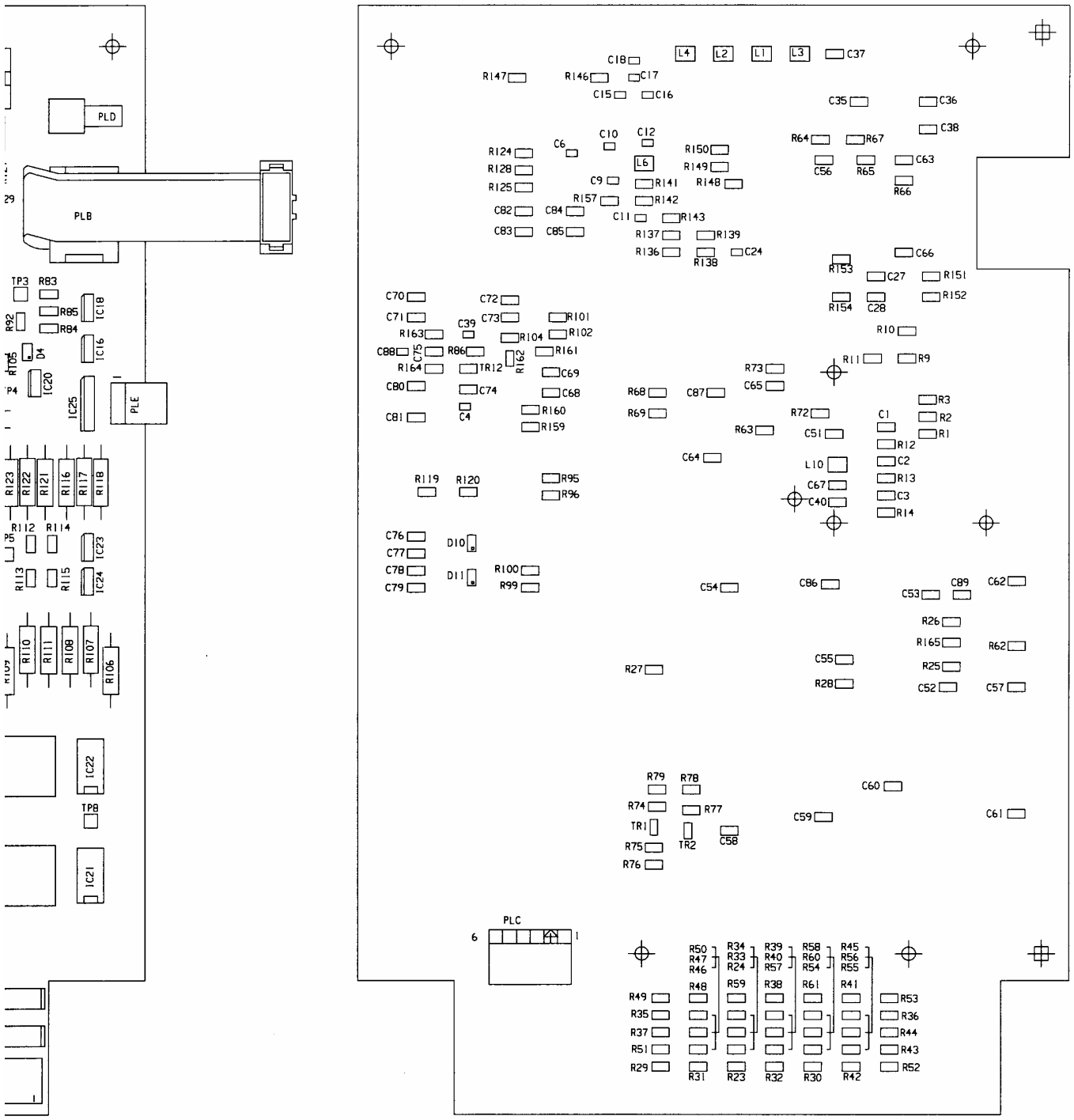
SERVICING DIAGRAMS

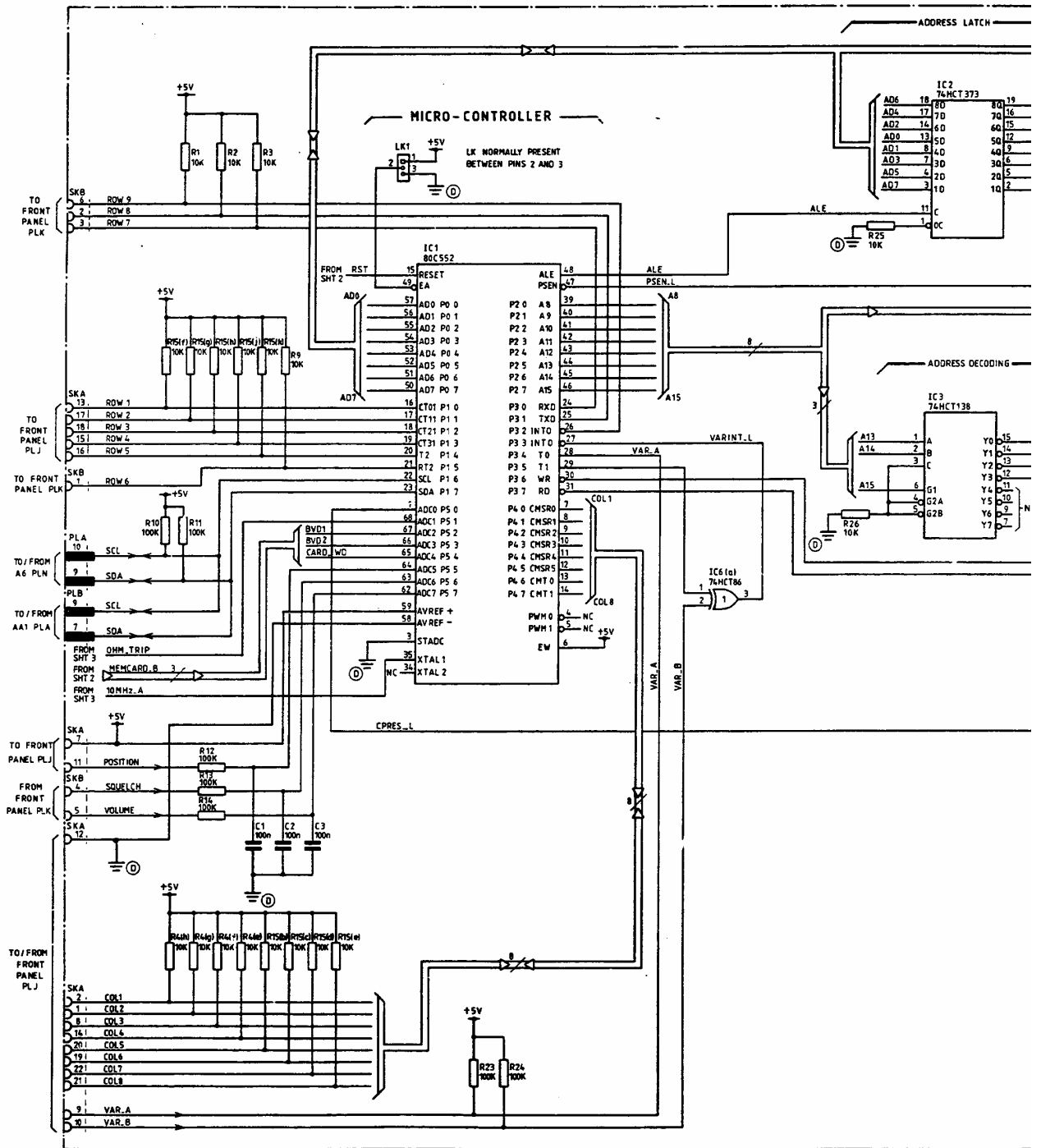


**Power supply and decoupling, memory connect A6/2**

Drg. No. 44829/83

# Component layout A7







# Circuit diagrams A7

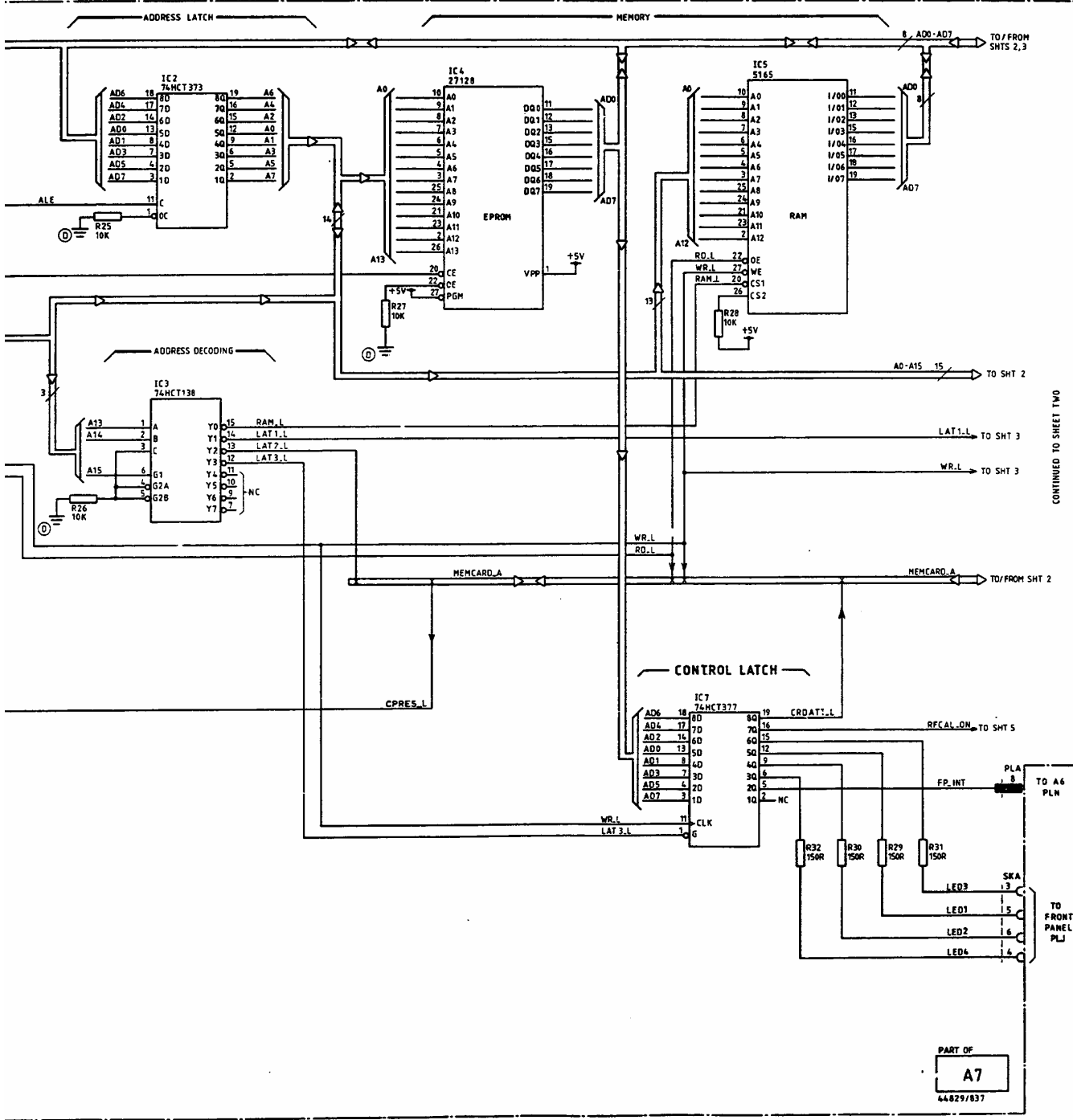
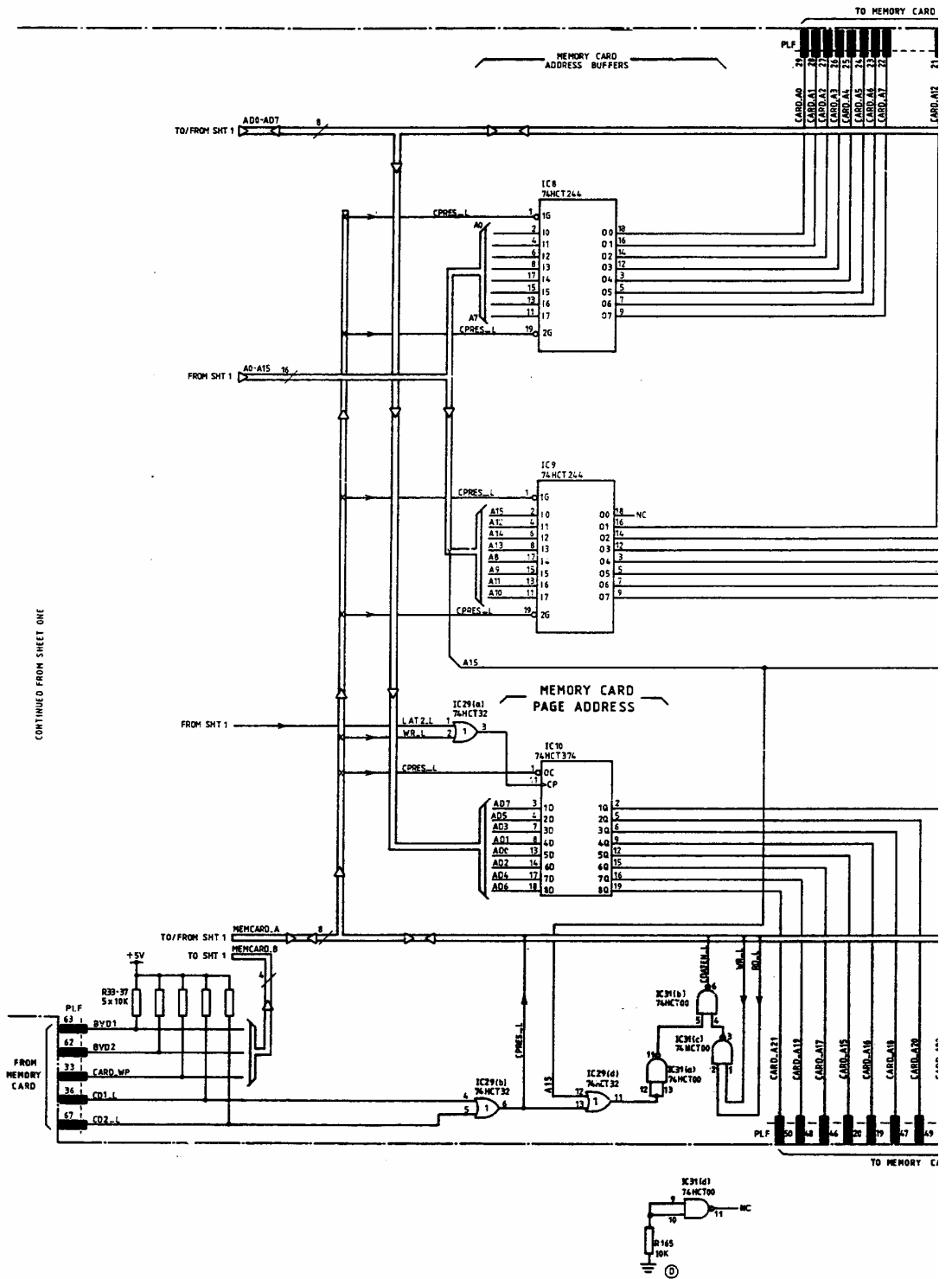


Fig. 7-110 A7 Microcontroller - circuit



# Circuit diagrams A7

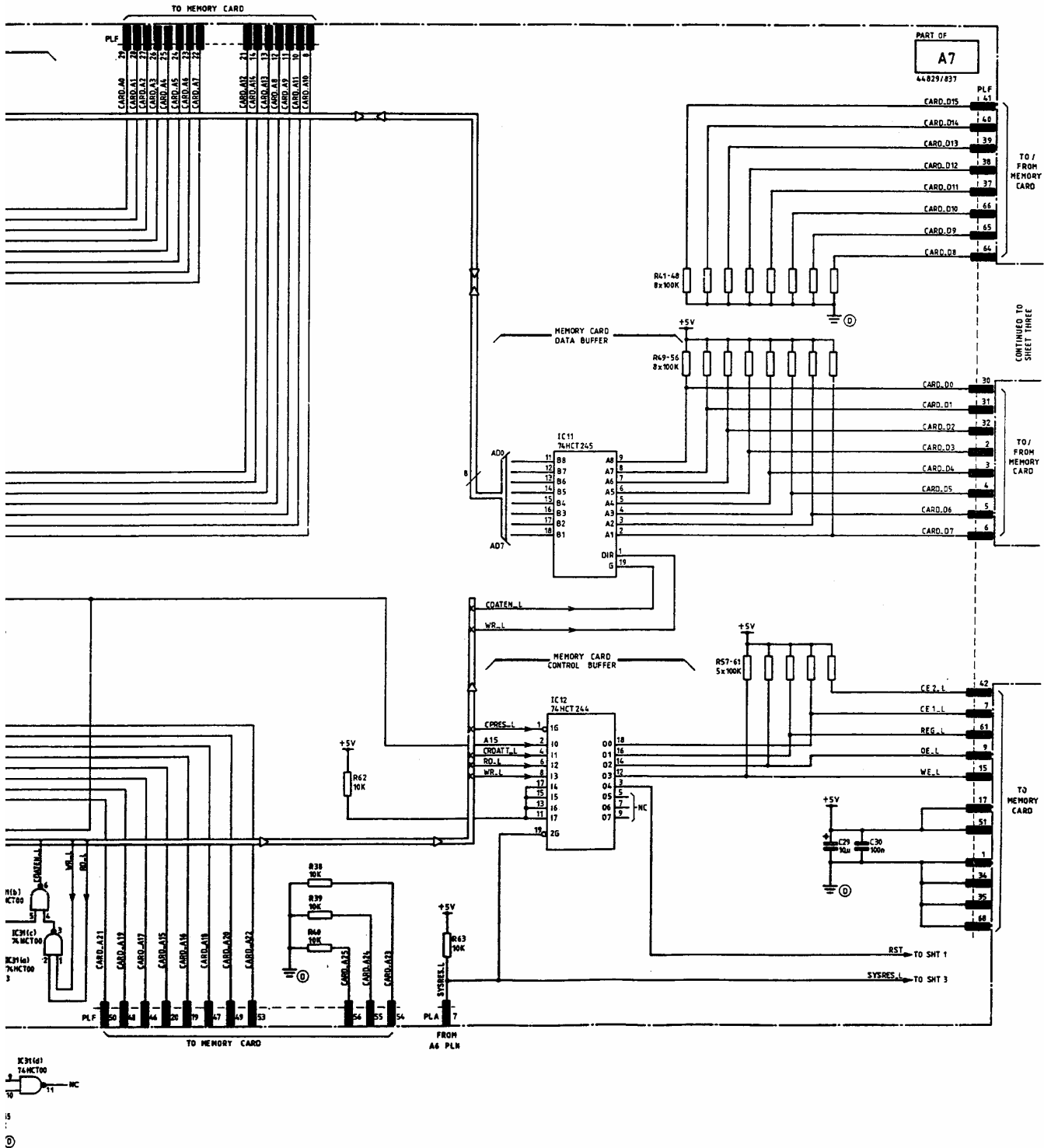
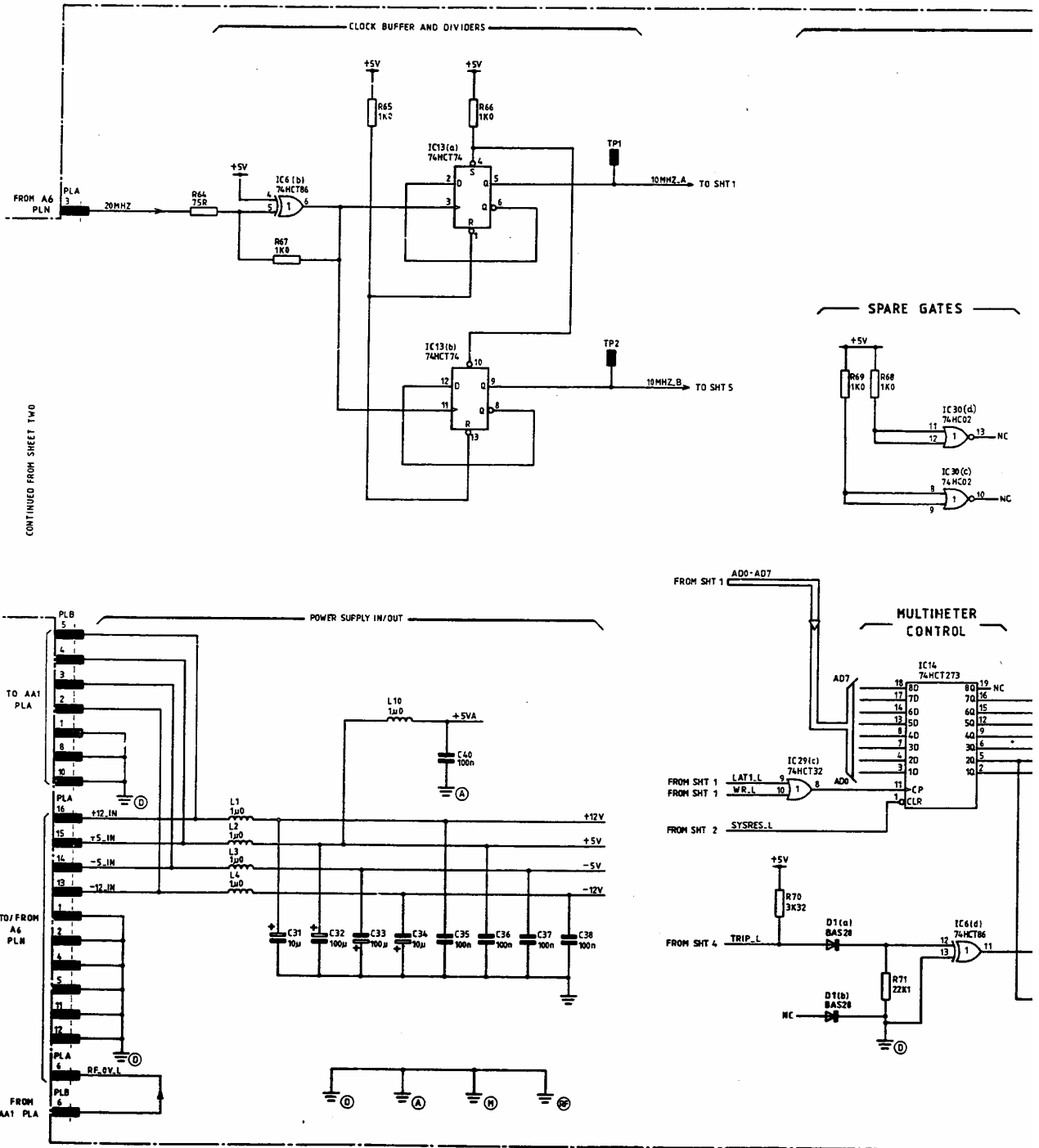


Fig. 7-111 A7 Memory card interface - circuit



# Circuit diagrams A7

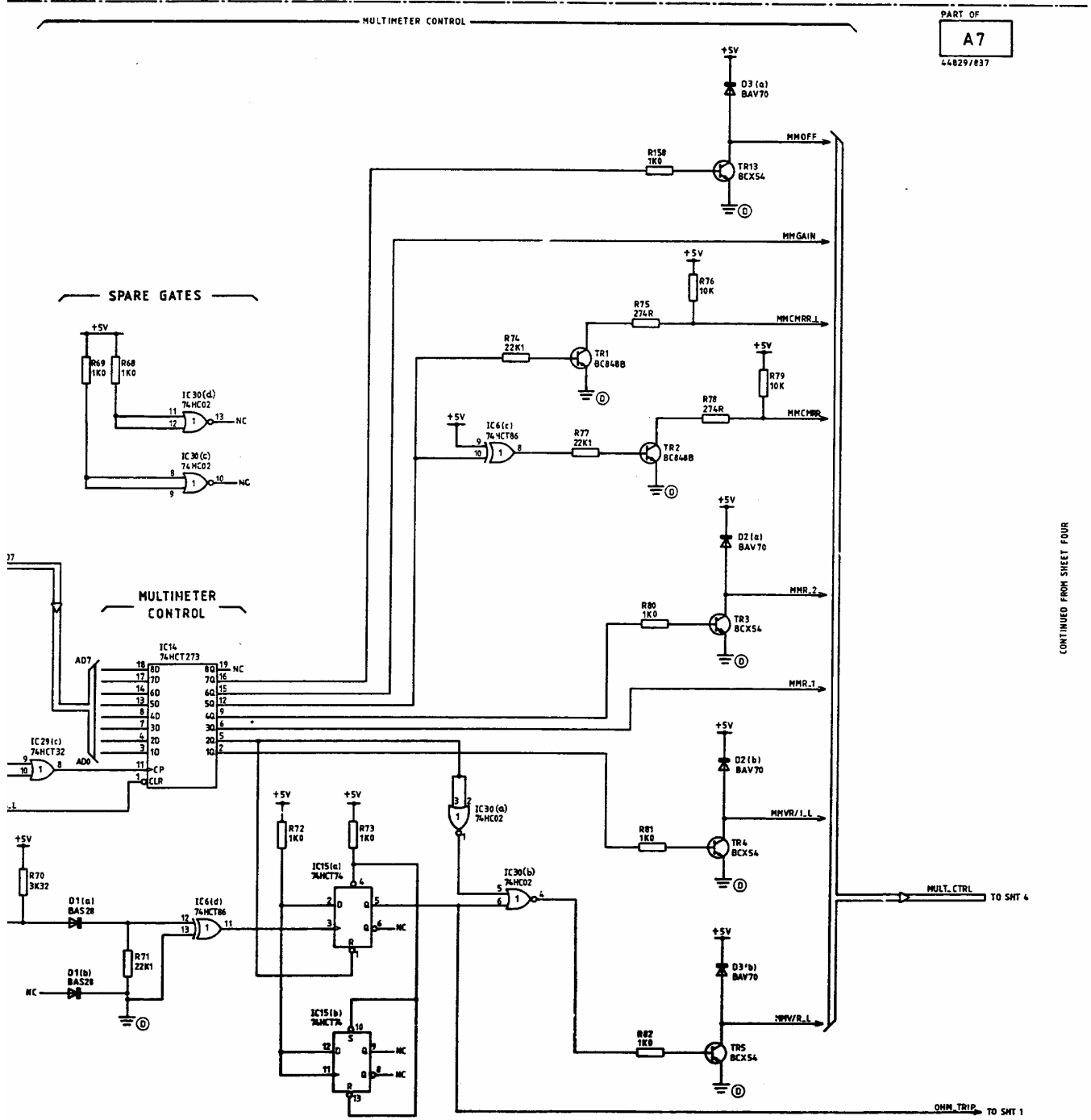
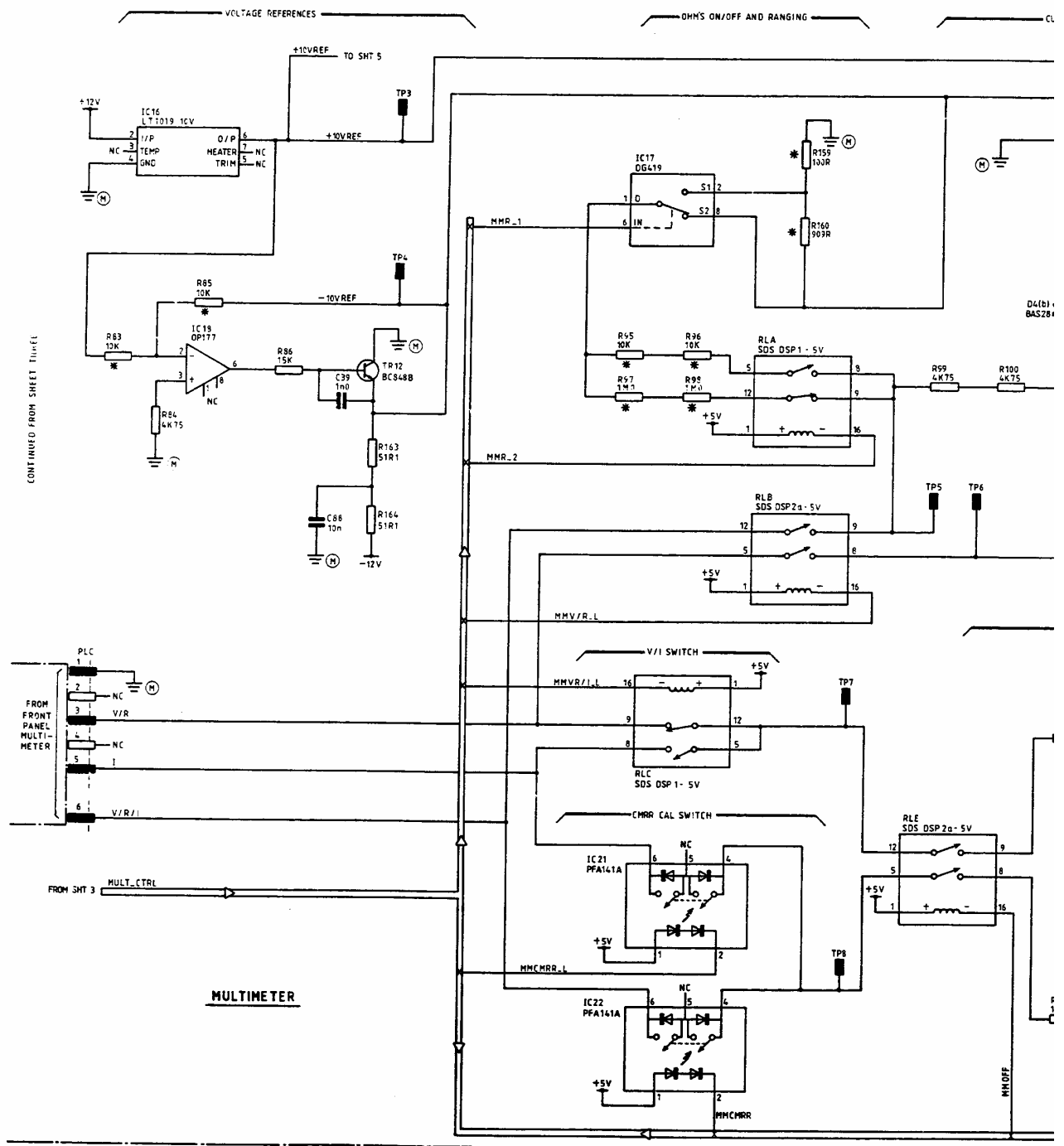


