

# THE MAXI MICRO TERM

## Video Features:

- 22, 32, 66, and 80 character lines
- 12, 13, 14, 15, 16, 18, 20, 22, 25, and 29 lines/page
- 7 or 8 dots/character
- Line-locked synthesized video dot clock
- Underline, highlight, blinking, and reverse video fields
- Upper/lower case ASCII, control character display,  
Greek, special symbols, and graphics characters
- Multiple page storage
- Screen dump
- Page handshaking

## Tape Interface:

- Asynchronous - variable FSK tones encode/decode
- Fully synchronous - phase encode/decode
- Asynchronous/synchronous - phase encoded asynchronous

## 4 X 4 Crossbar Switch:

- Any input to any output - UART, EIA, Modem, and Tape

## Variable Baud Rates:

- 45 to 9600 baud

## Switch Selectable Power-on Options

## Built-in Baudot Conversion

## Real-Time Clocks:

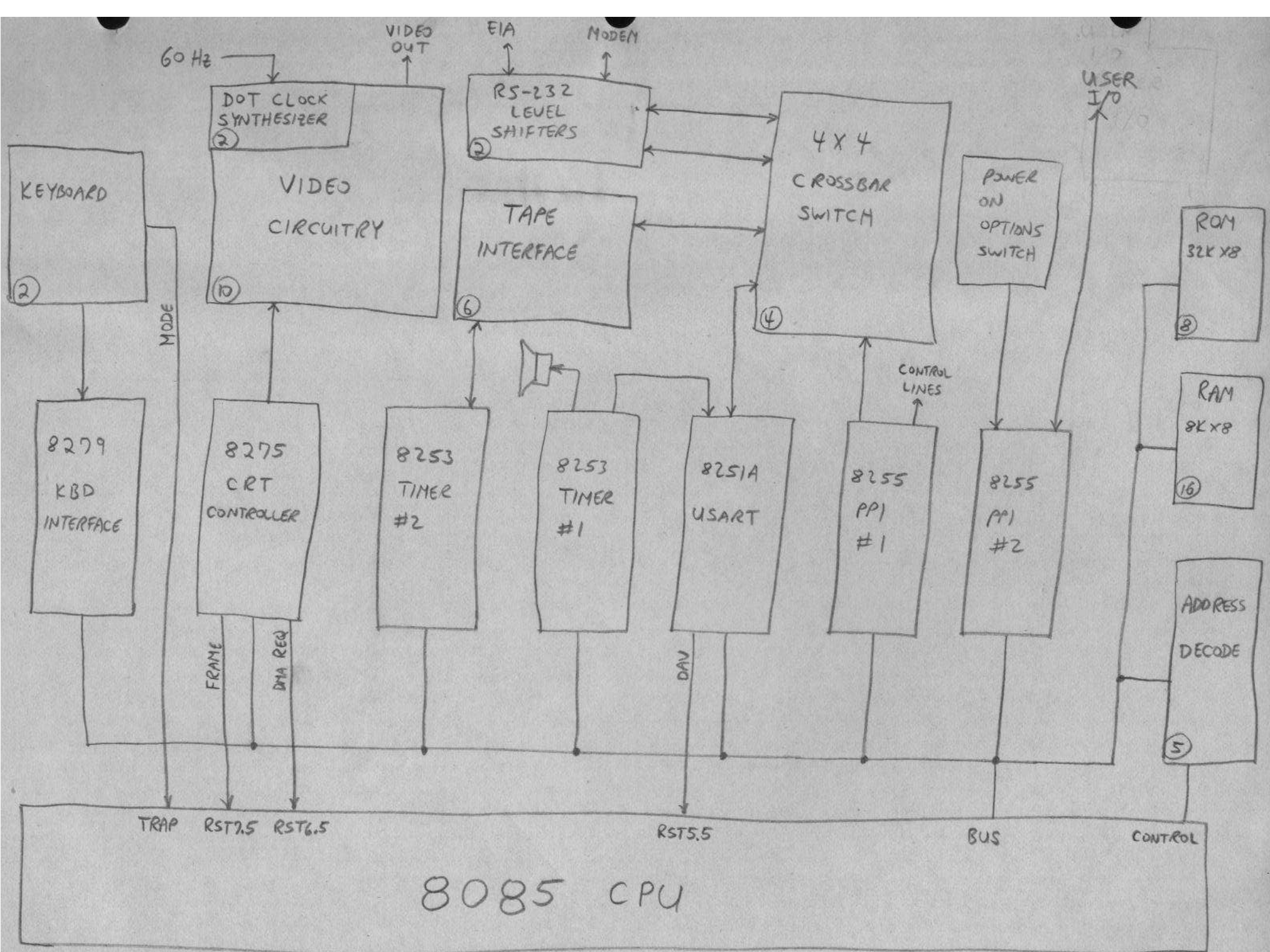
- Conventional 24-hour time from .1 second to 99 days
- Programmable delay from 1 millisecond to 8 seconds

## Software Controllable AC Power Switch

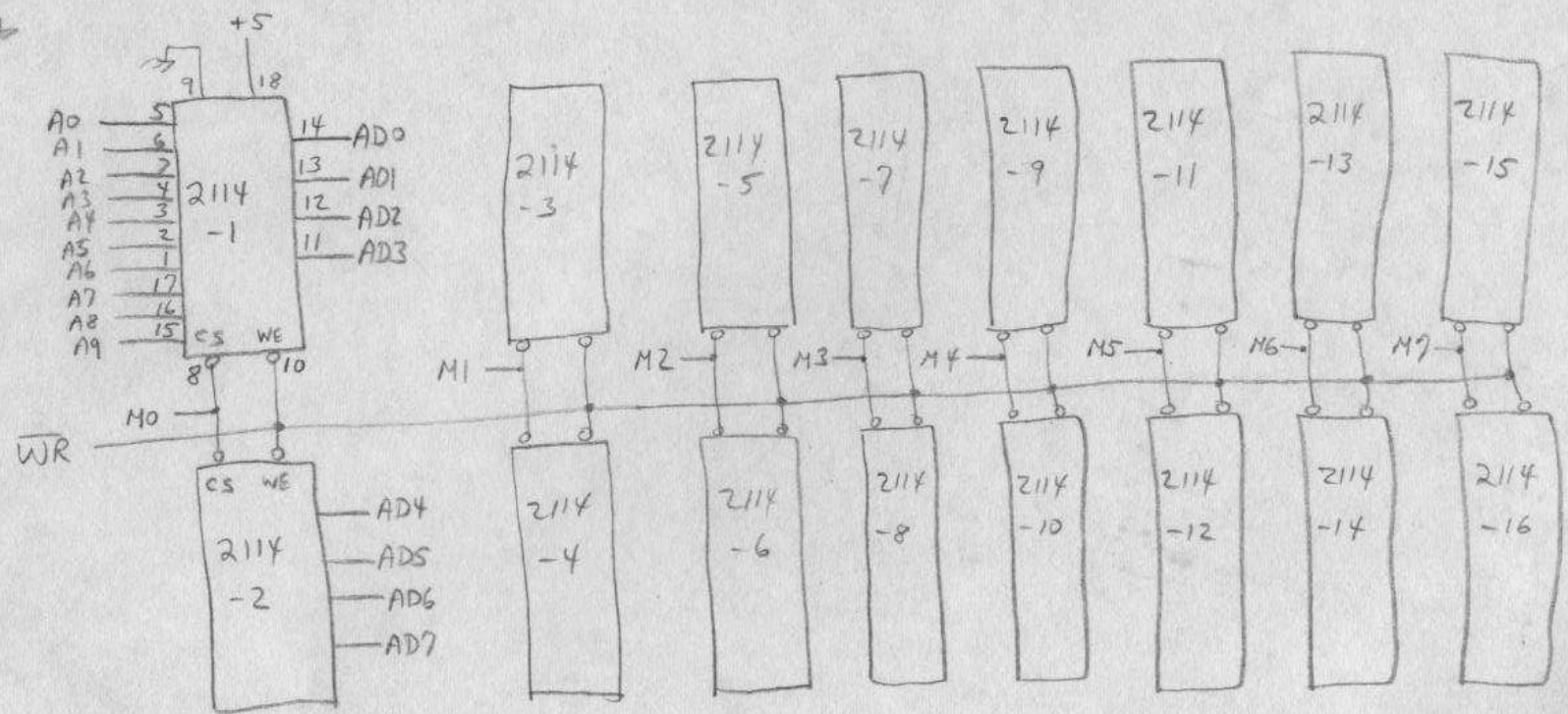
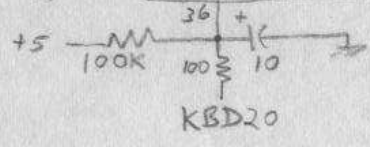
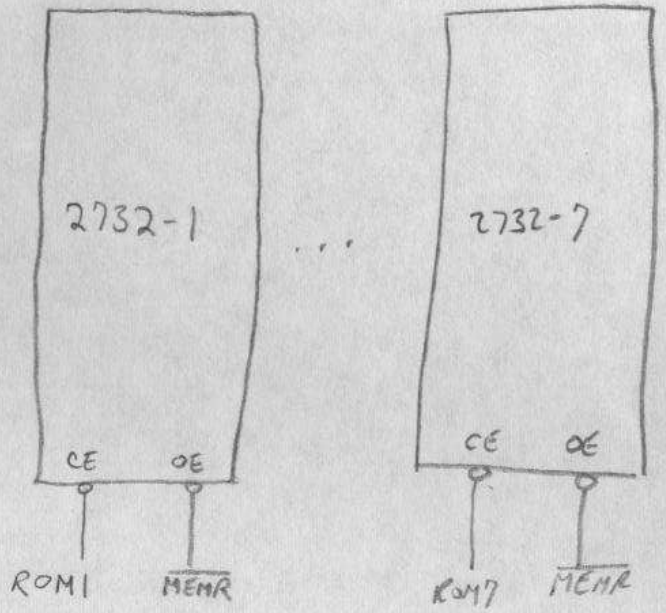
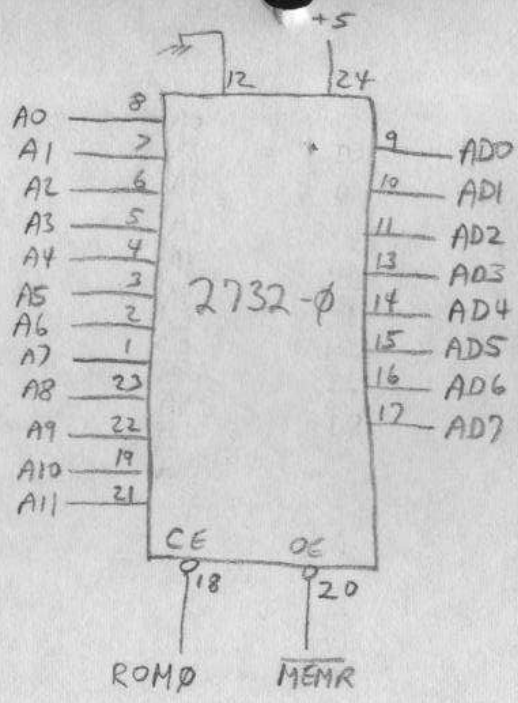
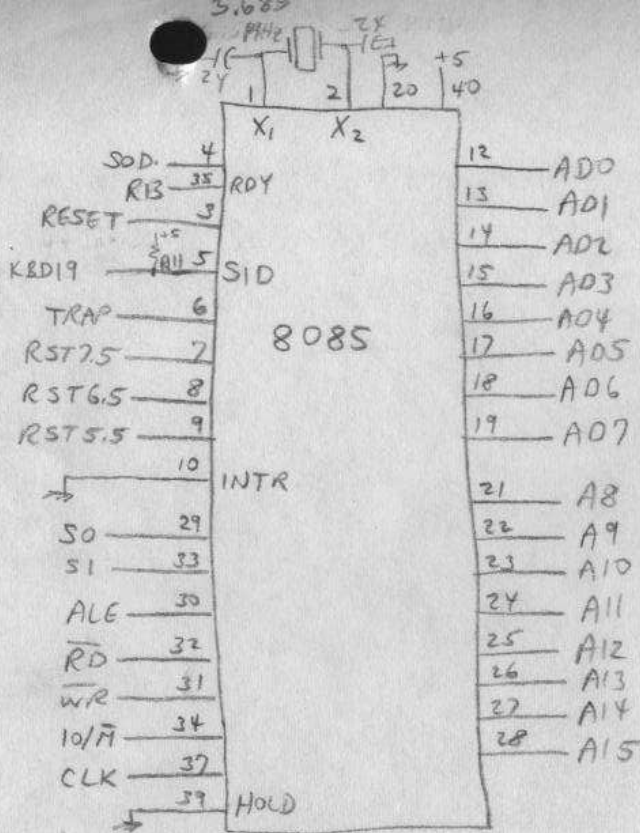
## Computer:

- Intel 8085 with 32K bytes ROM and 8K bytes RAM
- Mini Monitor for low-level tasks
- Complete high-level operating system containing text editor, assembler, BASIC, text formatter, Morse code routines, and utility packages plus complete IBM Selectric printer driver

