

CPU board Power

- -5V
 - +12V
 - +5V
 - GND
- ↓
Front

CPU/Keyboard-Display

Towards CPU



- Dootstb
- ACAZEN
- STM2
- Gnd
- Gnd
- Vcc
- Vcc
- Din0
- Din3
- Din1
- Din2
- Din4
- Din5
- Din7
- Din6
- SelA
- Flug CA1
- SelD
- Dout 8 PA4
- SelB

- Dout9 PA5
- SelC
- Dout10 PA6
- Rst
- Dout11 PA7
- Dout12 PB0
- Dout13 PB1
- Dout14 PB2
- Dout15 PB3
- Dout16 PB4
- Dout17 PB5
- Dout18 PB6
- CPUclk #2
- Dout19 PB7
- Tape Drv EOT?? CBI
- Adm En/ Halt (Factory Test??)
- ~~Wakeup~~ KYB
- CPUclk #1
- Wout En???
- RAMEn??

4815

Keyboard → Interface Connector

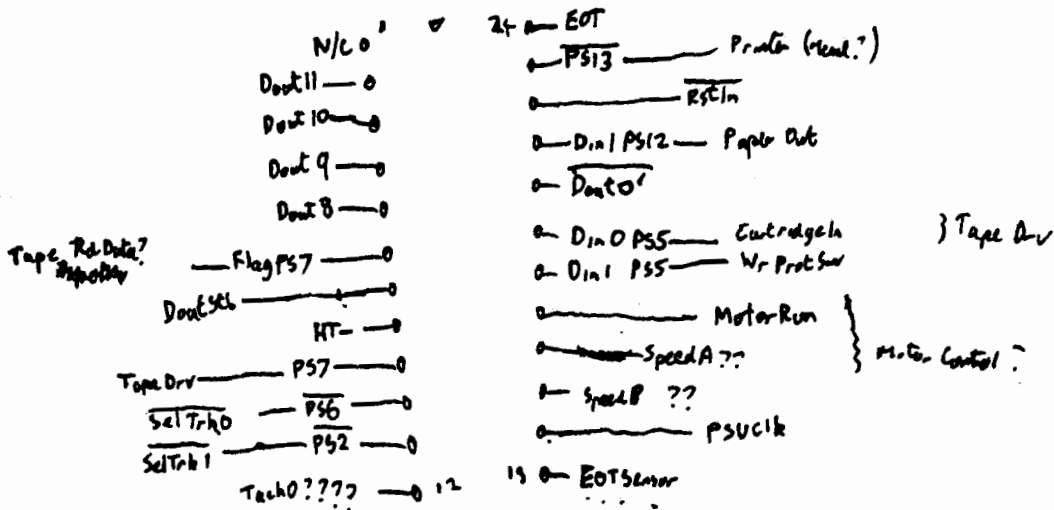
L45



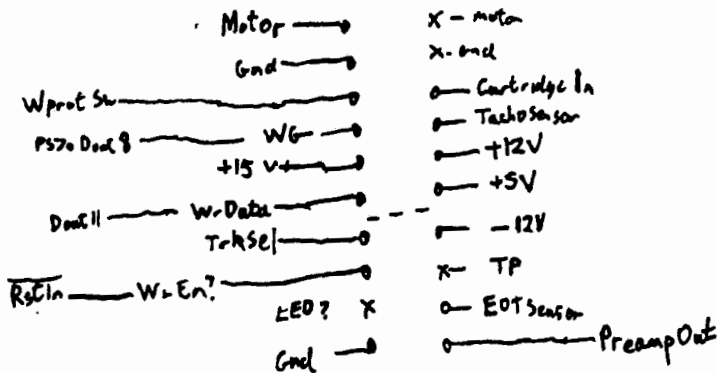
- — R1
- — R0
- — R2
- — R3
- — R4
- — R5
- — R6
- — R7
- — C1
- — C0
- — C2
- — C3
- — C4
- —
- —
- — C5
- — C6
- — C7
- — +5V
-
-
-
- — Prt Sw Conn
- — ~~PRGM~~ PRGM
- — Prog Sw Conn
- — Auto Start
- — All
- — Norm

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Keyboard/Display Interface - PSU



Tape Drive
→ Comp Side



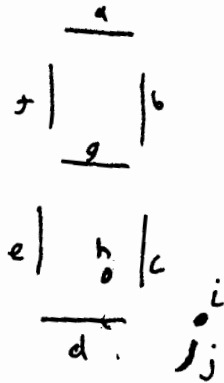
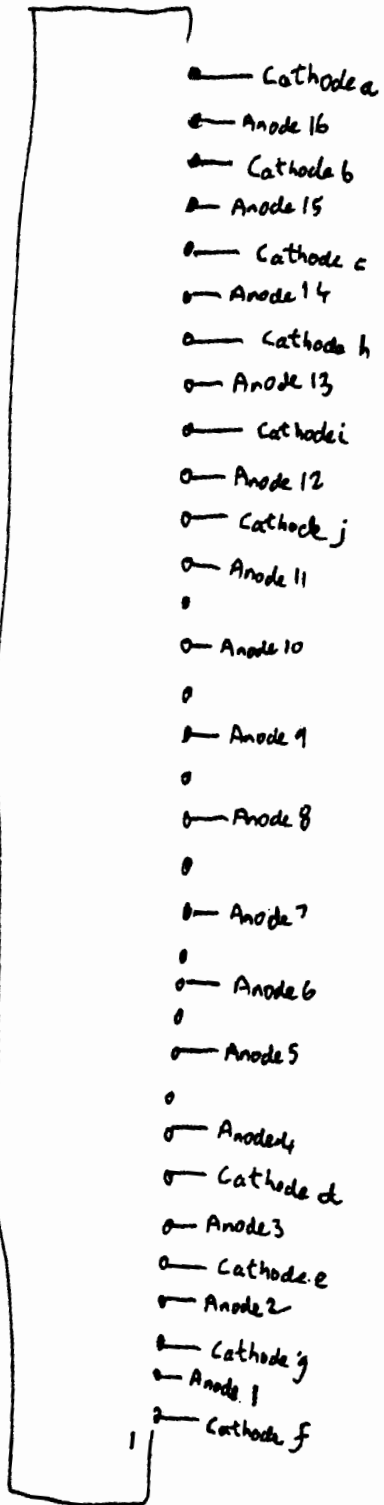
HP9815 I/O Slot Pinout

-5v	A1	B1	+12v
A14	A2	B2	/STM2
DM7	A3	B3	DM6
DM4	A4	B4	DM5
DM3	A5	B5	DM2
DM0	A6	B6	DM1
A6	A7	B7	A10
A9	A8	B8	A8
A3	A9	B9	A12
A0	A10	B10	A4
A11	A11	B11	A5
A1	A12	B12	A7
A13	A13	B13	A2
AD2	A14	B14	AD7
AD5	A15	B15	AD6
AD4	A16	B16	AD8
AD3	A17	B17	AD11
ALTCH	A18	B18	AD10
+5v	A19	B19	AD9
+5v	A20	B20	AD0
6nd	A21	B21	AD1
6nd	A22	B22	/ATS2
6nd	A23	B23	/ATS1
ACA2	A24	B24	/CHSA
ACAL	A25	B25	/AFLG

← Bottom

	0	1	2	3	4	5	6	7
	U	U	U	U	U	U	U	U
0)---	(Load)	(Rewind)	(Record)	(List)	(Alpha)	(Clear)	(+/-)	(EEX)
1)---	(Goto)	(Label)	(SFG)	(Step)	(Reset)	(Store)	(7)	(8)
2)---	(A)	(B)	(C)	(D)	(E)	(Recall)	(4)	(5)
3)---	(F)	(G)	(H)	(I)	(J)	(End)	(1)	(2)
4)---	(K)	(L)	(M)	(N)	(O)	(R/S)	(0)	(.)
5)---	(Ln)	(Log)	(Sin)	(Cos)	(R [^])	(Rdn)	(*)	(-)
6)---	(f-1)	(Gold)	(Print)	(/)	(Clx)	(9)	(6)	(3)
7)---	(Sigma+)	(Acc+)	(Tan)	(P->R)	(x<>y)		(Enter)	(+)

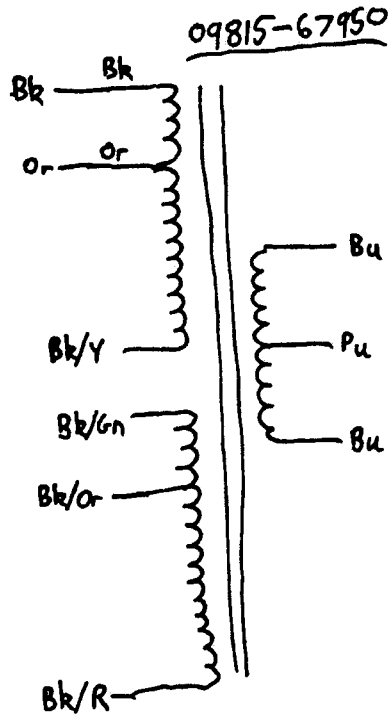
Panaplex Display



HP9815

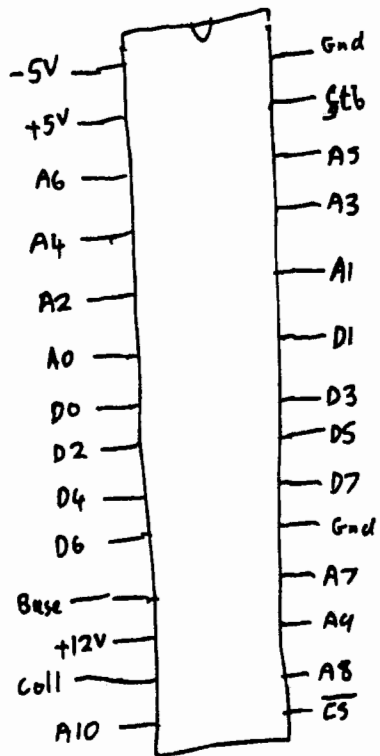
Transformer Assy

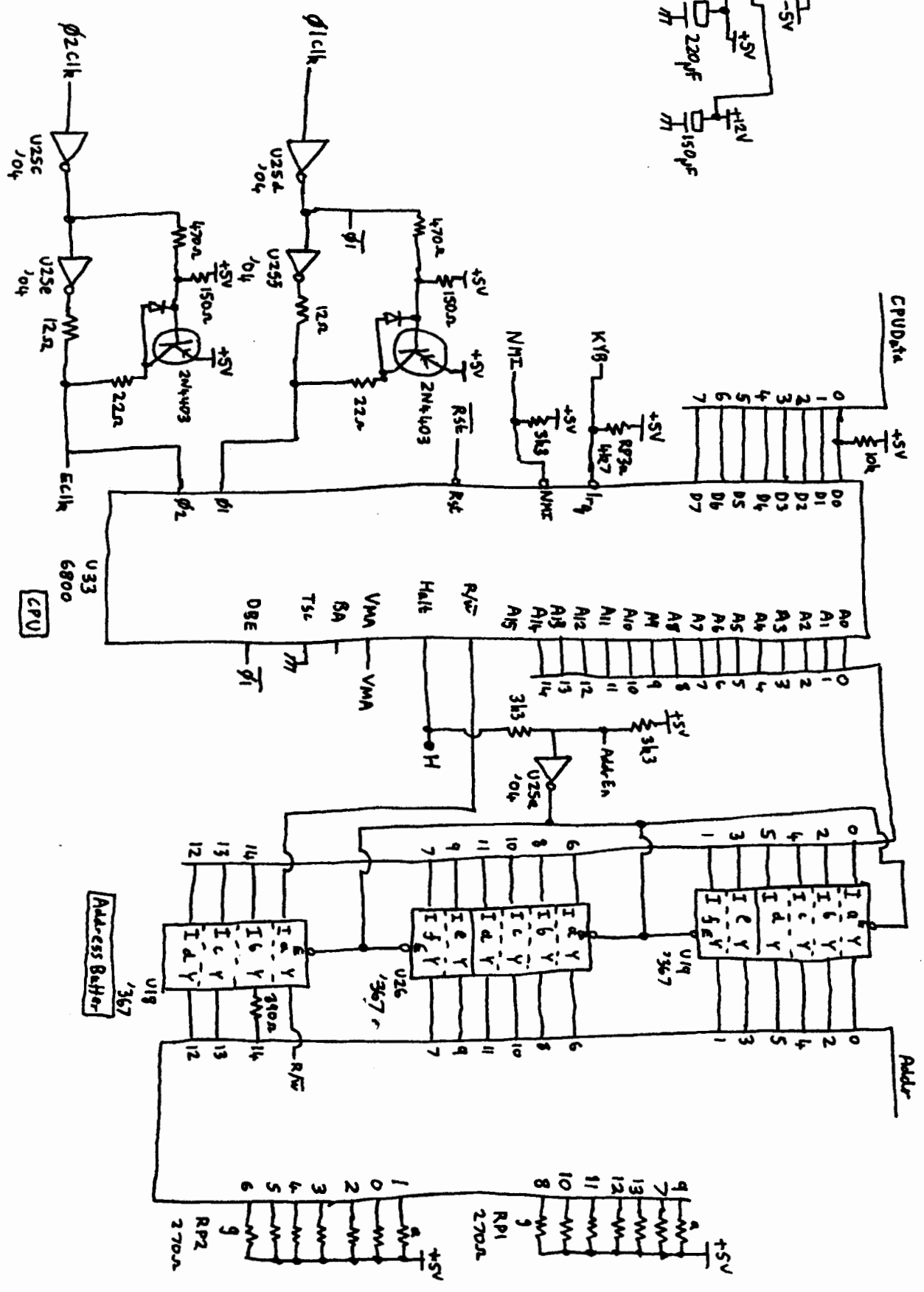
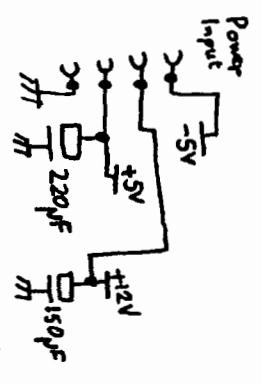
- 3 — Bk — chopper collector, Flywheel cathode
- 3 — W — chopper base
- 2 — Bu — Transformer
- 2 — Pu — Transformer Ct.
- 2 — Bu — Transformer
- x
- 2 — Y — Flywheel Anode
- 2 — Or — chopper emitter, Pass collector
- 2 — R — Pass base
- 2 — Br — Pass emitter



2K ROM Pinout

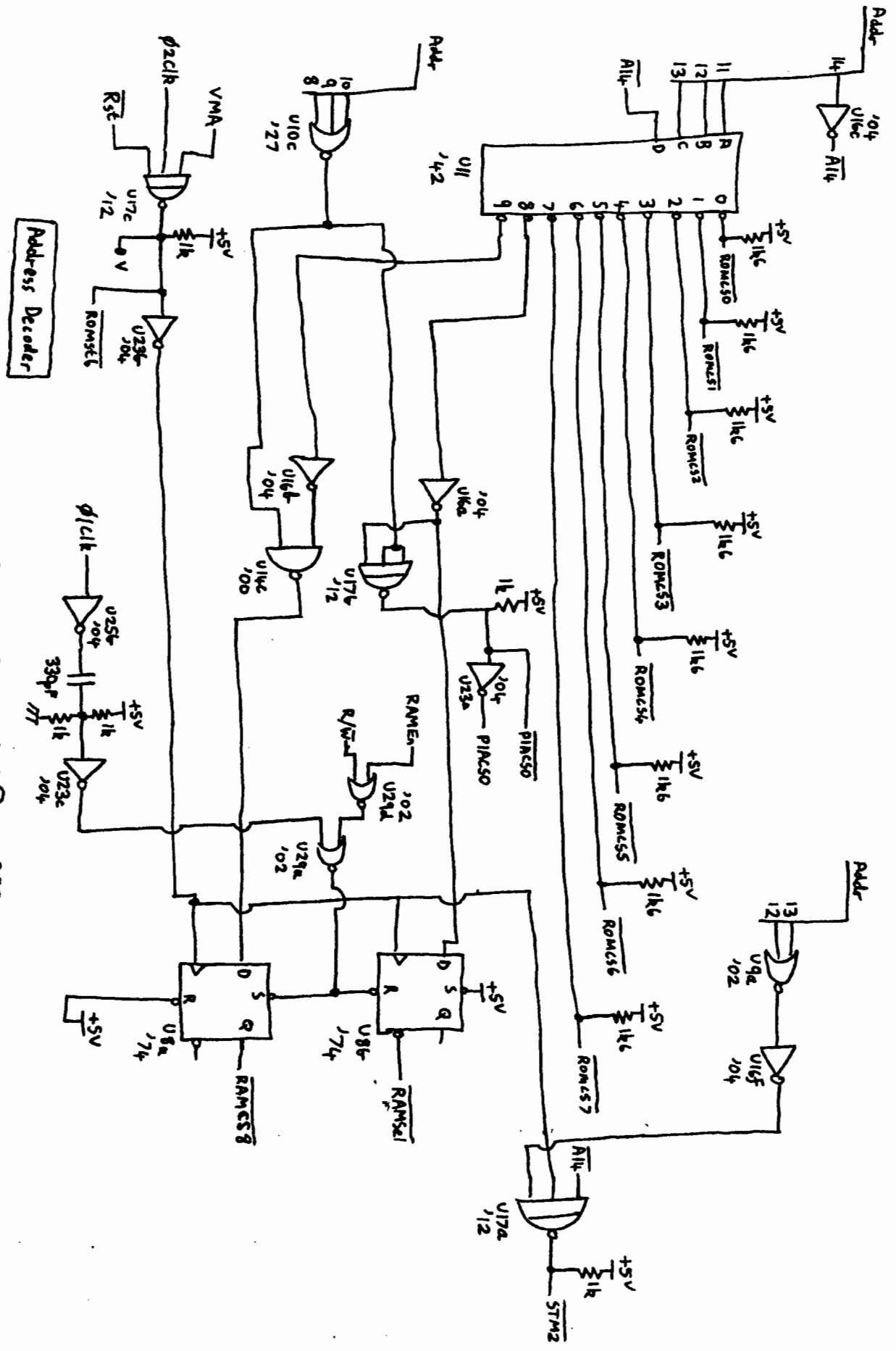
(09815-66510 CPU Board)



