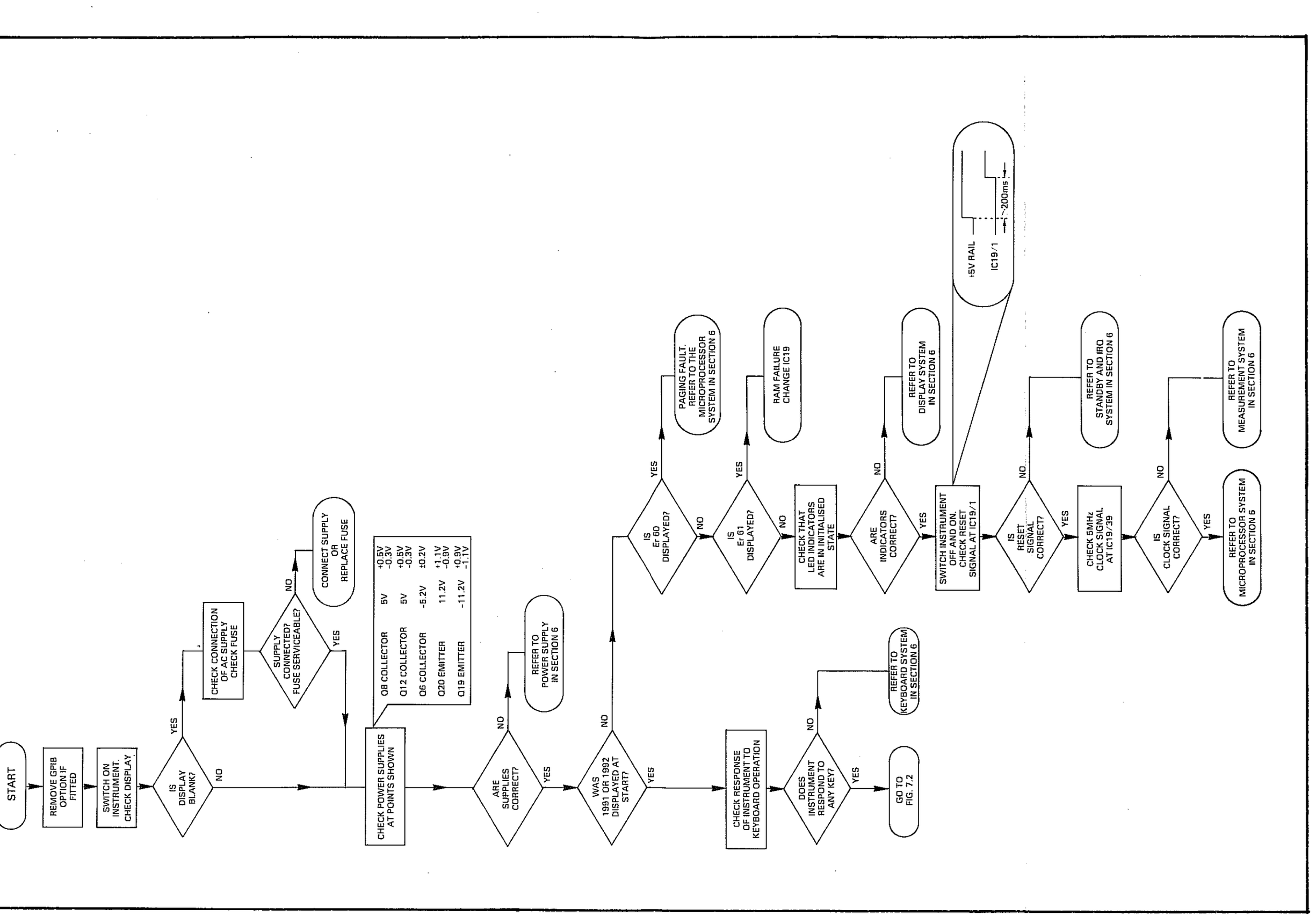


Fig 7.1 Fault Finding Flowchart - Part 1

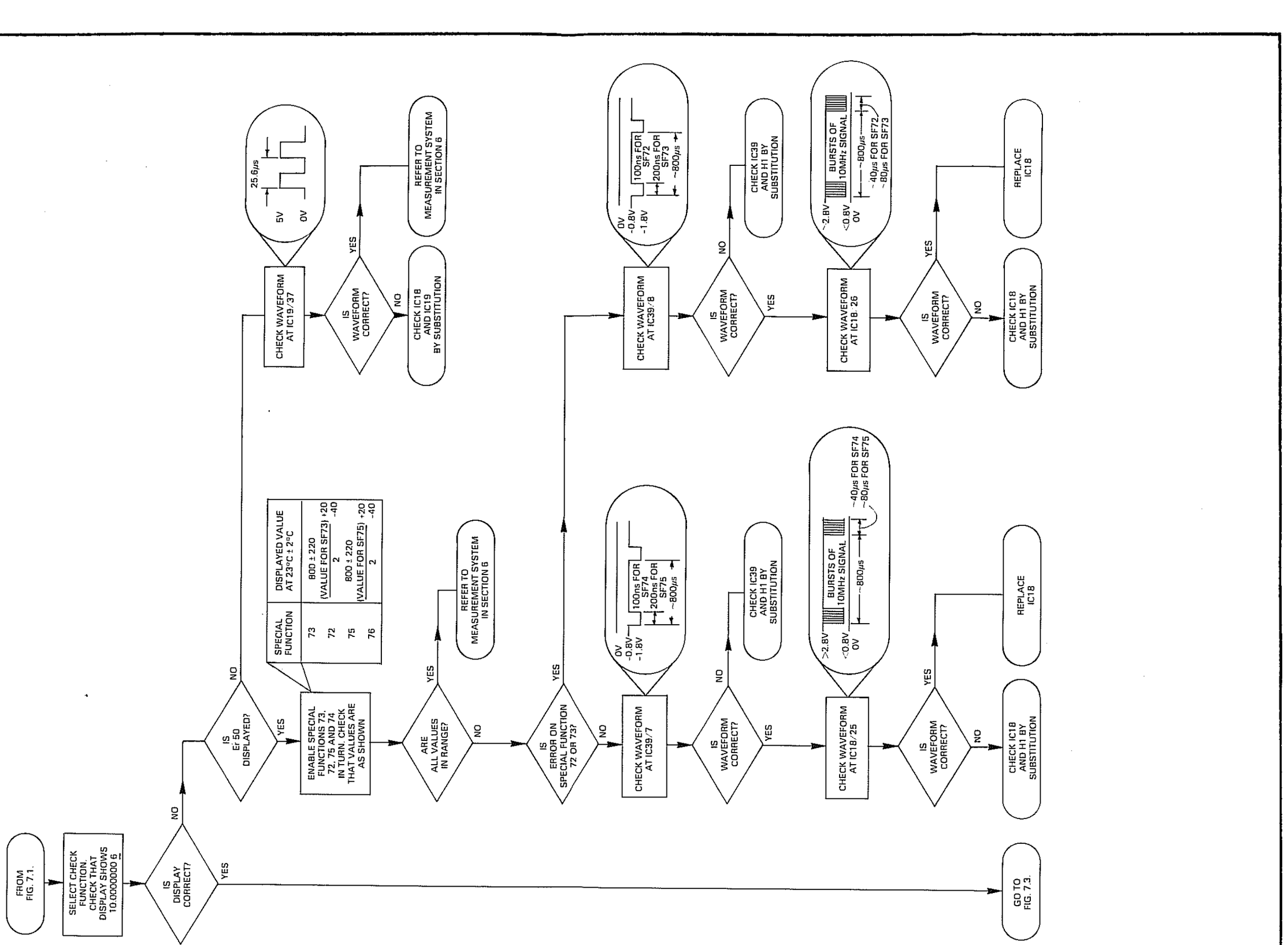


Fig 7.2 Fault Finding Flowchart - Part 2

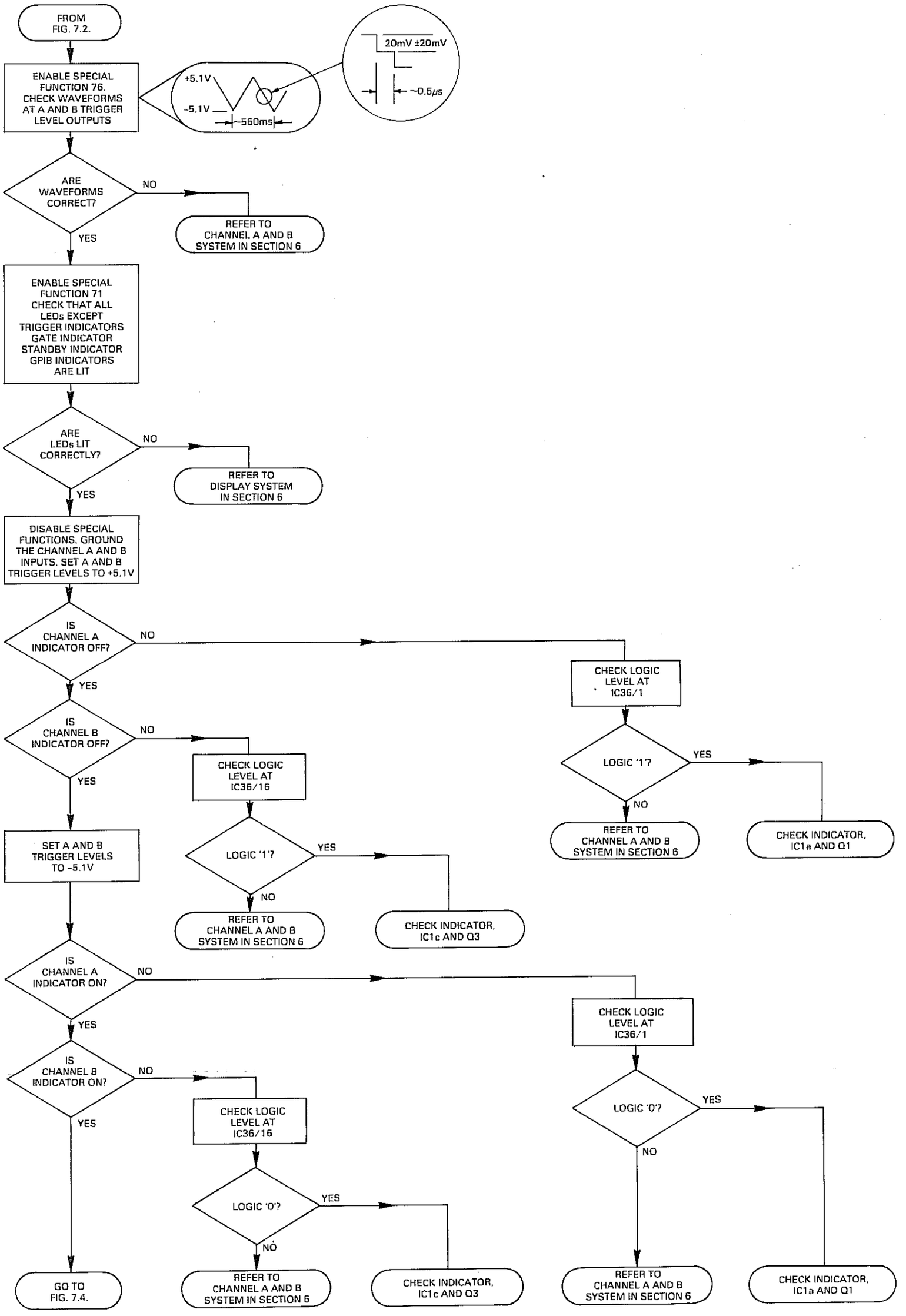


Fig 7.3 Fault Finding Flowchart - Part 3