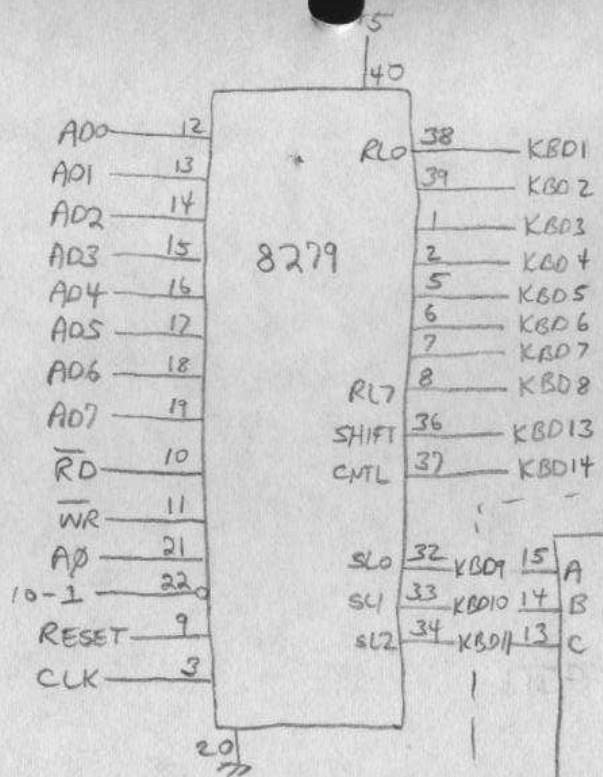
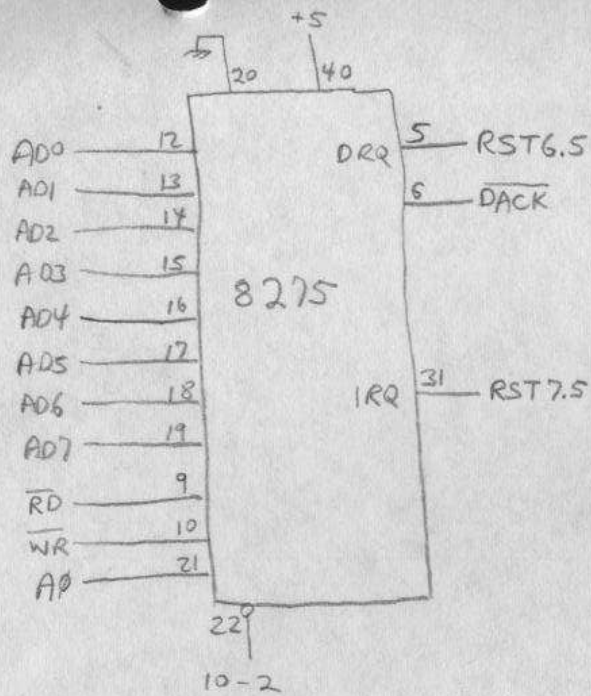
Power Consumption of only 35 Watts



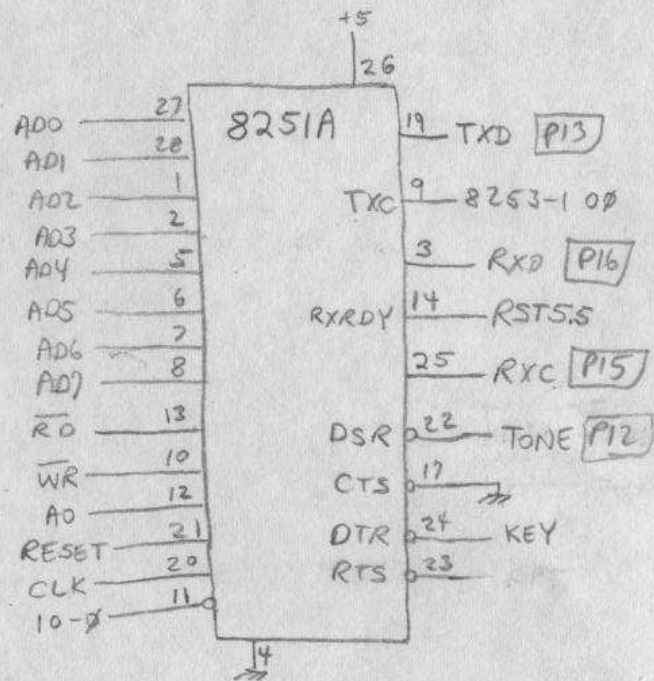
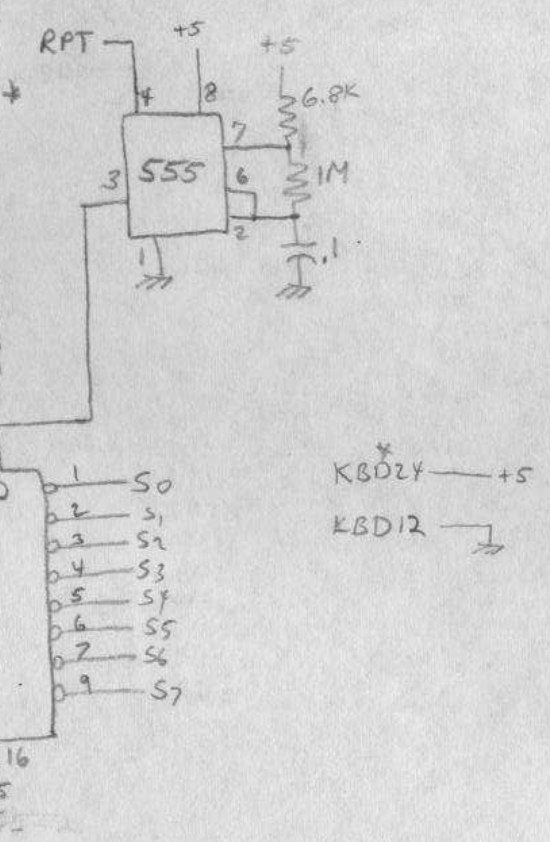




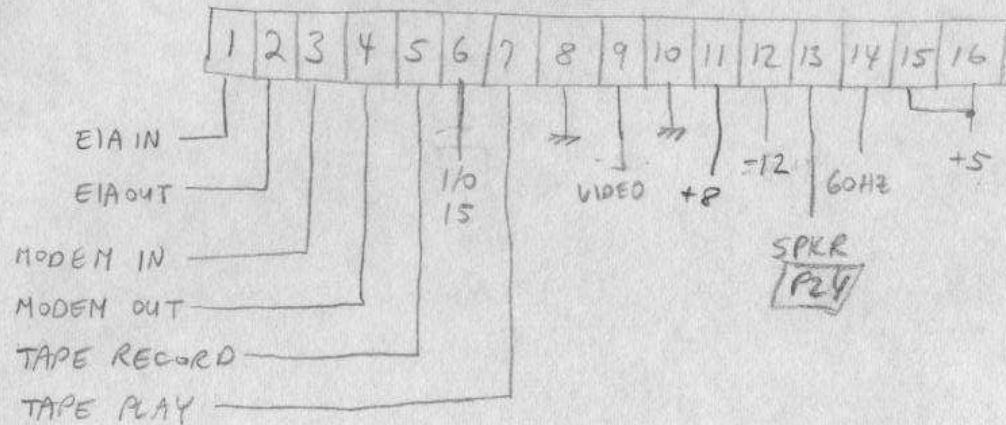
CPU + MEMORY



KEYBOARD

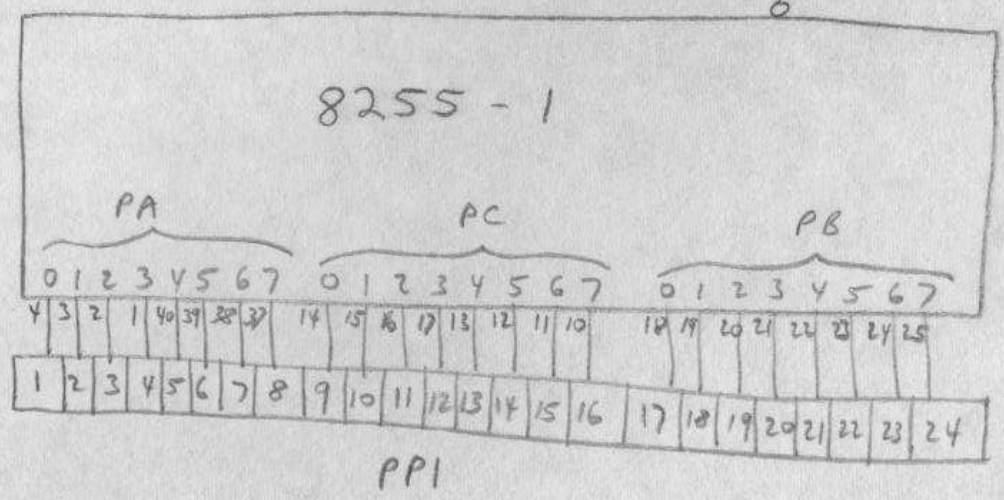
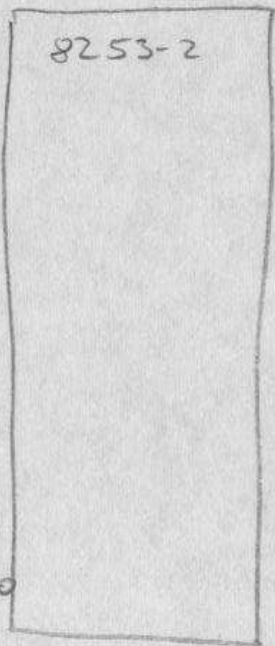
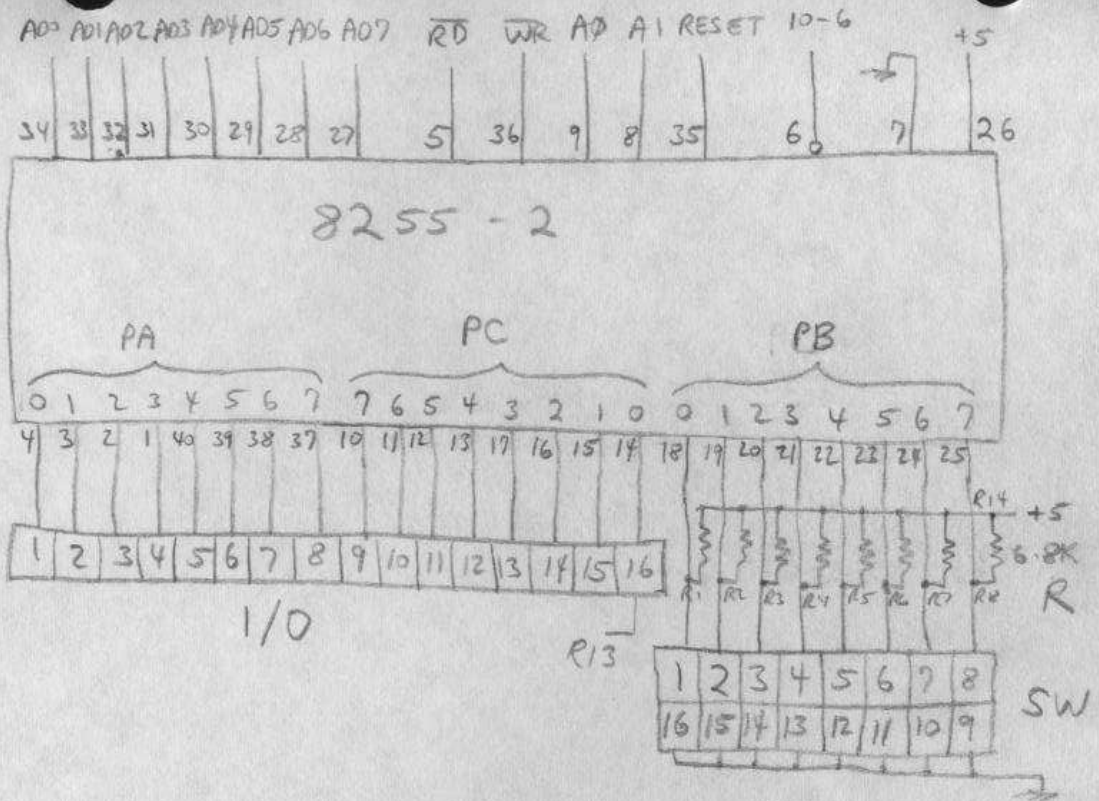
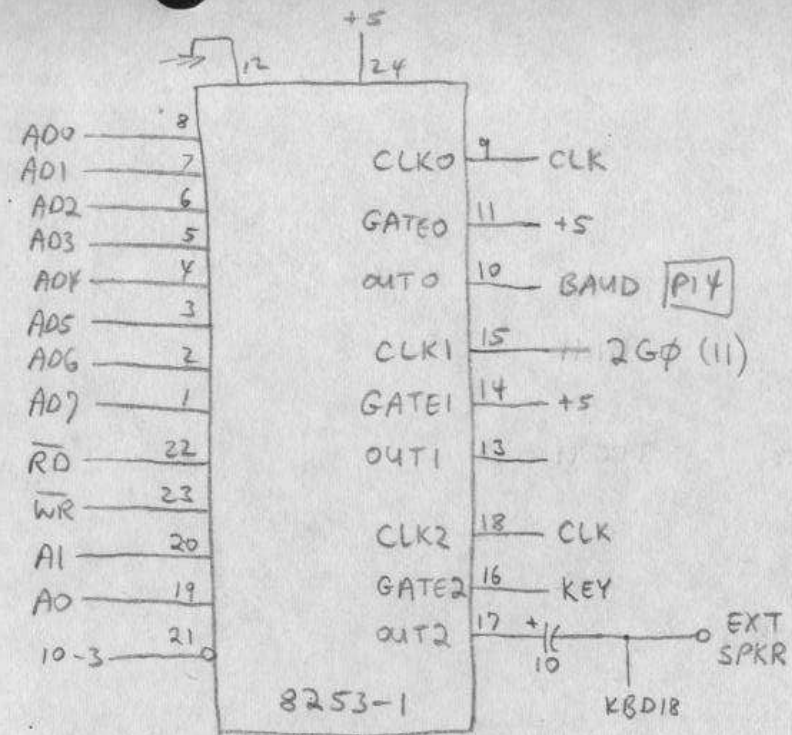