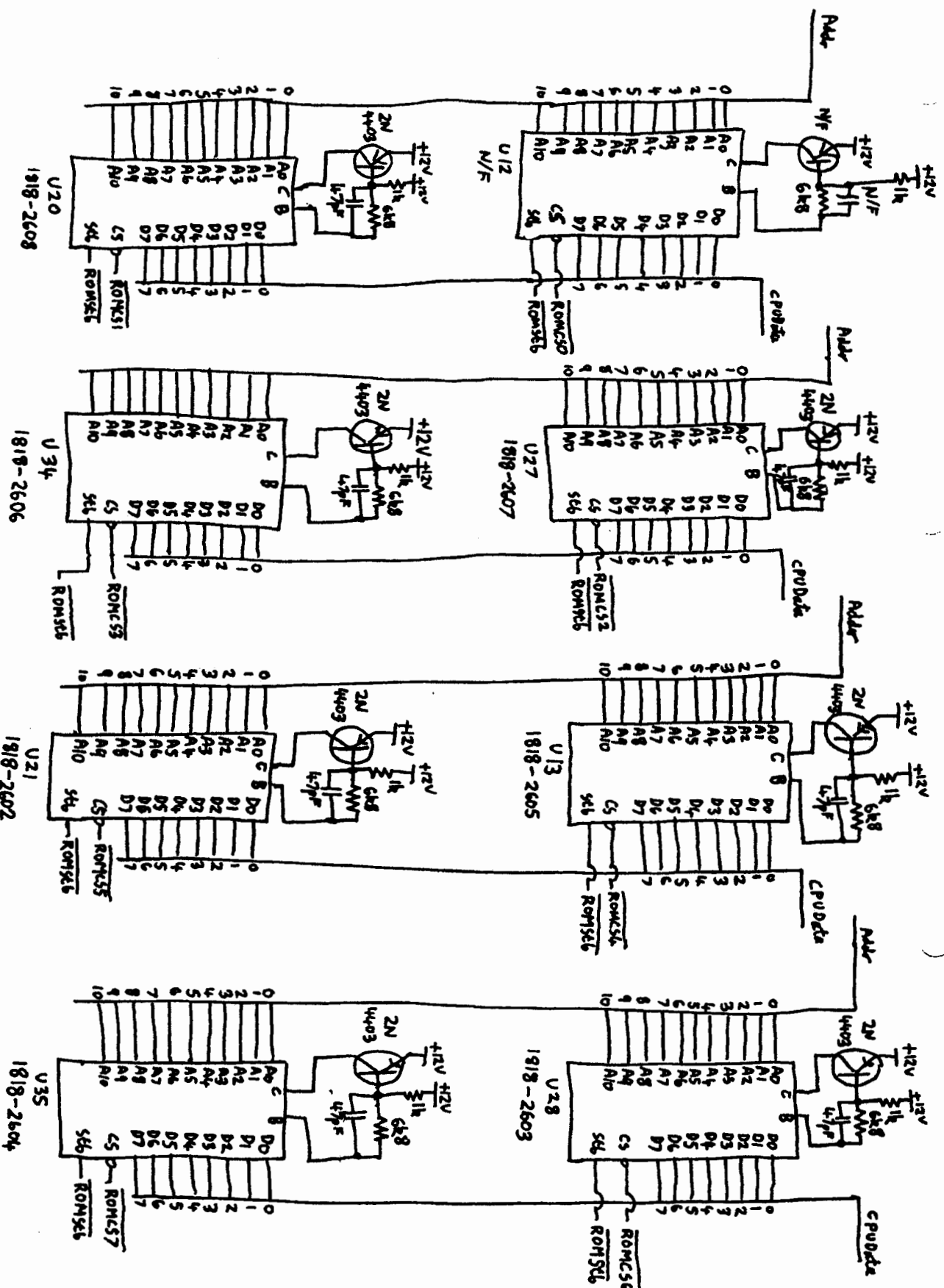


HP9815 CPU Board sheet ①

09815-66510



HP9815 CPU Board sheet ② 09815-66510

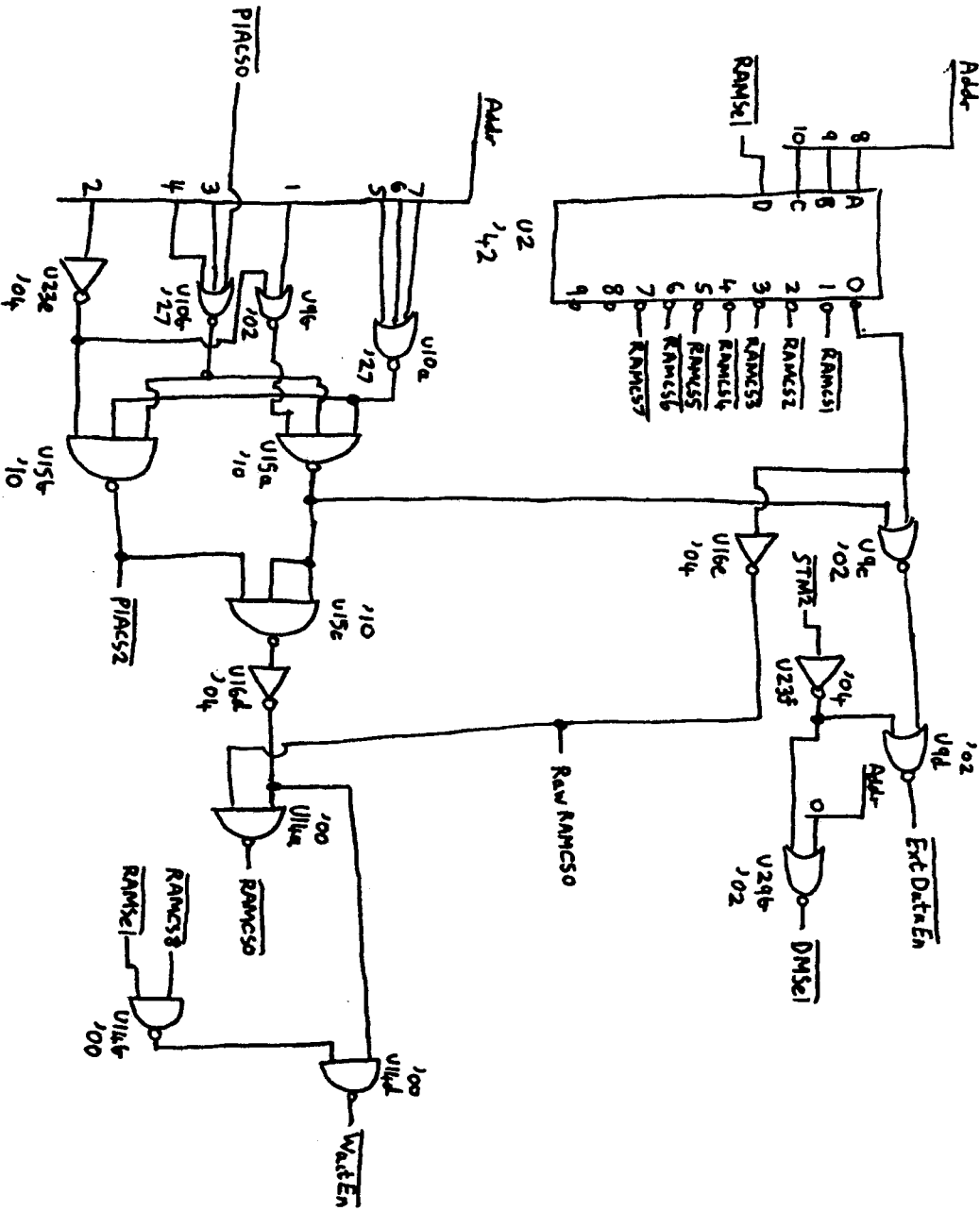


ROM

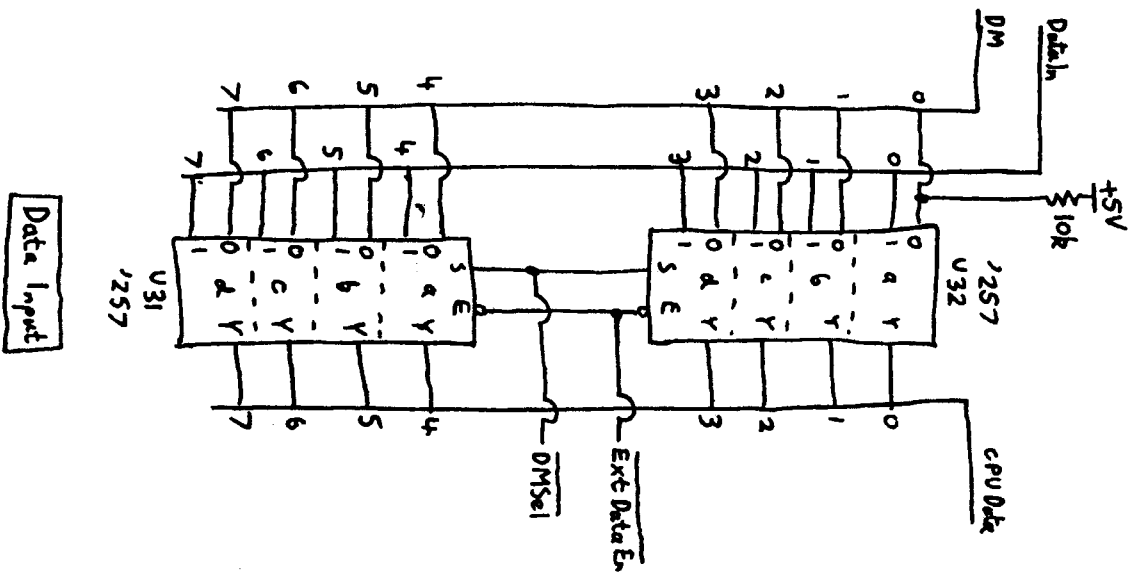
HP9815 CPU Board Sheet ③

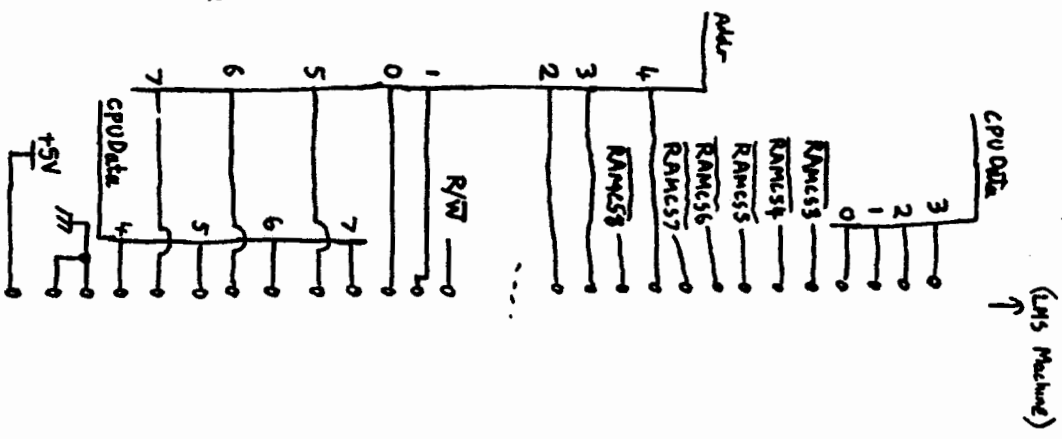
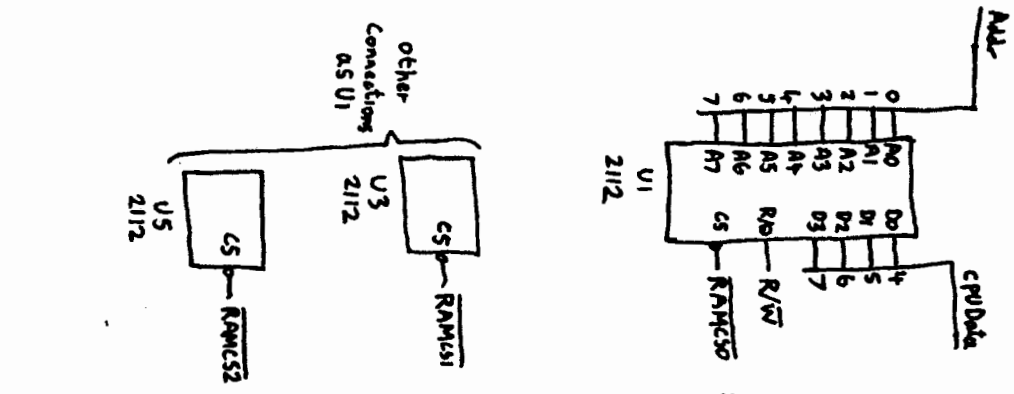
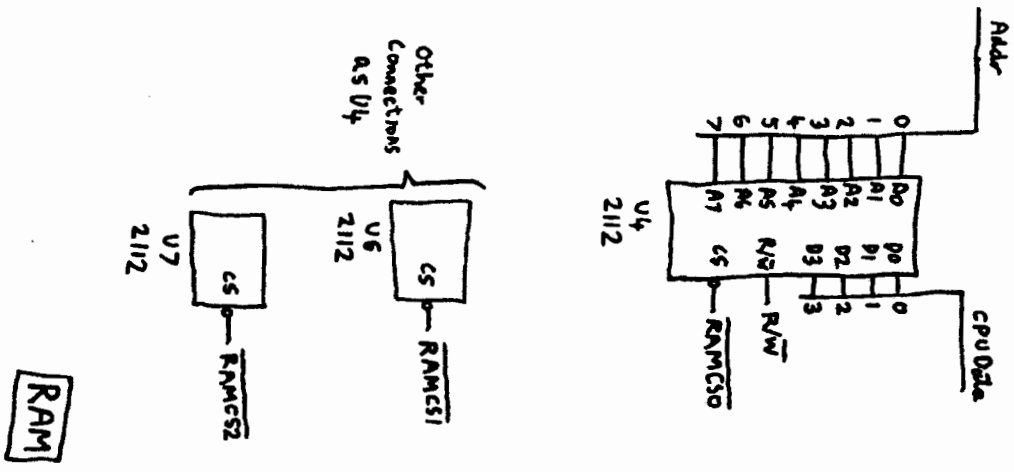
09815-66510

RAM and I/O Address Decoder

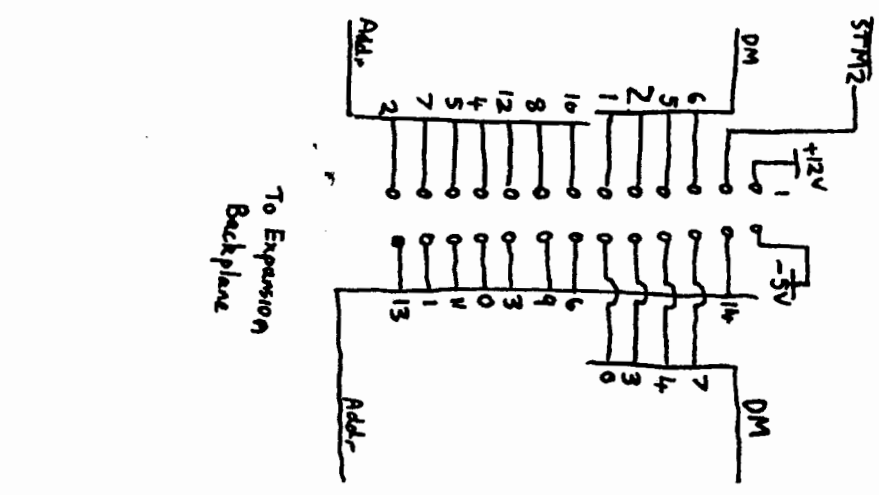


HP9815 CPU Board Sheet ④ 09815-66510





To RAM Expansion Board



RAM

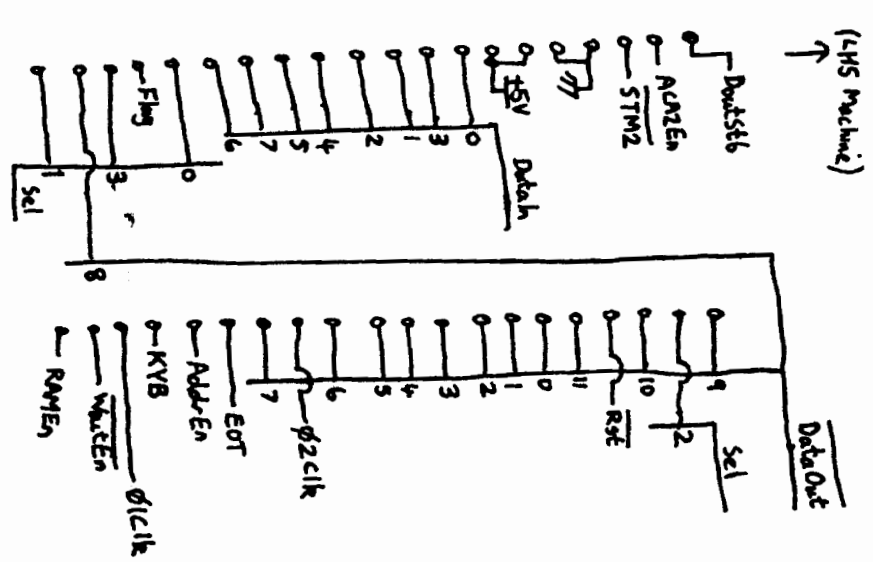
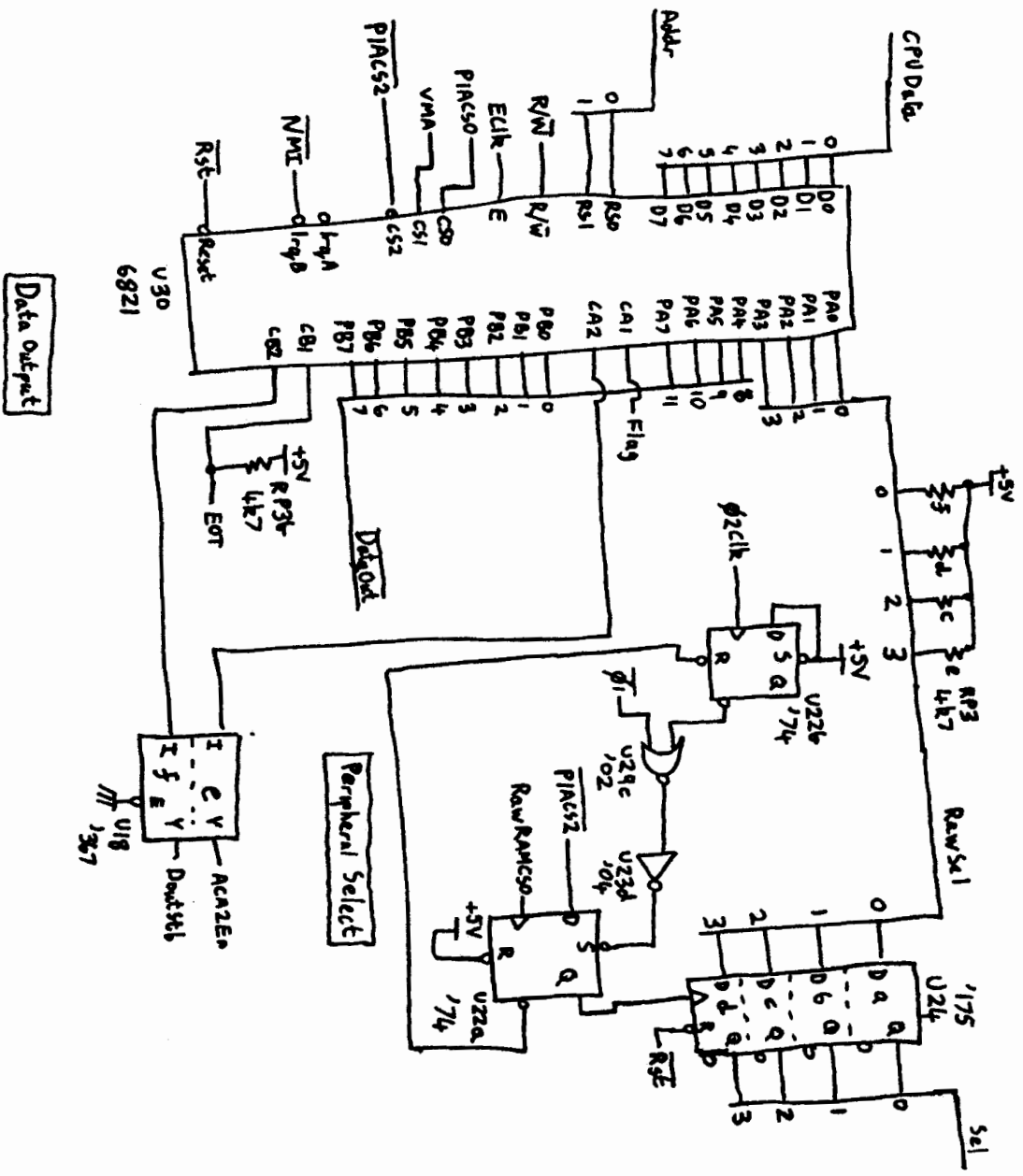
Memory Expansion connectors

HP9815 CPU Board Slot 5

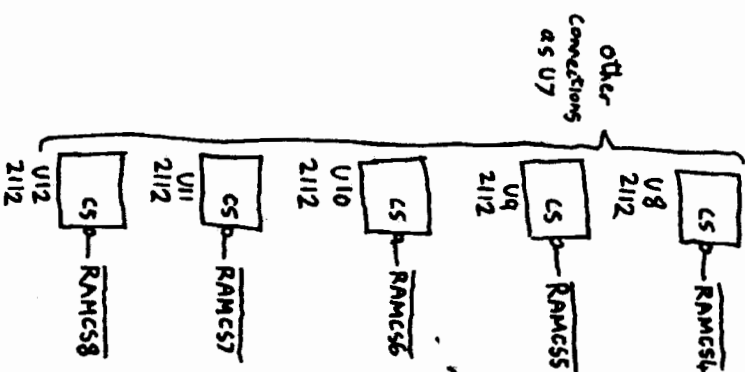
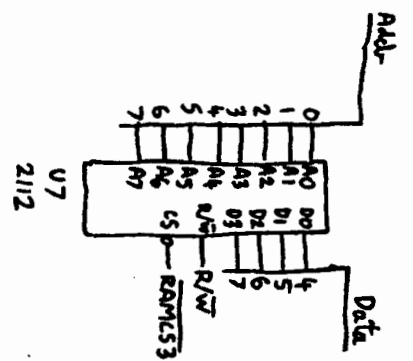
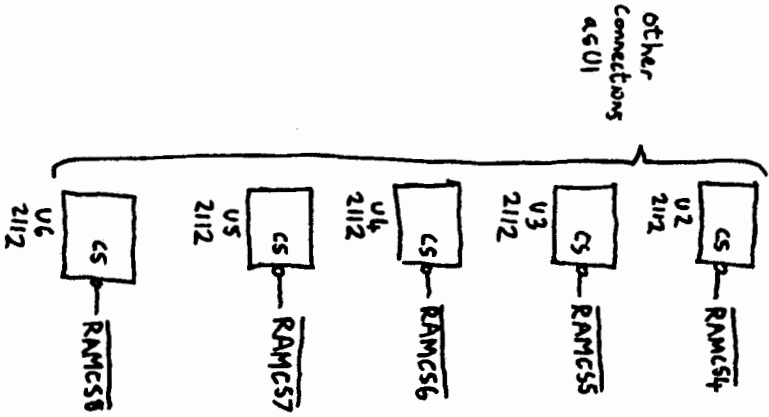
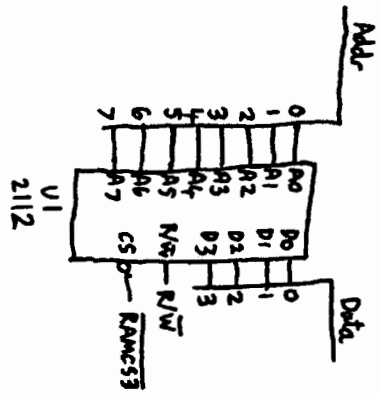
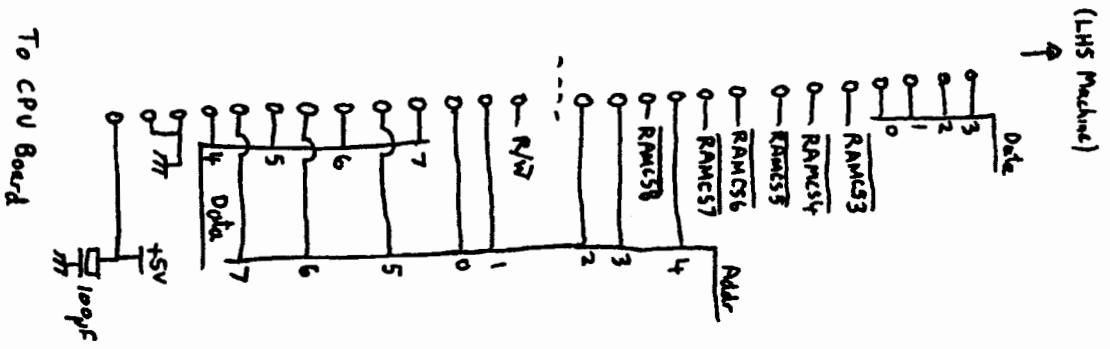
09815-66S10

(LMS Machine)