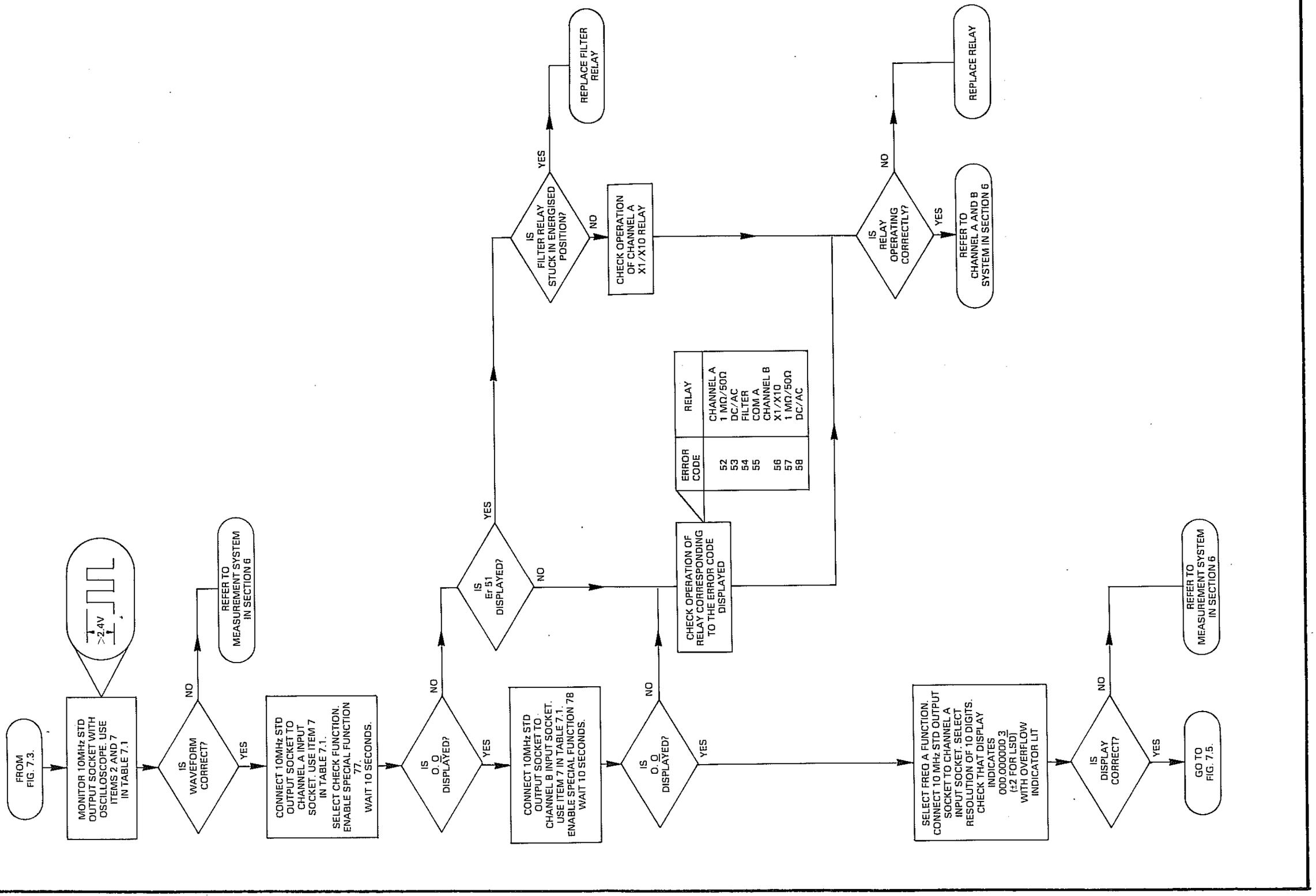


Fig 7.4 Fault Finding Flowchart - Part 4

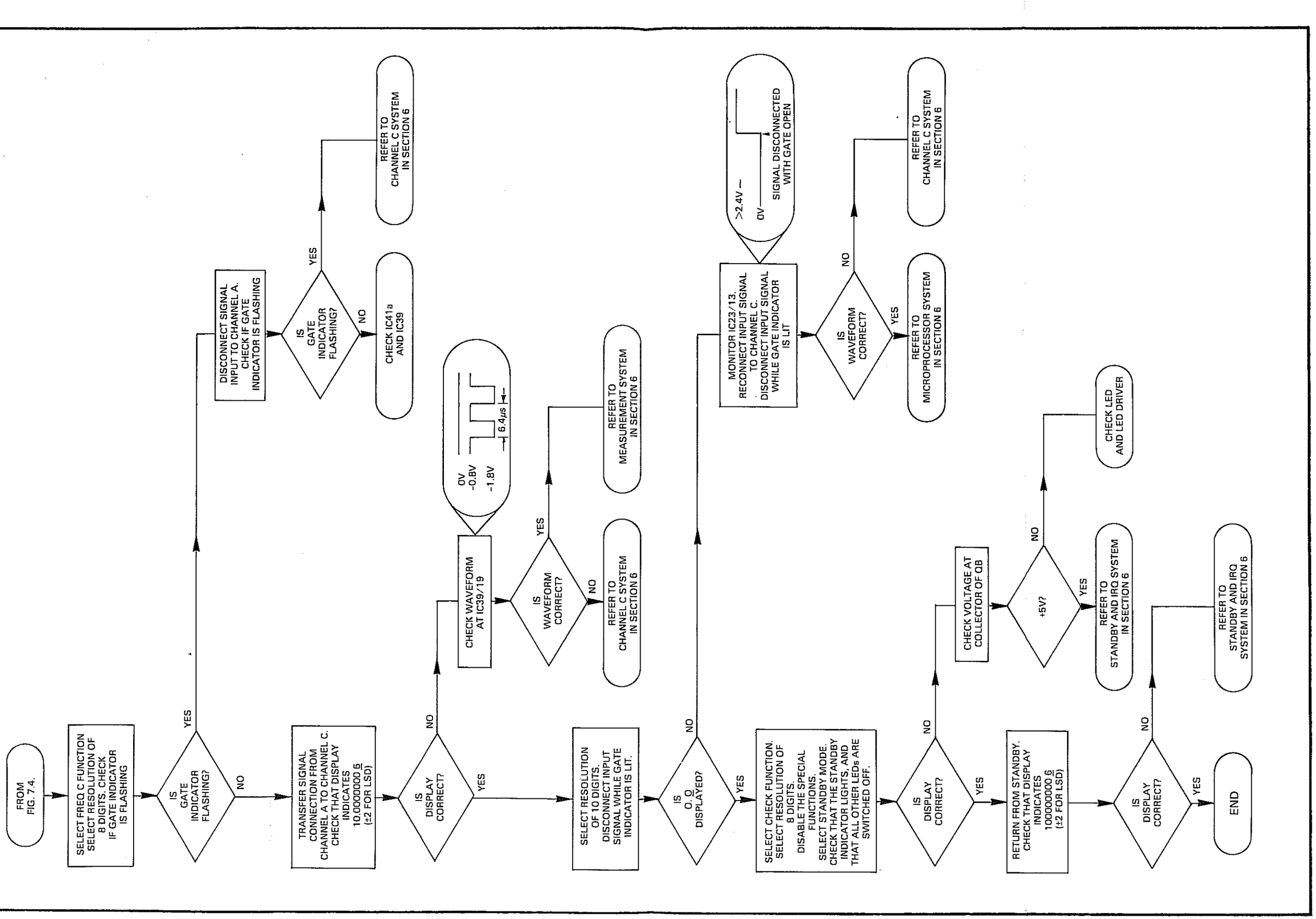


Fig 7.5 Fault Finding Flowchart - Part 5

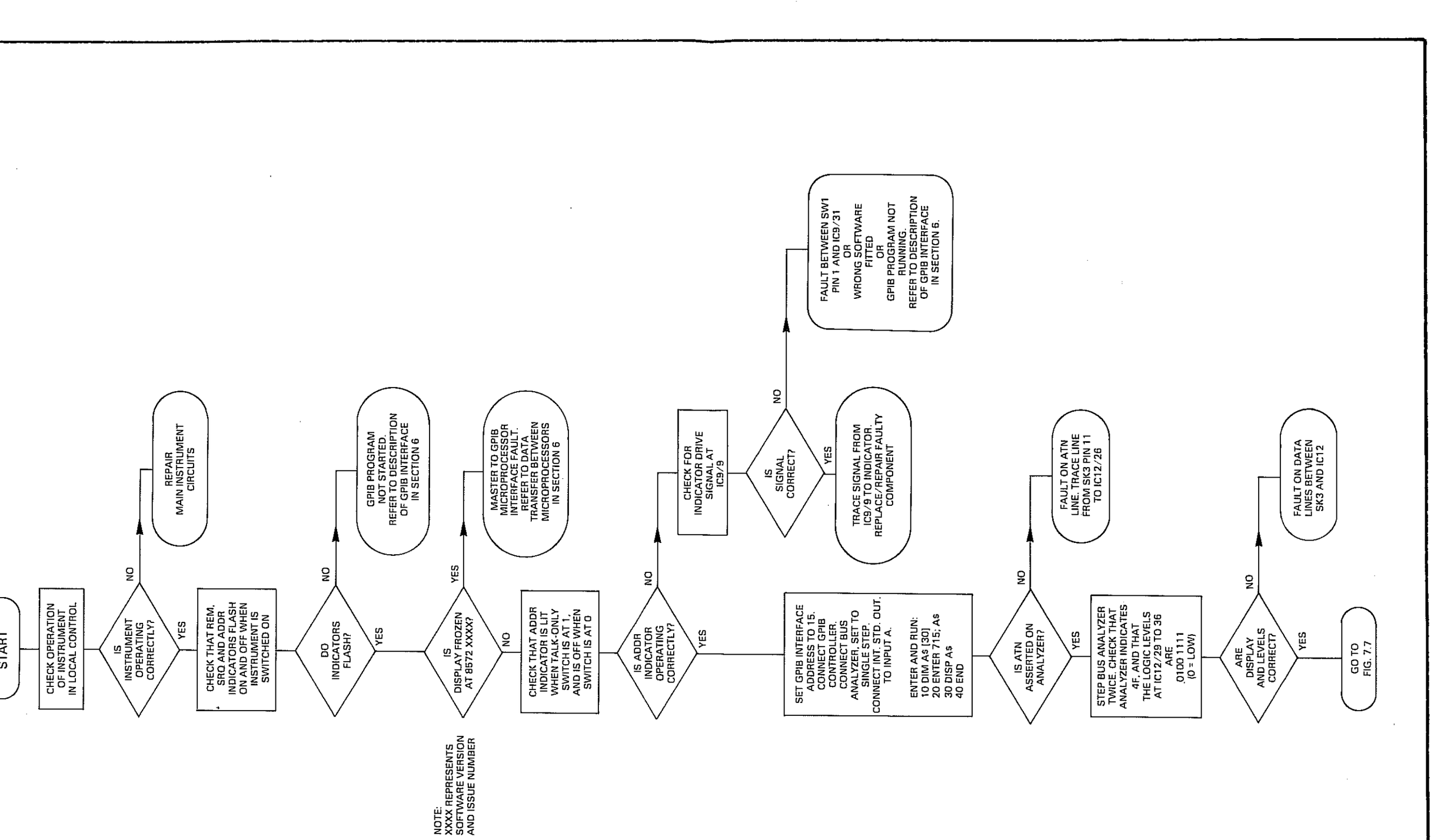