Fig. 7-112 A7 Clock buffer and dividers, multimeter control, PS I/O - circuit

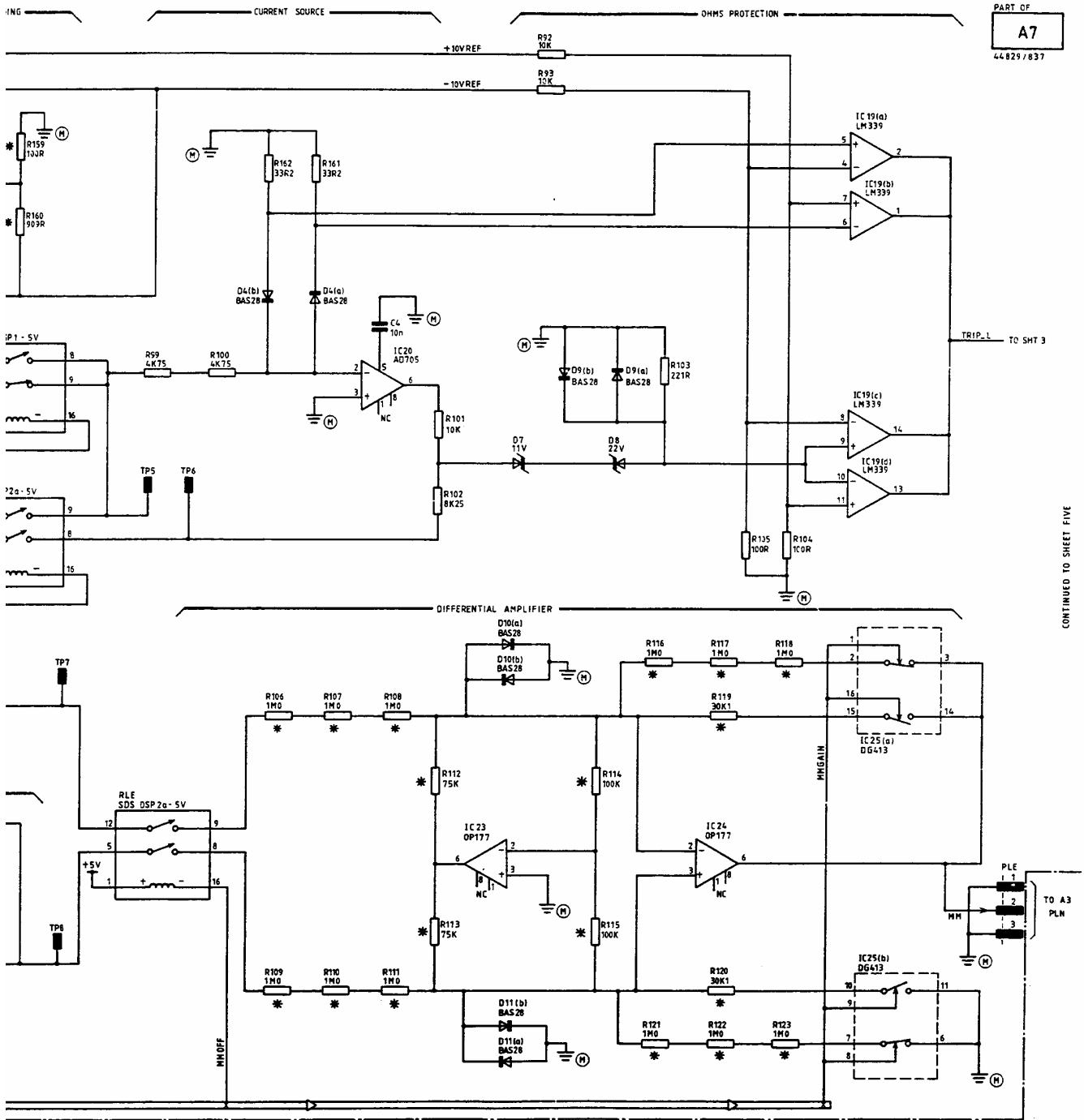


CONTINUED FROM SHEET THREE

MULTIMETER

\* = 0.1%  
15 ppm

# Circuit diagrams **A7**



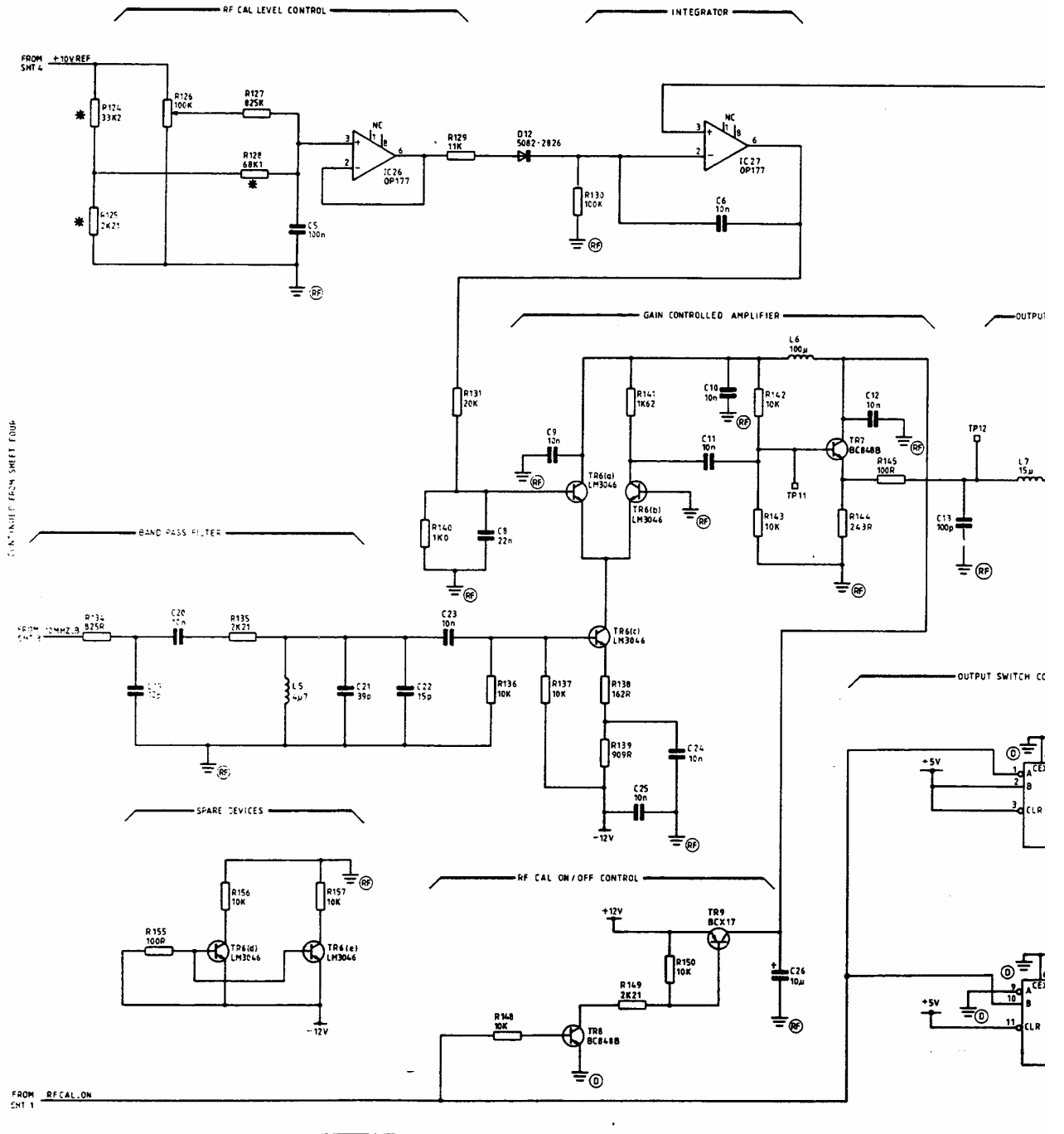
PART OF  
**A7**  
44 829 / 837

CONTINUED TO SHEET FIVE

1/2  
pm

Fig. 7-113 A7 Multimeter - circuit

\* = 0.1%  $\pm$ 5ppm





# Circuit diagrams A7

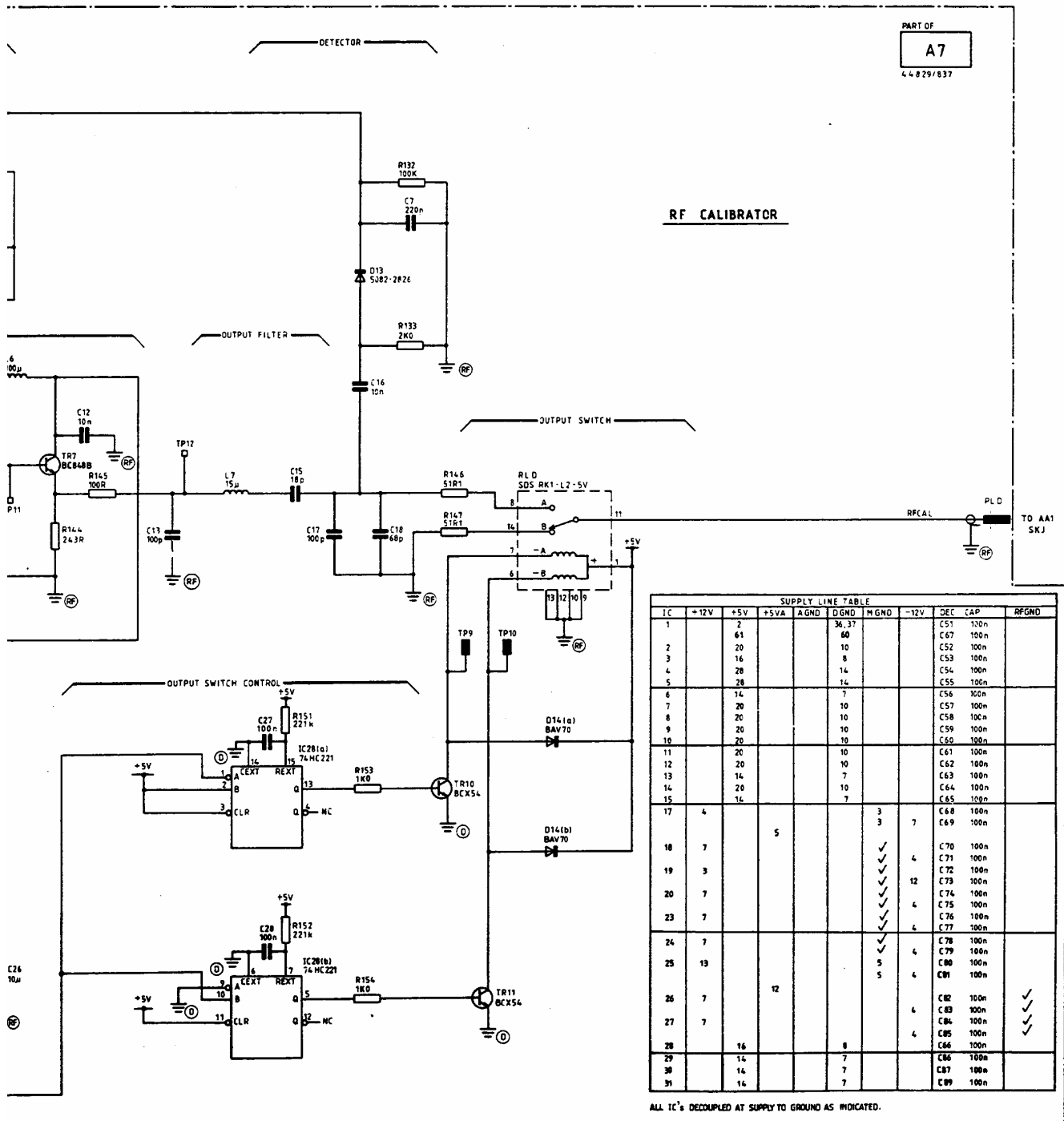
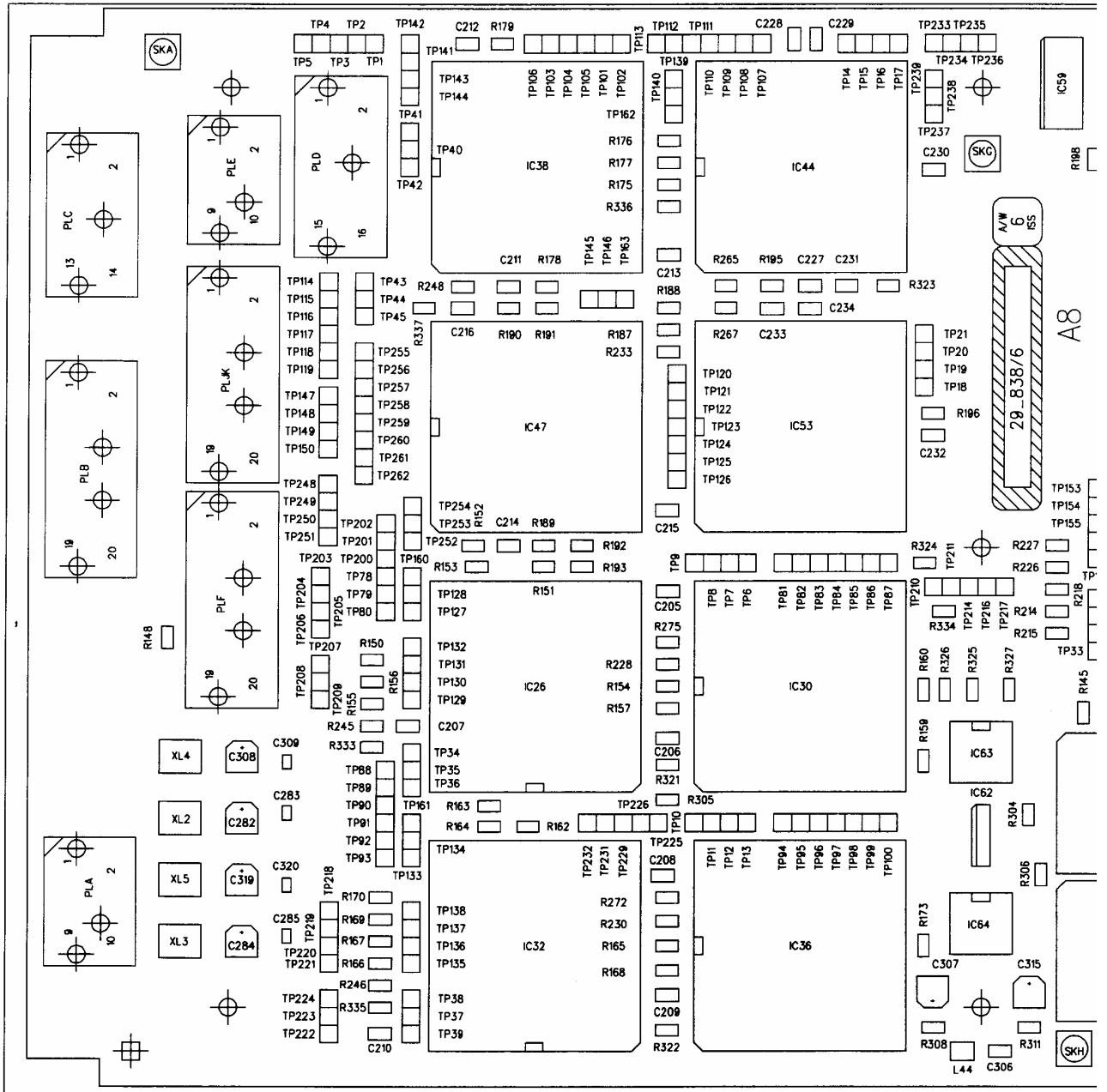


Fig. 7-114 A7 RF calibrator - circuit

SERVICING DIAGRAMS



RF calibrator **A7**

Drg. No. 44829/838 Sheet 1 of

# Component layout A8

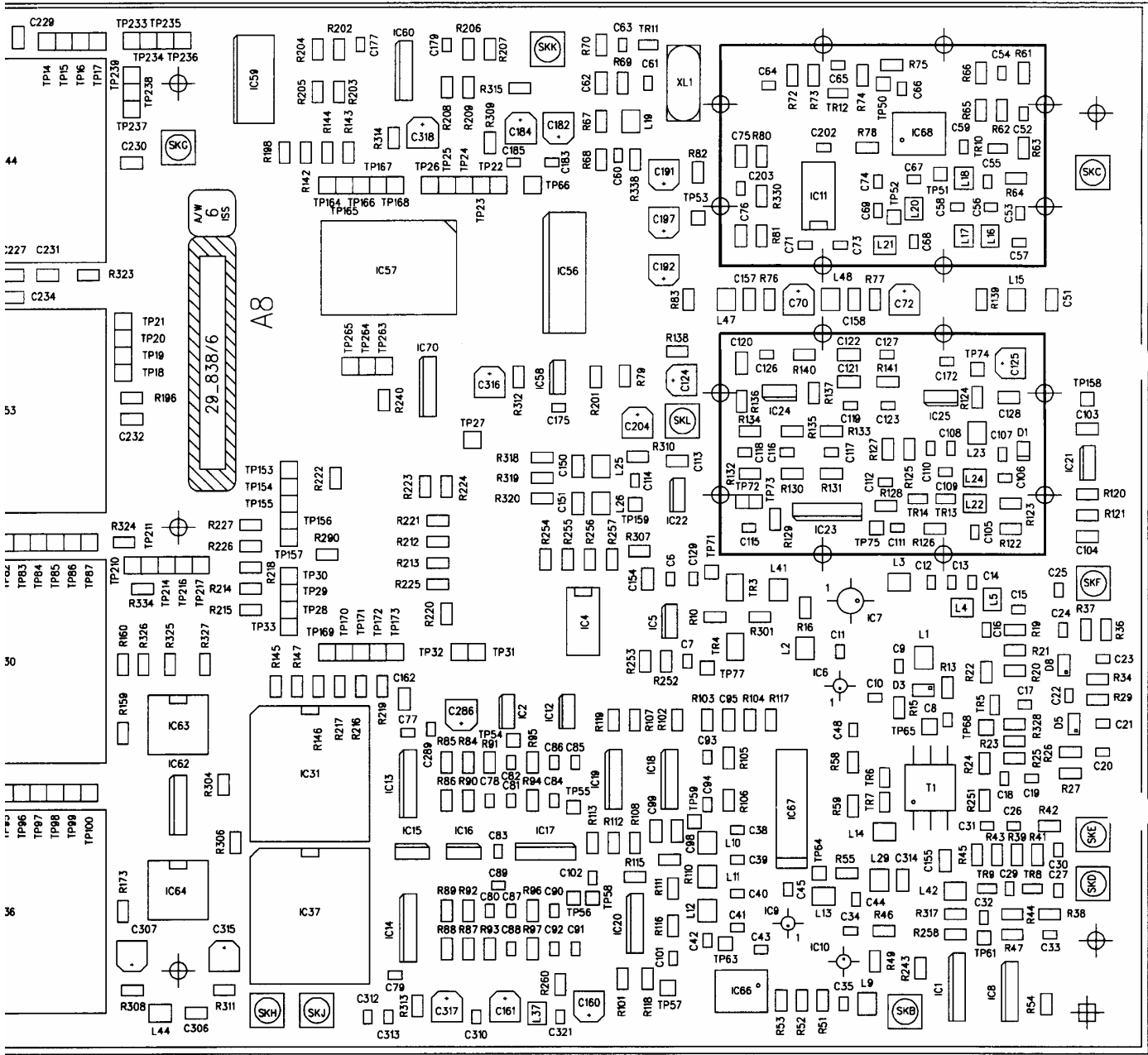
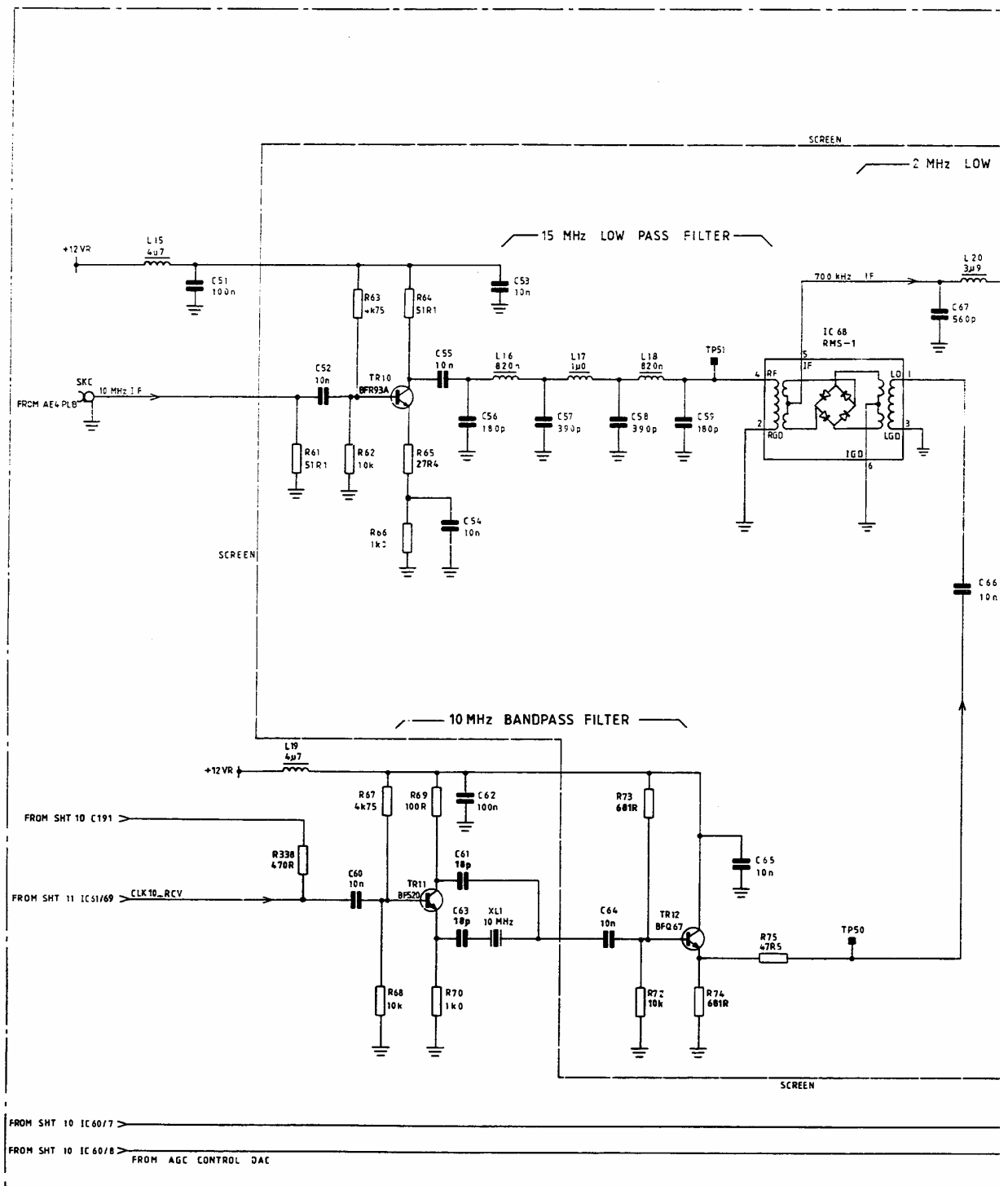


Fig. 7-115 A8 Complex modem and IF - component layout, component side



Circuit diagrams **A8**

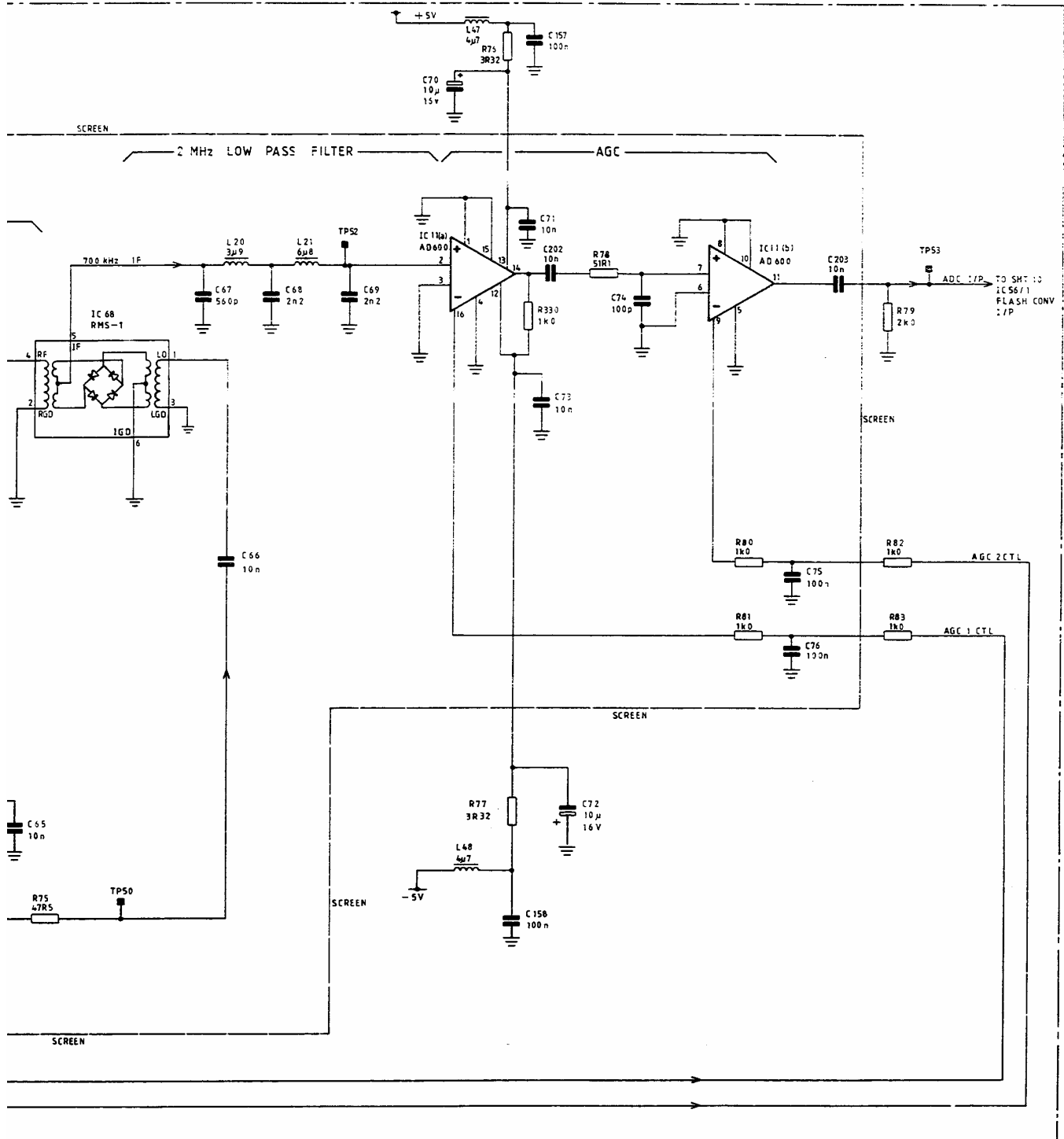
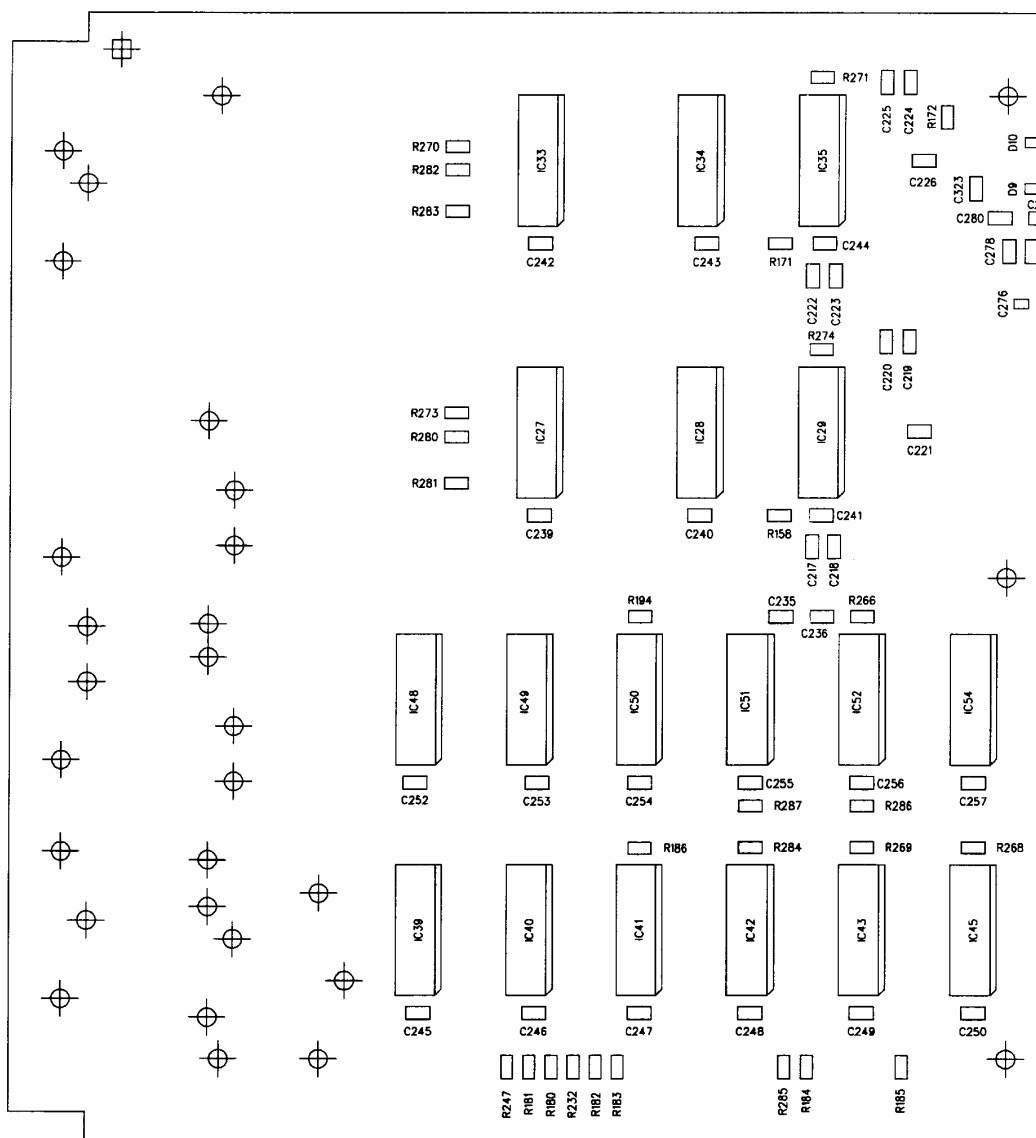