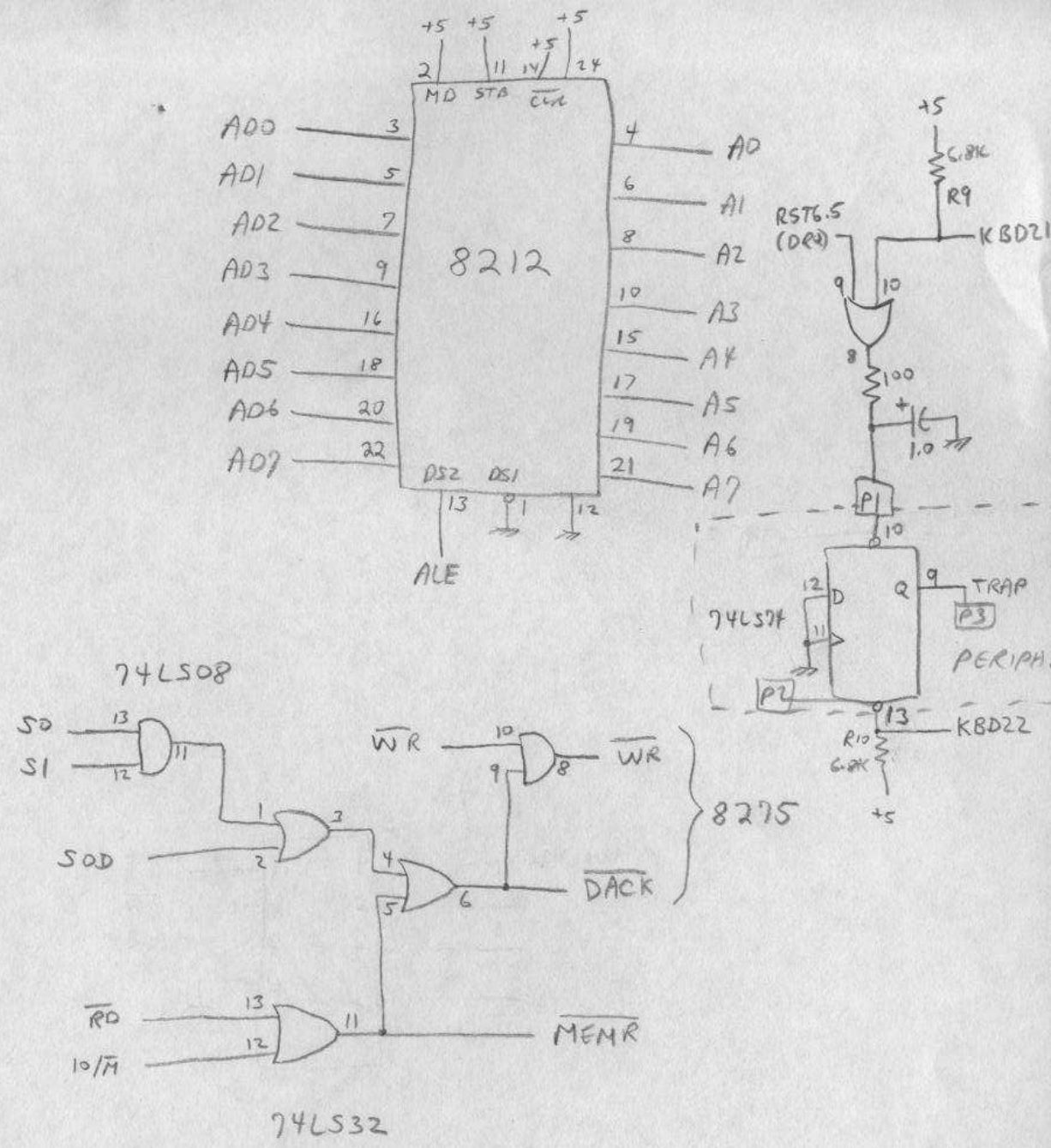
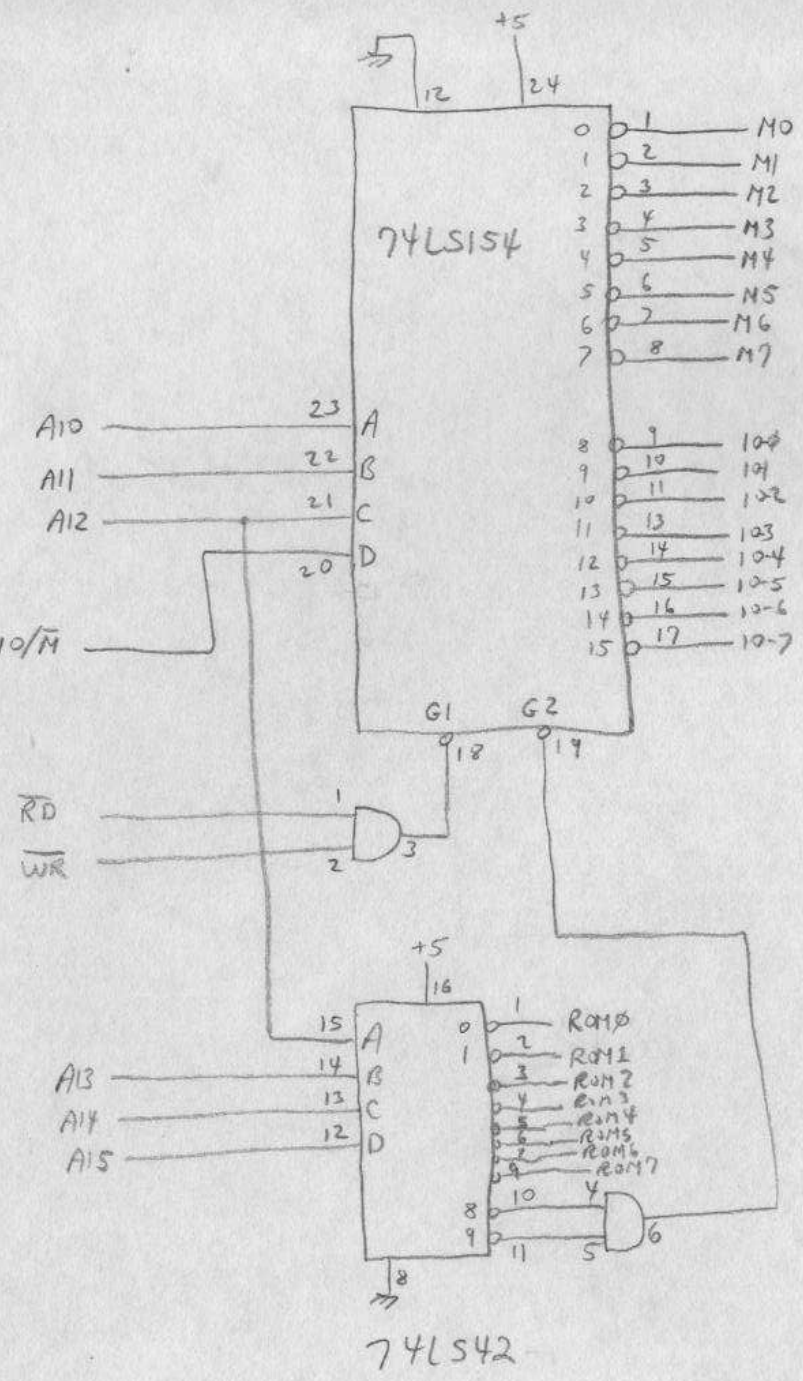
INTERFACE



