

*Specials
Only.*

Special SSB filters are fitted to this receiver with the following specification.

LSB

6dB UPPER	99.65kHz Minimum	2.75kHz BANDWIDTH
6dB LOWER	96.90kHz Maximum	

60dB UPPER	100.70kHz Maximum	5.05kHz BANDWIDTH
60dB LOWER	95.65kHz Minimum	

USB

6dB UPPER	103.10kHz Minimum	2.75kHz BANDWIDTH
6dB LOWER	100.35kHz Maximum	

60dB UPPER	104.40kHz Maximum	5.05kHz BANDWIDTH
60dB LOWER	99.35kHz Minimum	

Eddystone Radio Limited.

1837/2F B.F.O. OFFSET SELECTOR MODULE

Introduction

This unit is a D.C. switched path selector which routes either 100kHz from the Correction Module or the locally generated Offset Frequency to the BFO and Product Detector.

Circuit Operation

Inverter IC1d, crystal XL1 and capacitors C16 and C3 form the Offset Frequency oscillator which is buffered and shaped by inverters IC1e, IC1f, and IC1a. The Offset Frequency may be measured at TP1. IC2 is a divide by 20 circuit and the output Q2 (IC2b) is low pass filtered by R5, CH1, C5, C6, C7 and coupled to transmission gate IC3d by C8.

Transmission gate IC3a controls the 100kHz feed from the Correction Module.

Switching of either IC3a or IC3d is controlled by complementary voltages from IC1c and IC1b. Switching of IC1c is provided by the selectivity unit. In SSB bandwidth + 12V appears at A4 and IC3a is enabled and IC3d is disabled so routing 100kHz to the output A5. In all other bandwidths the Offset Frequency appears at A5. IC3c in conjunction with R3 stops the Offset Frequency oscillator when SSB bandwidth is selected. R5 enables the level of 100kHz and the Offset Frequency to be equalised during manufacture. IC4 produces +5V for the complete module.

Operation

The offset facility may be selected on any range and on all bandwidths except for SSB.

Offset is effected as follows: Depress F1 USB/LSB switch 13/S5 and select any bandwidth except SSB. Adjust receiver for normal operation and received signals will be displaced from the tuned frequency by the required offset.

The following table relates the operation of the selectivity switch and 13/S4 & 13/S5 in providing CW, SSB, AM, F1 modes.

SELECTIVITY	MODE S4	SWITCHES S5	INJECTION	RECEPTION MODE
SSB	AM	LSB	100kHz	LSB
SSB	AM	USB/F1	100kHz	USB
SSB	CW	LSB	100kHz	LSB
SSB	CW	USB/F1	100kHz	USB
$\overline{\text{SSB}}$	AM	LSB	OFFSET	AM
$\overline{\text{SSB}}$	AM	USB/F1	OFFSET	F1
$\overline{\text{SSB}}$	CW	LSB	OFFSET	CW
$\overline{\text{SSB}}$	CW	USB/F1	OFFSET	F1

Components List B.F.O. Selector Module 1837/2F

Capacitors

Ref	Value	Type	Voltage	Tolerance
C1	100n	Polycarbonate	100V	10%
C2	100n	Polycarbonate	100V	10%
C3	100pf	Polystyrene	350V	+2%
C4	S.O.T.			
C5	820pf	Polystyrene		+5%
C6	100pf	Polystyrene		+2%
C7	820pf	Polystyrene		+5%
C8	10n	Plate Ceramic	63V	-80%+20%
C9	10n	Plate Ceramic	63V	-80%+20%
C10	10n	Plate Ceramic	63V	-80%+20%
C11	10n	Plate Ceramic	63V	-80%+20%
C12	22μ	Tantalum	16V	20%
C13	1μ	Tantalum	35V	20%
C14	220μ	Tubular Electrolytic	16V	+80%-20%
C15	10n	Polycarbonate	400V	10%
C16	2p5-27pf	Trimmer		

