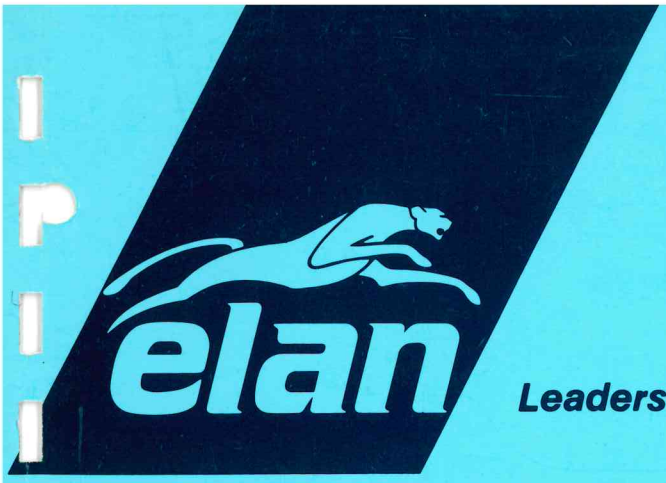


Leaders in device programming, copying, simulation

DIVERSE
TECHNISCHE
INFORMATIE

Elan Digital Systems

1) READ MASTER INTO RAM & GET CHECKSUM 2704

2) EXAMINE RAM ADDRESS 1000, 9B CHANGE TO 8A

3) PROGRAM NEW DATA INTO MASTER,CHECKSUM 26F3

4) EXAMINE RAM ADDRESS 0500, 9B CHANGE TO 8A

5) PROGRAM NEW DATA INTO MASTER,CHECKSUM 26E2

6) FIND STRING DATA ASC11 HEX VALUES OF 'ELAN' USING 'FIND' COMMAND

7) COPY STRING DOWN TO ADDRESS 0100

8) PROGRAM NEW DATA INTO MASTER,CHECKSUM 2406

9) USE 'EXCHANGE' COMMAND TO CHANGE DATA @ 0100 & 0943 TO ASC11 HEX VALUE OF 'DH@B'

10) PROGRAM NEW DATA INTO MASTER,CHEKSUM 23E2

11) PRINT CONTENTS OF EPROM SHOWING HEX & ASC11

ELAN PRODUCT FEATURES

INTEL APPROVAL ACCESS TIME CHECK INTELLIGENT IDENTIFIER

CONFIGURATION RETENTION SOFTWARE SELECTION

INTELLIGENT FAST PROGRAMMING & QUICK-PULSE PROGRAMMING

E85 E9C 1013 C41 E12B 1011 1012 UNIVERSE 1000

LABEL PRINTING

CODE LOCK

SERIAL INPUT/OUTPUT 15 FORMATS TO 19200 BAUD

REMOTE CONTROL IBM DRIVERS

PARALLEL CENTRONICS OUTPUT BLOCK DUMP

ADAPTORS E4 8741/42 8748/H 8755A

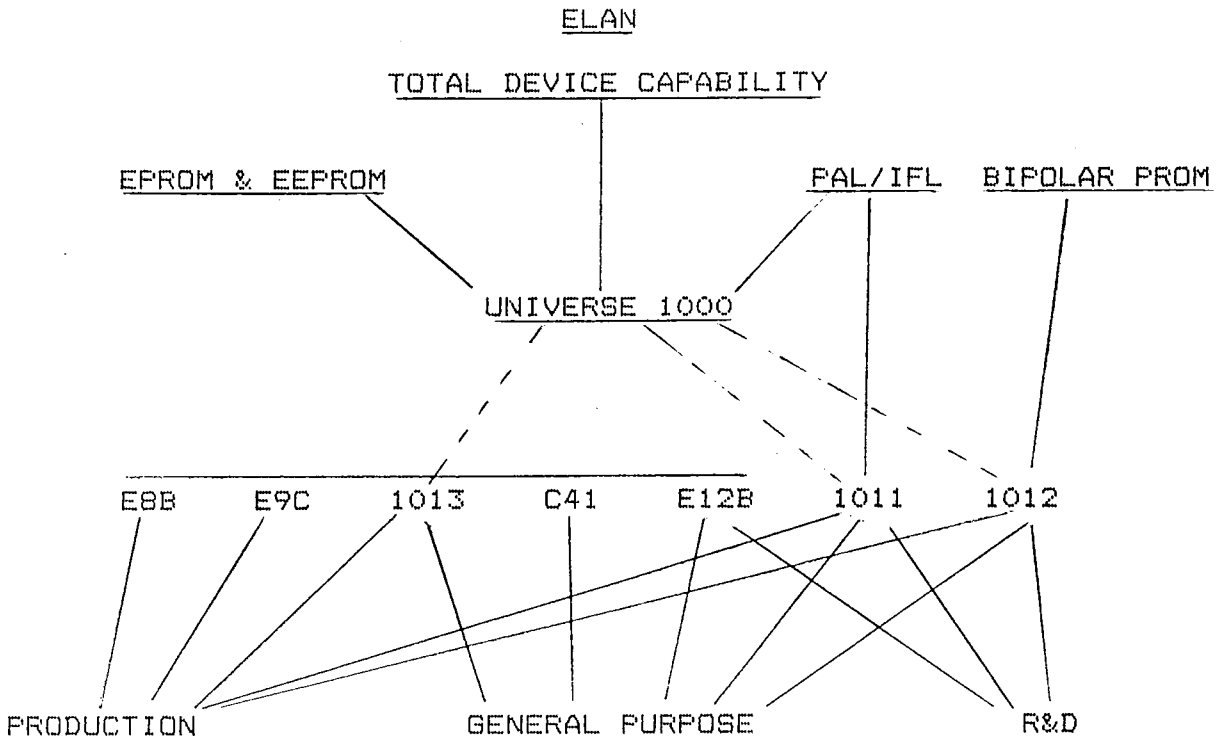
E5 68701/U4

E7 8751/H 8752A 87C51 8752BH

E11 EPROM SIMULATION TO 27256

E13 2708 2716 3 RAIL

A32 27010


ELAN
TOTAL DEVICE CAPABILITY
EPROM & EEPROM
PAL/IFL
BIPOLAR PROM
UNIVERSE 1000
E8B
E9C
1013
C41
E12B
1011
1012
PRODUCTION
GENERAL PURPOSE
R&D
SERVICE DEPARTMENTS
PORTABLE/FIELD

T1U

1) READ MASTER INTO RAM & GET CHECKSUM 2704

2) EXAMINE RAM ADDRESS 1000, 9B CHANGE TO 8A

3) PROGRAM NEW DATA INTO MASTER,CHECKSUM 26F3

4) EXAMINE RAM ADDRESS 0500, 9B CHANGE TO 8A

5) PROGRAM NEW DATA INTO MASTER,CHECKSUM 26E2

6) FIND STRING DATA ASC11 HEX VALUES OF "ELAN" USING 'FIND' COMMAND AND NOTE ADDRESSES.

7) EXCHANGE FF FF FF FF WITH ASC11 VALUES OF "ELAN" @ RAM ADDRESS 1E00, USING 'EXCHANGE'COMMAND,VERIFY TO CHECK DIFFERENCE.

8) PROGRAM NEW DATA INTO MASTER,CHECKSUM 2406.

9) PROGRAM RAM ADDRESS 1E00 TO DEVICE ADDRESS 1F00.

10) PROGRAM NEW DATA INTO MASTER,CHEKSUM 0120.

11) PRINT CONTENTS OF EPROM SHOWING HEX & ASC11 FROM 1E00.

COMMUNICATIONS

INTERFACE

FORMATS

REMOTE CONTROL

INTERFACE

1, PARALLEL

CENTRONICS OUTPUT

2, SERIAL

BI-DIRECTIONAL IE. INPUT AND OUTPUT ON ALL FORMATS

RS232 LEVELS : STANDARD SERIAL SPECIFICATION

STANDARD 25 PIN 'D' TYPE CONNECTOR

CONFIGURATION KEY SELECTED AND REMEMBERED

HANDSHAKING SOFTWARE – 'X ON' 'X OFF'

HARDWARE – OPTIONAL USE OF TWO LEVELS DTR, RQS, DSR, CTS

FORMATS

1. ASCII HEX SPACE
2. INTEL LOADER (INCLUDING 16 BIT 8086
3. OPTIONAL
4. TEK HEX
5. MOS TECH
6. EXORCISOR 5159 (52,53 - 2ND QTR. 84)
7. DEC BINARY
8. BINARY
9. BLOCK DUMP (OUTPUT ONLY)
A. RCA COSMAC
B. PPX
C. TEXAS TAGS
D. BNPF

BAUD RATES

CODE	RATE
1	50
2	75
3	110
4	134·5
5	150
6	200
7	300
8	600
9	1200
A	1800
B	2400
C	4800
D	9600
E	19200

DATA STREAM SELECTION

CODE	PARITY	NO. DATA BITS	NO. STOP BITS
1	EVEN	7	1
2	ODD	7	1
3	NONE	7	1
4	EVEN	7	2
5	ODD	7	2
6	NONE	7	2
A	EVEN	8	1
B	ODD	8	1
C	NONE	8	1
D	EVEN	8	2
E	ODD	8	2
F	NONE	8	2
0	8 BIT PARALLEL OUTPUT		

REMOTE CONTROL

CURRENT E SERIES

ALL DEVICE FUNCTIONS CAN BE PERFORMED UNDER THE DIRECT CONTROL OF A DEVELOPMENT SYSTEM.

