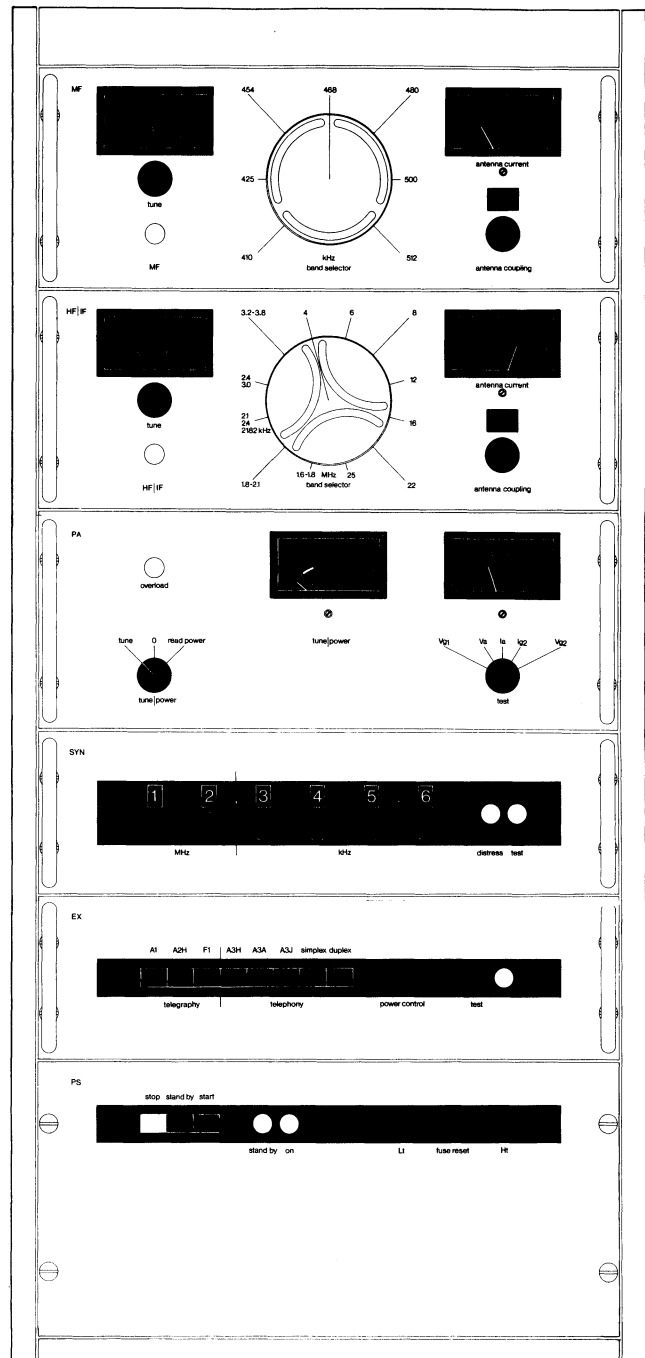


instruction manual

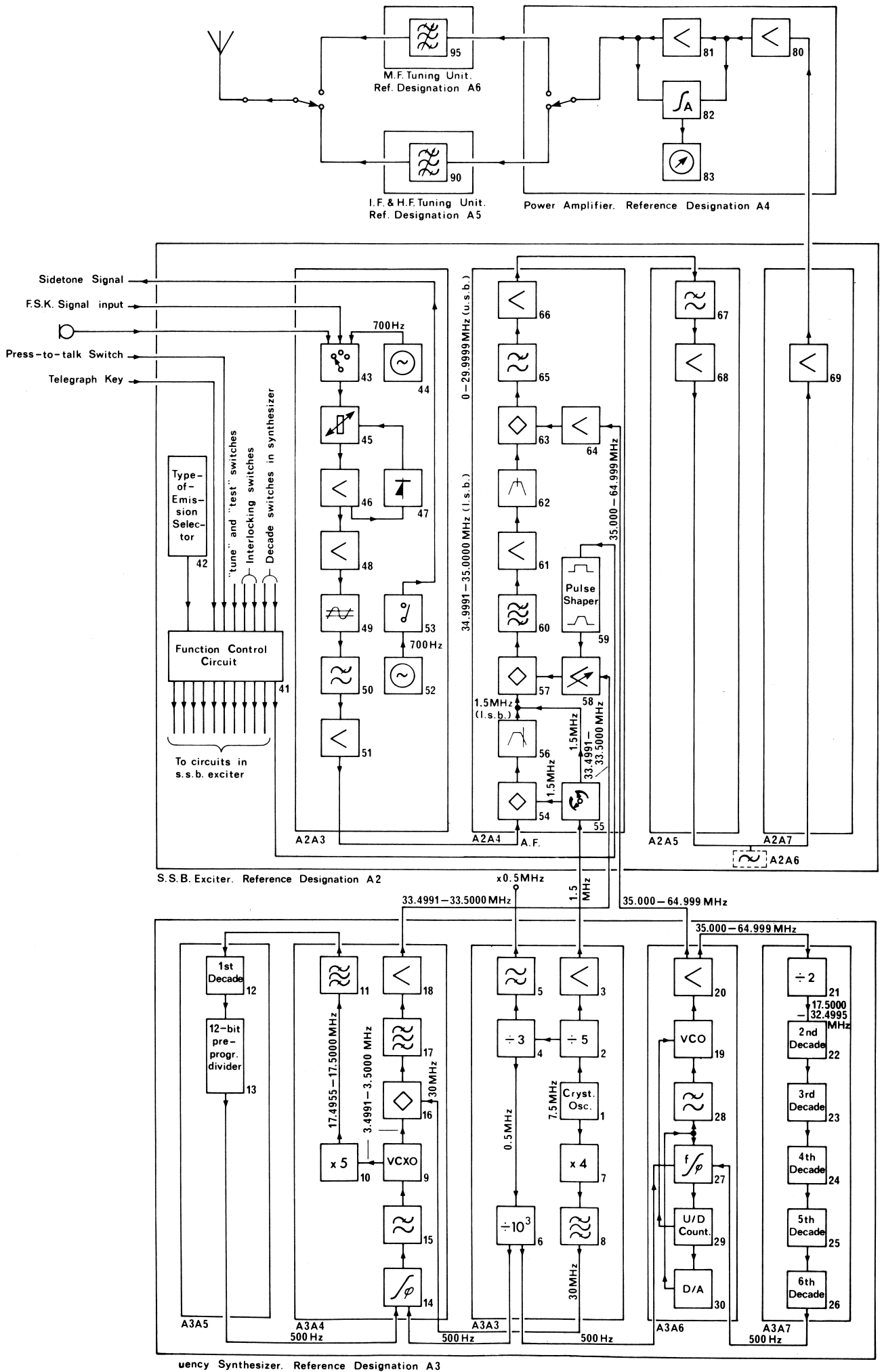
MAIN RADIO TELEGRAPH AND TELEPHONE TRANSMITTER

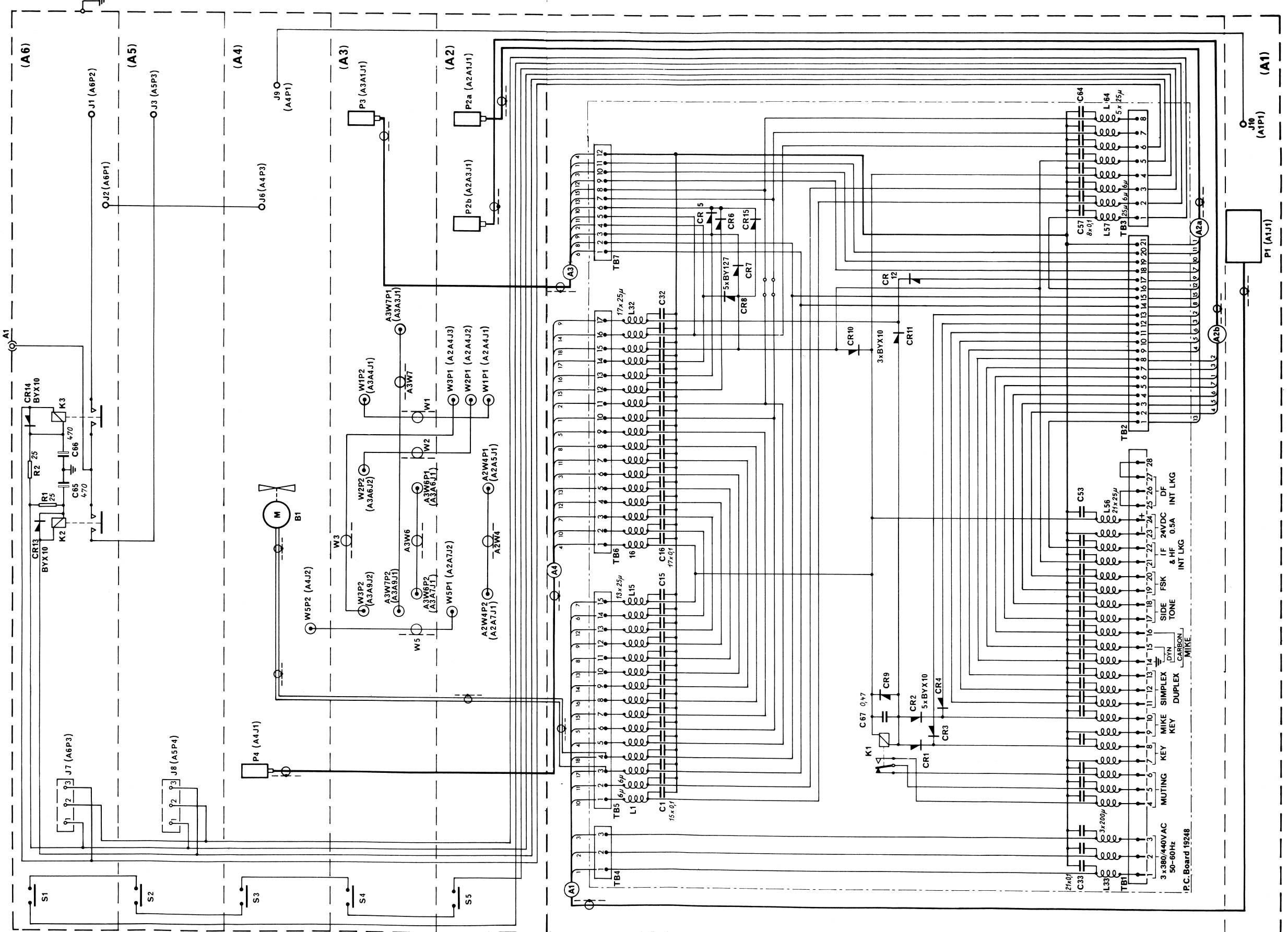
elektromekano S1250



dansk radio aktieselskab

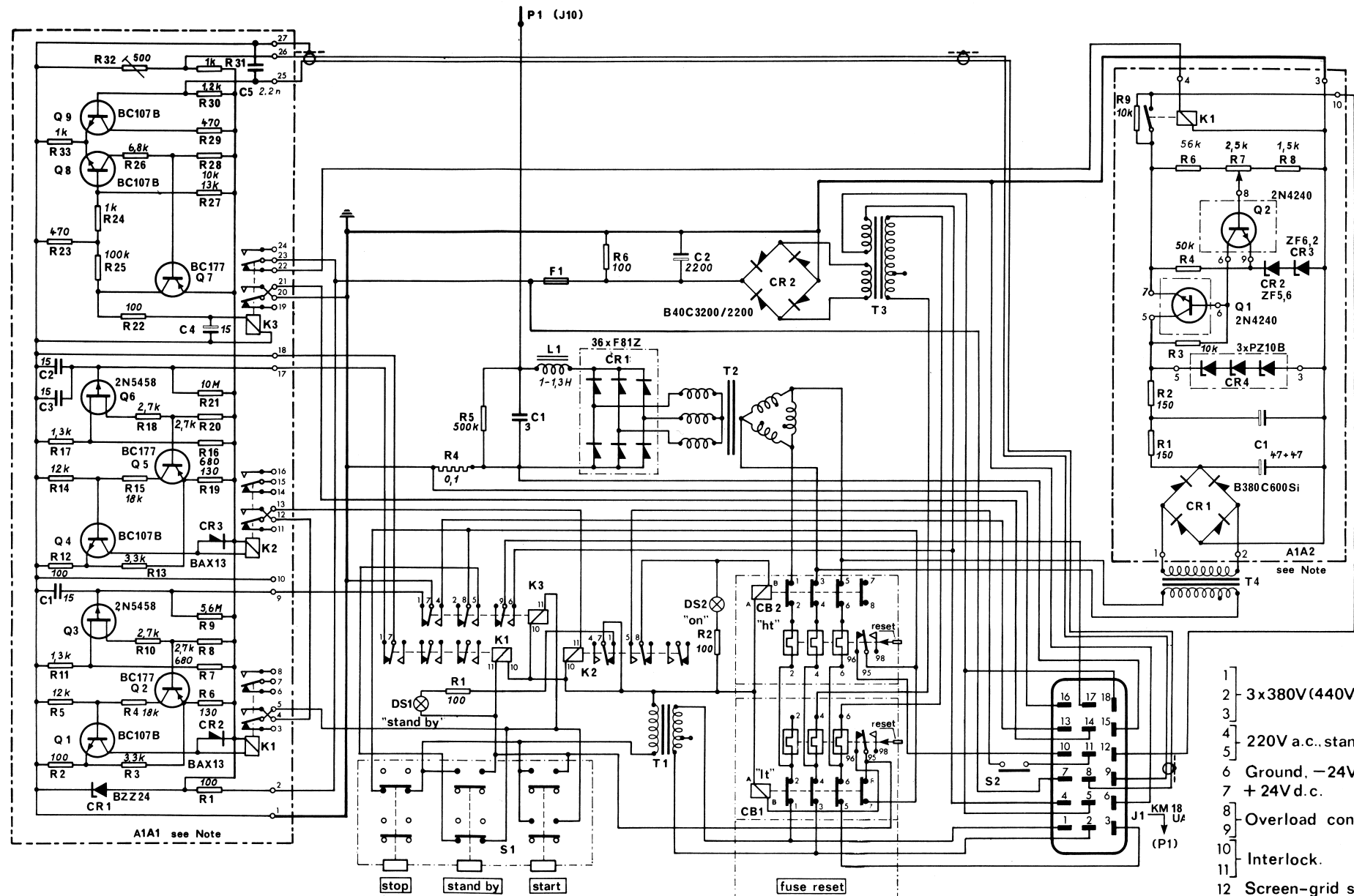
Dansk Radio Aktieselskab
33, Amaliegade, DK-1256 Copenhagen K, Denmark
telephone (01-54) MI 72 82
telegrams.: Dariose
telex 52 58





Note 1:
 Unless otherwise specified:-
 All resistance values are in ohms.
 All capacitance values are in microfarads.
 All inductance values are in henries.