To Expansion Backplane

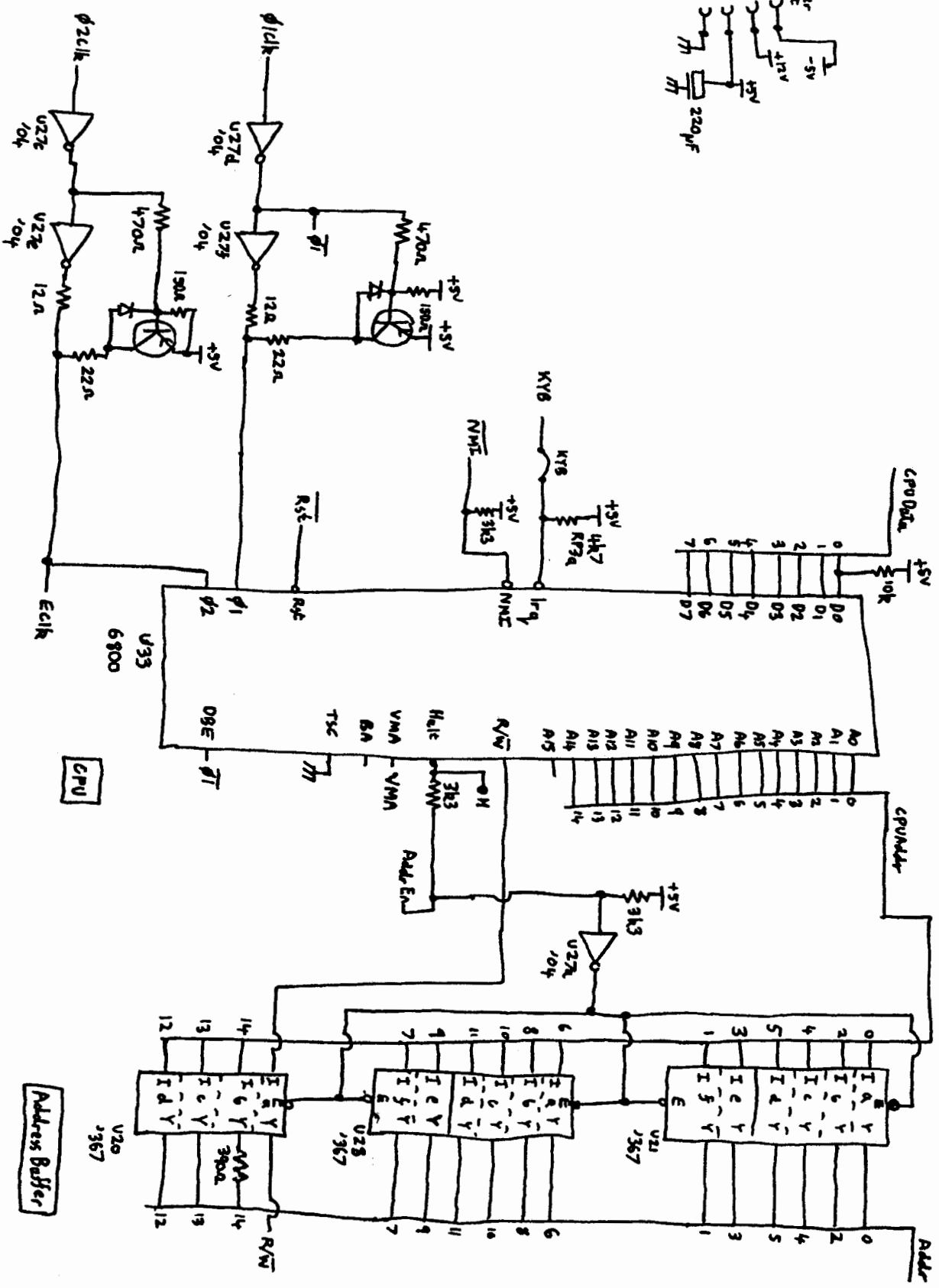
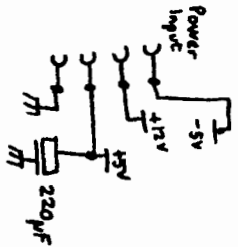


To Keyboard/Display Interface



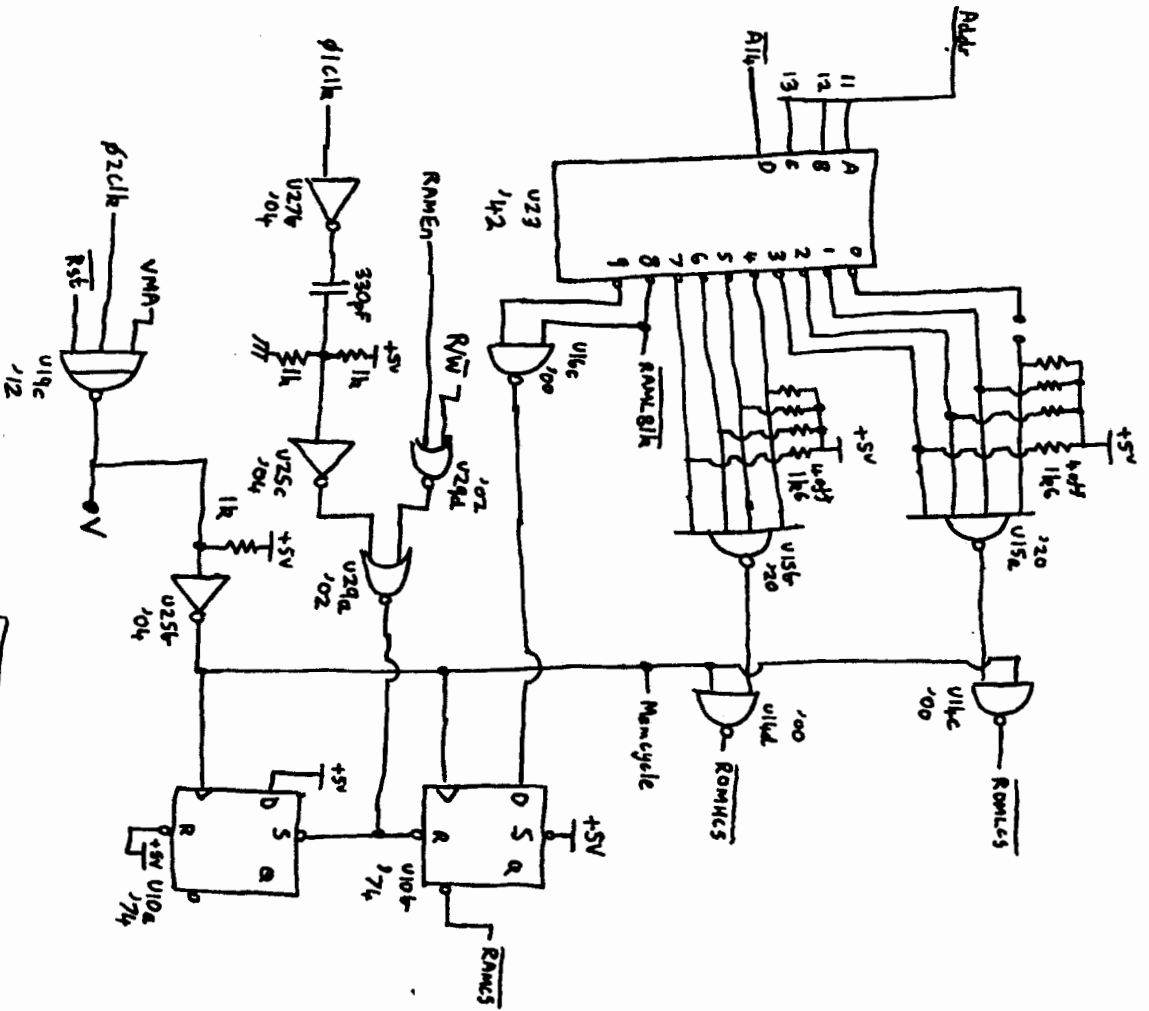
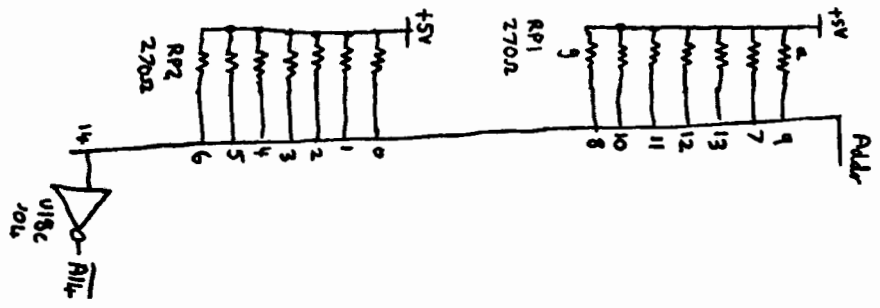
HP 9815 RAM Expansion Board