Fig 7.6 Fault Finding Flowchart - GPIB Part 1

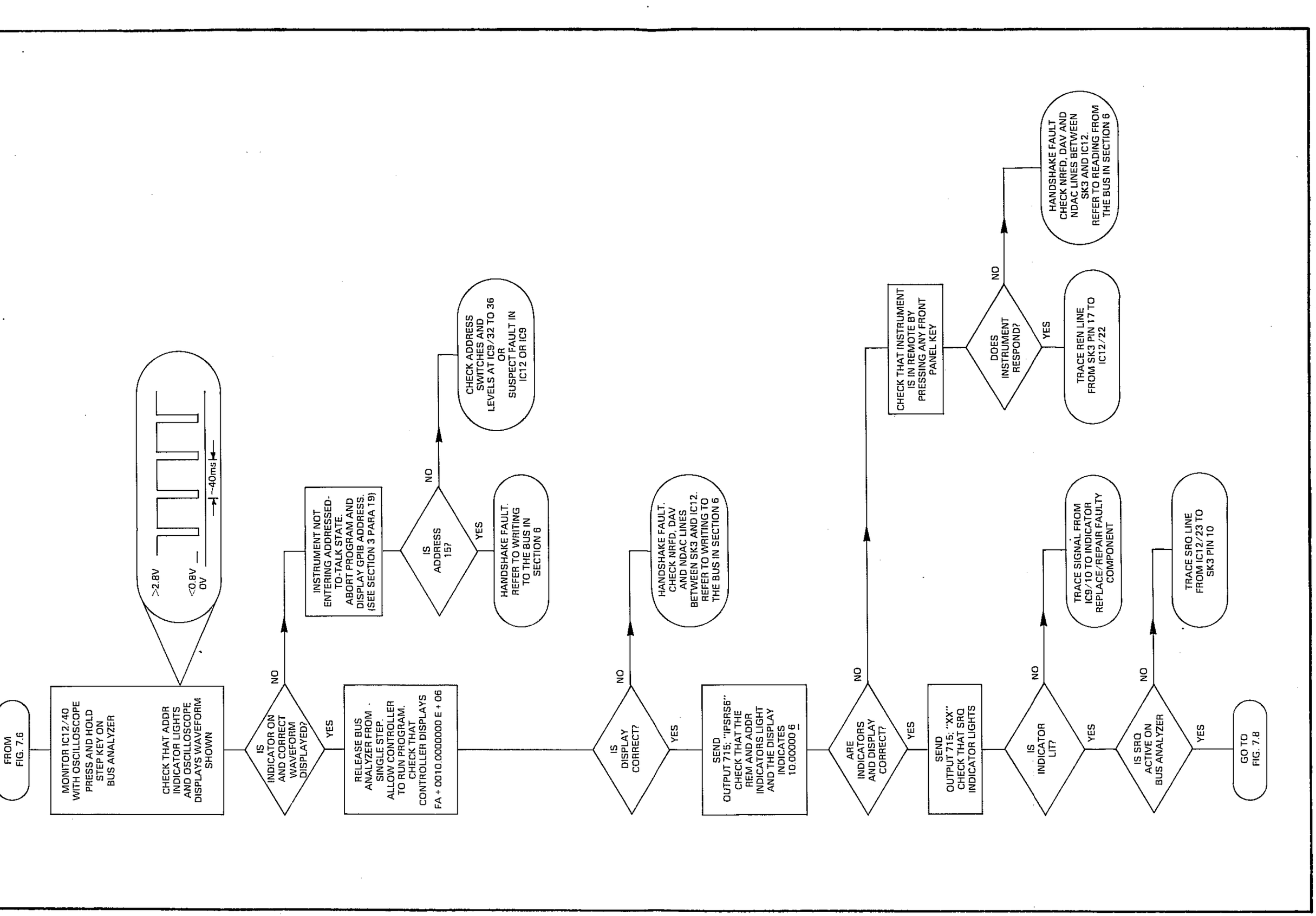


Fig 7.7 Fault Finding Flowchart - GPIB Part 2

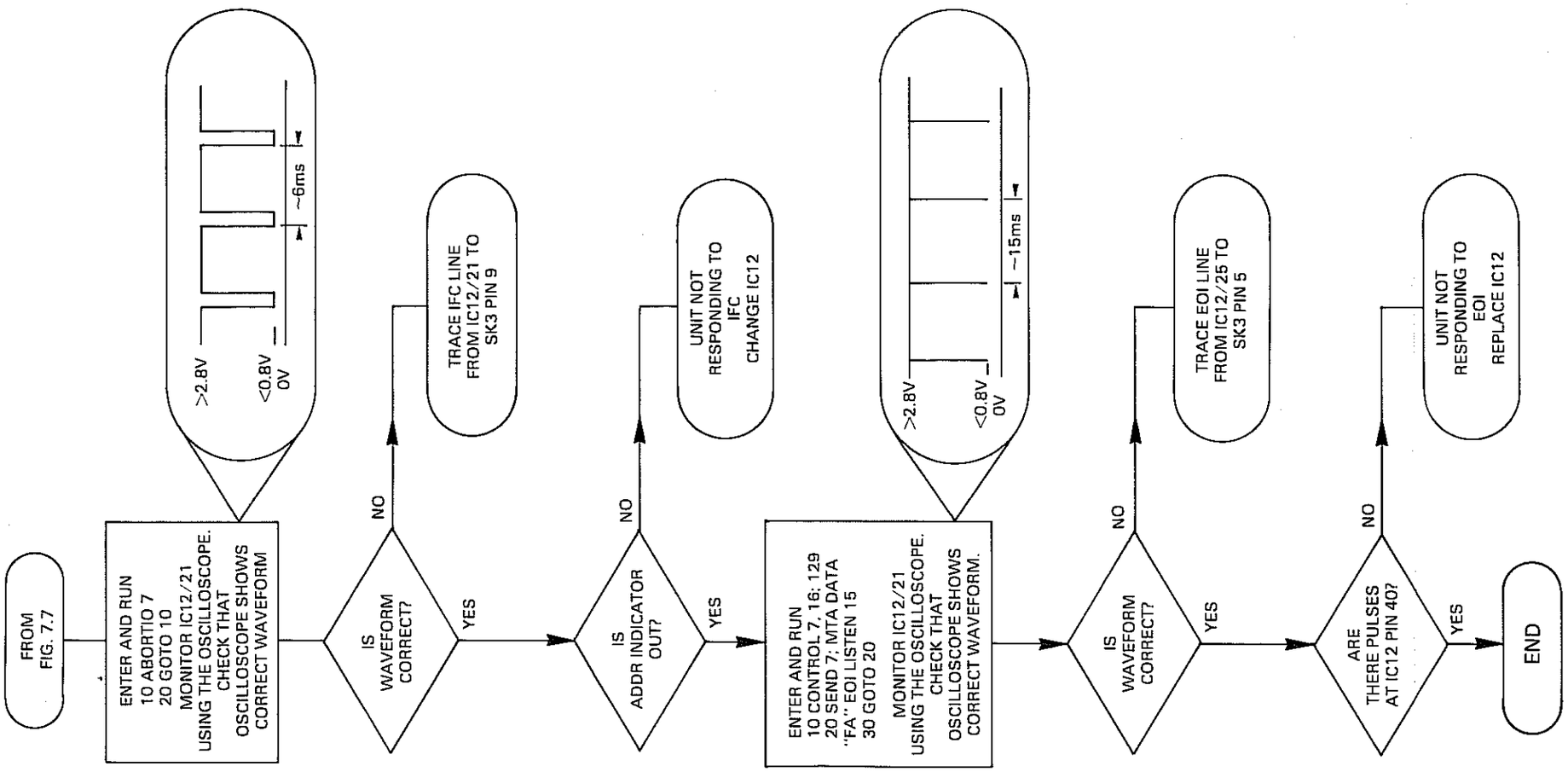
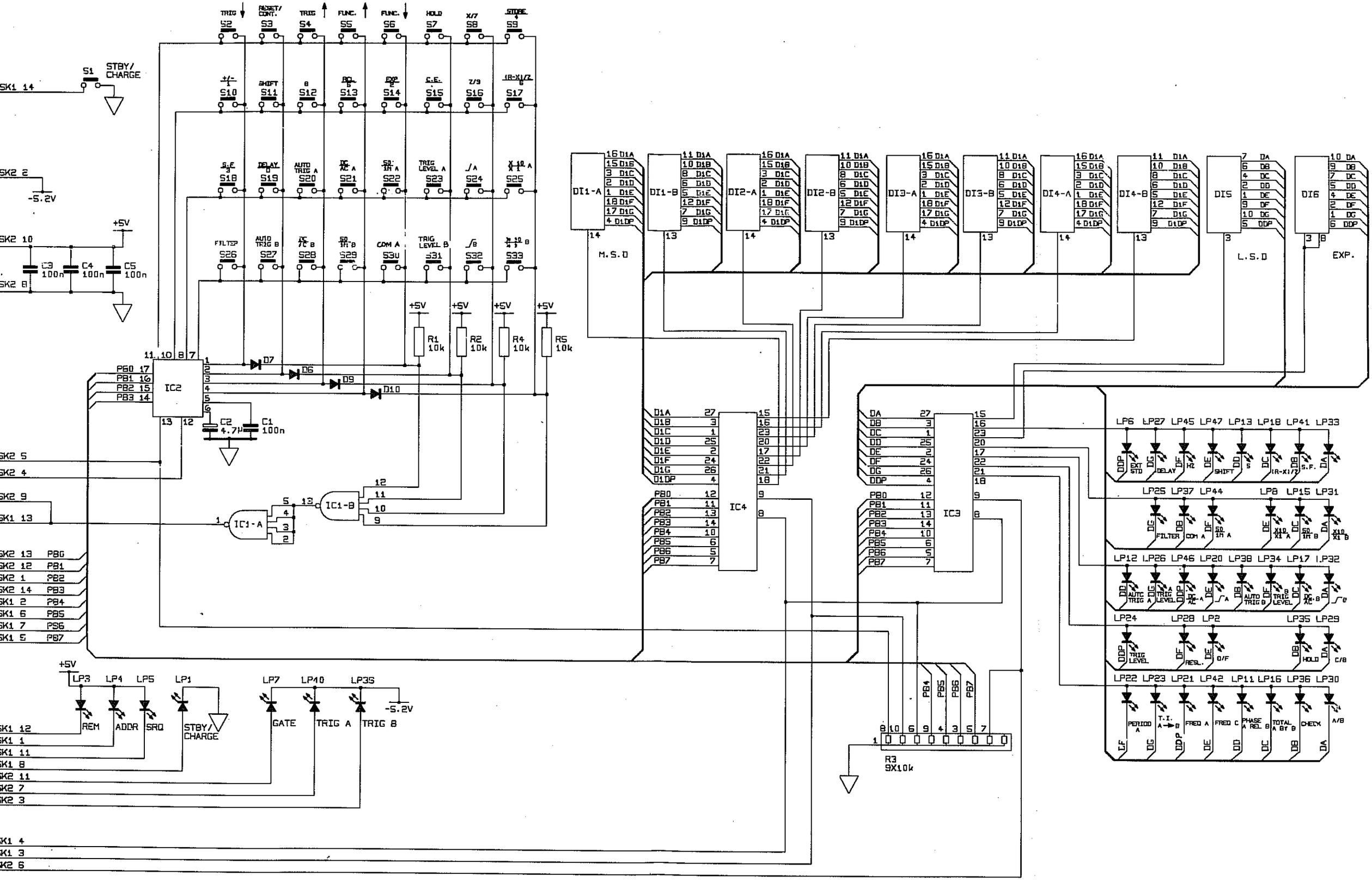
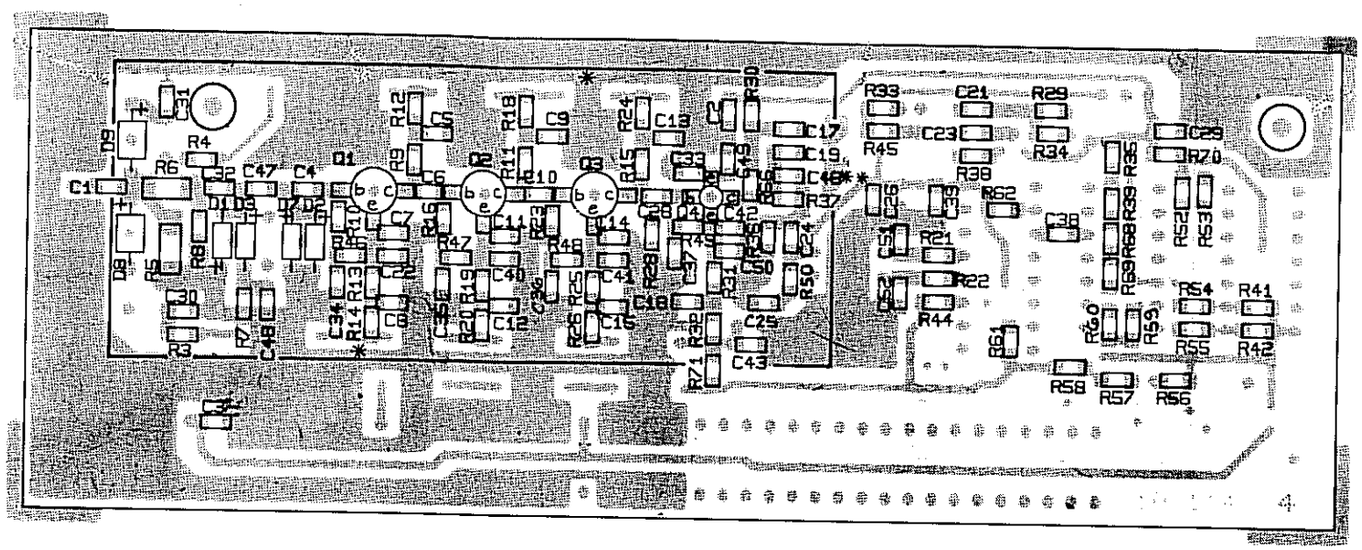