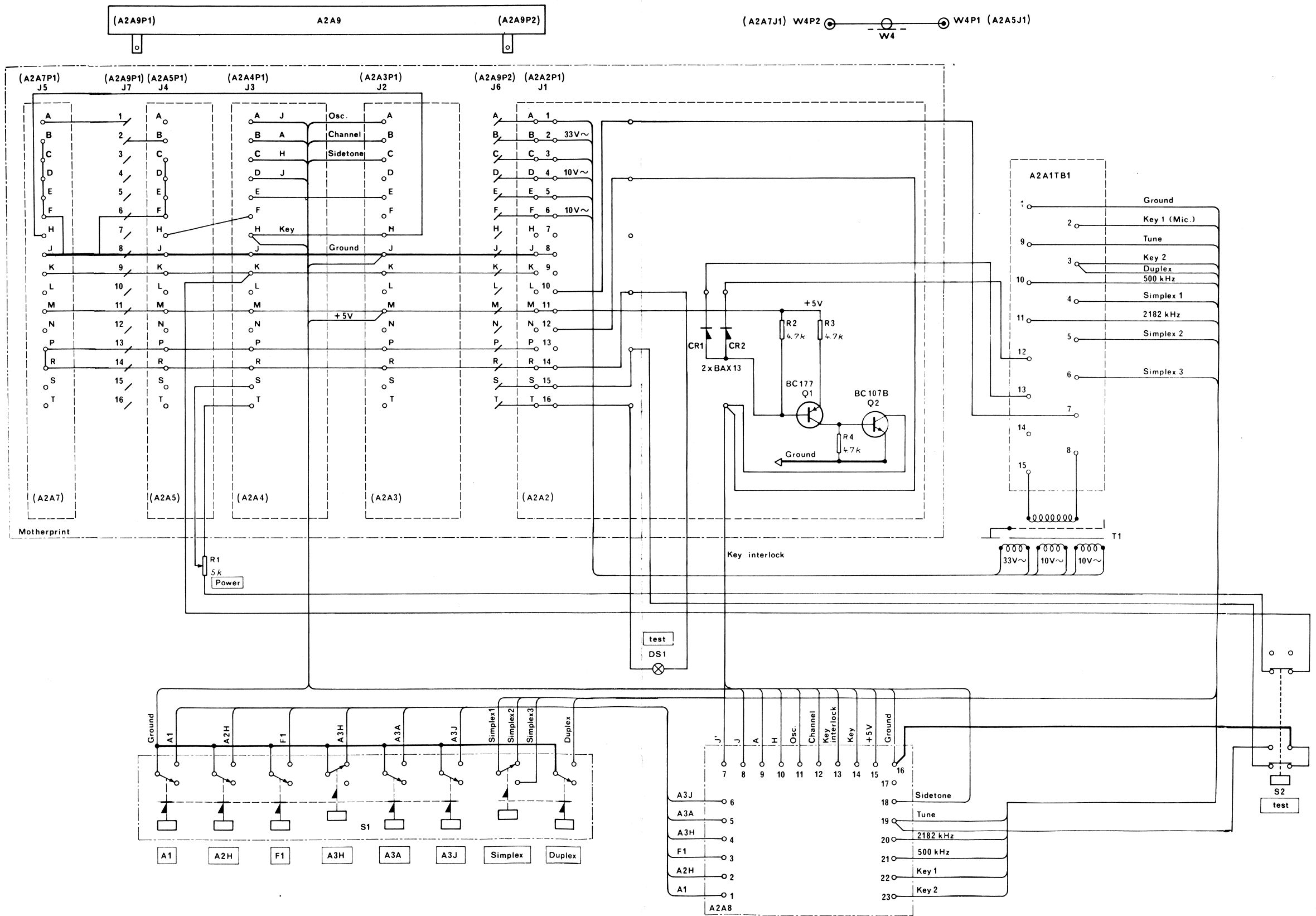
P.C. Board 19248



- 1 3x380V (440V) a.c. mains.
- 2
- 3
- 4 220V a.c. stand-by.
- 5
- 6 Ground, -24V d.c.
- 7 +24V d.c.
- 8 Overload control sensor.
- 9
- 10 Interlock.
- 11
- 12 Screen-grid supply.
- 13 Relay reduced filament supply.
- 14 Overload pilot lamp.
- 15 Pos. "Ia" } mA-meter.
- 16 Ground }
- 17 220V a.c. start.
- 18

Note 1:
 Unless otherwise specified:-
 All resistance values are in ohms.
 All capacitance values are in microfarads.
 All inductance values are in henries.

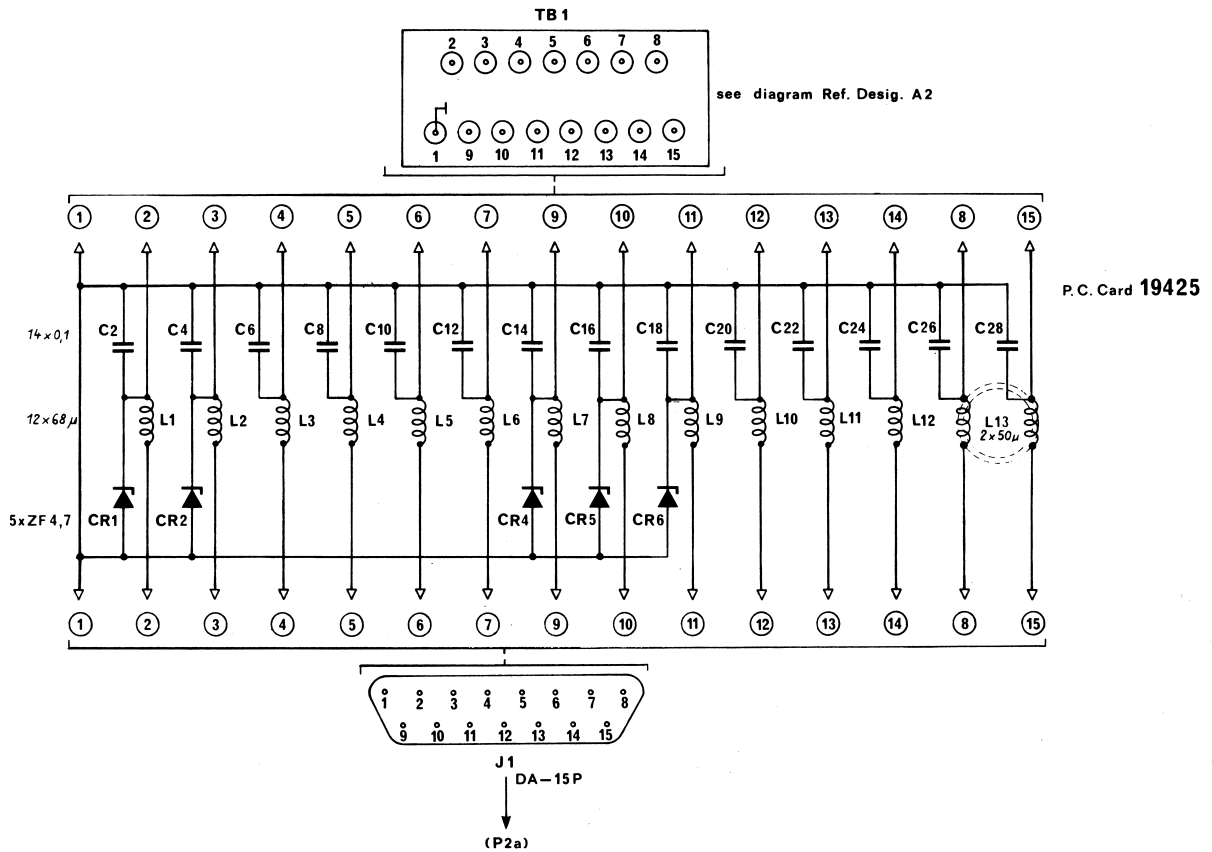
Note 2:
 Partial Reference Designations are shown.
 For Complete Designation prefix with Assembly and Subassembly Reference Designations, e.g.
 R1 of Assembly A1 is A1R1,
 R1 of Subassembly A1A1 is A1A1R1,
 etc.



Note 1:
 Unless otherwise specified:-
 All resistance values are in ohms.
 All capacitance values are in microfarads.
 All inductance values are in henries.

Note 2:
 Partial Reference Designations are shown.
 For Complete Designation prefix with Assembly and Subassembly Reference Designations.

Single-Sideband Exciter Panel-and-Chassis Assembly

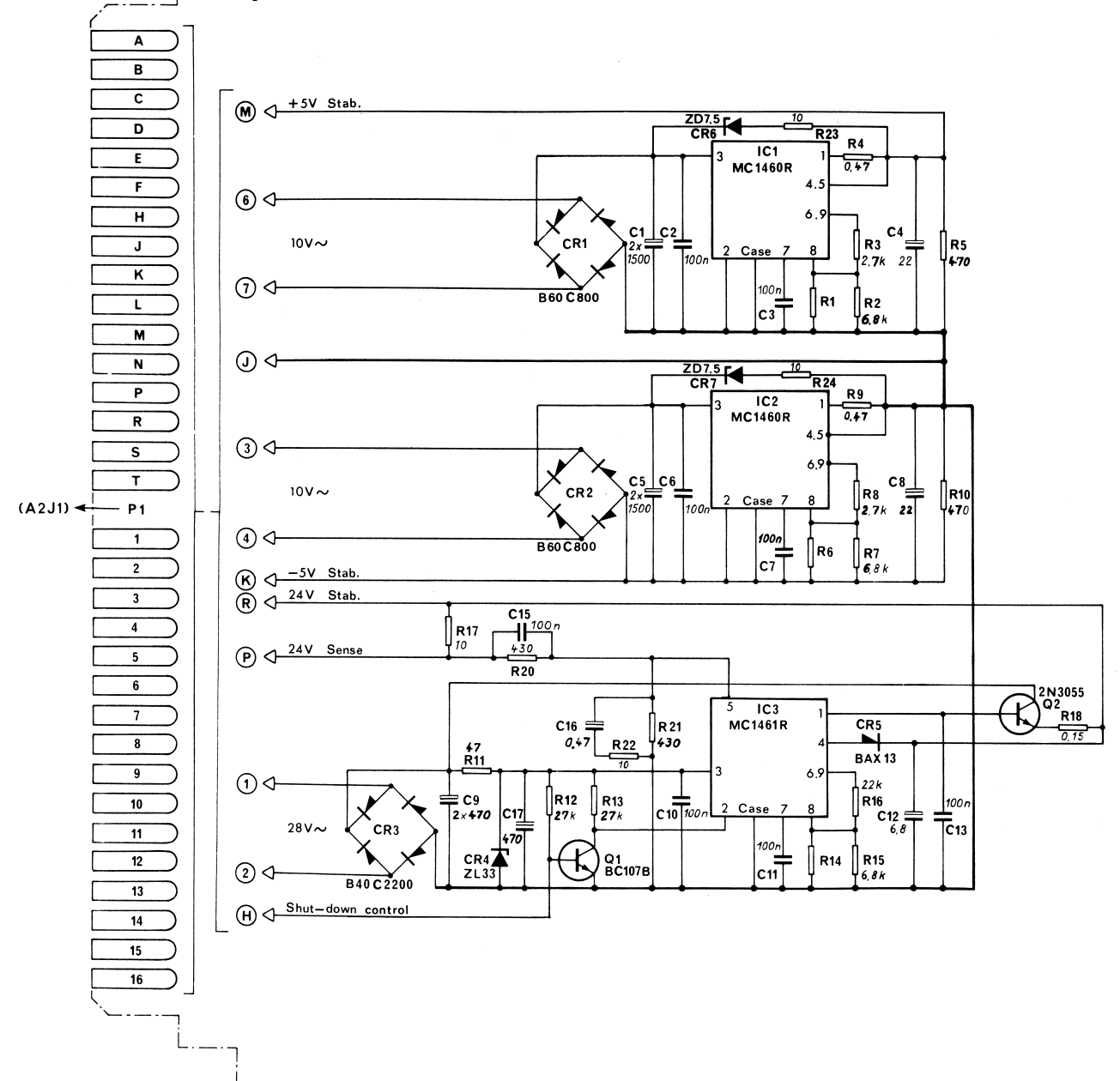


Note 1:
 Unless otherwise specified:-
 All resistance values are in ohms.
 All capacitance values are in microfarads.
 All inductance values are in henries.

Note 2:
 Partial Reference Designations are shown.
 For Complete Designation prefix with Assembly and Subassembly Reference Designations.

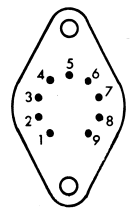
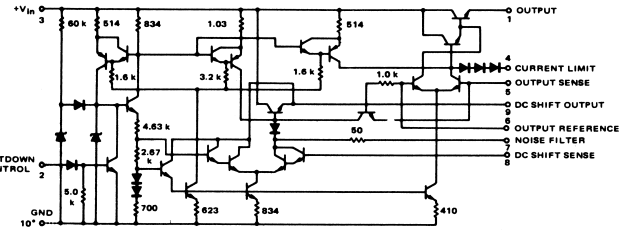
Radio-Frequency Filter Circuits for External Wiring