09815-66S81



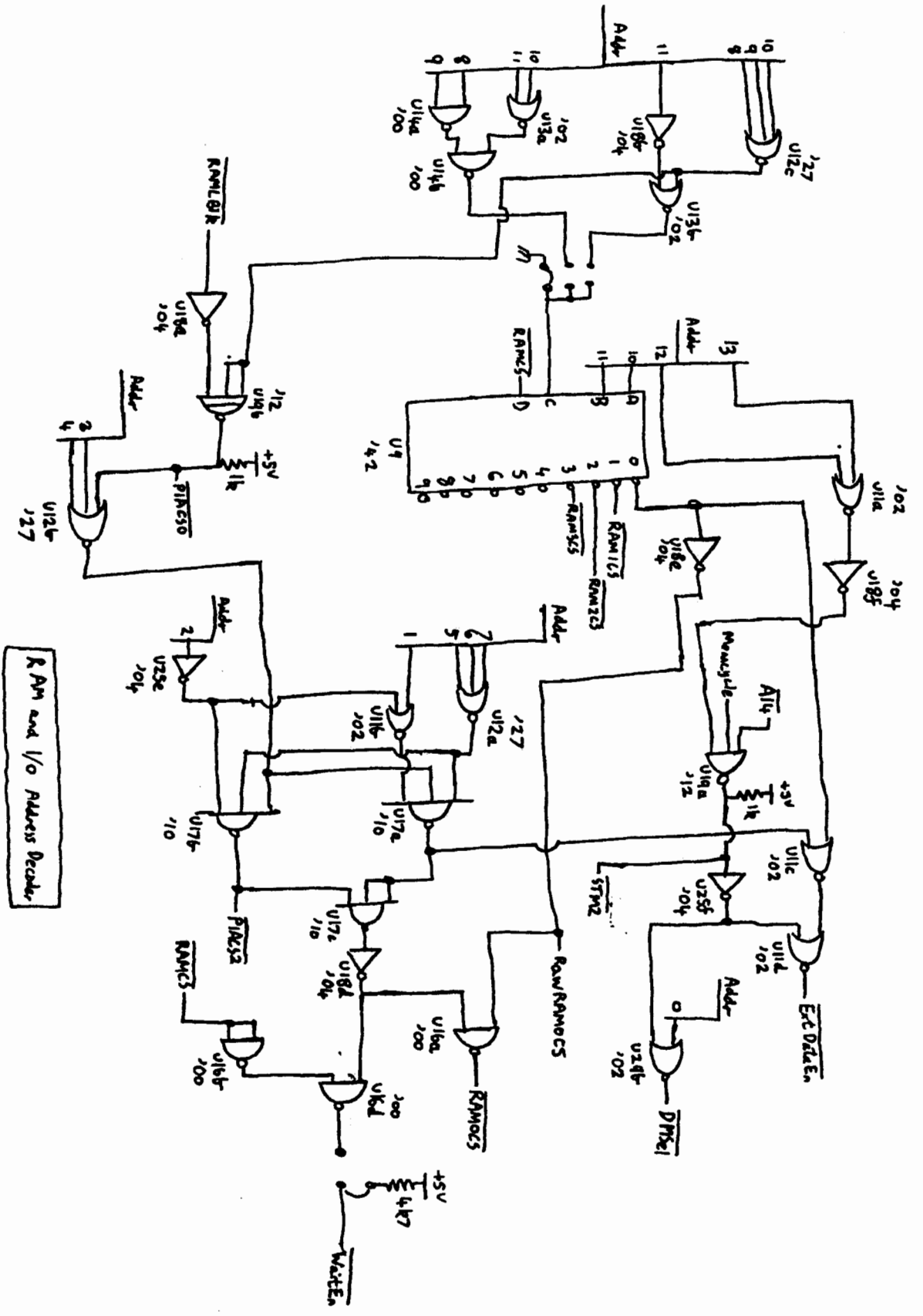
HP9815 CPU Board Sheet ①

09815-66512

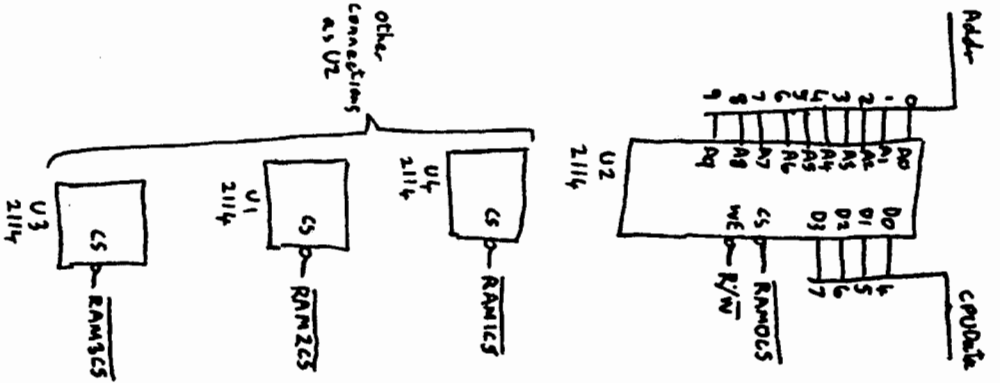


Address Decoder

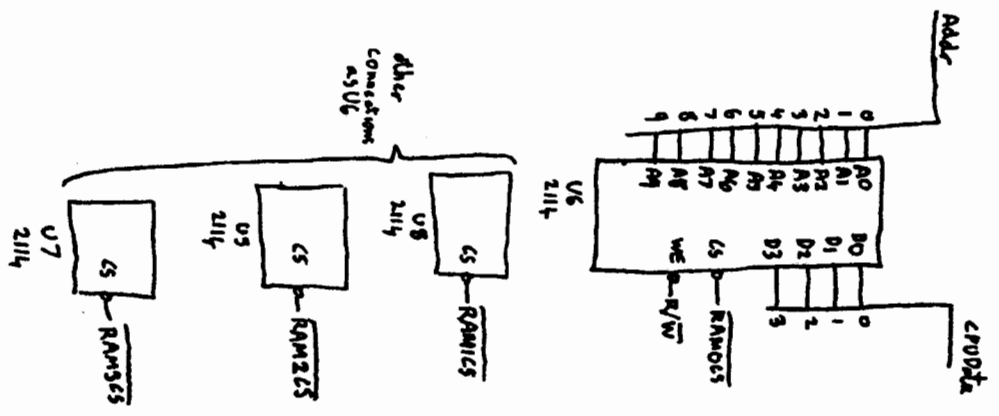
HP9815 CPU Board Skat ② 09815-66572



HP9815 CPU Board Sheet 5 01815-66512

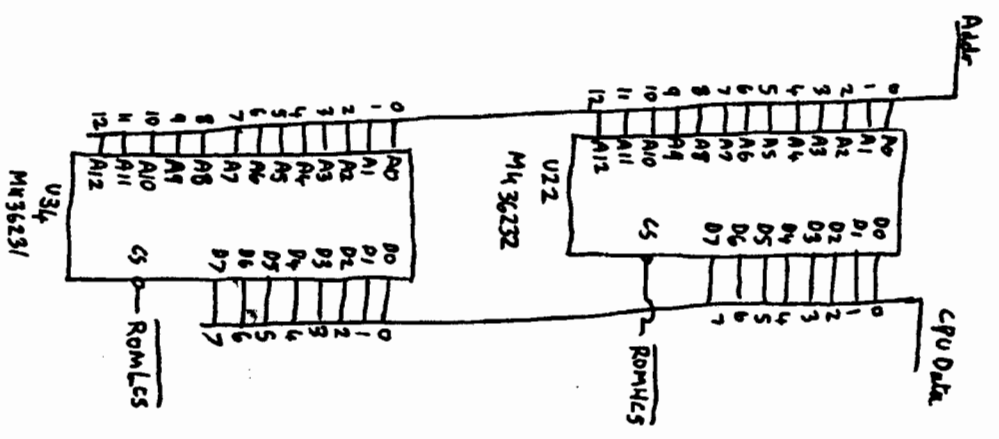


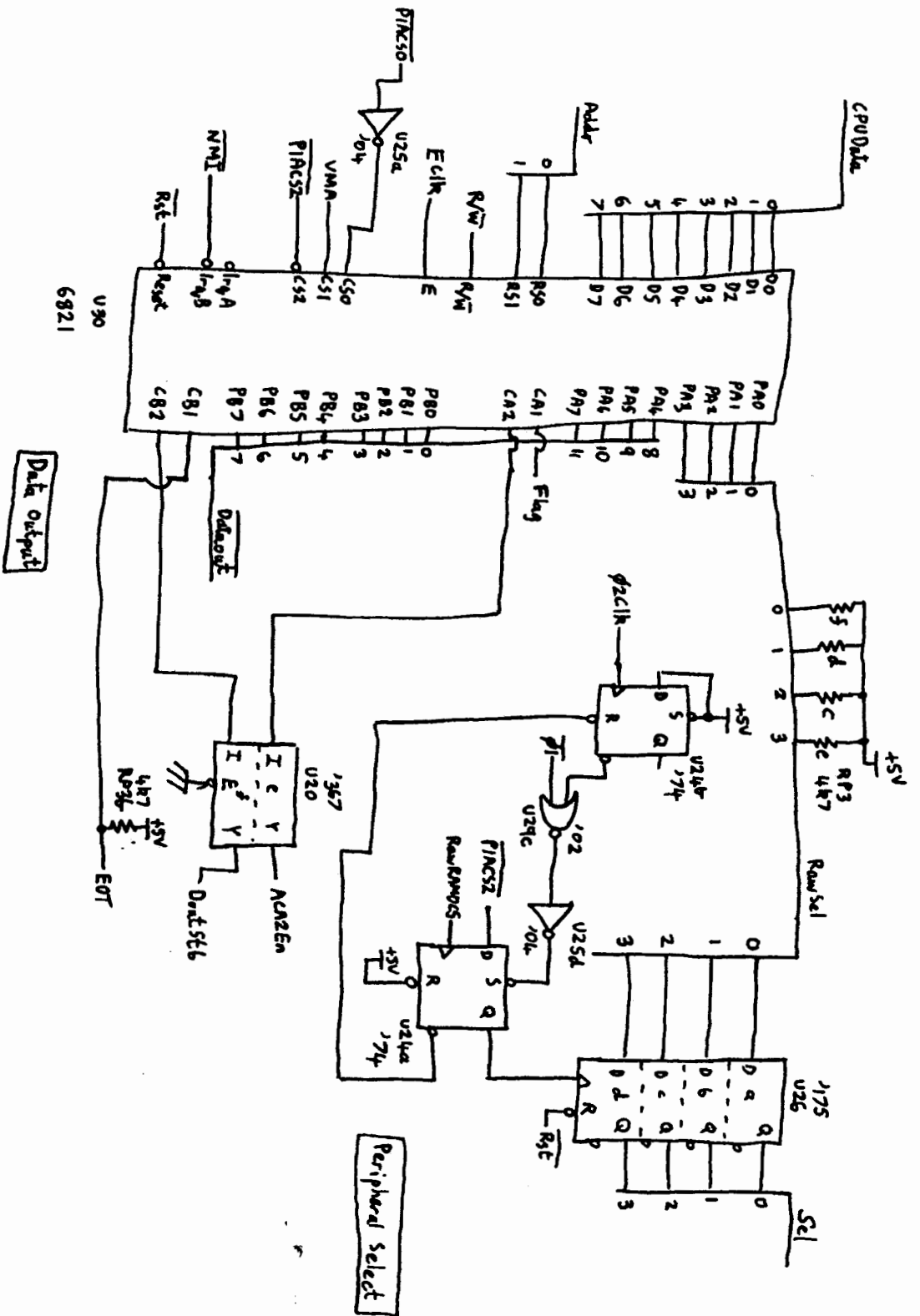
RAM



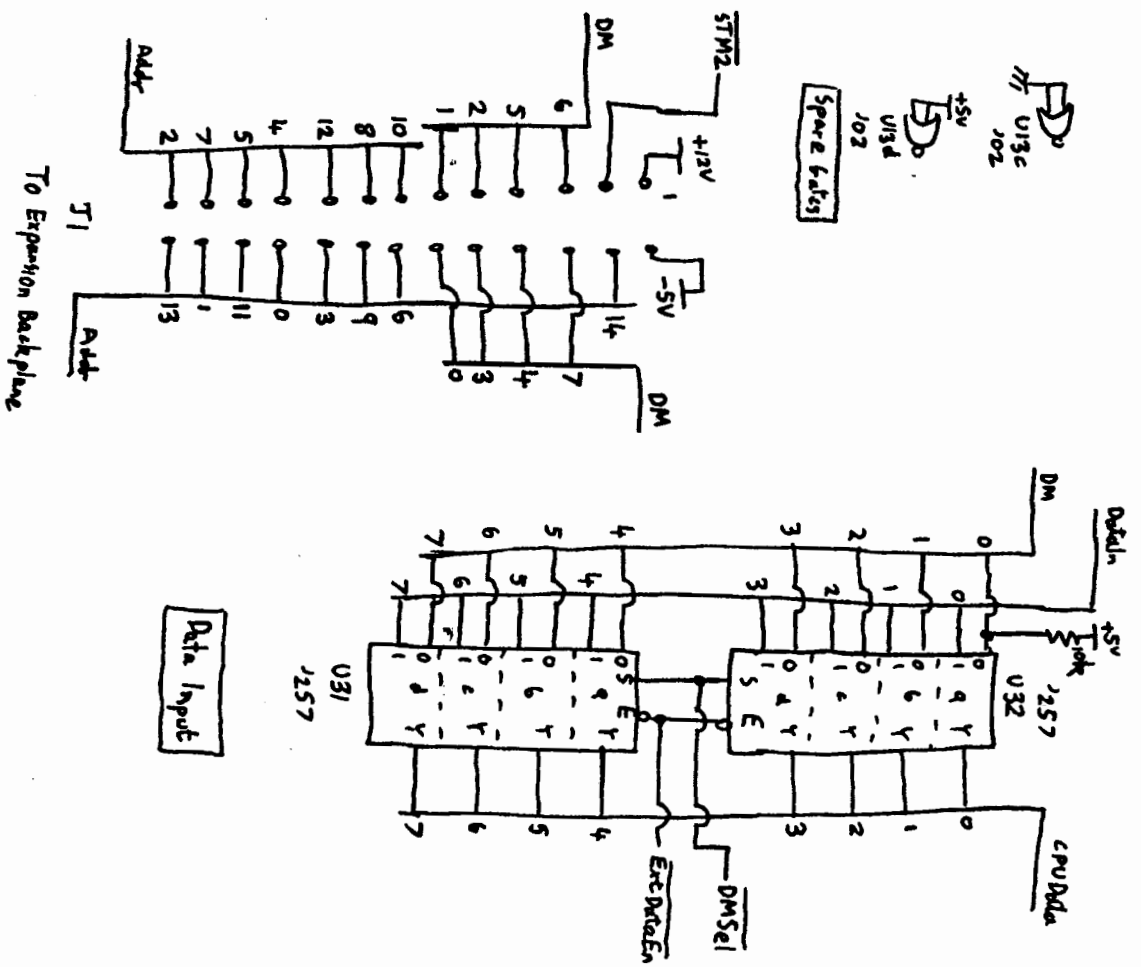
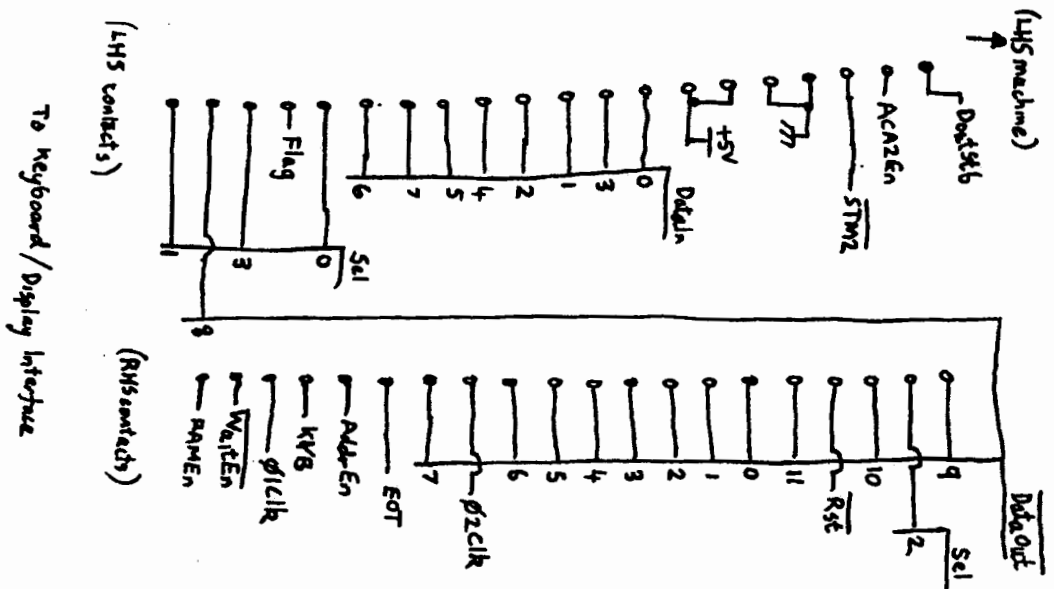
(ROM Pinouts as R23644)

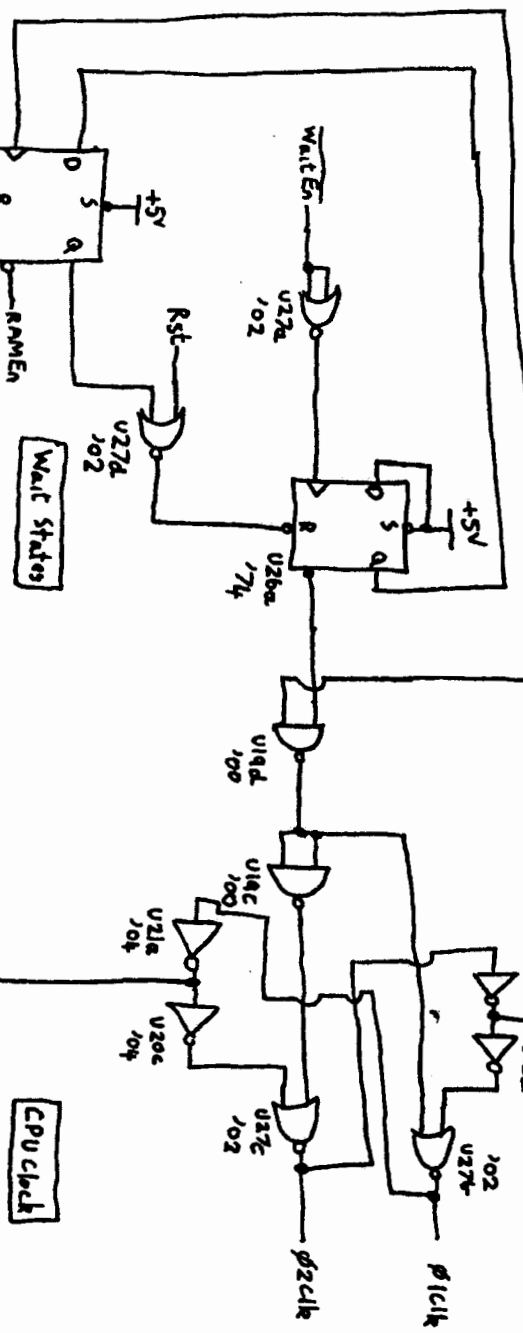
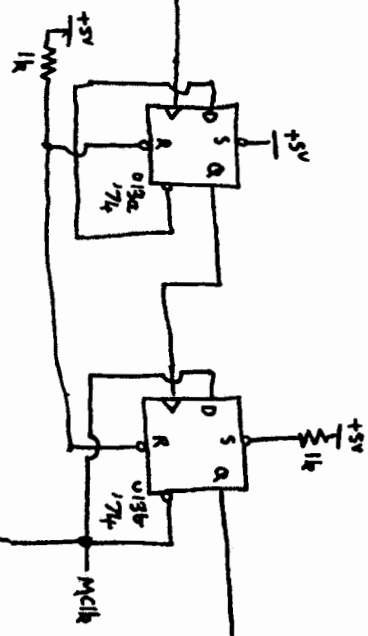
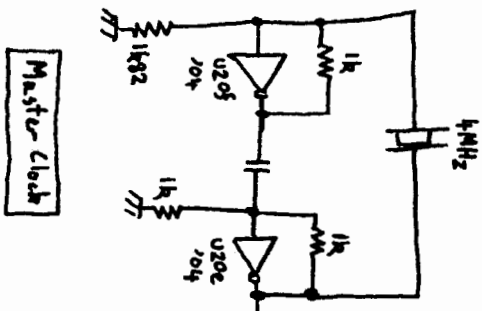
ROM



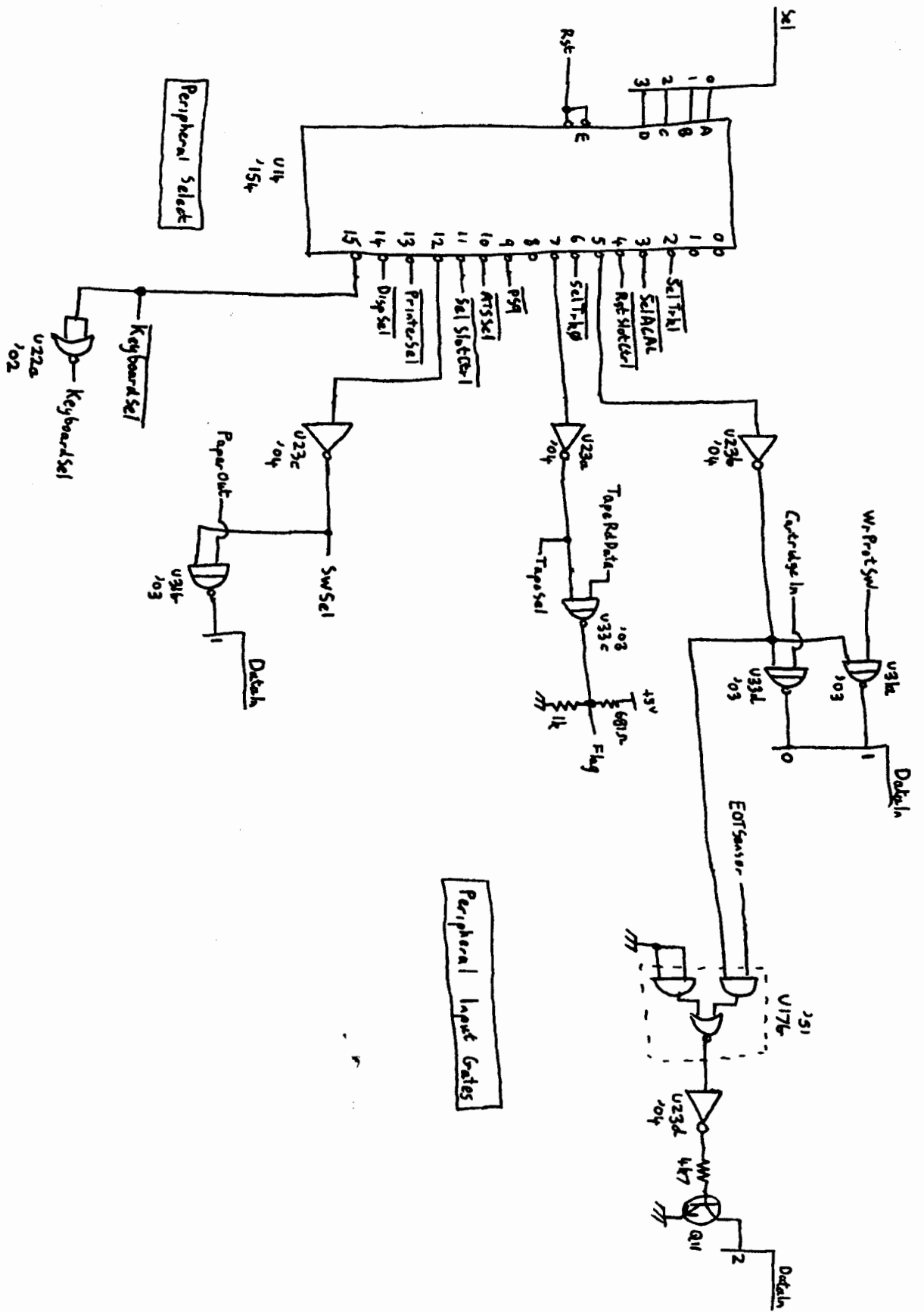


HP 9815 CPU Board Schematic 09815-66512



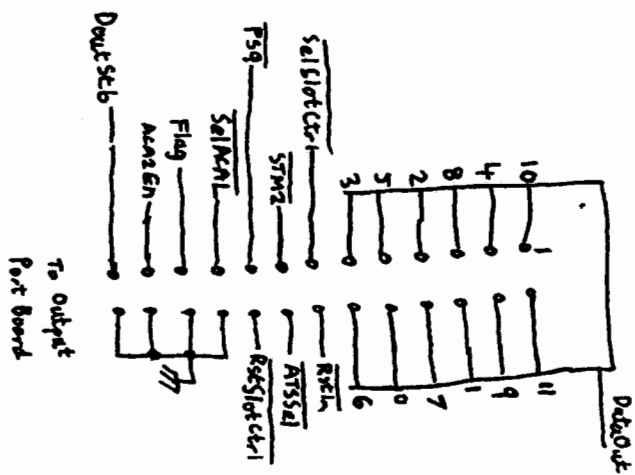
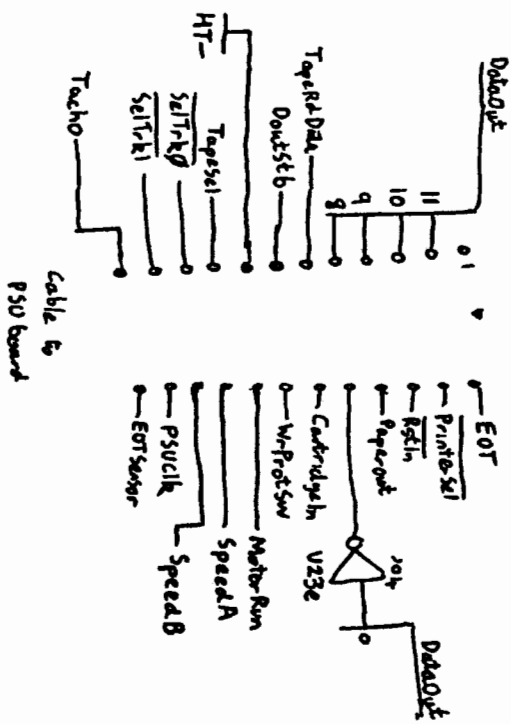


HP 9815 Keyboard/Display Interface Sheet ② 09815-66500



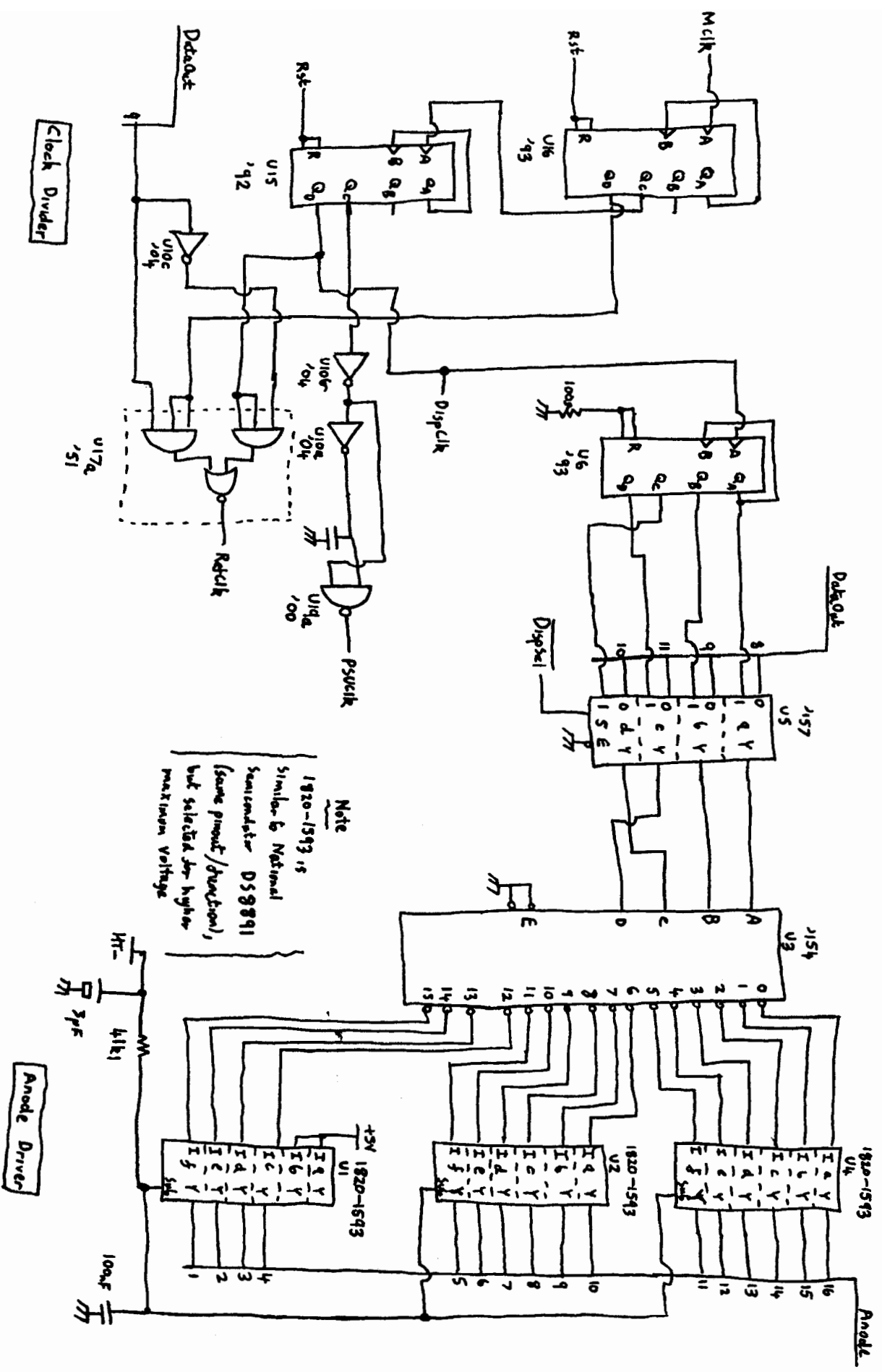
HP 9815 Keyboard/Display Interface Sheet ③

09815-66500



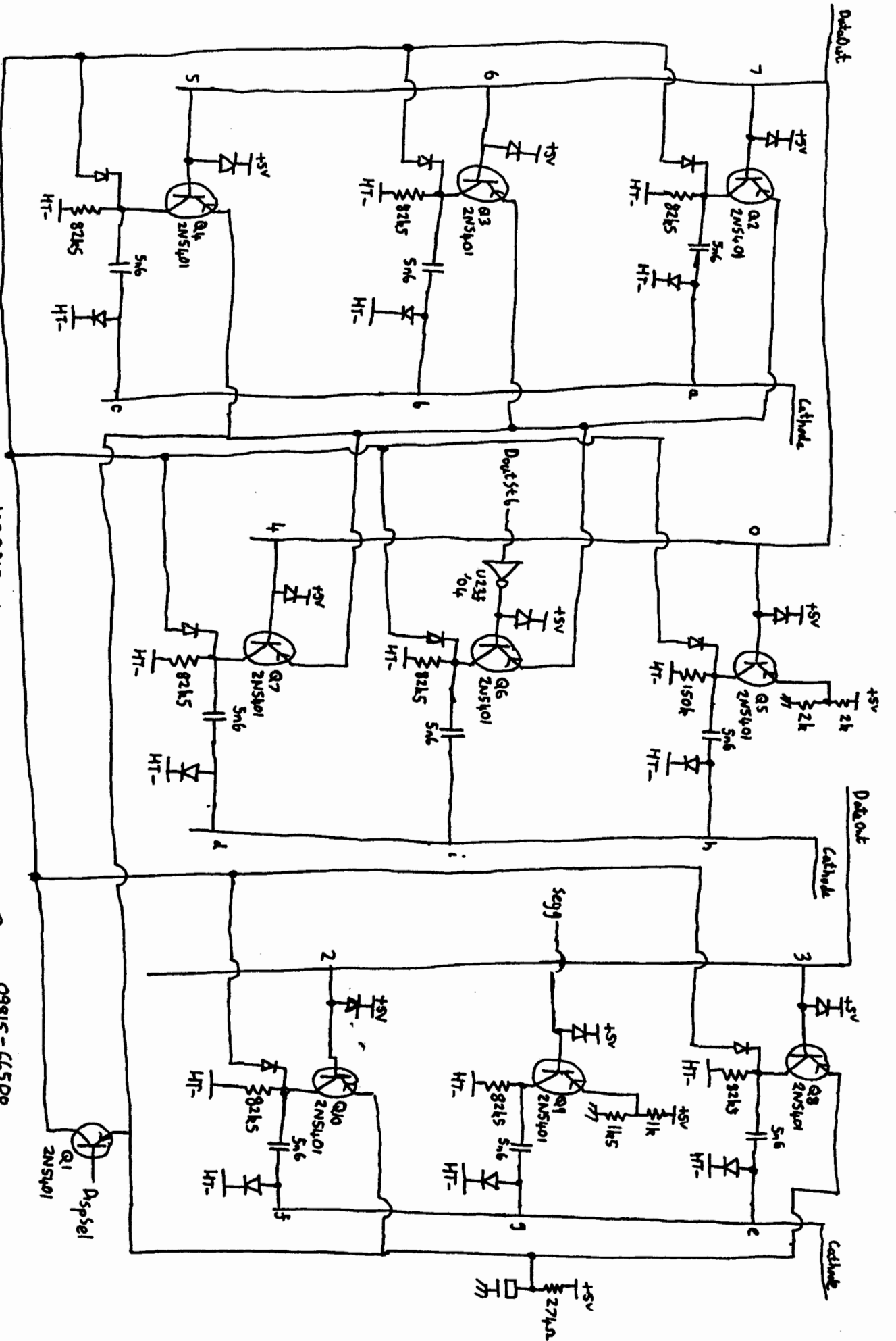
External Connectors

HP9815 Keyboard/Display Interface Sheet ④ 09815-66500



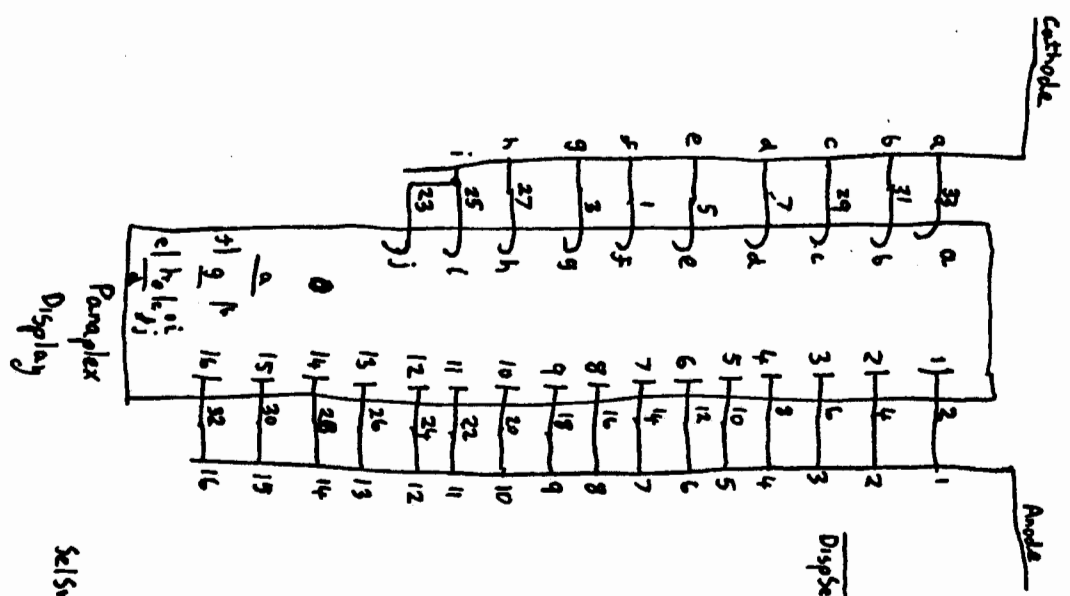
Note
 1820-1593 is
 similar to National
 Semiconductor DS9891
 (same pinout/function),
 but selected for higher
 maximum voltage