TRAINING - INTERFACE: REMOTE CONTROL EXAMPLE USING ASCII CHARACTER INPUT

SET ELAN UNIT TO ~~4800~~ BAUD, 8 DATA BITS, NO PARITY, 1 STOP BIT

PURPOSE	COMMAND	RESULT	INTERPRETATION
TO CHECK SATISFACTORY COMMUNICATIONS	H	>	O.K
CHECK SERIAL STREAM	N,J	>	CONFIRMS NO PARITY 1 STOP
	D,E,K	F	FAIL ENQUIRY
ERROR CODE ENQUIRY	x	81	SERIAL STREAM ERROR REPORT
SELECT 2764	07t	> 2764 DISPLAYED	
PLACE MASTER 2764 INTO COPY SOCKET 1	L	>	LOAD MASTER INTO RAM
COMPARE CHECKSUM NOTED ON MASTER	S	4 HEX. CHARACTERS	8C20
PROGRAM 55H INTO DEVICE LOCATIONS 0100 TO 01FF & VERIFY REVISED CHECKSUM	00100<	>	
	00200;	>	
	55Y	>	
	00100:	>	
	P	> (after delay)	
	00000<	>	
	02000;	>	
	S		E220

INTEL 8 BIT

```
: 000000000102030405060708090A0B0C0D0E0F10111213141516171819 1A1B1C1D1E1FF0
: 00200020212223242526272829 2A2B2C2D2E2F3031323334353637383 93A3B3C3D3E3FD0
00000001FF
```

```
  000    3A 32 30 30 30 30 30 30 30 30 30 30 31 30 32 30    :200000000001020
0   0    33 30 34 30 35 30 36 30 37 30 38 30 39 30 41 30    30405060708090A0
 0020    42 30 43 30 44 30 45 30 46 31 30 31 31 31 32 31    B0C0D0E0F1011121
  030    33 31 34 31 35 31 36 31 37 31 38 31 39 31 41 31    3141516171819 1A1
 0040    42 31 43 31 44 31 45 31 46 46 30 0D 0A 3A 32 30    B1C1D1E1FF0  :20
 0050    30 30 32 30 30 30 32 30 32 31 32 32 32 33 32 34    0020002021222324
 0060    32 35 32 36 32 37 32 38 32 39 32 41 32 42 32 43    252627282 92A2B2C
 0070    32 44 32 45 32 46 33 30 33 31 33 32 33 33 33 34    2D2E2F3031323334
 0080    33 35 33 36 33 37 33 38 33 39 33 41 33 42 33 43    35363738393A3B3C
  090    33 44 33 45 33 46 44 30 0D 0A 3A 30 30 30 30 30    3D3E3FD0  :00000
 00A0    30 30 31 46 46 0D 0A 1A FF FF FF FF FF FF FF FF    001FF
```

INTEL 16 BIT (20 BIT ADDR)

```
:02000002F0000C
:20000000010203040506070809 0A0B0C0D0E0F101112131415161718191A1B1C1D1E1FF0
:20002002021222324252627282 92A2B2C2D2E2F303132333435363738393A3B3C3D3E3FD0
:00000001FF
```

```
0000    3A 30 32 30 30 30 30 30 32 46 30 30 30 30 43 0D    :02000002F0000C
0010    0A 3A 32 30 30 30 30 30 30 30 30 30 30 30 31 30 32    :20000000000102
0020    30 33 30 34 30 35 30 36 30 37 30 38 30 39 30 41    030405060708090A
0030    30 42 30 43 30 44 30 45 30 46 31 30 31 31 31 32    0B0C0D0E0F101112
0040    31 33 31 34 31 35 31 36 31 37 31 38 31 39 31 41    131415161718191A
0050    31 42 31 43 31 44 31 45 31 46 46 30 0D 0A 3A 32    1B1C1D1E1FF0  :2
0060    30 30 30 32 30 30 30 32 30 32 31 32 32 32 33 32    0002000202122232
0070    34 32 35 32 36 32 37 32 38 32 39 32 41 32 42 32    425262728292A2B2
0080    43 32 44 32 45 32 46 33 30 33 31 33 32 33 33 33    C2D2E2F303132333
0090    34 33 35 33 36 33 37 33 38 33 39 33 41 33 42 33    435363738393A3B3
00A0    43 33 44 33 45 33 46 44 30 0D 0A 3A 30 30 30 30    C3D3E3FD0  :0000
00B0    30 30 30 31 46 46 0D 0A 1A FF FF FF FF FF FF FF    0001FF
```

TEK HEX

/0J002002000102030405060708090A0B0C0D0E0F10111213141516171819 1A1B1C1D1E1F00
/00202004202122232425262728292A2B2C2D2E2F3031323334353637383 93A3B3C3D3E3F40
/( )000000

0000	2F	30	30	30	30	32	30	30	32	30	30	30	31	30	32	30	/000020020001020
)010	33	30	34	30	35	30	36	30	37	30	38	30	39	30	41	30	304050607080 90A0
)020	42	30	43	30	44	30	45	30	46	31	30	31	31	31	32	31	B0C0D0E0F1011121
0030	33	31	34	31	35	31	36	31	37	31	38	31	39	31	41	31	3141516171819 1A1
)040	42	31	43	31	44	31	45	31	46	30	30	0D	0A	2F	30	30	B1C1D1E1F00 /00
)050	32	30	32	30	30	34	32	30	32	31	32	32	32	33	32	34	2020042021222324
0060	32	35	32	36	32	37	32	38	32	39	32	41	32	42	32	43	25262728292A2B2C
)070	32	44	32	45	32	46	33	30	33	31	33	32	33	33	33	34	2D2E2F3031323334
' 80	33	35	33	36	33	37	33	38	33	39	33	41	33	42	33	43	35363738393A3B3C
0090	33	44	33	45	33	46	34	30	0D	0A	2F	30	30	30	30	30	3D3E3F40 /00000
00A0	30	30	30	0D	0A	1A	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	000

MOS TECH

```
; 000000001020304050607080 90A0B0C0D0E0F101112131415161718191A1B1C1D1E1F0210
;_000202021222324252627282 92A2B2C2D2E2F303132333435363738393A3B3C3D3E3F0630
;0000000000
```

```
0000    3B 32 30 30 30 30 30 30 30 30 31 30 32 30 33 30     ;200000000102030
0010    34 30 35 30 36 30 37 30 38 30 39 30 41 30 42 30     405060708090A0B0
0020    43 30 44 30 45 30 46 31 30 31 31 31 32 31 33 31     C0D0E0F101112131
0030    34 31 35 31 36 31 37 31 38 31 39 31 41 31 42 31     4151617181 91A1B1
0040    43 31 44 31 45 31 46 30 32 31 30 0D 0A 3B 32 30     C1D1E1F0210  ;20
0050    30 30 32 30 32 30 32 31 32 32 32 33 32 34 32 35     0020202122232425
0060    32 36 32 37 32 38 32 39 32 41 32 42 32 43 32 44     262728292A2B2C2D
0070    32 45 32 46 33 30 33 31 33 32 33 33 33 34 33 35     2E2F303132333435
0080    33 36 33 37 33 38 33 39 33 41 33 42 33 43 33 44     363738393A3B3C3D
0090    33 45 33 46 30 36 33 30 0D 0A 3B 30 30 30 30 30     3E3F0630  ;00000
00A0    30 30 30 30 30 0D 0A 1A FF FF FF FF FF FF FF FF     00000
```

MOTOROLA S1 REC (16 BIT ADDR)

```
S0090000454C414E204571
S1230000000102030405060708090A0B0C0D0E0F101112131415161718191A1B1C1D1E1FEC
S1230020202122232425262728292A2B2C2D2E2F303132333435363738393A3B3C3D3E3FCC
S9030000FC
```

0000	53	30	30	39	30	30	30	30	34	35	34	43	34	31	34	45	S0090000454C414E
0010	32	30	34	35	37	31	0D	0A	53	31	32	33	30	30	30	30	204571 S1230000
0020	30	30	30	31	30	32	30	33	30	34	30	35	30	36	30	37	0001020304050607
0030	30	38	30	39	30	41	30	42	30	43	30	44	30	45	30	46	08090A0B0C0D0E0F
0040	31	30	31	31	31	32	31	33	31	34	31	35	31	36	31	37	1011121314151617
0050	31	38	31	39	31	41	31	42	31	43	31	44	31	45	31	46	18191A1B1C1D1E1F
0060	45	43	0D	0A	53	31	32	33	30	30	32	30	32	30	32	31	EC S12300202021
0070	32	32	32	33	32	34	32	35	32	36	32	37	32	38	32	39	2223242526272829
0080	32	41	32	42	32	43	32	44	32	45	32	46	33	30	33	31	2A2B2C2D2E2F3031
0090	33	32	33	33	33	34	33	35	33	36	33	37	33	38	33	39	3233343536373839
00A0	33	41	33	42	33	43	33	44	33	45	33	46	43	43	0D	0A	3A3B3C3D3E3FCC
00B0	53	39	30	33	30	30	30	30	46	43	0D	0A	1A	FF	FF	FF	S9030000FC

MOTOROLA S2 REC (24 BIT ADDR)

```
S0090000454C414E204571
S2241200000001020304050607080900A0B0C0D0E0F101112131415161718191A1B1C1D1E1FD9
S224120020202122232425262728292A2B2C2D2E2F303132333435363738393A3B3C3D3E3FB9
S9030000FC
```

```
0000    53 30 30 39 30 30 30 30 34 35 34 43 34 31 34 45    S0090000454C414E
0010    32 30 34 35 37 31 0D 0A 53 32 32 34 31 32 30 30    204571  S2241200
0020    30 30 30 30 30 31 30 32 30 33 30 34 30 35 30 36    0000010203040506
0030    30 37 30 38 30 39 30 41 30 42 30 43 30 44 30 45    0708090A0B0C0D0E
0040    30 46 31 30 31 31 31 32 31 33 31 34 31 35 31 36    0F101112131415 16
0050    31 37 31 38 31 39 31 41 31 42 31 43 31 44 31 45    1718191A1B1C1D1E
0060    31 46 44 39 0D 0A 53 32 32 34 31 32 30 30 32 30    1FD9  S224120020
0070    32 30 32 31 32 32 32 33 32 34 32 35 32 36 32 37    2021222324252627
0080    32 38 32 39 32 41 32 42 32 43 32 44 32 45 32 46    28292A2B2C2D2E2F
0090    33 30 33 31 33 32 33 33 33 34 33 35 33 36 33 37    3031323334353637
00A0    33 38 33 39 33 41 33 42 33 43 33 44 33 45 33 46    38393A3B3C3D3E3F
0080    42 39 0D 0A 53 39 30 33 30 30 30 30 46 43 0D 0A    B9  S9030000FC
00C0    1A FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
```