PERIPHERAL

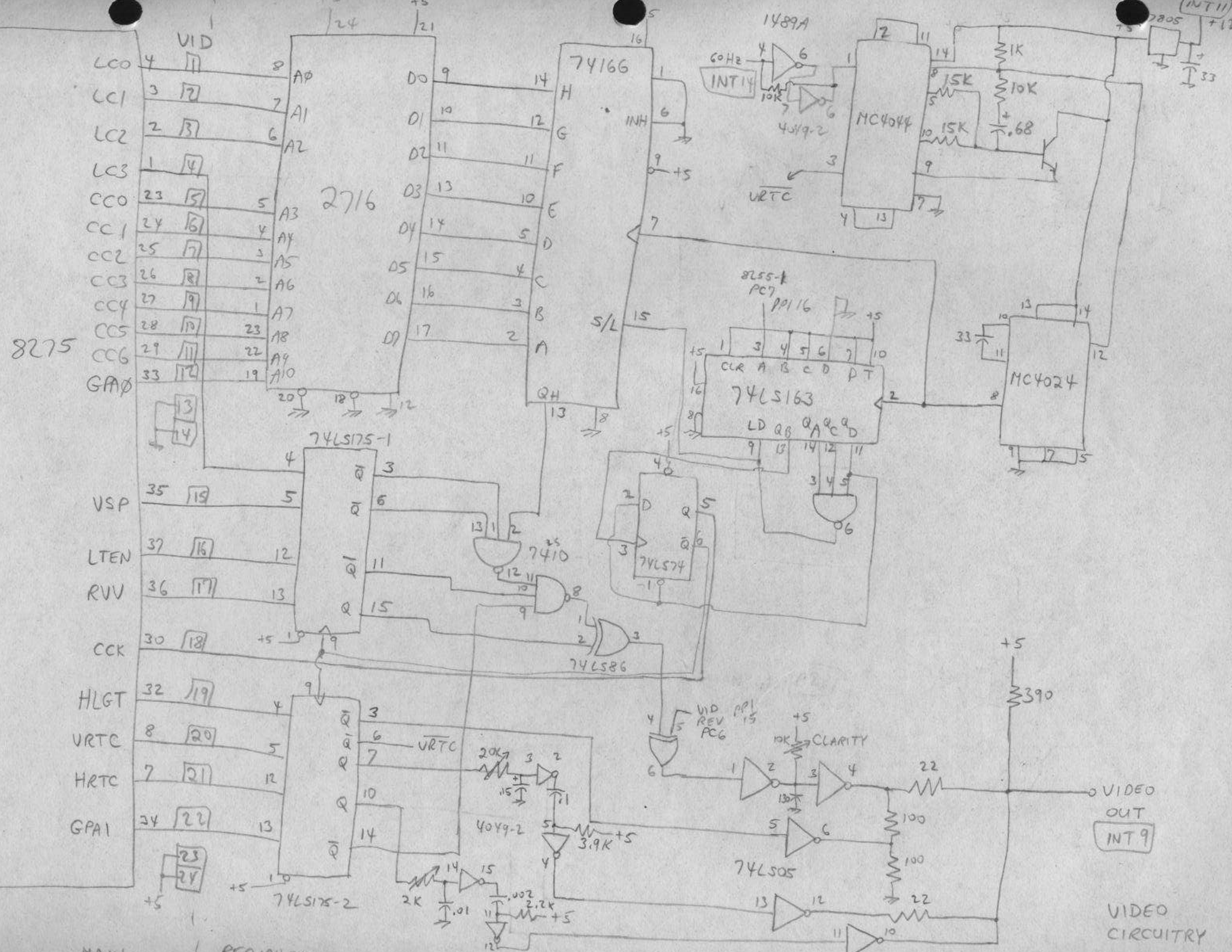






DECODERS

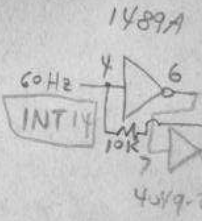




8275

2716

74166



MC4044

74LS163

MC4024

MAIN

PERIPHERAL

VIDEO CIRCUITRY

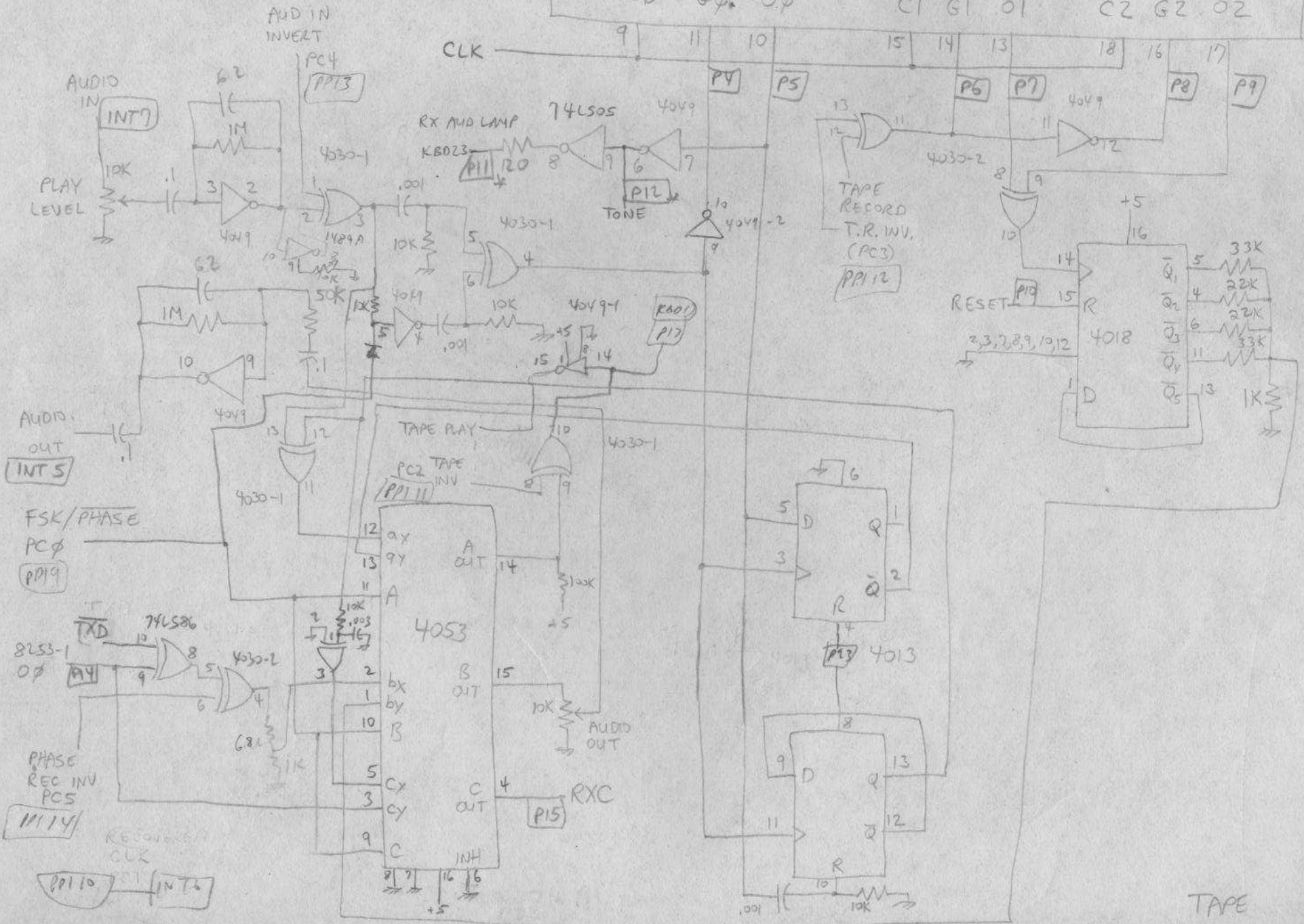
VIDEO OUT

INT 9

8253-2

CO G<sub>0</sub> O<sub>0</sub> CI G<sub>1</sub> O<sub>1</sub> C<sub>2</sub> G<sub>2</sub> O<sub>2</sub>

CLK 9 11 10 15 14 13 18 16 17

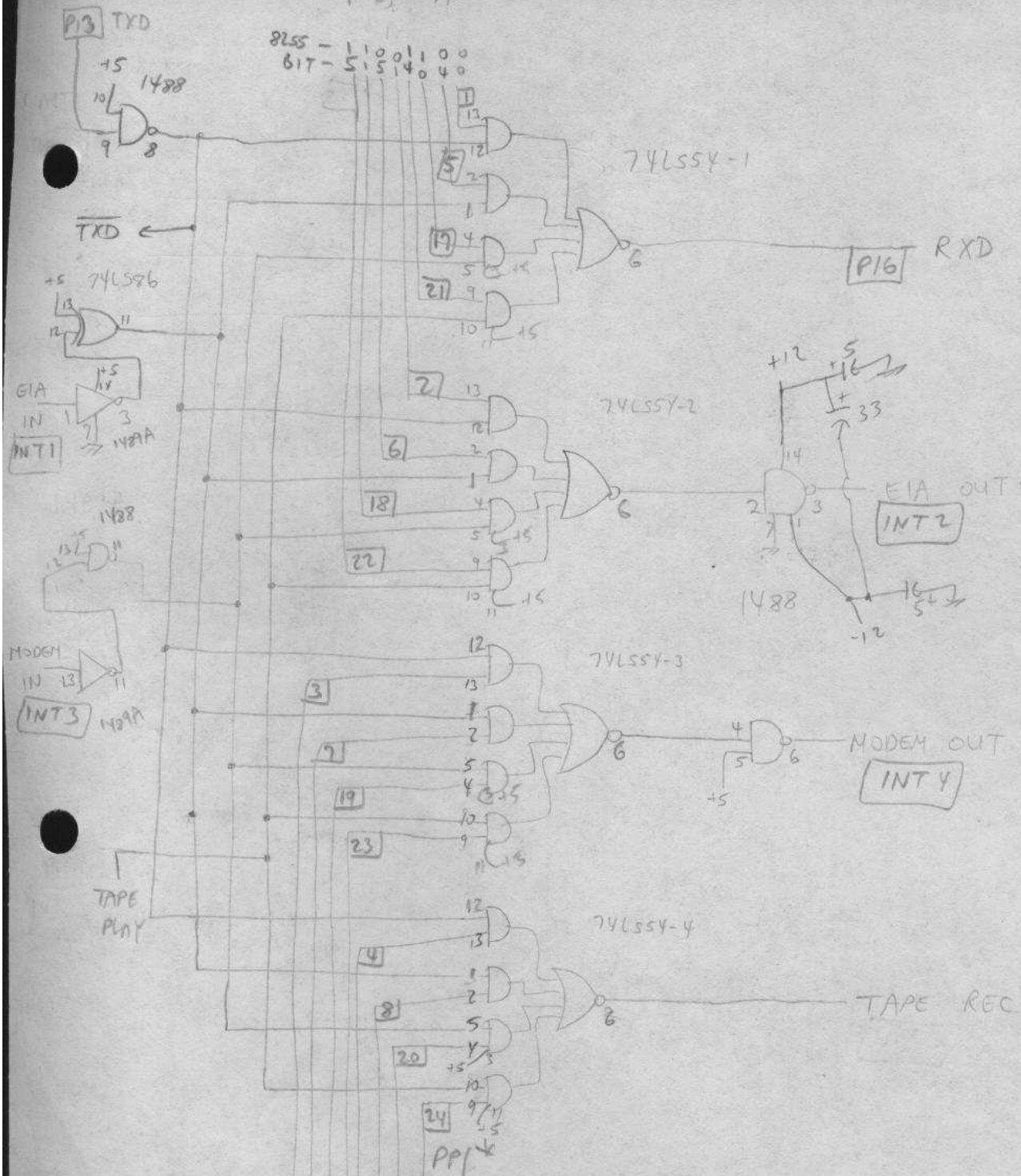


TAPE INTERFACE

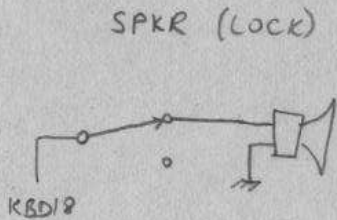
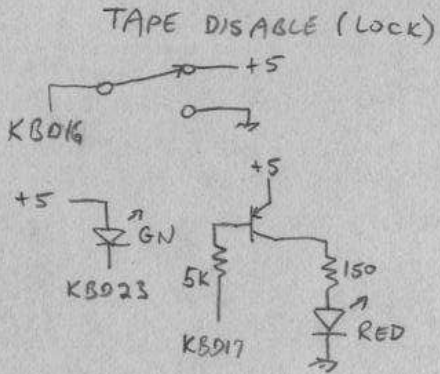
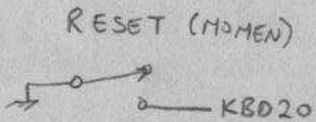
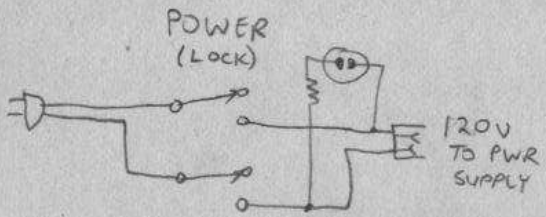


1=B, 0=A

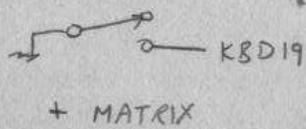
8255 - 11001100  
617 - 51514040



BIT - 26 26 37 37  
8255 - 00 11 00 11



BREAK (MOMEN)



BACK (MOMEN)

MATRIX

DUMP/NEXT (MOMEN)

MATRIX

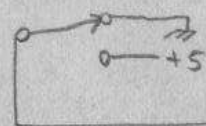
CLEAR (MOMEN)

MATRIX

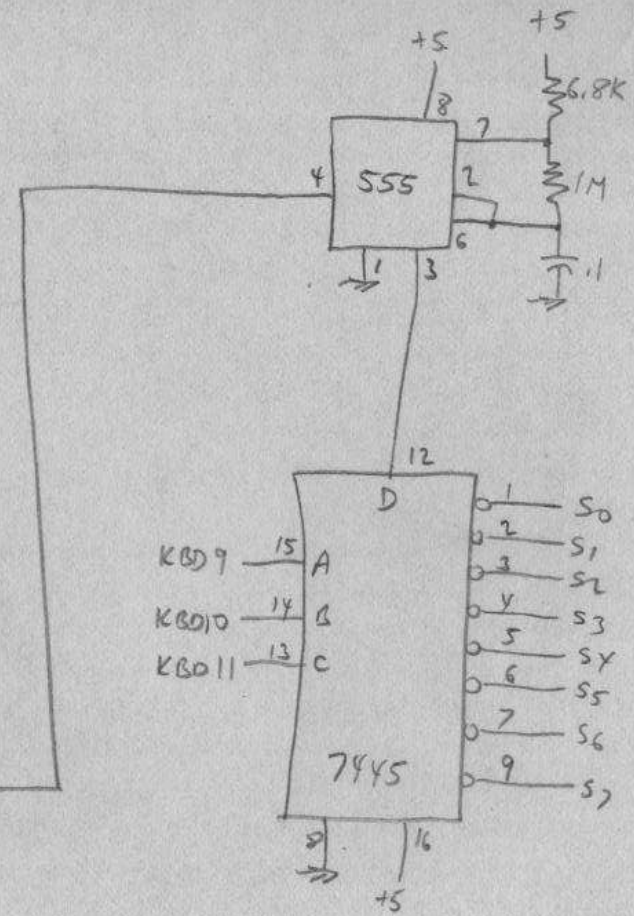
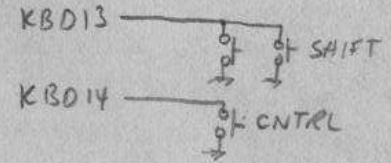
MODE (MOMEN)



RPT (LOCK)



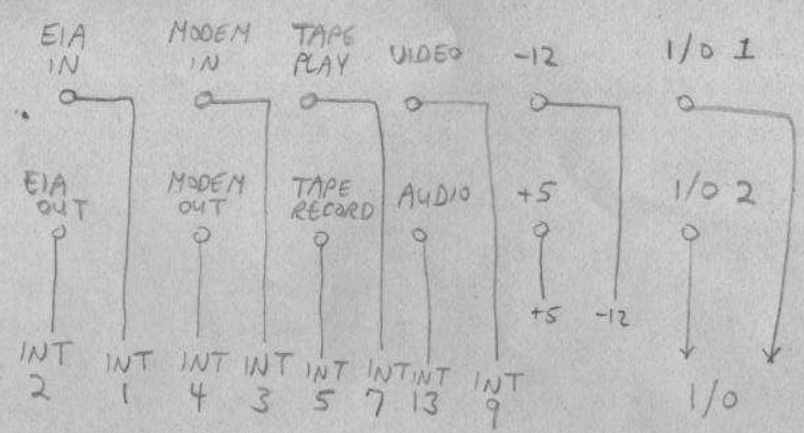
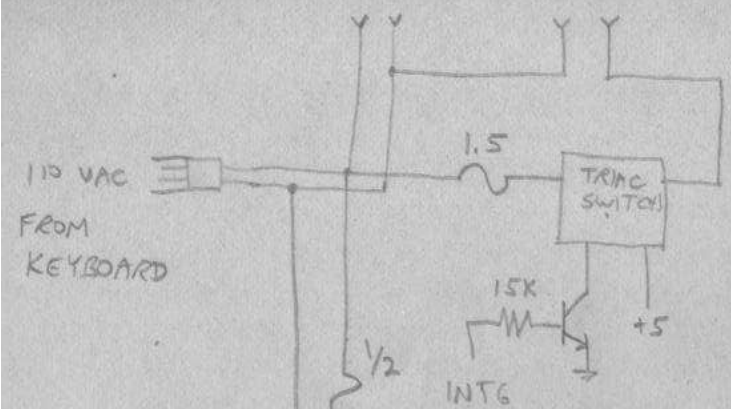
- KBD 1 — RL0
- KBD 2 — RL1
- KBD 3 — RL2
- KBD 4 — RL3
- KBD 5 — RL4
- KBD 6 — RL5
- KBD 7 — RL6
- KBD 8 — RL7



