

SYNTHESIS

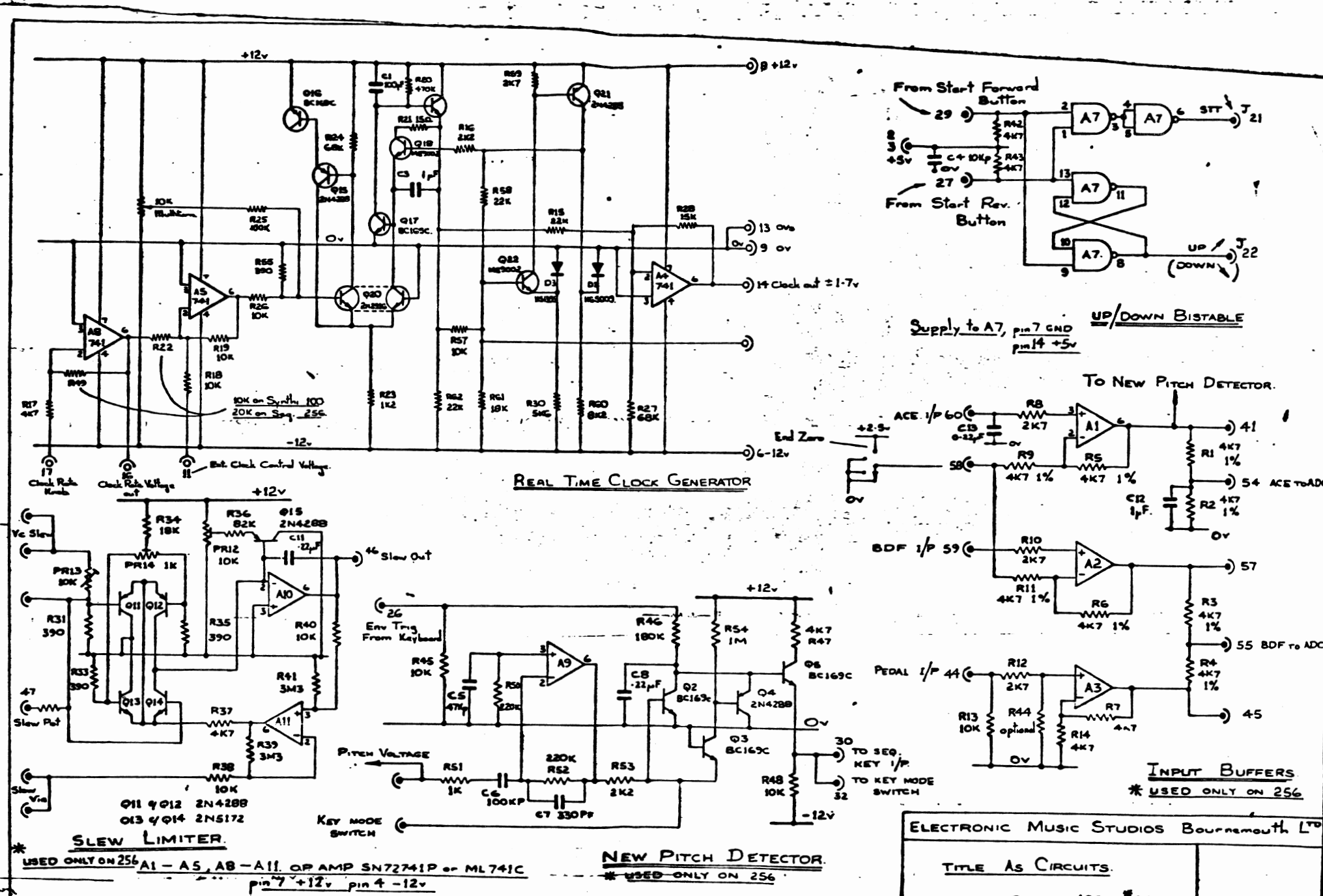
**Circuit Diagrams
&
Assembly Drawings**

<u>DRG. No.</u>	<u>TITLE</u>
\ 32/00	Low Pass Filter Osc. Ring Modulator Circuit
\ 33/00	Low Pass Filter Osc. Ring Modulator Assembly
\ 32/01	High Pass Filter Osc. Circuit
\ 33/01	High Pass Filter Osc. Assembly
\ 32/02	Trapezoid Generator Circuit
\ 33/02	Trapezoid Generator Assembly
\ 32/04	Reverb Drive Circuit
\ 33/04	Reverb Drive Assembly
\ 32/05	Octave Filter Bank Circuit
\ 33/05	Octave Filter Bank Assembly
\ 32/06	S.R. & R.T. Oscillator & Meter Circuit
\ 33/06	S.R. & R.T. Oscillator & Meter Assembly
\ 32/07	Noise Generator Circuit
\ 33/07	Noise Generator Assembly
\ 32/08	Random Generator Circuit
\ 33/08	Random Generator Assembly
\ 32/09	Pitch to Voltage Circuit
\ 33/09	Pitch to Voltage Assembly
\ 32/10	Envelope Follower Circuit
\ 33/10	Envelope Follower Assembly
\ 32/11	Keyboard Controller Circuit
\ 33/11	Keyboard Controller Assembly
\ 32/12	Slew Limiter Circuit
\ 33/12	Slew Limiter Assembly
\ 32/13	O/P Channel Filter Circuit
\ 33/13	O/P Channel Filter Assembly
\ 32/14	Pan Summing Amps Circuit
\ 33/14	Pan Summing Amps Assembly
\ 32/15	Log Modulators Circuit
\ 33/15	Log Modulators Circuit
\ 32/16	Hex Operational Amplifier Circuit
\ 33/16	Hex Operational Amplifier Assembly
\ 32/17	Hex Operational Amplifier Summing Buffer Circuit
\ 33/17	Hex Operational Amplifier Summing Buffer Assembly
\ 32/18	Dynamic Keyboard Electronics Circuit
\ 33/18	Dynamic Keyboard Electronics Assembly
32/19	4 Decade up/down Counter Circuit
33/19	4 Decade up/down Counter Assembly