Fig. 7-116 A8 2 MHz, 15 MHz low-pass and 10 MHz band-pass filters, AGC - circuit

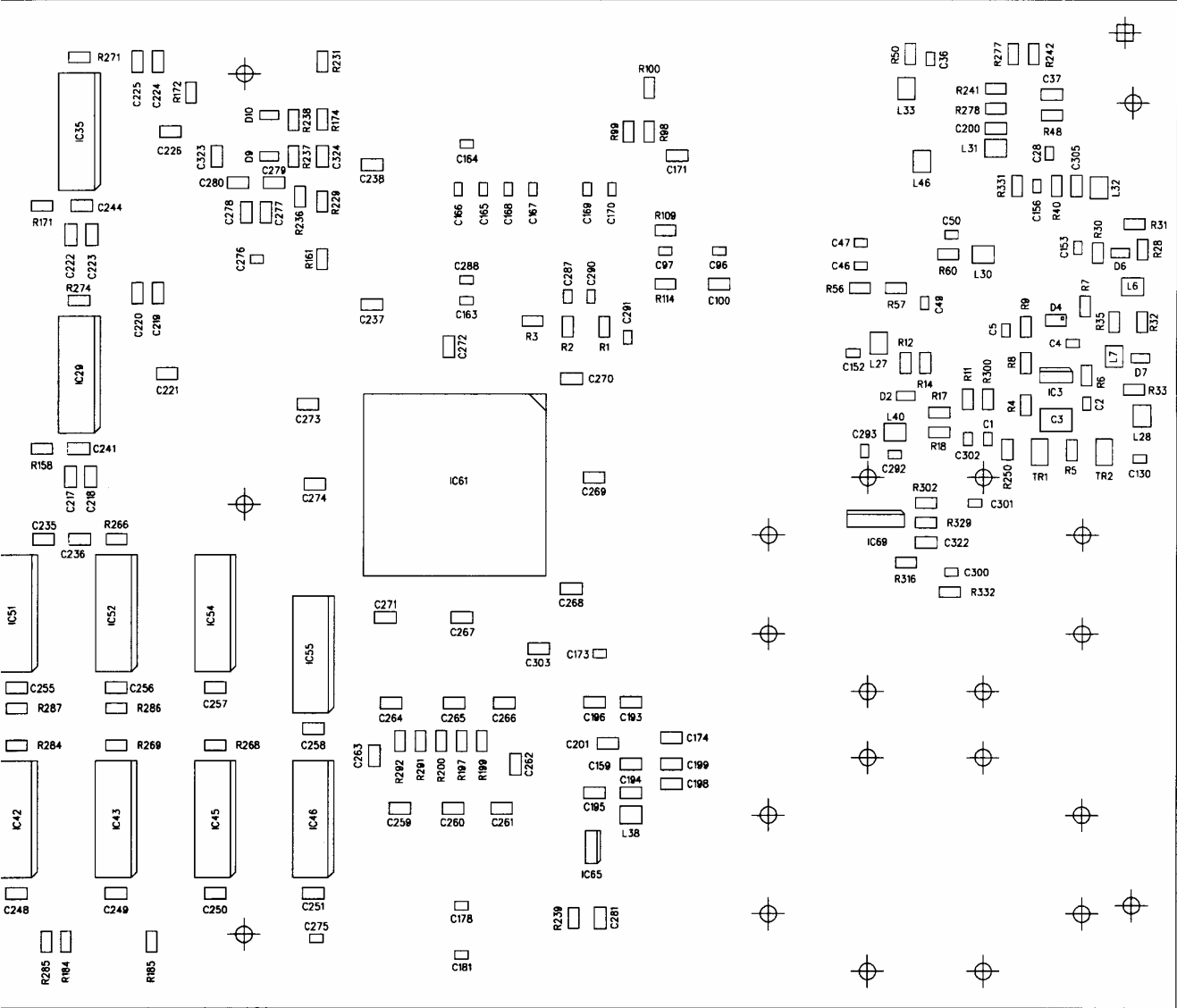
SERVICING DIAGRAMS



SOLDE

2 MHz, 15 MHz low-pass and 10 MHz band-pass filters, AGC **A8**

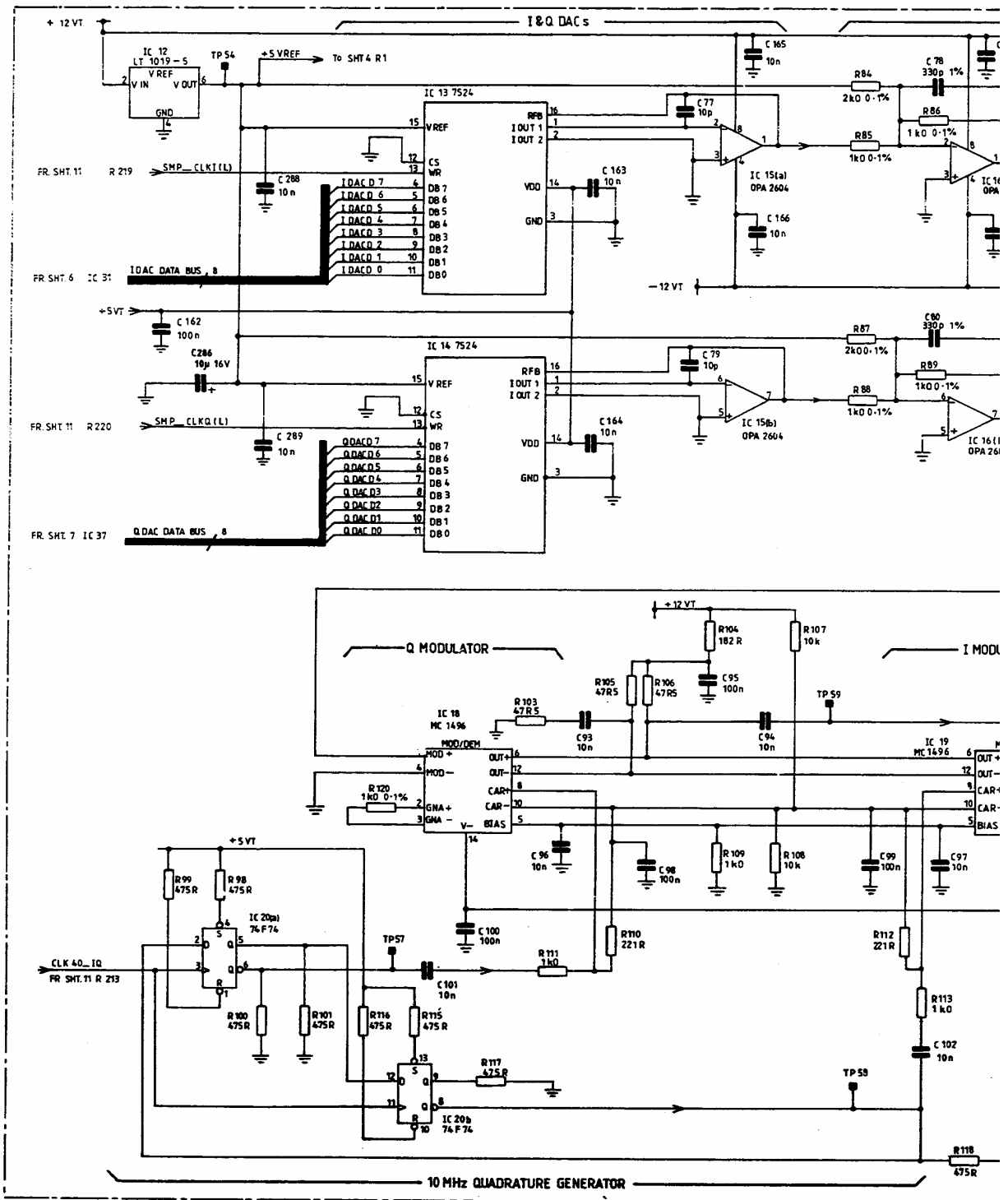
# Component layout A8



SOLDER SIDE

3

Fig. 7-117 A8 Complex modem and IF - component layout, solder side





Circuit diagrams **A8**

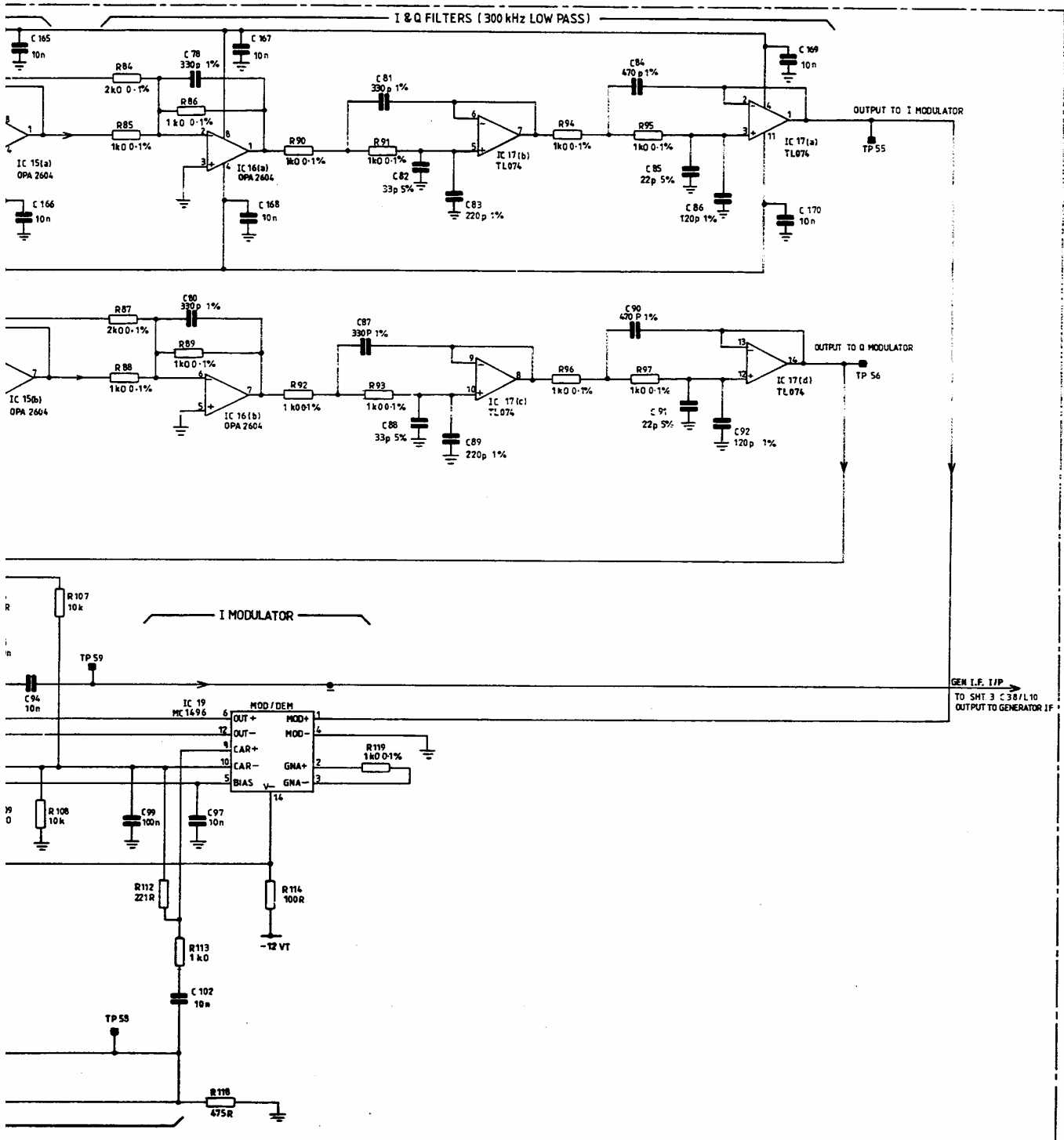
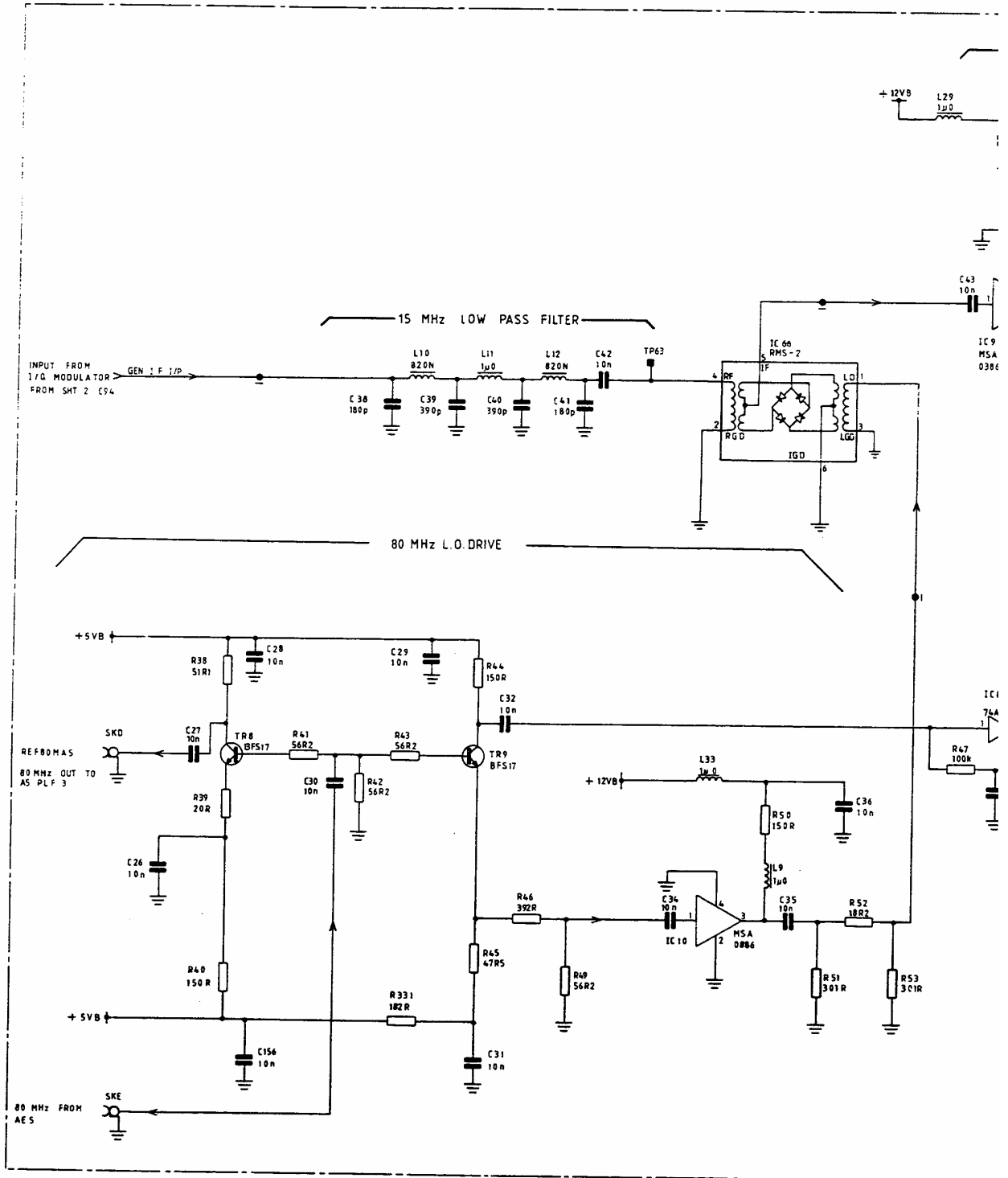


Fig. 7-118 A8 I and Q DACs, filters and modulators, quadrature generator - circuit



Circuit diagrams **A8**

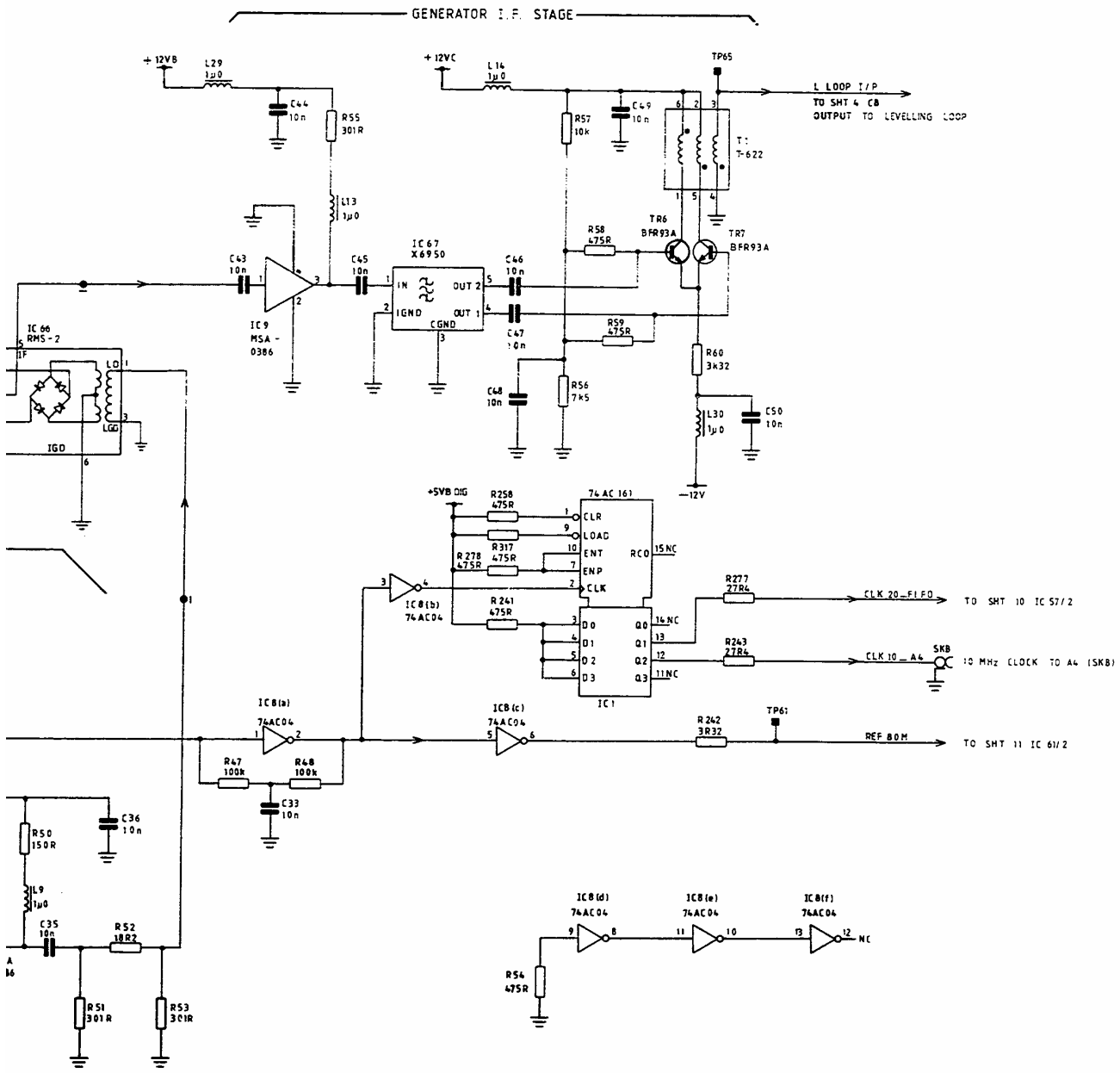
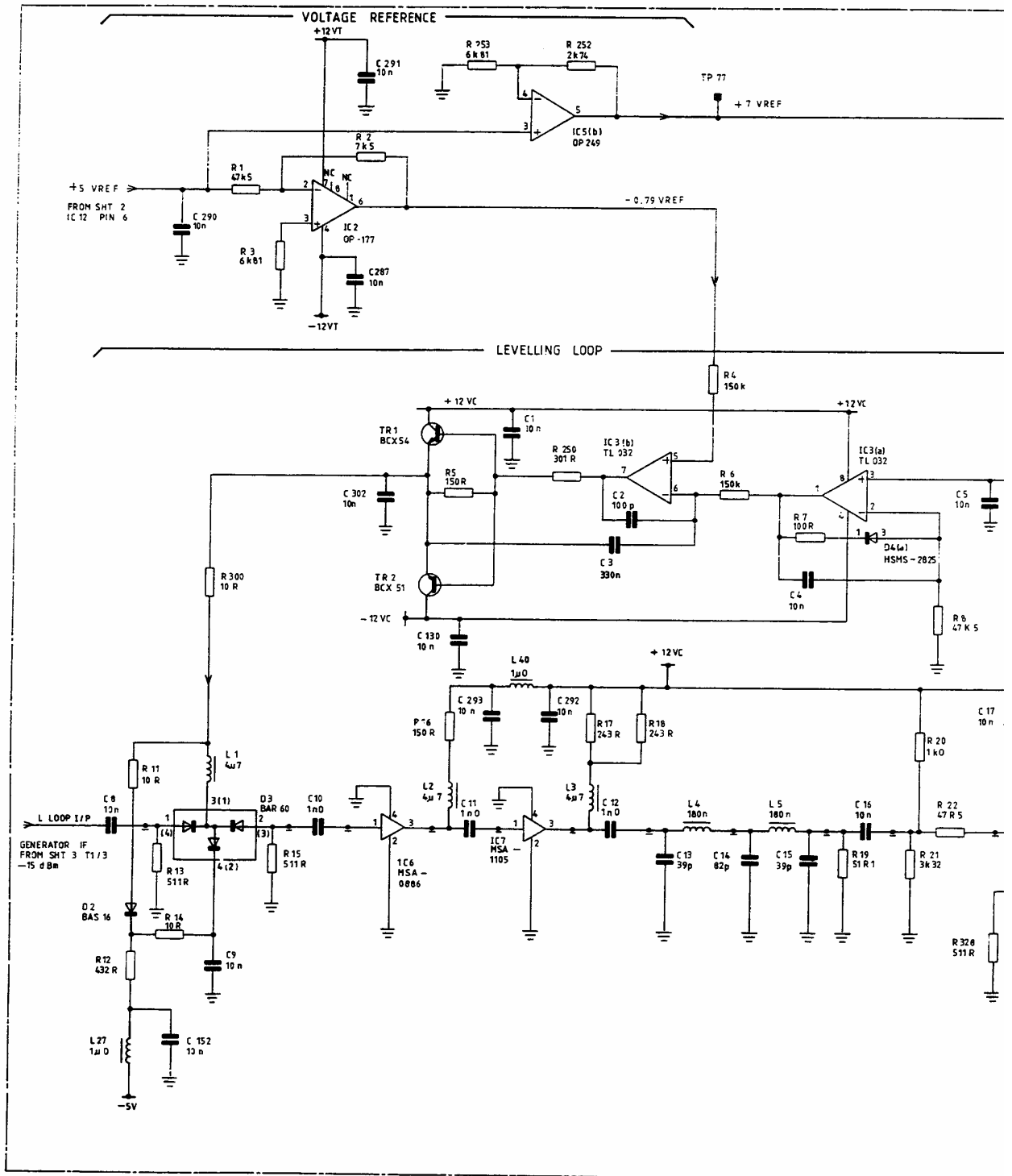


Fig. 7-119 A8 15 MHz low-pass filter, generator IF, 80 MHz LO drive - circuit



# Circuit diagrams **A8**

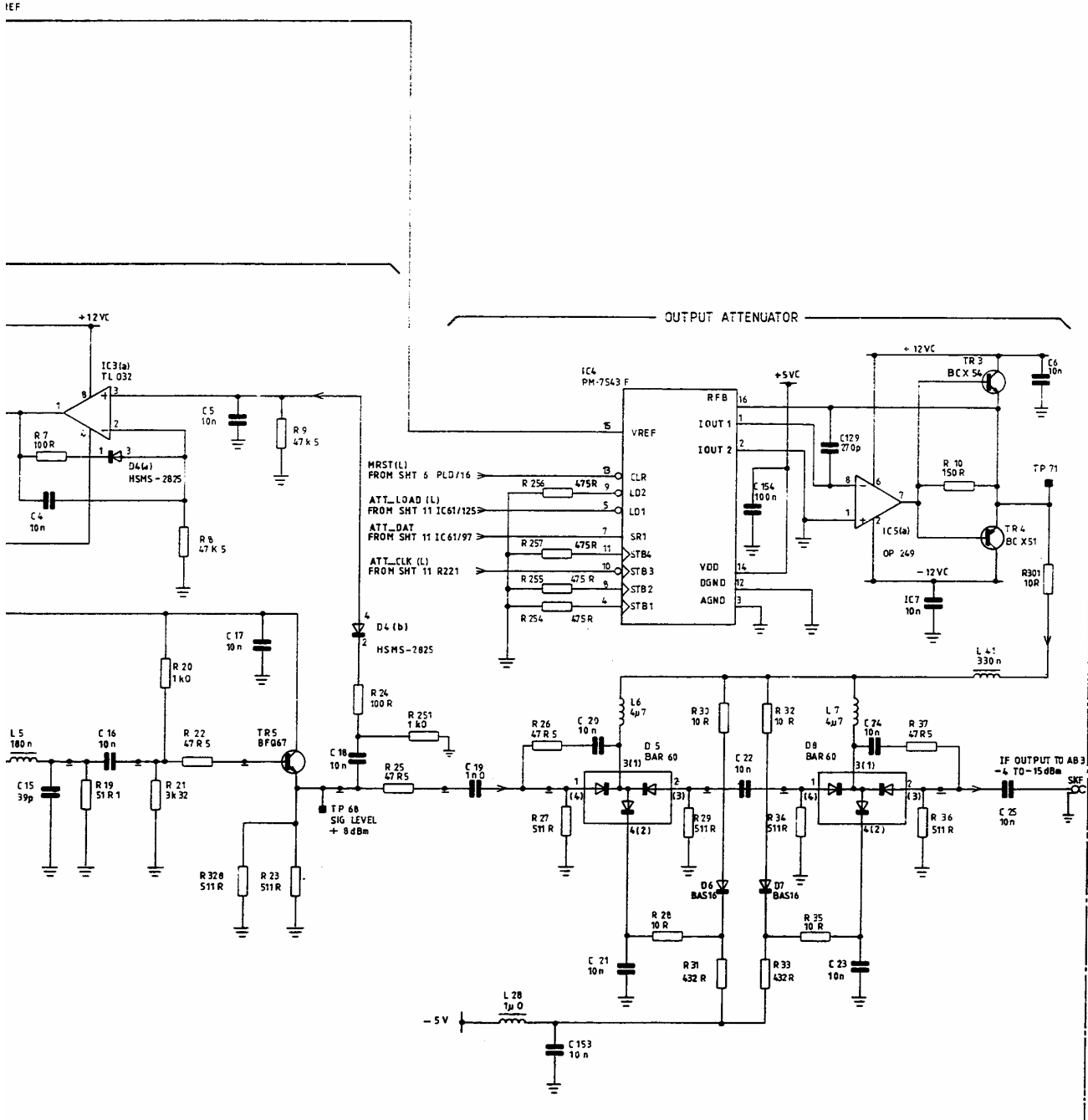
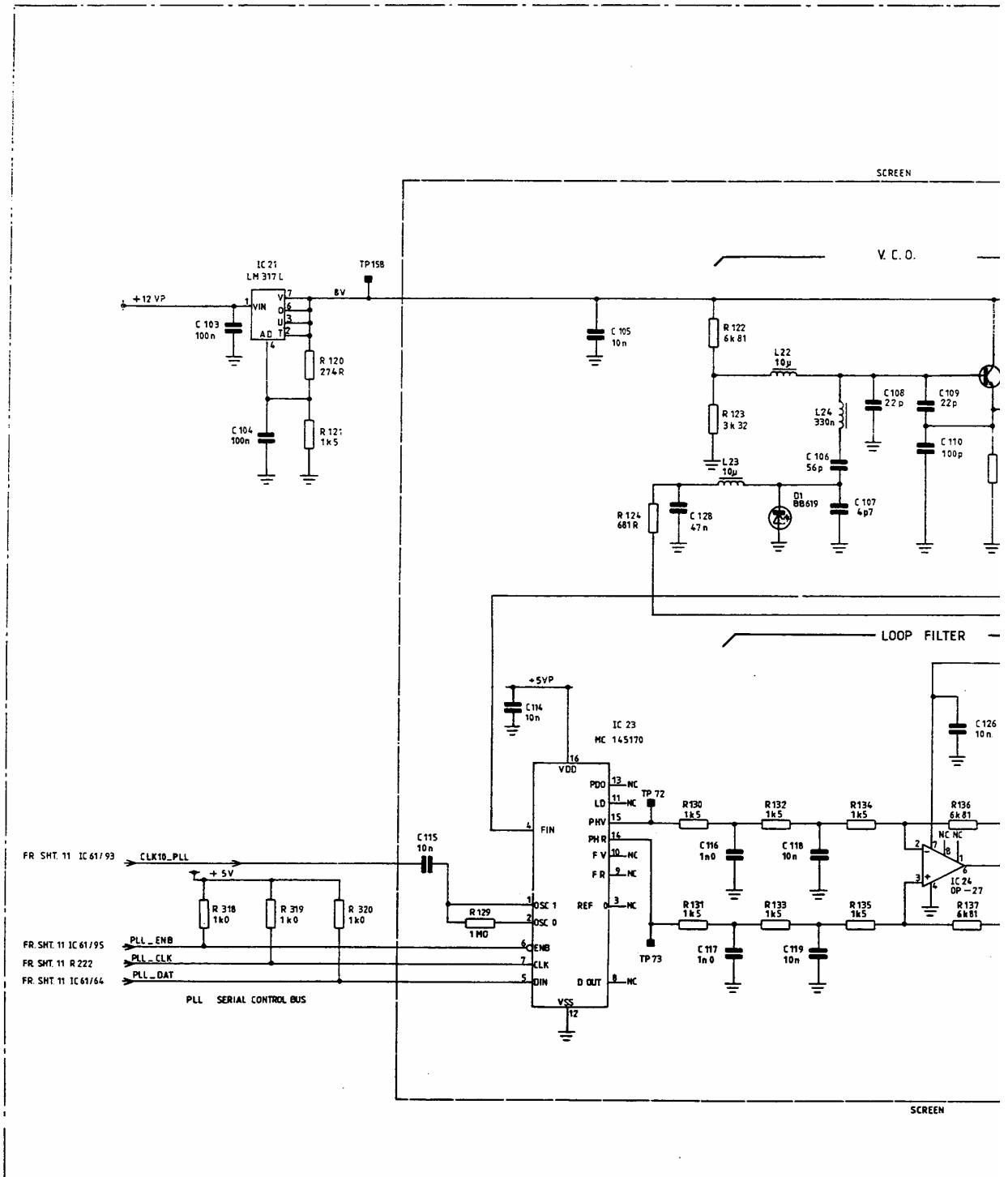


Fig. 7-120 A8 Voltage reference, levelling loop, and output attenuator - circuit



# Circuit diagrams A8

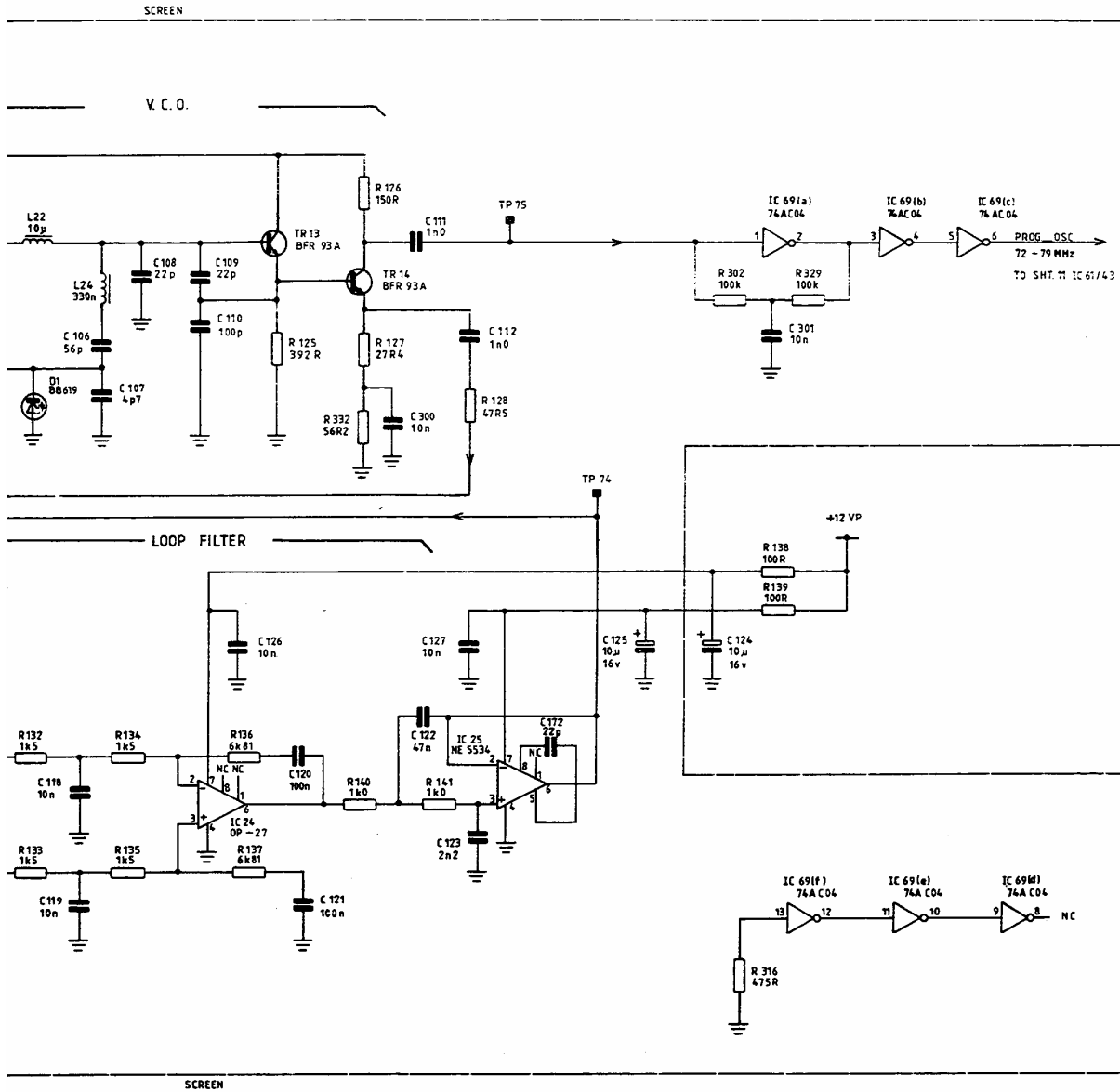
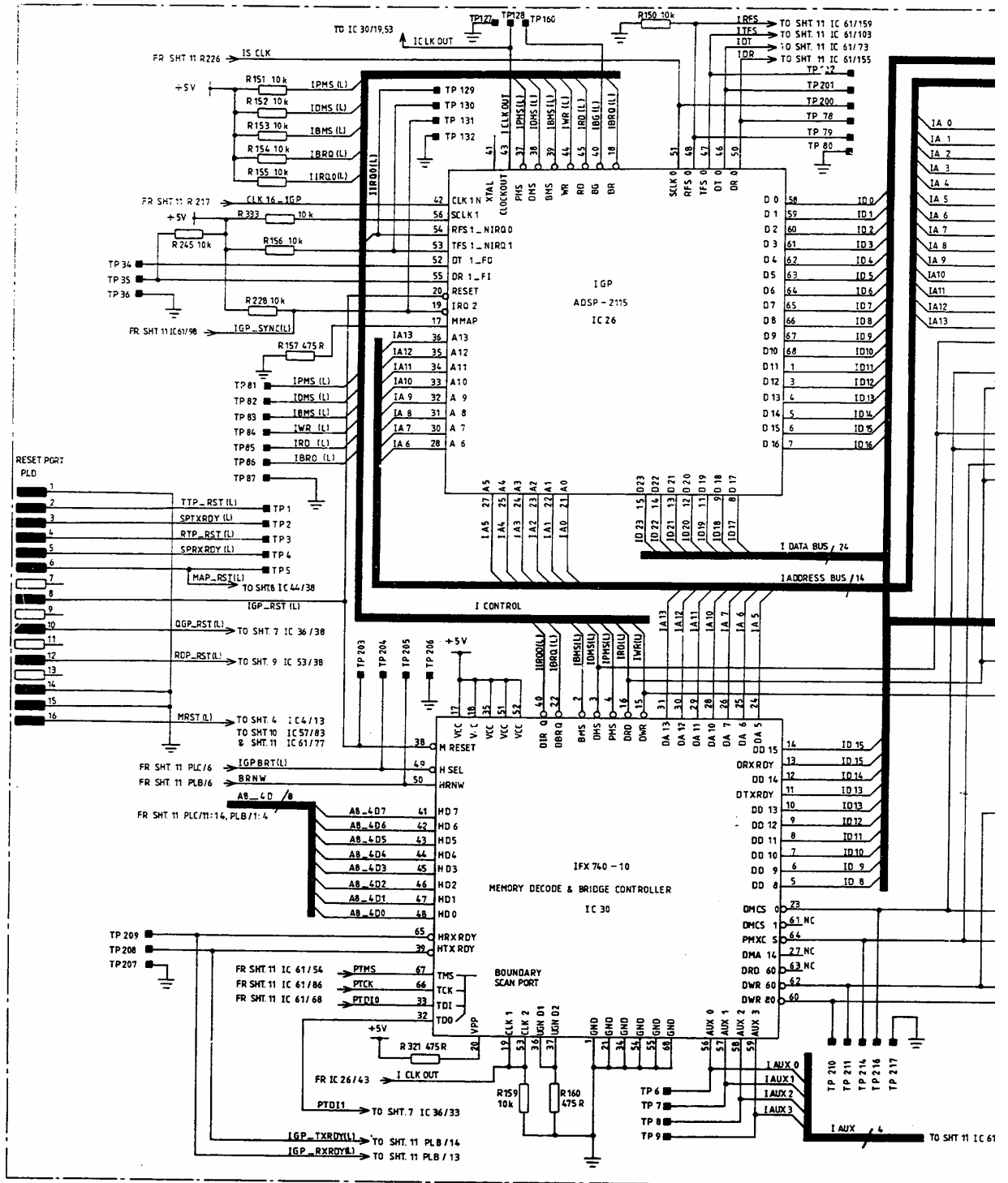


Fig. 7-121 A8 VCO and loop filter - circuit





# Circuit diagrams A8

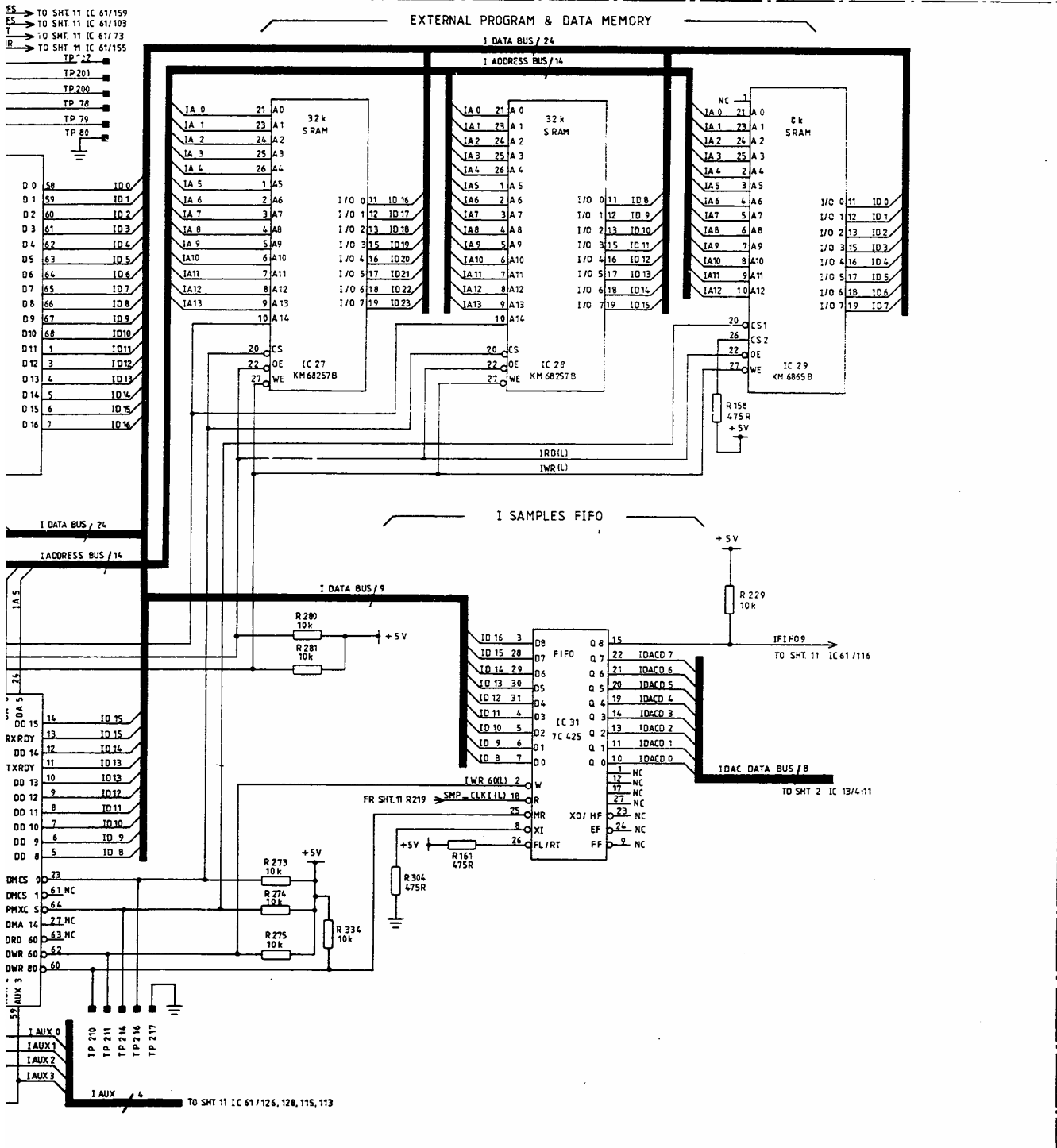
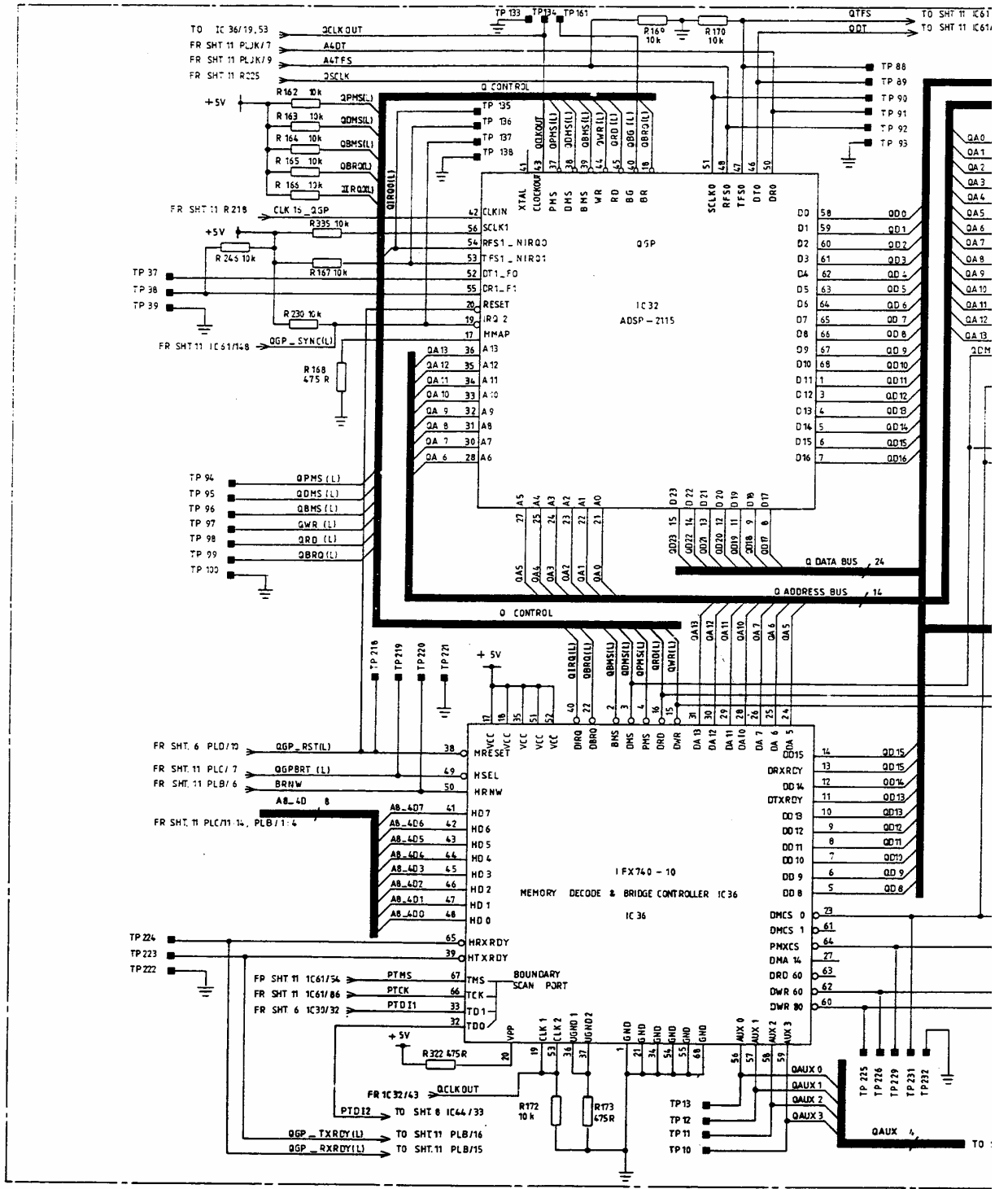