HP9815 Keyboard/Display Interface Schematic (5) 09815-66500

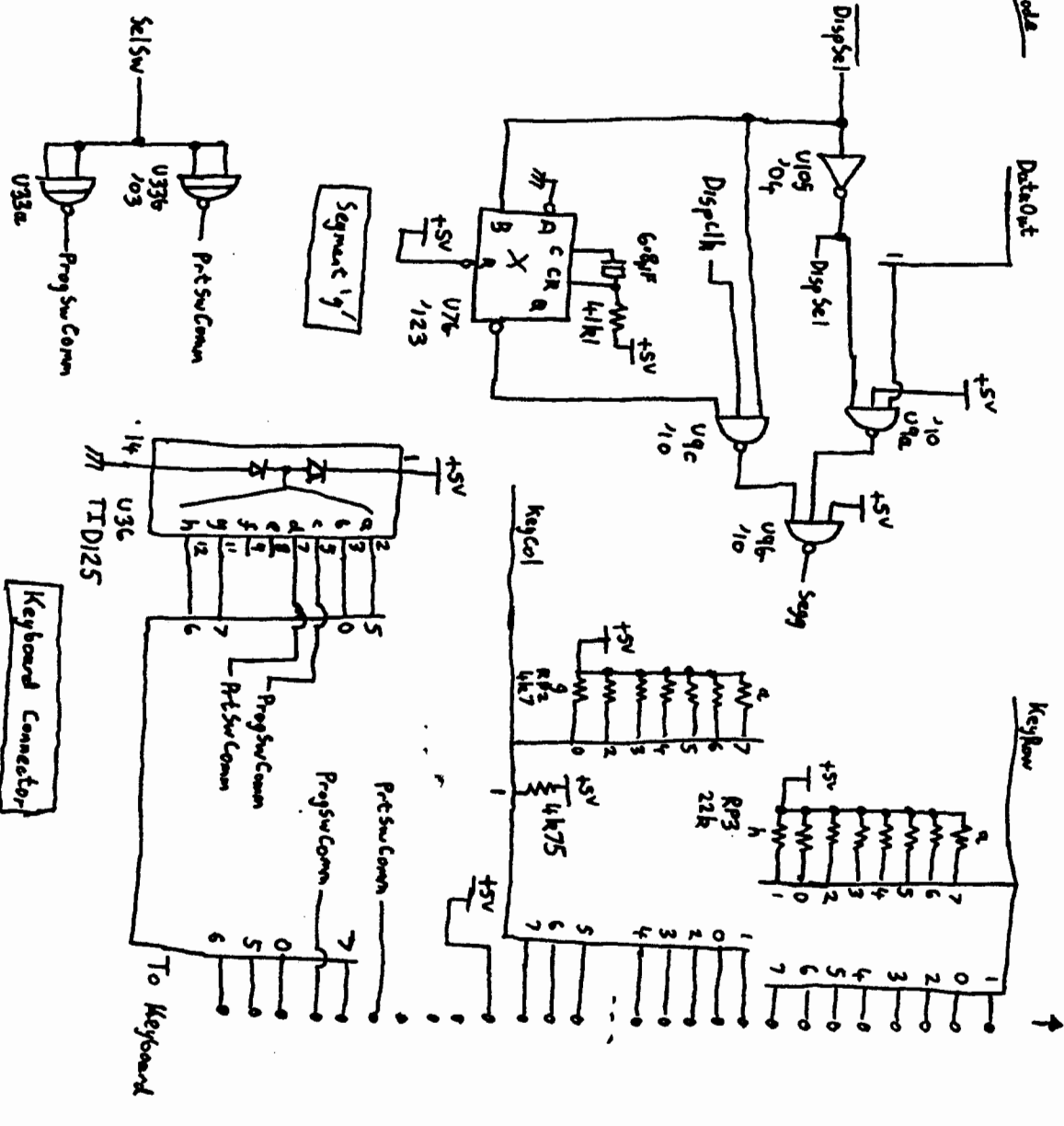


HP 9815 Keyboard / Display Interface Schematic 6

09815-66500



Display

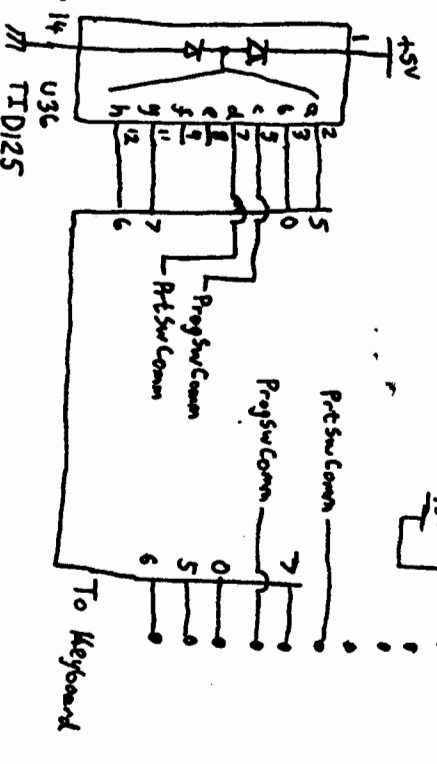


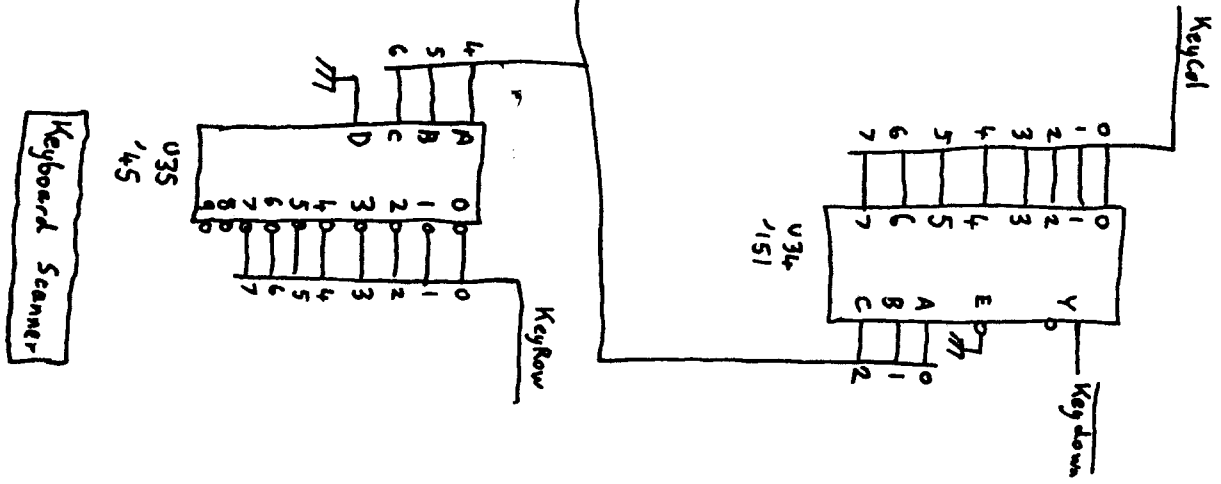
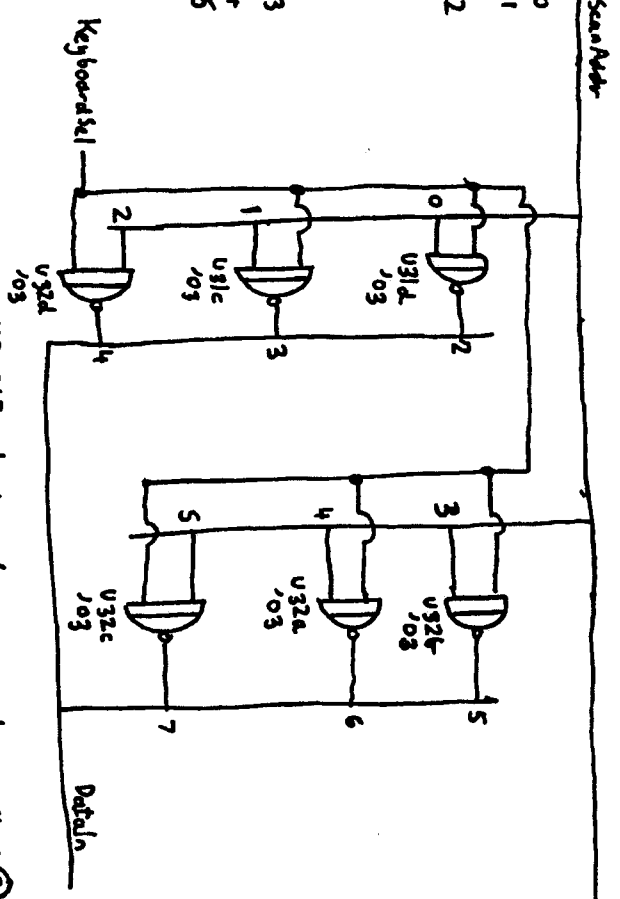
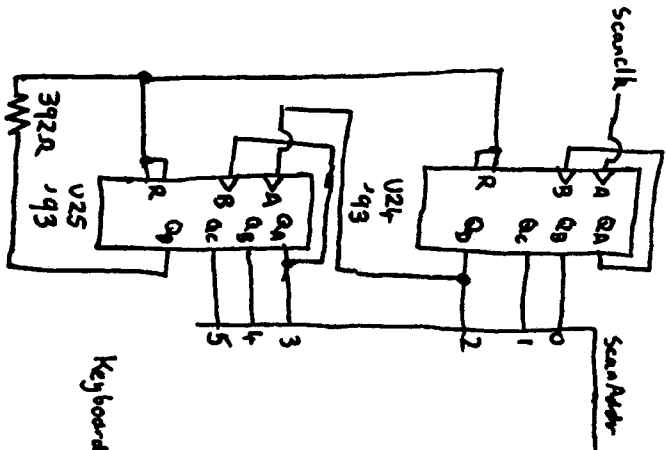
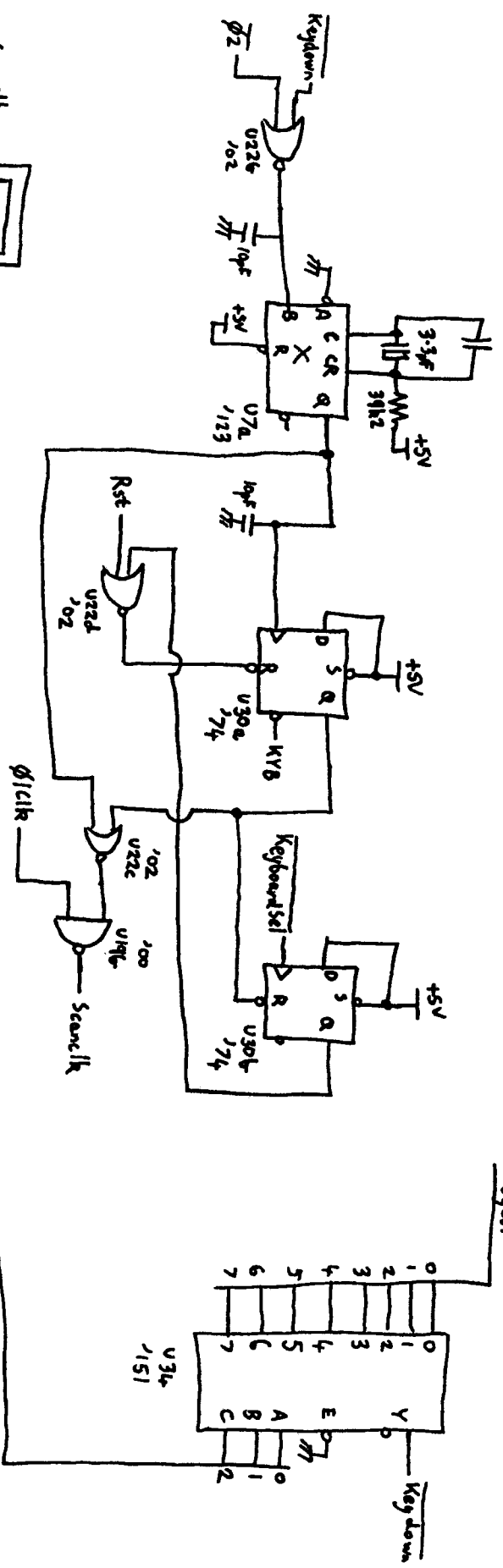
(LHS Machine)

HP9815 Keyboard/Display Interface Sheet 7

09815-66500

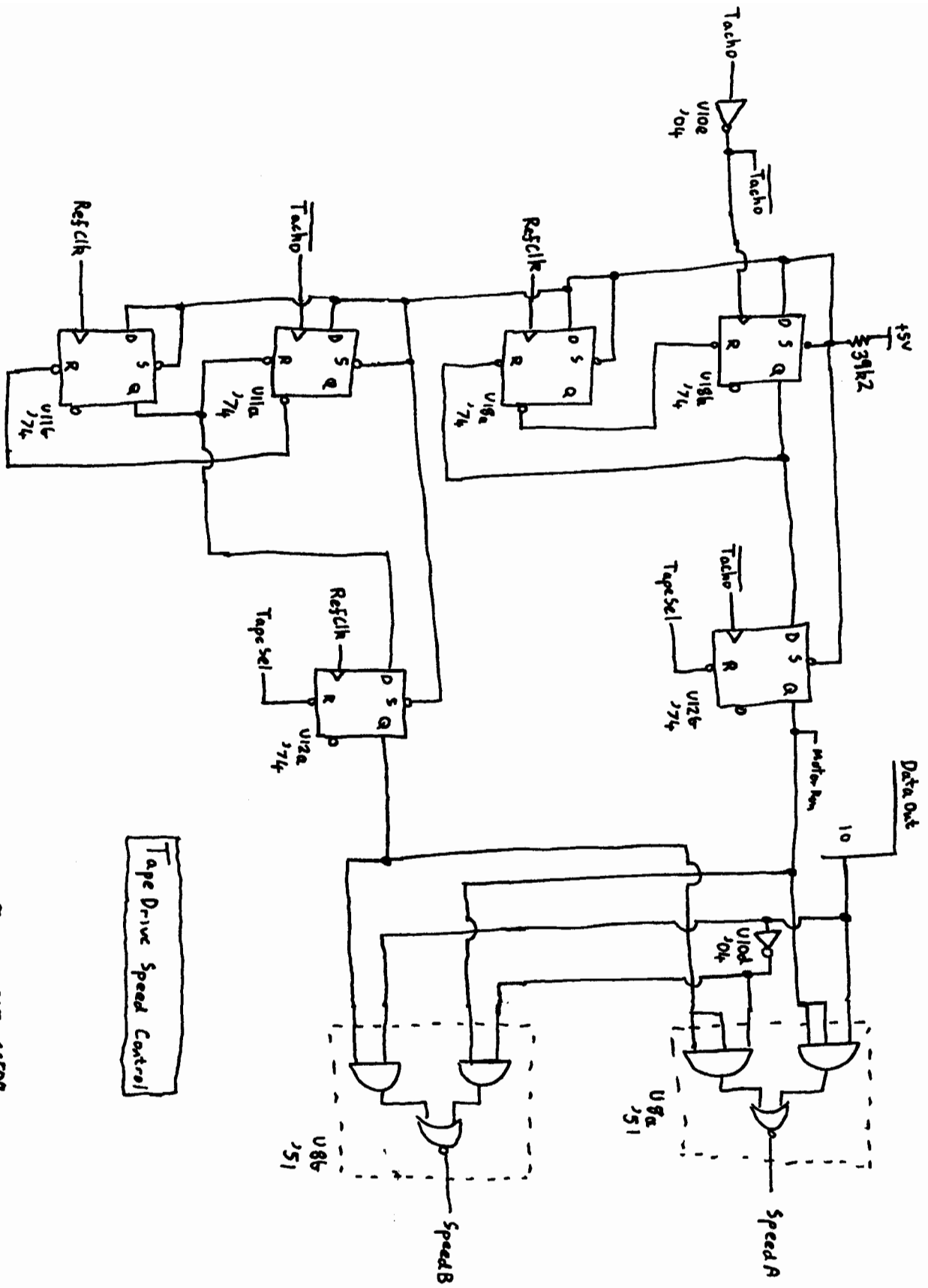
Keyboard Connector





HPQ815 Keyboard/Display Interface Sheet ⑧

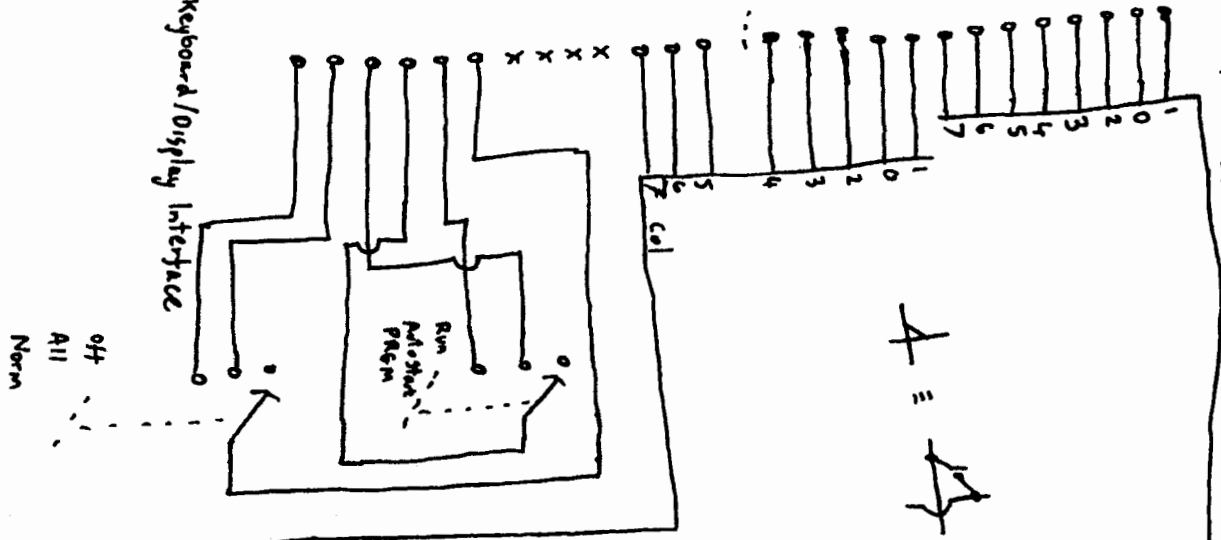
09815-66500



Tape Drive Speed Control

HP 9815 Keyboard/Display Interface Sheet 9 C9815-66500

(LHS machine)
 ↓
 Row




HP 9815 Keyboard

0	1	2	3	4	5	6	7
Lead	Rewind	Record	List	Alpha	Clear	f ²	EX
Grfo	Label	SFG CFB	Step	Reset 0/stop	Shoe	7	8
A	B	C	D	E	Recall	4	5
F	G	H	I	S	End	1	2
K	L	M	N	O	Run Stop	0	.
Ln	Log	Sin	Cos	Rt	Rd	X	-
f ⁻¹	gold	Print	÷	Clk	9	6	3
Σ+	Acct	Tax	P-R	Σ _Y	Enter	Enter	+

Load	Revind	Record	List	Call Alpha
Goto	Label	Set PC	Step	Reset BStep
A	B	C	D	E
F	G	H	I	J
K	L	M	N	O