<u>DRG. No.</u>	<u>TITLE</u>
\ 32/41	Real Time Clock Generator Circuit
\ 33/41	Real Time Clock Generator Assembly
\ 32/42	6 Bit A to D Converter Ref. Supply and Key 4 Buffer Circuit
\ 33/42	6 Bit A to D Converter Ref. Supply and Key 4 Buffer Assembly
\ 32/43	8 Bit D to A Converters and Key Flip Flop Circuit
\ 33/43	8 Bit D to A Converters and Key Flip Flop Assembly
\ 32/44	Shift Clock Generator D to A Converter
\ 33/44	Time Reference Dividers Circuit Time Reference Dividers Assembly
\ 32/45	Recirculation Control Logic Circuit
\ 33/45	Recirculation Control Logic Assembly
\ 32/46	Data Control Logic Circuit
\ 33/46	Data Control Logic Assembly
\ 32/47	Real Time Clock Circuit
\ 33/47	Real Time Clock Assembly
\ 32/48	Recirculating Memory Event Circuit
\ 33/48	Recirculating Memory Event Assembly
\ 32/49	Recirculating Memory Circuit
\ 33/49	Recirculating Memory Assembly
32/51	Mic. Amp Circuit
33/51	Mic. Amp Assembly
31/00	Real Real Estate Layout Location of Card Frames, etc.
\ 31/01	Module Location Card Frames 1 - 2
\ 31/02	Module Location Card Frames 3 - 4
31/03	Notes on Wiring Diagrams
\ 31/04	Miscellaneous Wiring Mains Distribution, etc.
\ 31/05	Stabilised Tower Distribution Bussed Wiring in Card Framed
\ 31/06	Module Wiring Filters 1 - 4 (Low Pass)
\ 31/07	Module Wiring Filters 5 - 8 (High Pass)
\ 31/08	Module Wiring Filters Envelope Shaper 1
\ 31/09	Module Wiring Filters Envelope Shaper 2
\ 31/10	Module Wiring Filters Envelope Shaper 3
\ 31/11	Module Wiring Ring Modulators 1,2,3.
\ 31/12	Module Wiring Reverb (1, 2)
\ 31/13	Module Wiring Octave Filter Bank
\ 31/14	Module Wiring Input Amplifiers (1 - 8)
\ 31/15	Module Wiring Ext. Treatment Buffers
\ 31/16	Module Wiring Sine Ramp Oscillators (1 - 6)
\ 31/17	Module Wiring Ramp Rect Oscillators (1 - 9)
\ 31/18	Module Wiring Ramp Rect Oscillators (10 - 12)
\ 31/19	Module Wiring Noise Generators (1 - 2)
\ 31/20	Module Wiring Random Generator
\ 31/21	Module Wiring Pitch to Voltage Converter
\ 31/22	Module Wiring Envelope Followers (1 - 1)
\ 31/23	Module Wiring Keyboard Controllers Upper & Lower
\ 31/24	Module Wiring Slew Limiters (1, 2, 3)

<u>DRG. No.</u>	<u>TITLE</u>
- 31/25	Module Wiring Output Channels (1 - 4)
- 31/26	Module Wiring Output Channels (5 - 8)
- 31/27	Module Wiring Joysticks, Left Right,
- 31/28	Module Wiring Sequencer.
- 31/29	Panel Layout, Rear View. Panel 1 Filters, etc.
- 31/30	Panel Layout, Rear View. Panel 2 Input Ampt etc.
- 31/31	Panel Layout, Rear View. Panel 3 Oscillators etc.
- 31/32	Panel Layout, Rear View. Panel 4 Meters etc.
- 31/33	Panel Layout, Rear View. Panel 5 Faders etc.
- 31/34	Panel Layout, Rear View. Panel 6 Interface.
- 31/49	Nestra Power Supply.
- 32/40	via Time Extender
- 33/40	" " Expander.
- 33/03	Quad light Mod
- 32/03	Quad log Photo Mod.
- 31/47	Seq Card Frame Bt Wiring.