Fig. 7-122 A8 External program & data memory, I samples FIFO - circuit



# Circuit diagrams A8

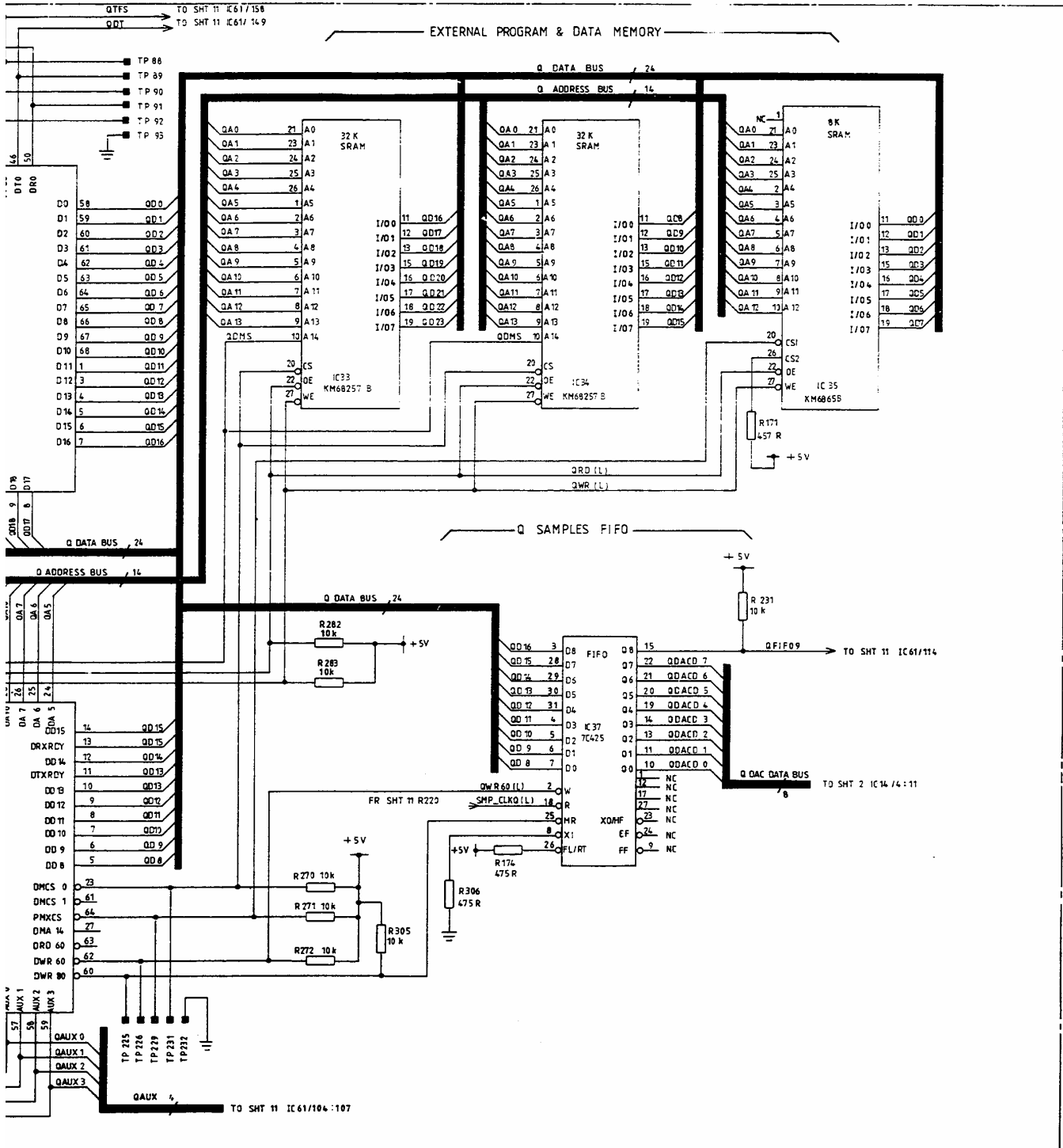
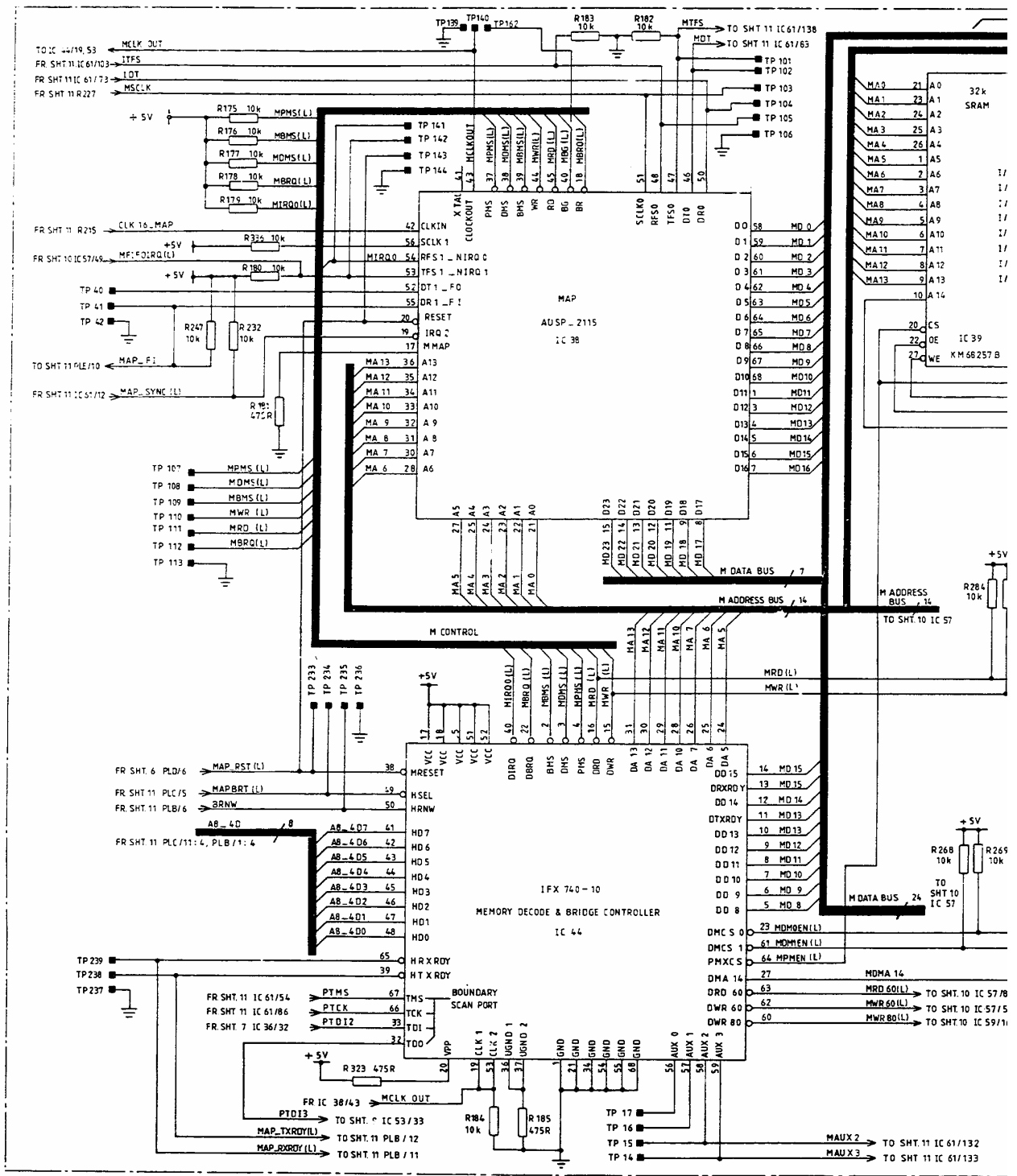


Fig. 7-123 A8 External program & data memory, Q samples FIFO - circuit



# Circuit diagrams A8

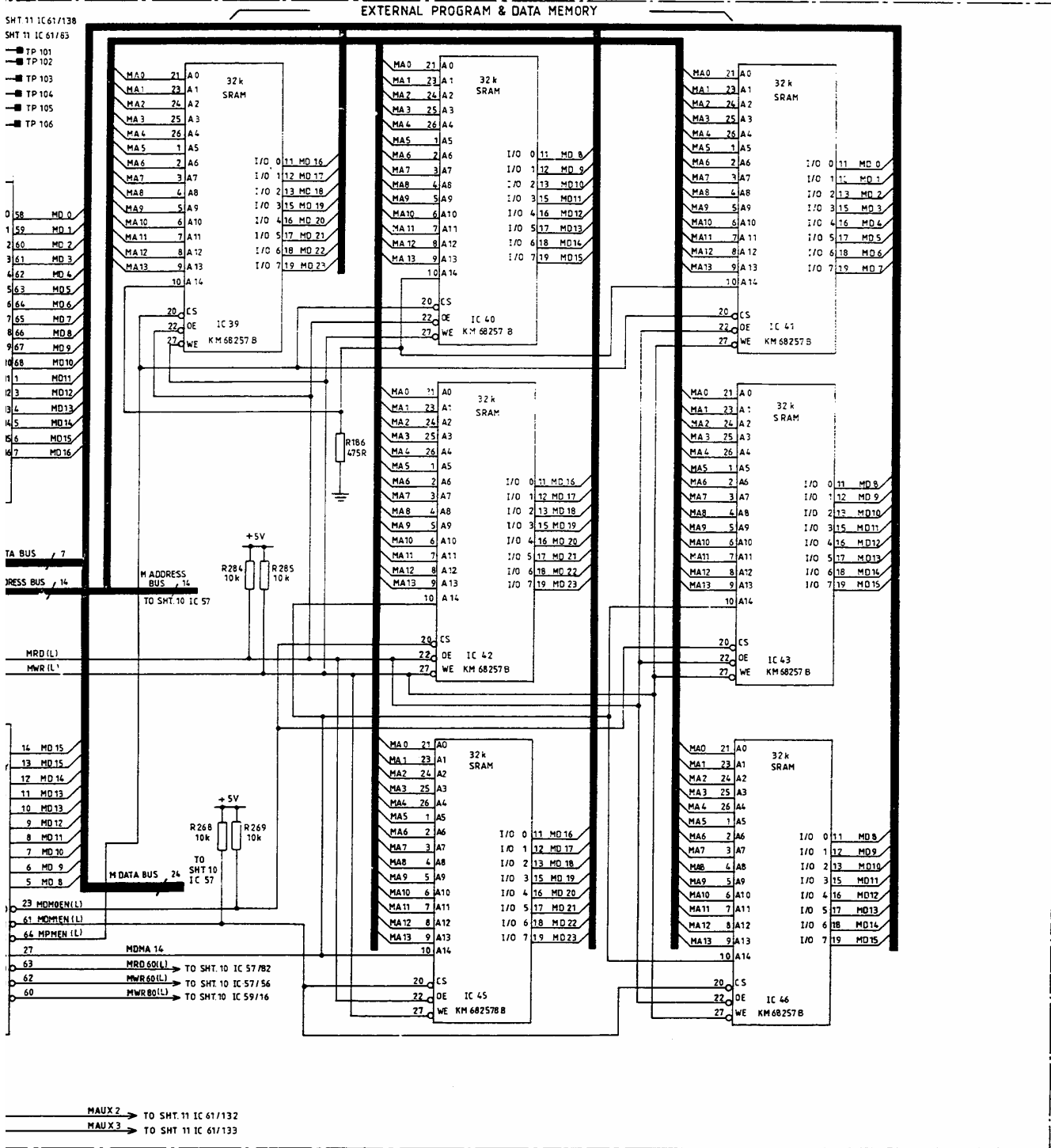
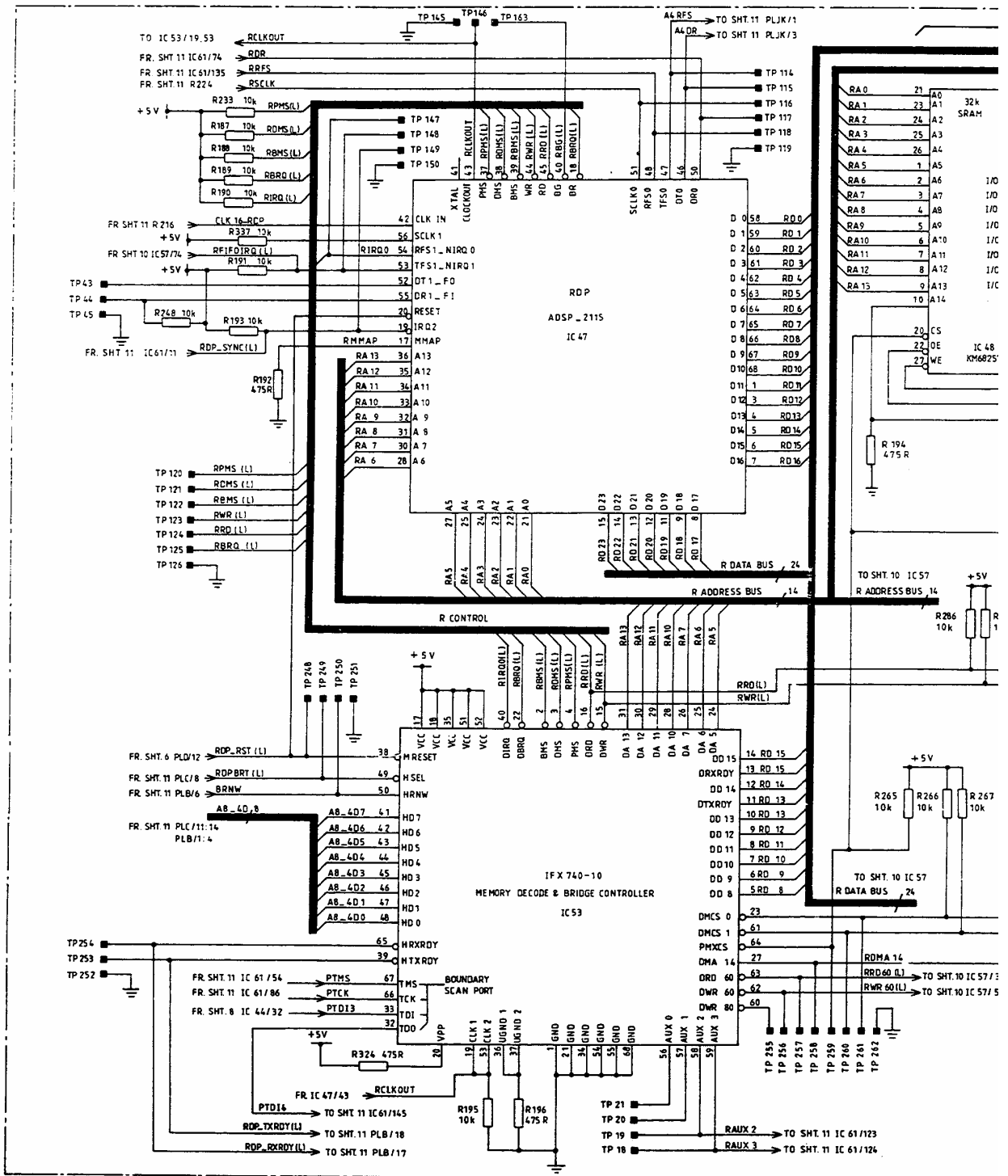


Fig. 7-124 A8 External program & data memory - circuit



# Circuit diagrams A8

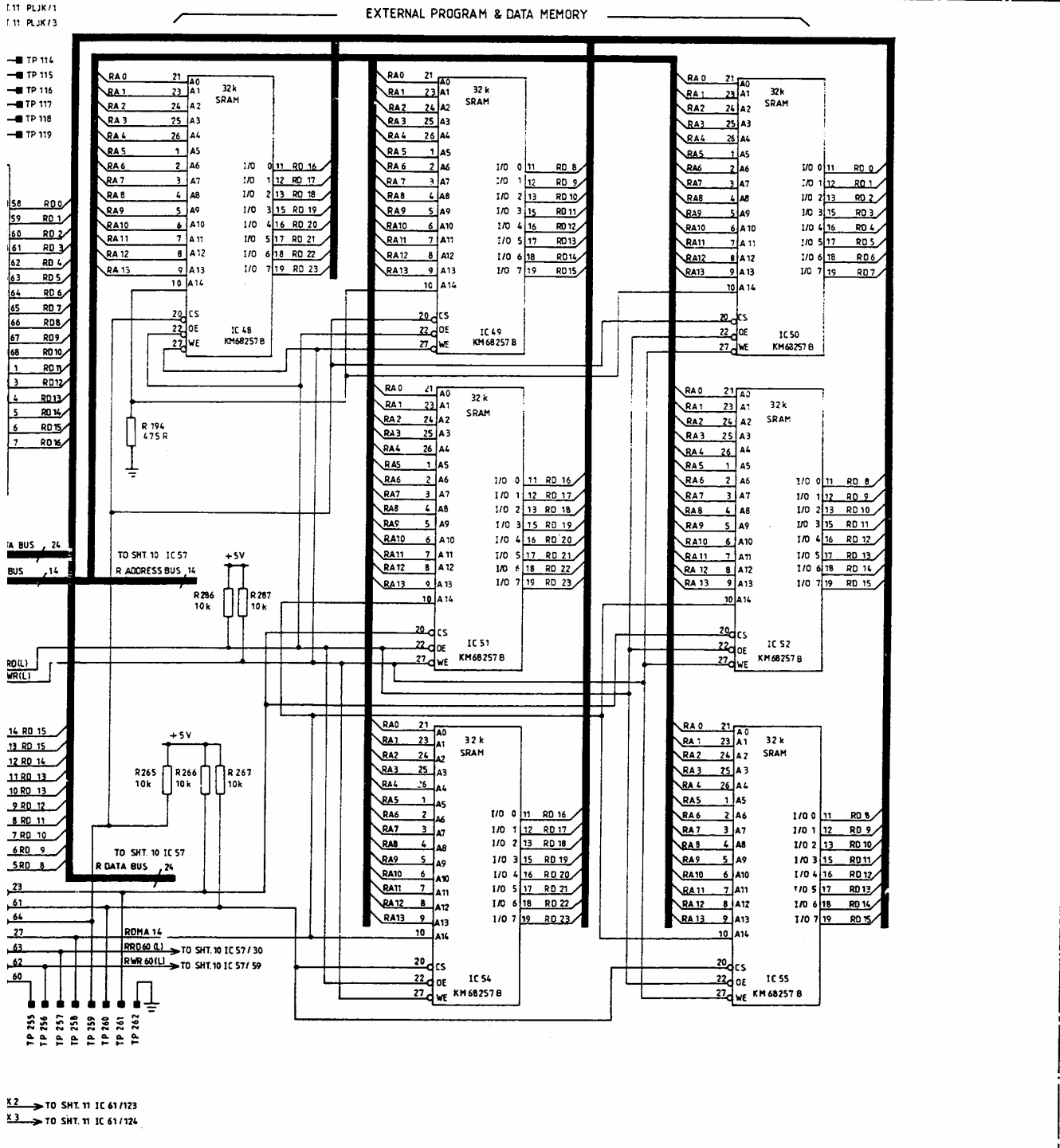


Fig. 7-125 A8 External program & data memory - circuit





# Circuit diagrams A8

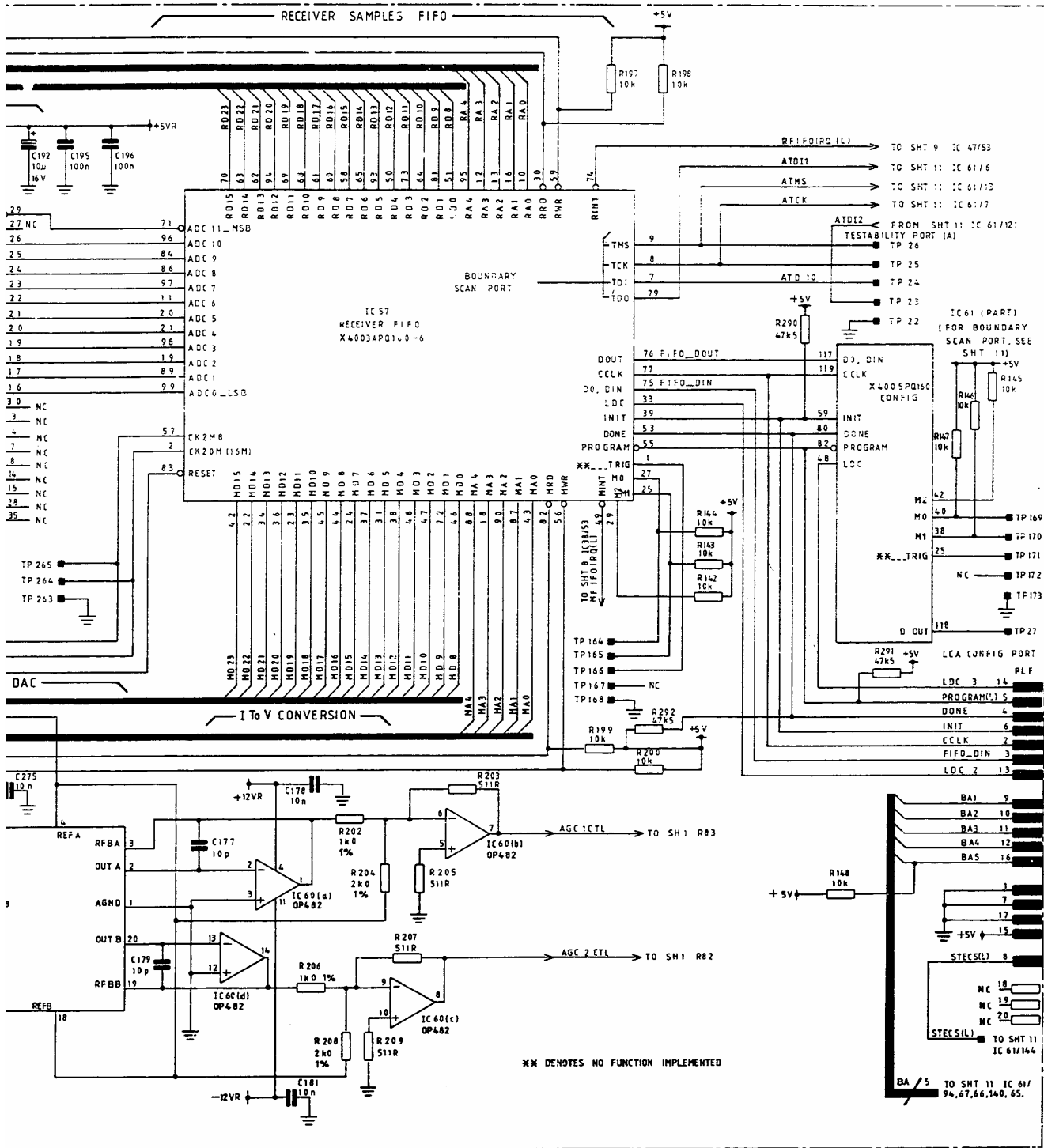
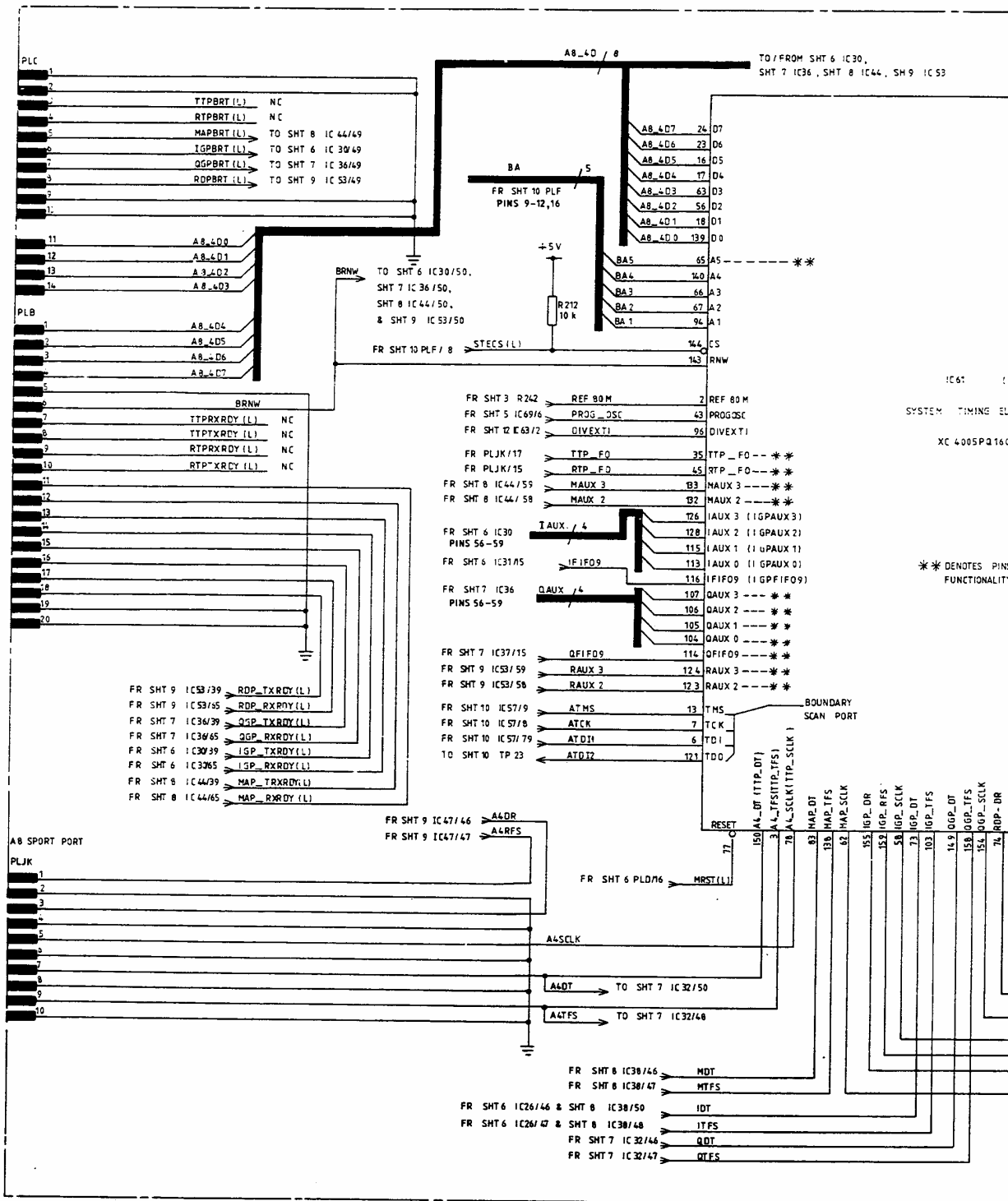


Fig. 7-126 A8 Rx sampling clock recovery & flash ADC, AGC setting DAC - circuit



# Circuit diagrams A8

1// FROM SHT 6 IC30,  
 IT 7 IC36, SHT 8 IC44, SH 9 IC53

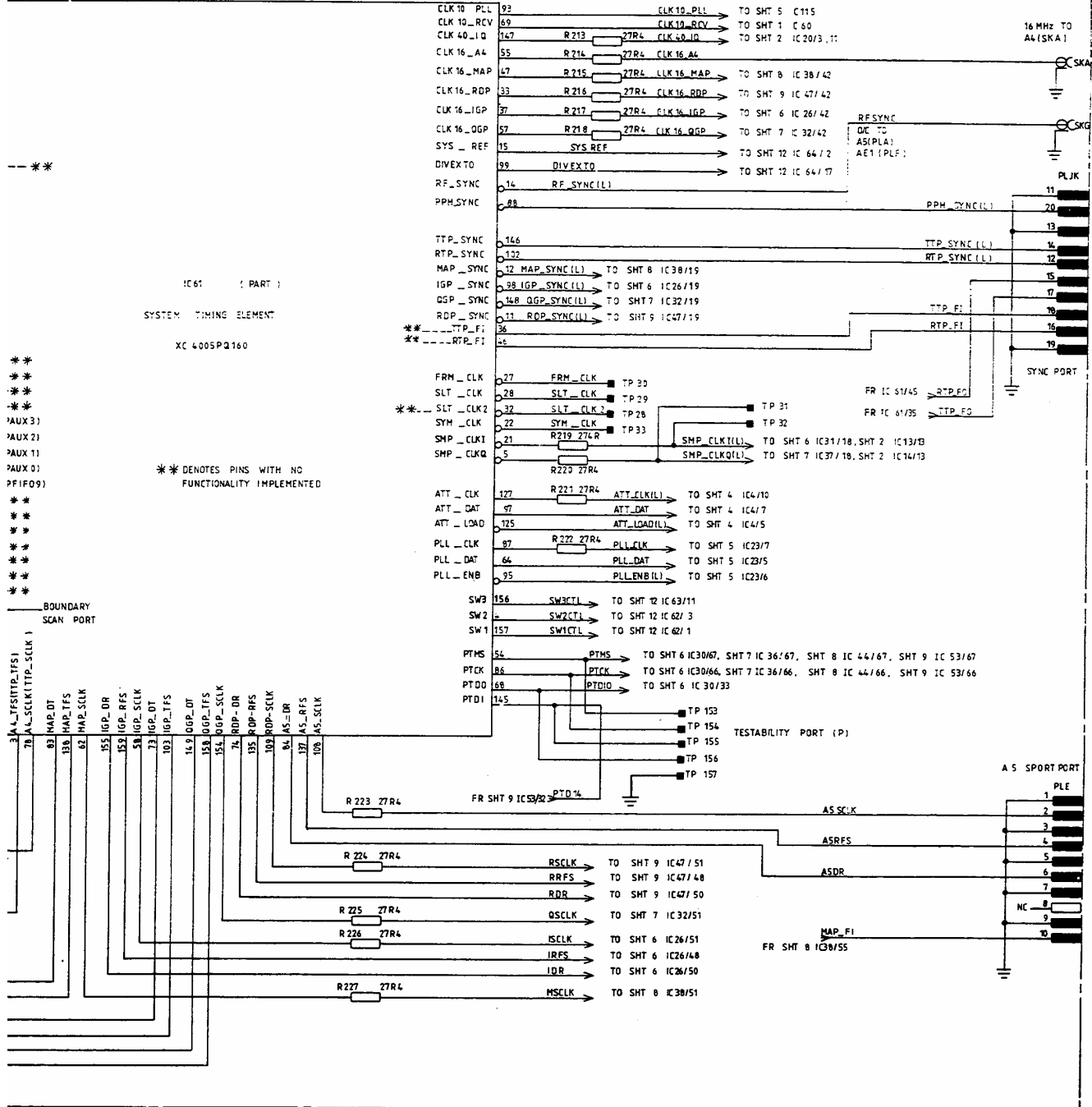
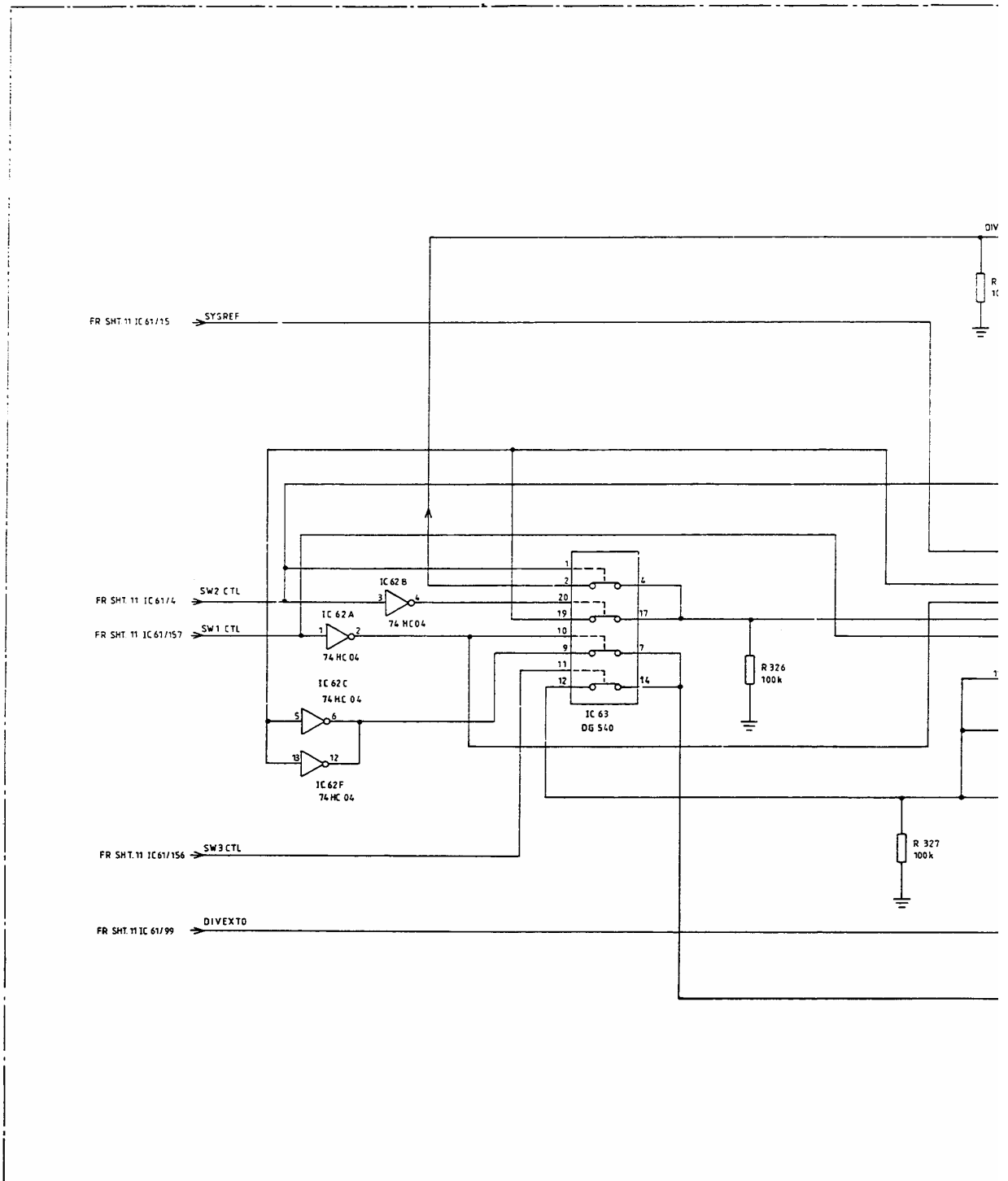