MOTOROLA S3 REC (32 BIT ADDR)

```
S0^90000454C414E204571
S3 512340000000102030405060708090A0B0C0D0E0F101112131415161718191A1B1C1D1E1FA4
S3251234002020212223242526272829 2A2B2C2D2E2F303132333435363738393A3B3C3D3E3F84
S9030000FC
```

```
0 ^0    53 30 30 39 30 30 30 30 34 35 34 43 34 31 34 45    S00900004 54C414E
0U10    32 30 34 35 37 31 0D 0A 53 33 32 35 31 32 33 34    204571 S3251234
1020    30 30 30 30 30 30 30 31 30 32 30 33 30 34 30 35    0000000102030405
J030    30 36 30 37 30 38 30 39 30 41 30 42 30 43 30 44    060708090A0B0C0D
0040    30 45 30 46 31 30 31 31 31 32 31 33 31 34 31 35    0E0F101112131415
 050    31 36 31 37 31 38 31 39 31 41 31 42 31 43 31 44    161718191A1B1C1D
1060    31 45 31 46 41 34 0D 0A 53 33 32 35 31 32 33 34    1E1FA4 S3251234
0070    30 30 32 30 32 30 32 31 32 32 32 33 32 34 32 35    0020202122232425
n080    32 36 32 37 32 38 32 39 32 41 32 42 32 43 32 44    262728292A2B2C2D
 090    32 45 32 46 33 30 33 31 33 32 33 33 33 34 33 35    2E2F303132333435
J0A0    33 36 33 37 33 38 33 39 33 41 33 42 33 43 33 44    363738393A3B3C3D
00B0    33 45 33 46 38 34 0D 0A 53 39 30 33 30 30 30 30    3E3F84 S9030000
10C0    46 43 0D 0A 1A FF FF FF FF FF FF FF FF FF FF FF    FC
```

DEC BINARY

```
(  )0    FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF 00
)010     00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F
)020     10 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E 1F
0030     20 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F      !"#$%&'()*+,-./
0040     30 31 32 33 34 35 36 37 38 39 3A 3B 3C 3D 3E 3F     0123456789:;<=>?
)050     0D 0A 1A 37 31 38 31 39 31 41 31 42 31 43 31 44        718191A1B1C1D
```

BINARY

```
0000    FF 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E
0010    0F 10 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E
0020    1F 20 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E      !"#$%&'()*+,-.
0030    2F 30 31 32 33 34 35 36 37 38 39 3A 3B 3C 3D 3E     /0123456789:;<=>
0040    3F 0D 0A 1A 34 35 36 37 38 39 3A 3B 3C 3D 3E 3F     ?   456789:;<=>?
```

BLOCK DUMP

```
0000    00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F
0010    10 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E 1F
0020    20 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F     !"#$%&'()*+,-./
0030    30 31 32 33 34 35 36 37 38 39 3A 3B 3C 3D 3E 3F     0123456789:;<=>?
```

```
0000    0D 0A 20 20 30 30 30 30 20 20 20 20 30 30 20 30         0000     00 0
0010    31 20 30 32 20 30 33 20 30 34 20 30 35 20 30 36     1 02 03 04 05 06
0020    20 30 37 20 30 38 20 30 39 20 30 41 20 30 42 20      07 08 09 0A 0B
0030    30 43 20 30 44 20 30 45 20 30 46 20 20 20 20 20     0C 0D 0E 0F
0040    20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20
0050    0D 0A 20 20 30 30 31 30 20 20 20 20 31 30 20 31         0010     10 1
0060    31 20 31 32 20 31 33 20 31 34 20 31 35 20 31 36     1 12 13 14 15 16
0070    20 31 37 20 31 38 20 31 39 20 31 41 20 31 42 20      17 18 19 1A 1B
0080    31 43 20 31 44 20 31 45 20 31 46 20 20 20 20 20     1C 1D 1E 1F
0090    20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20
00A0    0D 0A 20 20 30 30 32 30 20 20 20 20 32 30 20 32         0020     20 2
00B0    31 20 32 32 20 32 33 20 32 34 20 32 35 20 32 36     1 22 23 24 25 26
00C0    20 32 37 20 32 38 20 32 39 20 32 41 20 32 42 20      27 28 29 2A 2B
00D0    32 43 20 32 44 20 32 45 20 32 46 20 20 20 20 20     2C 2D 2E 2F
00E0    20 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F      !"#$%&'()*+,-./
00F0    0D 0A 20 20 30 30 33 30 20 20 20 20 33 30 20 33         0030     30 3
0100    31 20 33 32 20 33 33 20 33 34 20 33 35 20 33 36     1 32 33 34 35 36
0110    20 33 37 20 33 38 20 33 39 20 33 41 20 33 42 20      37 38 39 3A 3B
0120    33 43 20 33 44 20 33 45 20 33 46 20 20 20 20 20     3C 3D 3E 3F
0130    30 31 32 33 34 35 36 37 38 39 3A 3B 3C 3D 3E 3F     0123456789:;<=>?
0140    0D 0A 1A FF FF FF FF FF FF FF FF FF FF FF FF FF
```

RCA COSMAC

```
!M
0000 00010203040506070809 0A0B0C0D0E0F10111213141516171819 1A1B1C1D1E1F,
20 2122232425262728292A2B2C2D2E2F303132333435363738393A3B3C3D3E3F
```

```
0000    21 4D 0D 30 30 30 30 20 30 30 30 31 30 32 30 33    !M 0000 00010203
0010    30 34 30 35 30 36 30 37 30 38 30 39 30 41 30 42    040506070809 0A0B
0020    30 43 30 44 30 45 30 46 31 30 31 31 31 32 31 33    0C0D0E0F10111213
0030    31 34 31 35 31 36 31 37 31 38 31 39 31 41 31 42    1415161718191A1B
0040    31 43 31 44 31 45 31 46 2C 0D 32 30 32 31 32 32    1C1D1E1F, 202122
0050    32 33 32 34 32 35 32 36 32 37 32 38 32 39 32 41    232425262728292A
0060    32 42 32 43 32 44 32 45 32 46 33 30 33 31 33 32    2B2C2D2E2F303132
0070    33 33 33 34 33 35 33 36 33 37 33 38 33 39 33 41    333435363738393A
0080    33 42 33 43 33 44 33 45 33 46 0D 0A 0D 0A 1A FF    3B3C3D3E3F
```

PPX

```
0000 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F
0010 10 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E 1F
0020 20 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F
0030 30 31 32 33 34 35 36 37 38 39 3A 3B 3C 3D 3E 3F $
```

```
0000    2A 0D 0A 30 30 30 30 20 30 30 20 30 31 20 30 32    * 0000 00 01 02
0010    20 30 33 20 30 34 20 30 35 20 30 36 20 30 37 20     03 04 05 06 07
0020    30 38 20 30 39 20 30 41 20 30 42 20 30 43 20 30    08 09 0A 0B 0C 0
0030    44 20 30 45 20 30 46 20 0D 0A 30 30 31 30 20 31    D 0E 0F  0010 1
0040    30 20 31 31 20 31 32 20 31 33 20 31 34 20 31 35    0 11 12 13 14 15
0050    20 31 36 20 31 37 20 31 38 20 31 39 20 31 41 20     16 17 18 19 1A
0060    31 42 20 31 43 20 31 44 20 31 45 20 31 46 20 0D    1B 1C 1D 1E 1F
0070    0A 30 30 32 30 20 32 30 20 32 31 20 32 32 20 32     0020 20 21 22 2
0080    33 20 32 34 20 32 35 20 32 36 20 32 37 20 32 38    3 24 25 26 27 28
0090    20 32 39 20 32 41 20 32 42 20 32 43 20 32 44 20     29 2A 2B 2C 2D
00A0    32 45 20 32 46 20 0D 0A 30 30 33 30 20 33 30 20    2E 2F  0030 30
00B0    33 31 20 33 32 20 33 33 20 33 34 20 33 35 20 33    31 32 33 34 35 3
00C0    36 20 33 37 20 33 38 20 33 39 20 33 41 20 33 42    6 37 38 39 3A 3B
00D0    20 33 43 20 33 44 20 33 45 20 33 46 20 24 20 0D     3C 3D 3E 3F $
00E0    0A 1A FF FF FF FF FF FF FF FF FF FF FF FF FF FF
```

TEXAS TAGS

```
( 000ELAN E  7FD14F
90000B0001B0203B0405B0607B0809B0A0BB0C0DB0E0F7F61EF
90010B1011B1213B1415B1617B1819B1A1BB1C1DB1E1F7F60DF
: 0020B2021B2223B2425B2627B2829B2A2BB2C2DB2E2F7F5FCF
: 0030B3031B3233B3435B3637B3839B3A3BB3C3DB3E3F7F5EBF
:
```

```
0000    30 30 30 30 30 45 4C 41 4E 20 45 20 20 37 46 44    00000ELAN E  7FD
0010    31 34 46 0D 0A 39 30 30 30 30 42 30 30 30 31 42    14F 90000B0001B
0020    30 32 30 33 42 30 34 30 35 42 30 36 30 37 42 30    0203B0405B0607B0
0030    38 30 39 42 30 41 30 42 42 30 43 30 44 42 30 45    809B0A0BB0C0DB0E
0040    30 46 37 46 36 31 45 46 0D 0A 39 30 30 31 30 42    0F7F61EF 90010B
0050    31 30 31 31 42 31 32 31 33 42 31 34 31 35 42 31    1011B1213B1415B1
0060    36 31 37 42 31 38 31 39 42 31 41 31 42 42 31 43    617B1819B1A1BB1C
0070    31 44 42 31 45 31 46 37 46 36 30 44 46 0D 0A 39    1DB1E1F7F60DF 9
0080    30 30 32 30 42 32 30 32 31 42 32 32 32 33 42 32    0020B2021B2223B2
0090    34 32 35 42 32 36 32 37 42 32 38 32 39 42 32 41    425B2627B2829B2A
00A0    32 42 42 32 43 32 44 42 32 45 32 46 37 46 35 46    2BB2C2DB2E2F7F5F
00B0    43 46 0D 0A 39 30 30 33 30 42 33 30 33 31 42 33    CF 90030B3031B3
00C0    32 33 33 42 33 34 33 35 42 33 36 33 37 42 33 38    233B3435B3637B38
00D0    33 39 42 33 41 33 42 42 33 43 33 44 42 33 45 33    39B3A3BB3C3DB3E3
00E0    46 37 46 35 45 42 46 0D 0A 3A 0D 0A 1A FF FF FF    F7F5EBF :
```