DIGITAL

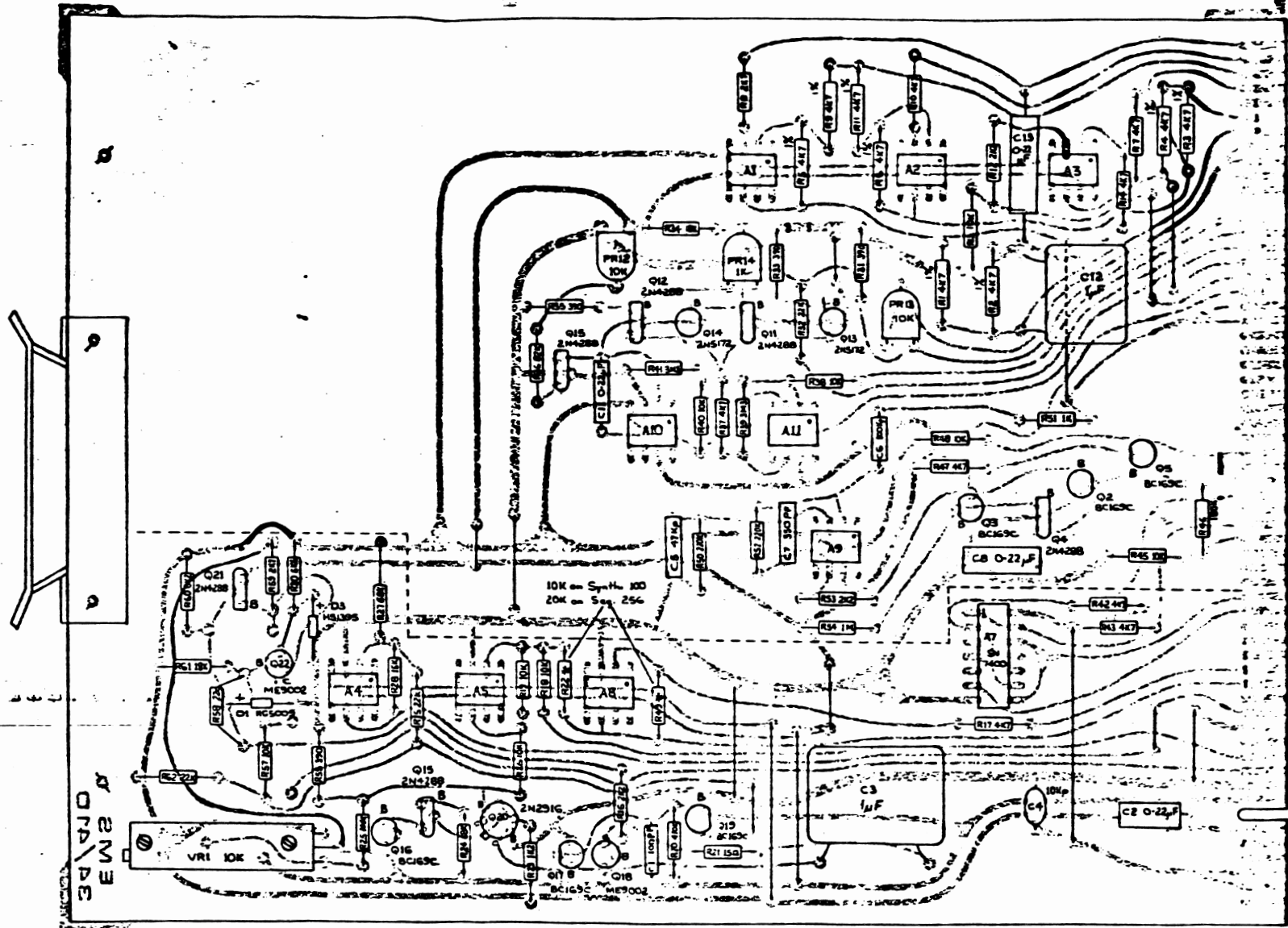


* USED ONLY ON 256 A1 - A5, A8 - A11. OP AMP SN72741P or ML741C
pin 7 +12v pin 4 -12v

NEW PITCH DETECTOR.
* USED ONLY ON 256

F. Chas. B. J.T. G. Chas. C13 C.A. 4-4-71 B. 12/13/71
J.L. G. 4-9-71 C. 12/13/71
R. J. G. 4-9-71 P. 12/13/71
S. 12/13/71

ELECTRONIC MUSIC STUDIOS Bournemouth LTD	
TITLE AS CIRCUITS.	
USED ON SYNTHI 100 & 256	
DRN 41	DATE 12.5.71 ISSUE X.B.F.B.E