Fig 7.8 Fault Finding Flowchart - GPIB Part 3

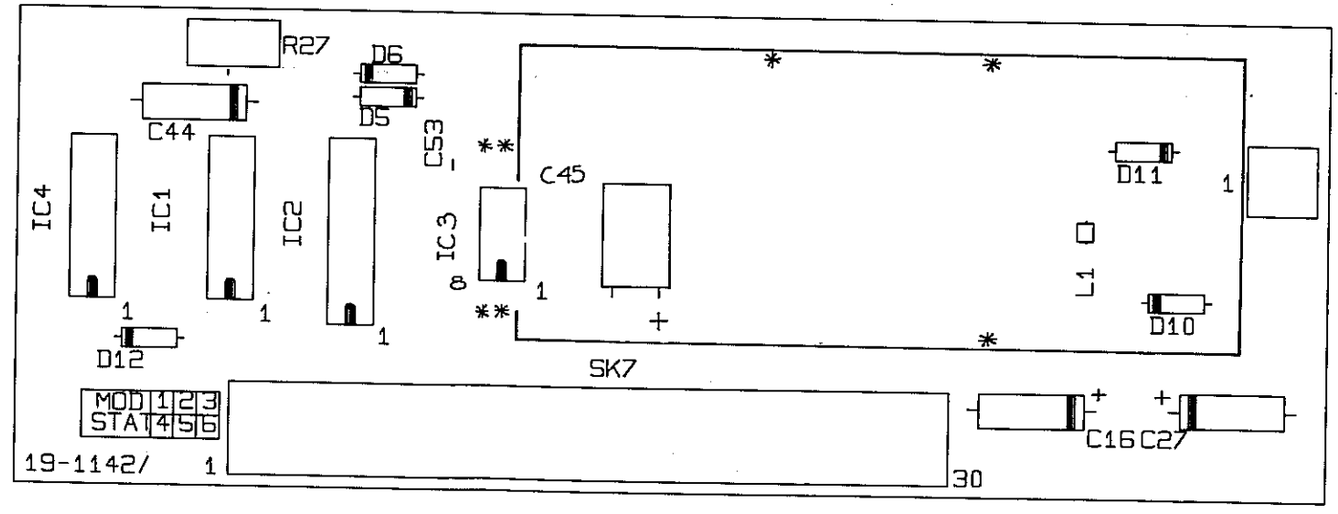


Circuit Diagram:
Display Board Assembly 19-1141 Fig.3

TRACKSIDE VIEW

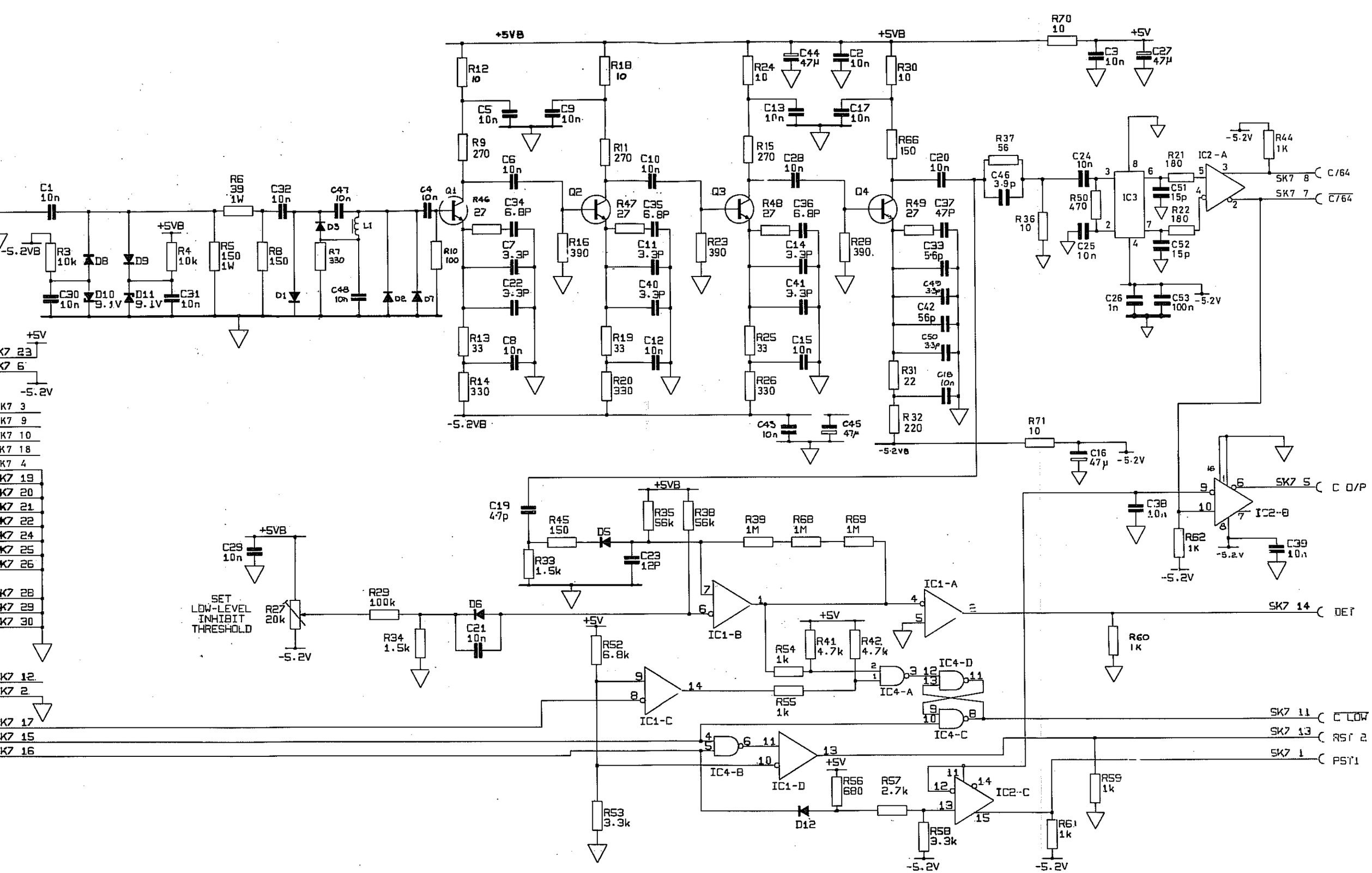


COMPSIDE VIEW

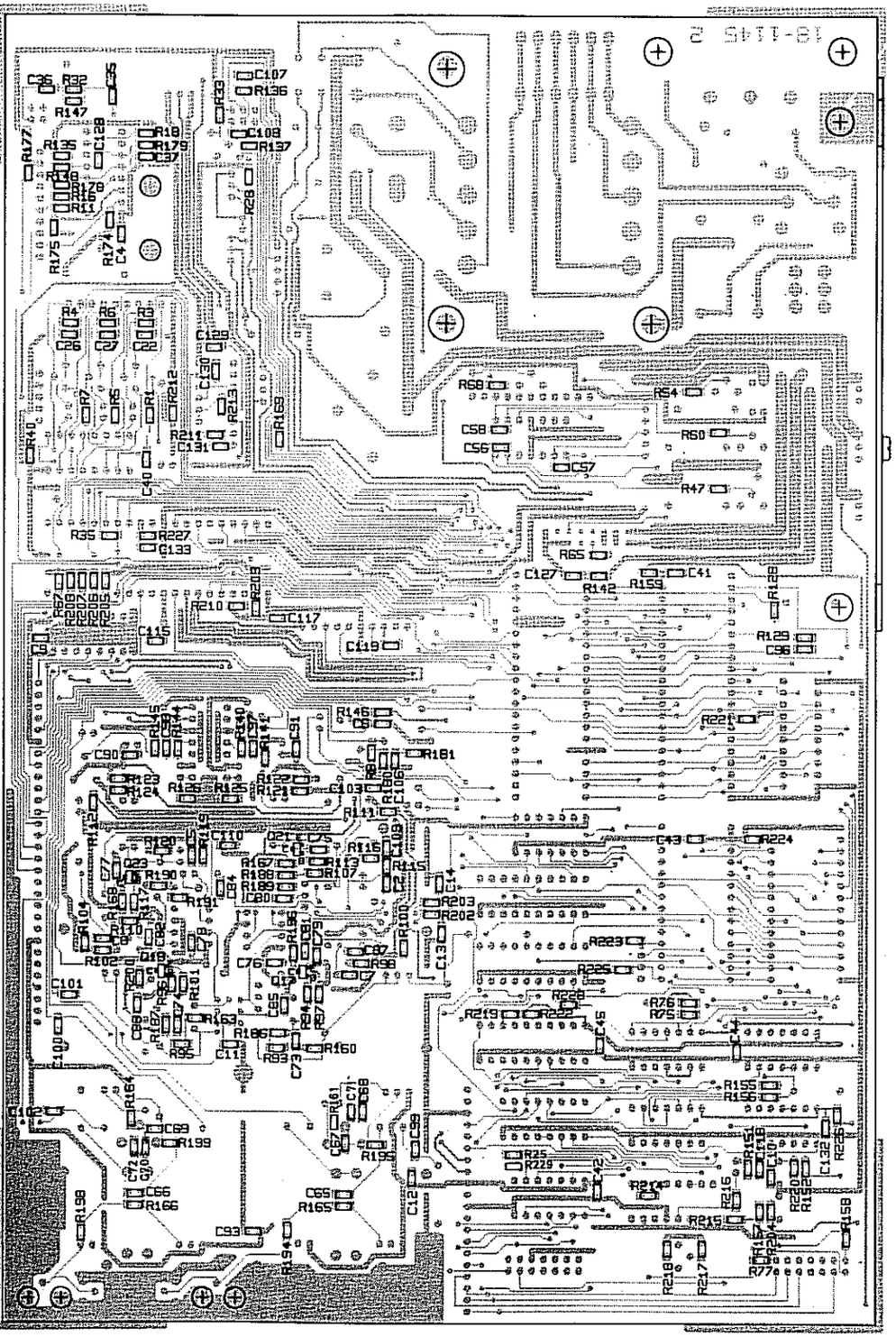


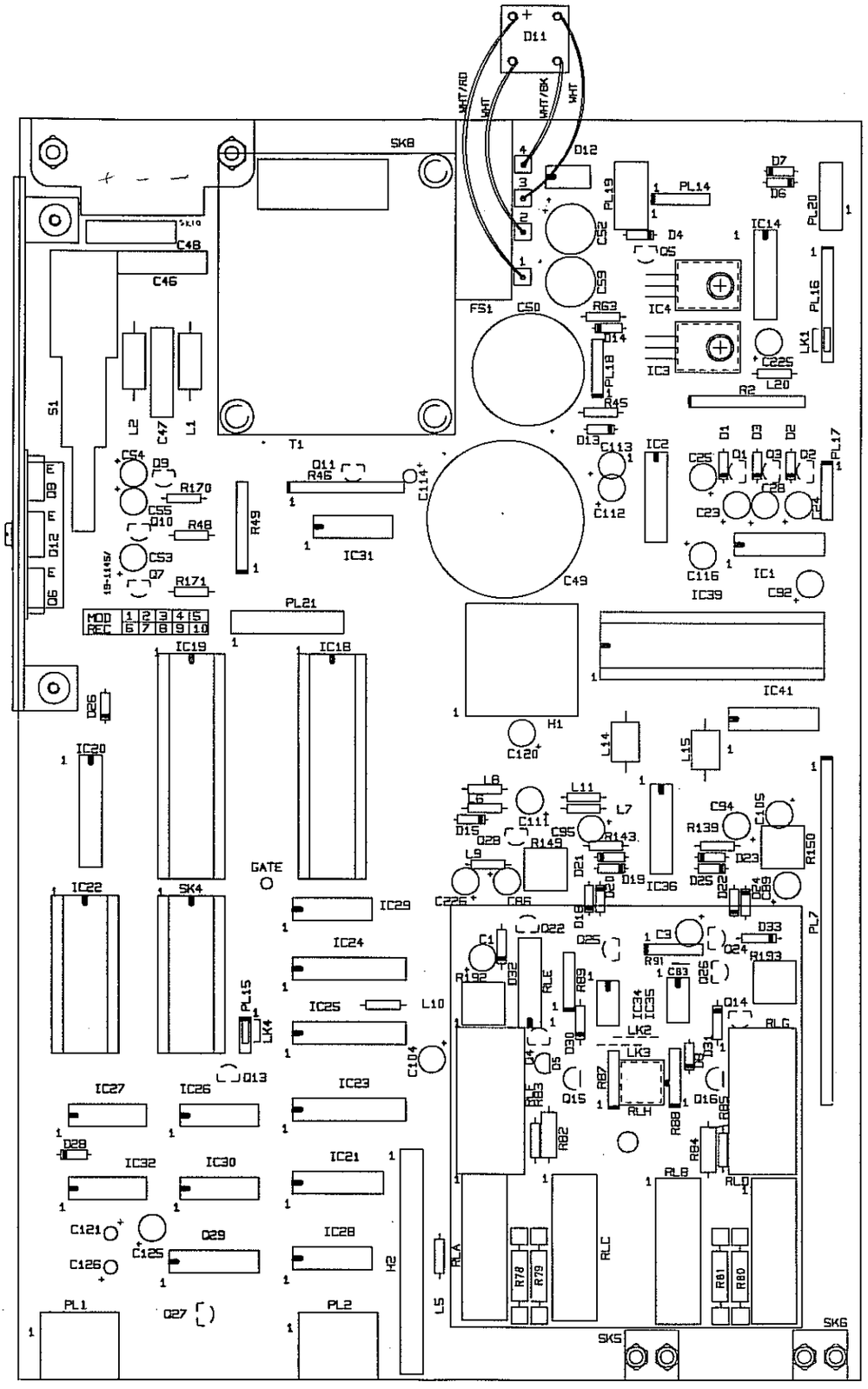
Component Layout :
Channel C Assembly 19-1142