Fig. 7-127 A8 System timing element - circuit



# Circuit diagrams **A8**

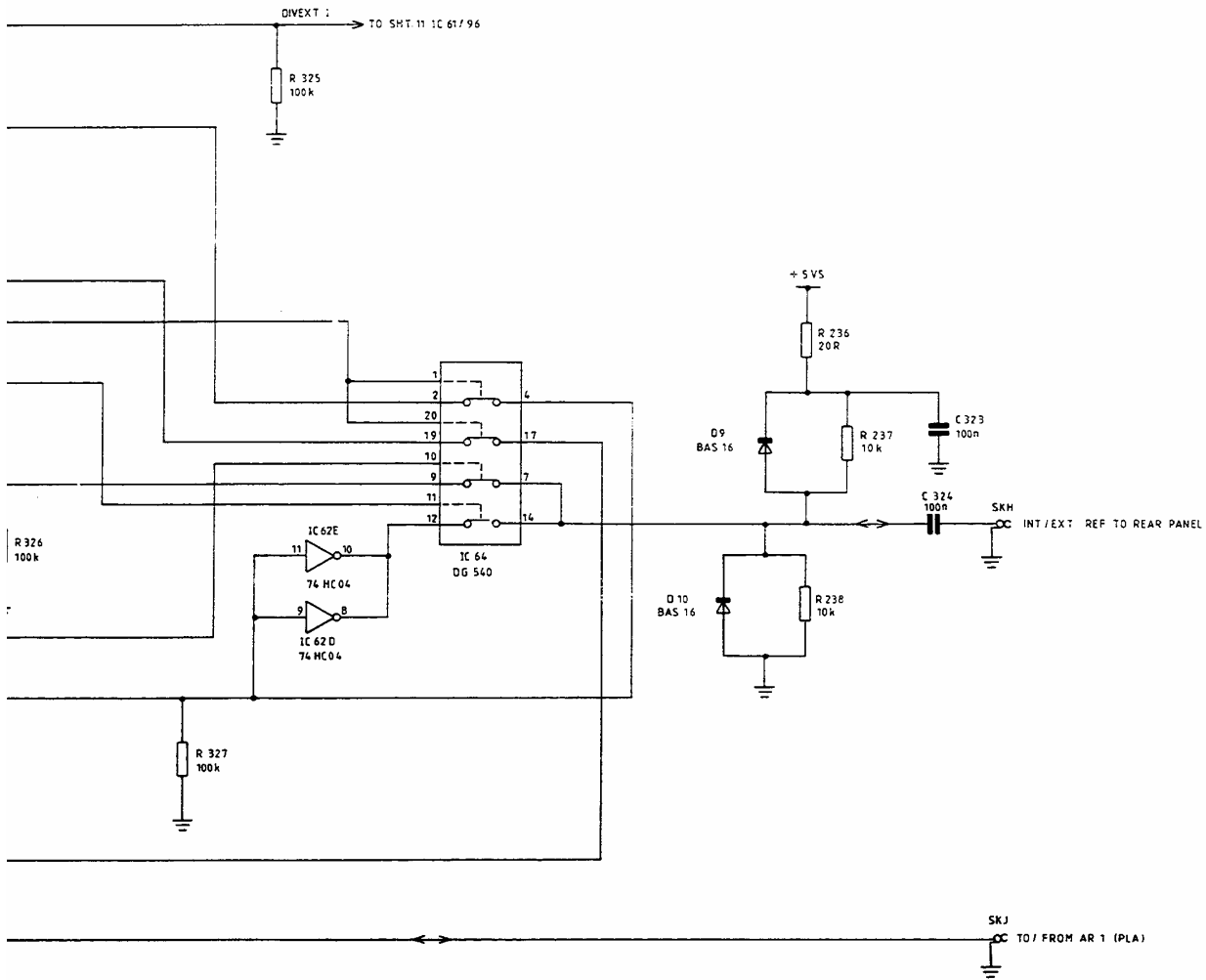
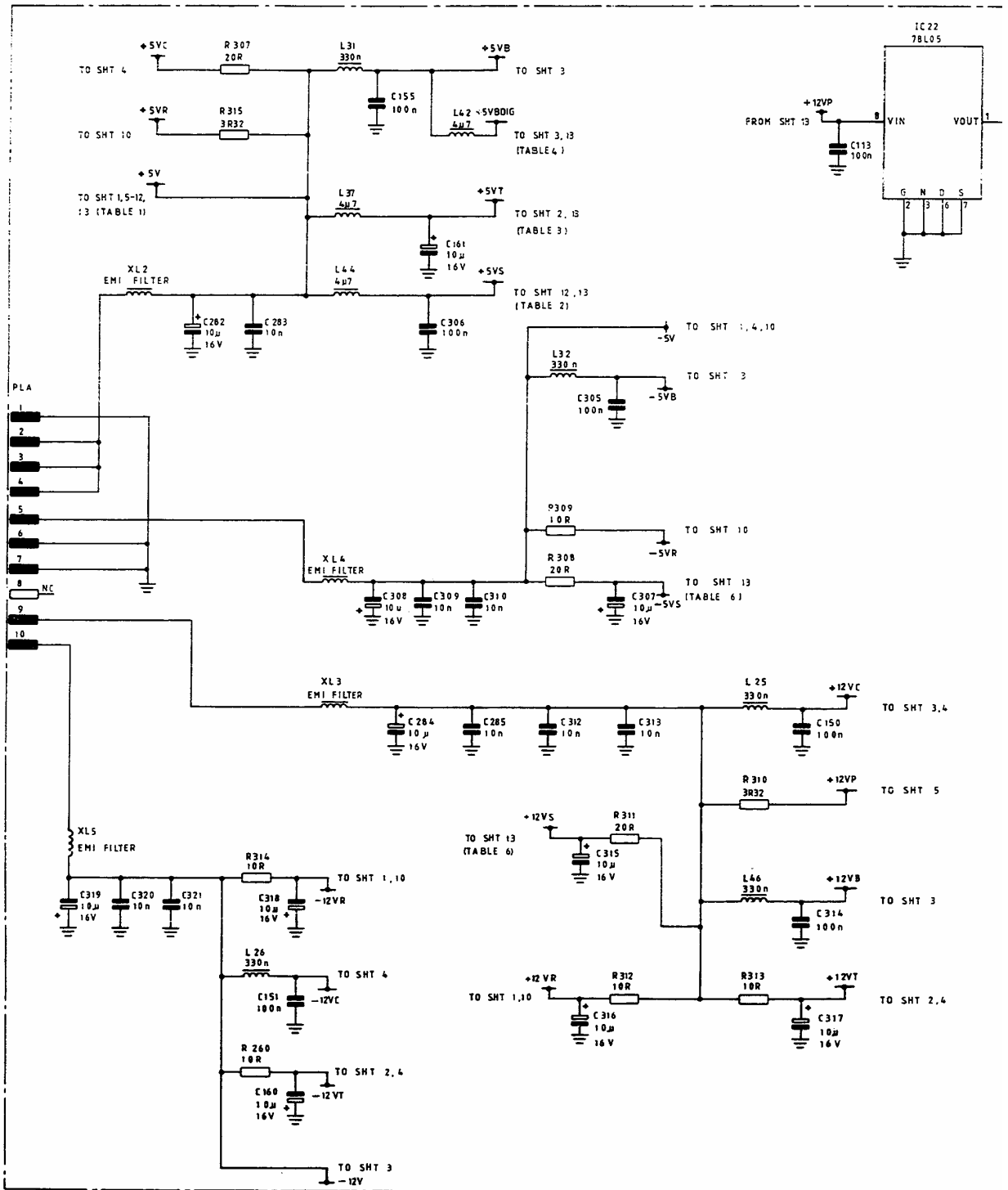
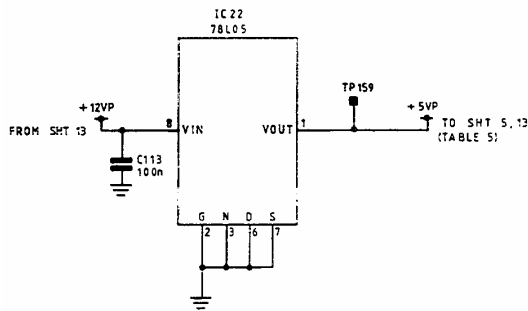


Fig. 7-128 A8 Reference frequency switches - circuit



# Circuit diagrams A8



1, 4, 10

3

10

13

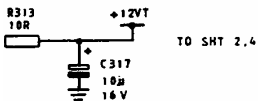
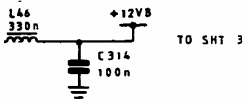
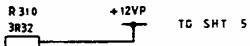
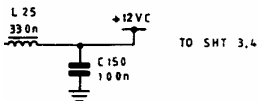


TABLE 1—POWER SUPPLY & DECOUPLING				
IC No.	TYPE	+5V	GND	CAPACITOR
IC 26	USP	16, 26, 57	2, 10, 29, 49	C 205, 206, 207
IC 32	DSP	16, 26, 57	2, 10, 29, 49	C 208, 209, 210
IC 38	DSP	16, 26, 57	2, 10, 29, 49	C 211, 212, 213
IC 47	DSP	16, 26, 57	2, 10, 29, 49	C 214, 215, 216
IC 30	FX740	17, 18, 35, 51, 52	1, 21, 34, 54, 68	C 217, 218, 219, 220, 221
IC 36	FX740	17, 18, 35, 51, 52	1, 21, 34, 54, 68	C 222, 223, 224, 225, 226
IC 44	FX740	17, 18, 35, 51, 52	1, 21, 34, 54, 68	C 227, 228, 229, 230, 231
IC 53	FX740	17, 18, 35, 51, 52	1, 21, 34, 54, 68	C 232, 233, 234, 235, 236
IC 31	FIFO	32	16	C 237
IC 37	FIFO	32	16	C 238
IC 27	SRAM	28	14	C 239
IC 28	SRAM	28	14	C 240
IC 29	SRAM	28	14	C 241
IC 33	SRAM	28	14	C 242
IC 34	SRAM	28	14	C 243
IC 35	SRAM	28	14	C 244
IC 39	SRAM	28	14	C 245
IC 40	SRAM	28	14	C 246
IC 41	SRAM	28	14	C 247
IC 42	SRAM	28	14	C 248
IC 43	SRAM	28	14	C 249
IC 45	SRAM	28	14	C 250
IC 46	SRAM	28	14	C 251
IC 48	SRAM	28	14	C 252
IC 49	SRAM	28	14	C 253
IC 50	SRAM	28	14	C 254
IC 51	SRAM	28	14	C 255
IC 52	SRAM	28	14	C 256
IC 54	SRAM	28	14	C 257
IC 55	SRAM	28	14	C 258
IC 57	RCVFIFO	3, 15, 28, 40, 54, 66, 78, 92	4, 14, 26, 41, 52, 67, 89, 91	C 259, 260, 261, 262, 263, 264, 265, 266
IC 61	STE	20, 41, 60, 81, 100, 120, 142, 160	1, 10, 19, 29, 39, 51, 61, 70, 79, 91, 101, 110, 122, 131, 141, 151	C 267, 268, 269, 270, 271, 272, 273, 274

TABLE 2—POWER SUPPLY & DECOUPLING				
IC No.	TYPE	+5VS	GND	CAPACITOR
IC 62	74HC04	14	7	C 276 (10n)

TABLE 3—POWER SUPPLY & DECOUPLING				
IC No.	TYPE	+5VT	GND	CAPACITOR
IC 20	74F74	14	7	C171

TABLE 4—POWER SUPPLY & DECOUPLING				
IC No.	TYPE	+5VBDIG	GND	CAPACITOR
IC 1	74AC161	16	8	C280
IC 8	74AC04	14	7	C37

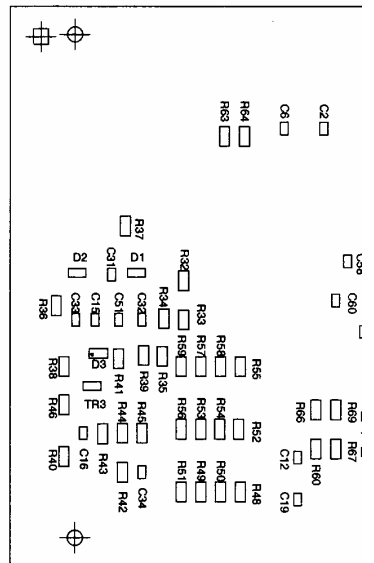
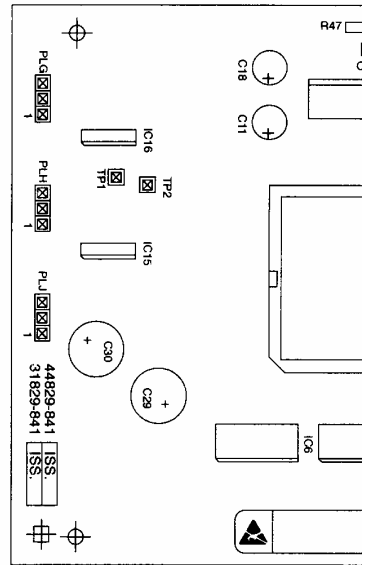
TABLE 5—POWER SUPPLY & DECOUPLING				
IC No.	TYPE	+5VP	GND	CAPACITOR
IC 69	74AC04	14	7	C322

TABLE 6—POWER SUPPLY & DECOUPLING					
IC No.	TYPE	+12VS	-5VS	GND	CAPACITOR
IC 63	DG540	16	5	3, 6, 8, 13, 15, 18	C 277 (+12VS,) 278 (-5VS)
IC 64	DG540	16	5	3, 6, 8, 13, 15, 18	C 279 (+12VS,) 280 (-5VS)

NOTE: ALL DECOUPLERS 100n UNLESS OTHERWISE STATED

Fig. 7-129 A8 Power supply and decoupling arrangements - circuit

SERVICING DIAGRAMS

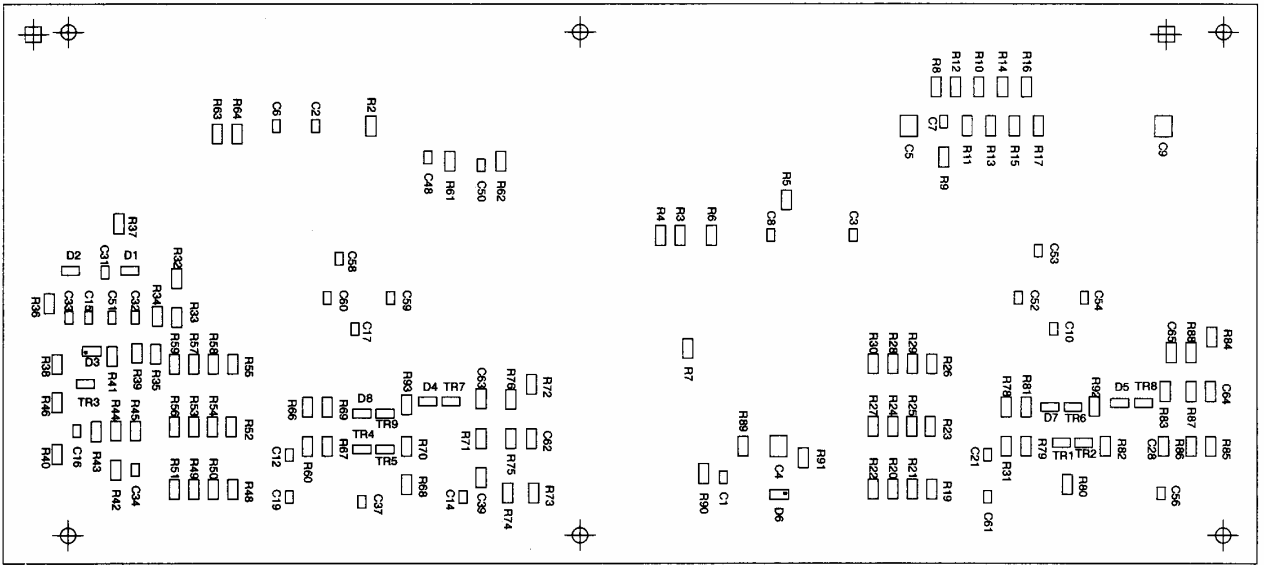
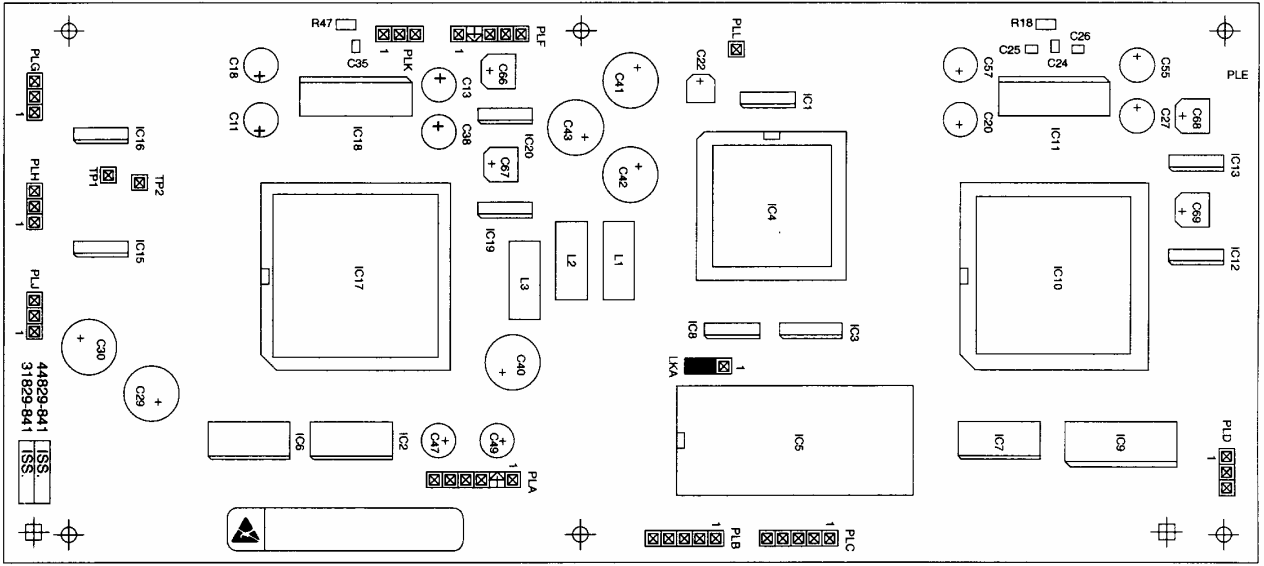


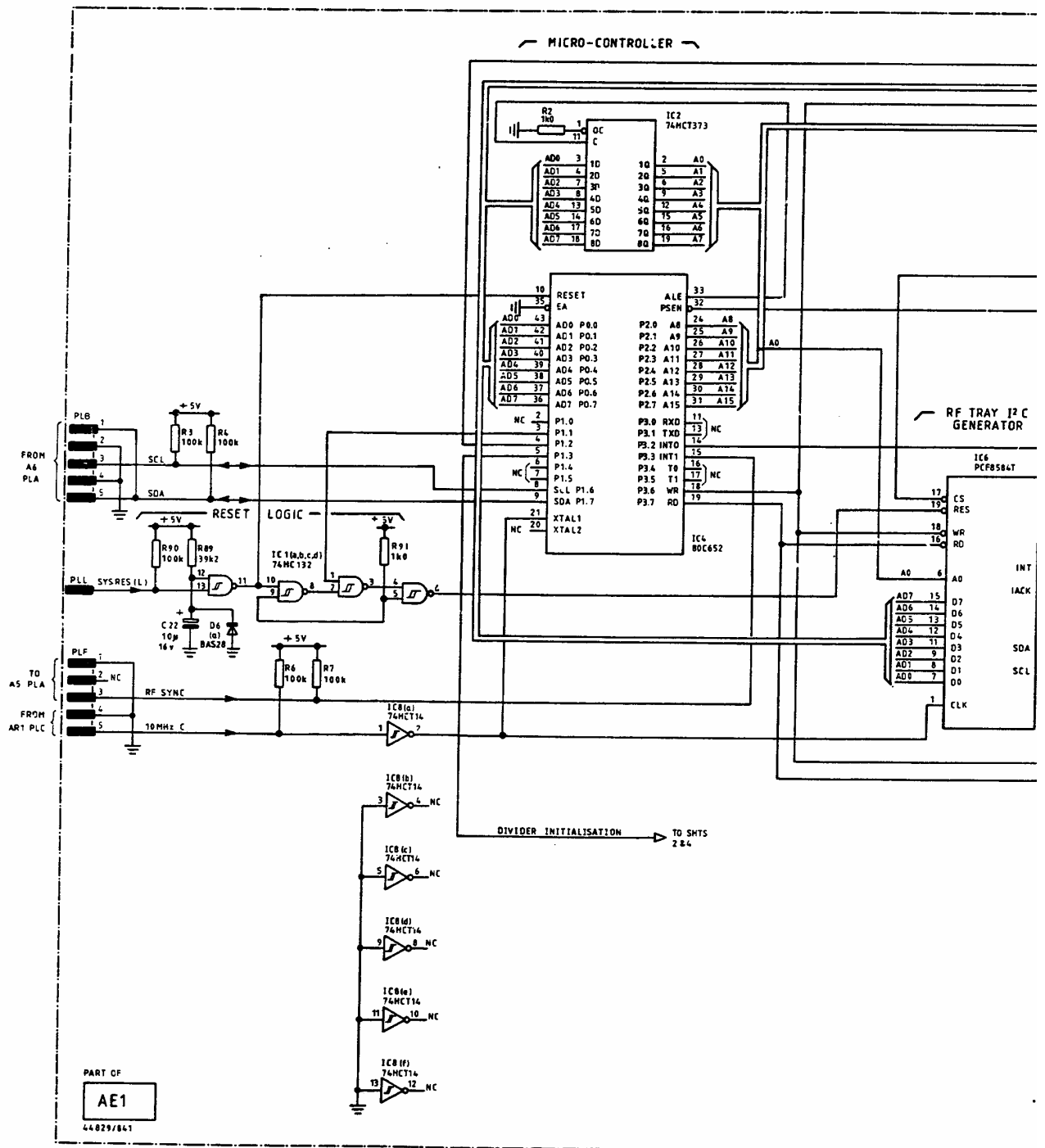
Power supply and decoupling arrangements **A8**

Drg. No. 44829/841 Sheet 1 of 1



# Component layout AE1





# Circuit diagrams AE1

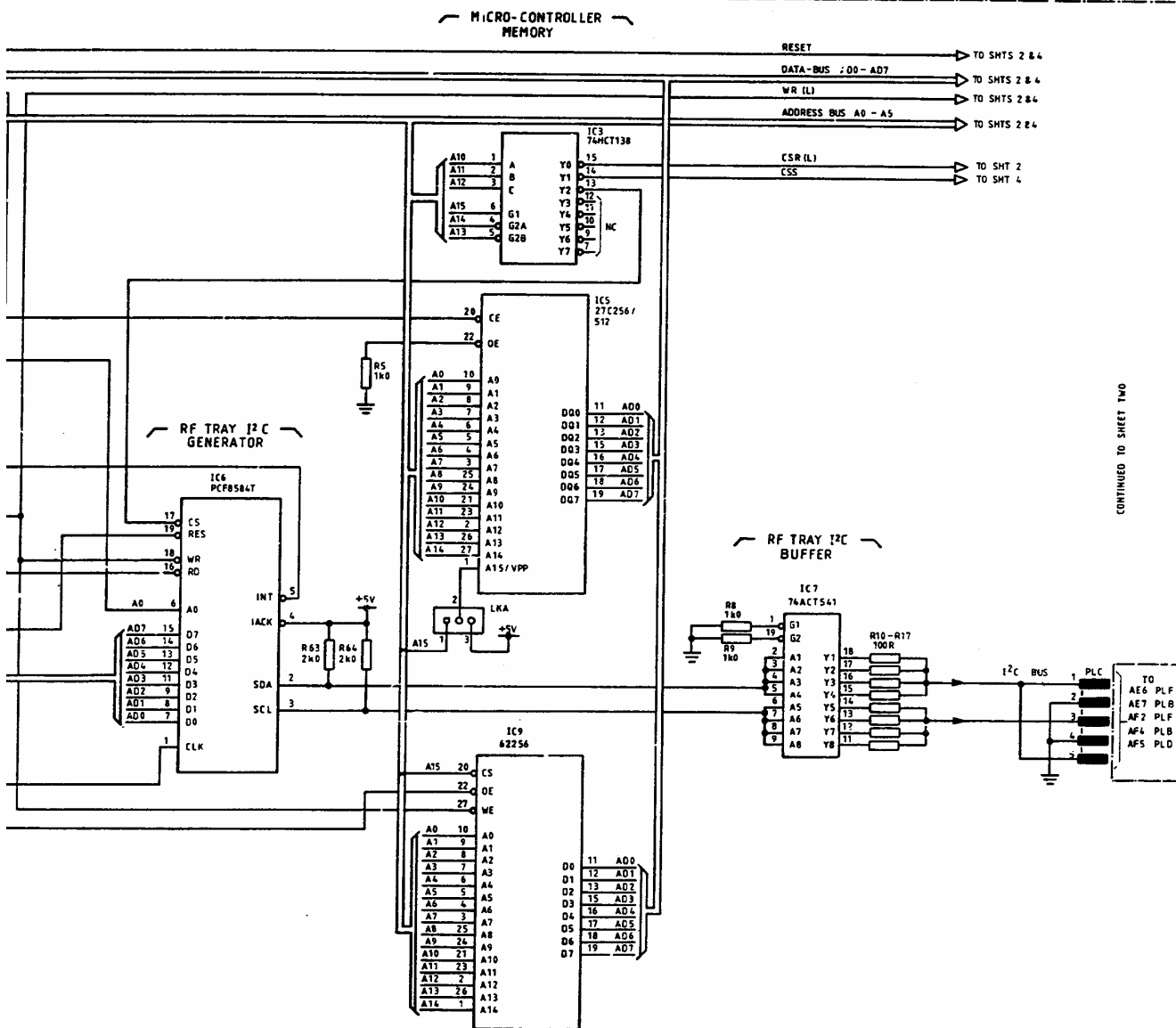
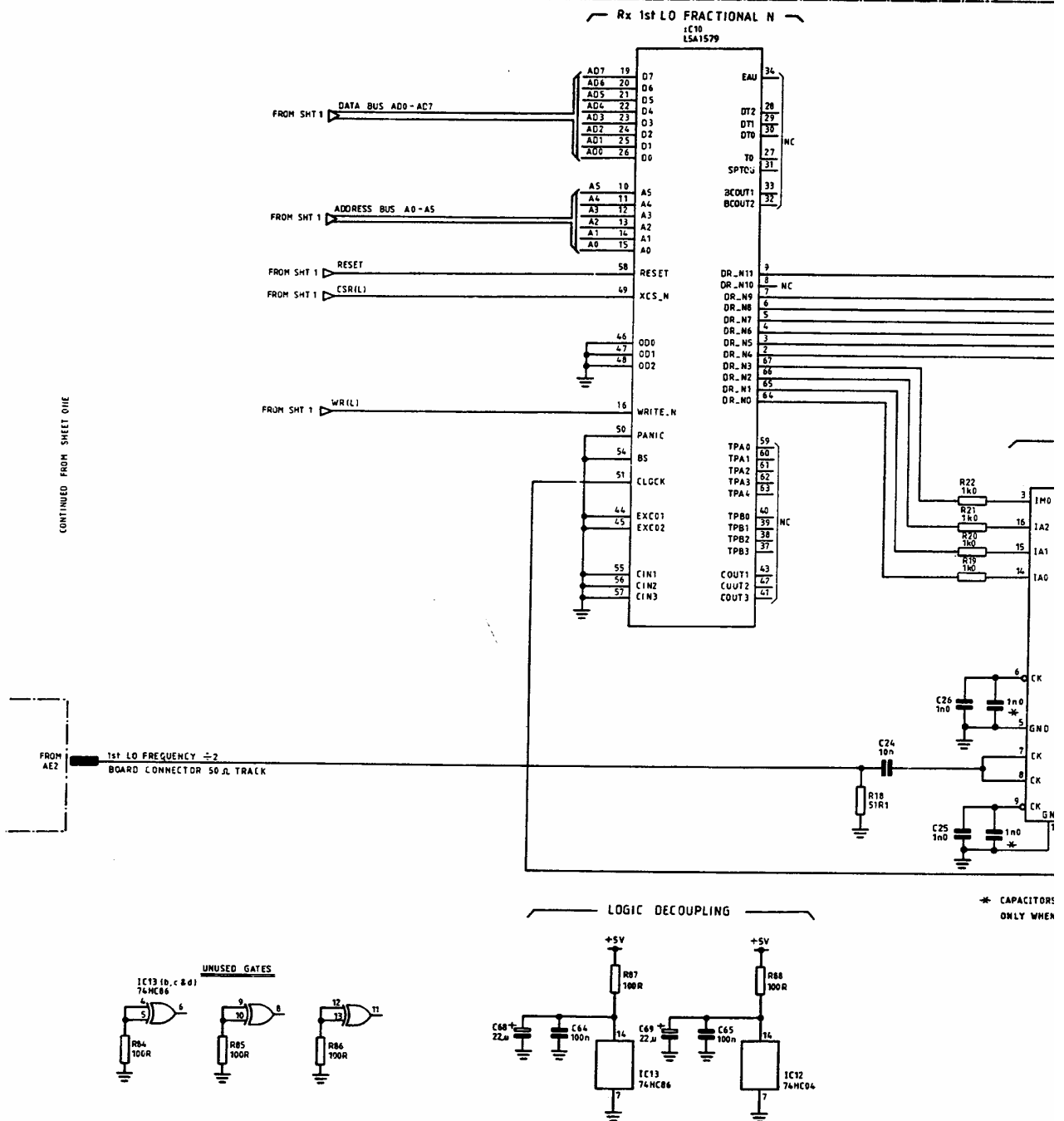
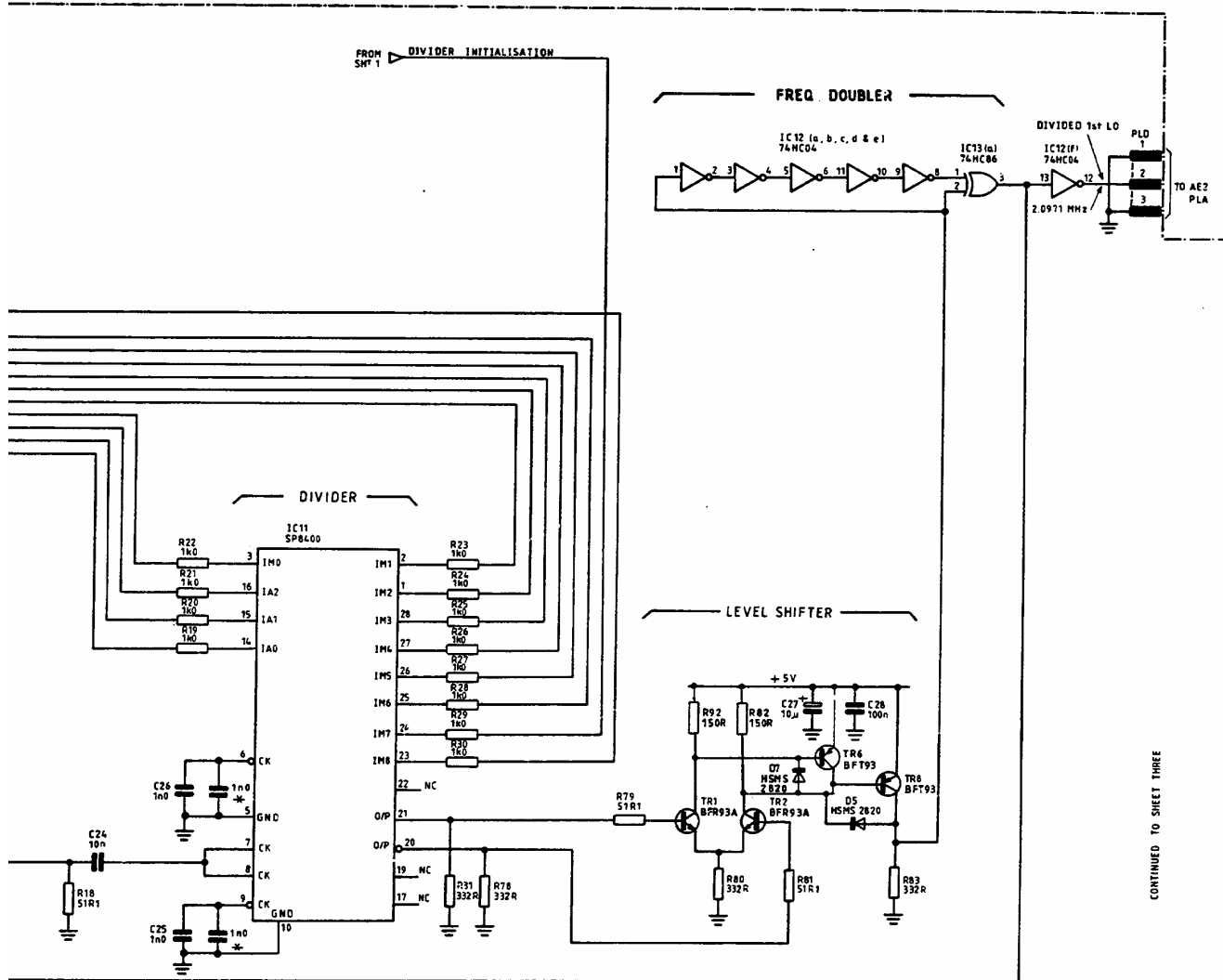