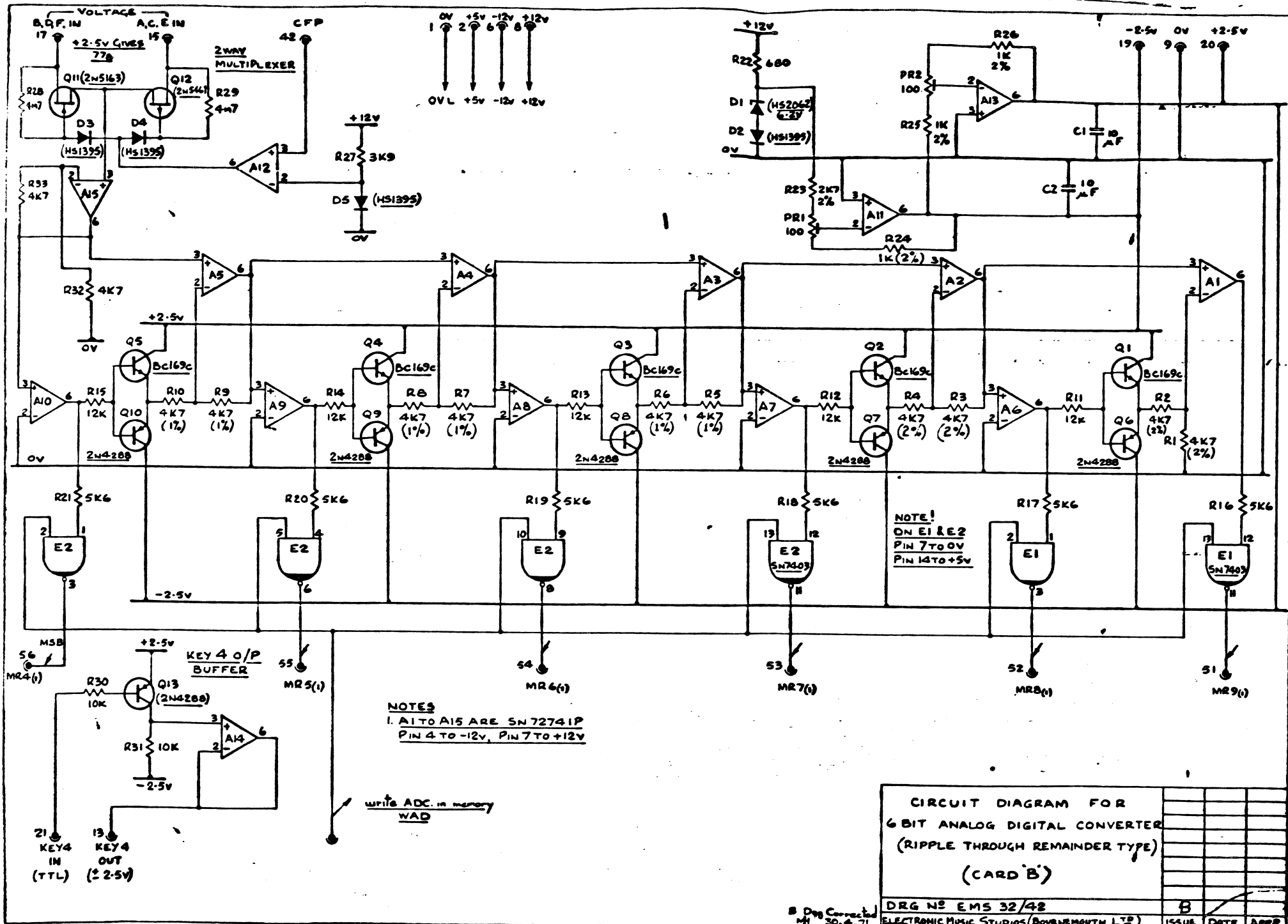


- 60 ACE input
- 59 BDF input
- 58 RSID/Wiper
- 57
- 56 BDF to ADC
- 55 ACE to ADC
- 54 X Stop
- 53
- 52
- 49 V_{cc} Stop
- 48 Stop Def
- 47 Stop Def
- 46 Stop Def
- 45
- 44 Pk'd input
- 43 Key Made signal
- 42 To ACE
- 41 Pk'd Voltage
- 32 To Key Made S-
- 30 To Syn. Key
- 25 From Start For
- 27 From Start R
- 26 Err. Trig. (From
- 22 up/down
- 21 STT
- 17 Clock Rate Knob
- 16 Clock Rate Voltage
- 14 Clock out ±1-7
- 13 0v
- 11 Ext Clock Center
- 10 0v_g
- 9 0v_g
- 8 +12v
- 7 Keying
- 6 -12v
- 5 +5v
- 2

NOTE CIRCUIT BORN DOTTED
LINE FOR SYNTH 100 ONLY

A1 to A5 & A8 to A11 5N741 or Sim.

ELECTRONIC MUSIC STUDIOS (Bournemouth) Ltd		Issu
MATL	TITLE <u>CLOCK GENERATOR</u>	Drq NO
FINISH	USED ON <u>Synth 100 & Syn 256</u>	<u>33/41</u>
TOL	FRAC	DATE