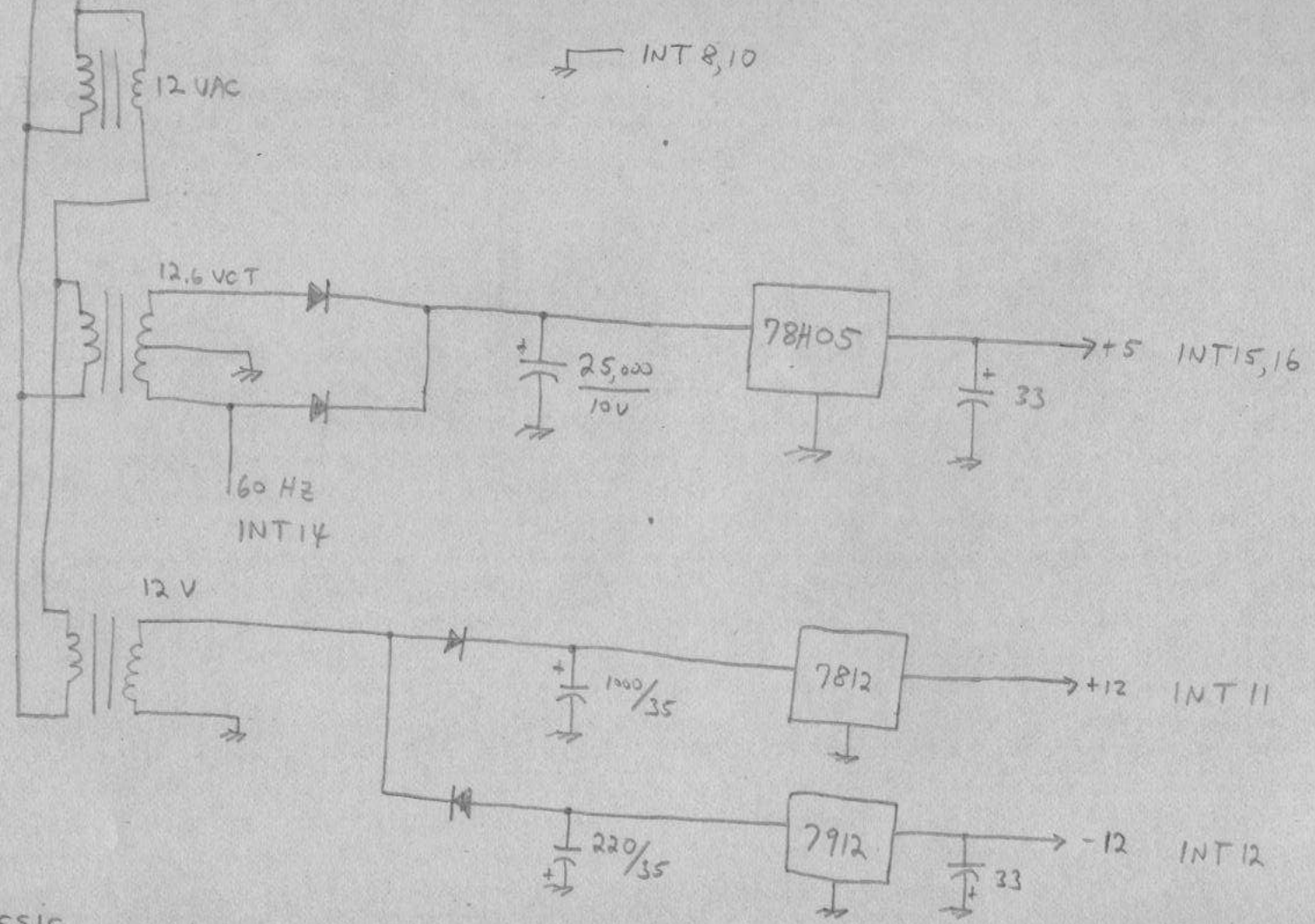
KEYBOARD



CONVENIENCE SWITCHED



INT 8, 10



CHASSIS

8255-1

94H-97H

- PA 0 - UART OUT / UART IN
- 1 - " " / EIA OUT
- 2 - " " / MODEM OUT
- 3 - " " / TAPE RECORD
- 4 - EIA IN / UART IN
- 5 - " " / EIA OUT
- 6 - " " / MODEM OUT
- 7 - " " / TAPE RECORD

- PB 0 - MODEM IN / UART IN
- 1 - " " / EIA OUT
- 2 - " " / MODEM OUT
- 3 - " " / TAPE RECORD
- 4 - TAPE PLAY / UART IN
- 5 - " " / EIA OUT
- 6 - " " / MODEM OUT
- 7 - " " / TAPE RECORD

- PC 0 - FSK/PHASE
- 1 - AC
- 2 - TAPE PLAY INVERT
- 3 - TAPE RECORD INVERT
- 4 - AUDIO IN INVERT
- 5 - PHASE RECORD INVERT
- 6 - VIDEO REVERSE
- 7 - 7/8 DOTS.

USART DTR - KEY  
 RTS - RPT  
 DSR - TONE

CPU SID - BREAK

8255-2

98H-9BH

- PB 0 - SW0 (COMP/TERM)
- 1 - SW1 (OS/AMSAT)
- 2 - SW2 (66/32)
- 3 - SW3 (16/22)
- 4 - SW4 (SOLID/BLINK)
- 5 - SW5 (MIN/MAX MEM)
- 6 - SW6 (300/1200/2400/9600)
- 7 - SW7

8251A: DATA 80 URDAT  
 CONTROL/STAT 81 UR

8279: DATA 84 KBDAT  
 CONTROL/STAT 85 KB

8275: PARAMETER REG 88 <sup>CRTPA</sup>  
 COMMAND REG 89 <sup>CET</sup>

8253-1: BAUD RATE 8C TIMBR  
 DOT CLOCK 8D TIMDC  
 AUDIO 8E TIMAU  
 MODE 8F TIML

8253-2: ONE-SHOT 90 TIMOS  
 SPACE TONE 91 TIMST  
 MARK TONE 92 TIMMT  
 MODE 93 TIMZ

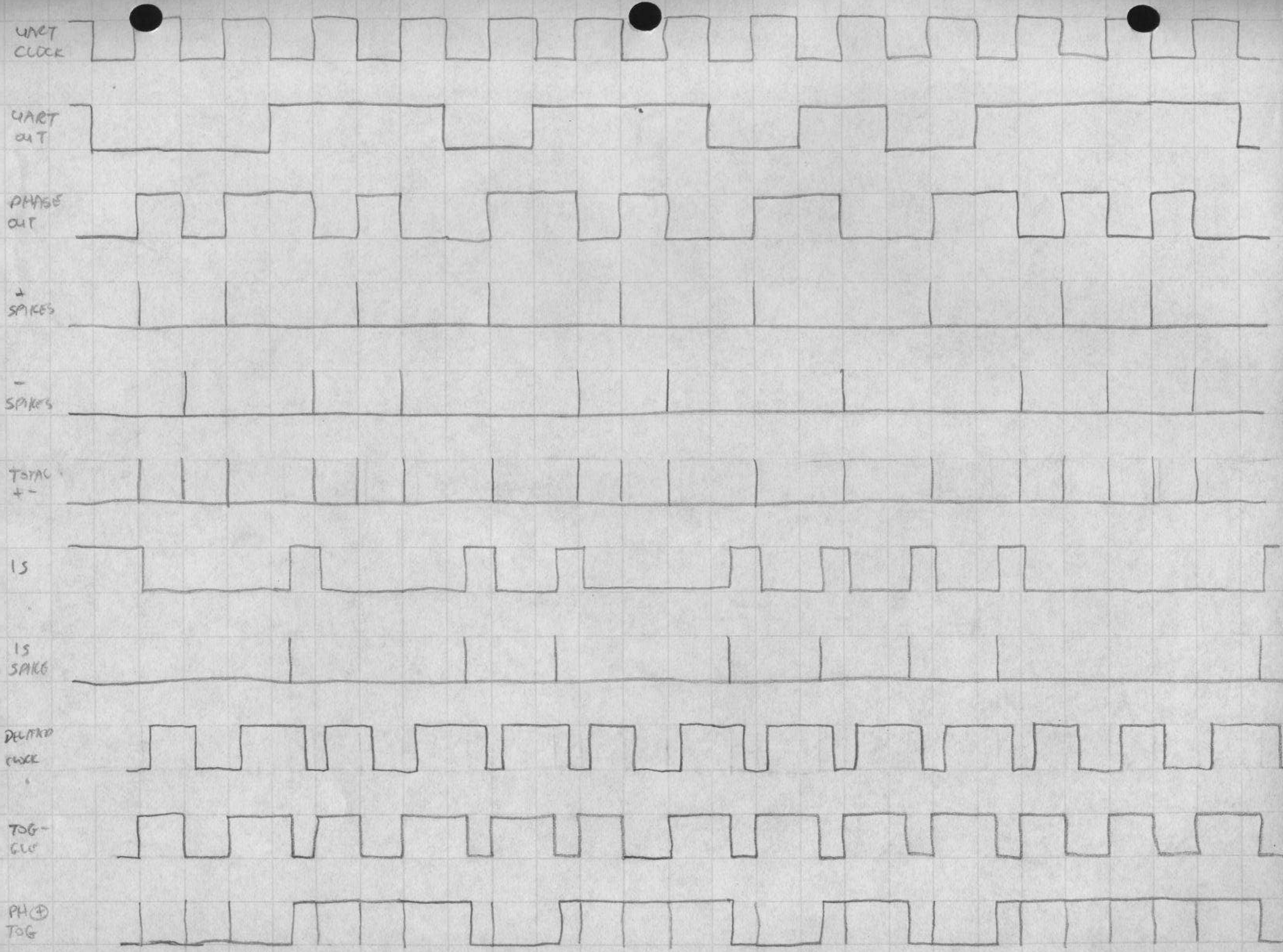
8255-1: PORT A 94 PPI1A  
 PORT B 95 PPI1B  
 PORT C 96 PPI1C  
 CONTROL 97 PPI1

8255-2: PORT A 98 PPI2A  
 SWITCH 99 PPI2B  
 PORT C 9A PPI2C  
 CONTROL 9B PPI2



PER CONNECTOR

- |                         |                       |
|-------------------------|-----------------------|
| 1 - KBD21, 2474-10      | 13 - TXD              |
| 2 - KBD22, 2474-13      | 14 - BAND             |
| 3 - TRAP                | 15 - RxC              |
| 4 - G4                  | 16 - RxD              |
| 5 - 0φ                  | 17 - KBD17, TAPE PLAY |
| 6 - G1                  | 18 - GND              |
| 7 - 01                  | 19 - N OUT            |
| 8 - G2                  | 20 - GND              |
| 9 - 02                  | 21 -                  |
| 10 - RESET              | 22 -                  |
| 11 - KBD23, RX AND LAMP | 23 - KBD16 (ALM INH)  |
| 12 - TONE               | 24 - SPKR (INT13)     |