Card edge



MC1460R
IC1 & IC2

MC1461R
IC3



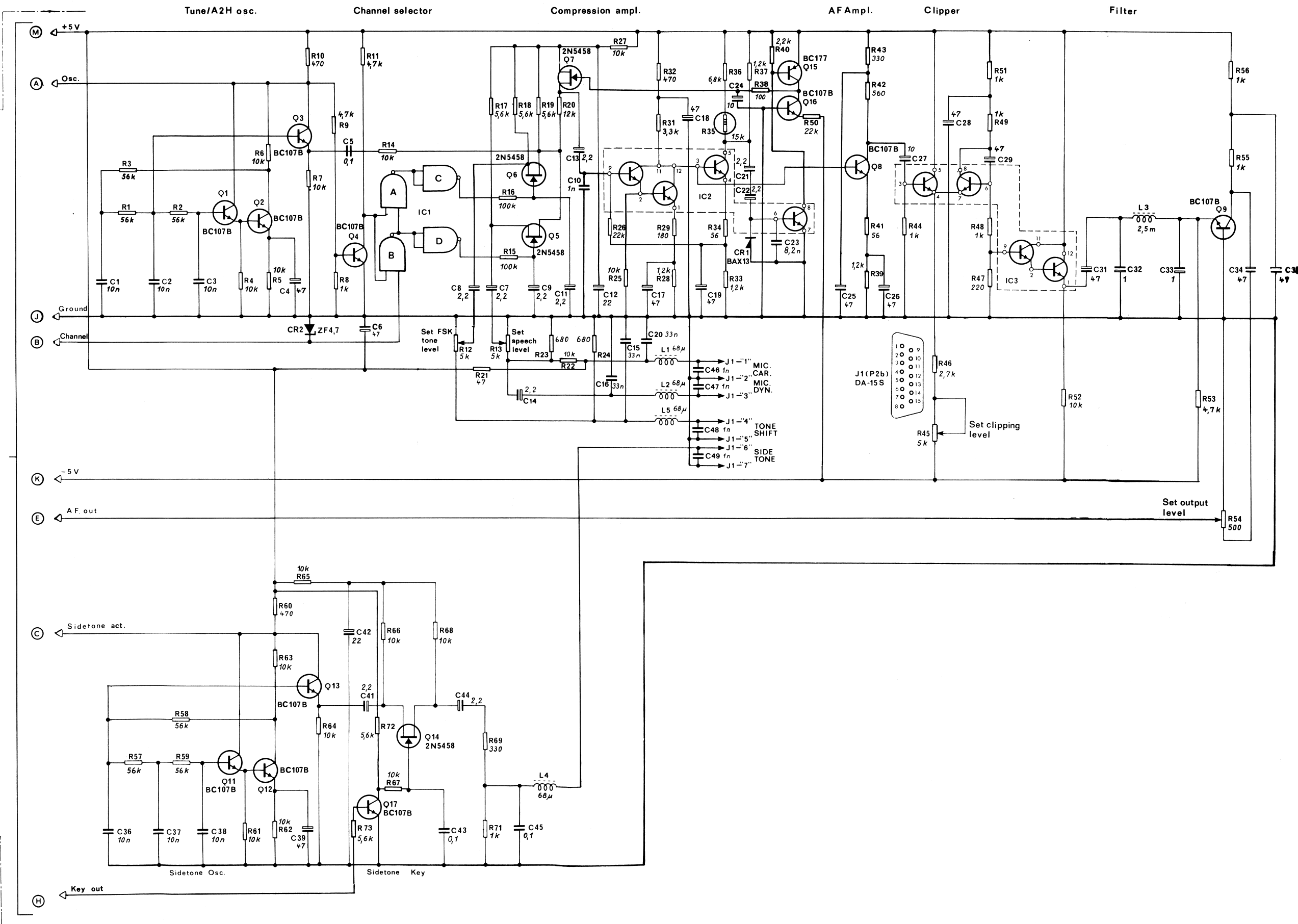
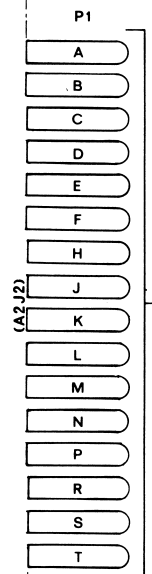
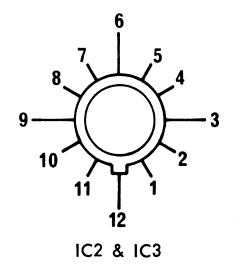
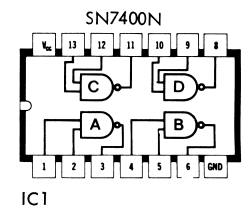
IC1, IC2 & IC3
(Bottom View)

**G" package - pin 10 is ground. "R" package - case is ground.

Note 1:
Unless otherwise specified:-
All resistance values are in ohms.
All capacitance values are in microfarads.
All inductance values are in henries.

Note 2:
Partial Reference Designations are shown.
For Complete Designation prefix with Assembly and Subassembly Reference Designations.

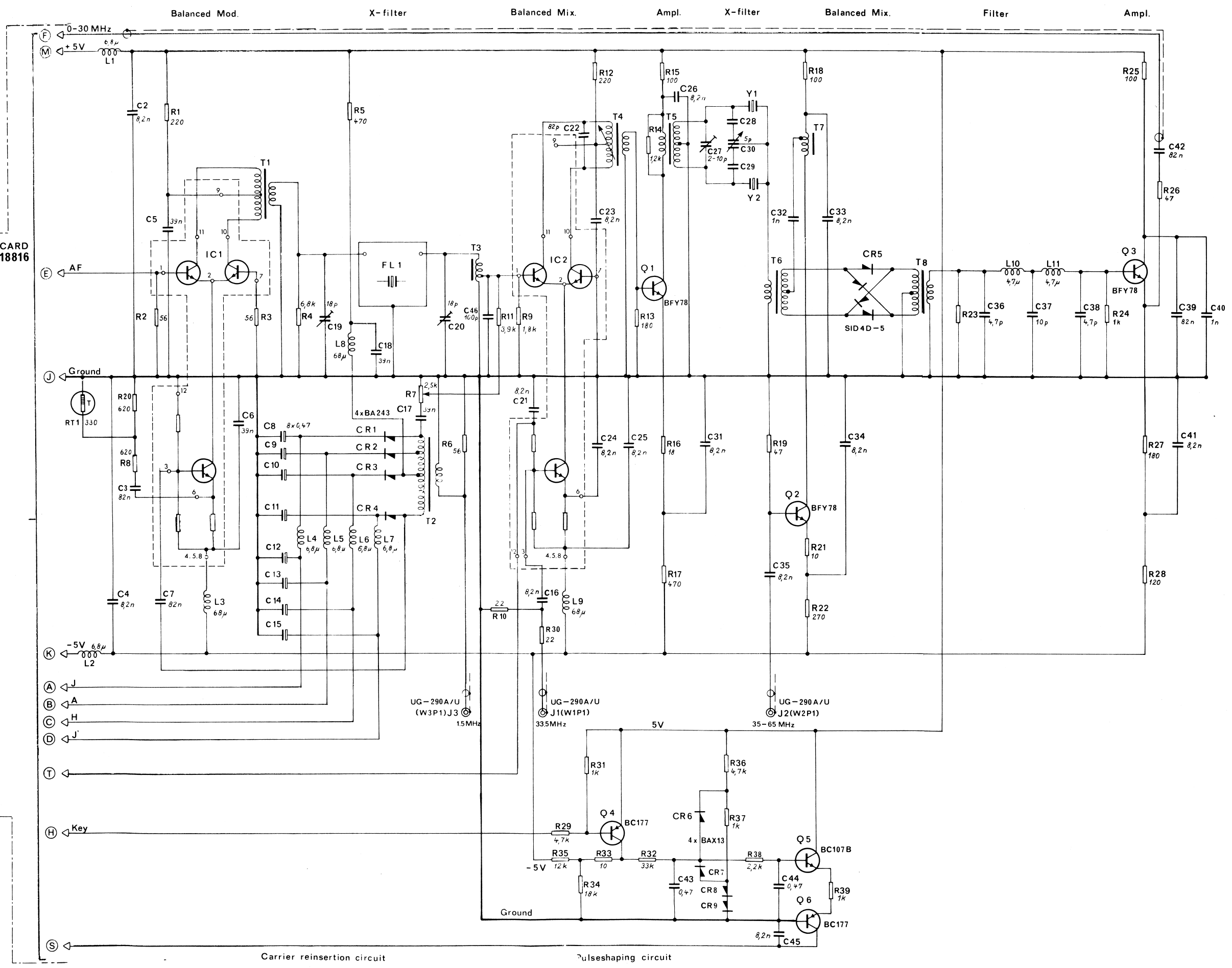
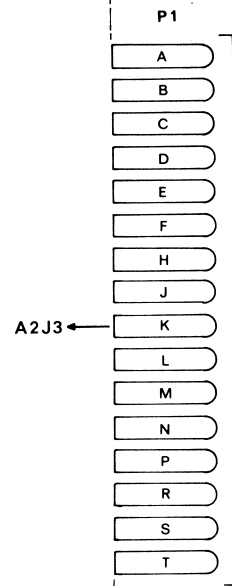
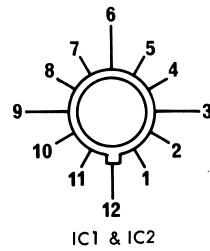
P.C. CARD 19428



Note 1:
Unless otherwise specified:-
All resistance values are in ohms.
All capacitance values are in microfarads.
All inductance values are in henries.

Note 2:
Partial Reference Designations are shown.
For Complete Designation prefix with Assembly and Subassembly Reference Designations.

Note 3:
Gates, flip-flops, etc. contained in an integrated-circuit package (IC) are identified by ref. designations shown on the individual logic-circuit symbols.



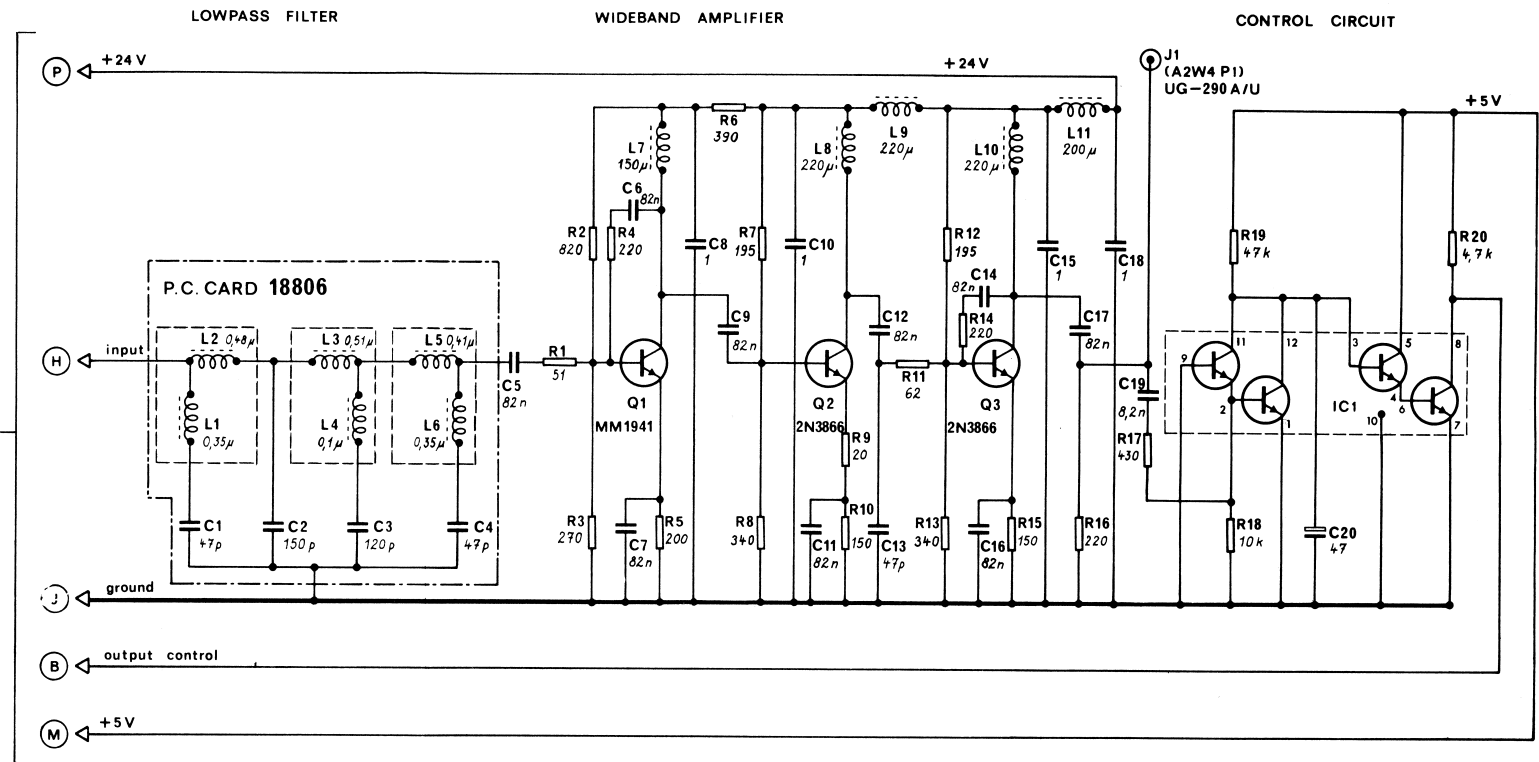
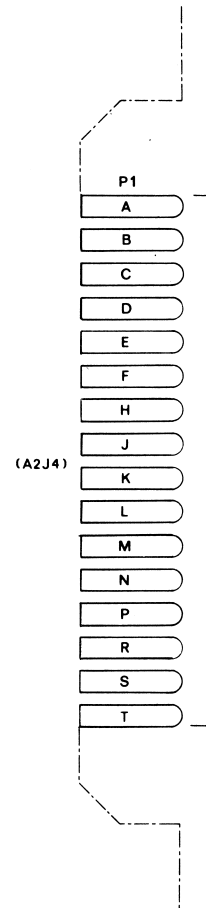
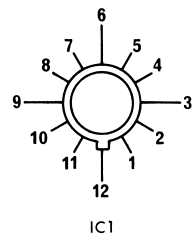
Note 1:
Unless otherwise specified:-
All resistance values are in ohms.
All capacitance values are in microfarads.
All inductance values are in henries.

Note 2:
Partial Reference Designations are shown.
For Complete Designation prefix with Assembly and Subassembly Reference Designations.

Note 3:
Gates, flip-flops, etc. contained in an integrated-circuit package (IC) are identified by ref. designations shown on the individual logic-circuit symbols.