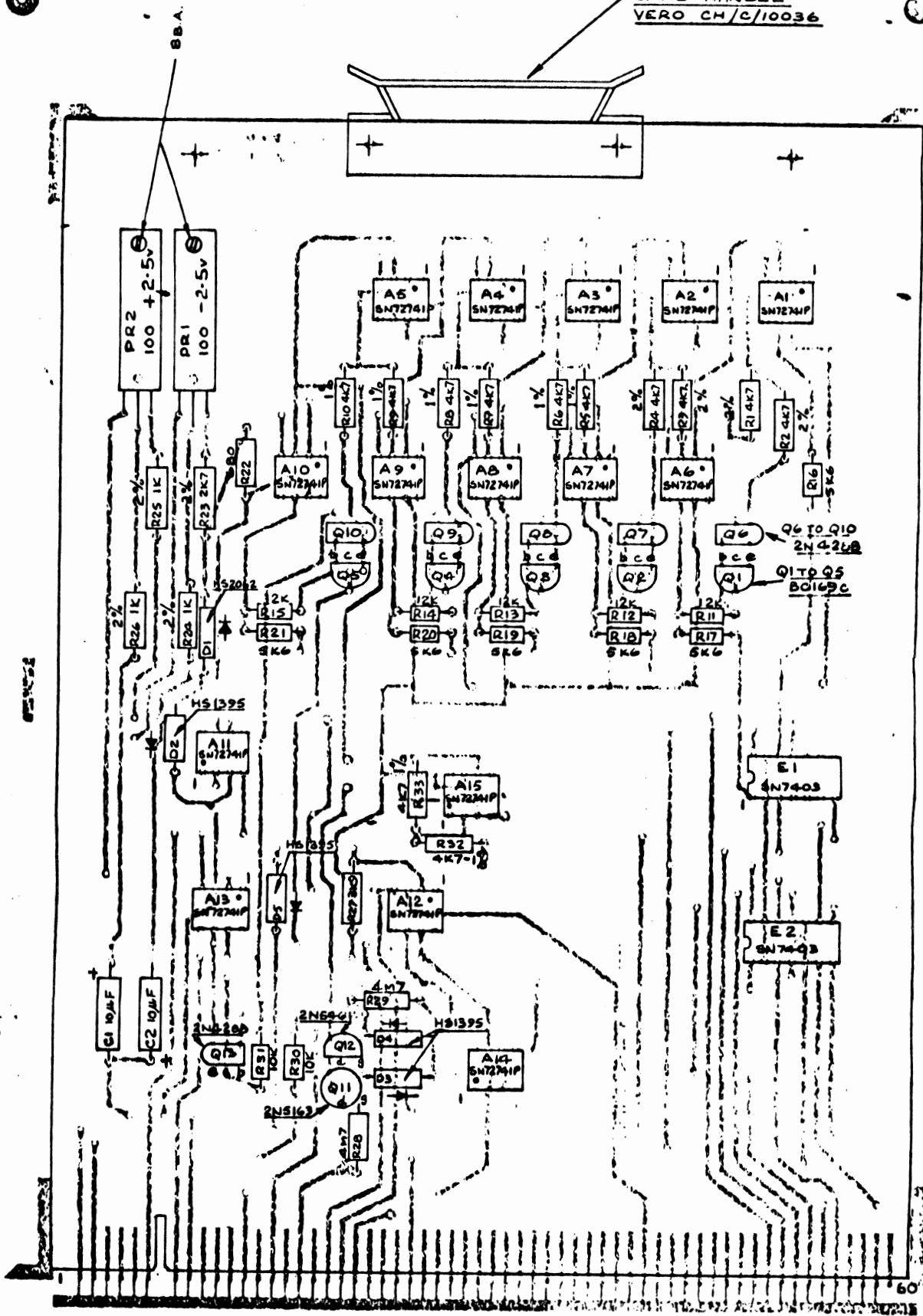
NOTES
 1. A1 TO A5 ARE SN7274IP
 PIN 4 TO -12V, PIN 7 TO +12V

CIRCUIT DIAGRAM FOR
 6 BIT ANALOG DIGITAL CONVERTER
 (RIPPLE THROUGH REMAINDER TYPE)
 (CARD B)

DRG NO EMS 32/42
 ELECTRONIC MUSIC STUDIOS (BOURNEMOUTH LTP)