Resistors

Ref	Value (Ω)
R1	100K
R2	47K
R3	10K
R4	10M
R5	3K3

Resistors

Ref	Value (Ω)
R6	100K
R7	100K
R8	S.O.T.
R9	330

All resistors are Mullard CR25 0.3 Watt 5%

Diodes

Ref	Type
D1	BAX13 Mullard

Integrated Circuits

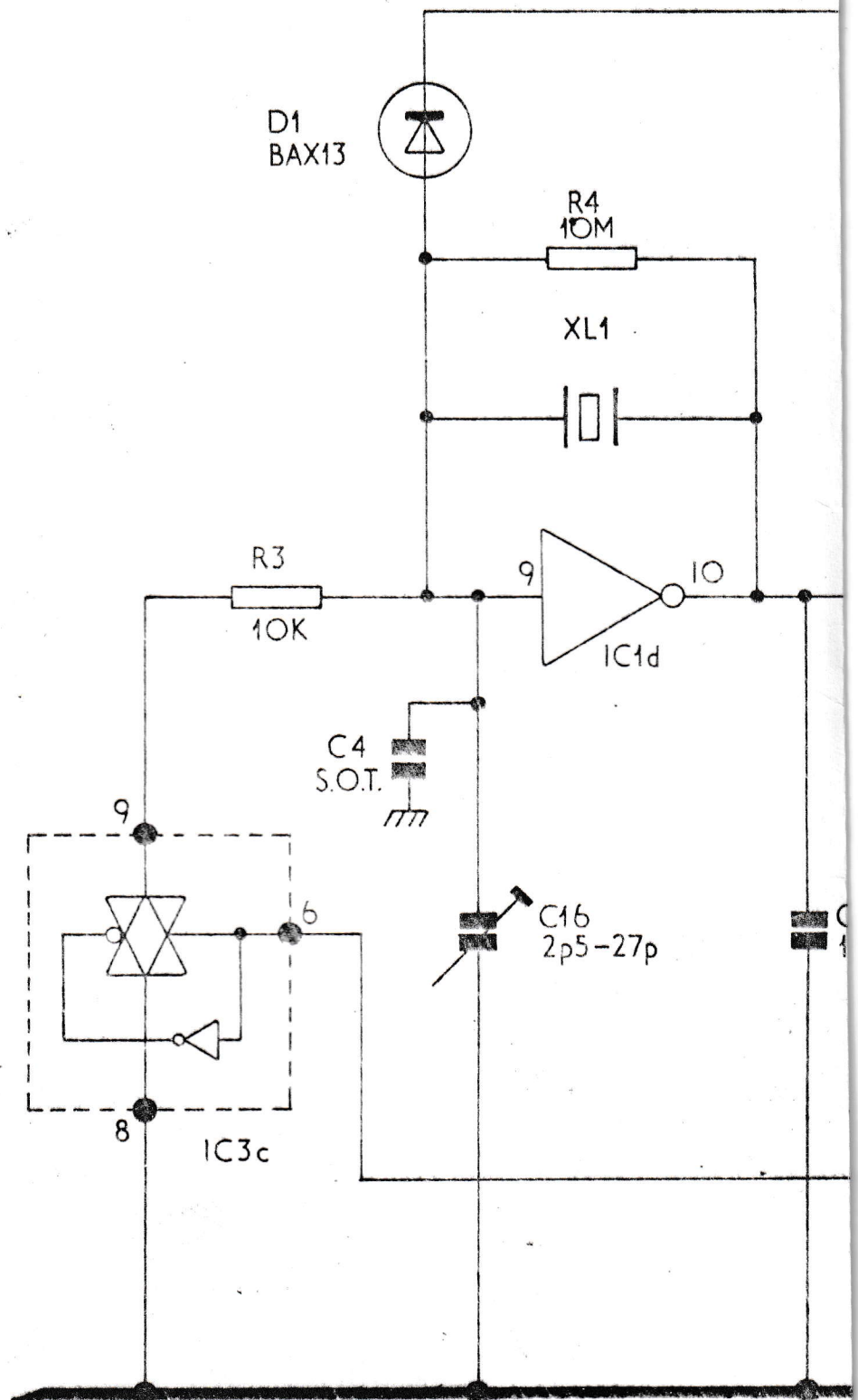
Ref	Type
IC1	MC14049 Motorola
IC2	MC14518 Motorola
IC3	MC14016 Motorola
IC4	MC78L05 Motorola

Components List B.F.O. Selector Module 1837/2F

Continued:

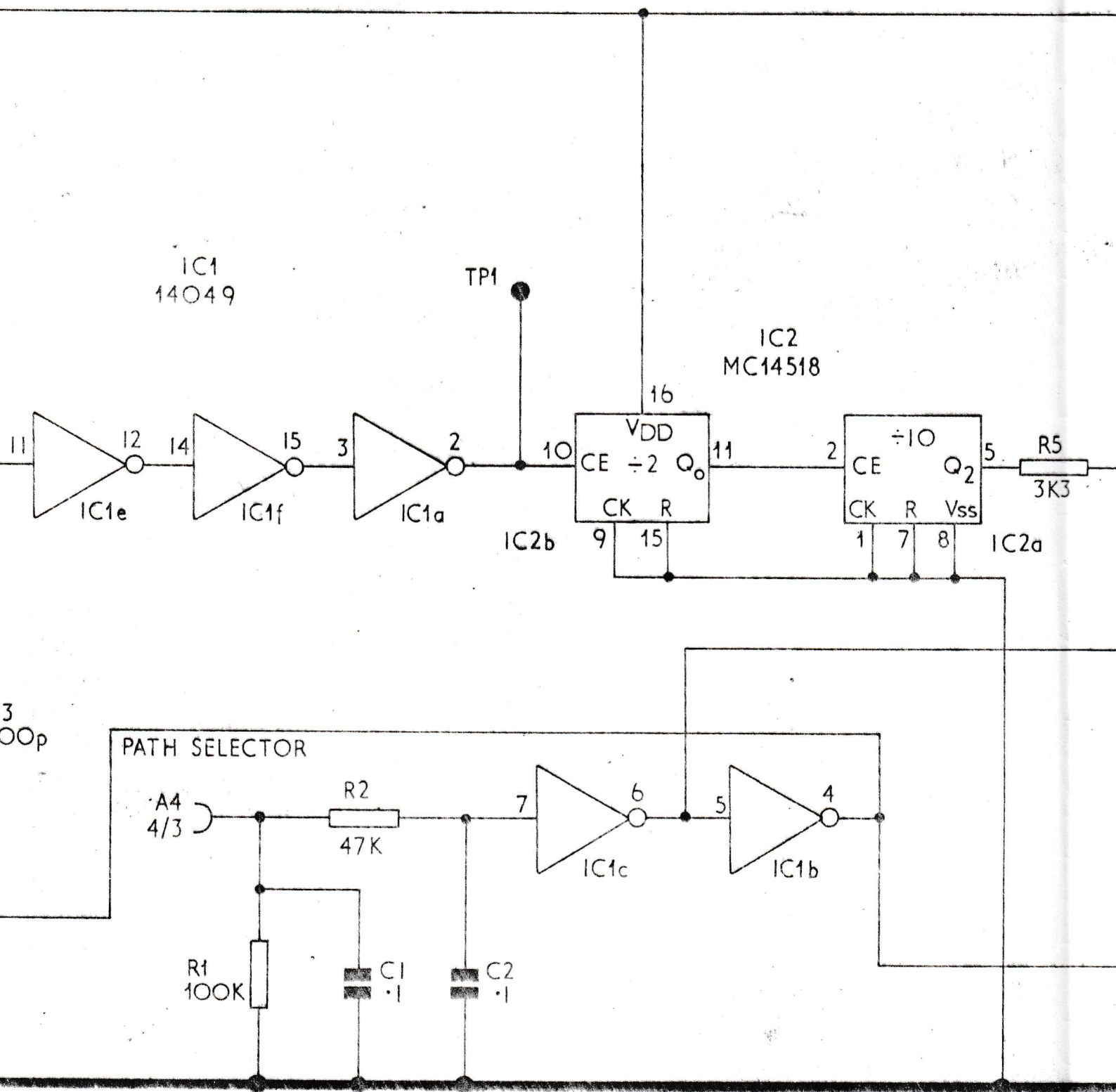
Miscellaneous

XL1 Crystal	10829P
CH1 Choke 4m7	SC60
Printed Circuit Board	9998P
10way Female Connector Side Entry	9865P