BNPF

```
0000  42 4E 4E 4E 4E 4E 4E 4E 4E 46 42 4E 4E 4E 4E 4E   BNNNNNNNNFBNNNNN
0010  4E 4E 50 46 42 4E 4E 4E 4E 4E 4E 50 4E 46 42 4E   NNPFBNNNNNNPNFBN
0020  4E 4E 4E 4E 4E 50 50 46 42 4E 4E 4E 4E 4E 50 4E   NNNNNPPFBNNNNNPN
0030  4E 46 42 4E 4E 4E 4E 4E 50 4E 50 46 42 4E 4E 4E   NFBNNNNNPNPFBNNN
0040  4E 4E 50 50 4E 46 42 4E 4E 4E 4E 4E 50 50 50 46   NNPPNFBNNNNNPPPF
0050  0D 0A 42 4E 4E 4E 4E 50 4E 4E 4E 46 42 4E 4E 4E     BNNNNPNNNFBNNN
0060  4E 50 4E 4E 50 46 42 4E 4E 4E 4E 50 4E 50 4E 46   NPNNPFBNNNNPNPNF
0070  42 4E 4E 4E 4E 50 4E 50 50 46 42 4E 4E 4E 4E 50   BNNNNPNPPFBNNNNP
0080  50 4E 4E 46 42 4E 4E 4E 4E 50 50 4E 50 46 42 4E   PNNFBNNNNPPNPFBN
0090  4E 4E 4E 50 50 50 4E 46 42 4E 4E 4E 4E 50 50 50   NNNPPPNFBNNNNPPP
00A0  50 46 0D 0A 42 4E 4E 4E 50 4E 4E 4E 4E 46 42 4E   PF  BNNNPNNNNFBN
00B0  4E 4E 50 4E 4E 4E 50 46 42 4E 4E 4E 50 4E 4E 50   NNPNNNPFBNNNPNNP
00C0  4E 46 42 4E 4E 4E 50 4E 4E 50 50 46 42 4E 4E 4E   NFBNNNPNNPPFBNNN
00D0  50 4E 50 4E 4E 46 42 4E 4E 4E 50 4E 50 4E 50 46   PNPNNFBNNNPNPNPF
00E0  42 4E 4E 4E 50 4E 50 50 4E 46 42 4E 4E 4E 50 4E   BNNNPNPPNFBNNNPN
00F0  50 50 50 46 0D 0A 42 4E 4E 4E 50 50 4E 4E 4E 46   PPPF  BNNNPPNNNF
0100  42 4E 4E 4E 50 50 4E 4E 50 46 42 4E 4E 4E 50 50   BNNNPPNNPFBNNNPP
0110  4E 50 4E 46 42 4E 4E 4E 50 50 4E 50 50 46 42 4E   NPNFBNNNPPNPPFBN
0120  4E 4E 50 50 50 4E 4E 46 42 4E 4E 4E 50 50 50 4E   NNPPPNNFBNNNPPPN
0130  50 46 42 4E 4E 4E 50 50 50 50 4E 46 42 4E 4E 4E   PFBNNNPPPPNFBNNN
0140  50 50 50 50 50 46 0D 0A 42 4E 4E 50 4E 4E 4E 4E   PPPPPF  BNNPNNNN
0150  4E 46 42 4E 4E 50 4E 4E 4E 4E 50 46 42 4E 4E 50   NFBNNPNNNNPFBNNP
0160  4E 4E 4E 50 4E 46 42 4E 4E 50 4E 4E 4E 50 50 46   NNNPNFBNNPNNNPPF
0170  42 4E 4E 50 4E 4E 50 4E 4E 46 42 4E 4E 50 4E 4E   BNNPNNPNNFBNNPNN
0180  50 4E 50 46 42 4E 4E 50 4E 4E 50 50 4E 46 42 4E   PNPFBNNPNNPPNFBN
0190  4E 50 4E 4E 50 50 50 46 0D 0A 42 4E 4E 50 4E 50   NPNNPPPF  BNNPNP
01A0  4E 4E 4E 46 42 4E 4E 50 4E 50 4E 4E 50 46 42 4E   NNNFBNNPNPNNPFBN
01B0  4E 50 4E 50 4E 50 4E 46 42 4E 4E 50 4E 50 4E 50   NPNPNPNFBNNPNPNP
01C0  50 46 42 4E 4E 50 4E 50 50 4E 4E 46 42 4E 4E 50   PFBNNPNPPNNFBNNP
01D0  4E 50 50 4E 50 46 42 4E 4E 50 4E 50 50 50 4E 46   NPPNPFBNNPNPPPNF
01E0  42 4E 4E 50 4E 50 50 50 50 46 0D 0A 42 4E 4E 50   BNNPNPPPPF  BNNP
01F0  50 4E 4E 4E 4E 46 42 4E 4E 50 50 4E 4E 4E 50 46   PNNNNFBNNPPNNNPF
0200  42 4E 4E 50 50 4E 4E 50 4E 46 42 4E 4E 50 50 4E   BNNPPNNPNFBNNPPN
0210  4E 50 50 46 42 4E 4E 50 50 4E 50 4E 4E 46 42 4E   NPPFBNNPPNPNNFBN
0220  4E 50 50 4E 50 4E 50 46 42 4E 4E 50 50 4E 50 50   NPPNPNPFBNNPPNPP
0230  4E 46 42 4E 4E 50 50 4E 50 50 50 46 0D 0A 42 4E   NFBNNPPNPPPF  BN
0240  4E 50 50 50 4E 4E 4E 46 42 4E 4E 50 50 50 4E 4E   NPPPNNNFBNNPPPNN
0250  50 46 42 4E 4E 50 50 50 4E 50 4E 46 42 4E 4E 50   PFBNNPPPNPNFBNNP
0260  50 50 4E 50 50 46 42 4E 4E 50 50 50 50 4E 4E 46   PPNPPFBNNPPPPNNF
0270  42 4E 4E 50 50 50 50 4E 50 46 42 4E 4E 50 50 50   BNNPPPPNPFBNNPPP
0280  50 50 4E 46 42 4E 4E 50 50 50 50 50 50 46 03 0D   PPNFBNNPPPPPPF
0290  0A 1A FF FF FF FF FF FF FF FF FF FF FF FF FF FF
```

ASCII HEX SPACE

```
) 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F
) 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E 1F
) 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F
) 31 32 33 34 35 36 37 38 39 3A 3B 3C 3D 3E 3F
```

```
0000    02 01 0D 0A 30 30 20 30 31 20 30 32 20 30 33 20        00 01 02 03
0010    30 34 20 30 35 20 30 36 20 30 37 20 30 38 20 30     04 05 06 07 08 0
0020    39 20 30 41 20 30 42 20 30 43 20 30 44 20 30 45     9 0A 0B 0C 0D 0E
0030    20 30 46 20 0D 0A 31 30 20 31 31 20 31 32 20 31      0F   10 11 12 1
0040    33 20 31 34 20 31 35 20 31 36 20 31 37 20 31 38     3 14 15 16 17 18
0050    20 31 39 20 31 41 20 31 42 20 31 43 20 31 44 20      19 1A 1B 1C 1D
0060    31 45 20 31 46 20 0D 0A 32 30 20 32 31 20 32 32     1E 1F   20 21 22
0070    20 32 33 20 32 34 20 32 35 20 32 36 20 32 37 20      23 24 25 26 27
0080    32 38 20 32 39 20 32 41 20 32 42 20 32 43 20 32     28 29 2A 2B 2C 2
0090    44 20 32 45 20 32 46 20 0D 0A 33 30 20 33 31 20     D 2E 2F   30 31
00A0    33 32 20 33 33 20 33 34 20 33 35 20 33 36 20 33     32 33 34 35 36 3
00B0    37 20 33 38 20 33 39 20 33 41 20 33 42 20 33 43     7 38 39 3A 3B 3C
00C0    20 33 44 20 33 45 20 33 46 20 03 0D 0A 1A FF FF      3D 3E 3F
```

-WHAT
IS THE
SERIAL
CONFIGURATION

?

THERE ARE :—

14 BAUD RATES
12 DATA STREAMS
13 FORMATS

THIS GIVES :—

14 x 12 x 13 = 2184 COMBINATIONS

TRIAL AND ERROR ?
— NO THANKS !

THE LOGICAL APPROACH

1. ESTIMATE BAUD RATE
2. DATA STREAM
3. FORMAT

Serial Test Routine (RS 232 Help/Examine)

Quite often the development system serial configuration is unknown and not even available to the user. If this is the case the Elan E2 or E9 can be used to narrow down the possibilities quite quickly.

First estimate the baud rate. This can be done quite easily by dumping a file from the development system to the serial port and timing it. Then compare the time with the table of values below.

A 1K dump in format ASCII HEX SPACE takes the following times.

Time in seconds	Baud Rate
4	9600
8	4800
15	2400
22	1800
30	1200
60	600
120	300
200	200
240	150
270	134.5
320	110
480	75
740	50

Secondly set up the Elan serial configuration code 3RC where R is the correct baud rate.

Format 3 (optional) is in fact binary without a header and will therefore store all data received.

Now set the Elan into Input mode ready to receive serial data and send a small known file to it.