ISSUE	DATE	APPD

CARD HANDLE
VERO CH/C/10036



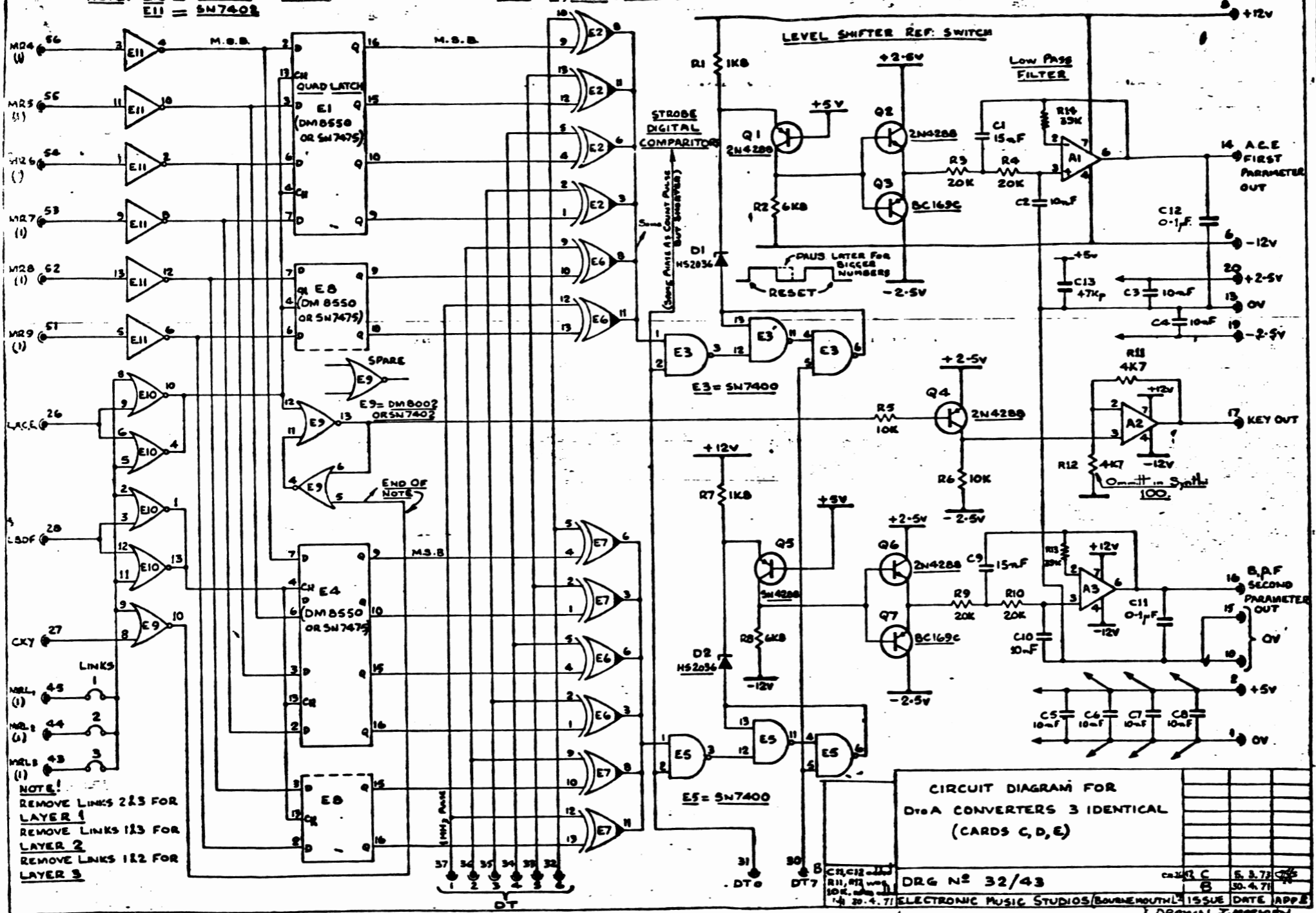
6 BIT ANALOG DIGITAL CONVERTER P.C.B. ASSY
(RIPPLE THROUGH REMAINDER TYPE)
E.M.S 33/42 ISSUE B
ELECTRONIC MUSIC STUDIO
(BOURNEMOUTH LTP)

8 Tolerances Added - Resistors
M 30.4.71

DRAWN J MARSDEN

NOTE! E10 = DM8002 OR SN7402
E11 = SN7402

NOTE- E2, E6, E7 = MC1012P



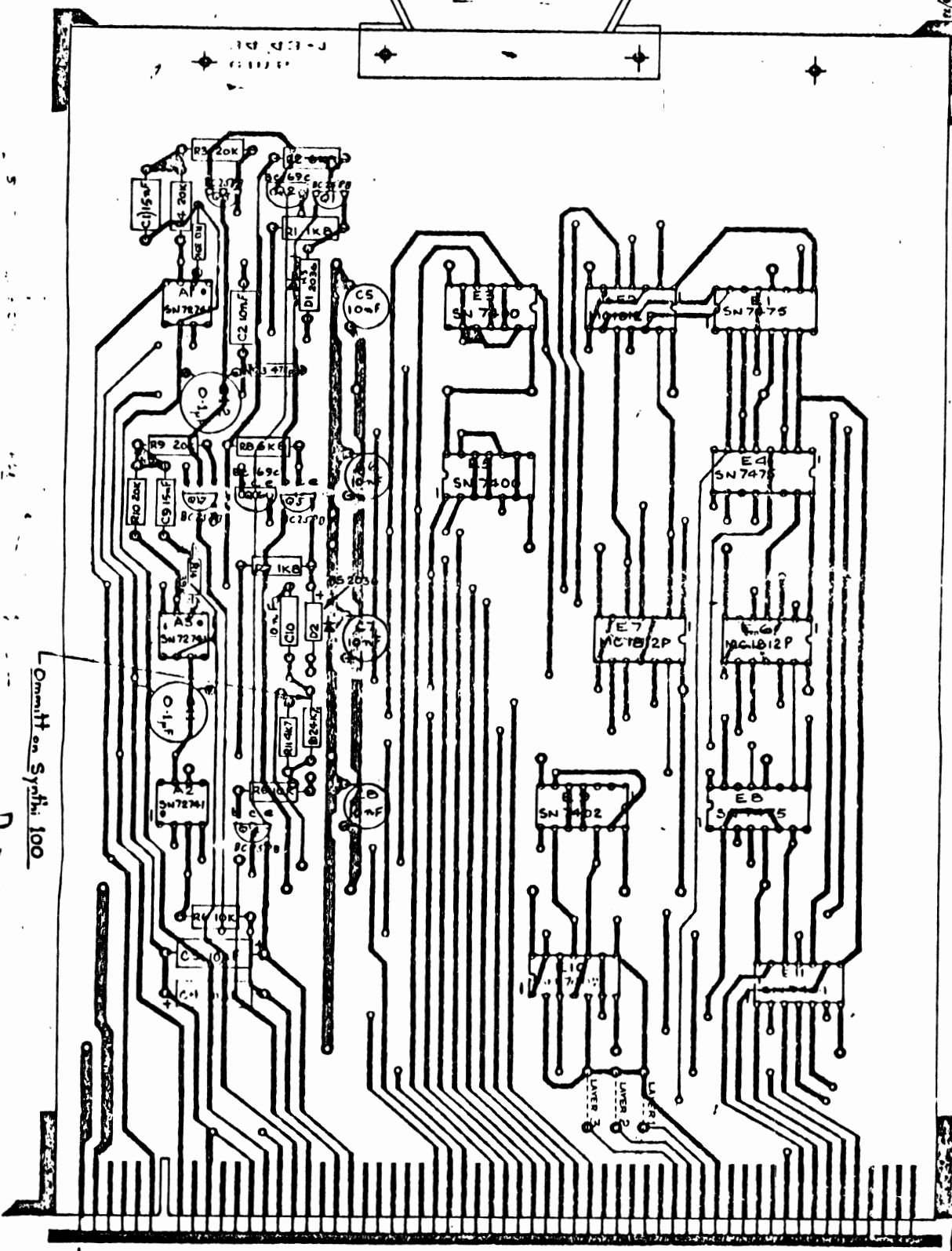
NOTE!
REMOVE LINKS 2&3 FOR LAYER 1
REMOVE LINKS 1&3 FOR LAYER 2
REMOVE LINKS 1&2 FOR LAYER 3