Fig. 4



Circuit Diagram :
Channel C Assembly 19-1142 Fig. 5





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Component Layout:
Motherboard Assembly 19-1145 Fig-6

SK5
I/PA
RLA1
R165 100
R194 10
C65 20n
R195 22
RB2 900K
RLF1
C67 6·8p
R161 68
RLC1
R78 100
R79 100
C71 2·7p
C68 47p
R83 111K
RB7
514K
476K
10K
RLH1
RLH2
SK6
I/PB
RLB1
R166 100
R198 10
C66 20n
R199 22
RB4 900K
RLG1
C69 6·8p
R164 68
RLD1
R80 100
R81 100
C72 3·9p
C70 47p
R85 111K
RB8
514K
476K
10K
C73 100p
R160 100
R93 560K
R186 560K
Q15
D5
-11·2vB
R94 180
R97 330
Q17
D30 2·7v
R111 10
+11·2vB
C85 10n
C86 47µ
R196 180
C75 10n
C79 33n
RLE1
R113 100
Q21
C87 3·3n
R107 1K
+11·2vB
R167 3·3K
IC34
'A' OFFSET NULL
R192 10K
R100 1·2K
Q25
C80 100n
R188 1K
R189 27K
RB9
10K
476K
514K
C76 10n
-11·2vB
Q4
Q22
R98 470
C7 10n
C1 47µ
C2 10n
D32 5·6v
R115 1K
R116 470
C109 10n
-11·2vB
-11·2vB
C74 100p
R163 100
R95 560K
R187 560K
Q16
D8
-11·2vB
R96 180
R101 330
Q18
D31 2·7v
+11·2v
R112 10
+11·2v_C
C88 10n
C89 47µ
R200 180
C77 10n
C82 33n
R117 100
Q23
R110 1K
+11·2vC
R168 3·3K
IC35
'B' OFFSET NULL
R193 10K
R104 1·2K
Q26
C83 100n
R190 1K
R191 27K
R91
10K
476K
514K
C78 10n
-11·2vB
Q14
Q24
R102 470
C8 10n
C3 47µ
C5 10n
D33 5·6v
R119 1K
R120 470
C110 10n
C111 47µ
C6 10n
R146 10
-11·2vB
-11·2v
+5vB
C94 47µ
C90 10n
+5v
R139 10
L15
R121 2·2K
D18
D19
D20
D21
R122 2·2K
-5·2vB
IC36a
IC36b
R125 680
R140 100
C97 10n
R141 10K
R149 10K 'A' HYST SET
-5·2vB
R202 1K
C81 10n
C13 1n
R136 10K
C107 33n
PL19
5 'A' TRIG LEVEL TO REAR PANEL
TO FIG 8 IC39 PIN 15
TO FIG 8 IC39 PIN 16
FIG 9 IC1 PIN 4.
R123 2·2K
D22
D23
D24
D25
R124 2·2K
-5·2vB
R143 10
L14
-5·2v
IC36b
R126 680
R144 100
C98 10n
R145 10K
R150 10K 'B' HYST SET
-5·2v
R203 1K
C84 10n
C14 1n
R137 10K
C108 33n
PL19
6 'B' TRIG LEVEL TO REAR PANEL
TO FIG 8 IC39 PIN 17
TO FIG 8 IC39 PIN 18 SHT. 3 IC1 PIN 12
TO FIG 8 IC24. PINS. 2, 5, 6, 9, 12, 15, 16, 19.
+5v
C93 10n
RLA
RLB
RLC
RLD
RLE
RLF
RLG
C226 47µ
C106 10n
R180 10K
Q28
R181 470
R8 10
RLH 2
C11 10n
D15
C99 10n
C100 10n
C101 10n
C102 10n
C103 10n
C104 47µ
C105 47µ
L5 100µ
L6 100µ
L7 100µ
L8 100µ
L9 100µ
L10 100µ
L11 100µ

Circuit Diagram :
Motherboard Assembly 19-1145 Fig 7

Circuit Diagram :
Motherboard Assembly 19-1145 Fig. 8

PL17 -5·2V +11·2V BYPASS R177 1K +5v STDBY OSC. -5·2v +11·2v

PL16 +5V -1·3V LK1 +5V STDBY OSC. NC -1·3v

TO FIG 8 IC39 PIN16 — Ā

TO FIG 8 IC39 PIN27 — GATE

TO FIG 8 IC39 PIN18 — B̄

TO FIG 8 IC39 PIN3

7 A TRIG LED

11 GATE LED

3 B TRIG LED

PL2

TO FIG 8 IC39 PIN2

R32 1K, C35 1n, R147 1K, D7, D6, R178 3·3K, IC14a, C128 1n, R179 1K, R135 100K, R148 3·3K, IC14b, IC14c, R18 1K, L20 100µ, C225 47µ, C4 10n, R16 470, R11 470, C37 33 n, R175 1K, R174 1K

EXT. REF. CONDITIONER

C129 10n, R213 1K, IC2a, R212 1K, IC2c, R211 1K, IC2b, C130 10n, C131 10n

INT. REF. CONDITIONER

IC1a, Q1, D1, R1 1K, C23 47µ, R3 220, C22 10n, R35 4·7K, R40 4·7K, IC1b, Q2, D2, R7 1K, C24 47µ, R4 220, C26 10n, IC1c, Q3, D3, R5 1K, C28 47µ, R6 220, C27 10n, C40 10n, C25 47µ

'A' TRIGGER LAMP FLASHER

R2 9x1K

GATE LAMP FLASHER

'B' TRIGGER LAMP FLASHER

D12, C52 680µ, R45 390, IC3, C112 47µ, D13, D14, C113 47µ, C59 680µ, RG3 390, IC4, +11·2v, -11·2v, -5·2v UR, +5·2v UR

+2·5V REFERENCE — TO FIG 8 H2 PIN 6

+5v STDBY — +5v STDBY OSC — +5v STDBY D1 — +5v STDBY D2

Q12, R49 10K, R159 18, C41 33 n, R226 68, C132 33 n, IC31c, C58 220p, Q10, R60 1K, R48 120, C55 47µ

S1a, S1b, POWER, FS1, L1 40µ, L2 40µ, C46 47n, C47 2·5n, C48 2·5n, LINE FILTER, T1, 115v, 100v, 0v, 115v, 0v