Modulator, Filter and Mixer Circuits

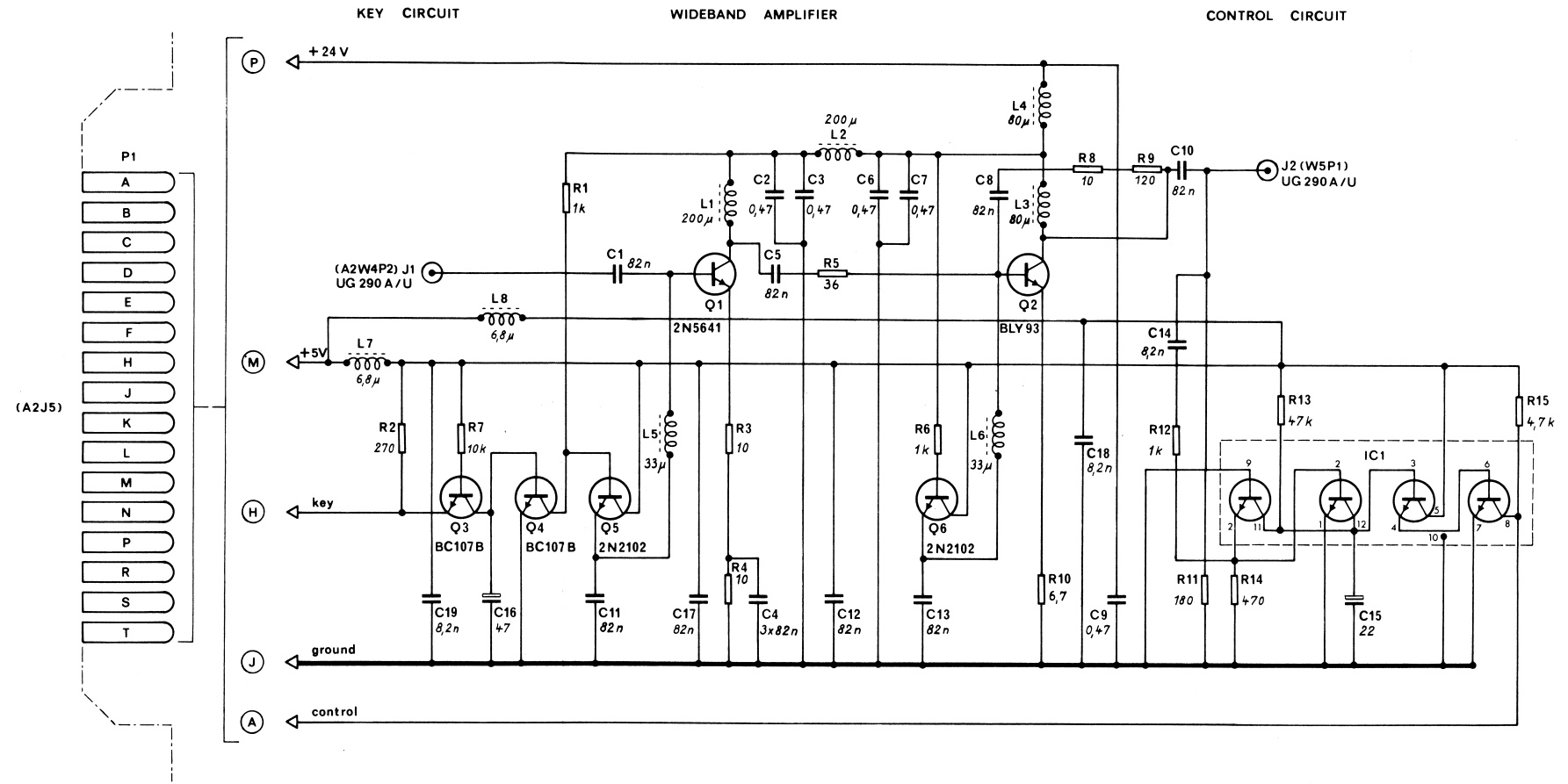
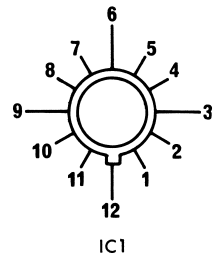
Ref. Designation A2A4



P.C. CARD 18804

Note 1:
 Unless otherwise specified:-
 All resistance values are in ohms.
 All capacitance values are in microfarads.
 All inductance values are in henries.

Note 2:
 Partial Reference Designations are shown.
 For Complete Designation prefix with Assembly and Subassembly Reference Designations.



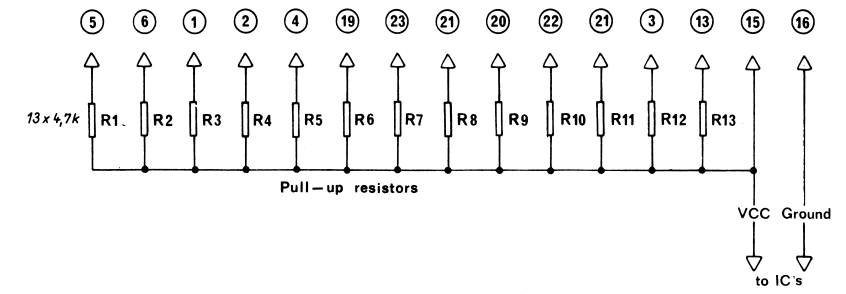
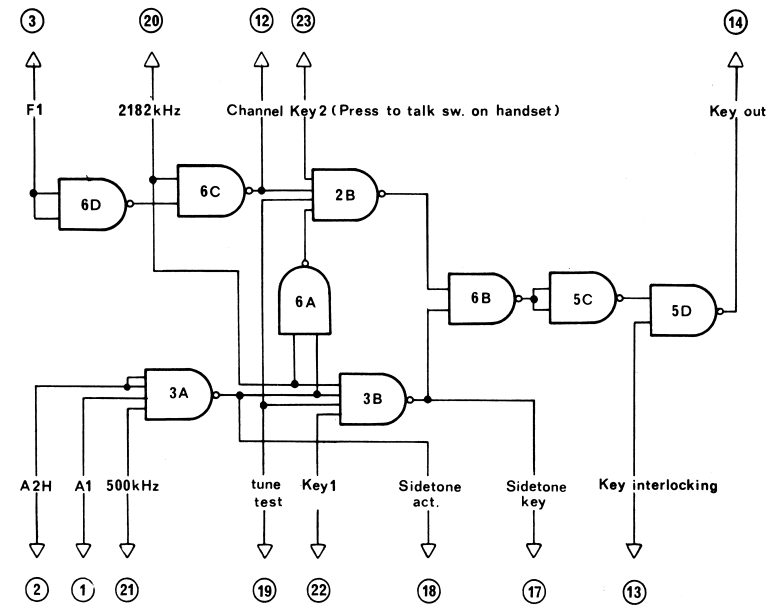
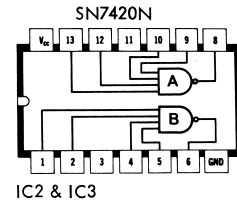
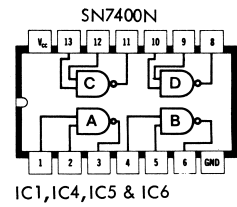
P. C. CARD 18803

Note 1:
 Unless otherwise specified:-
 All resistance values are in ohms.
 All capacitance values are in microfarads.
 All inductance values are in henries.

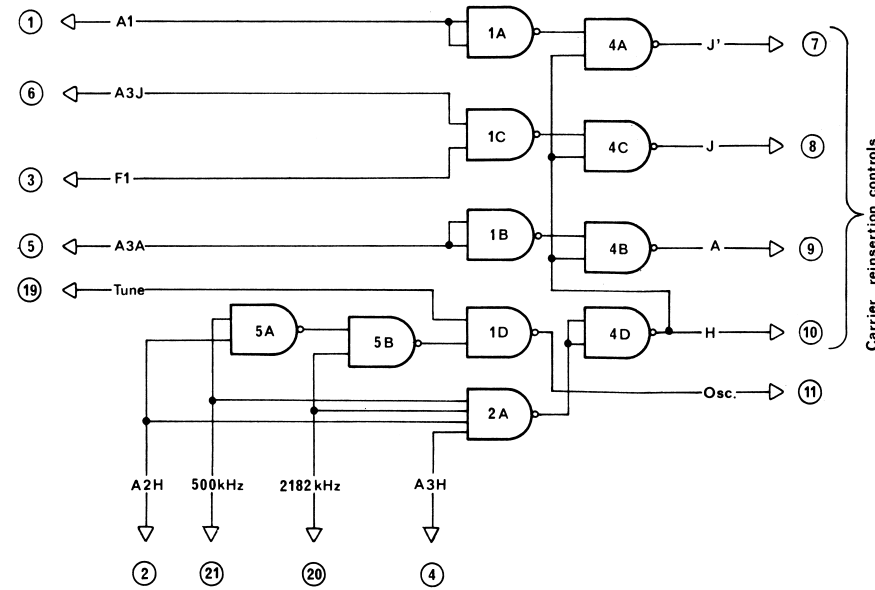
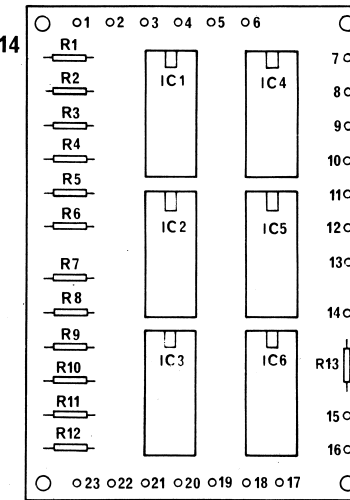
Note 2:
 Partial Reference Designations are shown.
 For Complete Designation prefix with Assembly and Subassembly Reference Designations.

Two-Stage Wide-Band Amplifier

Ref. Designation A2A7



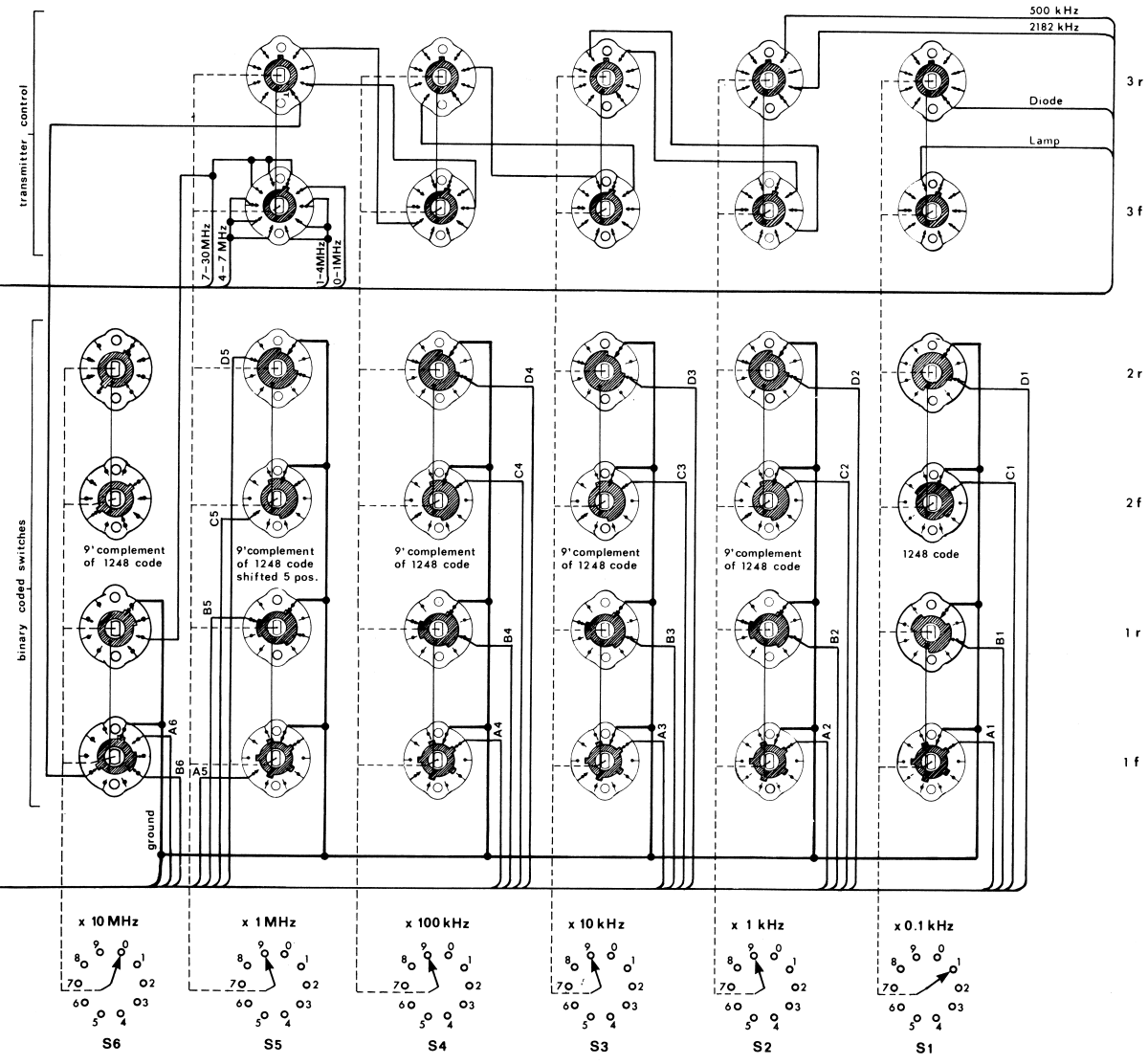
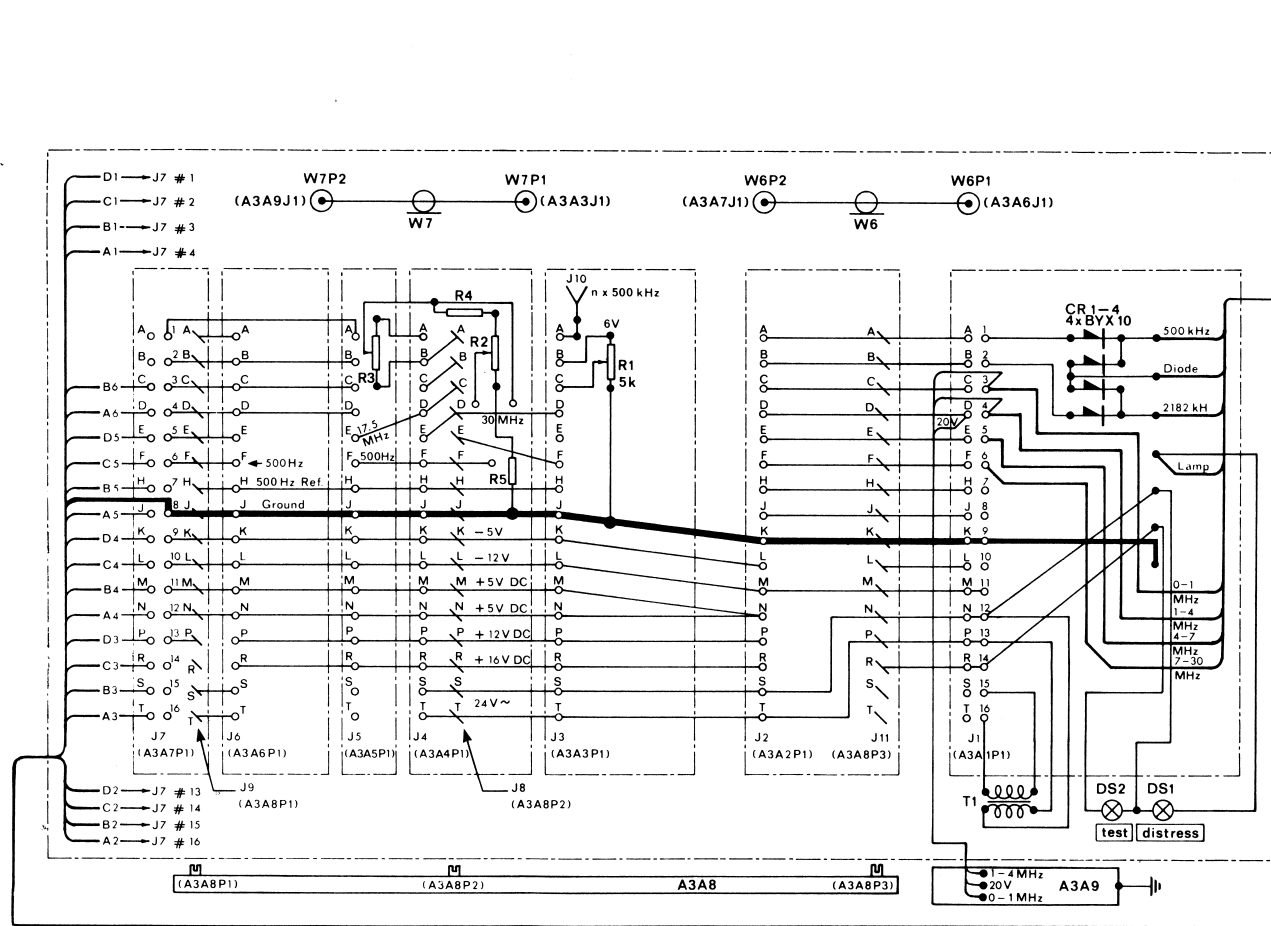
P.C. Card 18814