CIRCUIT DIAGRAM FOR
D/A CONVERTERS 3 IDENTICAL
(CARDS C, D, E)

DRG NO 32/43
ELECTRONIC MUSIC STUDIOS/BOURNEMOUTH
ISSUE DATE APPR
DRAWN J. MARSH

CARD HANDLE
VERO CH/C/10096

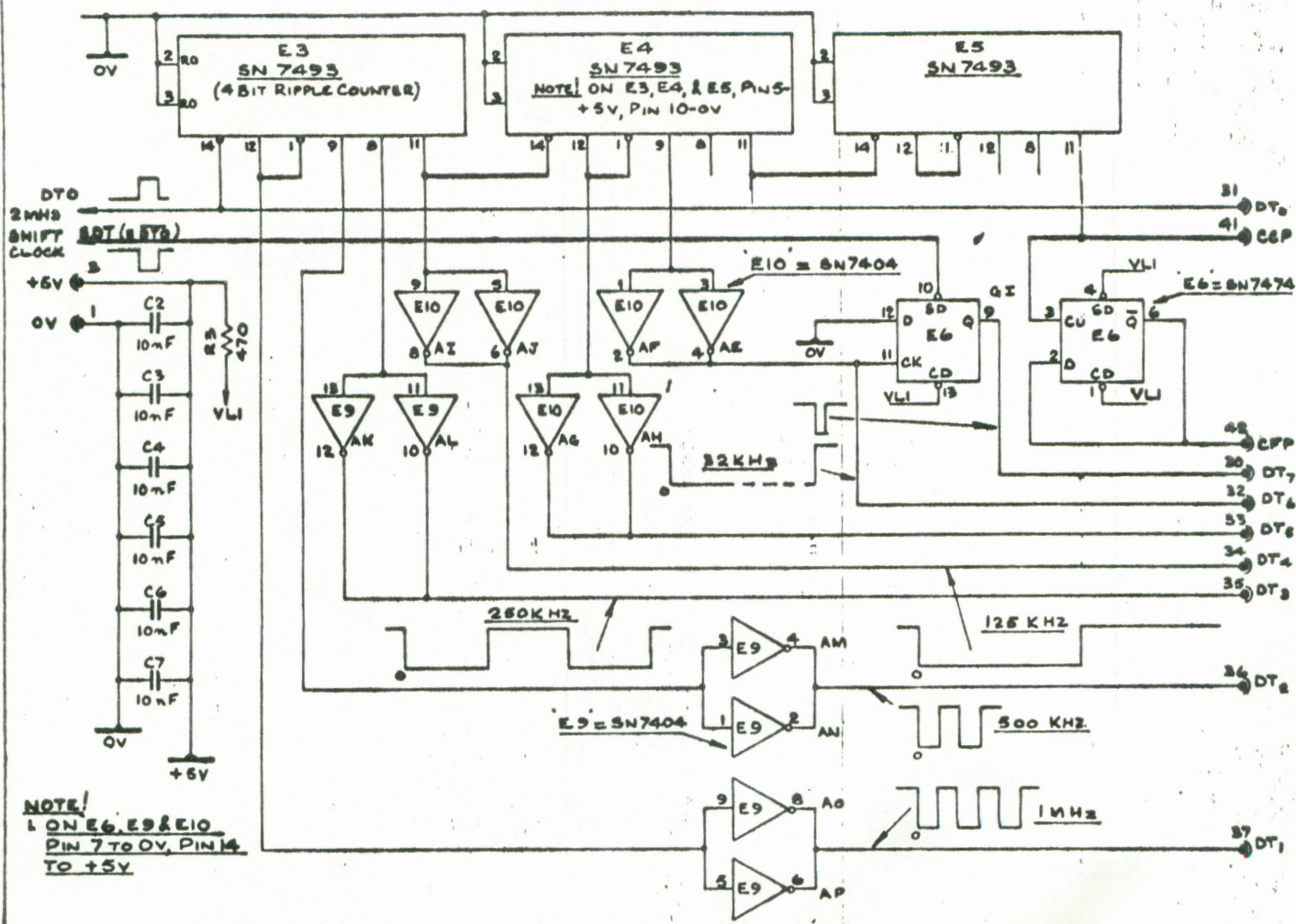
B 016012
M 30-4-71
C 1000
D 1000
E 1000
F 1000
G 1000
H 1000
I 1000
J 1000
K 1000
L 1000
M 1000
N 1000
O 1000
P 1000
Q 1000
R 1000
S 1000
T 1000
U 1000
V 1000
W 1000
X 1000
Y 1000
Z 1000