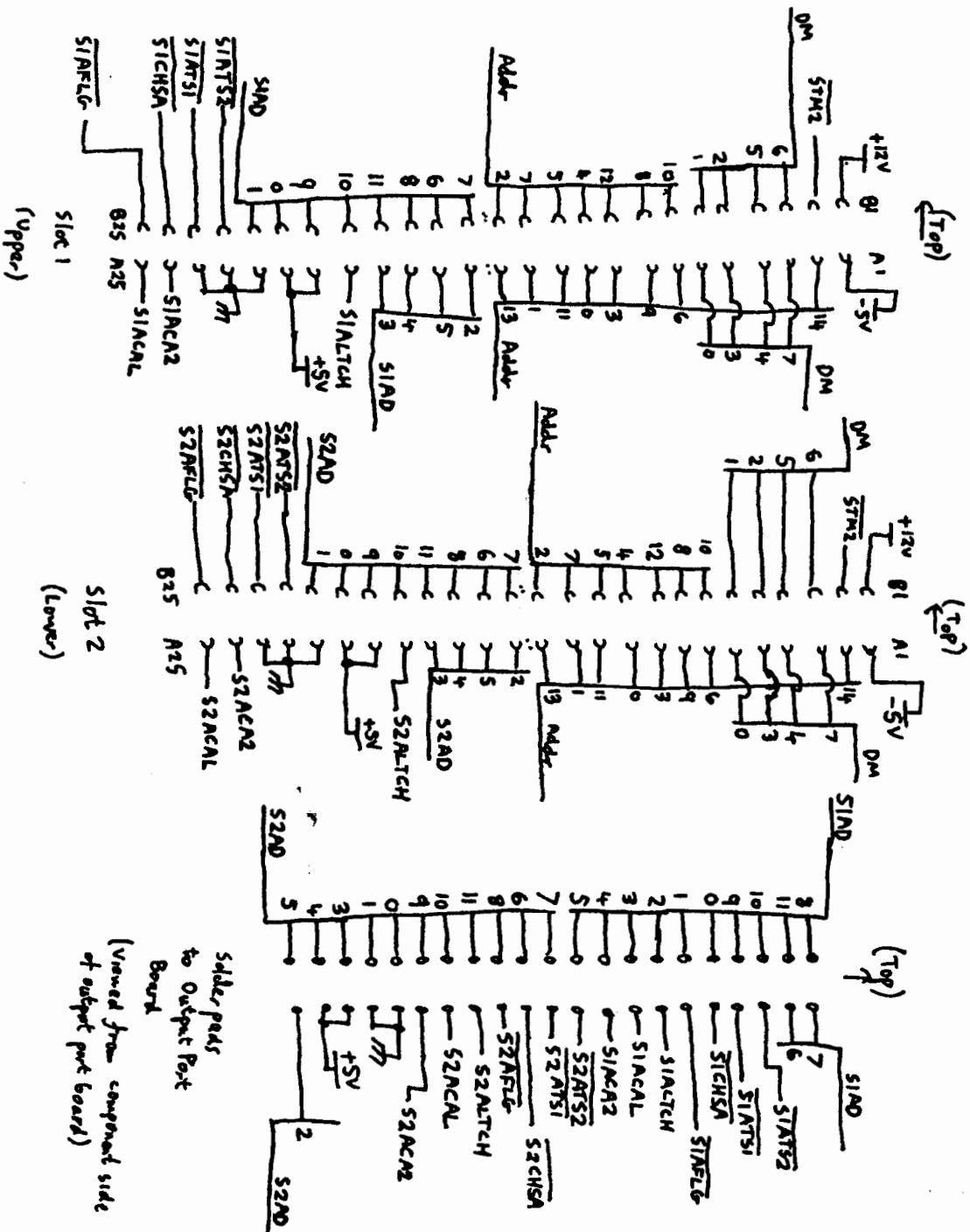
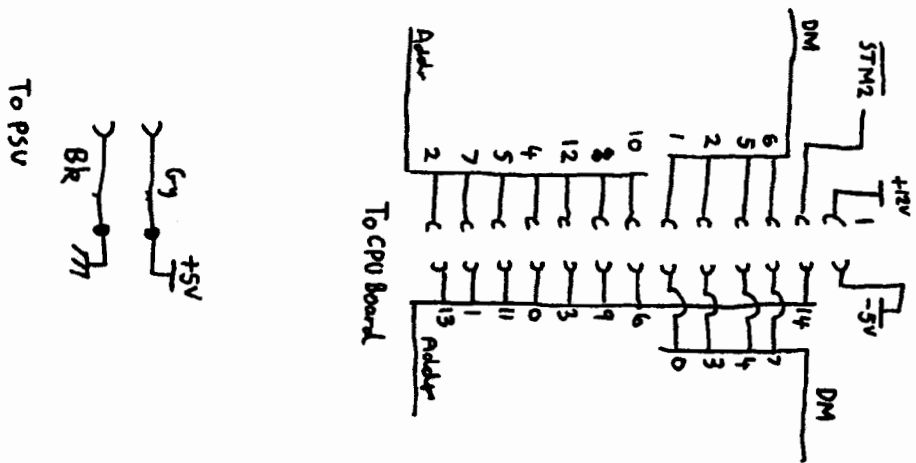
Clear
Store
Recall
End
Run Stop

	E EX	CLX
7	8	9
4	5	6
1	2	3
0		

HP 9815 Keypops Slot ①

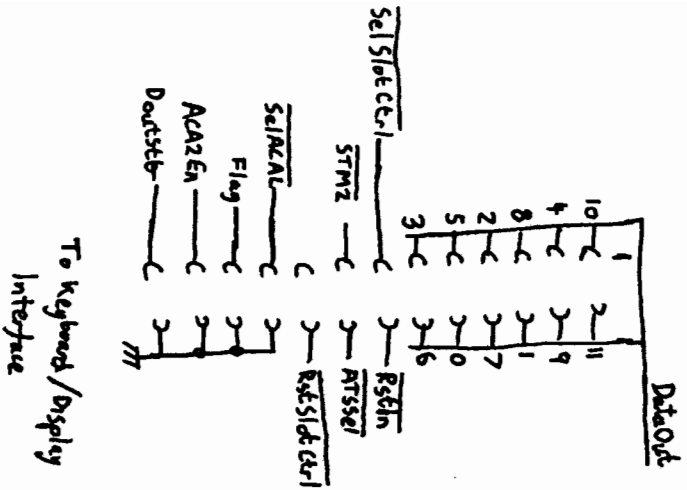
\div	Print	Gold	f^{-1}
X	R \uparrow	sin	Ln
-	R \downarrow	cos	log
+	x^y C \uparrow	Tan	Σ +
Enter \uparrow		P \rightarrow R	Acc+

HP 9815 Keycaps Sheet ②

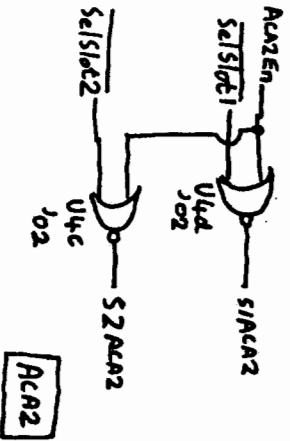
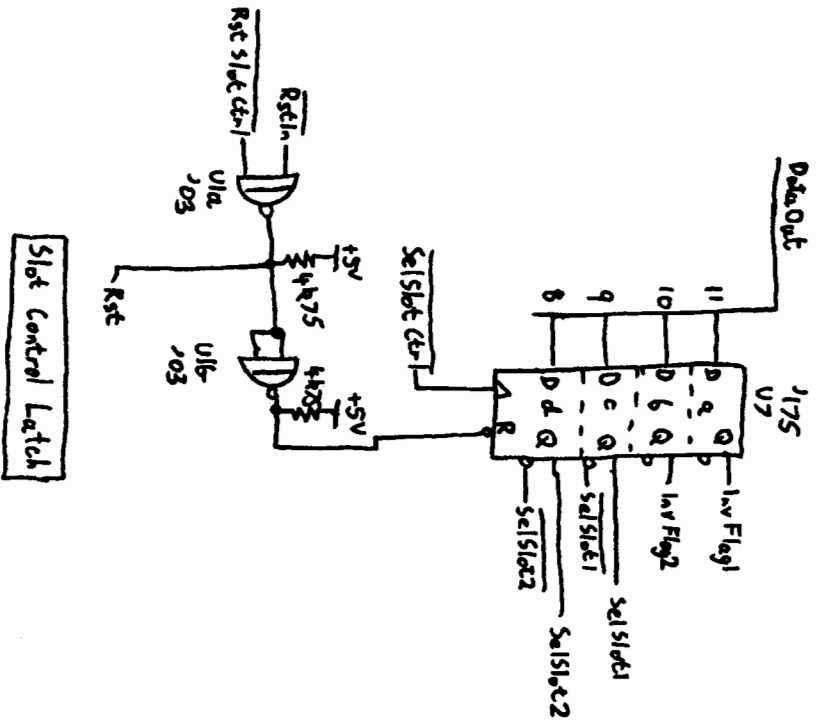