UART  
CLK

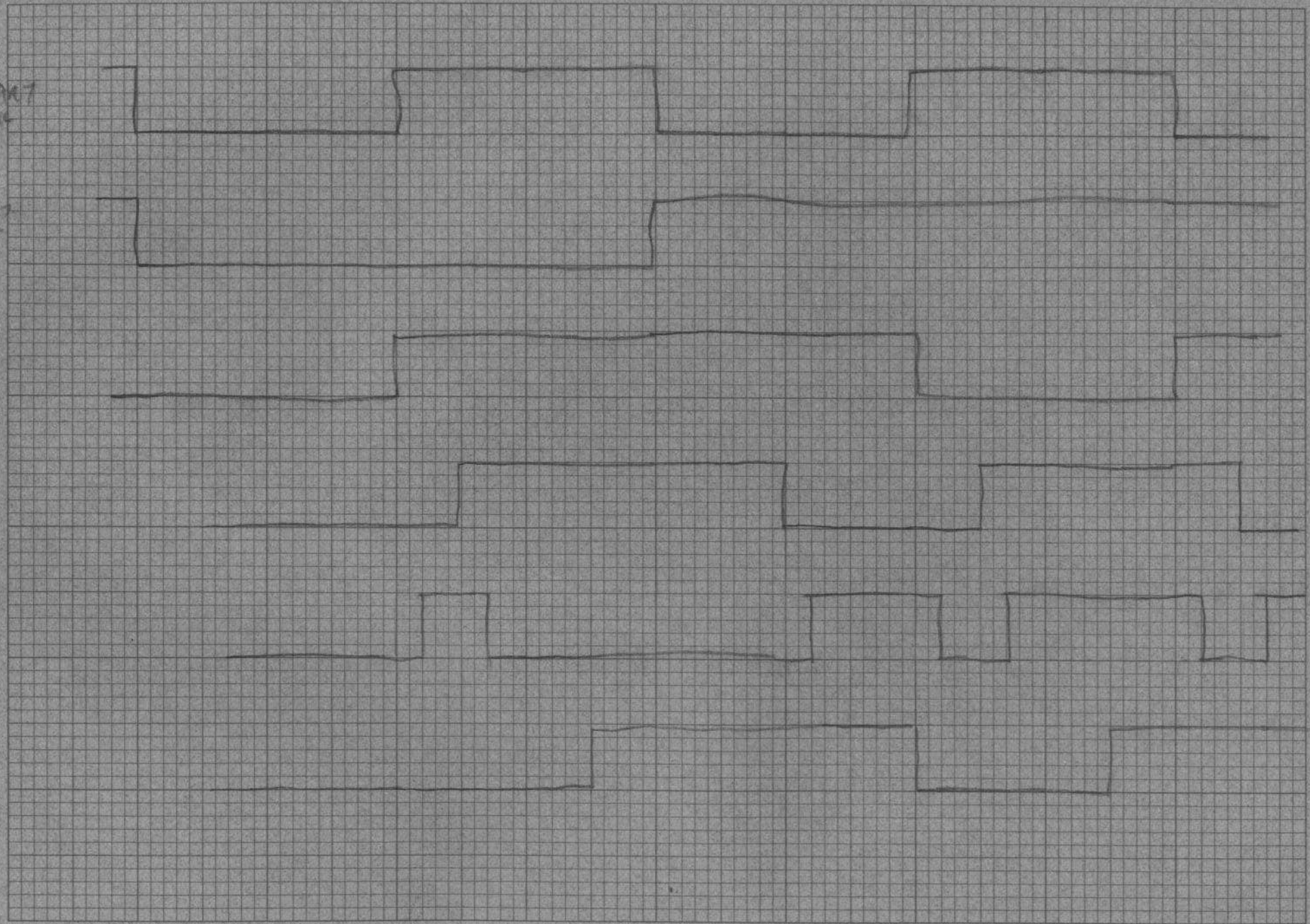
UART  
DIT

PHI  
DIT

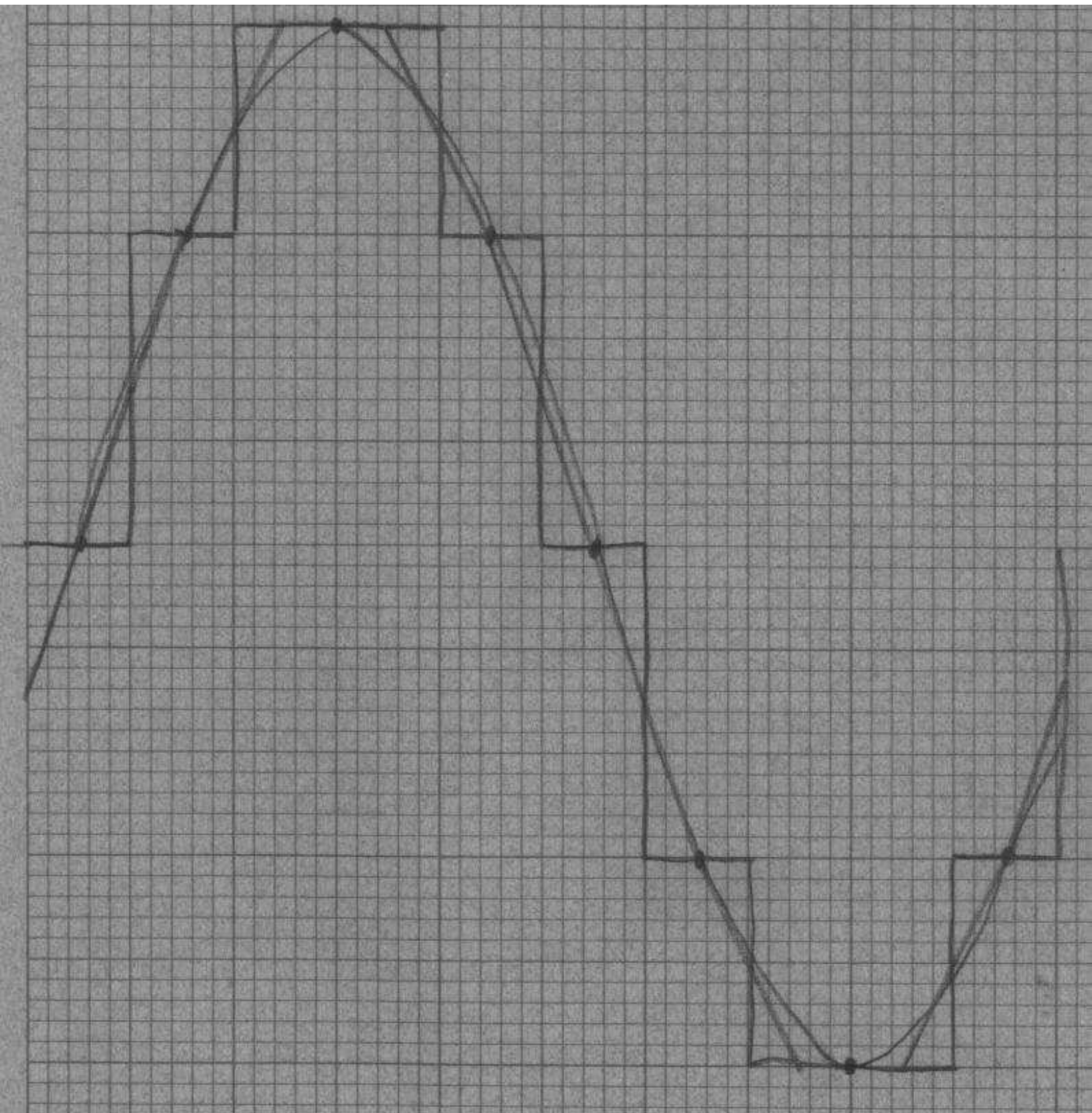
REC  
CLK

REC  
DATA

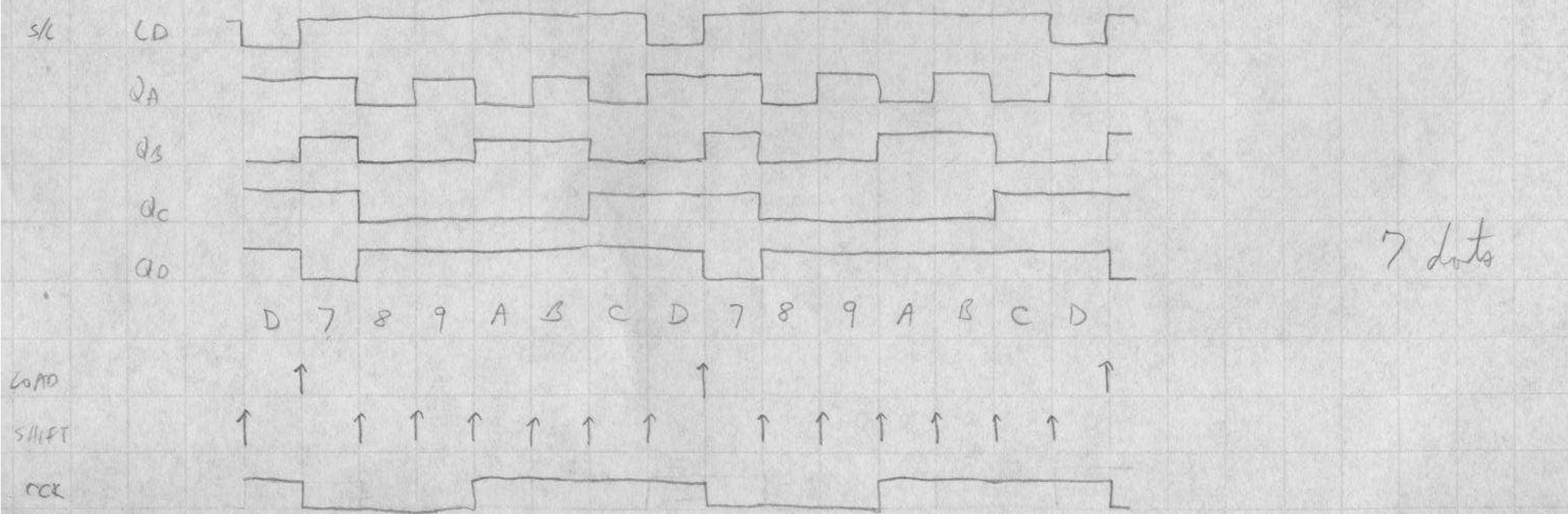
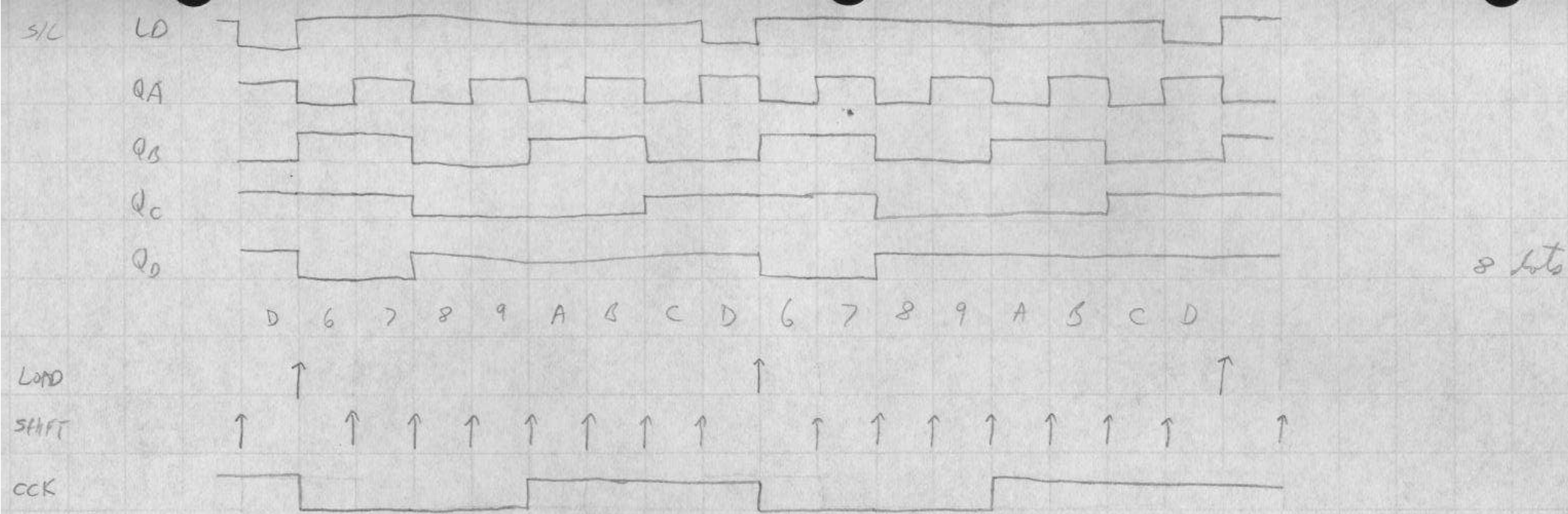
REC  
CLK  
DEL