If the Elan detects an error the data sent must be 8 data bits and either odd or even parity or 7 data bits no parity 1 stop bit. Try them out to confirm.

If the Elan receives the data without detecting an error we have either found the correct configuration lst time or the data is 7 bits with parity. Select the Amend mode on the Elan to examine the data stored and identify the Ascii code.

For example if an ASCII 0 and 1 has been stored.

Stored date	Diagnosis
30 31	7 data bits No parity or 8 data bits
30 81	7 data bits Even Parity
80 31	7 data bits Odd Parity

Once the configuration has been identified it can be set for life.

hand-out 'What is the serial configuration?' T8/1

INTERFACE

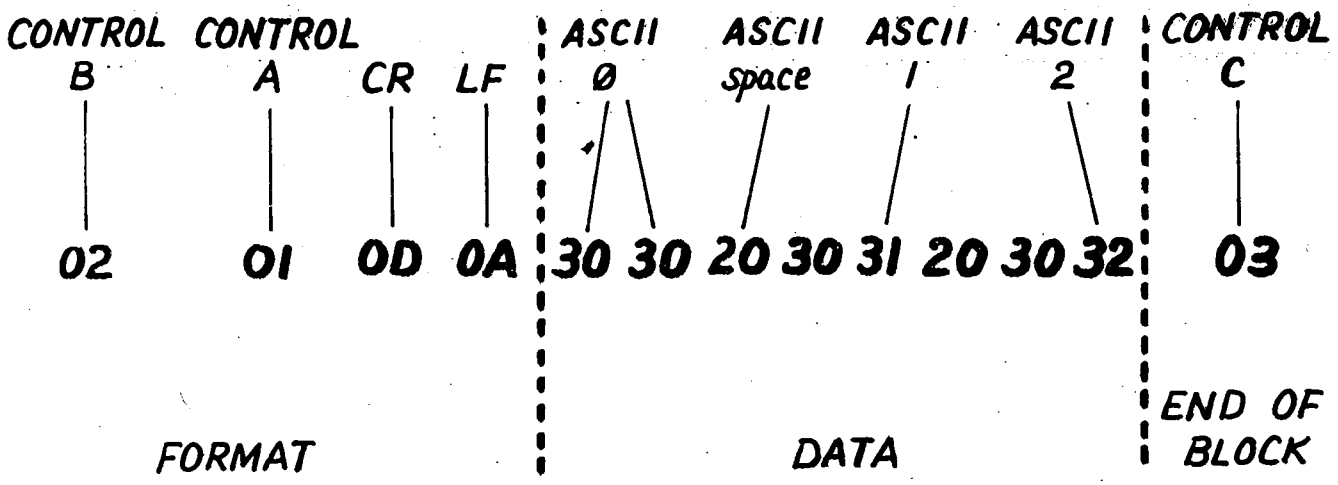
SERIAL COMMUNICATION : FORMATS

ASCII HEX SPACE.

EXAMPLE OF INCREMENTAL RAM DATA

e.g. 00 01 02 03 etc.

AS TRANSMITTED



INTERFACE
SERIAL COMMUNICATIONS :
DATA STREAM ANALYSIS

TO ANALYSE DATA STREAM WHEN PARITY / NO. OF DATA BITS / NO. OF STOP BITS IS UNKNOWN

ELAN SELECTIONS AVAILABLE :-

	SELECTION	PARITY	DATA BITS	STOP BITS	
	1	EVEN	7	1	or more
	2	ODD	7	1	
	3	NONE	7	1	— ERROR (7 bits)
	~~4~~	EVEN	7	~~2~~	at least
	~~5~~	~~ODD~~	7	2	
	~~6~~	NONE	7	~~2~~	
	A	EVEN	8	1	— ERROR (9 bits)
	B	ODD	8	1	— ERROR (9 bits)
SET UP →	C	NONE	8	1	
	~~D~~	EVEN	~~8~~	~~2~~	dis-regard 2 stop bit settings as being same as similar selections with 1 stop bit
	E	~~ODD~~	8	2	
	~~F~~	NONE	8	~~2~~	

SET ELAN UNIT TO RECEIVE NO PARITY 8 DATA BITS / 1 STOP BIT, BINARY NO. HEADER, 9600 BAUD.

SEND A SMALL KNOWN DATA BLOCK eg. 01 02 03 ..... USE ASCII HEX SPACE, 9600 BAUD, 7 DATA BITS 1 STOP BIT, ODD OR EVEN PARITY

INTERFACE
SERIAL COMMUNICATIONS
DATA STREAM ANALYSIS - RESULTS

DATA STORED USING CORRECT SETTING 8 DATA BIT NO PARITY

02 01 0D 0A 30 30 20 30 31 20 30 32

8 DATA BITS NO PARITY	02 0000 0010	01 0000 0001	0D 0000 1101	0A 0000 1010	30 0011 0000	20 0010 0000	31 0011 0001	32 0011 0010
7 DATA BITS EVEN PARITY	82 1000 0010	81 1000 0001	8D 1000 1101	0A 0000 1010	30 0011 0000	A0 1010 0000	B1 1011 0001	B2 1011 0010
7 DATA BITS ODD PARITY	02 0000 0010	01 0000 0001	0D 0000 1101	8A 1000 1010	B0 1011 0000	20 0010 0000	31 0011 0001	32 0011 0010

INTERFACE
SERIAL COMMUNICATIONS
DATA STREAM ANALYSIS – SUMMARY

ALWAYS SET THE ELAN TO 8 DATA BITS, NO PARITY, 1 STOP BIT. 'THE TEST SETTING'.

RECEPTION OF 8 DATA BITS ODD OR EVEN PARITY (9 BITS) WILL ERROR.

RECEPTION OF 7 DATA BITS NO PARITY (7 BITS) WILL ERROR.

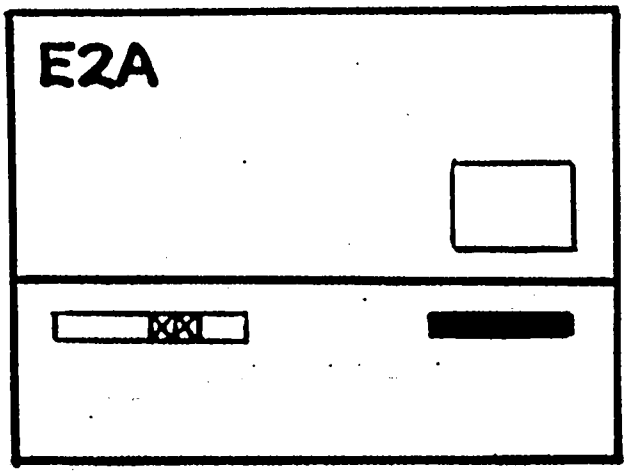
∴ IF THE ELAN DETECTS AN ERROR, TRY THESE 3 POSSIBILITIES IN TURN TO ISOLATE THE CORRECT ONE.

IF NO ERROR IS DETECTED THE CONFIGURATION IS EITHER RIGHT FIRST TIME or 7 DATA BITS WITH PARITY, COMPARE RECEIVED DATA AGAINST THE ORIGINAL TO CHECK.

THIS TECHNIQUE CAN ALSO BE USED TO CHECK THE VALIDITY OF SUPPOSED STANDARD FORMATS OR EVEN TO ANALYSE A COMPLETELY UNKNOWN FORMAT.

A CUSTOMER COULD BE INSTRUCTED, SAY BY TELEPHONE, TO RECEIVE SERIAL DATA USING THE TEST SETTING. THE RESULTING RAM CONTENTS COULD BE COMMUNICATED BY TELEPHONE, PRINTOUT OR PROGRAMMED INTO AN EPROM AND POSTED, FOR ANALYSIS.