HP 9815 Expansion Backplane

09815-66502

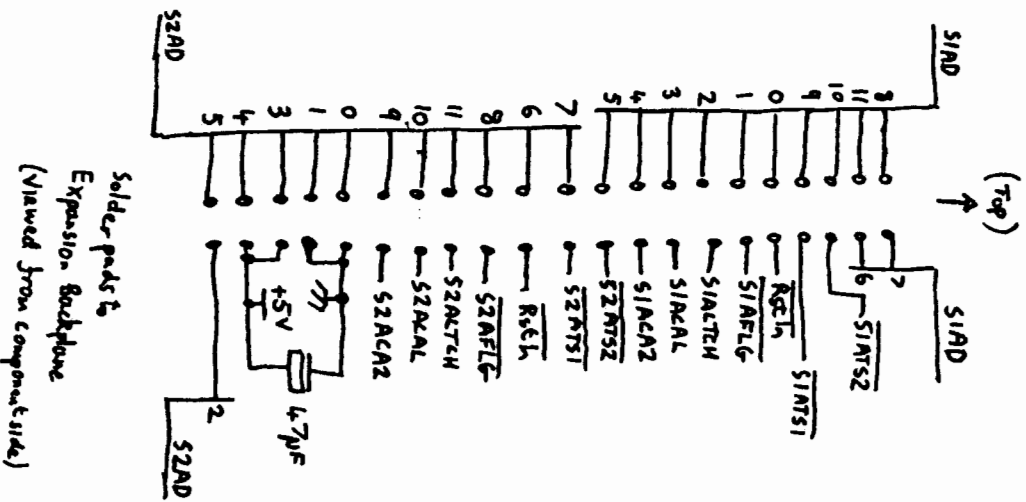


To Keyboard/Display Interface

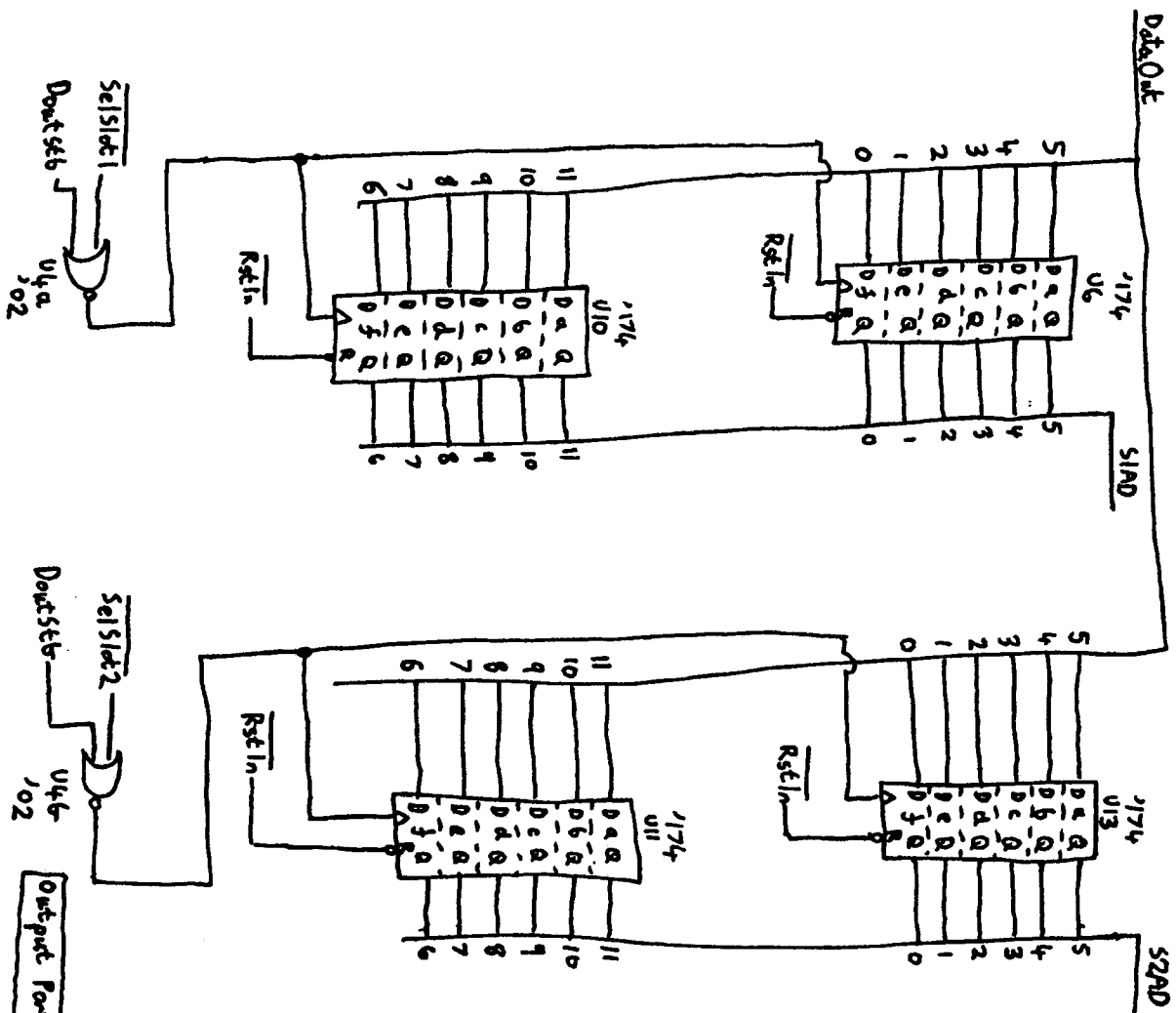


AC2

HP9815 Output Port Board Sheet 1



09815-66501

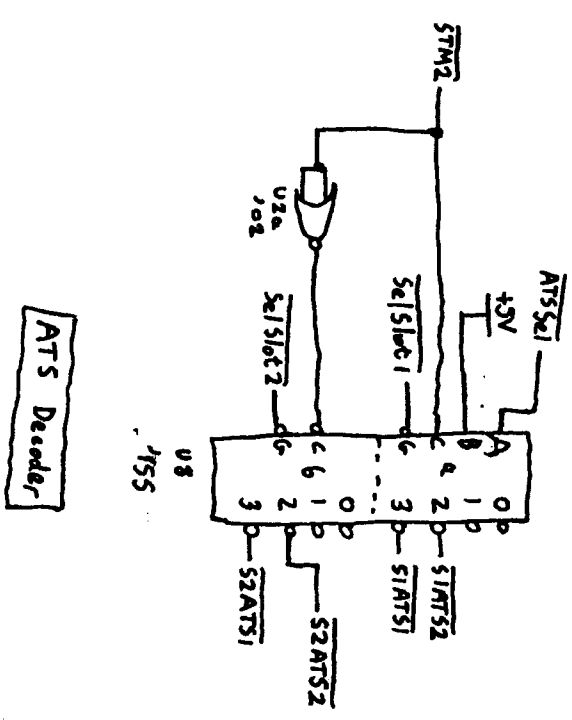


SelSlot1
DataOut
U4a
102

SelSlot2
DataOut
U4b
102

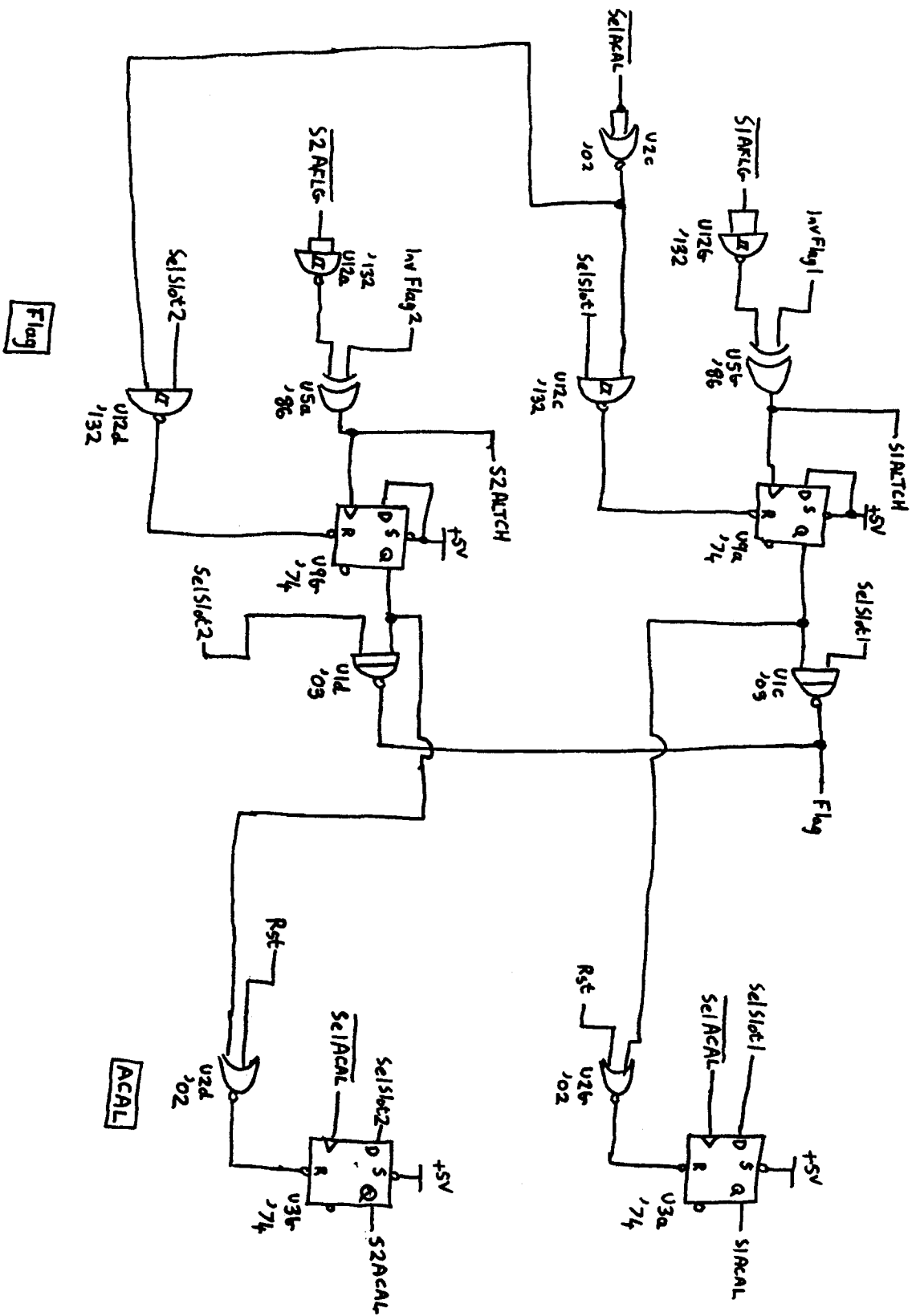
Output Ports

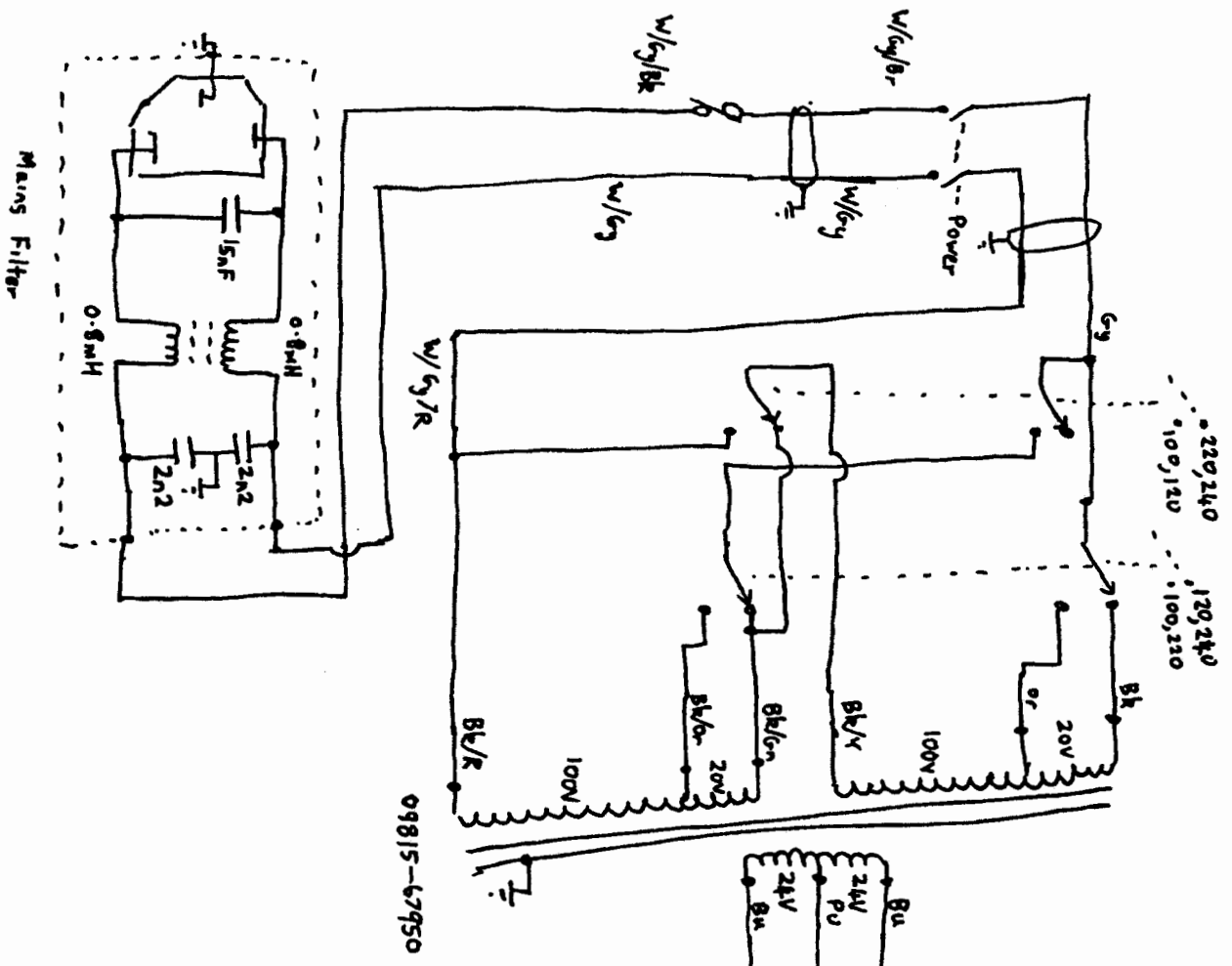
HP 9815 Output Port Board Skat ②



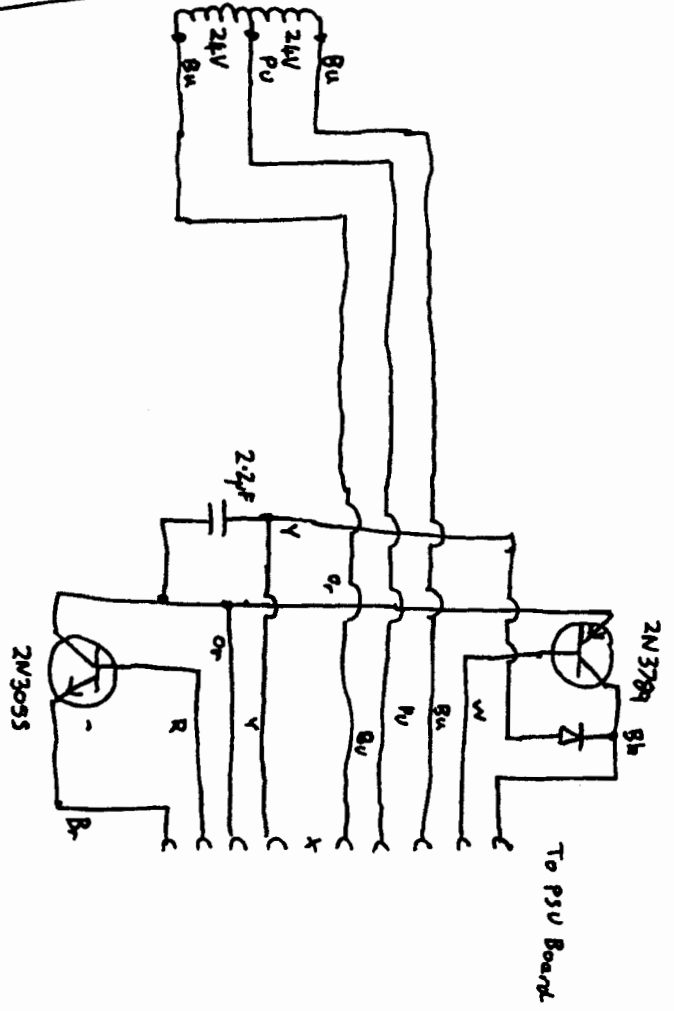
ATS Decoder

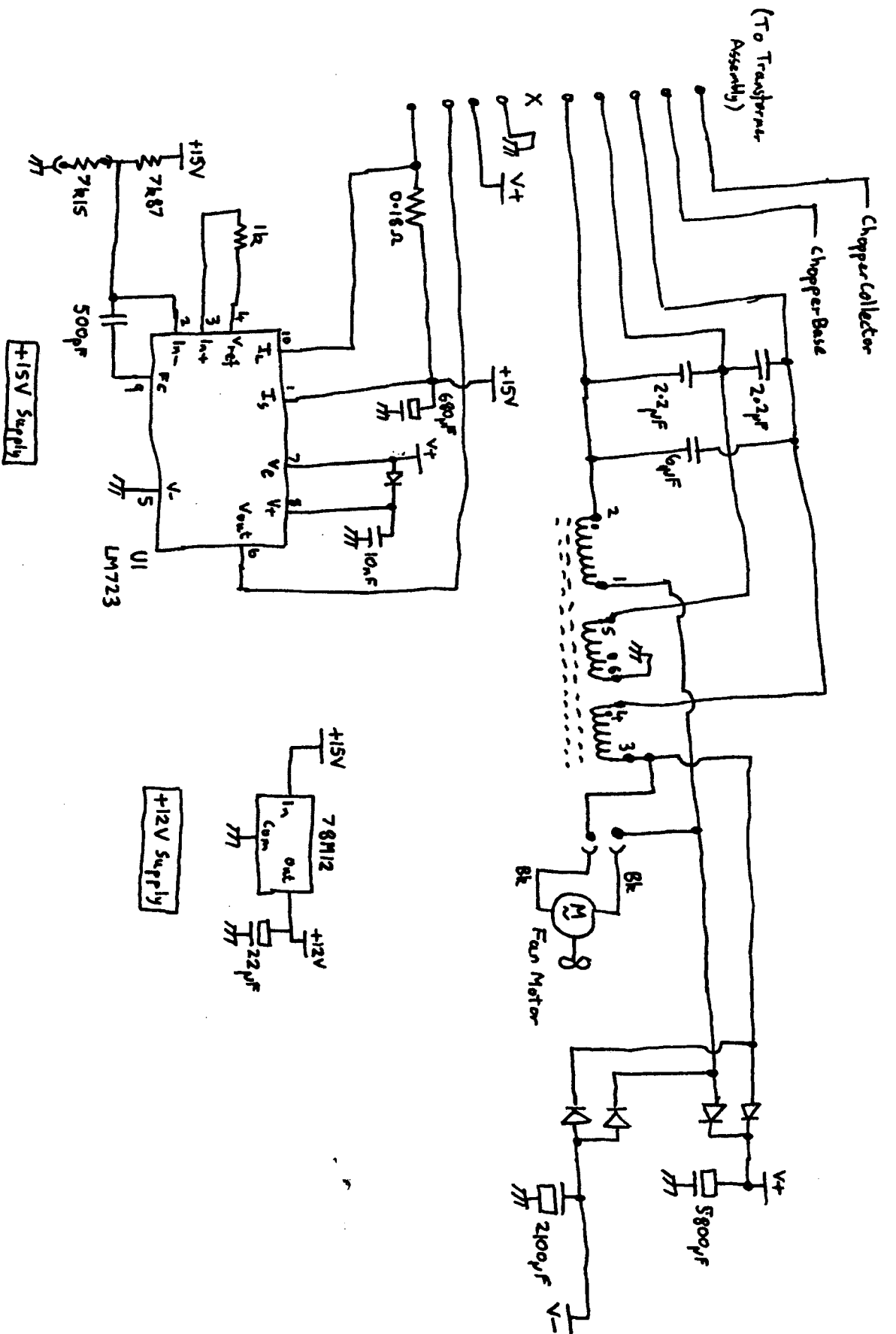
09815-66501



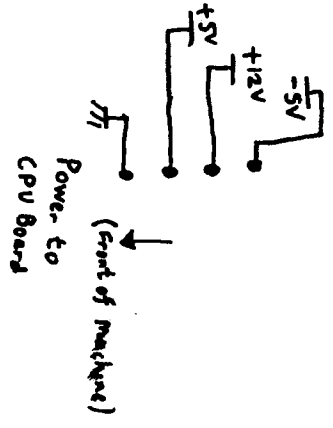
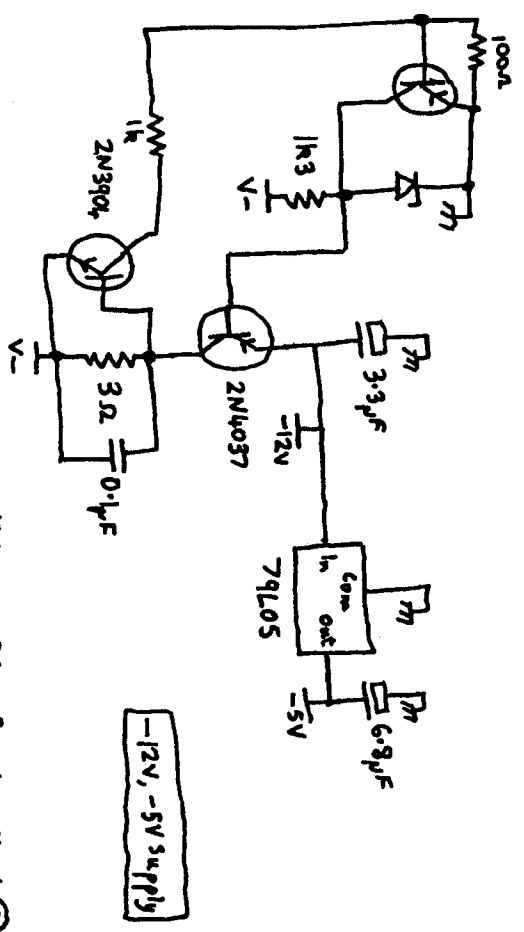
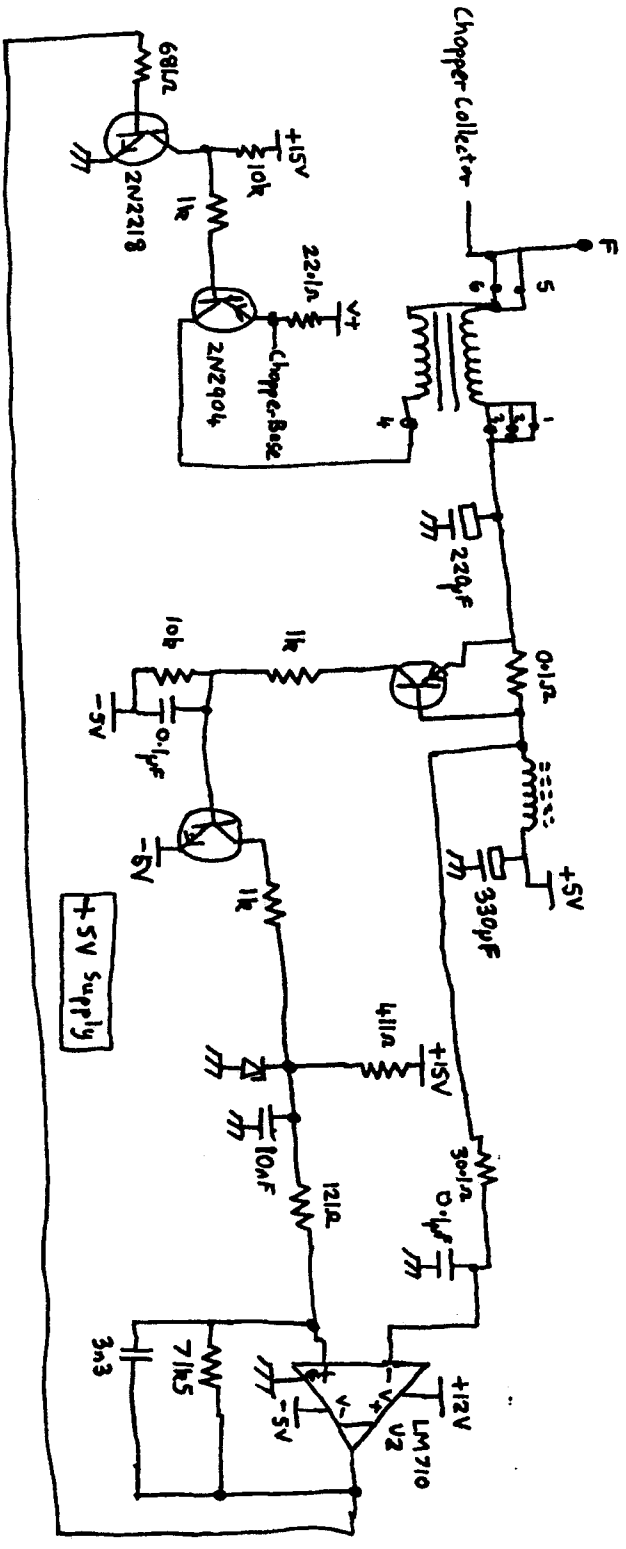


HP9815 Transformer Assembly

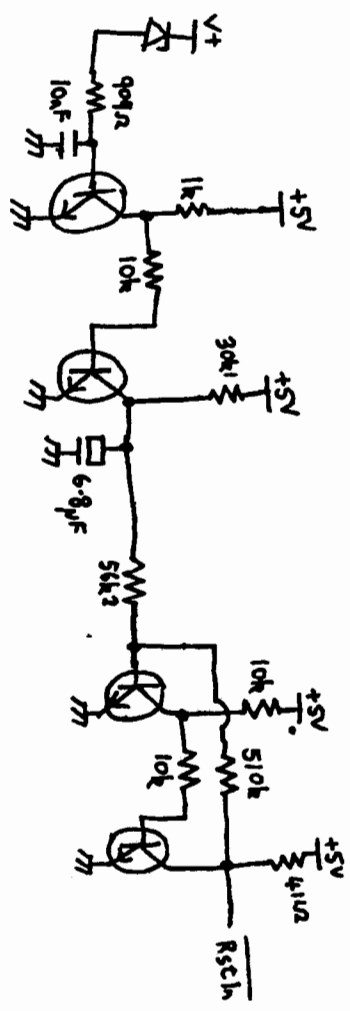




HP9815 PSU Board sheet ① 09815-66550

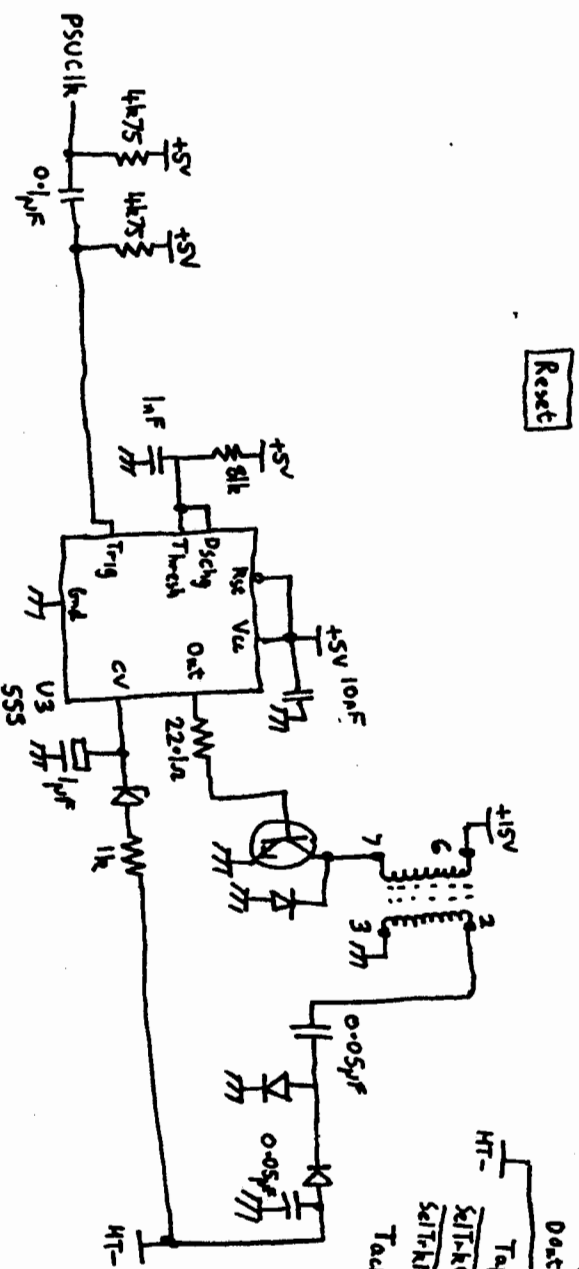


HP9815 PSU Board sheet ② 09815-66550

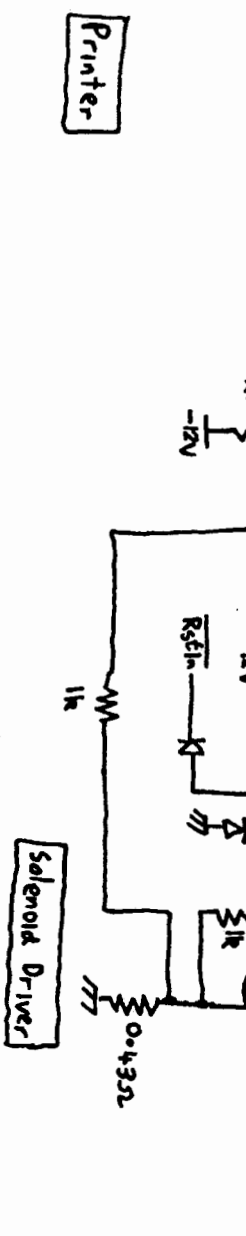
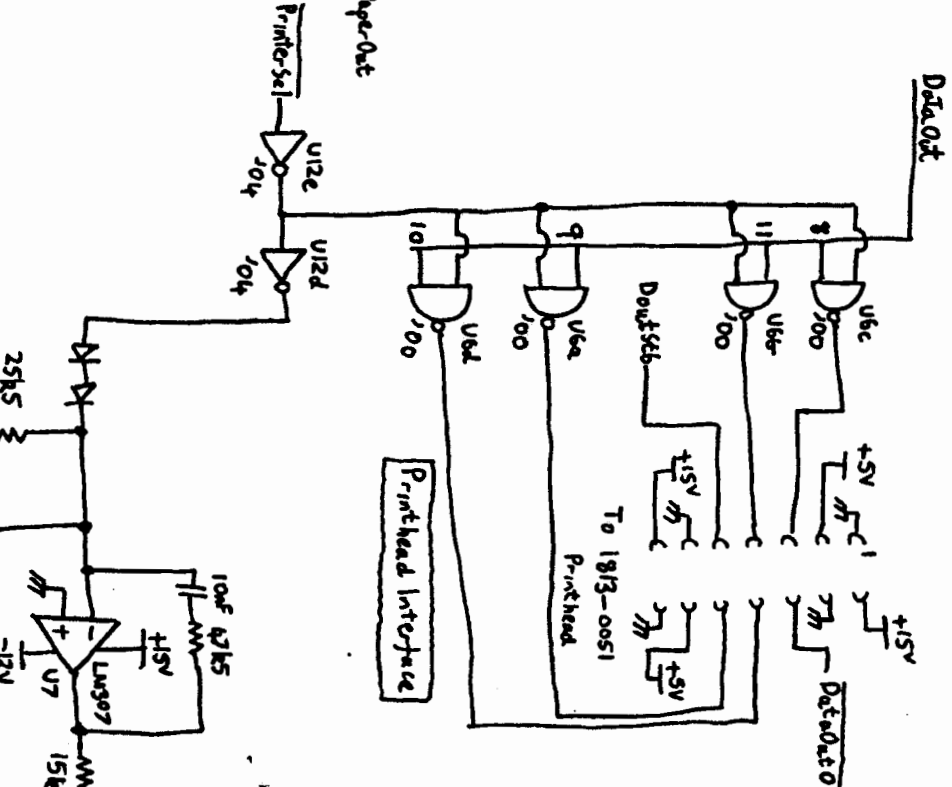
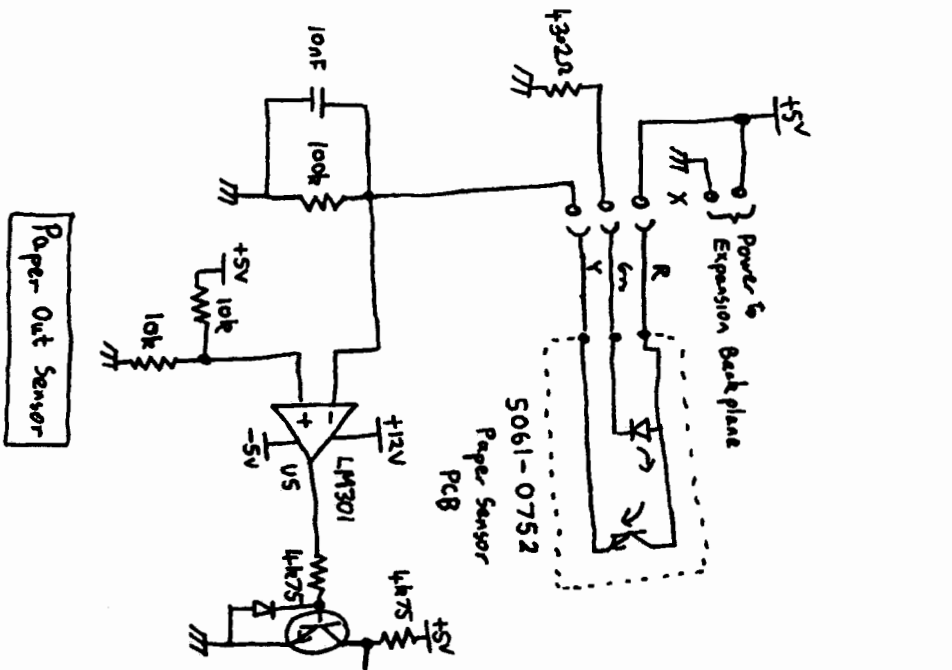