Delay 25 ns







VC0  
○

V4

24

12

163

175  
1

V10

PP1

SY  
1

05

86

74

175  
2

166

275

PP2

SY  
2

○  
CLARITY

18

494

53

13

30

30

29

NT

SP

SY  
3

SY  
4

49-2

○  
ADD  
IN

○  
ADD  
MT

○  
VERT

○  
HORIZ

PERIPHERAL  
- TOP

32

53  
1

53  
2

51<sup>32</sup>

154

42

08

53

2732  
0

2732  
1

2732  
2

2732  
3

2732  
4

2732  
5

2732  
6

2732  
7

2114  
4

3

5

7

9

11

13

15

K60

PP1

2

4

6

8

10

12

14

16

V10

PP1

8085

272

79

75

55  
1

55  
2

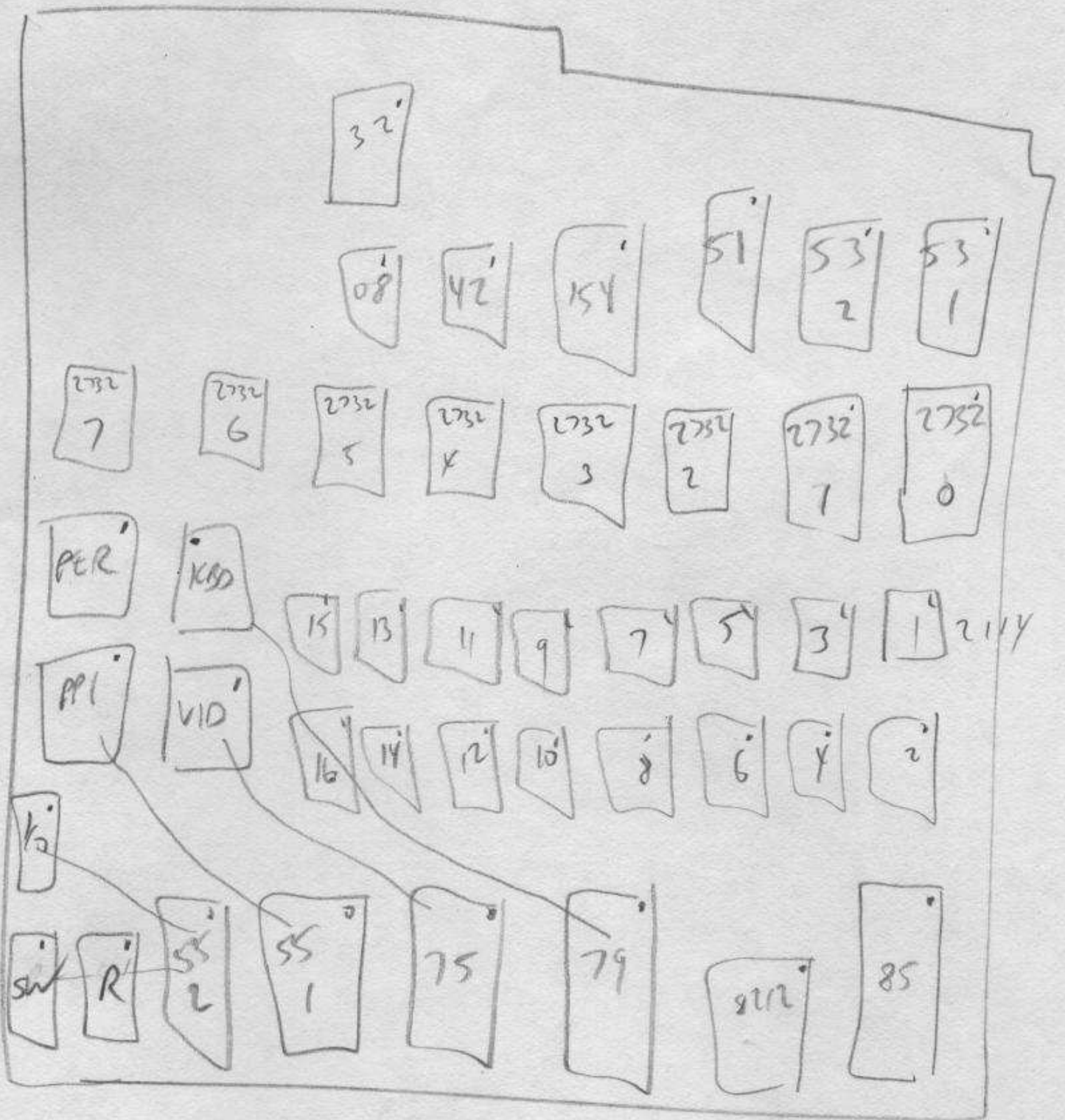
110

R

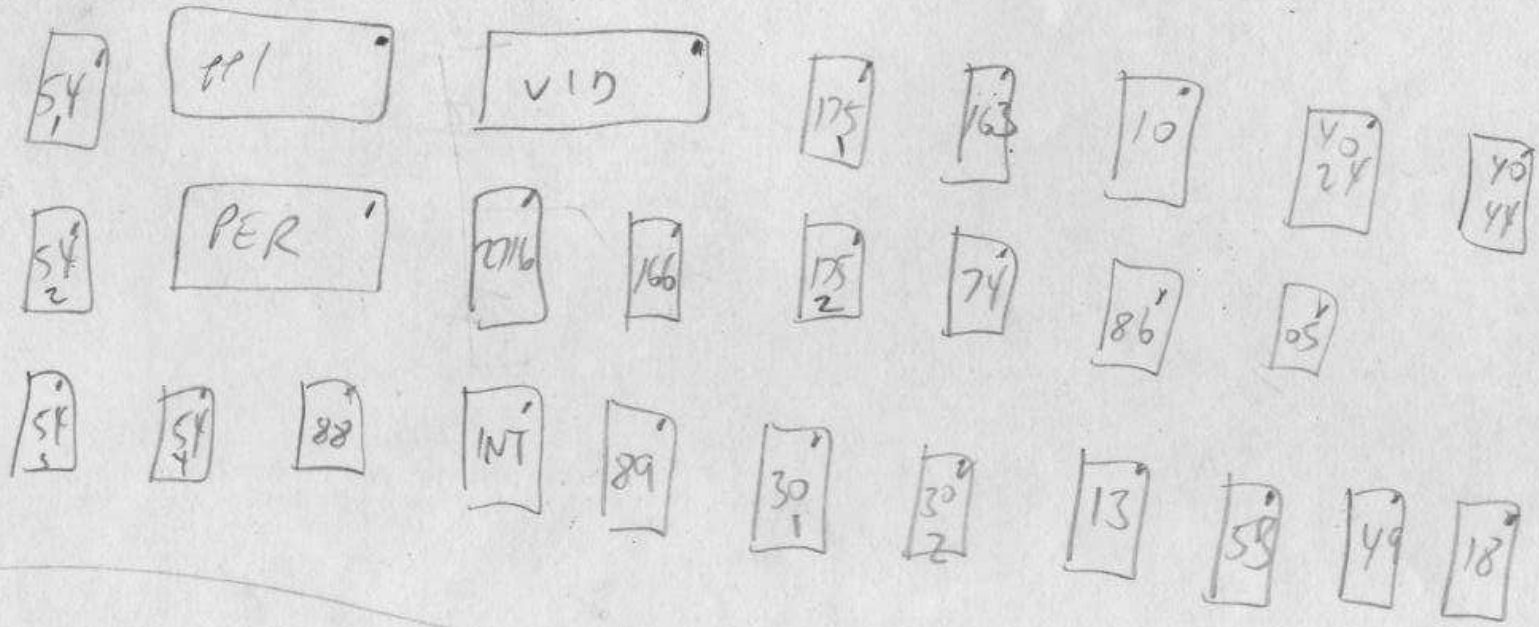
SW

MAIN -  
TOP





MAIN -  
BOT TO M

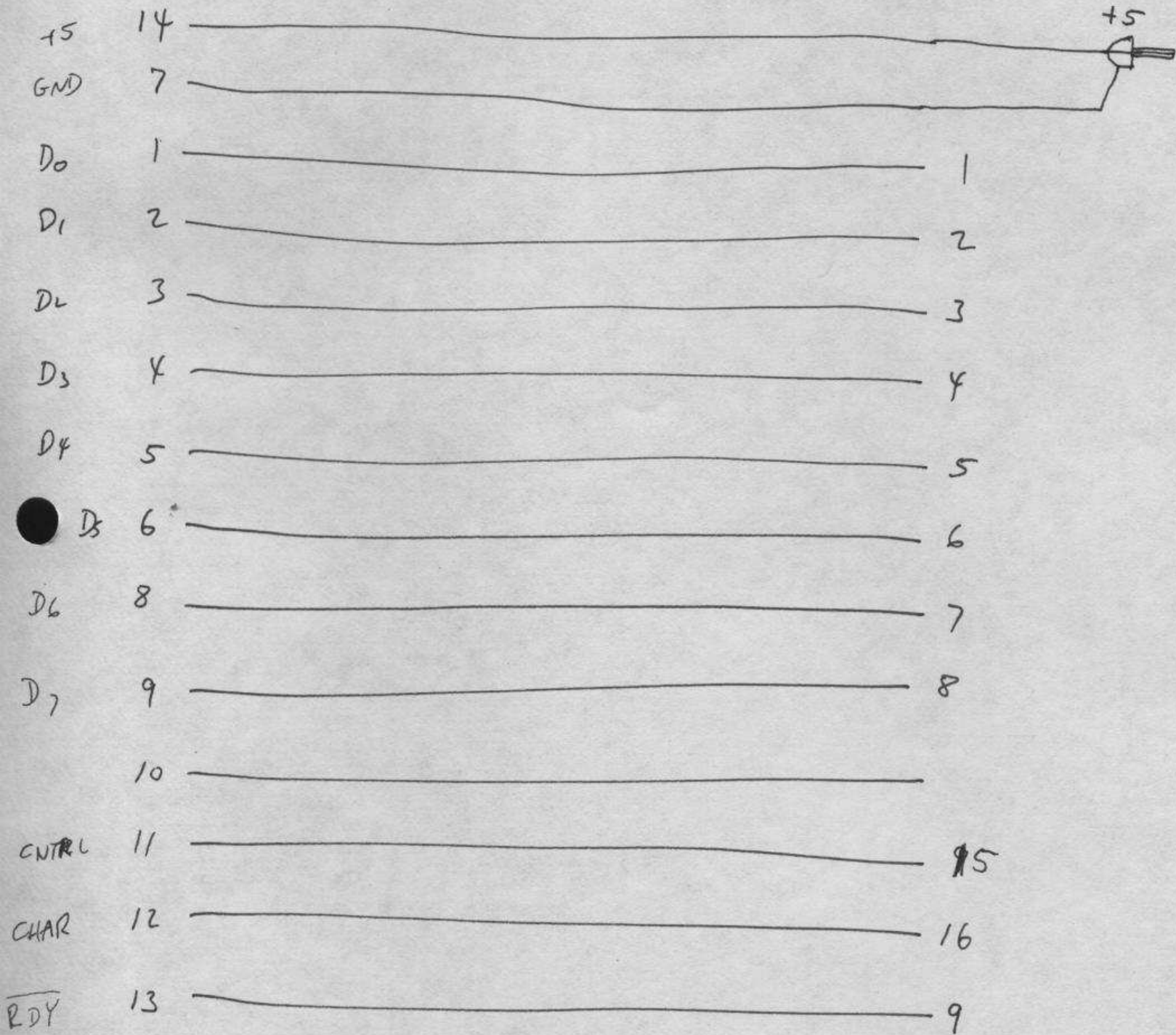


PERIPHERAL

- BOTTOM

SELECTRIC  
INTERFACE

I/O  
CONNECTOR





		mo	
JW	8085	170	
JW	8251A	100	
JW	(2) 8253	280	
JW	(2) 8255	240	
JW	8275	160	
JW	8279	120	
JW	8212	90	
JW	2716	57	
JW	(2) 2732	100	
JW	(16) 2114	1280	

KEY - 24  
 I/O - 16  
 INTERFACE - 16  
 SW - 16  
 PULLUP - 14

	NE555	
	74LS05	3.6
	74LS08	4.4
	74LS10	1.8
	74LS32	4.9
	74LS42	7
	7445	43
(4)	74LS54	4
	74LS74	4
	74LS86	6
	74LS154	9
	74LS163	19
	74166	72
(2)	74LS175	22

A	40 - 5	
A	28 - 1	
A	24 - 8	15
A	18 - 16	
	16 - 11	12
	14 - 19	10
A	8 - 1	

	MC4024	
	MC4044	
	CD4013	
	CD4018	
(2)	CD4030	
(2)	CD4049	
	CD4053	

4 cables 2x24  
 1 cable 1x16

1488  
 1489

447  
K7AL

100K  
100R  
10M<sup>+</sup>(2)

PER  
1K  
39K  
2.7K (2)  
680  
.47M<sup>+</sup>  
NPN  
33p<sup>+</sup>  
10K pot (2)  
22R (2)  
390R

K50  
6.8K  
1M  
.1M<sup>+</sup>  
24-1  
16-1  
8-1  
3

40-5  
28-1  
24-10  
18-16  
16-3  
14-3  
38

100R (3)  
1K pot  
1M (2)  
100p<sup>+</sup> (2)  
.1M<sup>+</sup> (3)  
100 (3)

555  
7445  
KBD-24

8085  
8251  
8253(2)  
8255(2)  
8275  
8279  
8212  
2732  
2114(16)  
7408  
7432  
7442  
74154  
KBD-24  
PER-24  
PPI-24  
VID-24  
1/0-16  
SW-16  
-14

10K (3)  
50K  
33K (2)  
20K (2)  
1K  
24-4  
16-9  
14-15  
2716 28  
7405  
7410  
7454(8)  
7474  
7486  
74163-16  
74166-16  
74175(2)-16  
7024-14  
7044-14  
7013-14  
7018-16  
7030(2)-14  
7049(2)  
7053-16  
1488-14  
1489-14  
1NT-16

PER-24  
PPI-24  
VID-24

$$K_v = 33.6 \times 10^6 \text{ rad/A/V}$$

$$K_p = .111 \text{ V/rad}$$

lockup time  $t = 1 \mu$

$$\omega_n = \frac{4.5}{1} = 4.5 \text{ rad/sec}$$

$$R_1 C = \frac{.5 K_p K_v}{\omega_n^2 N}$$

$$= \frac{(.5)(.111)(33.6 \times 10^6)}{(4.5)^2 (2 \times 10^5)}$$

$$\frac{1.5 \times 10^6}{.5 \times 10^7} = .3$$

$$R_1 C = 0.46$$

Let  $C = 5 \times 10^{-6}$

$$R_1 = \frac{.46}{C} = \frac{.46}{5 \times 10^{-6}} = .1 \times 10^6 = 100 \text{K}$$

$$R_2 = \frac{25}{C \omega_n} = \frac{1.6}{4.5 C} = \frac{1}{2.8 C}$$

$$C = 5 \times 10^{-6}$$

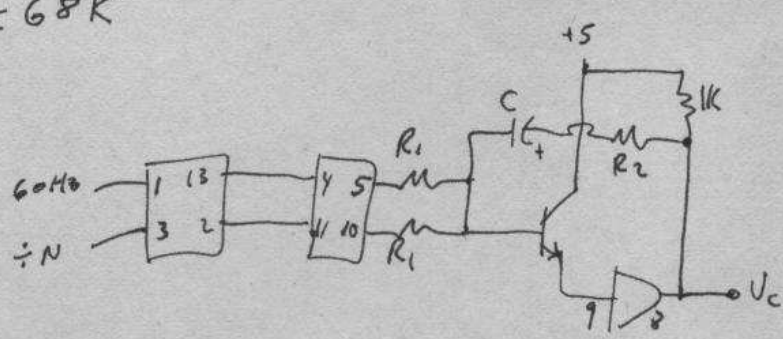
$$R_2 = \frac{1}{2.8 \times 5 \times 10^{-6}} = \frac{1}{14 \times 10^{-6}} = .07 \times 10^6 = 70 \text{K}$$