Fig. 7-131 AE1 Microcontroller - circuit



# Circuit diagrams AE1



\* CAPACITORS ADDED TO BOARDS PH'S 1-4, INCLUSIVE, ONLY  
 ONLY WHEN IC10 &/OR 17 ARE 28469/621: L5A1579

CONTINUED TO SHEET THREE

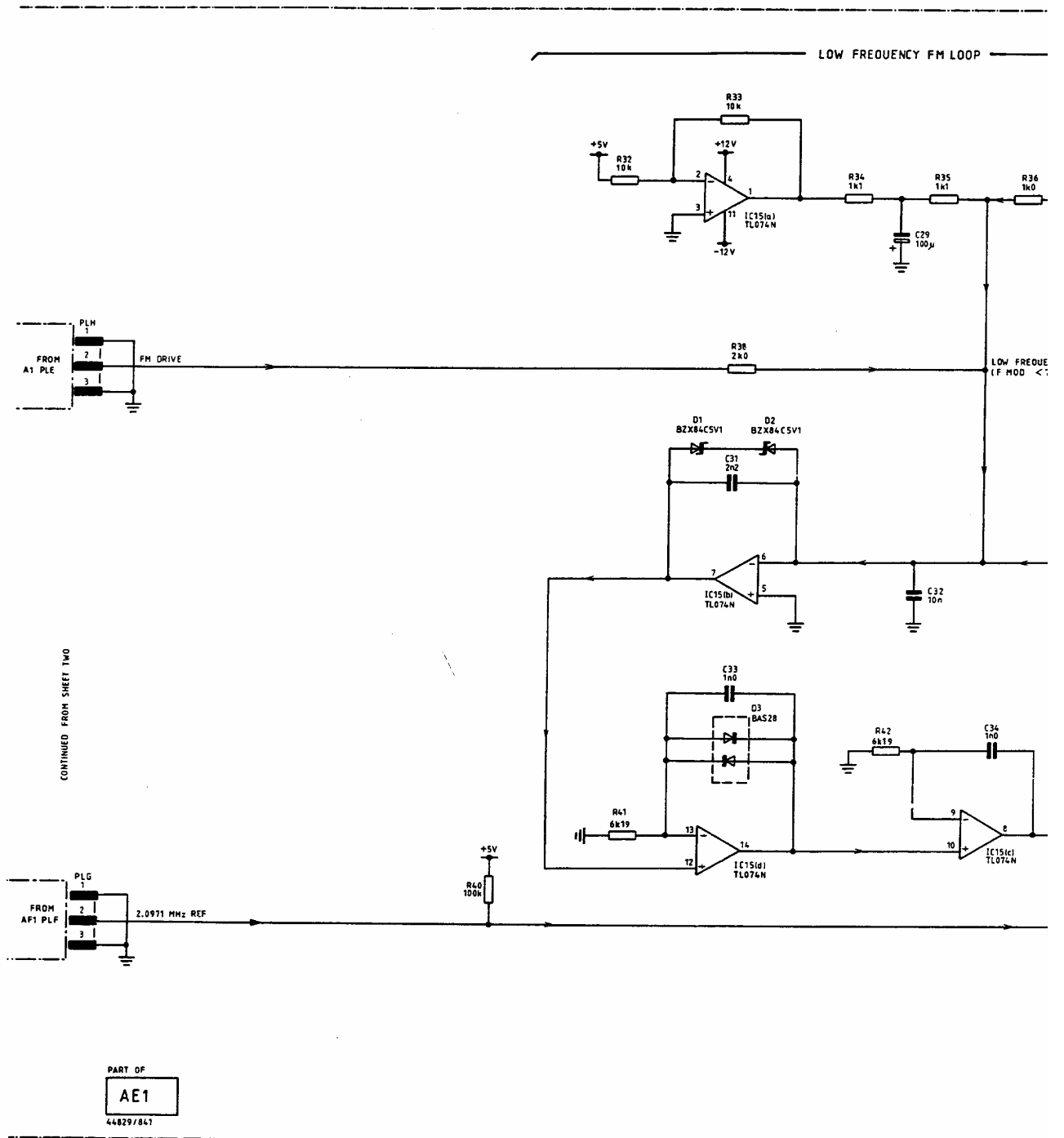
04

PART OF

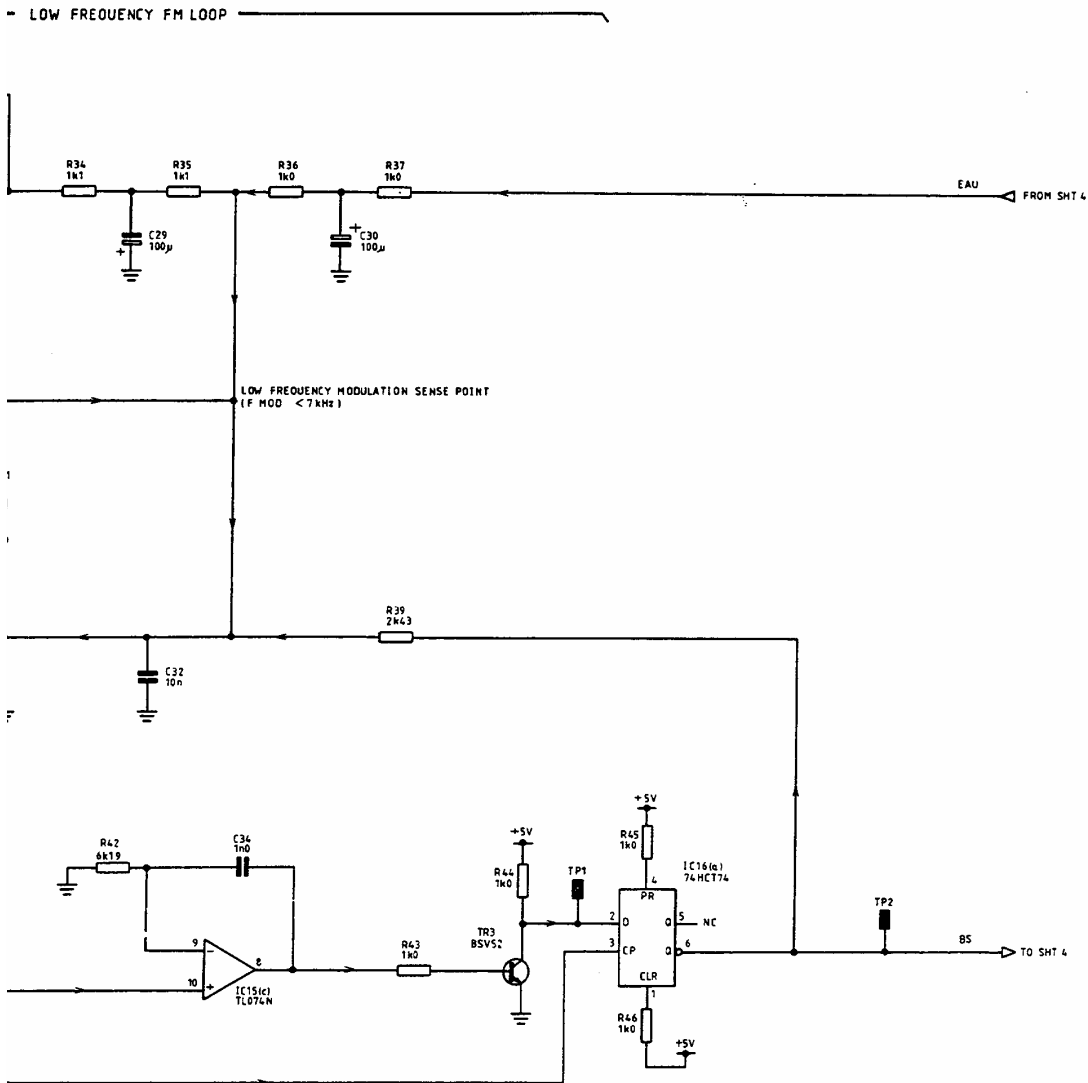
**AE1.**

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Fig. 7-132 AE1 Rx fractional-N control - circuit

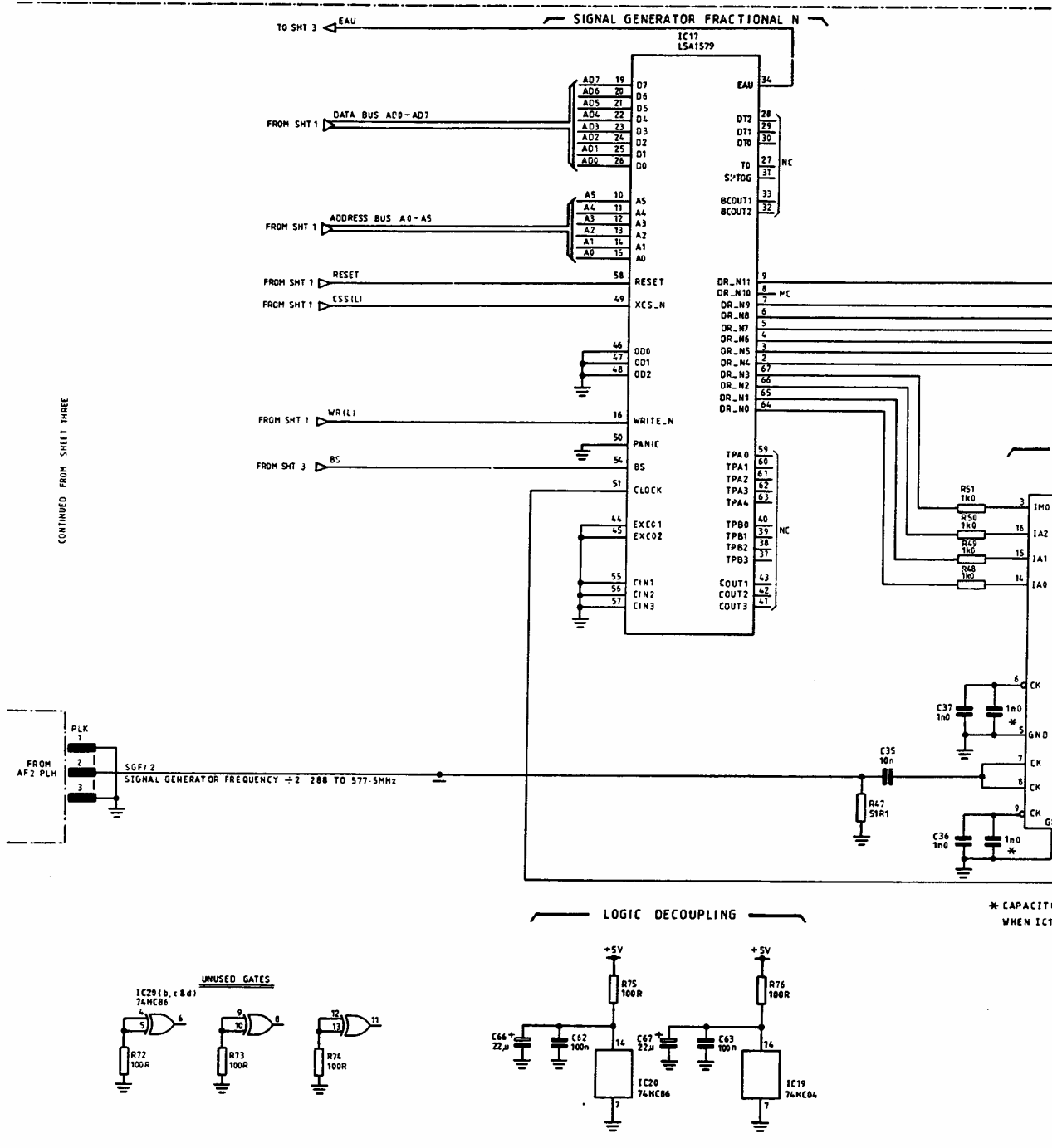


# Circuit diagrams AE1



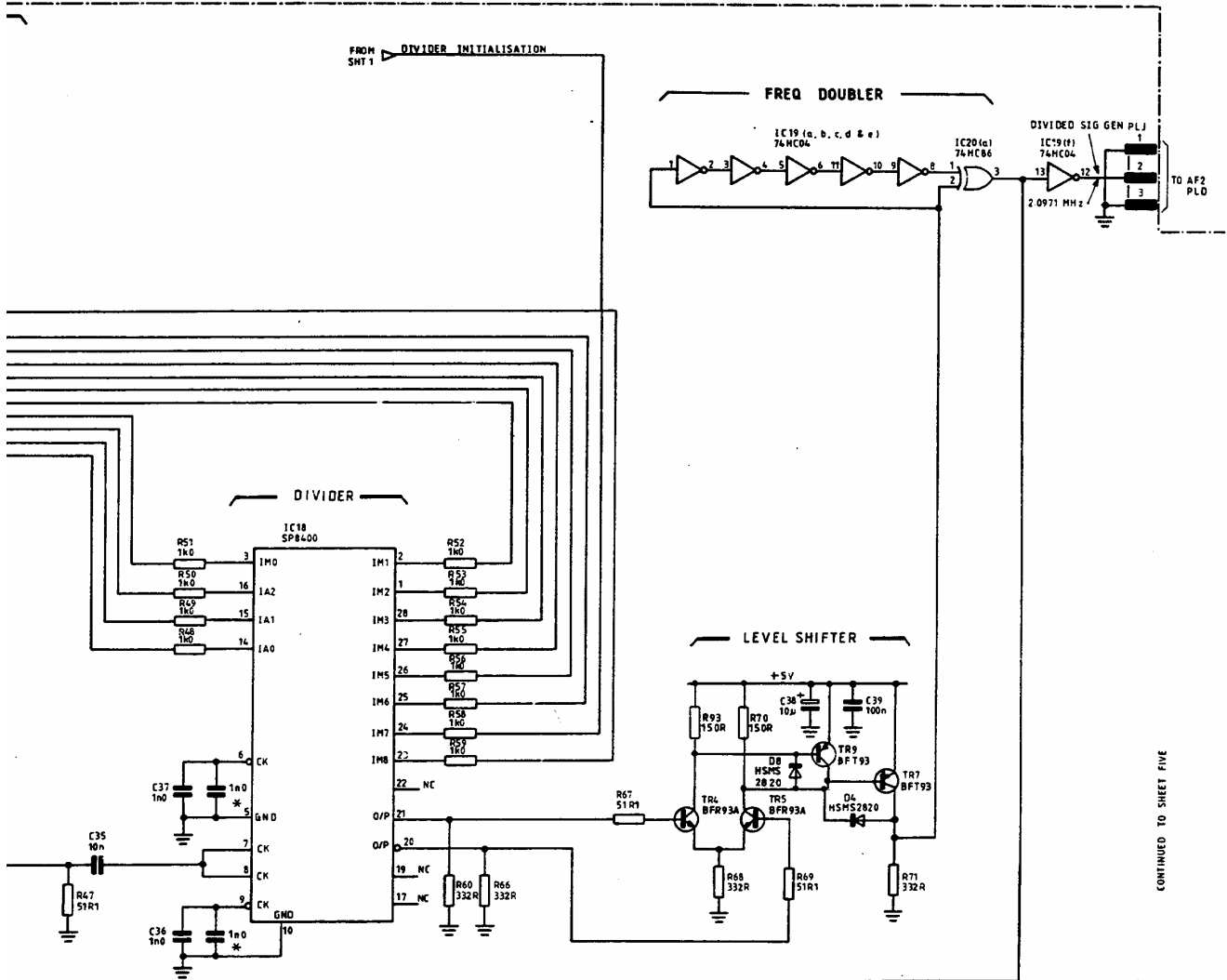
CONTINUED TO SHEET FOUR

Fig. 7-133 AE1 1-bit ADC - circuit





# Circuit diagrams AE1



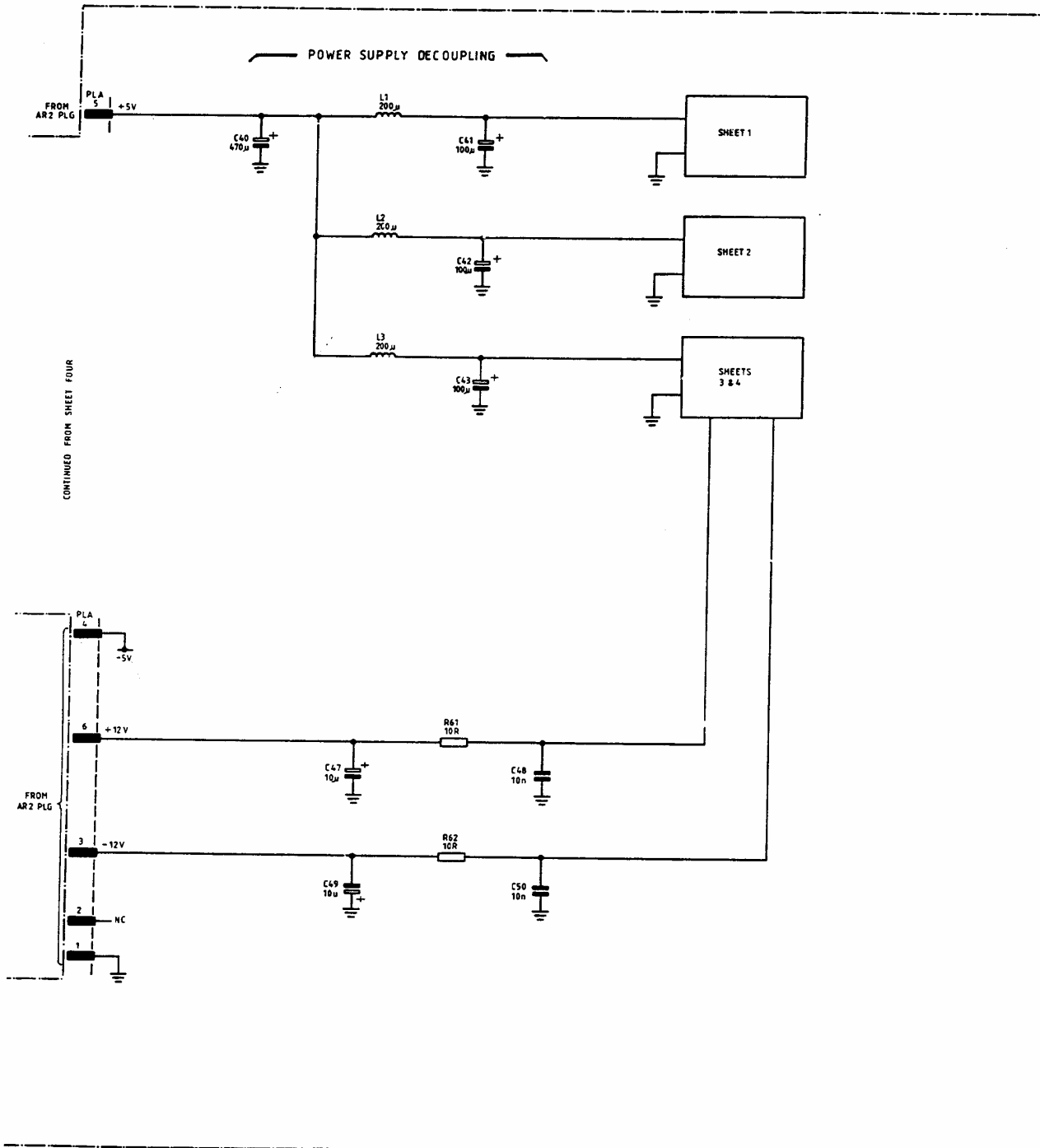
\* CAPACITORS ADDED TO BOARDS PMS 1-6, INCLUSIVE, ONLY  
WHEN IC10 & / OR 17 ARE 204691621; LSA1579

CONTINUED TO SHEET FIVE

PART OF

AE1  
44829/841

Fig. 7-134 AE1 Tx fractional-N control - circuit



# Circuit diagrams AE1

SHEET 1

SHEET 2

SHEETS  
1 & 4

SUPPLY LINE TABLE				
IC	+5V	GND	DEC	CAP
IC1	14	7	C1	10n
IC2	20	10	C2	10n
IC3	16	8	C3	10n
IC4	44	22	C4	47n
IC5	28	14	C5	47n
IC6	20	10	C6	10n
IC7	20	10	C7	10n
IC8	14	7	C8	10n
IC9	28	14	C9	47n
IC10	17	1	C10	10n
-	36	18	C52	10n
-	53	35	C53	10n
-	68	52	C54	10n
IC11	11,12	13	C20	10μ
-	11,12	13	C21	1n0
-	4	10	C55	10μ
-	4	10	C56	1n0
-	18	5	C57	10μ
-	18	5	C61	1n0
IC15	-	-	C15	10n
IC15	-	-	C51	10n
IC16	14	7	C16	10n
IC17	17	1	C17	10n
-	36	18	C58	10n
-	53	35	C59	10n
-	68	52	C60	10n
IC18	11,12	13	C11	10μ
-	11,12	13	C12	1n0
-	4	10	C13	10μ
-	4	10	C14	1n0
-	18	5	C18	10μ
-	18	5	C19	1n0

ALL IC's DECOUPLED AT SUPPLY  
TO GROUND AS INDICATED

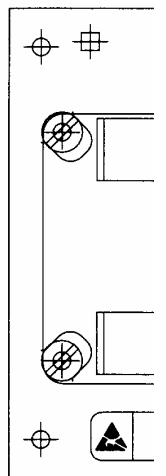
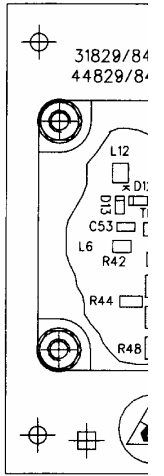
PART OF

AE1

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Fig. 7-135 AE1 Power supplies - circuit

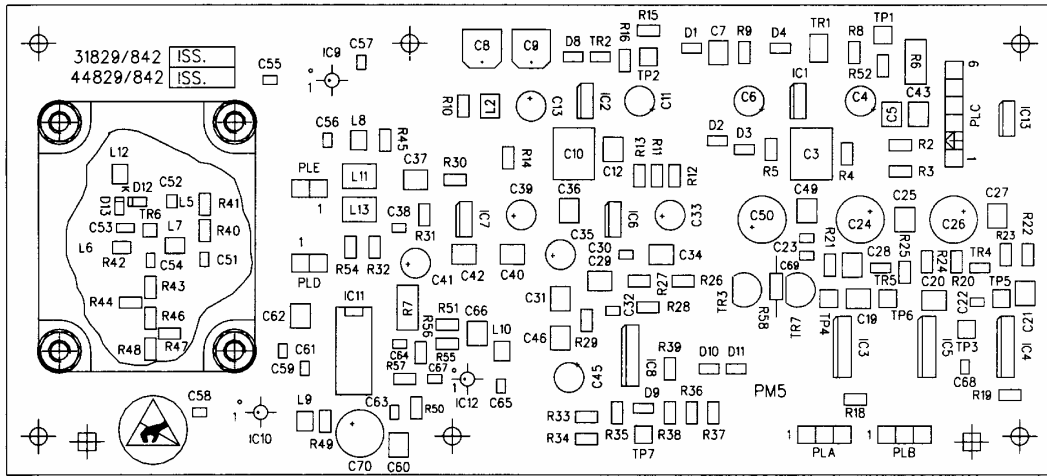
SERVICING DIAGRAMS



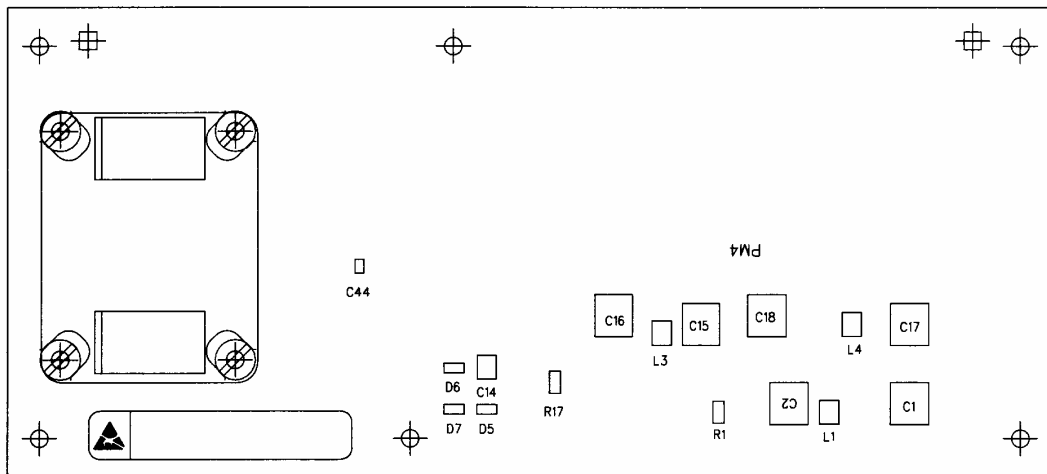
Power supplies **AE1**

Drg. No. 44829/842

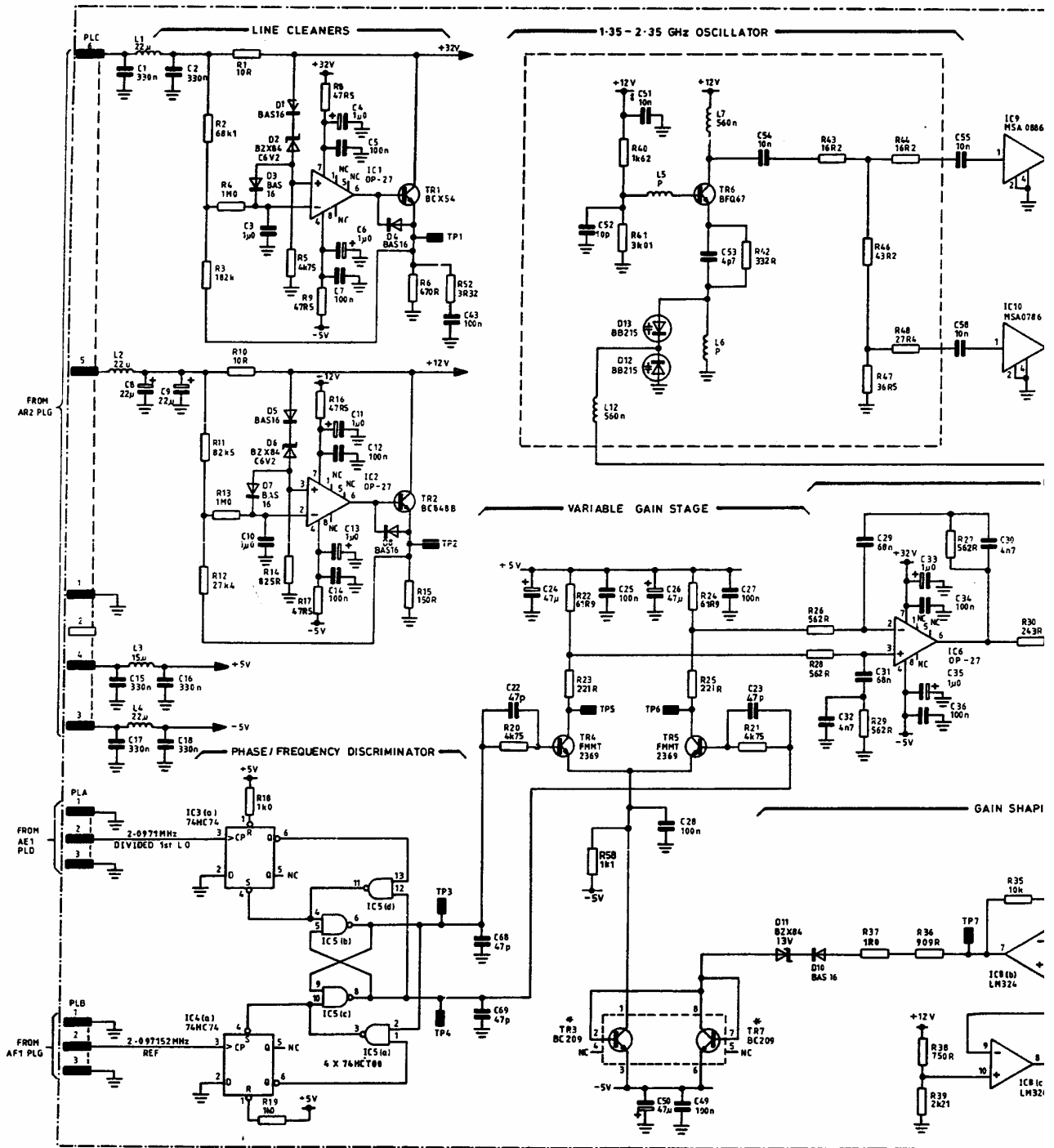
# Component layout AE2



COMPONENT SIDE

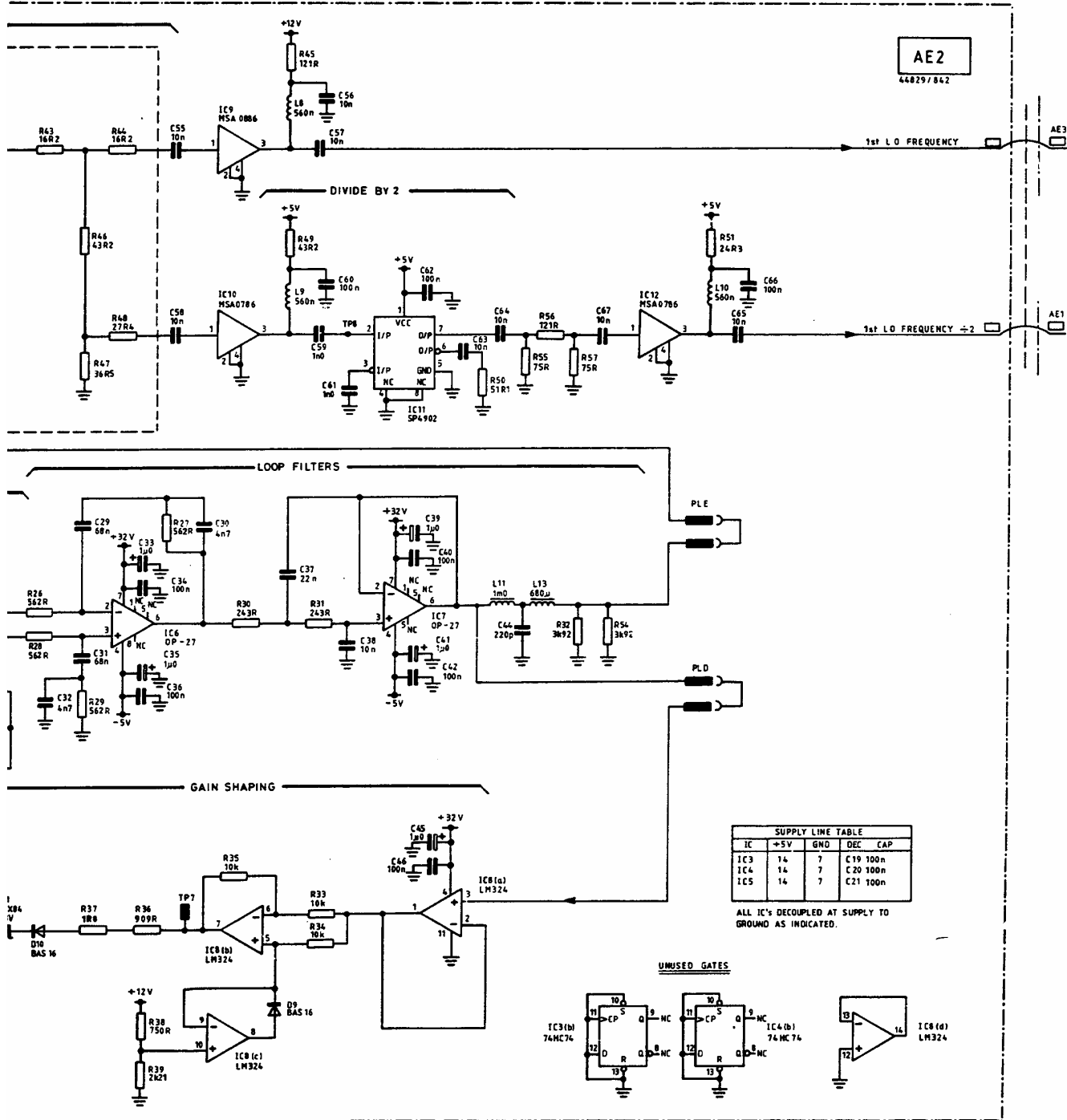


SOLDER SIDE



\* TR3 AND TR7 OCCUPY POSITION ALLOCATED TO TYPE LH396 ORIGINAL OUTLINE RETAINED TO AID ASSEMBLY

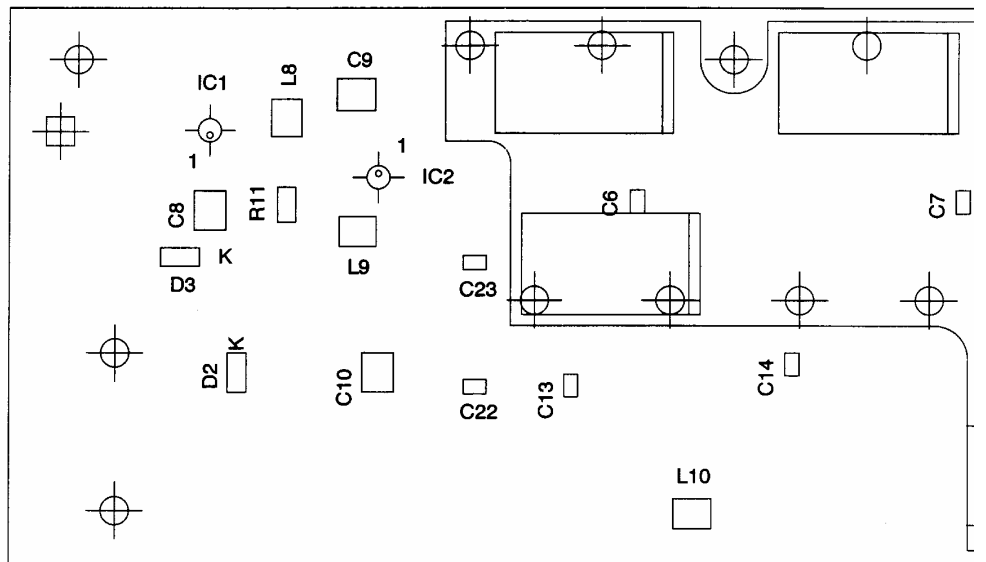
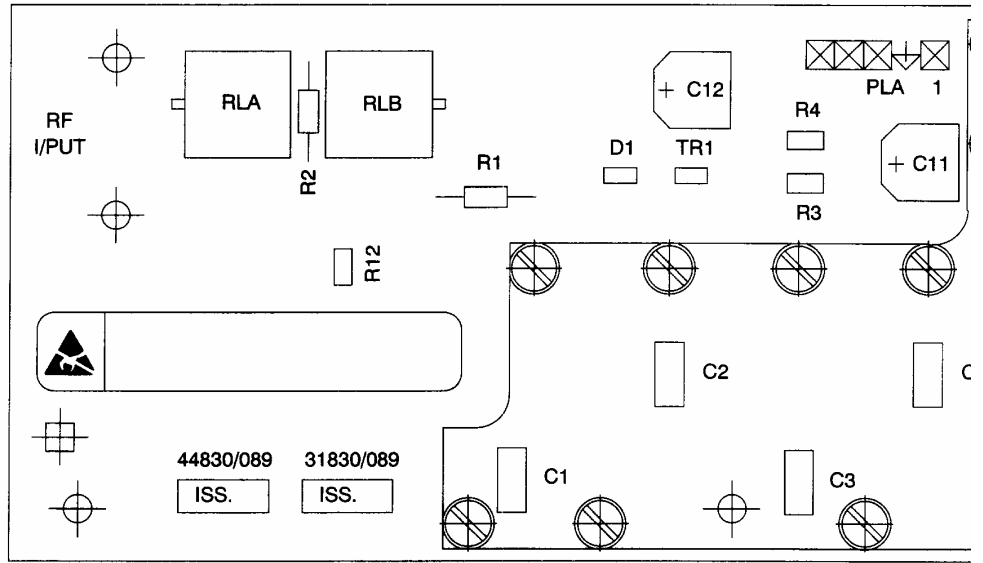
# Circuit diagram AE2