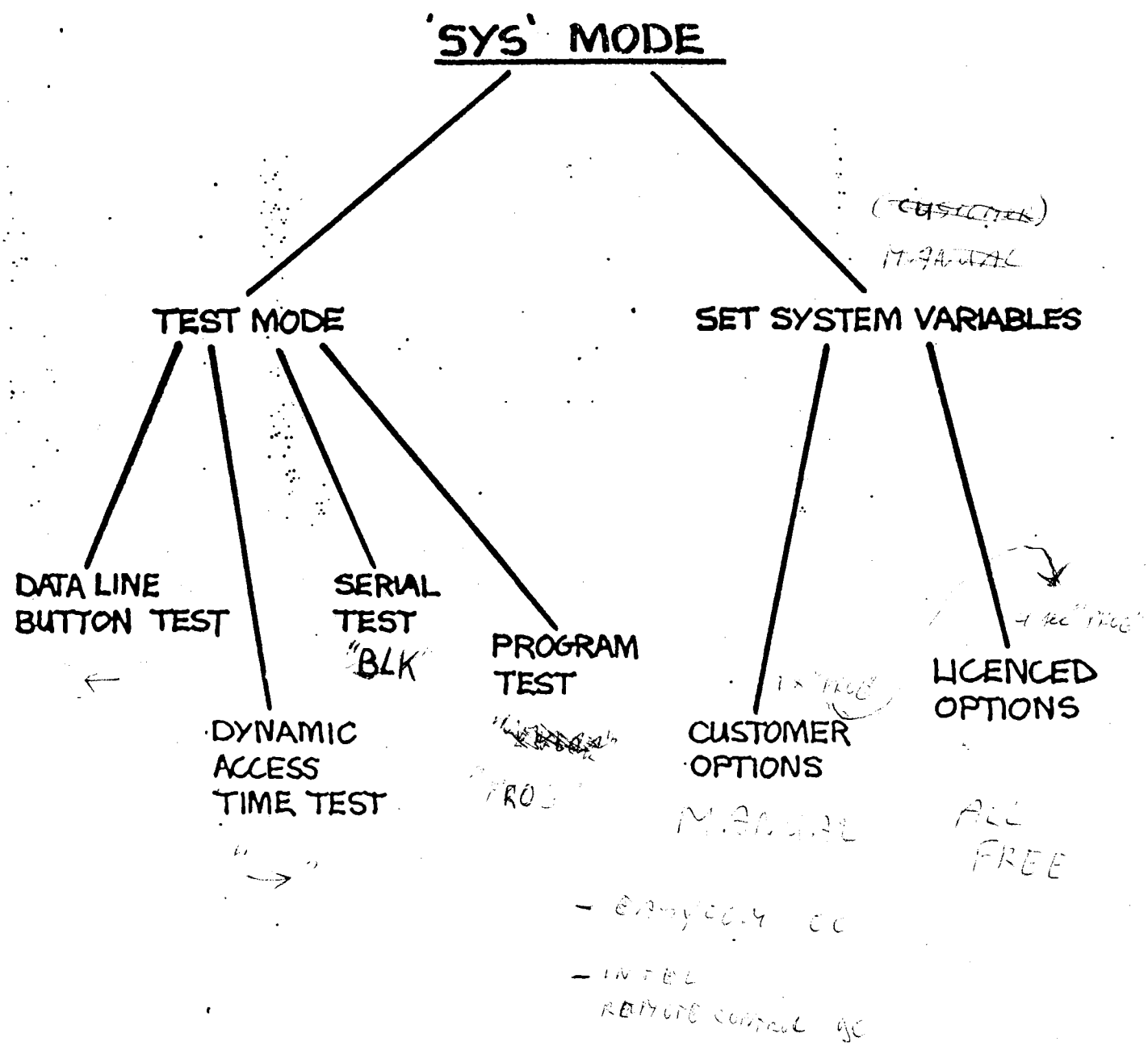
'SYS' MODE



TO ENTER 'SYS' MODE:

SWITCH ON.
PRESS BOTH STEP BUTTONS BEFORE THE UNIT BEEPS.
THE DISPLAY WILL THEN SHOW:—

X X X X S Y S


'SYS' MODE
TEST MODE
SET SYSTEM VARIABLES
DATA LINE BUTTON TEST
DYNAMIC ACCESS TIME TEST
SERIAL TEST "BLK"
PROGRAM TEST
CUSTOMER OPTIONS
LICENCED OPTIONS

'SYS' MODE

SET SYSTEM VARIABLES – CUSTOMER OPTIONS

WHEN IN 'SYS' MODE PRESS THE PROGRAM BUTTON FOR ONE 'BEEP'.

DISPLAY WILL SHOW 2 HEX DIGITS REPRESENTING THE SYSTEM VARIABLES.

PRESS 'RESET' TO LEAVE THE VARIABLES UNCHANGED.

PRESS 'ENTER' TO ALLOW A CHANGE TO BE MADE.

THEN 'KEY IN' REQUIRED VALUE FROM THE MAGIC TABLE.

PRESS ENTER.

'SYS' MODE

SET SYSTEM VARIABLES – LICENCED OPTIONS.

WHEN IN 'SYS' MODE :–

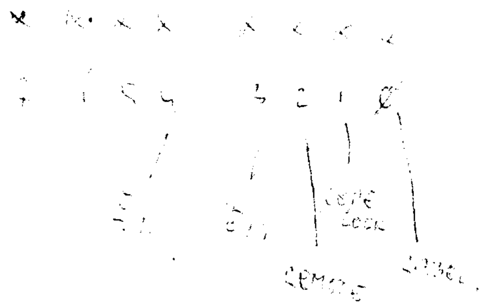
PRESS PROGRAM BUTTON FOR 1 'BEEP'.

THE DISPLAY WILL SHOW 2 DIGITS REPRESENTING SYSTEM VARIABLES AS BEFORE.

PRESS PROGRAM BUTTON AGAIN UNTIL UNIT 'BEEPS' AGAIN (APPROX 3 SEC.)

DISPLAY WILL SHOW 2 DIGITS (LICENCED OPTIONS)

THESE ARE :– BIT Ø LABEL PRINTING
1 CODE LOCK
2 REMOTE CONTROL
3 E16



4, 5, 6, 7 } 0 UP TO EG 28; 1 EG 29

PRESS RESET TO LEAVE OPTIONS UNCHANGED OR :–

ENTER REQUIRED DIGITS FROM HEX. KEYPAD AND PRESS ENTER

[BITS 0–3 SHOULD BE SET HIGH TO SELECT THE REQUIRED OPTION.].

SWITCH OFF CODE LOCK : PRESS · E while powering up.

'SYS' MODE

TEST MODE

DYNAMIC ACCESS TIME CHECK.

WHEN IN 'SYS' MODE :-

PRESS →,

THE DISPLAY WILL SHOW XXXX450

THE STEP BUTTONS WILL ALLOW SCROLLING OF ACCESS TIMES FROM 450nS TO 100nS.

A DUAL TRACE SCOPE CONNECTED TO PINS 11 + 1 OF IC 35 WILL ALLOW TIMING MEASUREMENT TO CHECK ACCESS TIME SETTINGS.

'SYS' MODE

TEST MODE

SERIAL TEST

CONNECT SERIAL PORTS ON 2 ELAN UNITS
USING PINS 2, 3, 7 ONLY.

WITH BOTH UNITS IN 'SYS' MODE :—
PRESS 'BLANK' BUTTON ON ONE UNIT.
PRESS 'BLANK' BUTTON TWICE ON SECOND UNIT.

AUTOMATIC CHECK OF ALL COMBINATIONS OF FORMATS.

left out 2 shuffle programmes.

'SYS' MODE

TEST MODE

PROGRAM TEST

IN 'SYS' MODE SELECT DEVICE TYPE REQUIRED.

PRESS PROGRAM BUTTON FOR 2 BEEPS.

CONTINUOUS LOOP IN PROGRAM MODE ON ADDRESS

ALLOWS WAVEFORM CHECKING: Vpp, Vcc ETC.

ELAN UNIVERSE MCU REMOTE CONTROL EXAMPLE

)

)

{ – REQUEST STACK CONFIGURATION

```
040010ADAPTERS   M3.20A0310L-STACK      3.220410G-STACK      3.180510P-STACK      3
24>
```

1013/G-STACK   STACK NUMBER 04

04} – REQUEST DEVICE FAMILIES FOR STACK NUMBER 04

```
0C03AMD05ATMEL07FUJITSU0BGEN. INSTR.07HITACHI05INTEL08NATIONAL03NEC08ROCKWELL04
EEQ07TOSHIBA03WSI>
```

INTEL IS FAMILY NUMBER 05

05! – REQUEST DEVICE LIST FOR FAMILY NUMBER 05

NBR OF CHARS

```
1907INT276408INT2764A08INT27C6407QP2764A08INT27128O9INT27128A08QP27128A09INT27C
280  INT2725609INT27C25607QP2725608INT2751207QP2751209INT27C51208INT2751307QP275
309INT27C51308INT2701009INT27C01008INT2701109INT27C0110CINT27210_A4008INT2817A0
INT2864A08INT87C64>
```

NBR. OF DEVICES — DEVICE NUMBER 08 — DEVICE NUMBER 0B

0508t – SELECT DEVICE 08 FROM FAMILY 05 = INTEL 27256
d – device type enquiry
\>

05C) = 27256
050Bt – SELECT DEVICE 0B FROM FAMILY 05 = INTEL 27512

\>
d – device type enquiry

050B> = 27512

RESULT FOR 1013/G-STACK FIRMWARE 3.18

)

)

)

Hand-out MCU: key functions, editing functions UI
Stack fitting procedure.

Slow ram s/p 64k bytes standard max 8 × 64k bytes = 512K by

½ M byte
8 × 27512
524,288 bytes
4,194,304 bits

UNIVERSE MCU

POWER IEC INPUT EXTERNAL FUSE
220/240V OR LINK INTERNALLY 110/120V
TO 30V SMPS. FEED TO 60 WAY BUS
5V SMPS FOR MCU LOGIC.

Z80A CPU ADDRESS/DATA BUFFERED TO
60 WAY BUS
KEYPAD INTERFACE : ALL STACK OPERATIONS
SERIAL **DART** CONTROL : BI-DIRECTIONAL
SERIAL ON BOTH PORTS
PARALLEL PORT CONTROL : PARALLEL
CENTRONICS OUTPUT ONLY

AUTOMATIC POWER-ON SELF TEST
SHIFT + ~~f5~~ f5 SUPER TEST → main menu!
SHIFT + ~~f6~~ f6 AUTOMATIC SERIAL PORT TEST
2 machine connection RX → TX