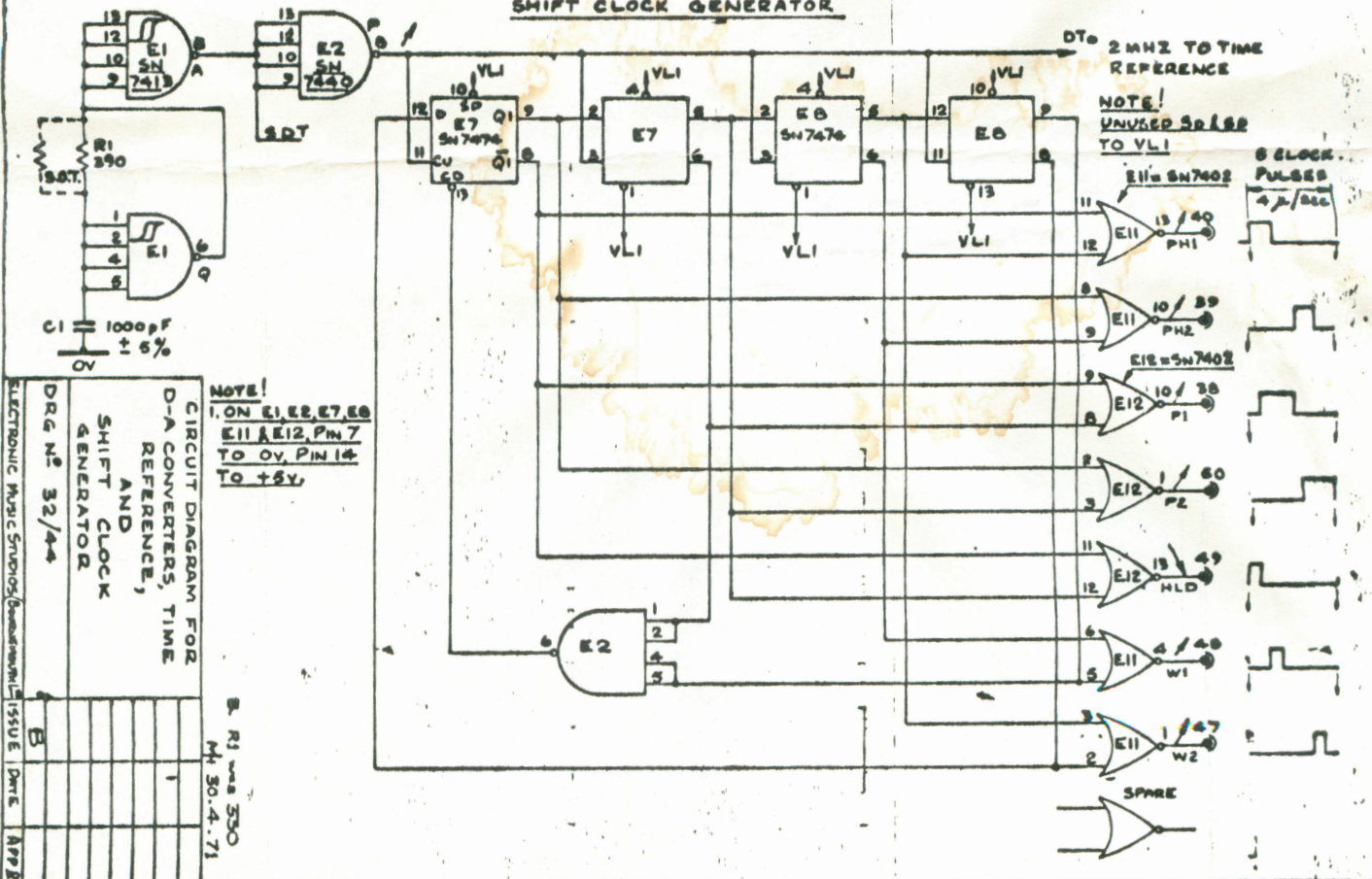
Omnit on Synth 100

D TO A CONVERTERS (3 IDENTICAL) PCB 4537
E.M.S. 33/43 - ISSUE 1
ELECTRONIC MUSIC STUDIOS
(BOURNEMOUTH LTD)

DRAWN J. HARRISON



SHIFT CLOCK GENERATOR



CIRCUIT DIAGRAM FOR
 D-A CONVERTERS, TIME
 REFERENCE,
 AND CLOCK
 GENERATOR

DRG N° 32/44

ELECTRONIC MUSIC STUDIOS (Commercial) ISSUE DATE APPB

DATE: 31 MAR 68

BY: RJ was 530
 M 30.4.71