REF TO TYPE LM324  
 ASSEMBLY

Fig. 7-137 AE2 1st LO synthesizer - circuit

SERVICING DIAGRAMS

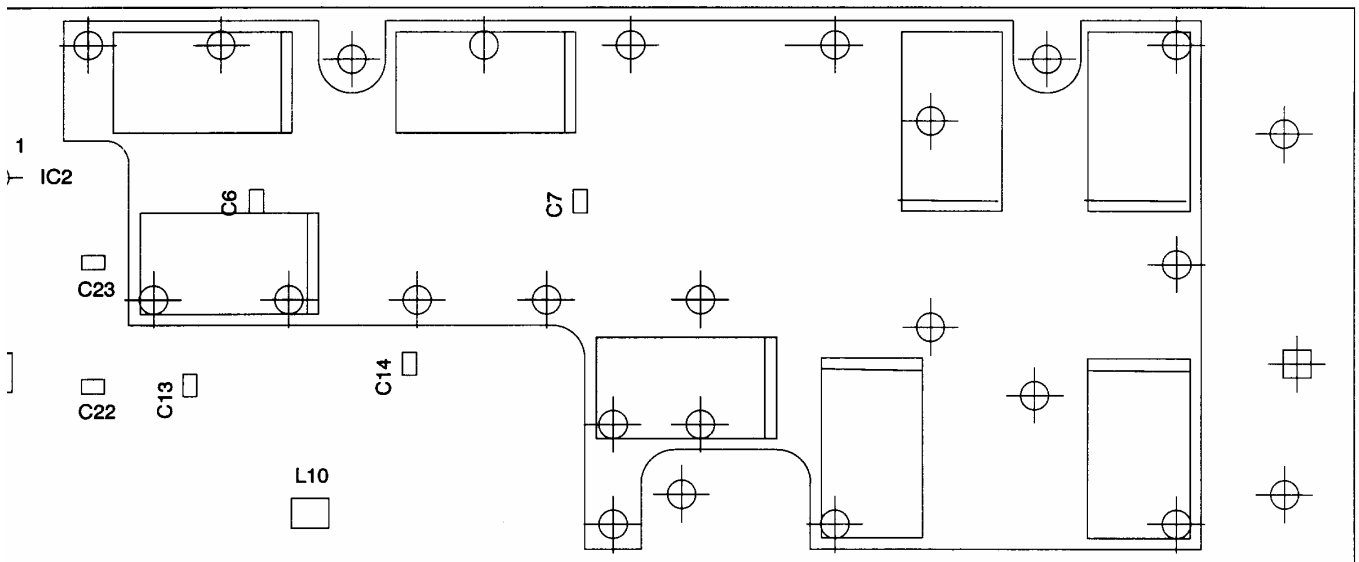
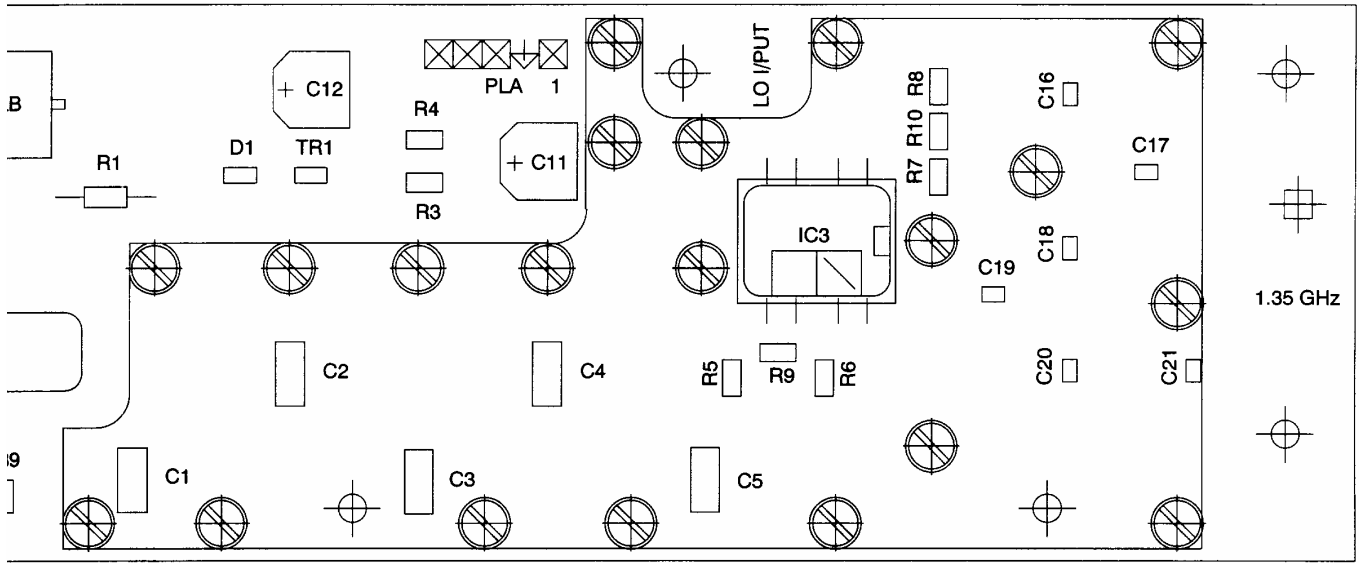


**1st LO synthesizer AE2**

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# Component layout AE3/2



E2

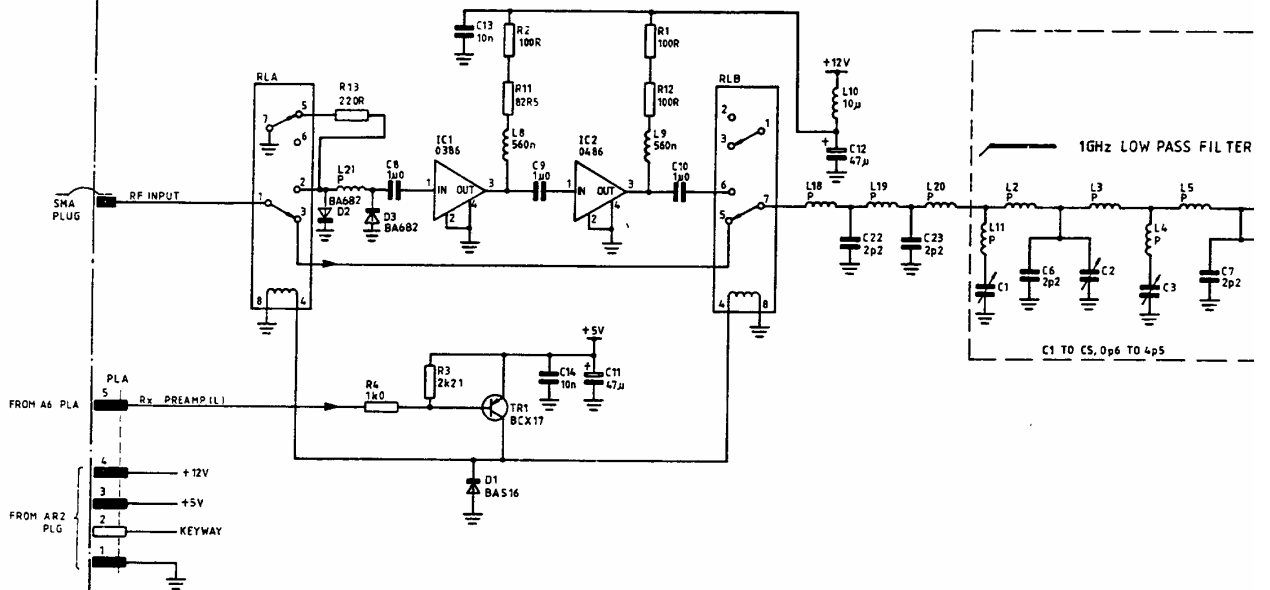
Drg. No. 44830/089 Sheet 1 of 1 Issue 5

Fig. 7-138 AE3/2 1st mixer - component layout

AE3/2

44830/089

20dB INPUT AMPLIFIER



# Circuit diagram AE3/2

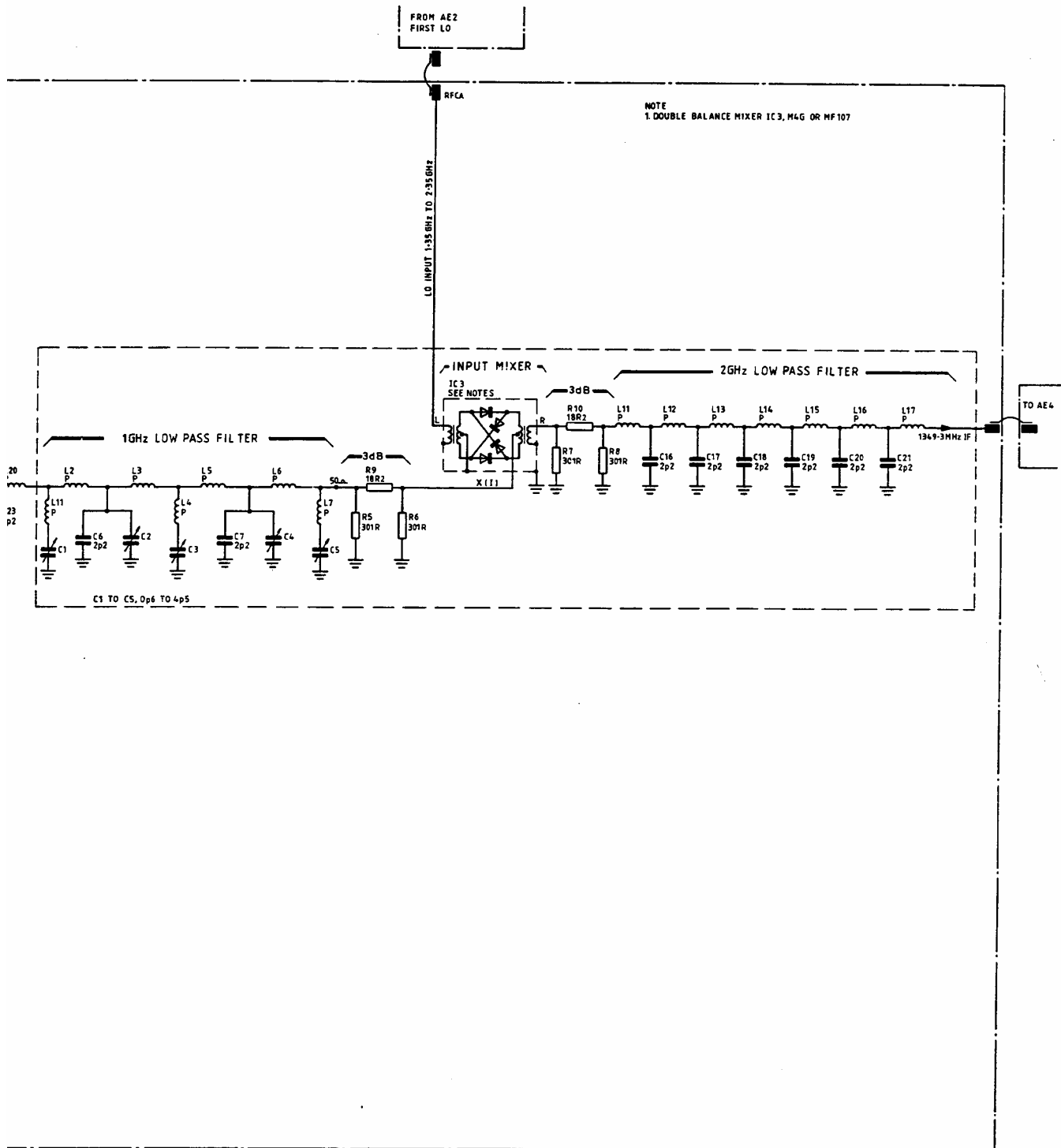
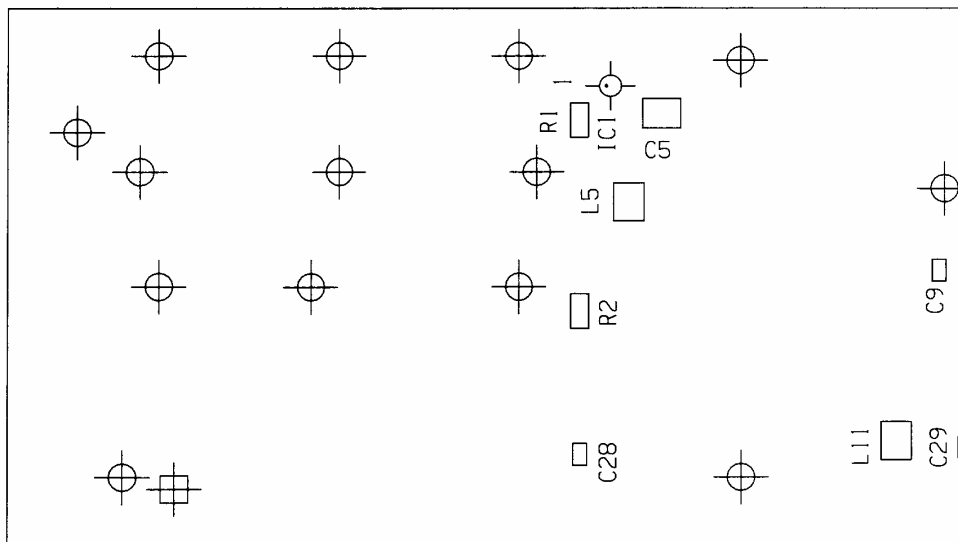
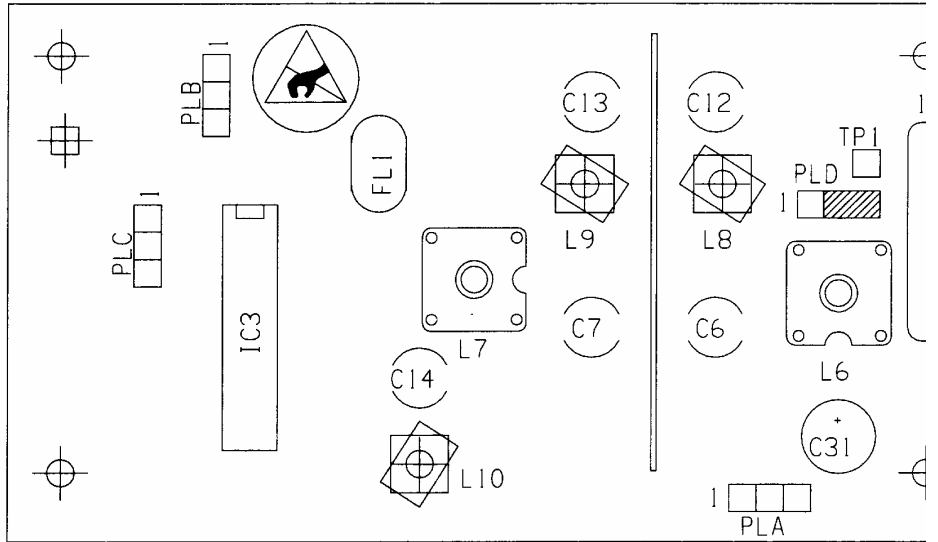


Fig. 7-139 AE3/2 1st mixer - circuit

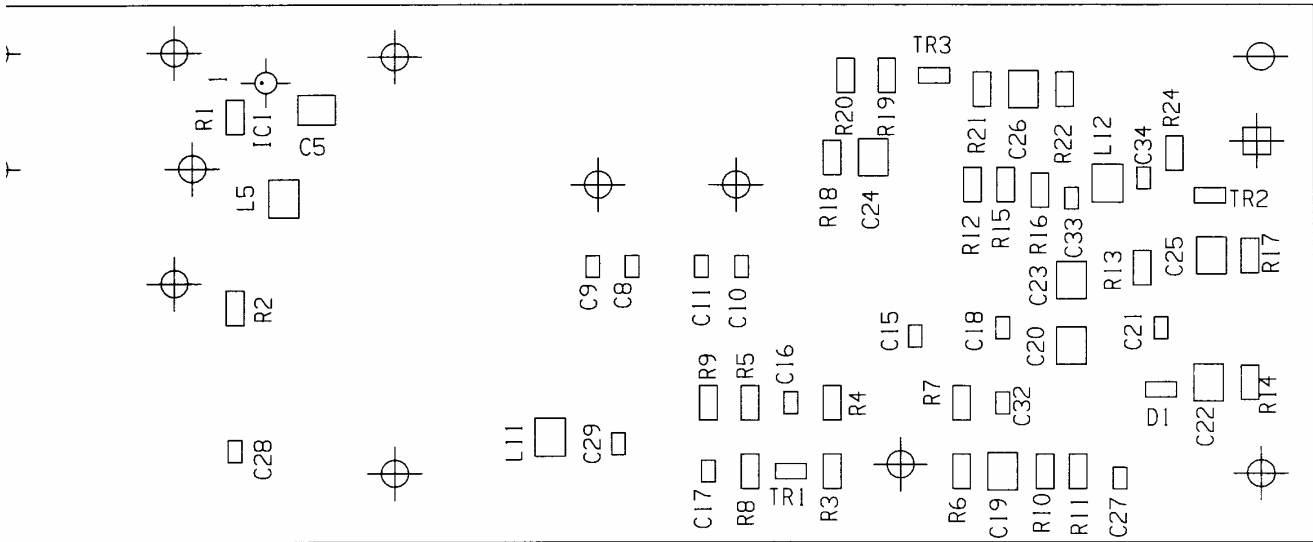
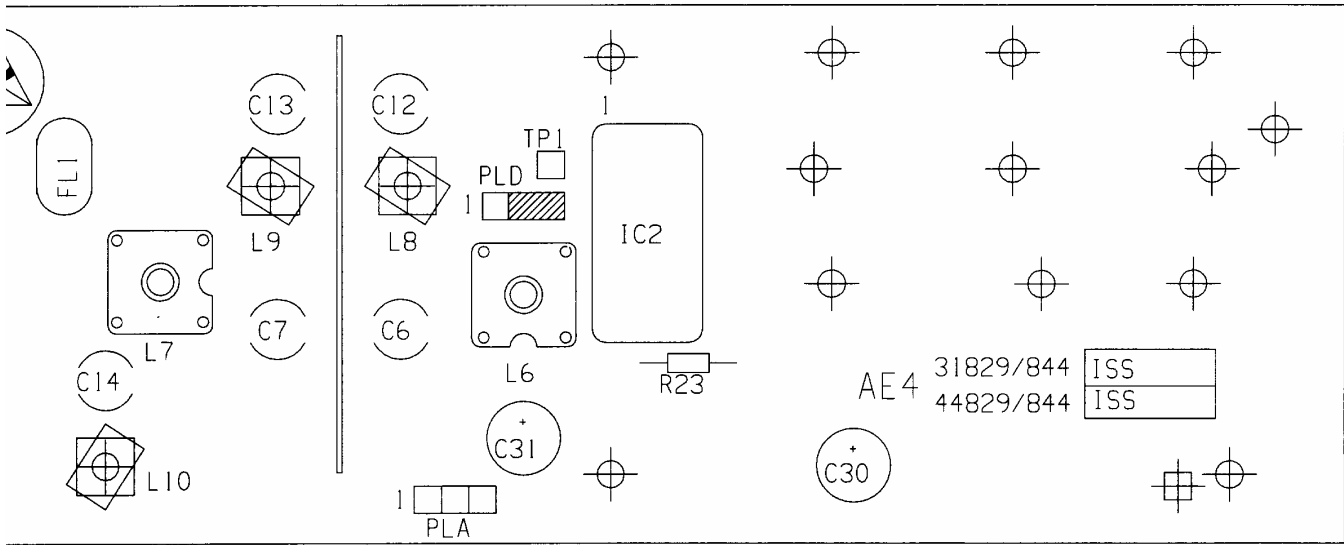
**SERVICING DIAGRAMS**



**1st mixer AE3/2**

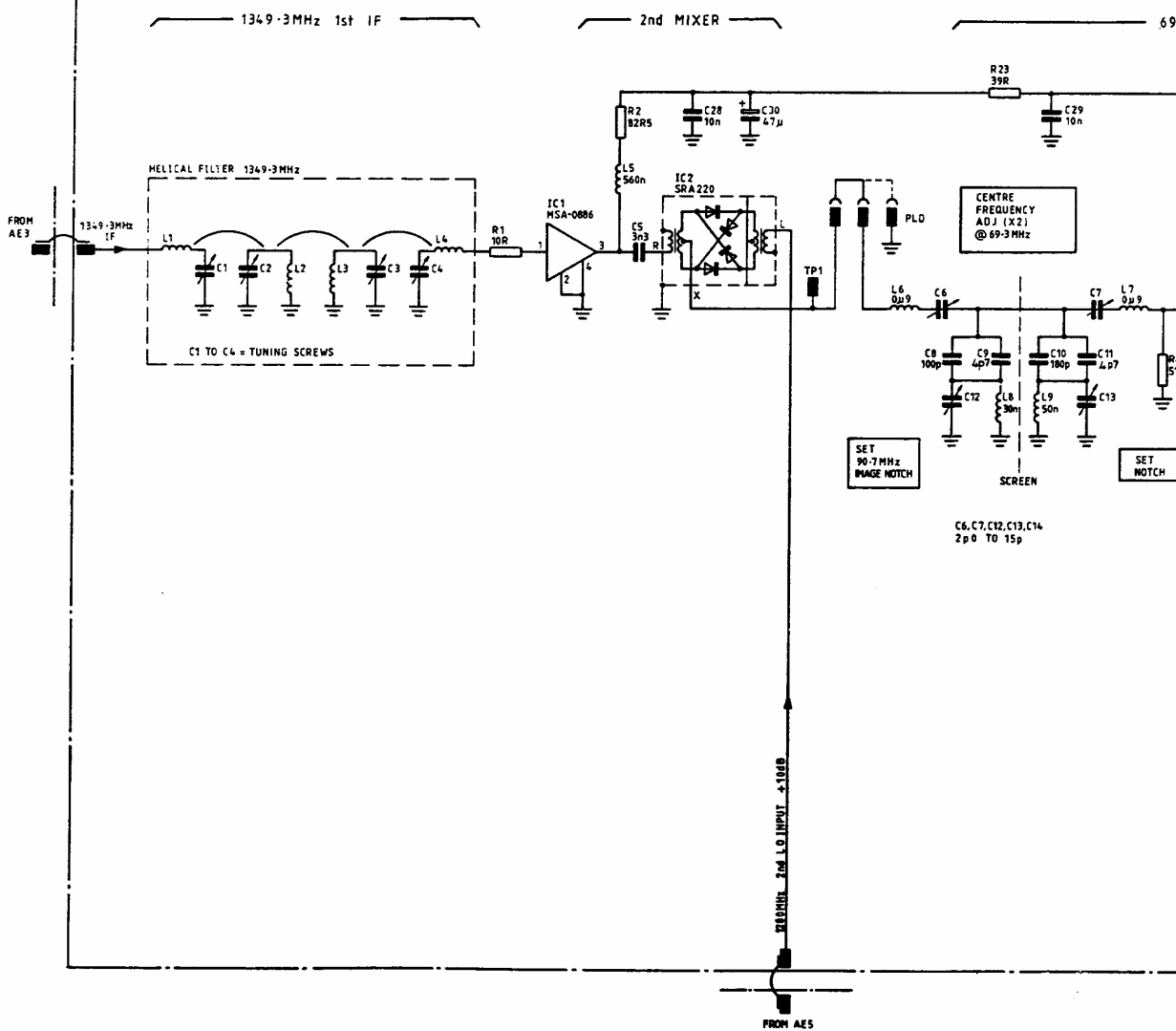
Drg. No. 44829/844 Sheet 1 of 1 Issue 4

# Component layout AE4



AE4

44829/844



# Circuit diagram AE4

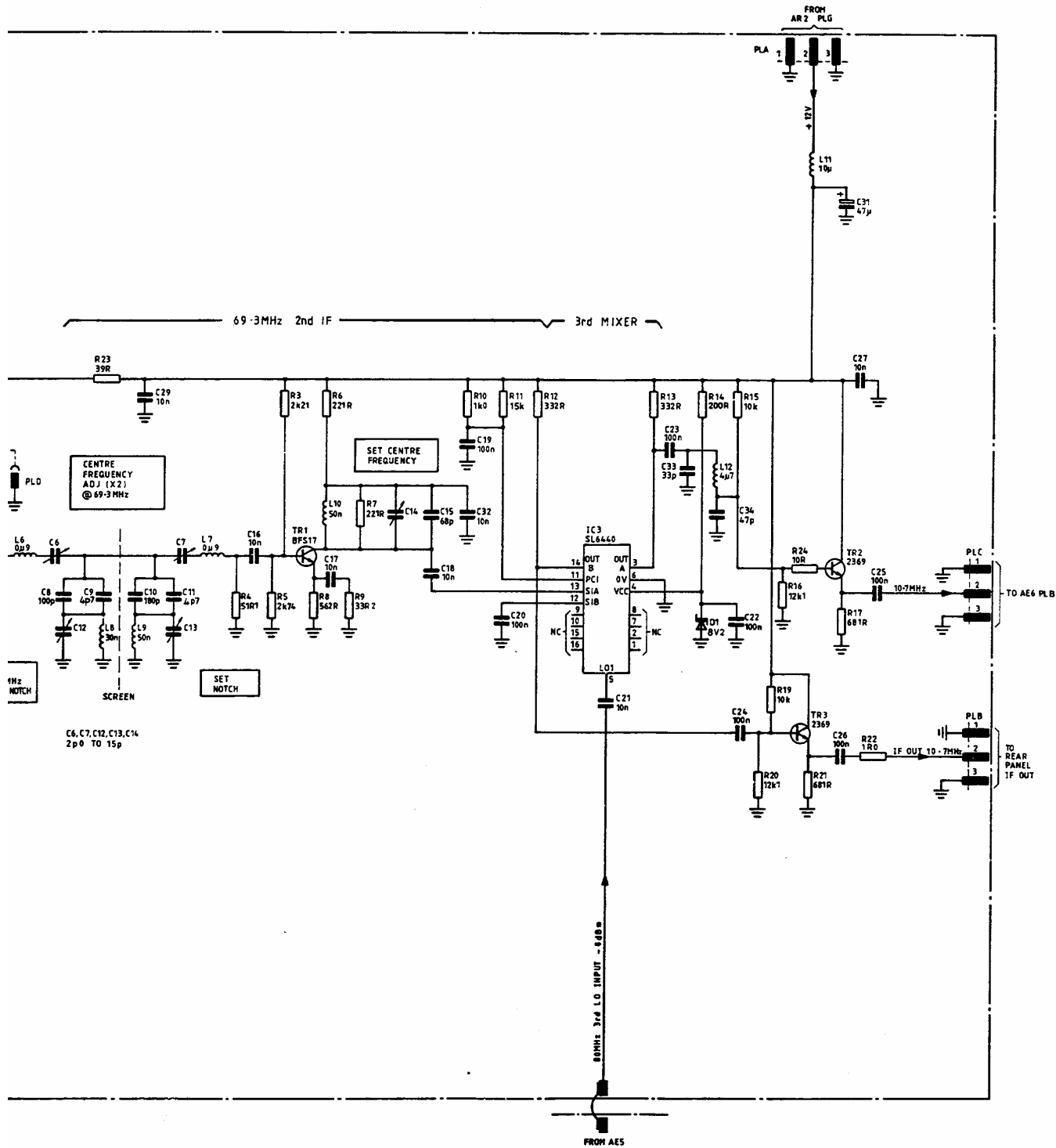
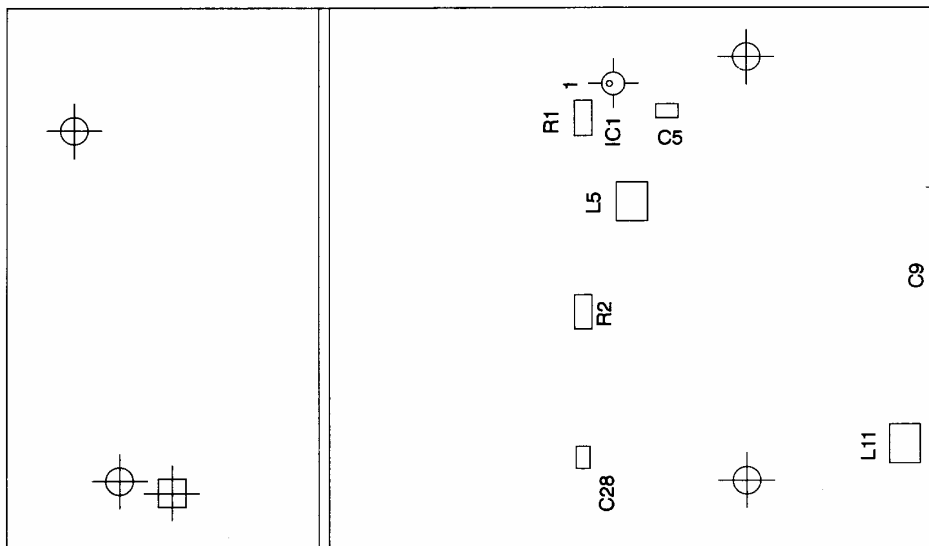
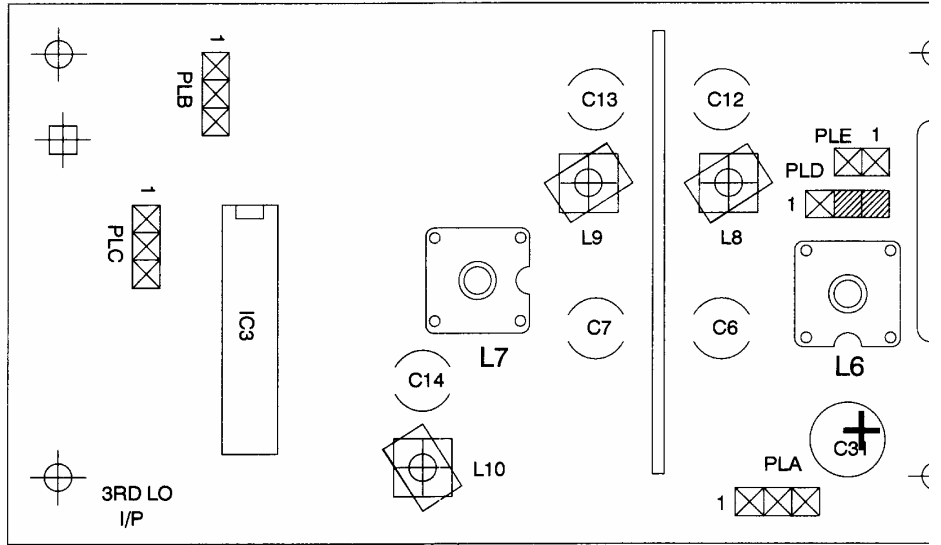


Fig. 7-141 AE4 1st and 2nd IF, 2nd and 3rd mixers - circuit

**SERVICING DIAGRAMS**

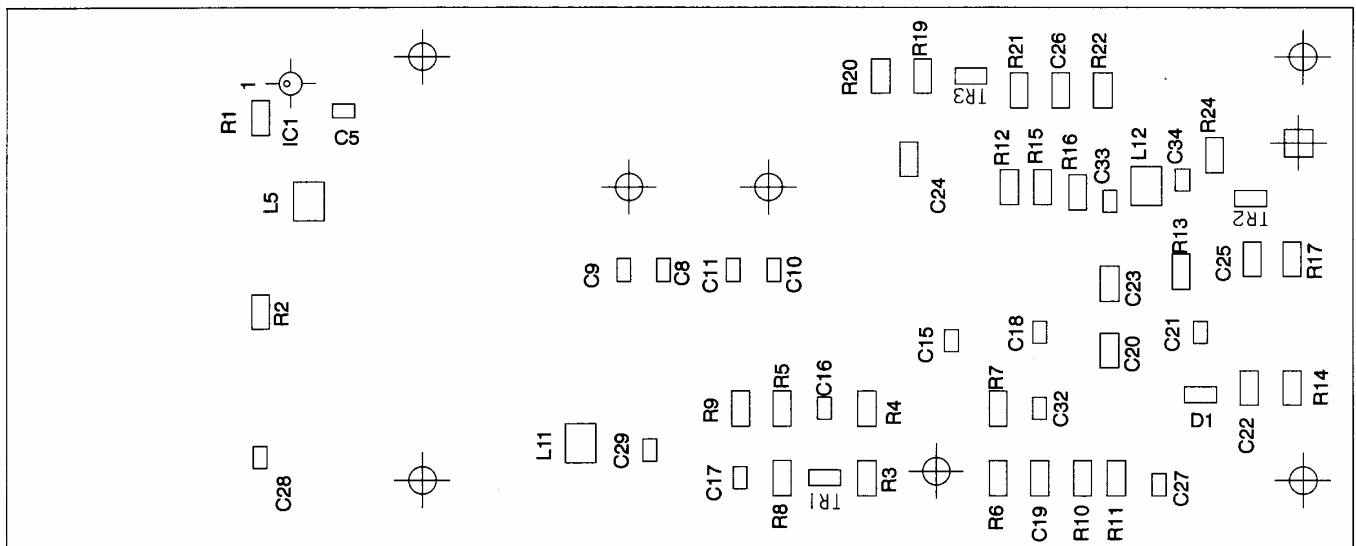
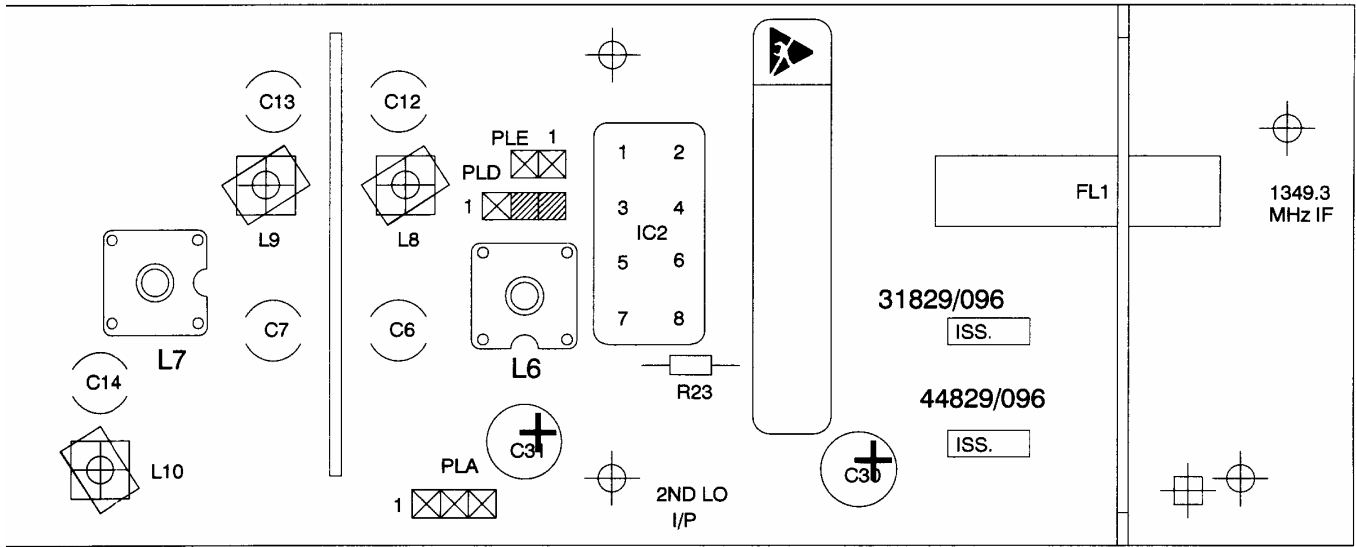