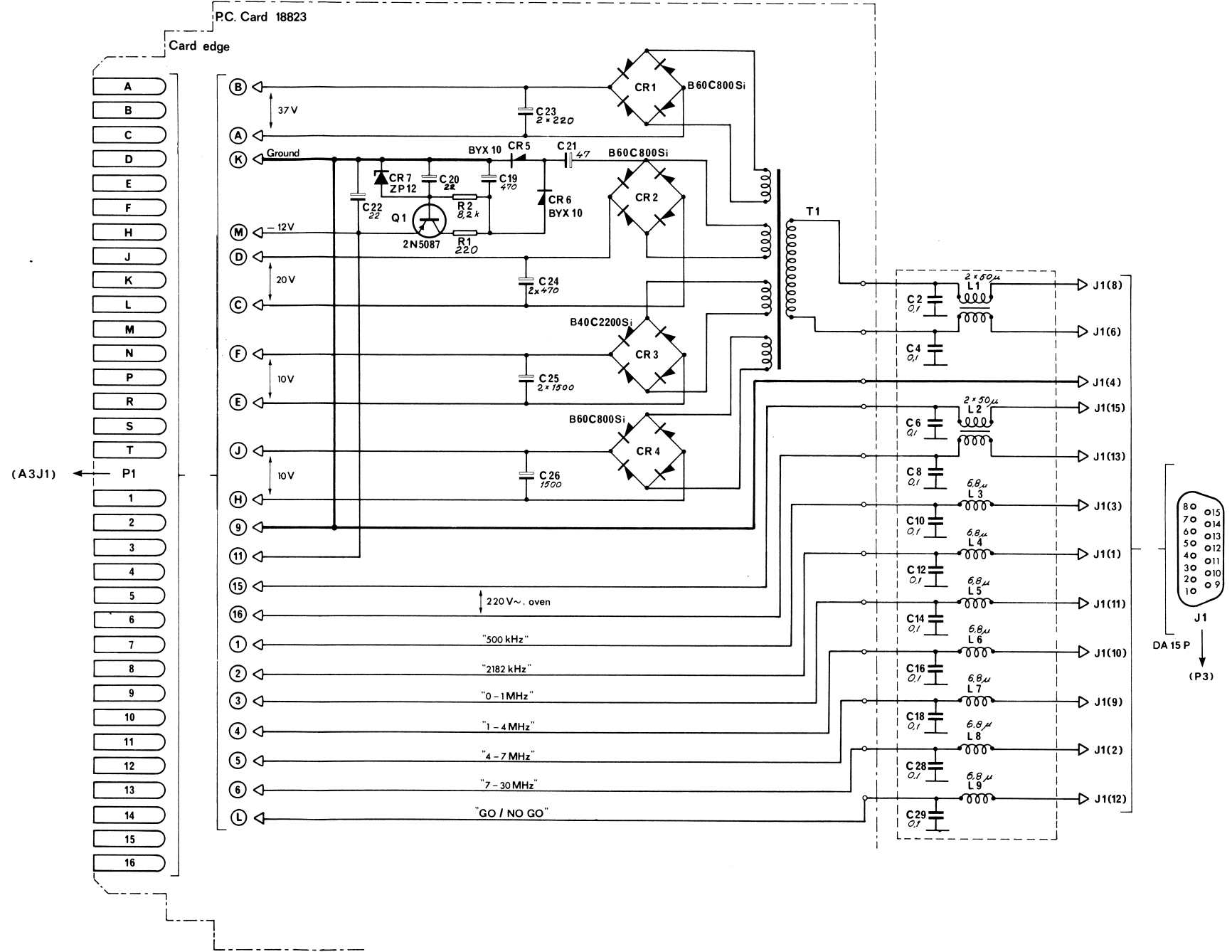
Note 1:
Unless otherwise specified:-
All resistance values are in ohms.
All capacitance values are in microfarads.
All inductance values are in henries.

Note 2:
Partial Reference Designations are shown.
For Complete Designation prefix with Assembly and Subassembly Reference Designations.

Note 3:
Gates, flip-flops, etc. contained in an integrated-circuit package (IC) are identified by ref. designations shown on the individual logic-circuit symbols.

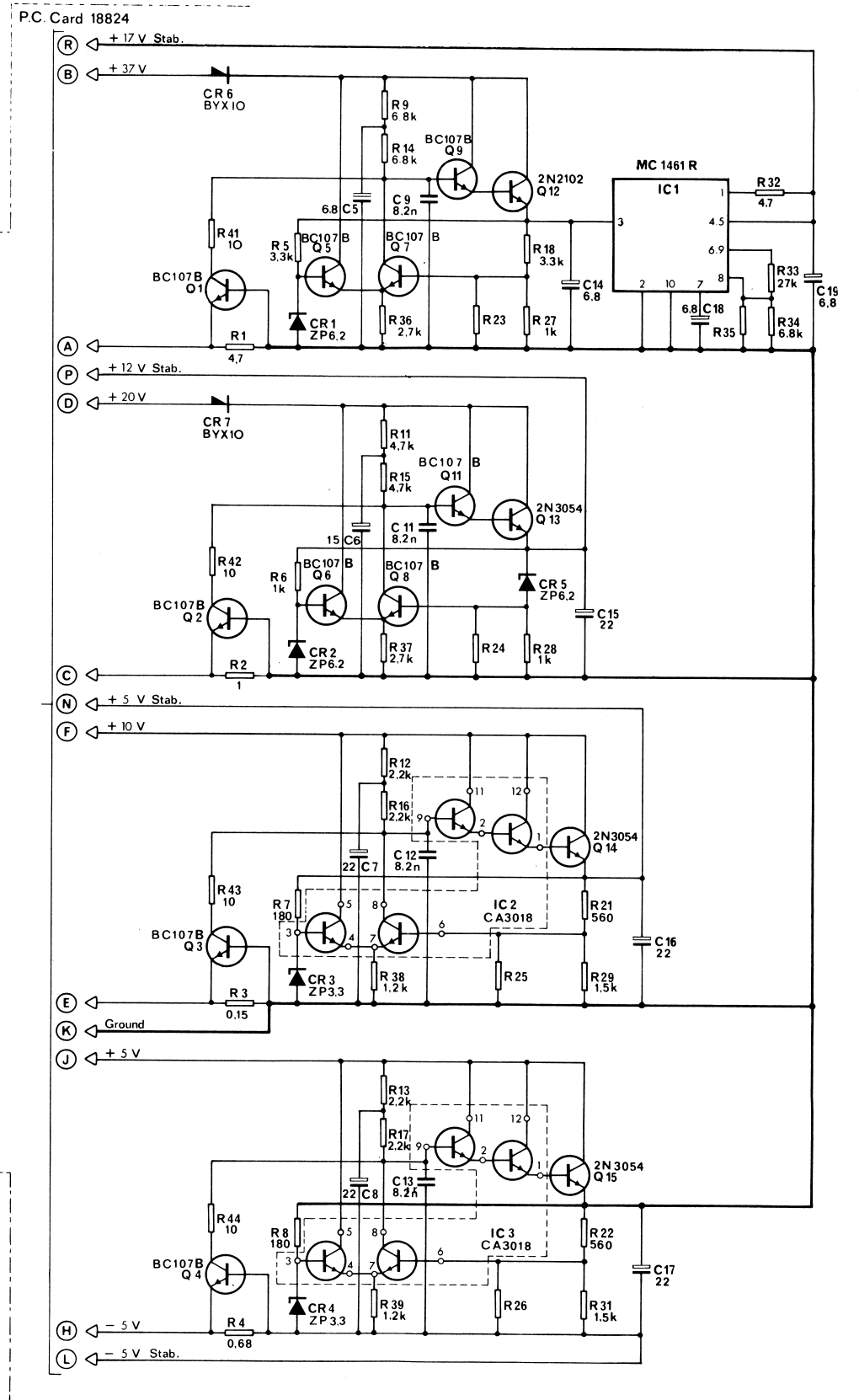
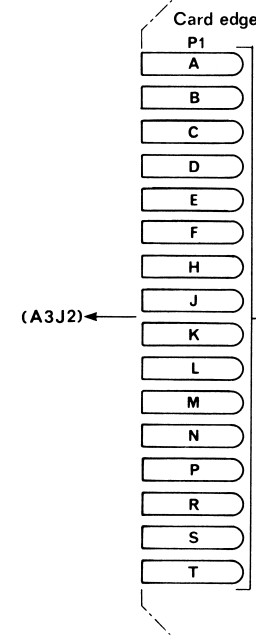
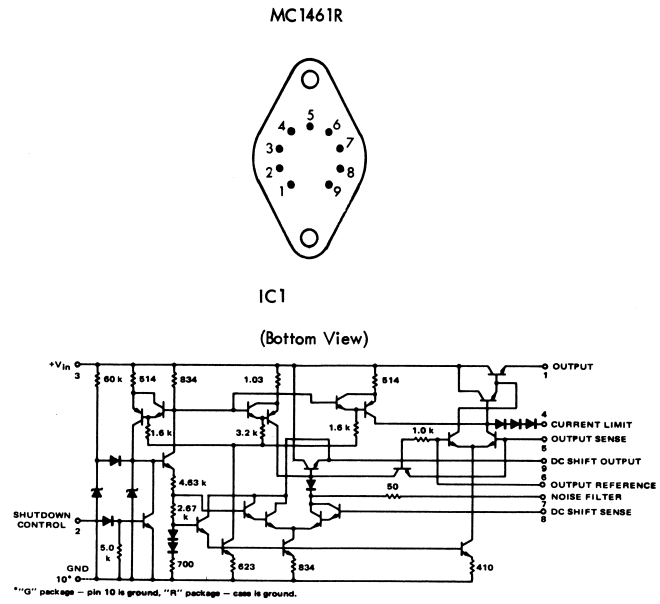


Frequency Synthesizer Panel-and-Chassis Assembly



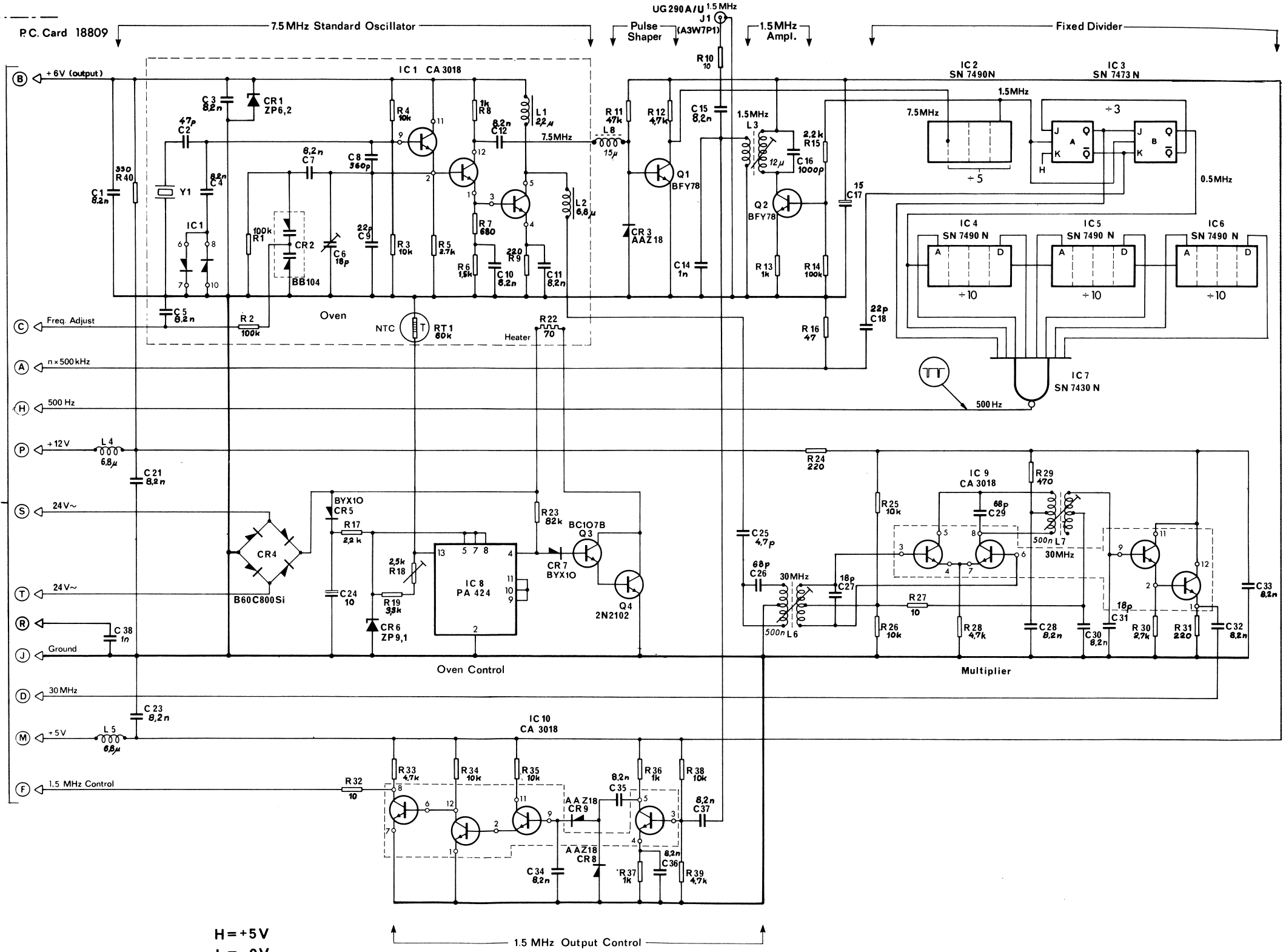
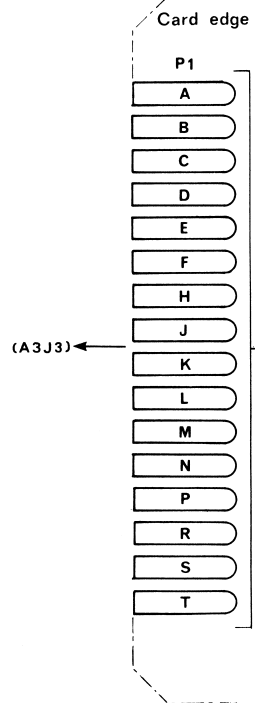
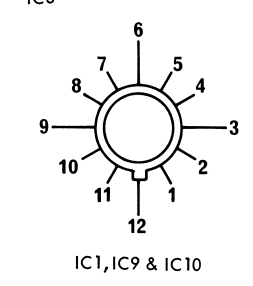
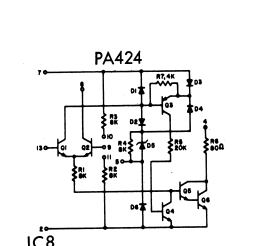
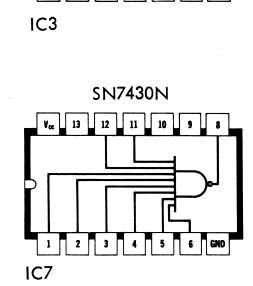
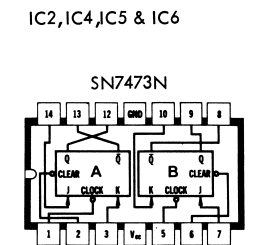
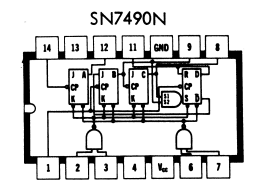
Note 1:
 Unless otherwise specified:-
 All resistance values are in ohms.
 All capacitance values are in microfarads.
 All inductance values are in henries.