D.C. POWER, SWITCHED D.C. POWER, +5v UR, +5v UR, LINE SENSE, +11·2v UR, -11·2v UR, 0v, STDBY, BATT LOW, STDBY TRIG, PL21

Q8, R49 10K, +5v

IC31a, C57 220p, Q9, R54 1K, R46 10K, C54 47µ, Q11, C114 1µ, R68 100K, R170 120

TO FIG 8 IC26 PIN9

IC31b, C56 220p, Q7, R47 1K, R171 120, C53 47µ, -5·2v

Q6, R49 10·4K

C49 10000µ, C50 4700µ, D11

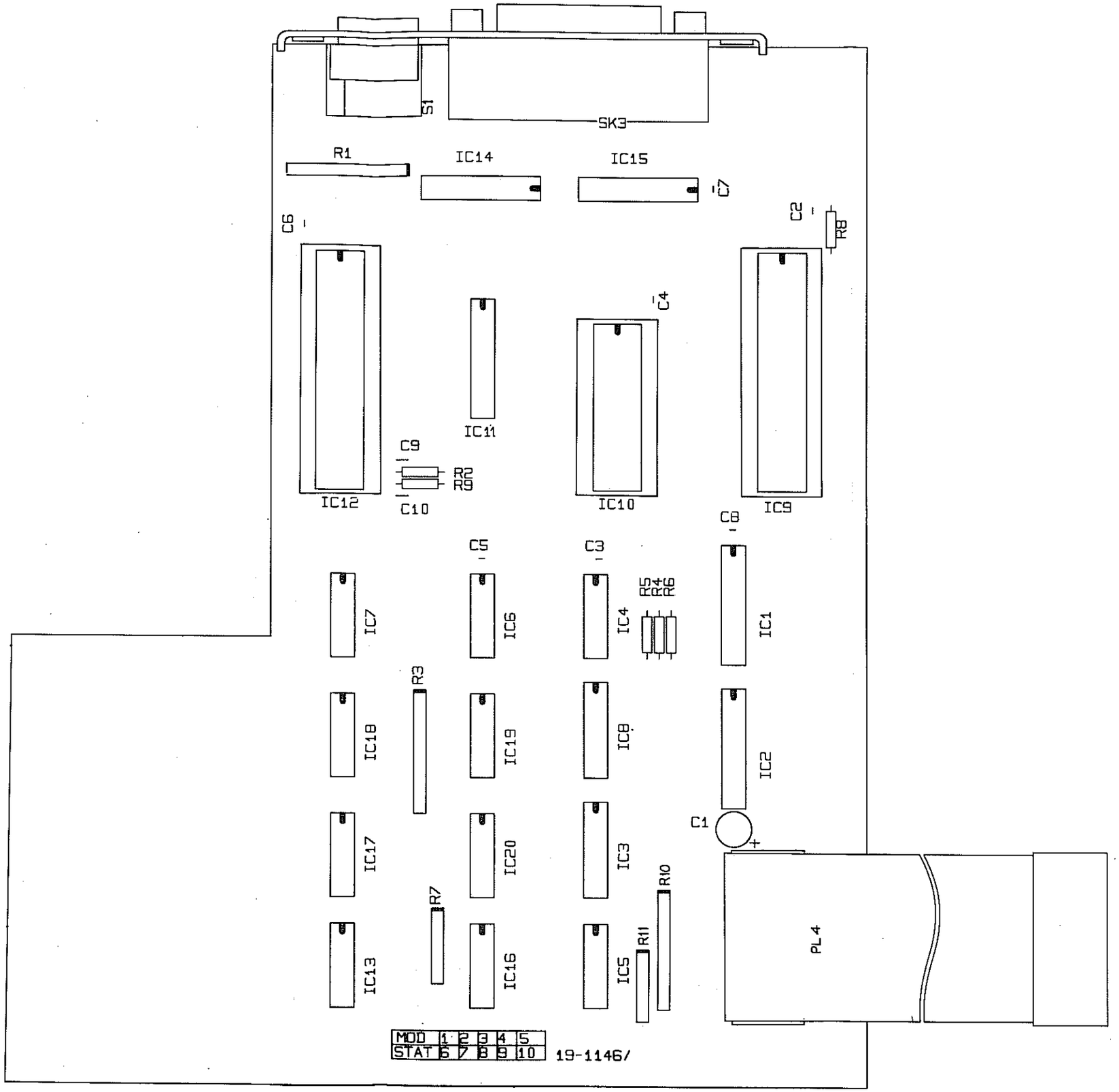
TO FIG 8 RG5

TO FIG 8 IC32 PINS

IC31d

SPARE

Circuit Diagram :
Motherboard Assembly 19-1145 Fig. 9



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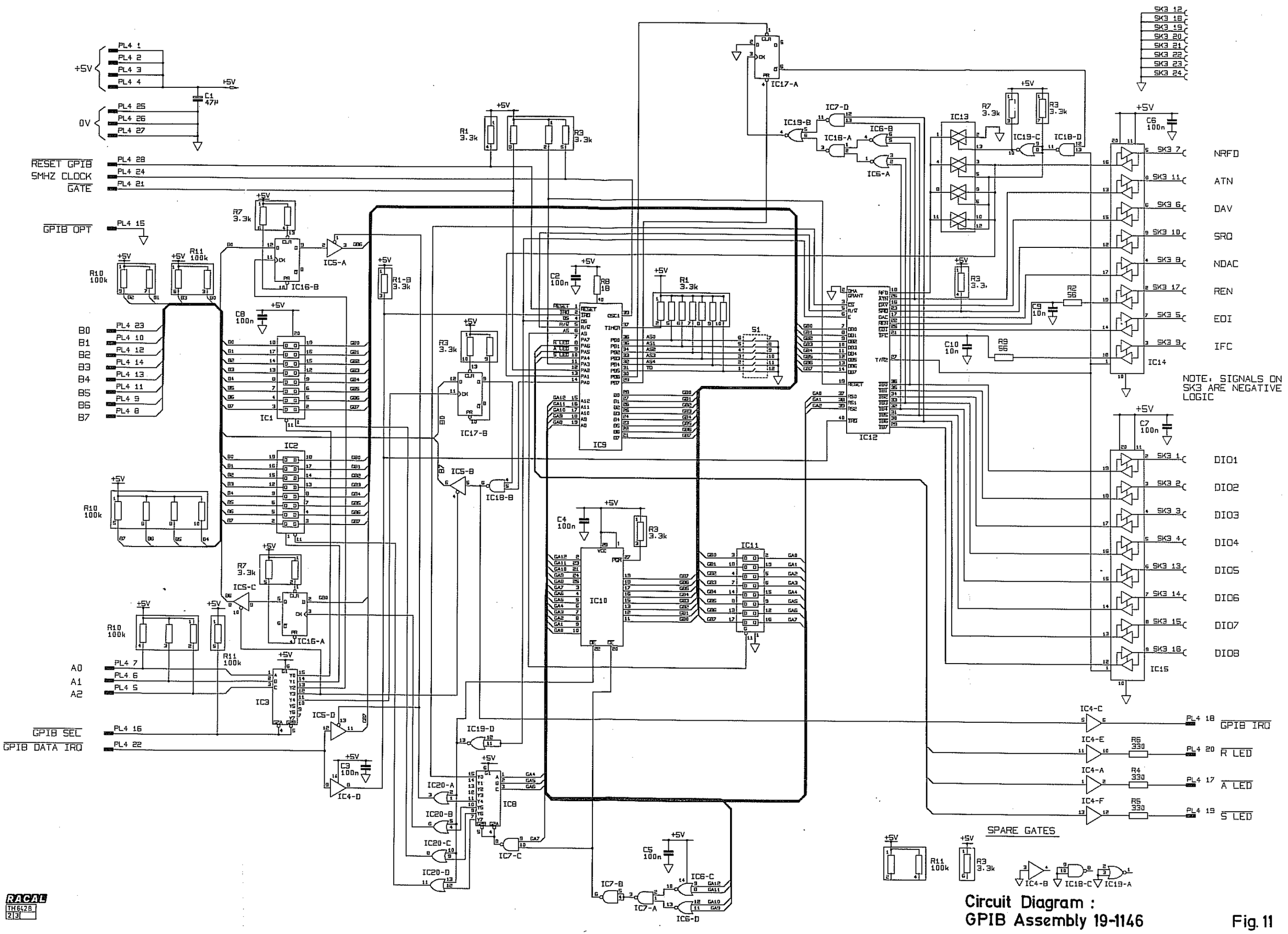
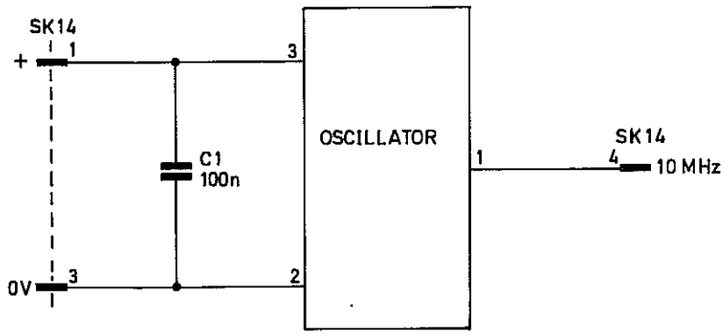
Component Layout :
GPIB Assembly 19-1146

Fig. 10



Circuit Diagram :
GPIB Assembly 19-1146

Fig. 11



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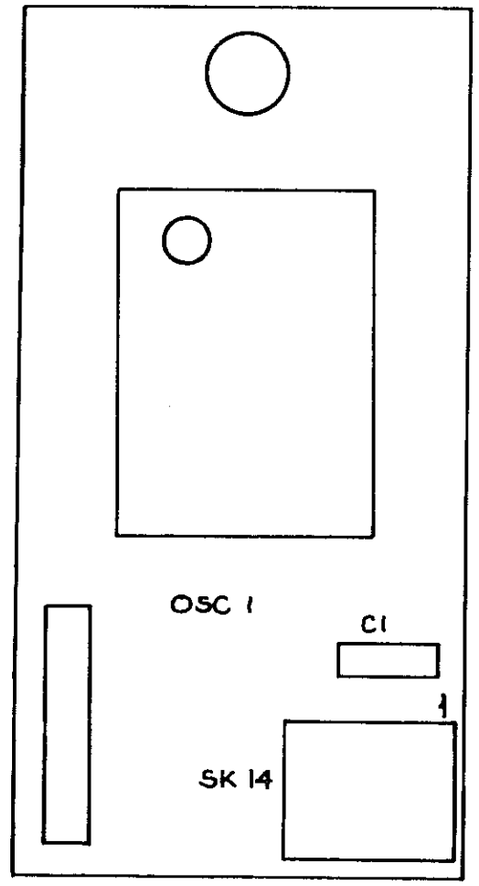
Circuit Diagram
Oscillator Assembly 19-1147

Fig.13



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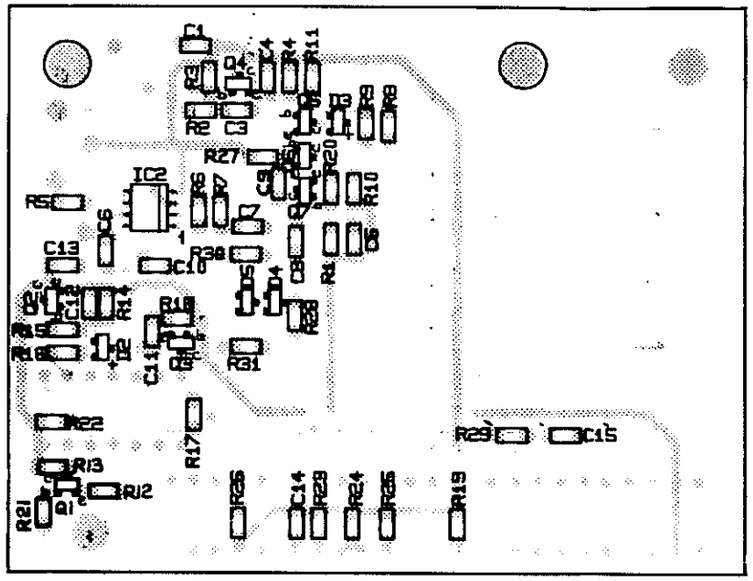
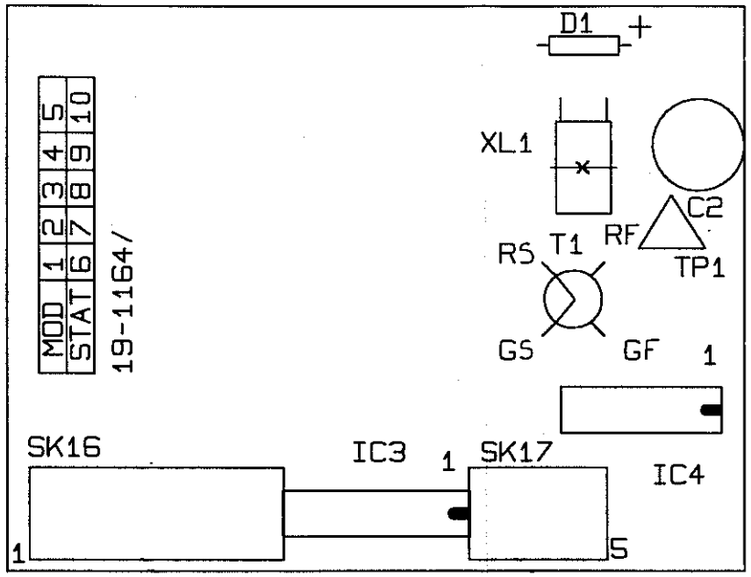
Component Layout:
Oscillator Assembly 19-1147