**1st and 2nd IF, 2nd and 3rd mixers AE4**

Drg. No. 44830/096 Sheet 1 of 1 Issue 4



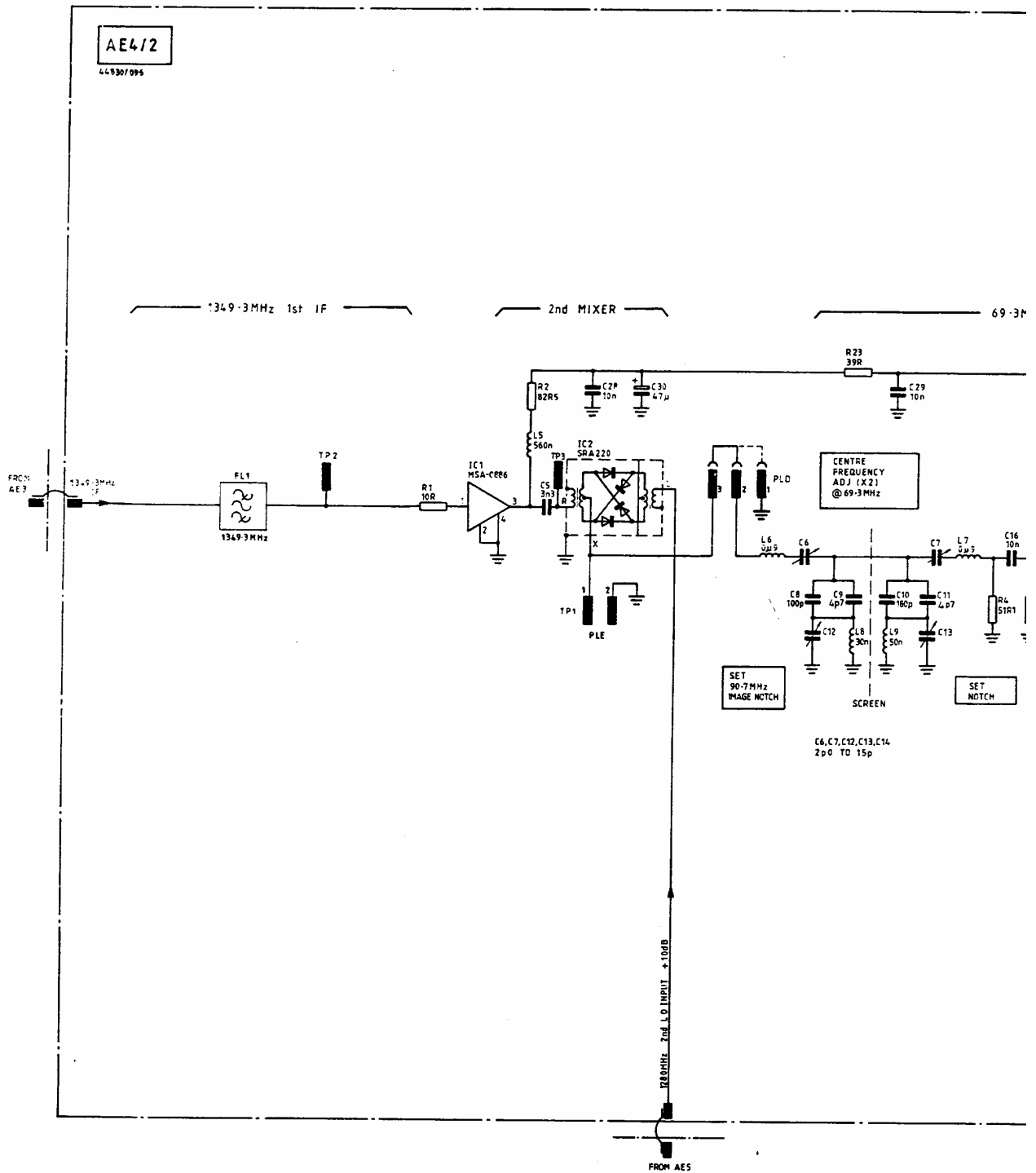
# Component layout AE4/2



**E4**

Drg. No. 44830/096 Sheet 1 of 1 Issue 4

Fig. 7-142 AE4/2 1st and 2nd IF, 2nd and 3rd mixers - component layout



# Circuit diagram AE4/2

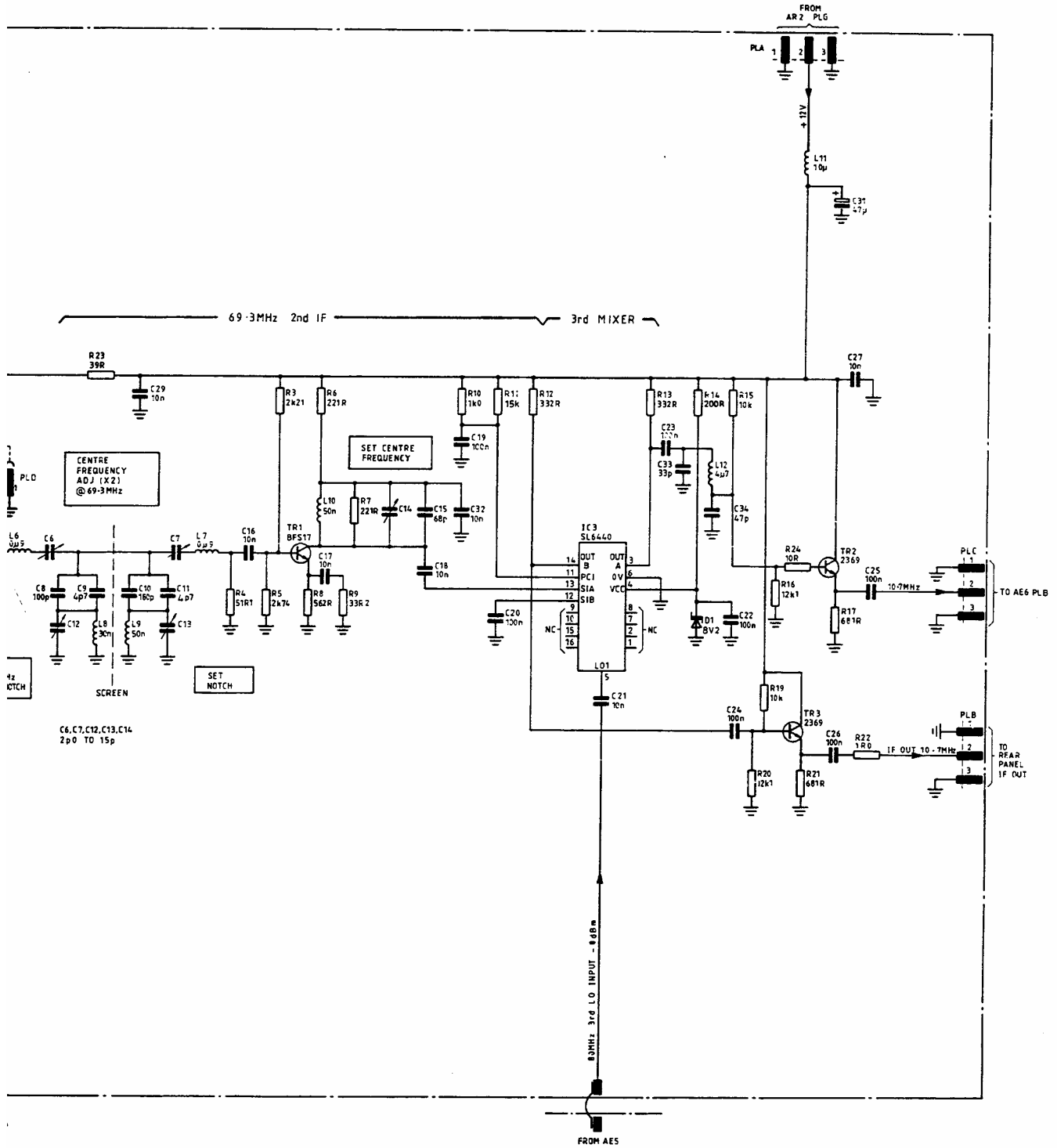
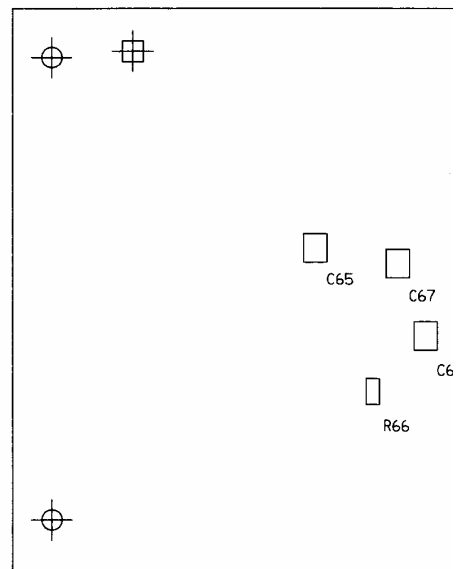
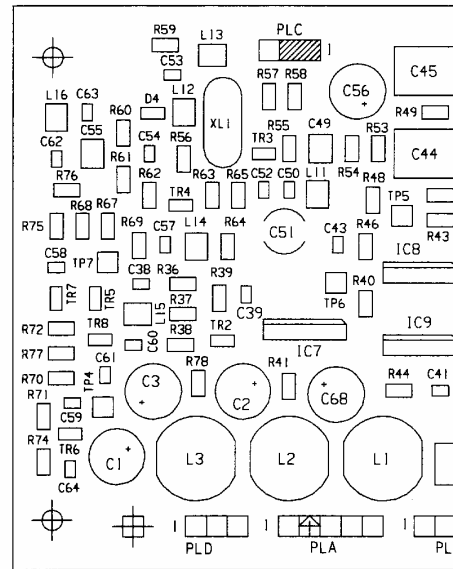


Fig. 7-143 AE4/2 1st and 2nd IF, 2nd and 3rd mixers - circuit

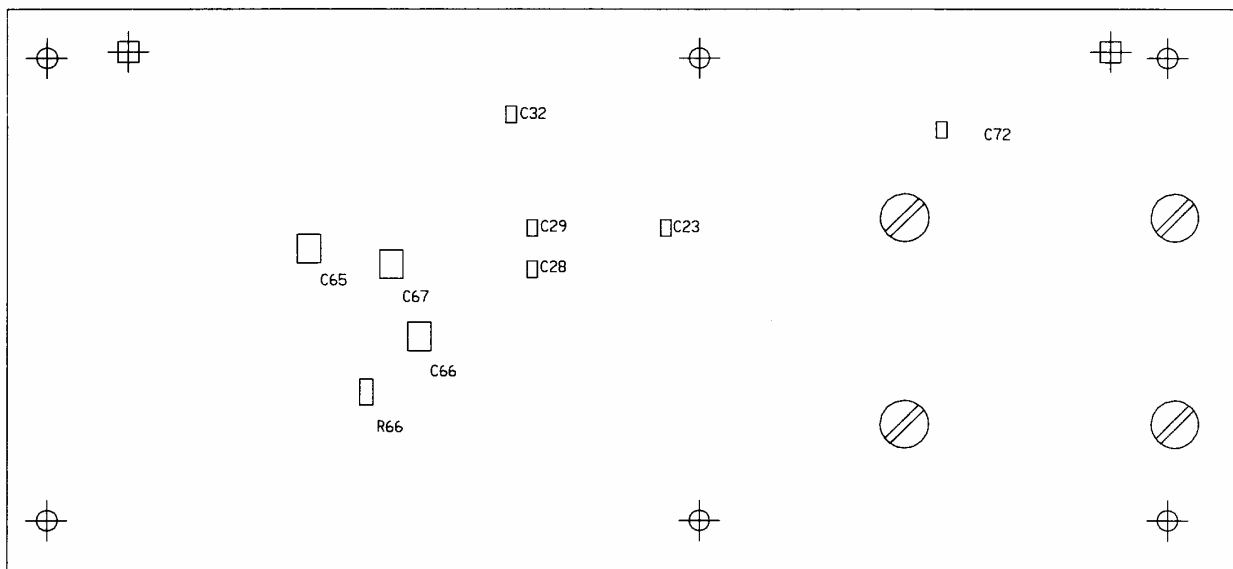
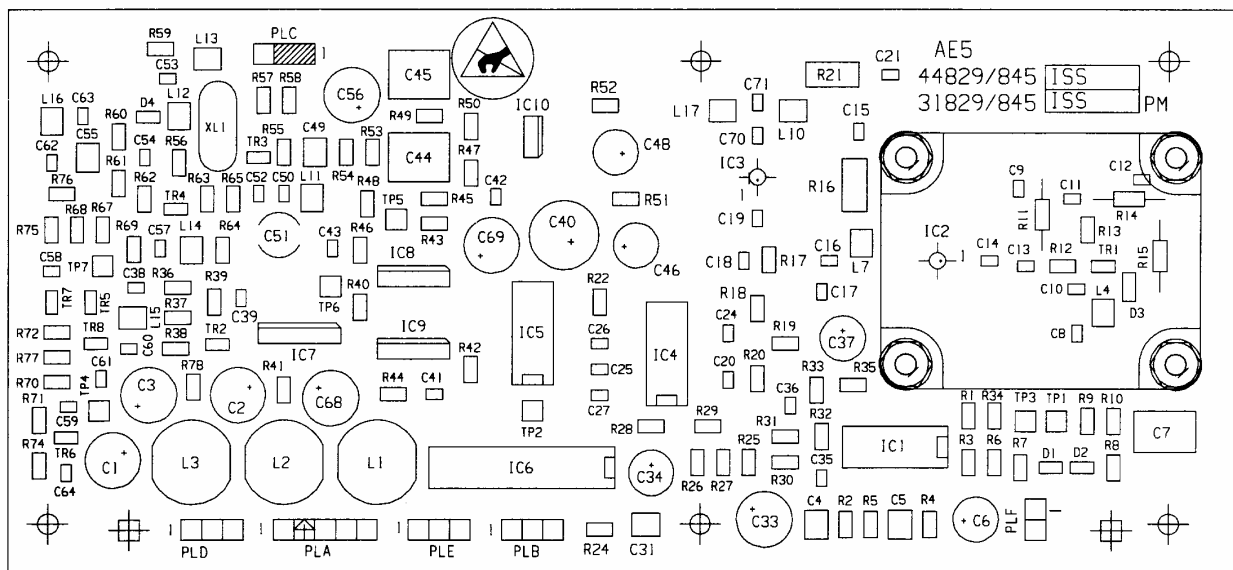
SERVICING DIAGRAMS

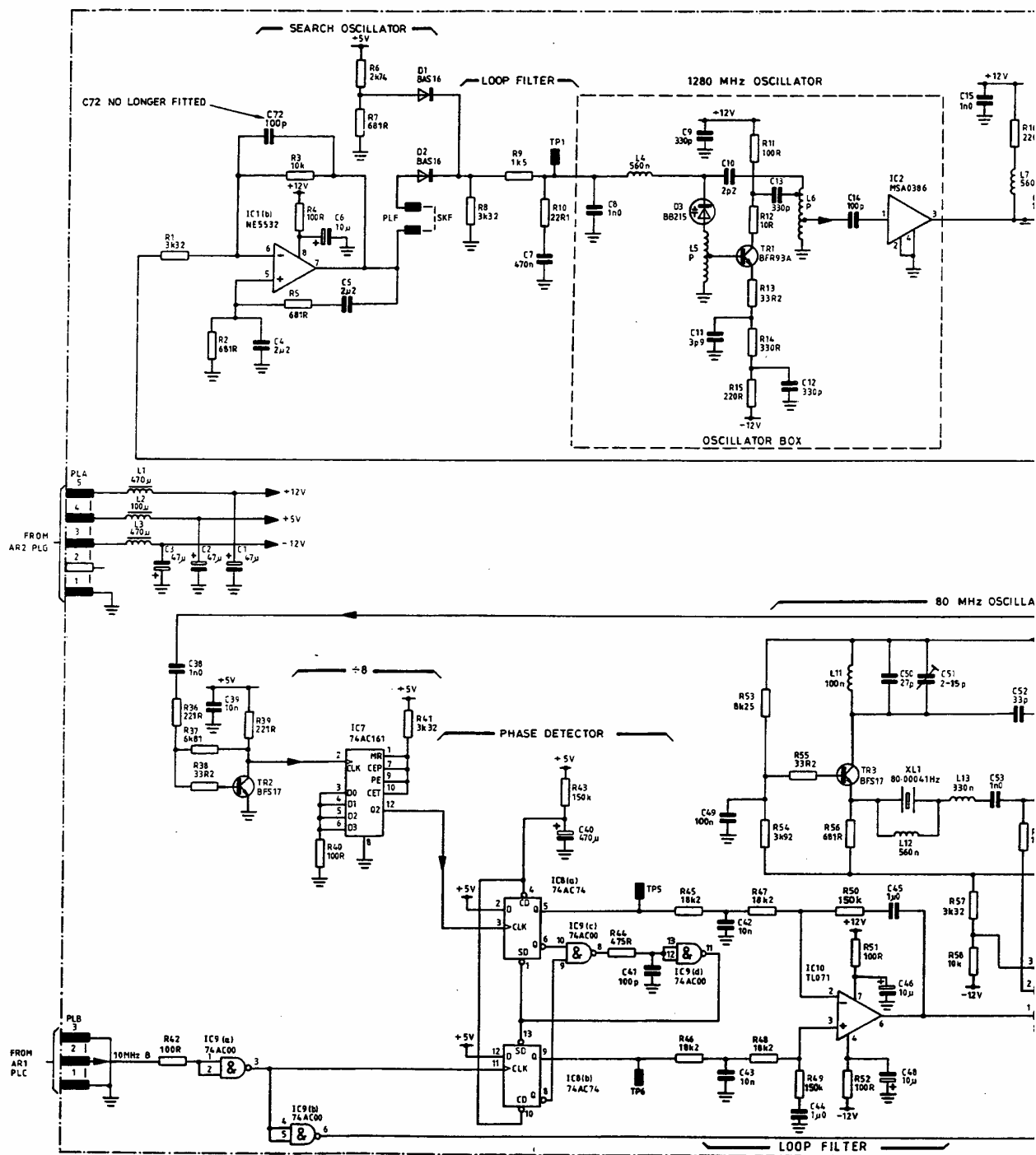


1st and 2nd IF, 2nd and 3rd mixers **AE4/2**

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# Component layout AE5





# Circuit diagram AE5

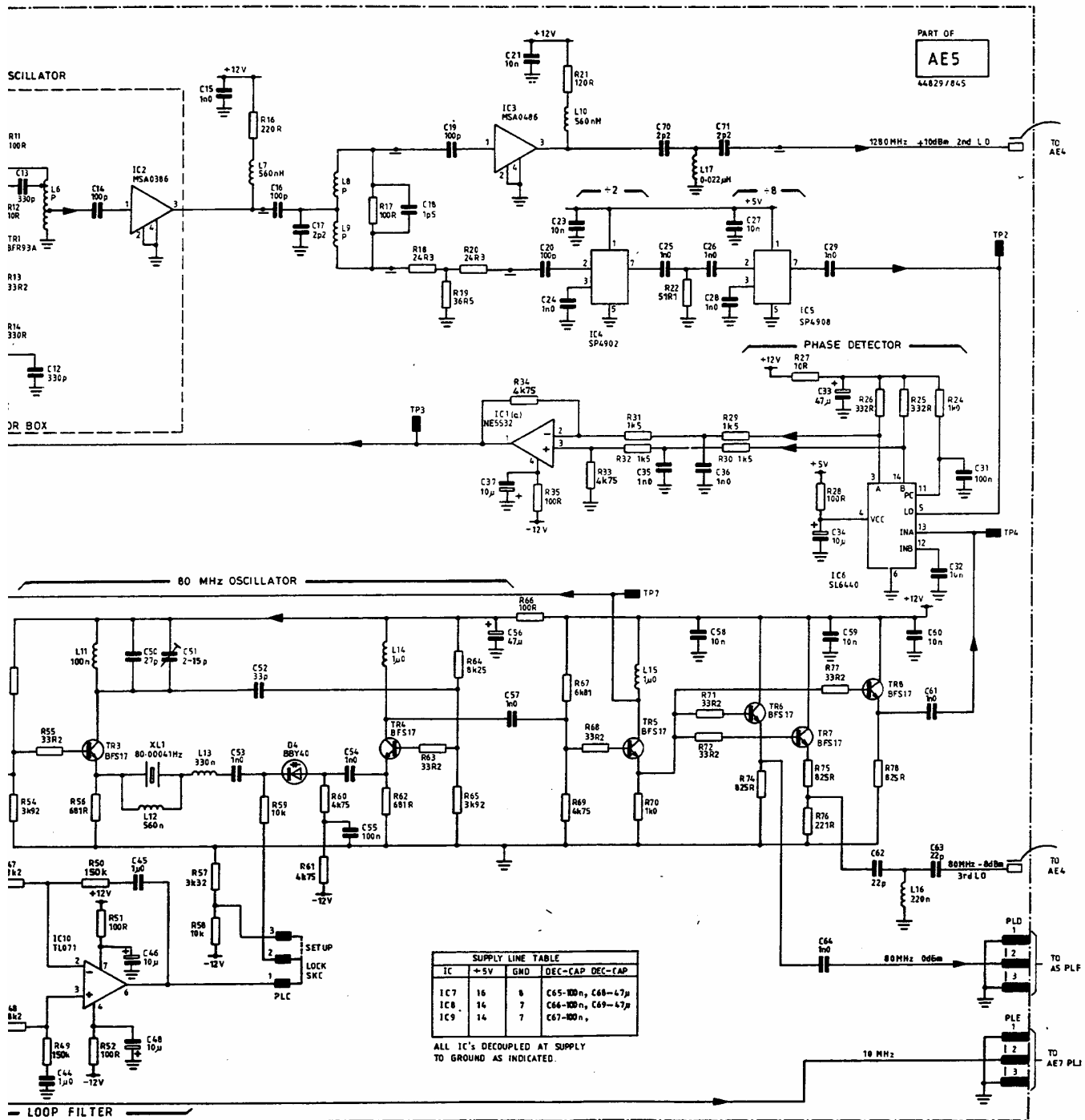
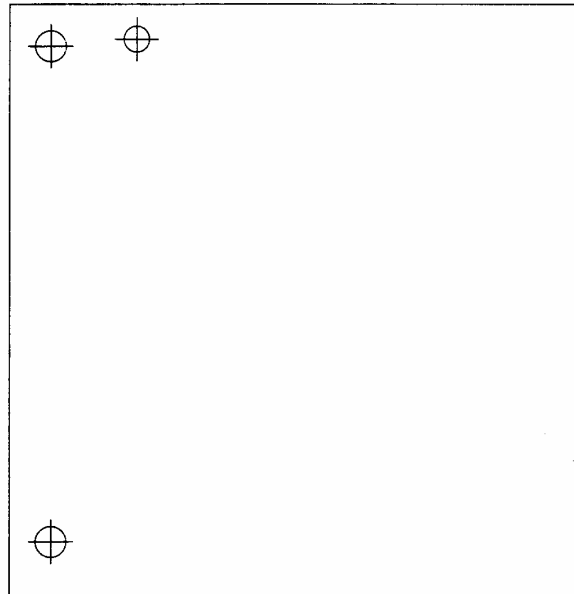
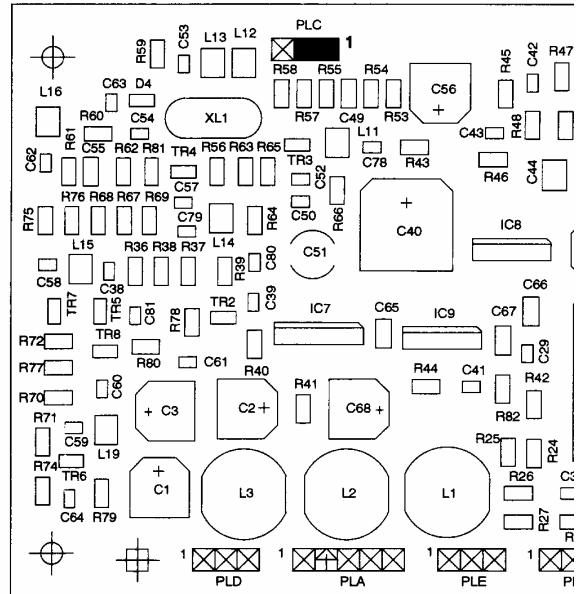


Fig. 7-145 AE5 2nd and 3rd LO - circuit

SERVICING DIAGRAMS

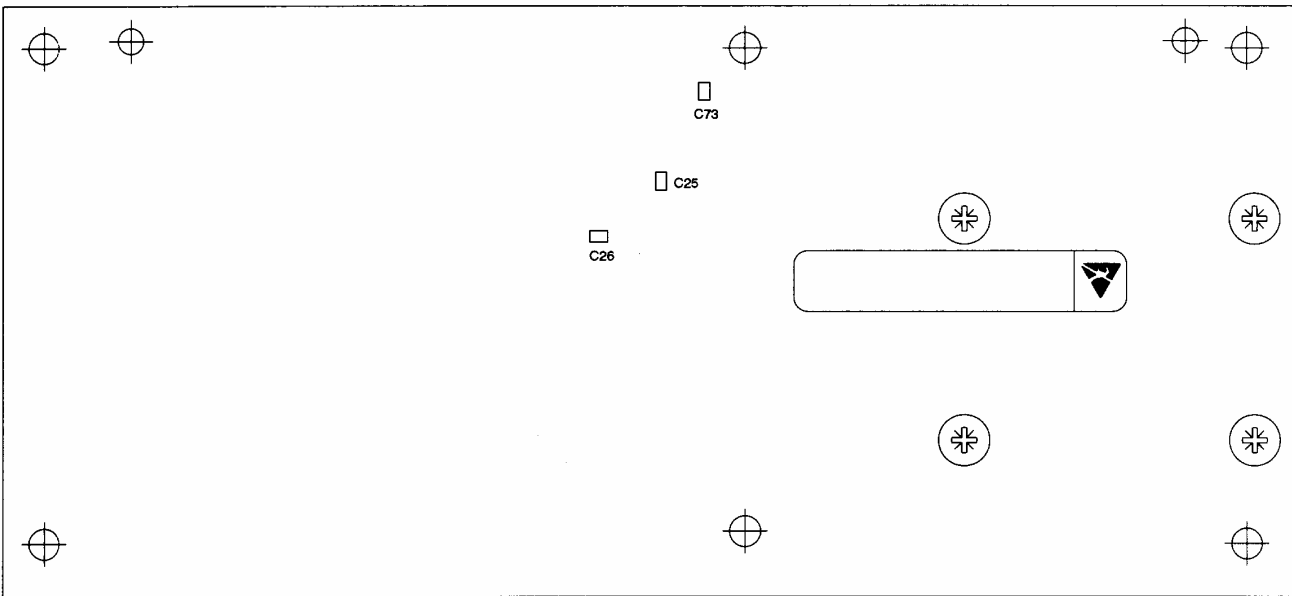
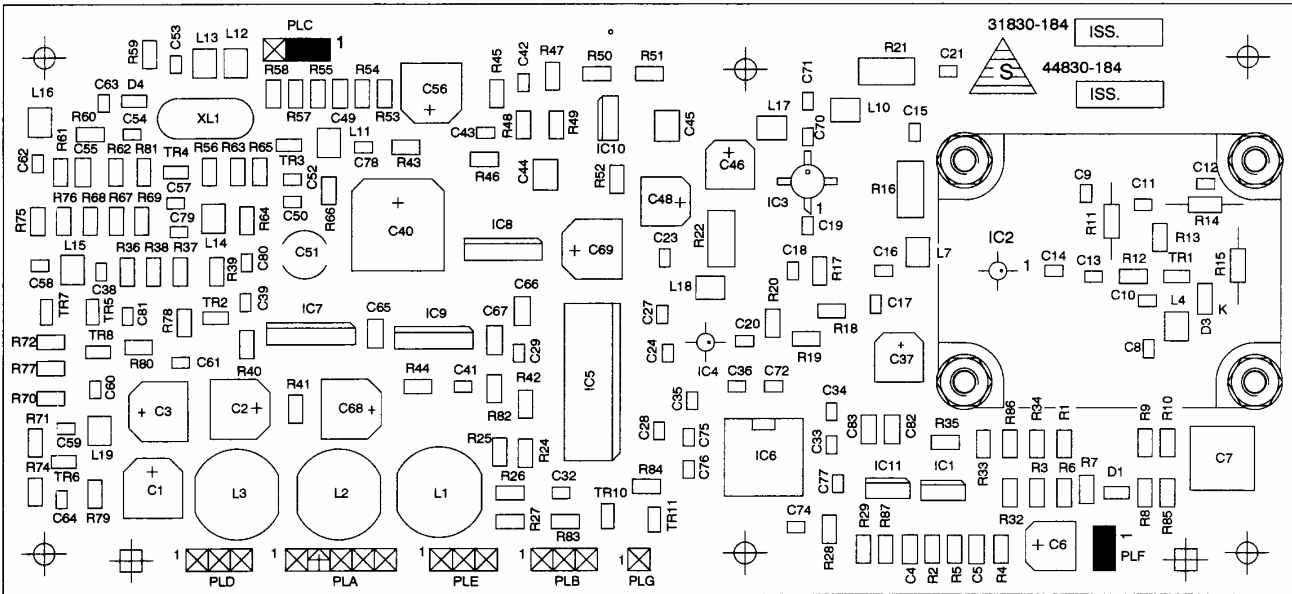


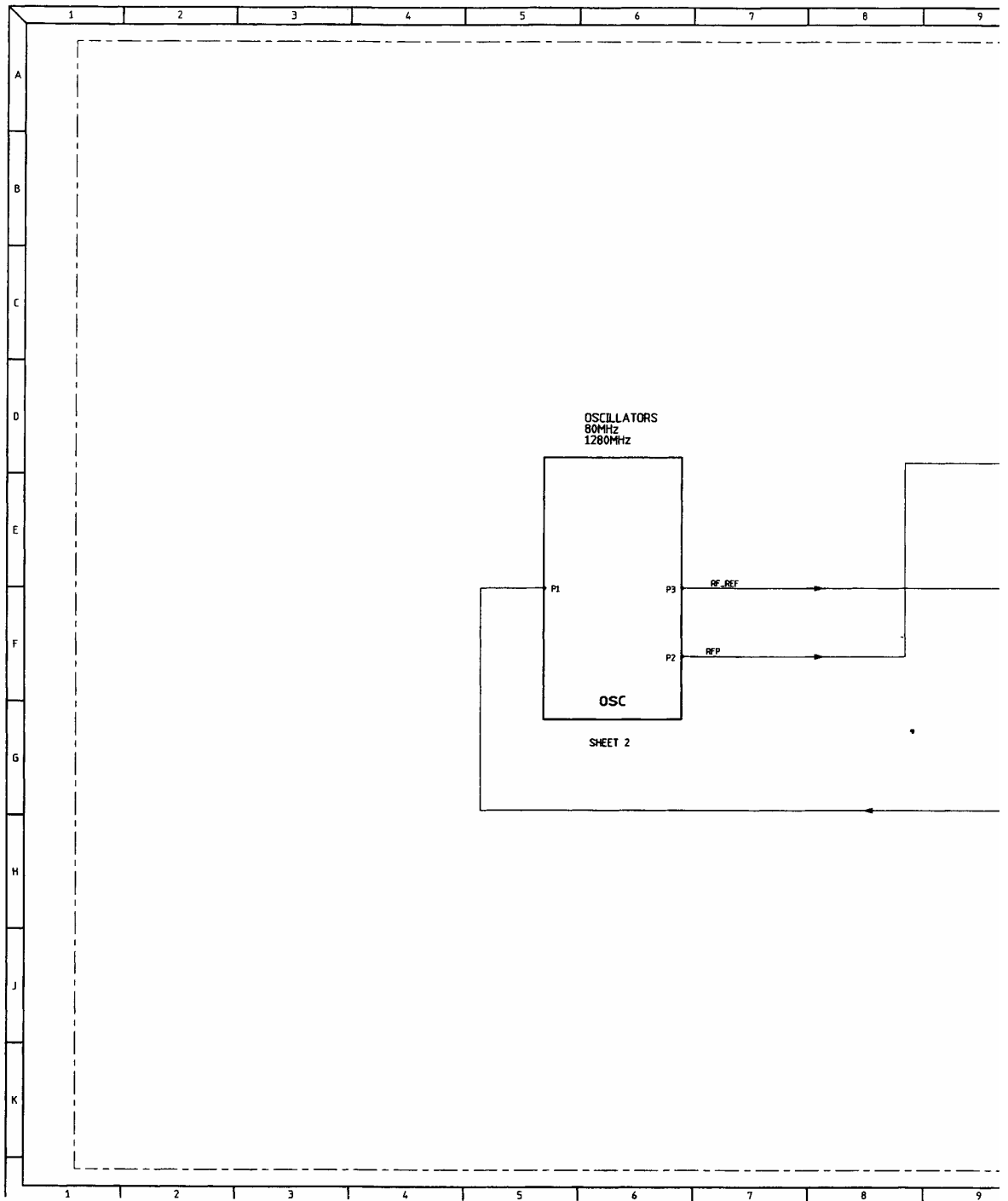
**2nd and 3rd LO AE5**

Drg. No. 44830/184 Sheet 1 of 1 Issue 5



# Component layout AE5/1





# Circuit diagrams AE5/1

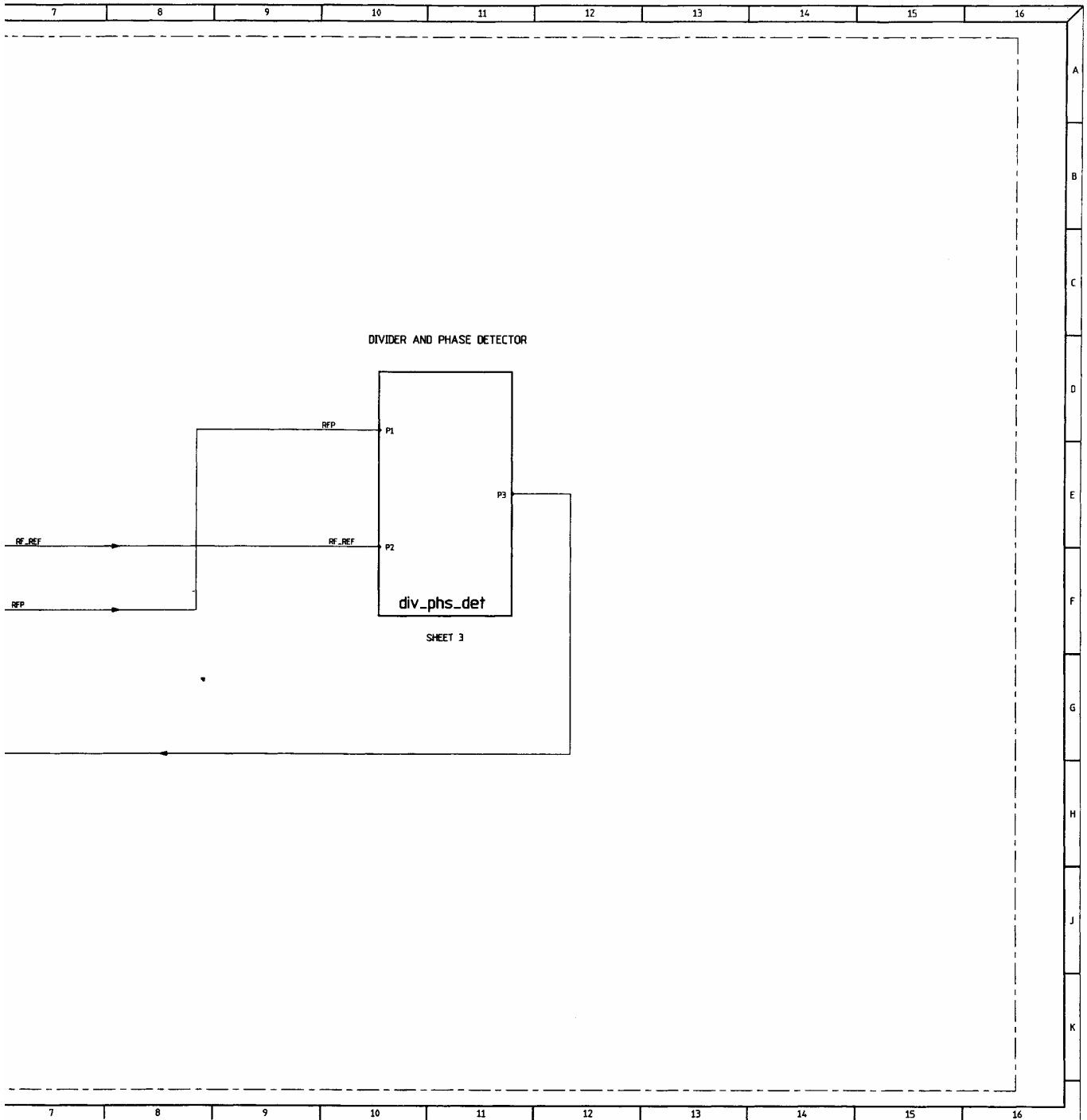


Fig. 7-147 AE5/1 2nd and 3rd LO - circuit