THE FOLLOWING PINS ARE CONNECTED
IN ADDITION TO THOSE SHOWN AND
BY THE CAPACITORS INDICATED, SEE CO

IC1	PIN 1
IC2	16
IC3	14



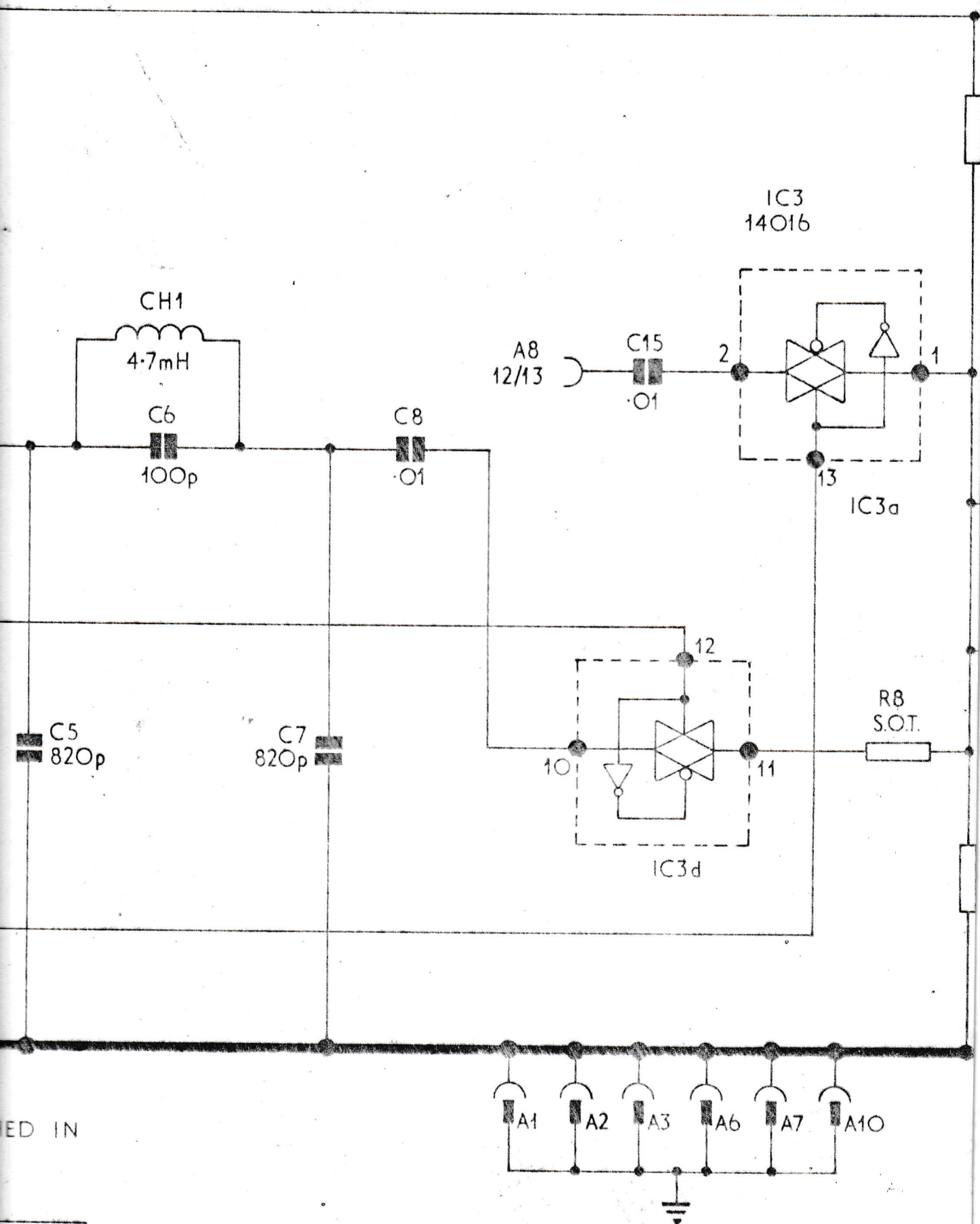
TO THE +5V SUPPLY
 DECOUPLED LOCALLY
 COMPONENTS LIST FOR TYPE