$\approx 68 \text{K}$

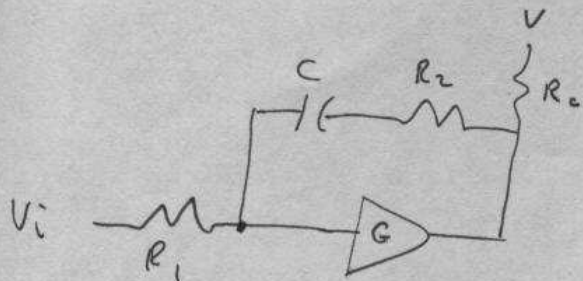
R <sub>1</sub>	C	R <sub>2</sub>
100K	5μF	68K
15K	33μF	10K
5K	100μF	3.3K
2.7K	200μF	1.8K
1M	.5μF	680K

$$\frac{.7 \times 10^4}{\times 3} = \times 1.1 \times 10^{-4}$$

$4.2 \times 10^2$   
420







$$i_c = G i_b$$

$$V_o = \cancel{5} + \cancel{10^3} i_c V - i_c R_c$$

$$i_b = \frac{V_i}{R_1} + \frac{V_o}{R_2 + \frac{1}{sC}}$$

$$V_o = V - G i_b R_c$$

$$V_o = V - G R_c \left[ \frac{V_i}{R_1} + \frac{V_o}{R_2 + \frac{1}{sC}} \right]$$

$$V_o = V - \frac{R_c}{R_1} G V_i + \frac{R_c}{R_2 + \frac{1}{sC}} G V_o$$

$$\left[ 1 + \frac{R_c}{R_2 + \frac{1}{sC}} G \right] V_o = V - \frac{R_c}{R_1} G V_i$$

$$\frac{\bar{V}_o}{V_i} = \frac{\frac{R_c}{R_1} G}{1 + \frac{R_c}{R_2 + \frac{1}{sC}} G} = \frac{R_c/R_1}{\frac{R_c}{R_2 + \frac{1}{sC}} + \frac{1}{G}}$$

$$\text{IF } \frac{R_c}{R_2 + \frac{1}{sC}} \gg \frac{1}{G}, \quad \frac{\bar{V}_o}{V_i} = \frac{R_c/R_1}{R_c/(R_2 + \frac{1}{sC})} = \frac{R_2 + \frac{1}{sC}}{R_1} = \frac{R_2}{R_1} + \frac{1}{sR_1 C}$$

$$G \gg \frac{R_2}{R_c} + \frac{1}{sR_1 C}$$

$$G \gg 1000 \rightarrow G \geq 10,000$$

ASCII	KEY	NORMAL	ALT	ASCII	KEY	NORMAL	ALT
00 (0)	CNTRL ESC	∅		1C (28)	CNTRL ,	FS	
01 (1)	" A	cA		1D (29)	" -	GS	
02 (2)	" B	cB		1E (30)	" .	RS	
03 (3)	" C	cC		1F (31)	" /	US	
04 (4)	" D	cD		20 (32)	SPACE	∅	
05 (5)	" E	cE or BIT 7		21 (33)		!	
06 (6)	" F	cF or HOME		22 (34)		"	
07 (7)	" G	cG or BELL		23 (35)		#	
08 (8)	" H	cH or ←		24 (36)		\$	
09 (9)	" I	cI or TAB		25 (37)		%	
0A (10)	LF	cJ or LF		26 (38)		&	
0B (11)	CNTRL K	cK or ↓		27 (39)		'	
0C (12)	" L	cL or CLR		28 (40)		(	
0D (13)	CR	cM		29 (41)		)	
0E (14)	CNTRL N	cN		2A (42)		*	
0F (15)	CNTRL O	cO		2B (43)		+	
10 (16)	" P	cP		2C (44)		,	
11 (17)	" Q	cQ		2D (45)		-	
12 (18)	" R	cR		2E (46)		.	
13 (19)	" S	cS		2F (47)		/	
14 (20)	" T	cT		30 (48)		∅	
15 (21)	" U	cU		31 (49)		1	
16 (22)	" V	cV		32 (50)		2	
17 (23)	" W	cW		33 (51)		3	
18 (24)	" X	cX or →		34 (52)		4	
19 (25)	" Y	cY or LIT		35 (53)		5	
1A (26)	" Z	cZ or ↑		36 (54)		6	
1B (27)	ESC	ES		37 (55)		7	



ASCII	KEY	NORMAL	ALT	ASCII	KEY	NORMAL	ALT
38 (56)		8	+	54 (84)		T	X
39 (57)		9	⌘	55 (85)		U	ψ
3A (58)		:	⌘	56 (86)		V	ω
3B (59)		;	⌘	57 (87)		W	Γ
3C (60)		<	⌘	58 (88)		X	Δ
3D (61)		=	⌘	59 (89)		Y	Θ
3E (62)		>	⌘	5A (90)		Z	Λ
3F (63)		?	⌘	5B (91)	CTRL-SHIFT	[	≡
40 (64)	SHIFT ESC	@	α	5C (92)	"	\	Π
41 (65)		A	β	5D (93)	"	]	Σ
42 (66)		B	γ	5E (94)	"	↑	Υ
43 (67)		C	δ	5F (95)	"	—	Φ
44 (68)		D	ε	60 (96)	"	`	Ψ
45 (69)		E	ζ	61 (97)		a	Ω
46 (70)		F	η	62 (98)		b	∞
47 (71)		G	θ	63 (99)		c	Ε
48 (72)		H	ι	64 (100)		d	ς
49 (73)		I	κ	65 (101)		e	□
4A (74)		J	λ	66 (102)		f	†
4B (75)		K	μ	67 (103)		g	°
4C (76)		L	ν	68 (104)		h	§
4D (77)		M	ξ	69 (105)		i	≤
4E (78)		N	π	6A (106)		j	≥
4F (79)		O	ρ	6B (107)		k	≠
50 (80)		P	σ	6C (108)		l	±
51 (81)		Q	τ	6D (109)		m	→
52 (82)		R	υ	6E (110)		n	┌
53 (83)		S	φ	6F (111)		o	└



<u>ASCII</u>	<u>KEY</u>	<u>NORMAL</u>	<u>ALT</u>
70 (112)		p	∩
71 (113)		q	∪
72 (114)		r	⊥
73 (115)		s	
74 (116)		t	
75 (117)		u	
76 (118)		v	
77 (119)		w	
78 (120)		x	
79 (121)		y	
7A (122)		z	
7B (123)	CNTRL-SHIFT 3	{	∟
7C (124)	" 4		∂
7D (125) *	" 5	}	
7E (126)	" 6	~	▽
7F (127)	RUBOUT	ru	■

ALT SET : 84

ATTRIBUTES: | 0 UNDR- REVERSE WHITE ALT HIGH-  
 ERLINE VIDED SET BLINK LIGHT

```

0001 0000 ;PRINT CHARACTER PROGRAM
0002 0000 ;
0003 0000 ;FOR DUMPING THE CHAR.
0004 0000 ;GENERATOR ROM IN AN
0005 0000 ;EASILY READABLE FORMAT.
0006 0000 ;
0007 0000 ;DUMPS A 2716 (2K X 8)
0008 0000 ;
0009 0000 ;
0010 0000 ;
0011 0000 ;
0012 5800 ;          ORG          5800H
0013 5800 CD 85 ED ;          CALL          GHXW
0014 5803 06 00 ;          MVI          B,0
0015 5805 C3 14 58 ;          JMP          PCHAR
0016 5808 3E 2C PCHR2: MVI          A,44
0017 580A B8 ;          CMP          B
0018 580B C8 ;          RZ
0019 580C 0E 00 ;          MVI          C,0
0020 580E 3E 06 PCHR3: MVI          A,6
0021 5810 B9 ;          CMP          C
0022 5811 C2 26 58 ;          JNZ          PCHR4
0023 5814 3E 0C PCHAR: MVI          A,0CH ;FF
0024 5816 CD 73 ED ;          CALL          OUTP
0025 5819 3E 06 ;          MVI          A,6
0026 581B CD 6D ED PCHR1: CALL          CRLF
0027 581E 3D ;          DCR          A
0028 581F C2 1B 58 ;          JNZ          PCHR1
0029 5822 04 ;          INR          B
0030 5823 C3 08 58 ;          JMP          PCHR2
0031 5826 16 00 PCHR4: MVI          D,0
0032 5828 CD 7C ED PCHR5: CAL, ' THXW
0033 582B CD 5D 58 ;          CAL, ' SPACE
0034 582E 7E ;          MOV          A,M
0035 582F CD 7F ED ;          CAL, ' THXB
0036 5832 CD 5D 58 ;          CALL          SPACE
0037 5835 CD 5D 58 ;          CALL          SPACE
0038 5838 1E 08 ;          MVI          E,8
0039 583A 1F PCHR6: RAR
0040 583B F5 ;          PUSH          PSW
0041 583C 3E 2E ;          MVI          A,'.'
0042 583E D2 43 58 ;          JNC          PCHR7
0043 5841 3E 58 ;          MVI          A,'X'
0044 5843 CD 73 ED PCHR7: CALL          OUTP
0045 5846 F1 ;          POP          PSW
0046 5847 1D ;          DCR          E
0047 5848 C2 3A 58 ;          JNZ          PCHR6
0048 584B CD 6D ED ;          CALL          CRLF
0049 584E 23 ;          INX          H
0050 584F 14 ;          INR          D
0051 5850 3E 08 ;          MVI          A,8
0052 5852 BA ;          CMP          D
0053 5853 C2 28 58 ;          JNZ          PCHR5
0054 5856 CD 6D ED ;          CALL          CR, F
0055 5859 0C ;          INR          C
0056 585A C3 0E 58 ;          JMP          PCHR3
0057 585D ;
0058 585D ;

```

```

059 585D
0060 585D F5
0061 585E 3E 20
0062 5860 CD 73 ED
0063 5863 F1
0064 5864 C9
0065 5865
0066 5865
0067 5865
0068 5865
0069 5865
0070 5865
0071 5865
0072 5865
0073 5865

```

```

;
SPACE:  PUSH      PSW
        MVI      A,' '
        CALL    OUTP
        POP     PSW
        RET
;
;
;
CRLF:   EQU      0ED6DH
GHXW:   EQU      0ED85H
OUTP:   EQU      0ED73H
THXW:   EQU      0ED7CH
THXB:   EQU      0ED7FH
PSW:    EQU      6

```

⊘



02A0 3E .XXXXX..  
02A1 08 ...X..  
02A2 08 ...X..  
02A3 08 ...X..  
02A4 08 ...X..  
02A5 08 ...X..  
02A6 08 ...X..  
02A7 00 .....

02A8 22 .X...X..  
02A9 22 .X...X..  
02AA 22 .X...X..  
02AB 22 .X...X..  
02AC 22 .X...X..  
02AD 22 .X...X..  
02AE 1C ..XXX..  
02AF 00 .....

02B0 22 .X...X..  
02B1 22 .X...X..  
02B2 22 .X...X..  
02B3 22 .X...X..  
02B4 22 .X...X..  
02B5 14 ..X.X..  
02B6 08 ...X..  
02B7 00 .....

02B8 22 .X...X..  
02B9 22 .X...X..  
02BA 22 .X...X..  
02BB 22 .X...X..  
02BC 2A .X.X.X..  
02BD 36 .XX.XX..  
02BE 22 .X...X..  
02BF 00 .....

02C0 22 .X...X..  
02C1 22 .X...X..  
02C2 14 ..X.X..  
02C3 08 ...X..  
02C4 14 ..X.X..  
02C5 22 .X...X..  
02C6 22 .X...X..  
02C7 00 .....

02C8 22 .X...X..  
02C9 22 .X...X..  
02CA 22 .X...X..  
02CB 14 ..X.X..  
02CC 08 ...X..  
02CD 08 ...X..  
02CE 08 ...X..  
02CF 00 .....

```

0001 0000      ;CRT TERMINAL CONTROL PROGRAM
0002 0000      ;
0003 0000      ;
0004 0000      ;
0005 0000      ;ROBERT GLASER, JUNE 1980
0006 0000      ;
0007 0000      ;
0008 0000      ;
0009 0000      ;VERSION 3.4
0010 0000      ;
0011 0000      ;PART 1
0012 0000      ;
0013 0000      ;LAST MODIFIED: JULY, 1980
0014 0000      ;
0015 0000      ;
0016 0000      ;
0017 0000      ;HARDWARE STRUCTURE:
0018 0000      ;
0019 0000      ;ROM 0000-0FFF      (2732 #1)
0020 0000      ;ROM 1000-1FFF      (2732 #2)
0021 0000      ;
0022 0000      ;RAM 8000-9FFF      (2114 #1-#16)
0023 0000      ;
0024 0000      ;I/O DEVICES
0025 0000      ;
0026 0000      ;8251A USART
0027 0000      URDAT: EQU      80H      ;DATA
0028 0000      UR:      EQU      81H      ;CONTROL/STATUS
0029 0000      ;
0030 0000      ;8279 KEYBOARD HANDLER
0031 0000      KBDAT: EQU      84H      ;DATA
0032 0000      KB:      EQU      85H      ;CONTROL/STATUS
0033 0000      ;
0034 0000      ;8275 CRT CONTROLLER
0035 0000      CRTPR: EQU      88H      ;PARAMETER REG
0036 0000      CRT:      EQU      89H      ;COMMAND REG
0037 0000      ;
0038 0000      ;8253 TIMER #1
0039 0000      TIMBR: EQU      8CH      ;BAUD RATE
0040 0000      TIMDC: EQU      8DH      ;DOT CLOCK
0041 0000      TIMAU: EQU      8EH      ;AUDIO OUTPUT
0042 0000      TIME1: EQU      8FH      ;MODE
0043 0000      ;
0044 0000      ;8253 TIMER #2
0045 0000      TIMOS: EQU      90H      ;ONE-SHOT
0046 0000      TIMMT: EQU      91H      ;MARK TONE
0047 0000      TIMST: EQU      92H      ;SPACE TONE
0048 0000      TIME2: EQU      93H      ;MODE
0049 0000      ;
0050 0000      ;8255 PPI #1
0051 0000      PPI1A: EQU      94H      ;PORT A
0052 0000      PPI1B: EQU      95H      ;PORT B
0053 0000      PPI1C: EQU      96H      ;PORT C
0054 0000      PPI1:  EQU      97H      ;CONTROL
0055 0000      ;
0056 0000      ;8255 PPI #2

```