Fig.12

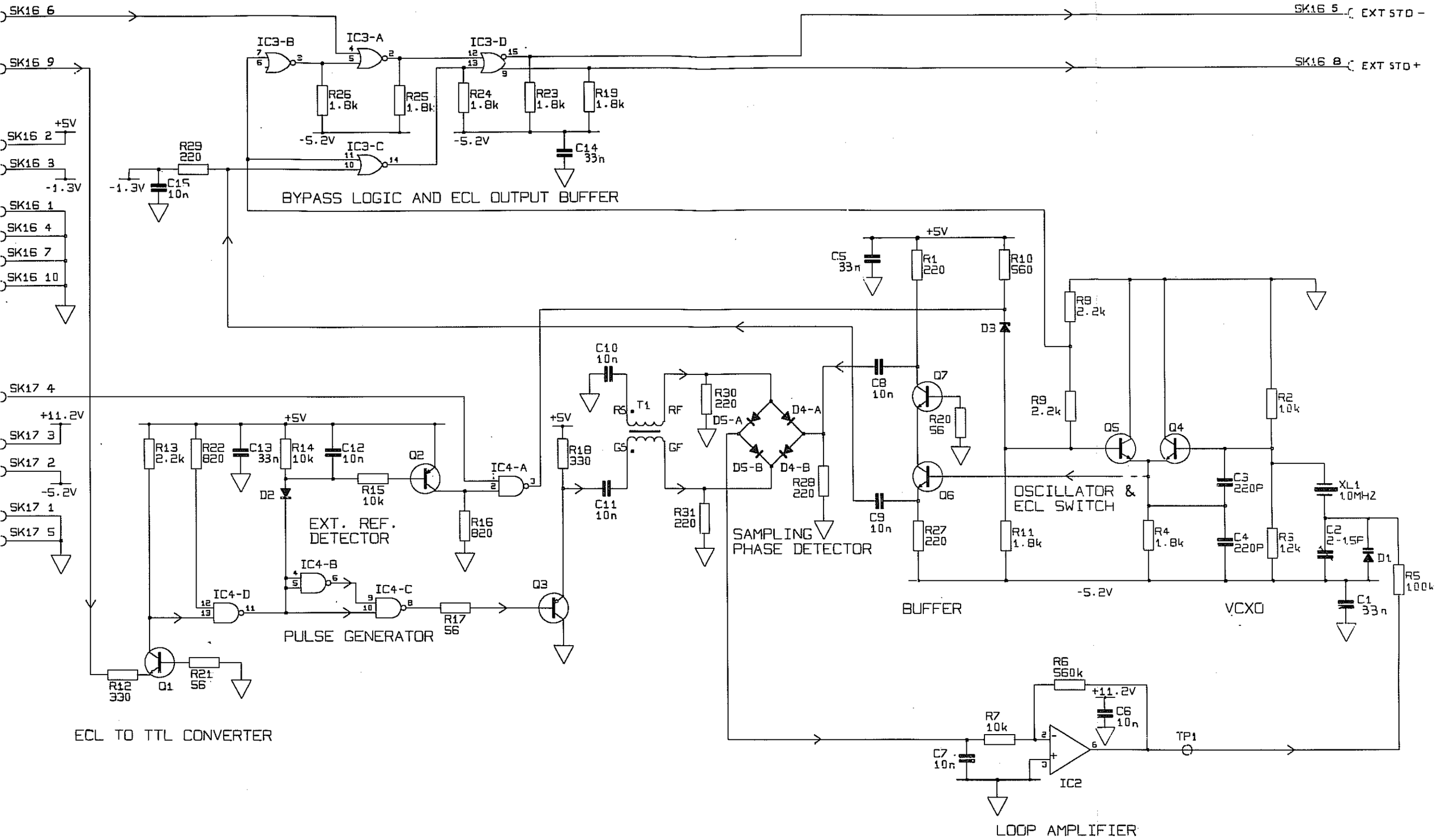
TRACKSIDE VIEW



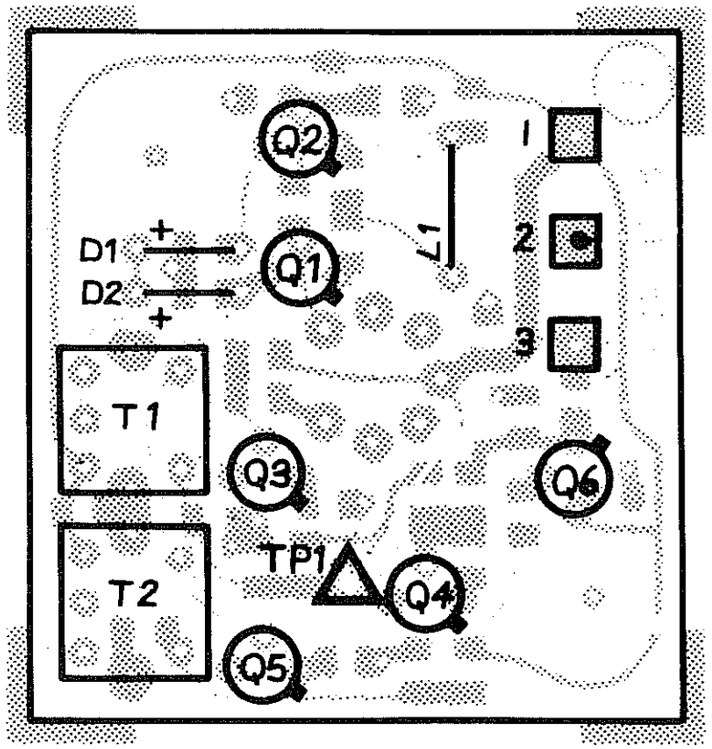
COMPONENT SIDE VIEW



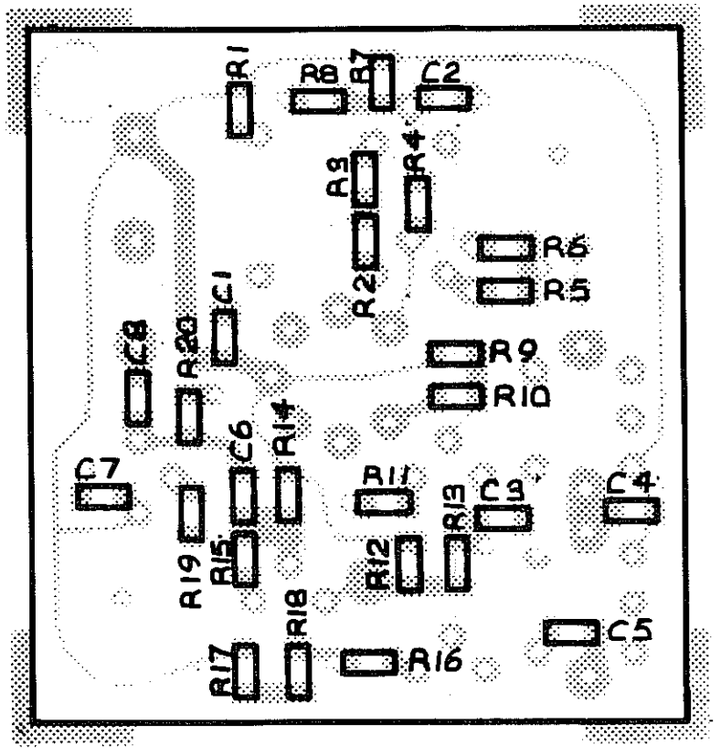
Component Layout : Reference
Frequency Multiplier Assembly 19-1164 Fig.14



Circuit Diagram : Reference Frequency Multiplier Assembly 19-1164 Fig. 15

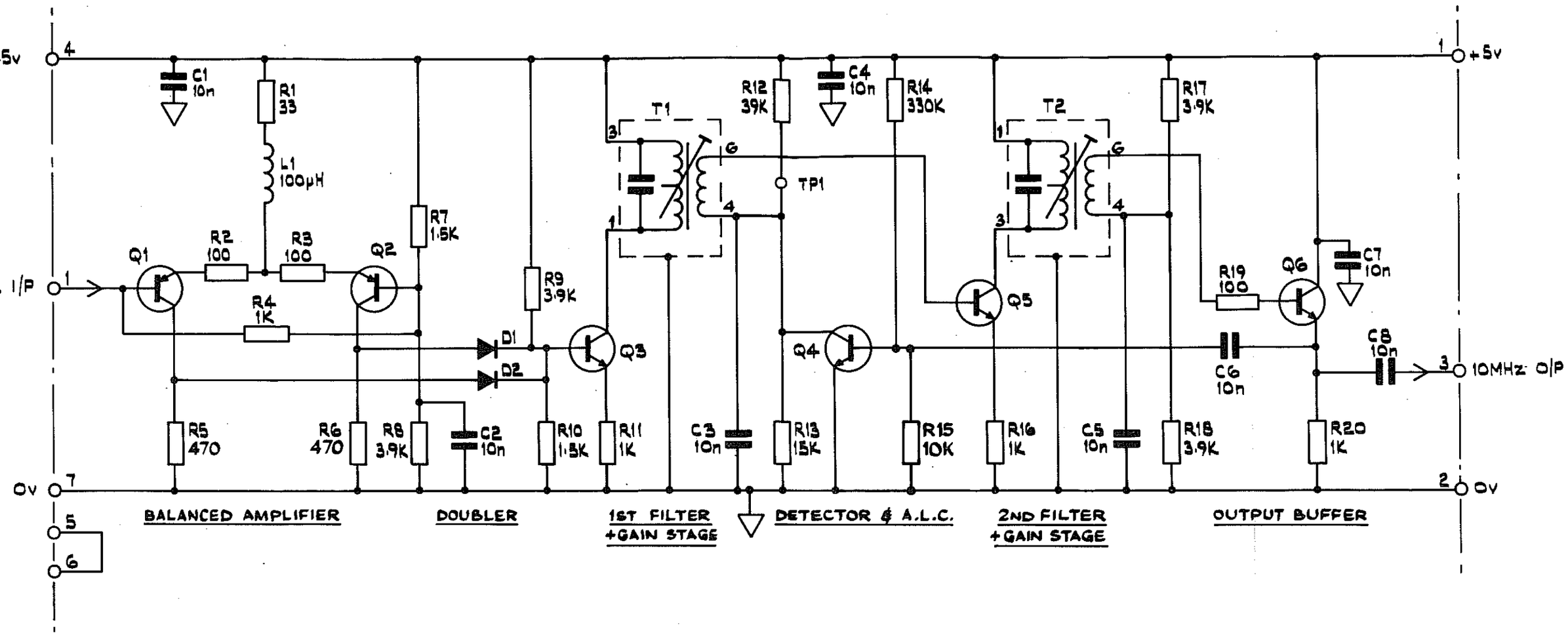


VIEWED FROM COMPONENT SIDE



VIEWED FROM TRACK SIDE

Component Layout : Reference
Frequency Doubler Assembly 19-1238 Fig.16



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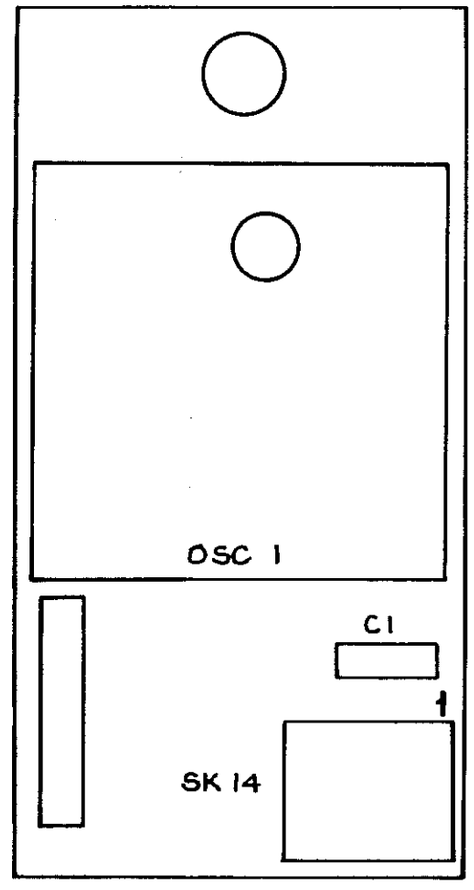
Circuit Diagram: Reference
Frequency Doubler Assembly 19-1238 Fig.17



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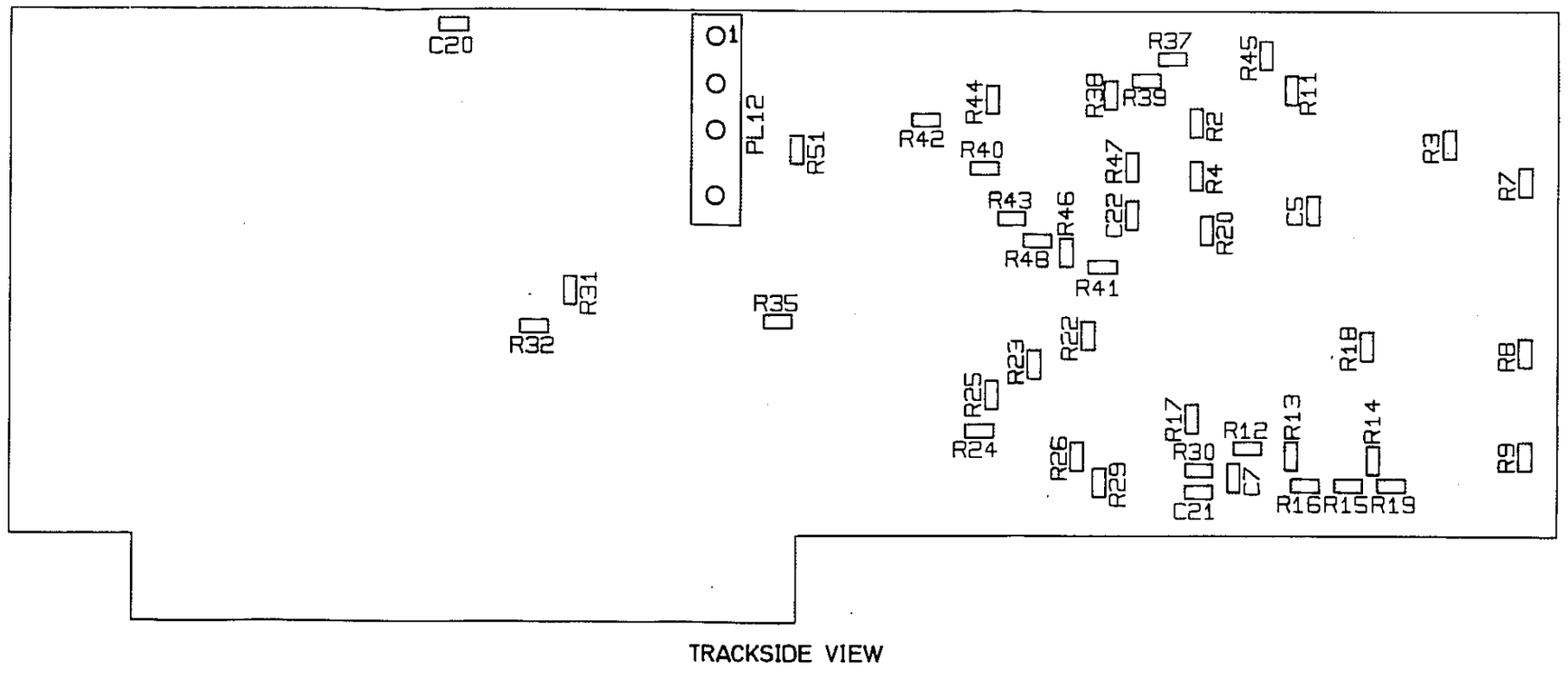
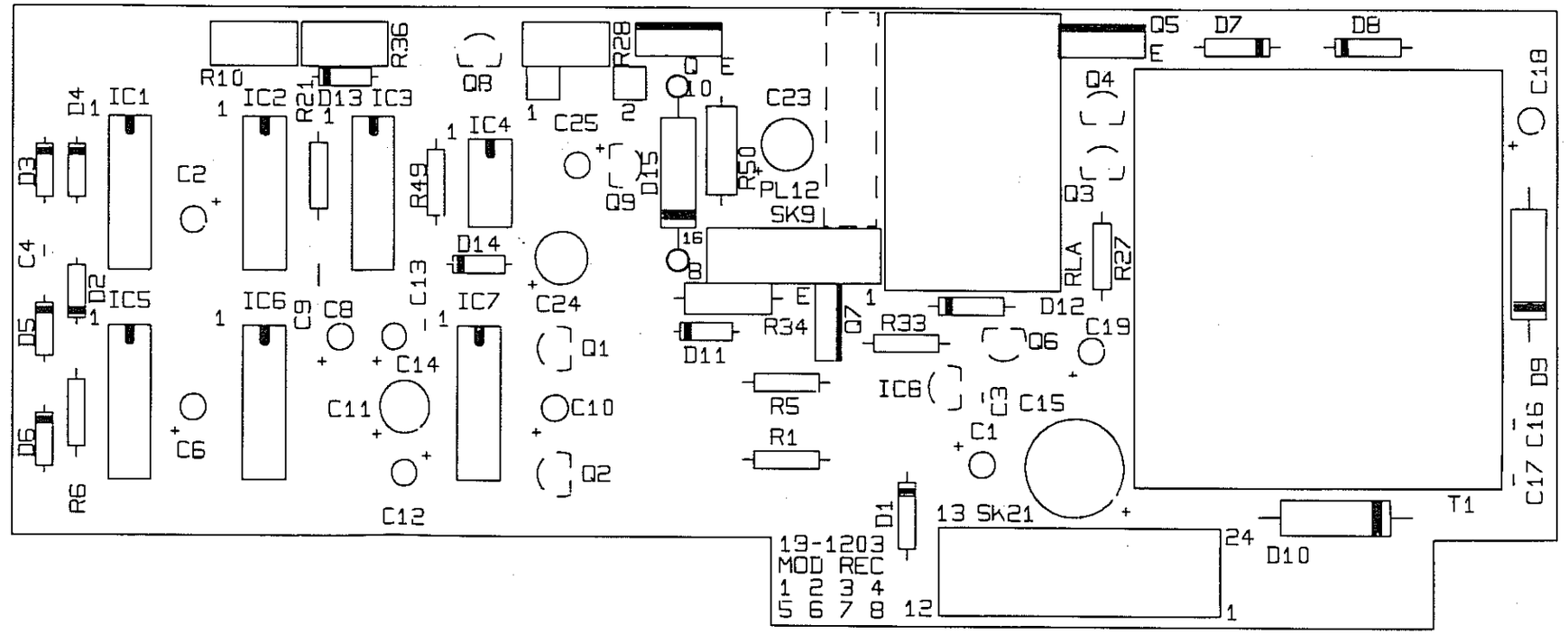
Component Layout:
Oscillator Assembly 19-1208