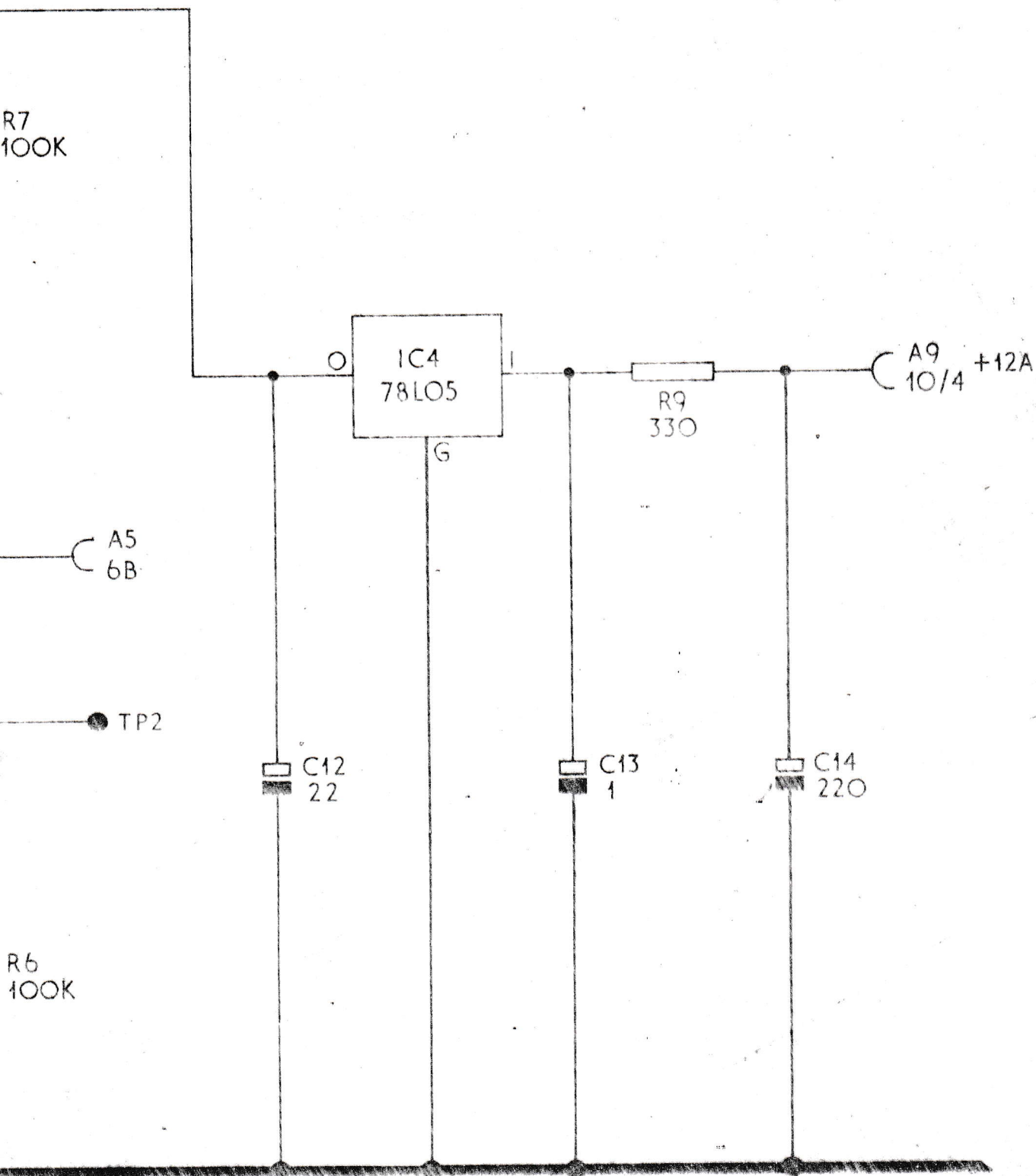
C11	10nF
C10	10nF
C9	10nF

THE FOLLOWING PINS ARE EARTHED
 ADDITION TO THOSE SHOWN

IC1	PIN 8
IC2	8
IC3	3,4,5,7

ED IN





PATH SELECTOR LOGIC

A4
+12V
OV

A5
100kHz
101-7kHz

BP 1487
ISSUE 1