MCU WILL SUPPORT ELAN ADAPTORS IN 26 WAY
PARALLEL PORT
RAM UPDATE
STACK FITTING

Pal/prom Software history's

UNIVERSE PAL L STACK

3.25

CURRENT FIRMWARE L 3.19

20 & 24 PIN DEVICE ZIF SOCKETS

SERIAL FORMAT : JEDEC FILE RECEIVE

PROGRAM VERIFY BLANK CHECK

FUSE EDIT

SHIFT + VERIFY : TEST VECTORS

SHIFT + PROGRAM : PROGRAM SECURITY FUSE

HARDWARE MODIFICATION TO ALLOW AMD DEVICES & IFL'S

NEW FIRMWARE : FUSE MAP OUTPUT

JECEC OUTPUT

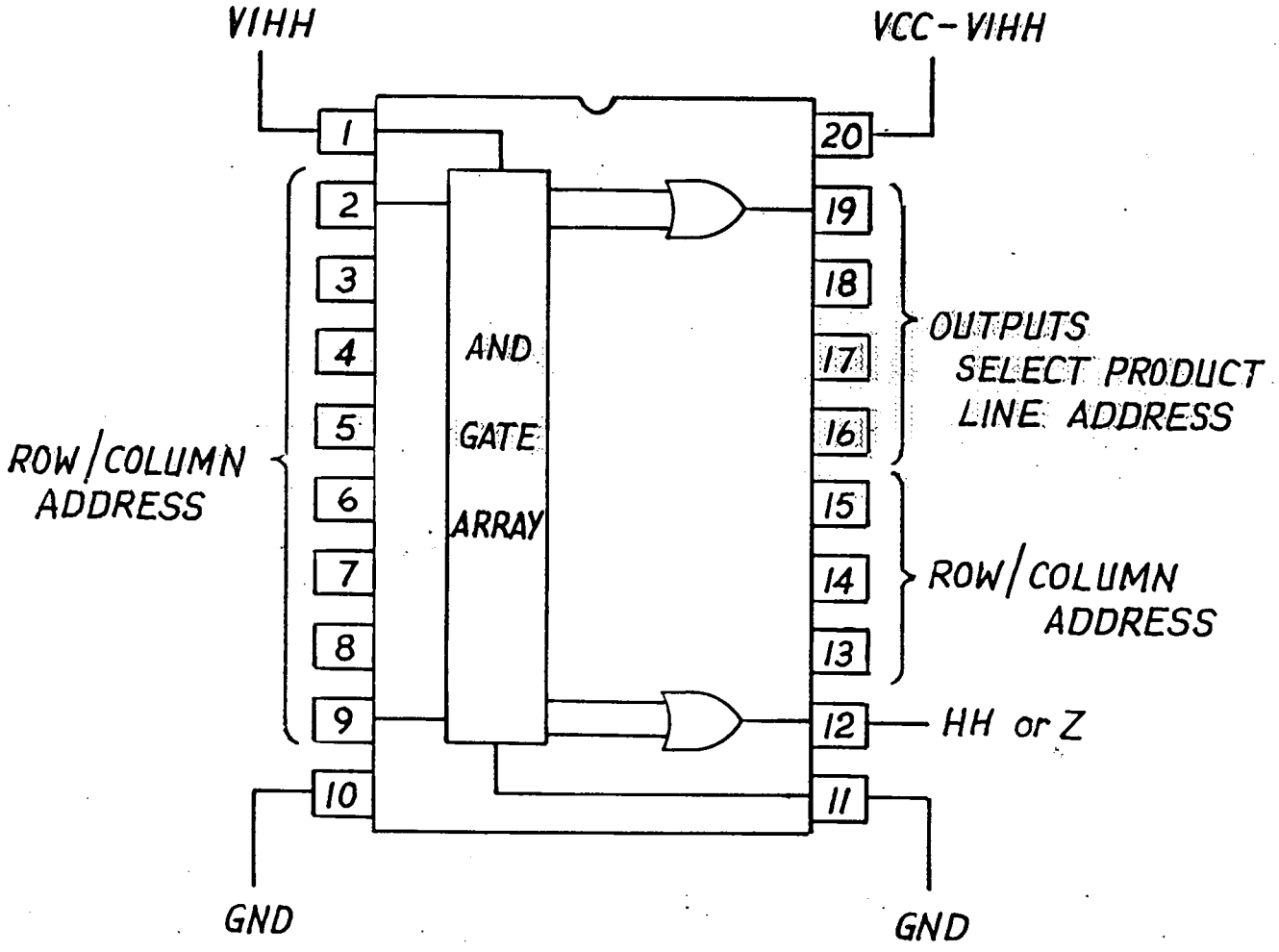
NEW: L STACK ADAPTOR A61

for MMI 20RS4 20RS8

20RS10 20S10

PAL DEVICE PROGRAMMING

MMI 10H8



VCC 5V

VIHH SUPER VOLTAGE 11·75V TYPICAL

VP SECURITY FUSE PROGRAMMING VOLTAGE 18·5V TYPICAL

UNIVERSE PROM P STACK

CURRENT FIRMWARE P 3.21

ZIF SOCKETS (2) 16 PIN, 18, 20
22 & (2) 24 PIN 0·3"
24 & 28 PIN 0·6"

PROGRAM VERIFY BLANK CHECK
SET PROGRAMMING.
USE OF EDITING FACILITIES

SERIAL FORMATS :

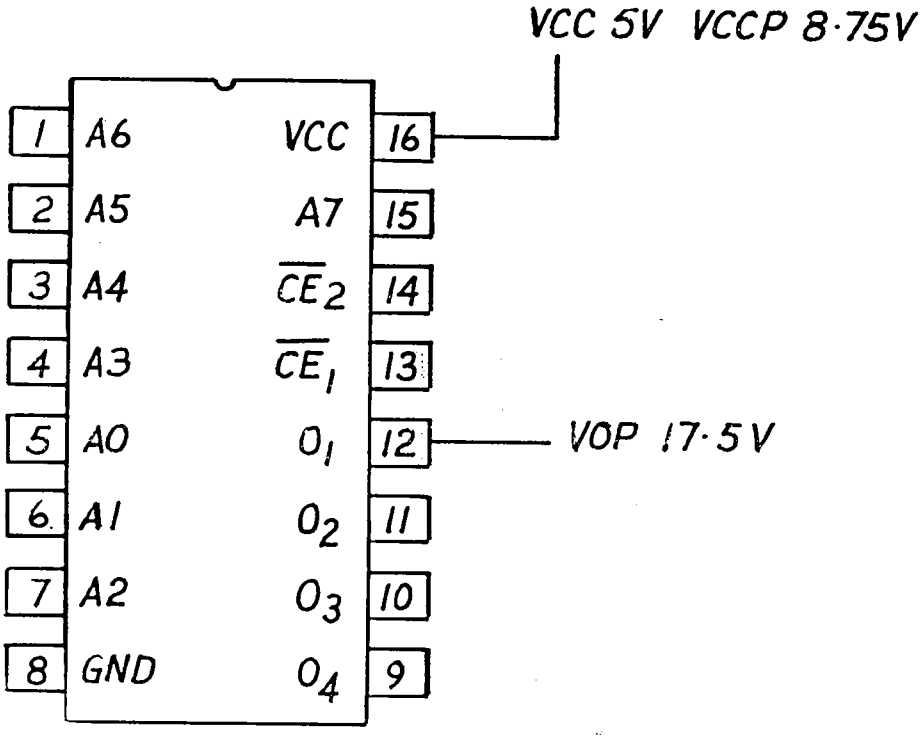
INTEL MOTOROLA TEK HEX

REMOTE CONTROL

EPROM PROGRAMMING

PROM DEVICE PROGRAMMING

SIGNETICS 825126

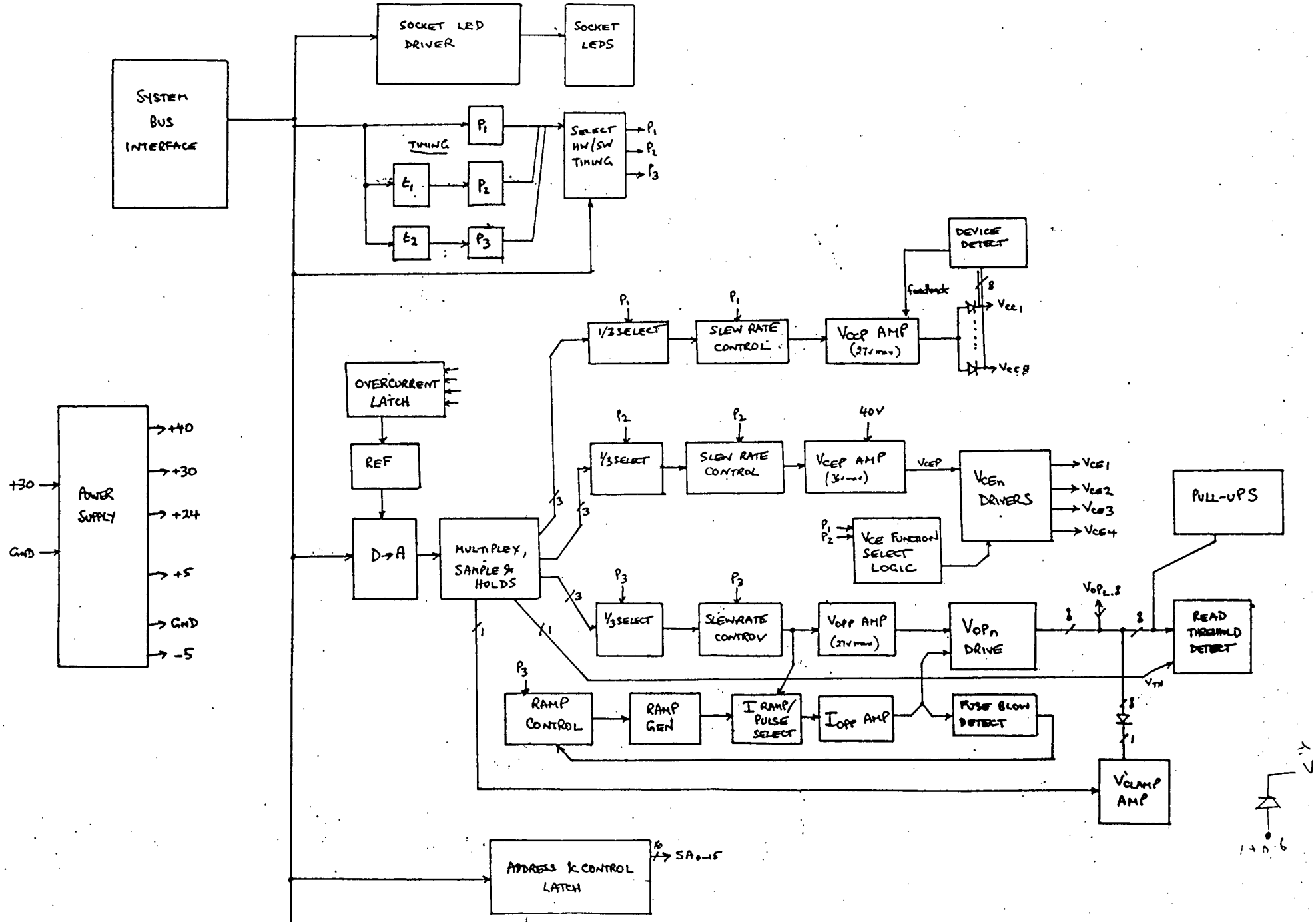


PROGRAMMED 1 BIT AT A TIME SEQUENCING THROUGH VCC, VCCP & VOP

VOP VOLTAGES HAVE CRITICAL TIMING AND SLEW RATES (RISE & FALL TIMES)

VOLTAGES, TIMING & SLEW RATES ARE DIFFERENT FOR EACH DEVICE MANUFACTURER

PROM BOARD	1	BLOCK DIAGRAM	T. GWINN	12-JUL-02



UNIVERSAL G STACK

2764 - 27513 + 27011 8(16K x 8) PAGED EPROM

+ 27010 1m BIT (128K x 8) 8 BIT 32 PIN

2 (256K x 8)

4 (512K x 8)

8 (1024K x 8)

8 SOCKETS GANG/SET

OR DOUBLE STACK

16 SOCKETS GANG/SET

MAX RAM 64K BYTES x 8 = 512K BYTES

= SET OF 16 27256 !