Note 2:
 Partial Reference Designations are shown.
 For Complete Designation prefix with Assembly and Subassembly Reference Designations.



Note 1:
Unless otherwise specified:-
All resistance values are in ohms.
All capacitance values are in microfarads.
All inductance values are in henries.

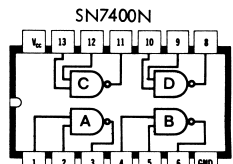
Note 2:
Partial Reference Designations are shown.
For Complete Designation prefix with Assembly and Subassembly Reference Designations.



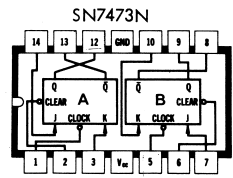
Note 1:
Unless otherwise specified:-
All resistance values are in ohms.
All capacitance values are in microfarads.
All inductance values are in henries.

Note 2:
Partial Reference Designations are shown.
For Complete Designation prefix with Assembly and Subassembly Reference Designations.

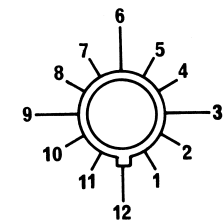
Note 3:
Gates, flip-flops, etc. contained in an integrated-circuit package (IC) are identified by ref. designations shown on the individual logic-circuit symbols.



IC3



IC4



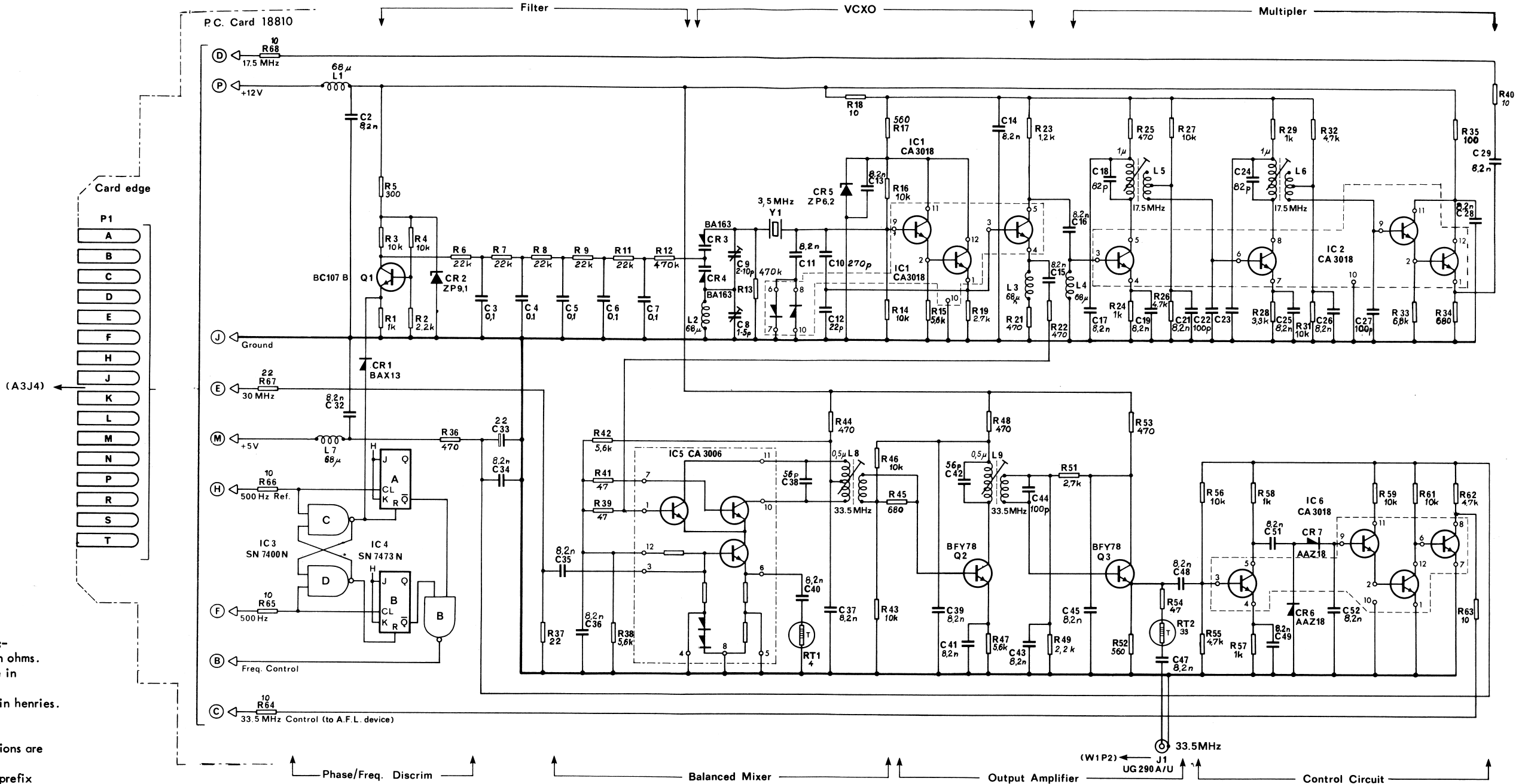
IC1, IC2, IC5 & IC6

H = +5V
L = 0V

Note 1:
Unless otherwise specified:-
All resistance values are in ohms.
All capacitance values are in microfarads.
All inductance values are in henries.

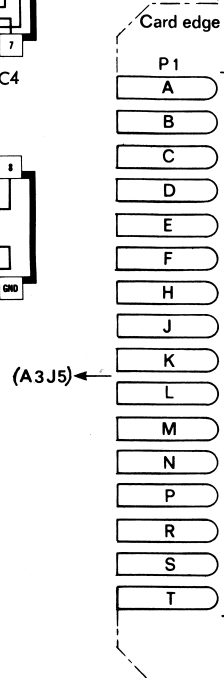
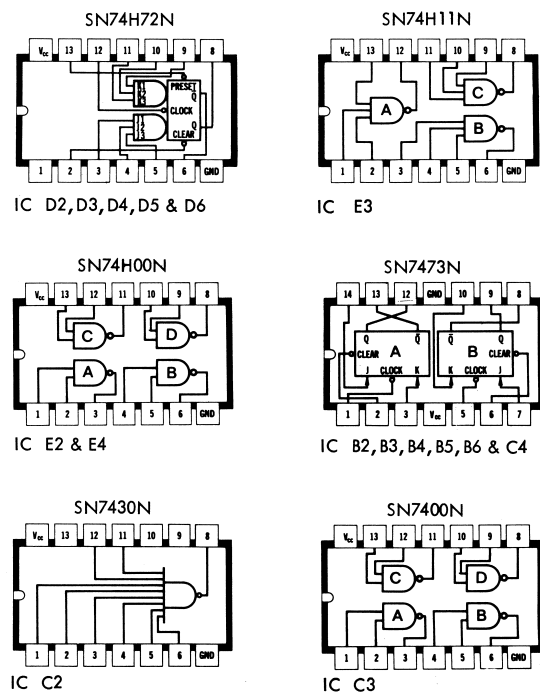
Note 2:
Partial Reference Designations are shown.
For Complete Designation prefix with Assembly and Subassembly Reference Designations.

Note 3:
Gates, flip-flops, etc. contained in an integrated-circuit package (IC) are identified by ref. designations shown on the individual logic-circuit symbols.

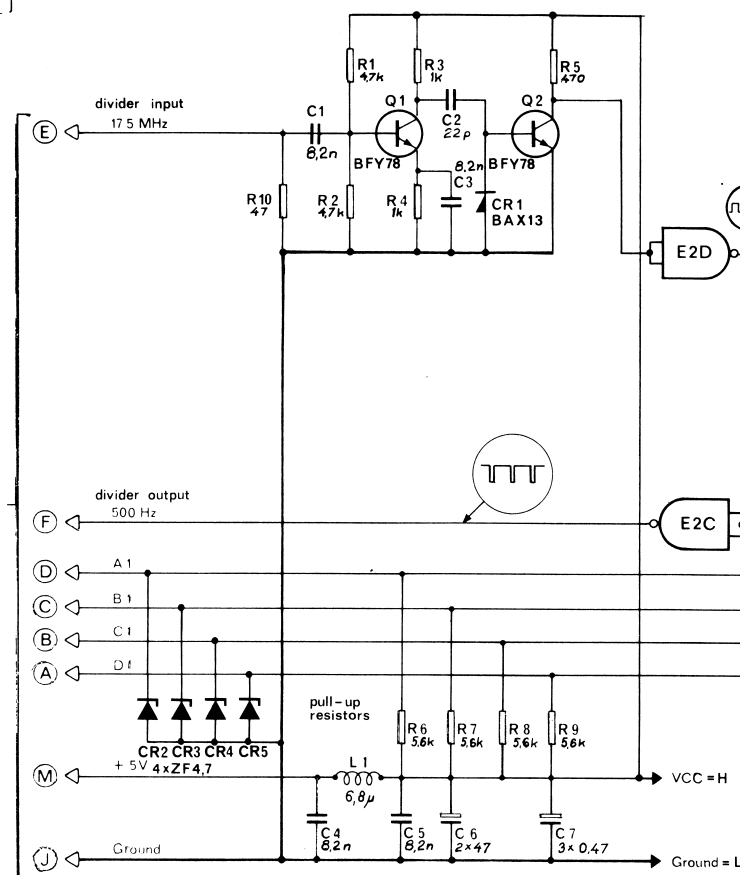


33.4991-33.5000 MHz Phase-Locked Loop

Ref. Designation A3A4



P.C. Card 18808



0.1 kHz dec. Sw. S1

| Dial | A | B | C | D |
|------|---|---|---|---|
| 0 | 1 | 0 | 0 | 1 |
| 1 | 0 | 0 | 0 | 0 |
| 2 | 1 | 0 | 0 | 0 |
| 3 | 0 | 1 | 0 | 0 |
| 4 | 1 | 1 | 0 | 0 |
| 5 | 0 | 0 | 1 | 0 |
| 6 | 1 | 0 | 1 | 0 |
| 7 | 0 | 1 | 1 | 0 |
| 8 | 1 | 1 | 1 | 0 |
| 9 | 0 | 0 | 0 | 1 |

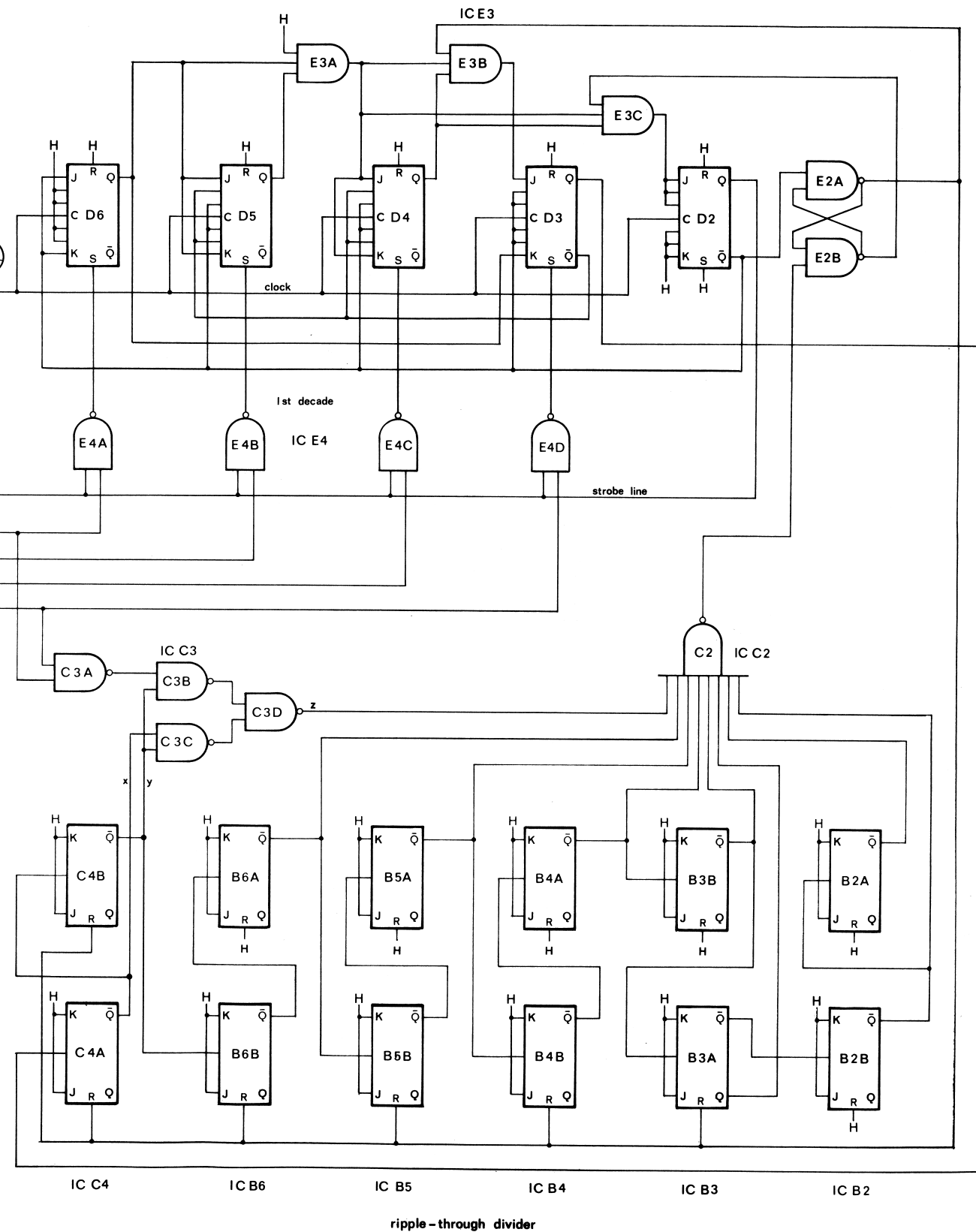
| S1 | Dial | x | y | z |
|----|------|---|---|---|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 1 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 | 0 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 1 | 1 | 1 | 1 |
| ≠0 | 0 | 0 | 0 | 0 |
| ≠0 | 1 | 0 | 0 | 0 |
| ≠0 | 0 | 1 | 1 | 1 |
| ≠0 | 1 | 1 | 1 | 1 |