Fig.18

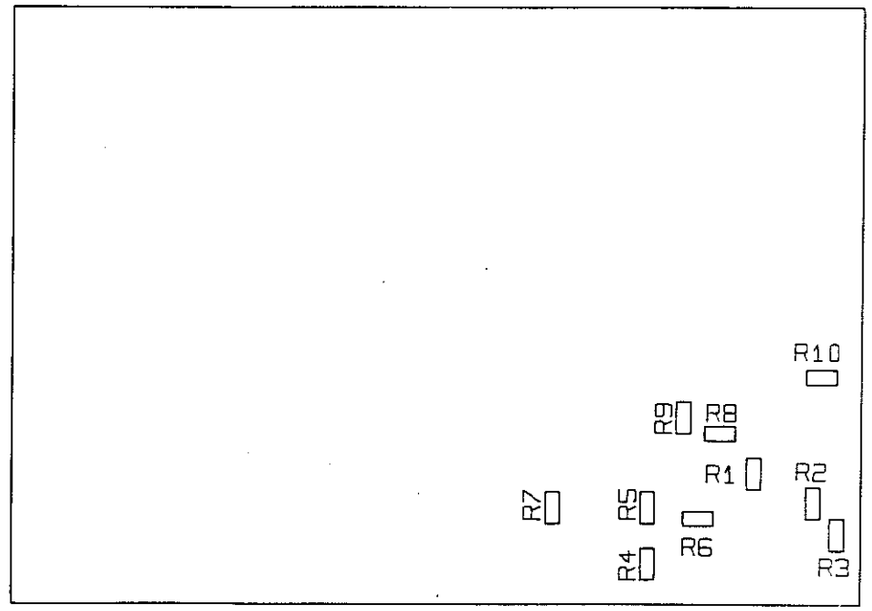


TRACKSIDE VIEW

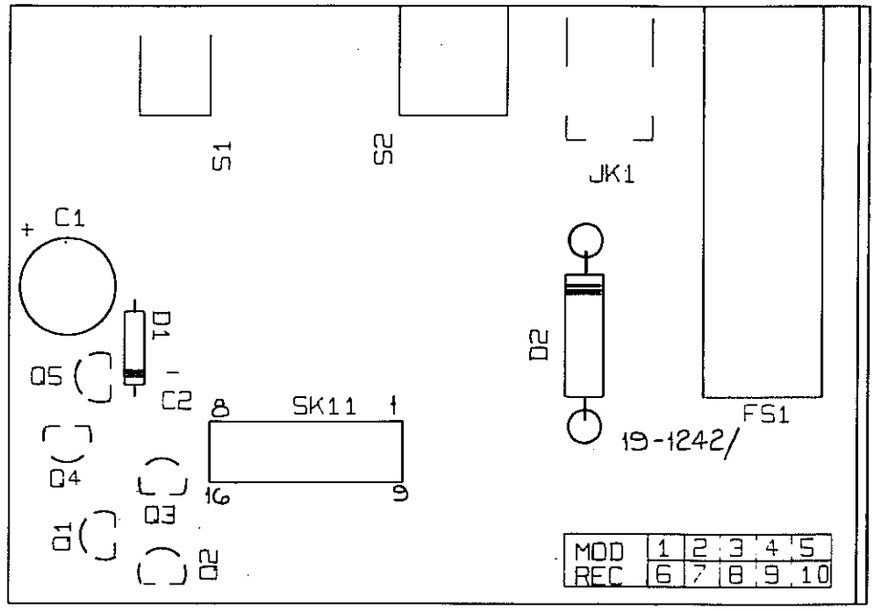


COMPONENT SIDE VIEW

Component Layout:
Battery Board Assembly 19-1203 Fig 19



TRACKSIDE VIEW



COMPONENT SIDE VIEW

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Component Layout :
Switch Board Assembly 19-1242

Fig. 20

19-1203
BATTERY BD. ASSY

MANAGEMENT CIRCUITS

POWER-DOWN LATCH
PART 19-1242 SWITCH BD. ASSY

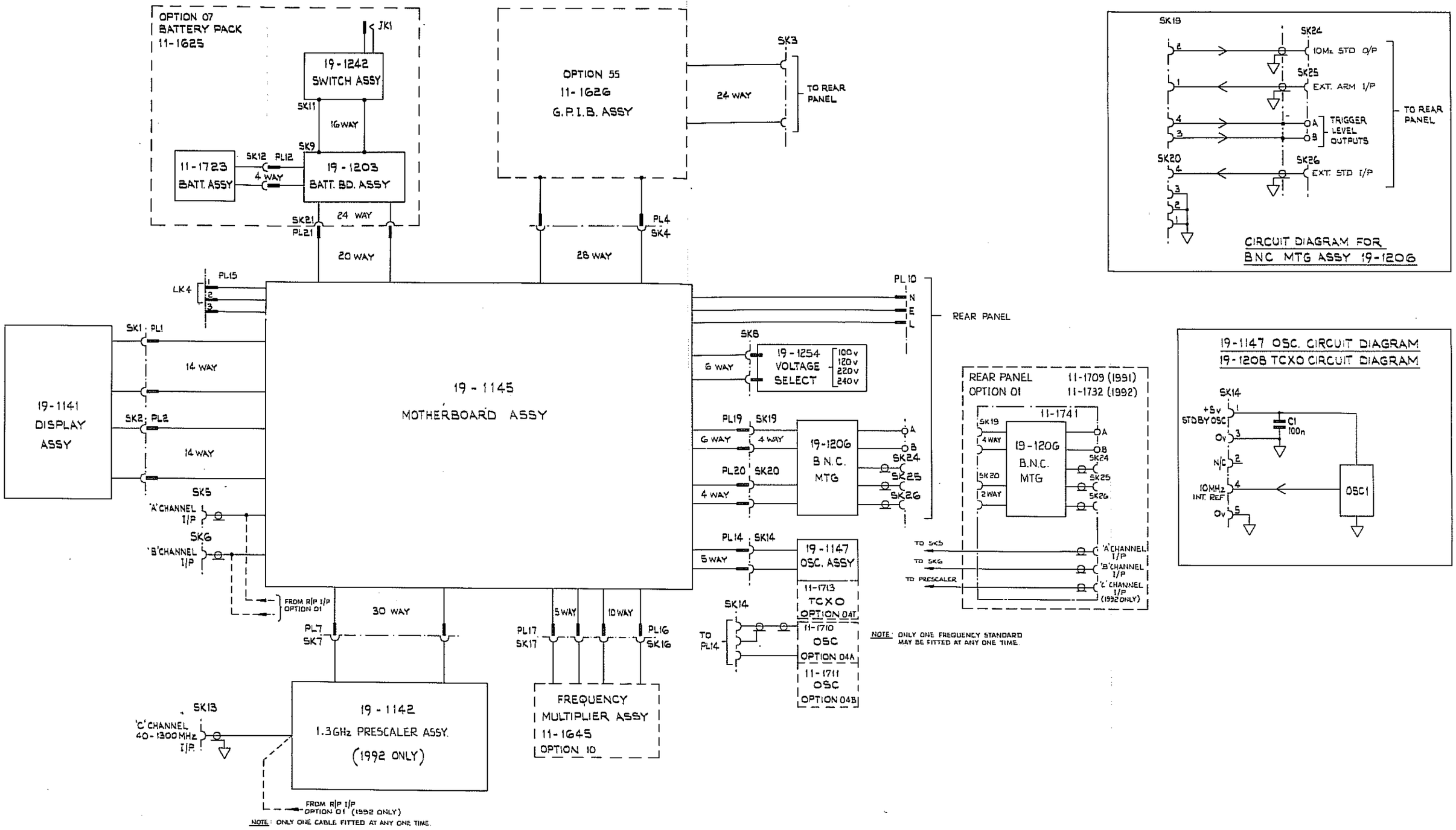
CONVERTER

CHARGER

PART 19-1242
SWITCH BD. ASSY

11-1723

Circuit Diagram:
Battery Pack Assembly 11-1625 Fig.21



	PL1	SK1
	PIN	PIN
	14	14
		13
	2	2
	6	6
	7	7
	5	5
	12	12
	1	1
	11	11
	8	8
OBE	4	4
	3	3

14 WAY	PL/SK 2
	PIN
-5.2v	2
0v	9
+5v	10
KEYBOARD ENABLE	5
KEYBOARD DATA	4
KEYBOARD EXTEND	3
PB0	13
PB1	12
PB2	1
PB3	14
GATE	11
A TRIG	7
B TRIG	3
MODE 2	6

24 WAY	SK3
	PIN
0v	12,18,19,20, 21,22,23,24
NRFD	7
ATN	11
DAV	6
SRQ	10
NDAC	8
REN	17
EOI	5
IFC	9
DIO1	1
DIO2	2
DIO3	3
DIO4	4
DIO5	13
DIO6	14
DIO7	15
DIO8	16

26 WAY	SK/PL 4
	PIN
+5v	1,2,3,4
0v	25,26,27
RESET GPIB	25
5MHz. CLOCK	24
GATE	21
GPIB OPT	15
B0	23
B1	10
B2	12
B3	14
B4	13
B5	11
B6	9
B7	8
A0	7
A1	6
A2	5
GPIB SEL	16
GPIB DATA IRQ	22
GPIB IRQ	18
R LED	20
A LED	17
S LED	19

4 WAY	PL/SK 12
	PIN
BATTERY 1 0v	3
BATTERY 1 +6v	1
BATTERY 2 +6v	4
BATTERY 2 0v	2

30 WAY	PL7	SK7 (1992 ONLY)
	PIN	PIN
+5v	23	23
-5.2v	6	6
0v	5,4,9,10, 18-22, 24-25, 28-30	4, 19-22, 24-25, 28-30
1.3GHz	12	12
GATE	17	17
RESET	15	15
ST SL or LL	16	16
C/G4	8	8
C/G4	7	7
C/OP	5	5
DET	14	14
C LOW	11	11
RST2	13	13
PST1	1	1
C FITTED	2	2

16 WAY	SK9, 11
	PIN
0v	4,5,6,12
NORM/BS	14
EXT/INT	13
POWER EXT/INT	1,2,3
BATTERY	9,10,11

5 WAY	PL/SK 14
	PIN
+5v STDBY OSC	1
0v	3,5
10MHz INT. REF.	4

10 WAY	PL16	SK16
	PIN	PIN
+5v STDBY OSC.	2	2
-1.3v	3	3
0v	1,4,7,10	1,4,7,10
EXT REF -	6	6
EXT REF +	9	9
EXT STD-		5
EXT STD+	8	8

5 WAY	PL/SK 17
	PIN
+11.2v	3
-5.2v	2
0v	1,5
BYPASS	4

PL19 - 6 WAY SK19 - 4 WAY	PL19	SK19
	PIN	PIN
10MHz STD O/P	2	2
EXT ARM	1	1
TRIG LEVEL A	5	4
TRIG LEVEL B	6	3
+5V	4	
-5.2V	3	

4 WAY	PL/SK 20
	PIN
0v	1,2,3
EXT REF.	4

PL21 - 20 WAY SK21 - 24 WAY	PL 21	SK21
	PIN	PIN
DC POWER	1,2,3	1,2,3,4
SWITCHED DC POWER	18,19,20	21-24
-5v UR	5,16	6,19
+5v UR	4,17	5,20
LINE SENSE	12	15
-11.2v UR	15	18
-11.2v UR	14	17
0v	6,9,10,11	9-14
STDBY	13	16
BATT LOW	6	7
STDBY TRIG	7	8

Interconnections

Fig.22