JEDEC STANDARDS

CURRENT ADHERENCE

JEDEC STANDARD NO. 3
PUBLISHED OCT. 83

JEDEC PROPOSED REVISION
DISCUSSION PAPER
OCT. 85

WE HAVE ADOPTED THE ADDITIONS & CLARIFICATIONS AS PROPOSED, EVEN THOUGH THE REVISED STANDARD IS NOT YET PUBLISHED.

ELAN FUSE MAP INPUT/OUTPUT

JEDEC FILE INPUT/OUTPUT

USING AN EXISTING PROGRAMMED PAL (UNSECURED)

READ DEVICE INTO RAM

OUTPUT ELAN FUSE MAP TO IBM TERMINAL

EDIT FUSE MAP AS REQUIRED USING WORDSTAR OR SIMILAR EDITOR

SEND EDITED FUSE MAP BACK TO UNIVERSE 1000

verify with > master to check changes.

THE NEW DATA CAN NOW BE TRANSMITTED EITHER AS A JEDEC FILE OR FUSE MAP WITH THE NEW CALCULATED CHECKSUM.

Can be done using fuse-edit for simple changes.

IT CAN BE PROGRAMMED INTO A NEW PAL DEVICE AND/OR SAVED TO DISK

THIS PROCEEDURE CAN BE APPLIED TO A BLANK DEVICE (OR RAM FILLED WITH ZEROS) WHEN A FUSE MAP TAILORED TO THE SELECTED DEVICE WILL BE PRODUCED FOR NEW DATA ENTRY USING AN EDITOR. THIS FACILITY WILL ALLOW CREATION OF VALID FUSE MAP/ JEDEC FILE WITHOUT THE NEED FOR A COMPILER.

TRAINING - UNIVERSE : ELAN FUSE MAP & JEDEC FILE EXAMPLE

EQUIPMENT: MCU+L-STACK WITH SERIAL CONNECTION TO IBM/EASYCOM

L-STACK

EASYCOM?

SELECT:- PROGRAMMER - UNIVERSE
STACK - L-STACK
DEVICE - MMI 10H8
FILE NAME - 10H8.F
RECORD FMT - ELAN FUSE MAP

FUNCTION:- READ DEVICE INTO RAM
NOTE CHECKSUM - 08F7
COPY RAM TO FILE
F2 - DOS SHELL

WORDSTAR EDITOR

WS 10H8.F
'INSERT' OFF
EDIT FUSEMAP - FILL ROW 0 WITH X's
Ctrl K
X
EXIT TO EASYCOM

EASYCOM?

COPY FILE TO RAM

FILE NAME 10H8.J
RECORD FMT JEDEC
COPY RAM TO FILE
EXIT
WS 10H8.J
NOTE NEW CHECKSUM 06F7
Ctrl K
X
EXIT
COPY FILE TO RAM

RESET
VERIFY

ENTER.....

Technical Update continued

3.2) Firmware Release L3.24.

Correction of AMD22V10 algorithm to improve programming yield of post May 86 plastic parts.

4) Universe 1000 MCU

Firmware Release M3.22A.(M3.21 not general release)

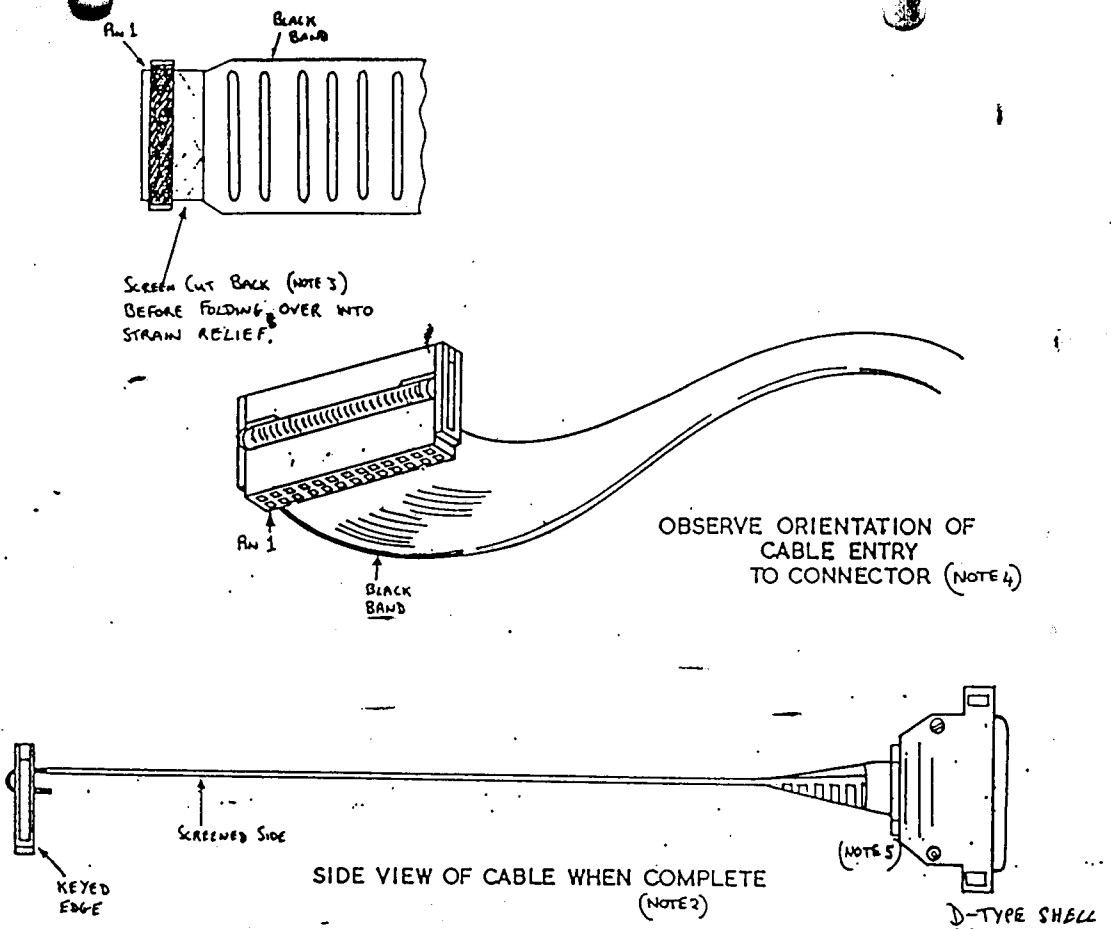
Introduction of: 1) Parallel Input on existing Parallel port.

2) Serial data rate increased to 38400 Baud, this is restricted to data streams of at least 11 bits for a true continuous data rate.
e.g. 8 bit,no parity,2 stop bits. }these are
8 bit,parity,1 stop bit. }11 bit
7 bit,parity,2 stop bits. }including
}start bit.

These added facilities will allow faster file transfer with systems that offer a true continuous data rate.Test times are shown here for transfer of a 32k Intel file using the IBM XT & AT,the results show that the continuous rate for the XT is actually less than 9600 baud.There are few systems today that are capable of a true rate in access of 19200 baud,therefore our 11 bit requirement is unlikely to be a restriction for most applications.

Times in seconds			
	Parallel	serial	
		19200 baud	9600 baud
IBM AT	42	56	107
IBM XT	107	118	118

A parallel cable detail drawing is enclosed with this bulletin.



CONNECTION LIST FOR 25 WAY D-TYPE END. (NOTE 1)

FUNCTION	RIBBON CABLE CORE NUMBER. (BLACK BAND = 1)	25 WAY D-TYPE PIN NUMBER
RETURN/SCREEN	1 AND SCREEN	18 THRU 25
NO CONNECT*	2 AND 3	—
DATA Ø	4	2
ERROR	5	15
DATA 1	6	3
PE	7	12
DATA 2	8	4
+ SELECT	9	13
DATA 3	1Ø	5
NO CONNECT*	11	—
DATA 4	12	6
NO CONNECT*	13	—
DATA 5	14	7
NO CONNECT*	15	—
DATA 6	16	8
BUSY	17	11
DATA 7	18	9
ACKNOWLEDGE	19	1Ø
STROBE	2Ø	1
NO CONNECT*	21 THRU 26	:—
NO CONNECT*		14, 16, 17

*NO CONNECT RIBBON CABLE CORES SHOULD BE CUT BACK TO RIBBON CLEANLY SO AS NOT TO TOUCH ANYTHING.

NOTES

1. D-TYPE CONNECTOR END IS HAND MADE. SEE CONNECTION LIST. SCREEN IS CONNECTED ALSO.
2. LENGTH OF RIBBON = 2 METRES.
3. RIBBON IS SPECTRA STRIP AND REQUIRES SPECIAL PREPARATION FOR ASSEMBLY. SEE THE "SPECTRA STRIP INSTRUCTION LEAFLET."
4. OBSERVE CABLE ENTRY (SEE DRAWING)
5. FLAT CABLE IS ROLLED TO FIT STRAIN RELIEF

PARALLEL I/O CABLE ASSY			
CABLE DETAIL			
DRAWN	PH.	ELAN DIGITAL SYSTEMS LTD	
ISSUE	1		
DRG Nº	621	EDS REF. Nº 001036	