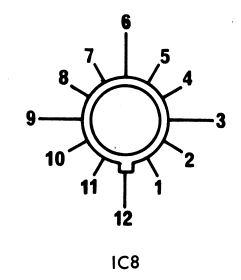
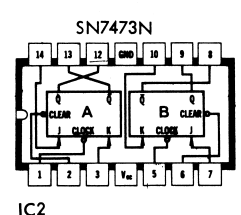
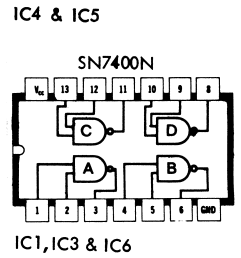
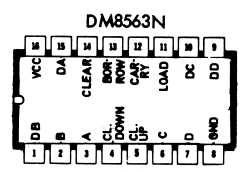
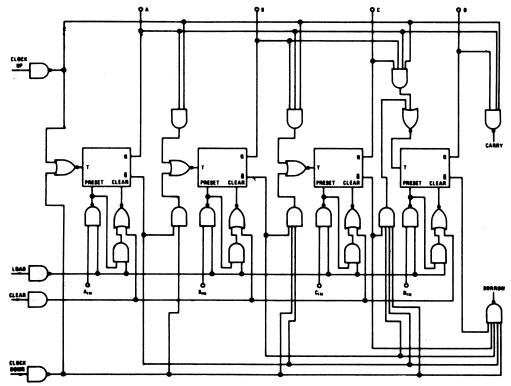
Truth Table for the preset lines.

Note 1:
Unless otherwise specified:-
All resistance values are in ohms.
All capacitance values are in microfarads.
All inductance values are in henries.

Note 2:
Partial Reference Designations are shown.
For Complete Designation prefix with Assembly and Subassembly Reference Designations.

Note 3:
Gates, flip-flops, etc. contained in an integrated-circuit package (IC) are identified by ref. designations shown on the individual logic-circuit symbols, e.g. E3C is gate C contained in ICE3. The first letter and the following number are also used as coordinates to specify the physical location of the IC on the p.c. card.

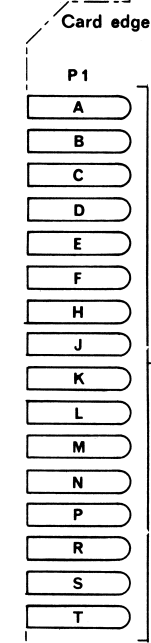




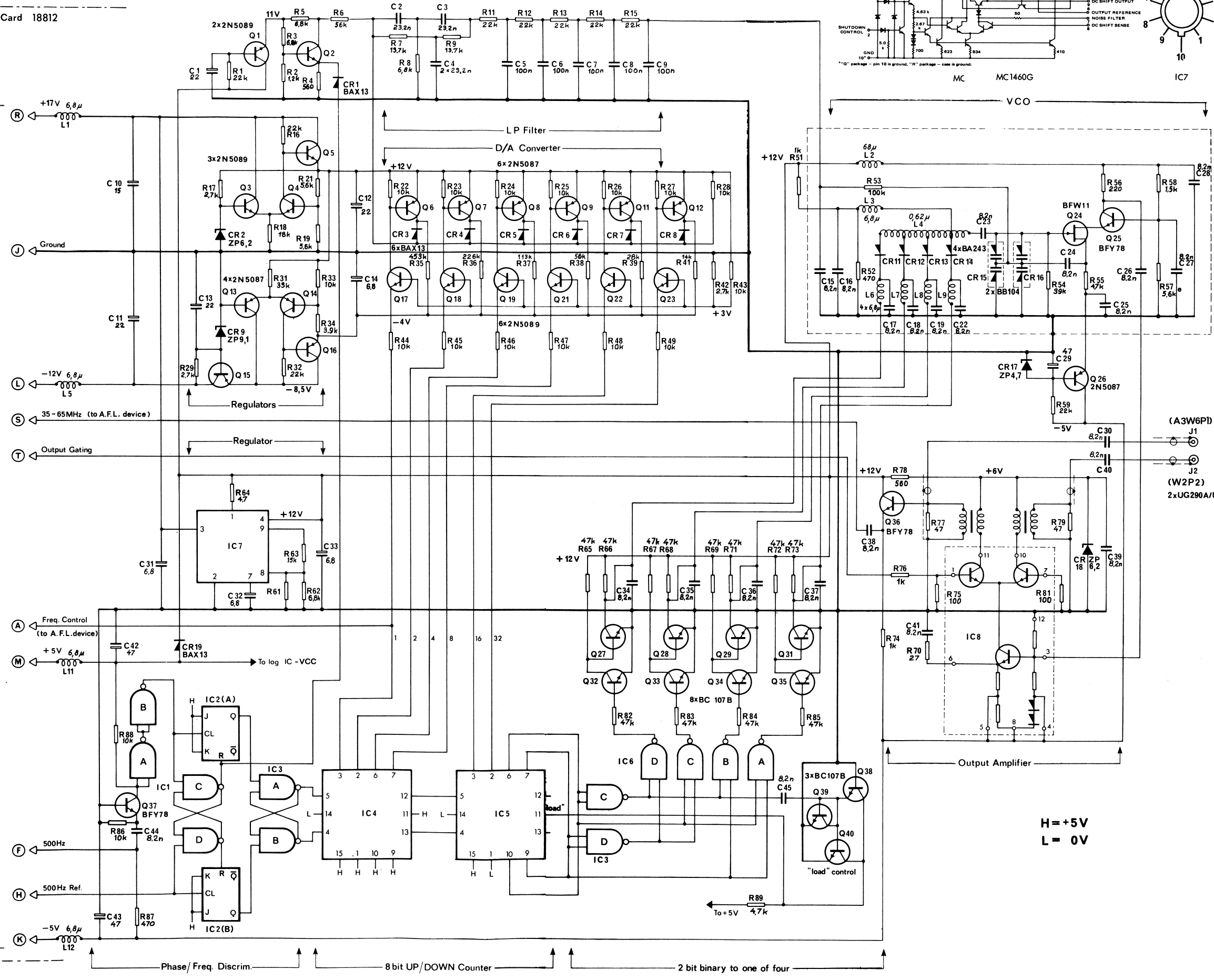
Note 1:
 Unless otherwise specified:-
 All resistance values are in ohms.
 All capacitance values are in microfarads.
 All inductance values are in henries.

Note 2:
 Partial Reference Designations are shown.
 For Complete Designation prefix with Assembly and Subassembly Reference Designations.

Note 3:
 Gates, flip-flops, etc. contained in an integrated-circuit package (IC) are identified by ref. designations shown on the individual logic-circuit symbols.

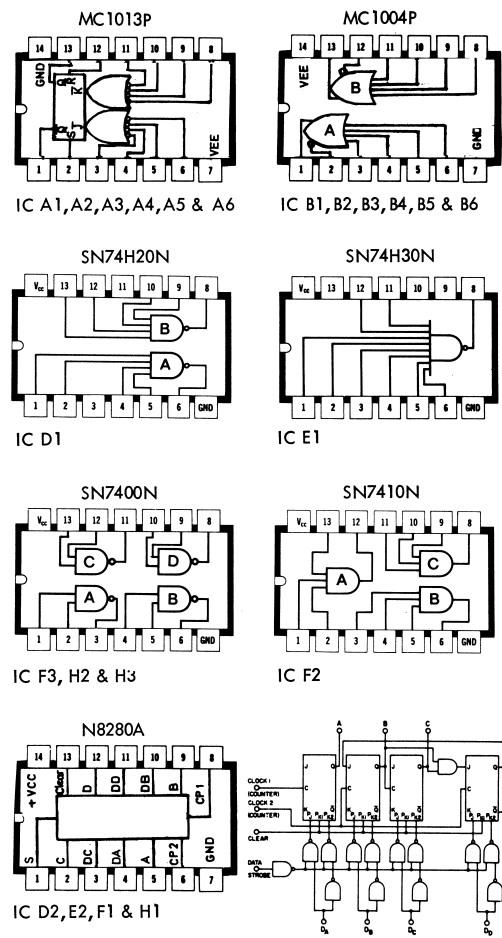


P.C. Card 18812



35.000-64.999 MHz Phase-Locked Loop

Ref. Designation A3A6

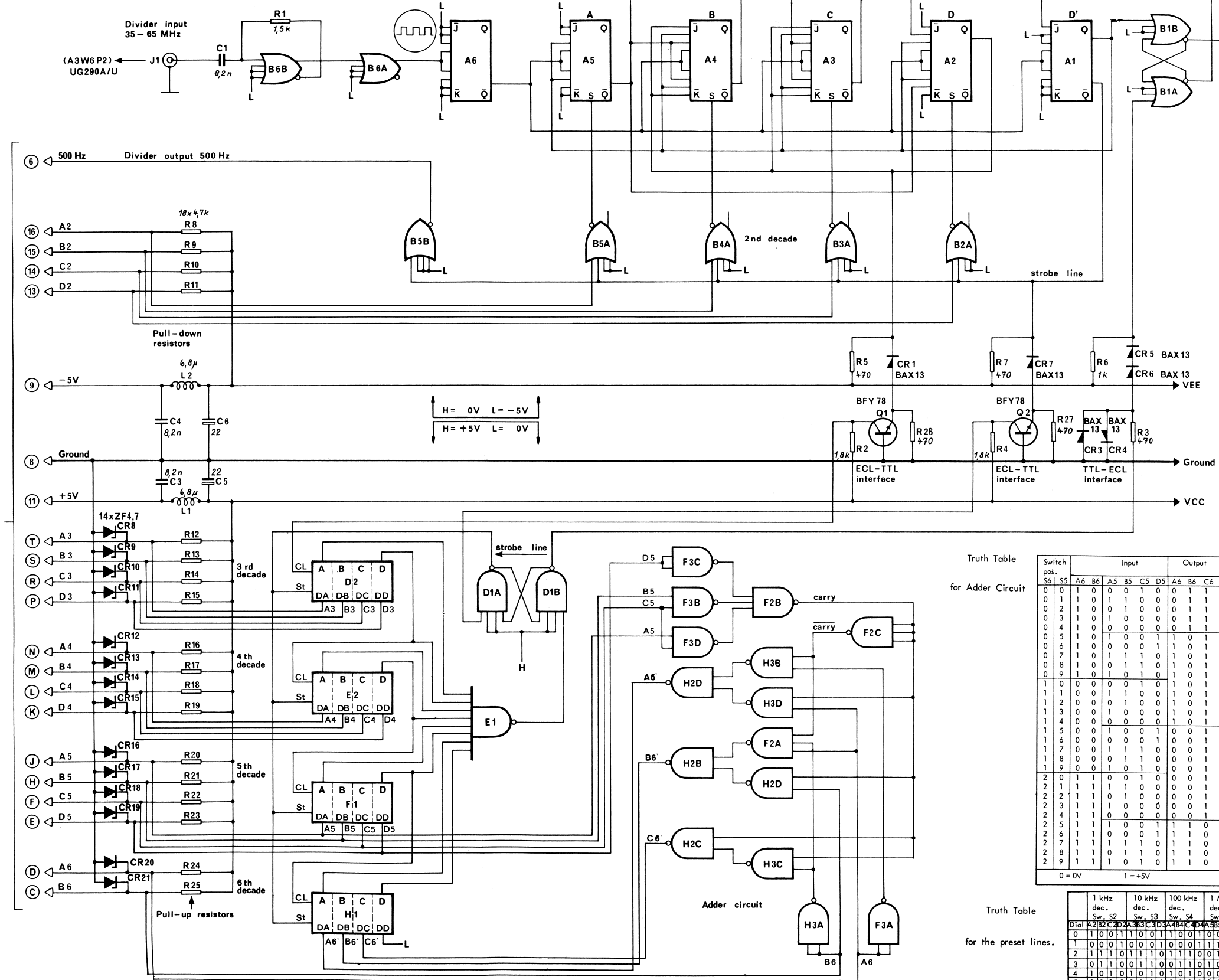


Note 1:
 Unless otherwise specified:-
 All resistance values are in ohms.
 All capacitance values are in microfarads.
 All inductance values are in henries.

Note 2:
 Partial Reference Designations are shown.
 For Complete Designation prefix with Assembly and Subassembly Reference Designations.

Note 3:
 Gates, flip-flops, etc. contained in an integrated-circuit package (IC) are identified by ref. designations shown on the individual logic-circuit symbols, e.g. B3A is gate A contained in ICB3. The first letter and the following number are also used as coordinates to specify the physical location of the IC on the p.c. card.

P.C. Card 18813

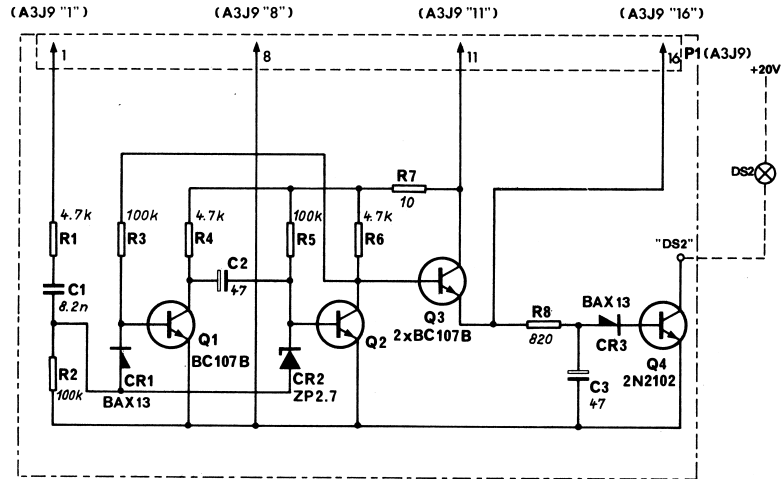


Truth Table for Adder Circuit

| Switch pos. | S6 | S5 | A6 | B6 | A5 | B5 | C5 | D5 | A6 | B6 | C6 | Output frequency MHz |
|-------------|----|----|----|----|----|----|----|----|----|----|----|----------------------|
| 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 35 |
| 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 36 |
| 0 | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 37 |
| 0 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 38 |
| 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 39 |
| 0 | 5 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 40 |
| 0 | 6 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 41 |
| 0 | 7 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 42 |
| 0 | 8 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 43 |
| 0 | 9 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 44 |
| 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 45 |
| 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 46 |
| 1 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 47 |
| 1 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 48 |
| 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 49 |
| 1 | 5 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 50 |
| 1 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 51 |
| 1 | 7 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 52 |
| 1 | 8 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 53 |
| 1 | 9 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 54 |
| 2 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 55 |
| 2 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 56 |
| 2 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 57 |
| 2 | 3 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 58 |
| 2 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 59 |
| 2 | 5 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 60 |
| 2 | 6 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 61 |
| 2 | 7 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 62 |
| 2 | 8 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 63 |
| 2 | 9 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 64 |

Truth Table for the preset lines.

| Dial | 1 kHz dec. Sw. S2 | 10 kHz dec. Sw. S3 | 100 kHz dec. Sw. S4 | 1 MHz dec. Sw. S5 | 10 MHz dec. Sw. S6 |
|------|-------------------|--------------------|---------------------|-------------------|--------------------|
| 0 | 1 | 0 | 0 | 1 | 1 |
| 1 | 0 | 0 | 1 | 0 | 1 |
| 2 | 1 | 1 | 0 | 1 | 1 |
| 3 | 0 | 1 | 0 | 1 | 1 |
| 4 | 1 | 0 | 1 | 0 | 1 |
| 5 | 0 | 1 | 1 | 0 | 1 |
| 6 | 1 | 1 | 0 | 1 | 1 |
| 7 | 0 | 1 | 0 | 1 | 1 |
| 8 | 1 | 0 | 1 | 0 | 1 |
| 9 | 0 | 0 | 0 | 0 | 0 |

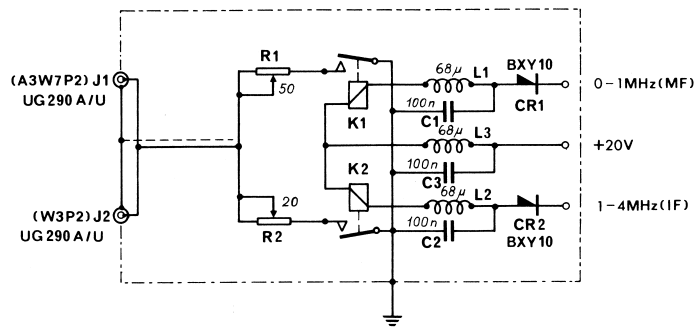


Note 1:
 Unless otherwise specified:-
 All resistance values are in ohms.
 All capacitance values are in microfarads.
 All inductance values are in henries.

Note 2:
 Partial Reference Designations are shown.
 For Complete Designation prefix with Assembly and Subassembly Reference Designations.

Output Gate-Off Circuit

Ref. Designation A3A8



Note 1:

Unless otherwise specified:-

All resistance values are in ohms.

All capacitance values are in microfarads.

All inductance values are in henries.

Note 2:

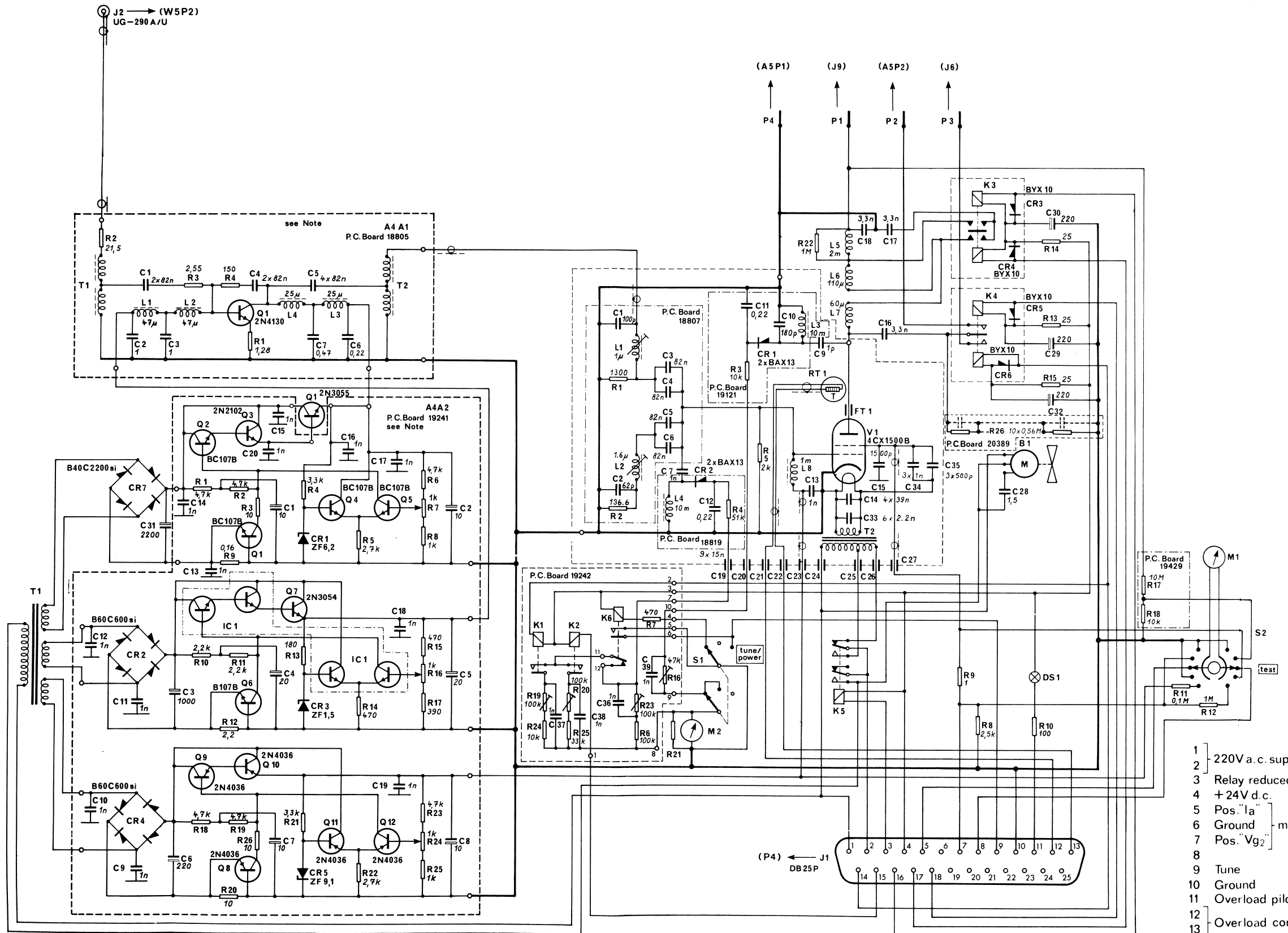
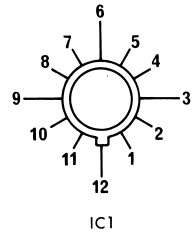
Partial Reference Designations are shown.

For Complete Designation prefix

with Assembly and Subassembly

Reference Designations.

1.5-MHz Signal-Level Control Circuit



Note 1:
Unless otherwise specified:-
All resistance values are in ohms.
All capacitance values are in microfarads.
All inductance values are in henries.

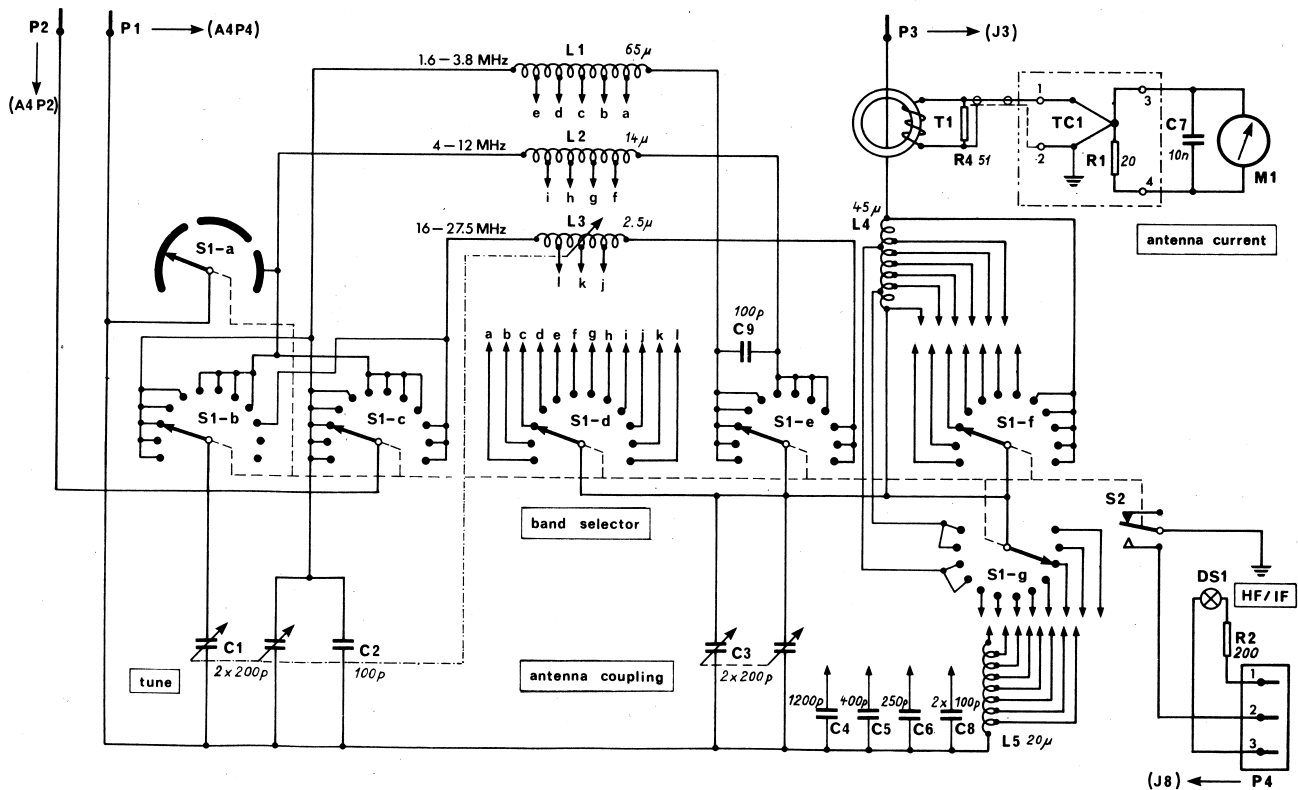
Note 2:
Partial Reference Designations are shown.
For Complete Designation prefix with Assembly and Subassembly Reference Designations, e.g. R1 of Assembly A4 is A4R1, R1 of Subassembly A4A1 is A4A1R1, etc.

- 1 } 220V a.c. supply.
- 2 } +24V d.c.
- 3 } Relay reduced filament supply.
- 4 } Pos. "Ia" mA-meter.
- 5 } Ground
- 6 } Pos. "Vg2"
- 7 } }
- 8 }
- 9 } Tune
- 10 } Ground
- 11 } Overload pilot lamp.
- 12 } Overload control sensor.
- 14 } 0-1 MHz
- 15 } 1-4 MHz
- 16 } 1-7 MHz
- 17 } 7-30 MHz
- 18 } 1-30 MHz

J1
DB25P

Power Amplifier Circuit

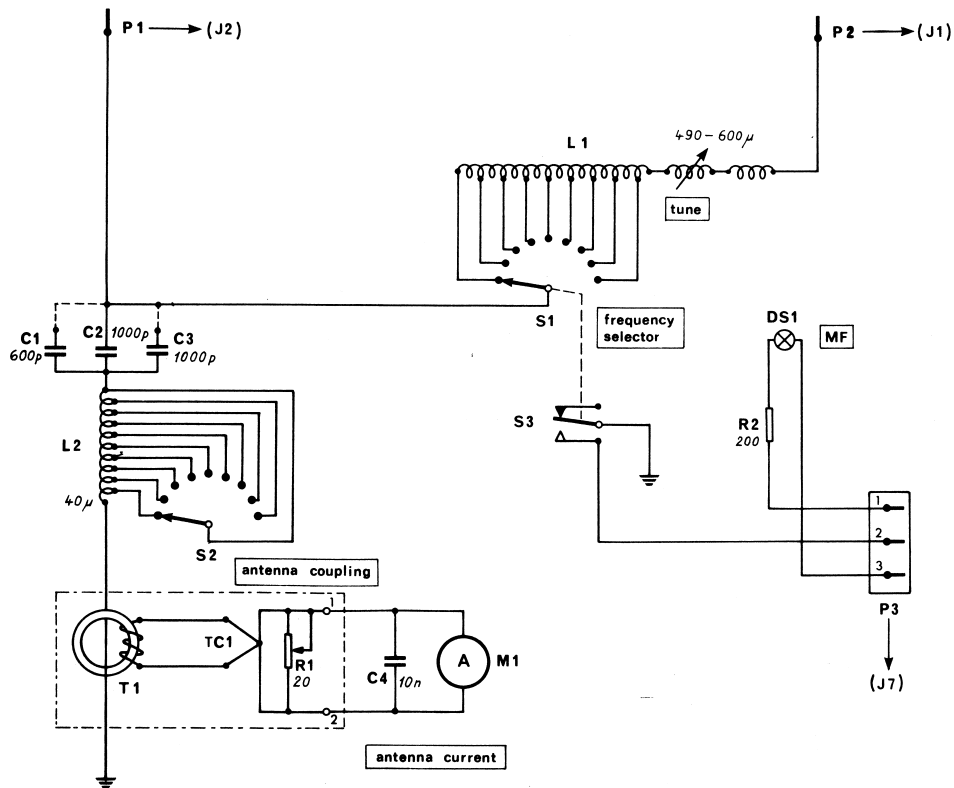
Ref. Designations A4, A4A1 and A4A2



Note 1:
 Unless otherwise specified:-
 All resistance values are in ohms.
 All capacitance values are in microfarads.
 All inductance values are in henries.

Note 2:
 Partial Reference Designations are shown.
 For Complete Designation prefix with Assembly and Subassembly Reference Designations.

Intermediate-Frequency and High-Frequency Antenna Matching Network



Note 1:
 Unless otherwise specified:-
 All resistance values are in ohms.
 All capacitance values are in microfarads.
 All inductance values are in henries.

Note 2:
 Partial Reference Designations are shown.
 For Complete Designation prefix with Assembly and Subassembly Reference Designations.

Medium-Frequency Antenna Matching Network