To Keyboard/Display Interface

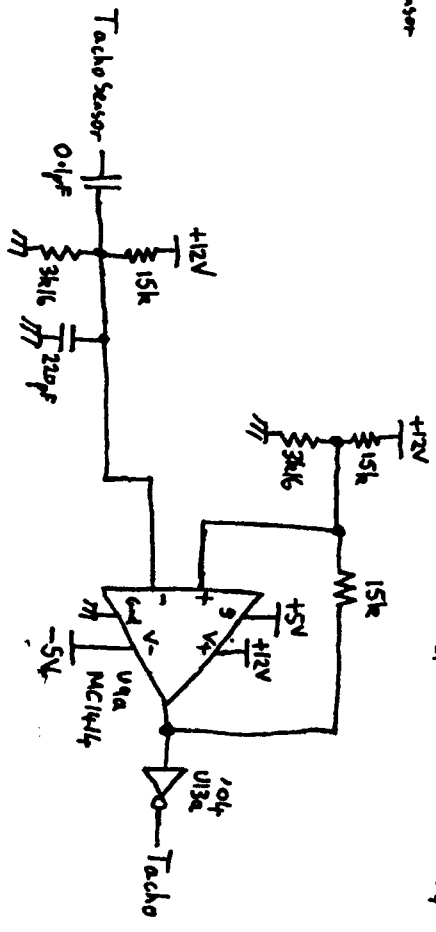
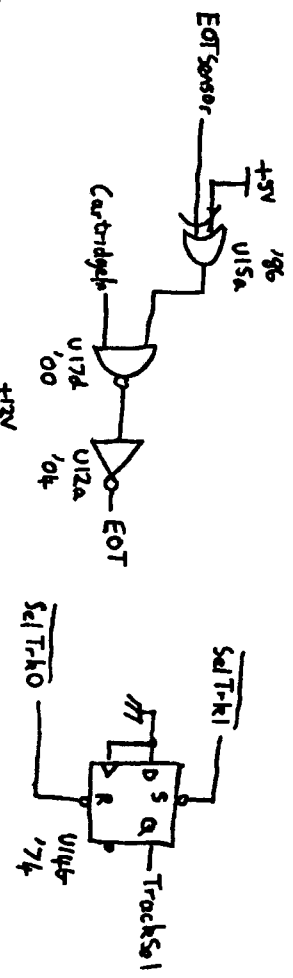
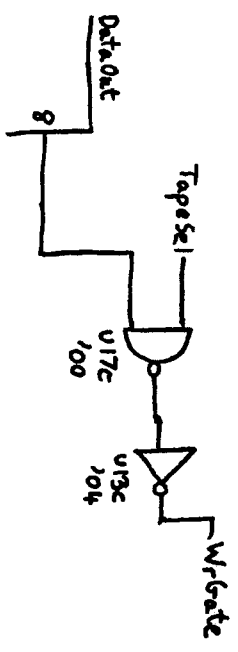
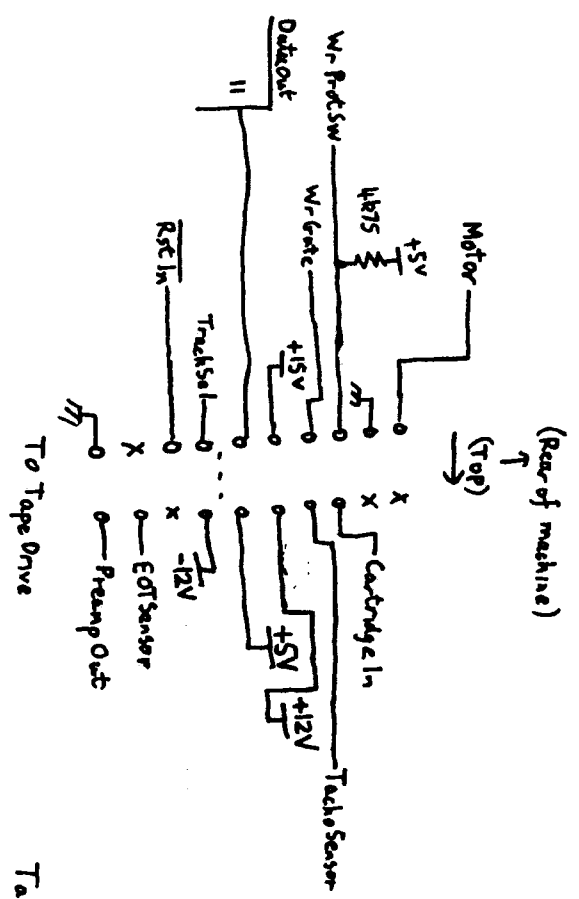
- 1 Data Out
- 11 EOT
- 10 PrinterSel
- 9 RstIn
- 8 PaperOut
- 7 DataOut0
- 6 Cartridgeln
- 5 Wr-ProtSw
- 4 MotorRun
- 3 SpeedA
- 2 SpeedB
- 1 PSuClk
- 0 EOT Sensor



Display Supply

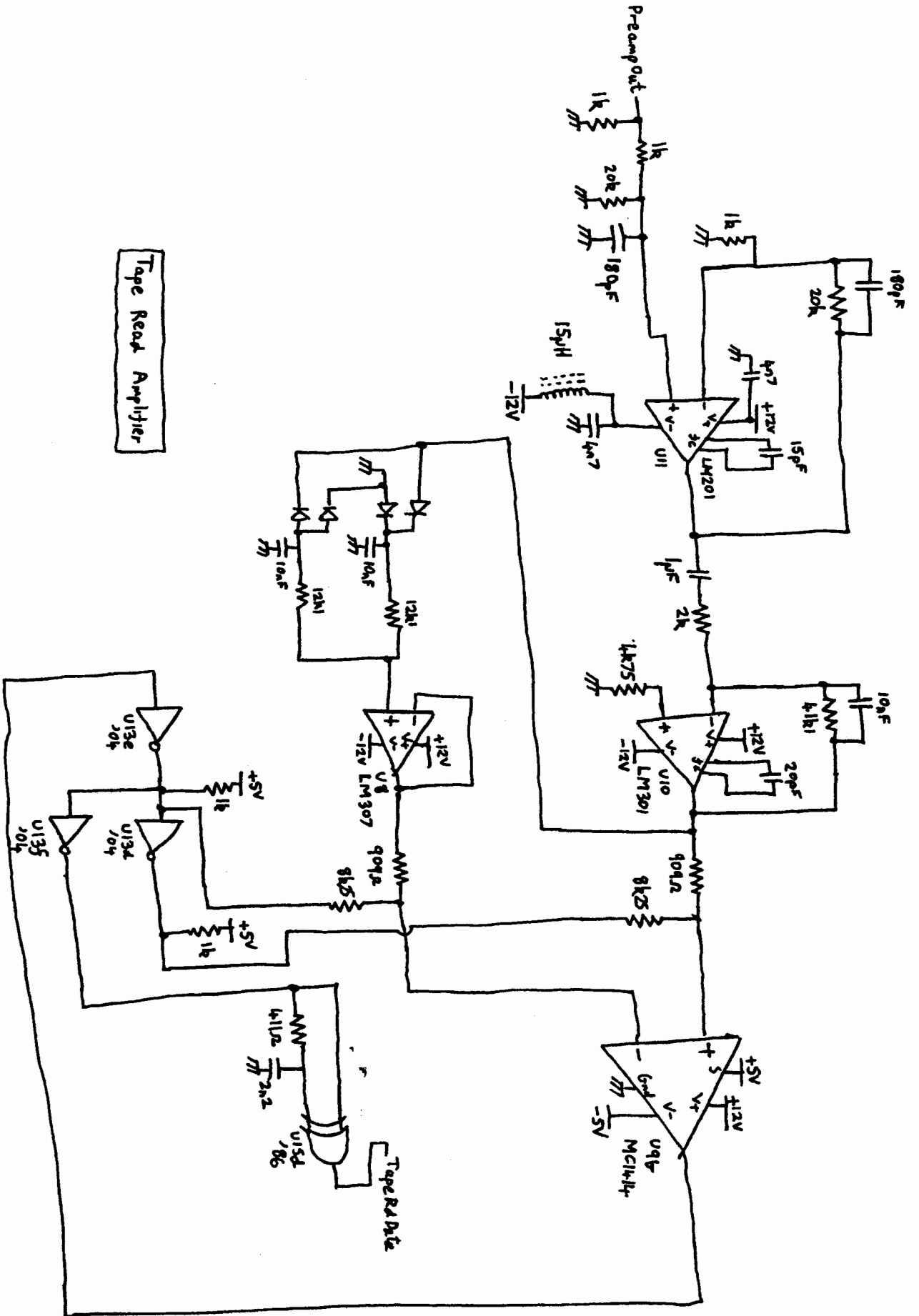


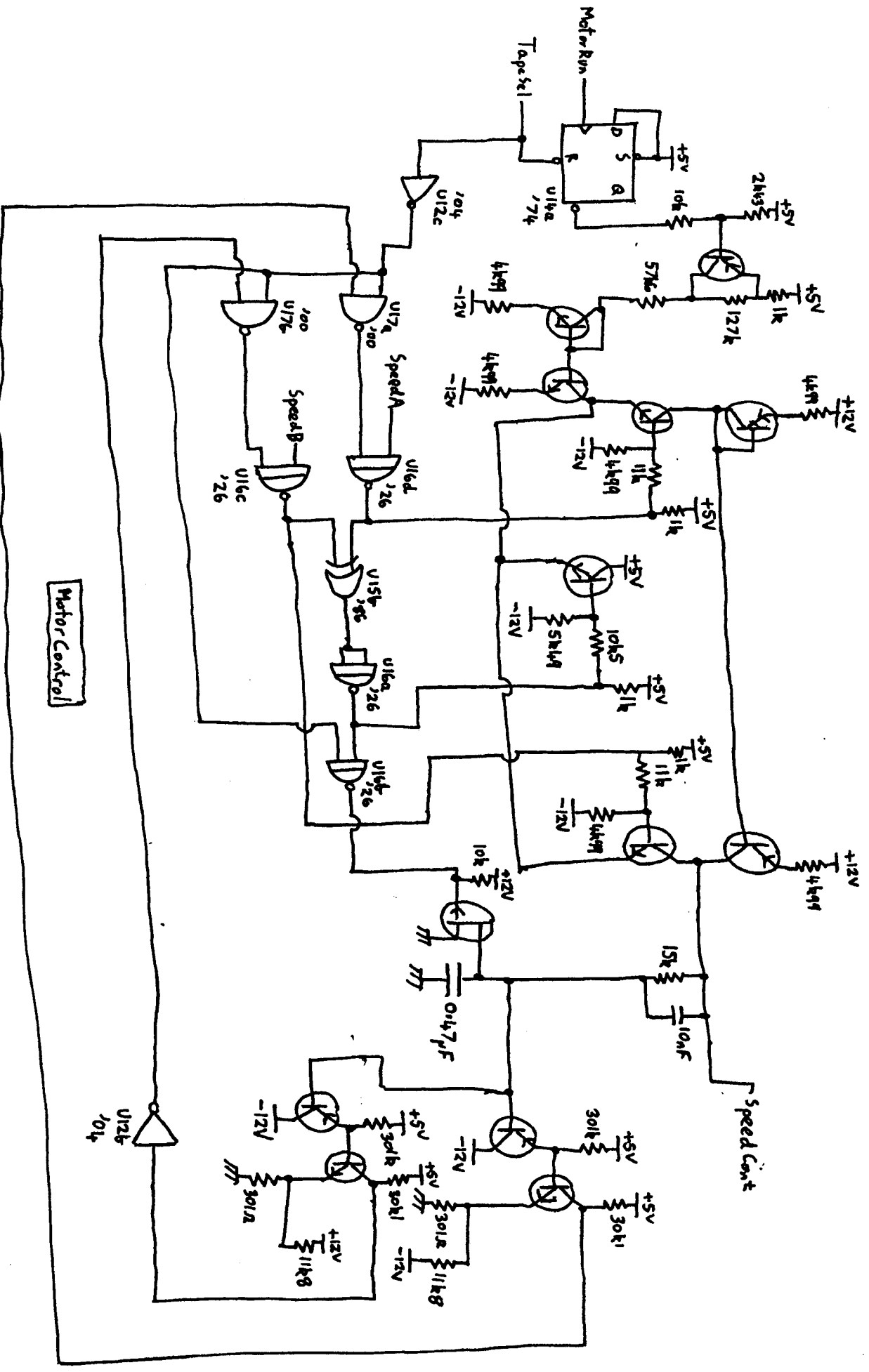
HP9815 PSU Board sheet (4) 09815-66550



Tape Drive Control

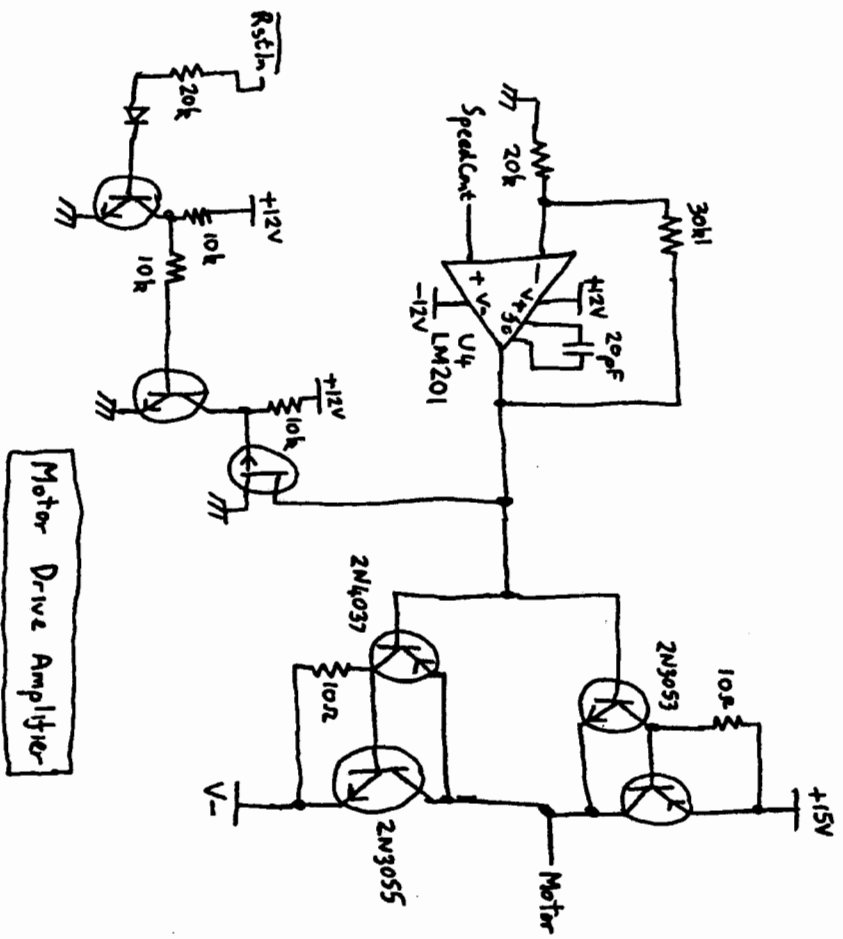
Tape Read Amplifier



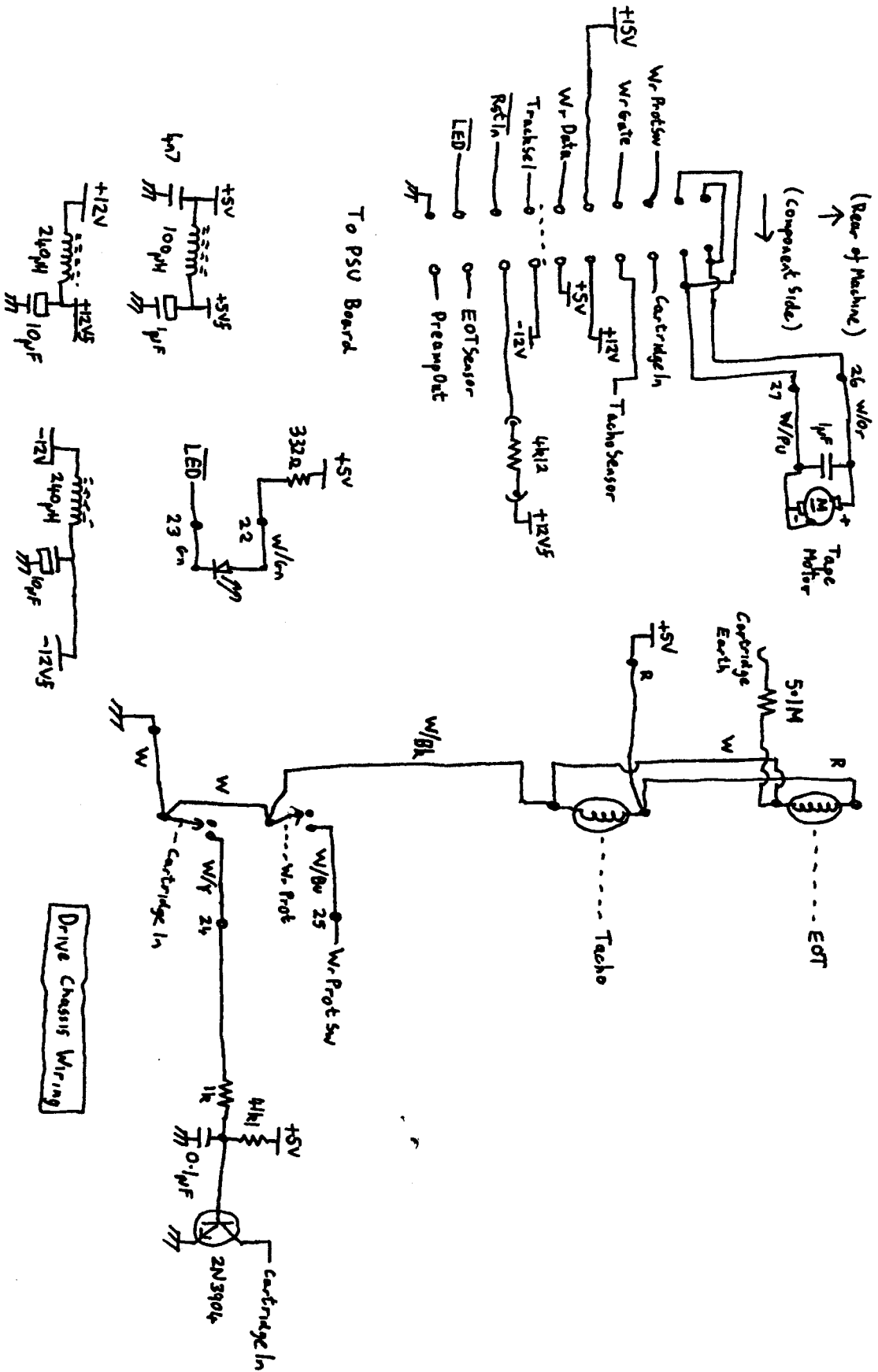


HP9815 PSU Board Sheet ② 09815-66550

Motor Control

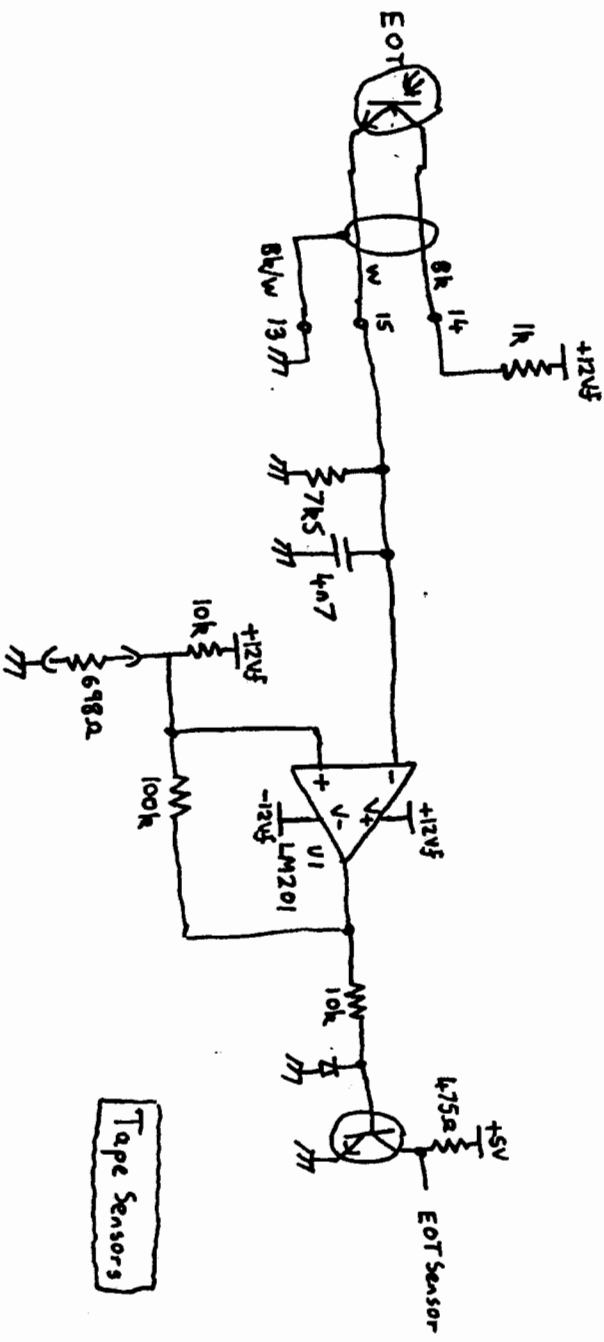
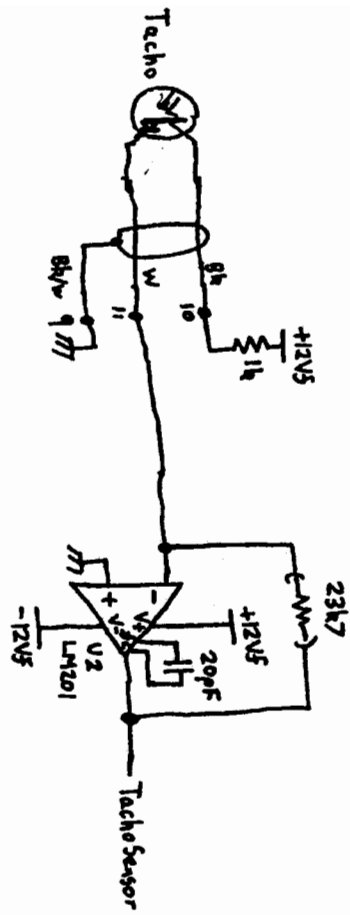


Motor Drive Amplifier



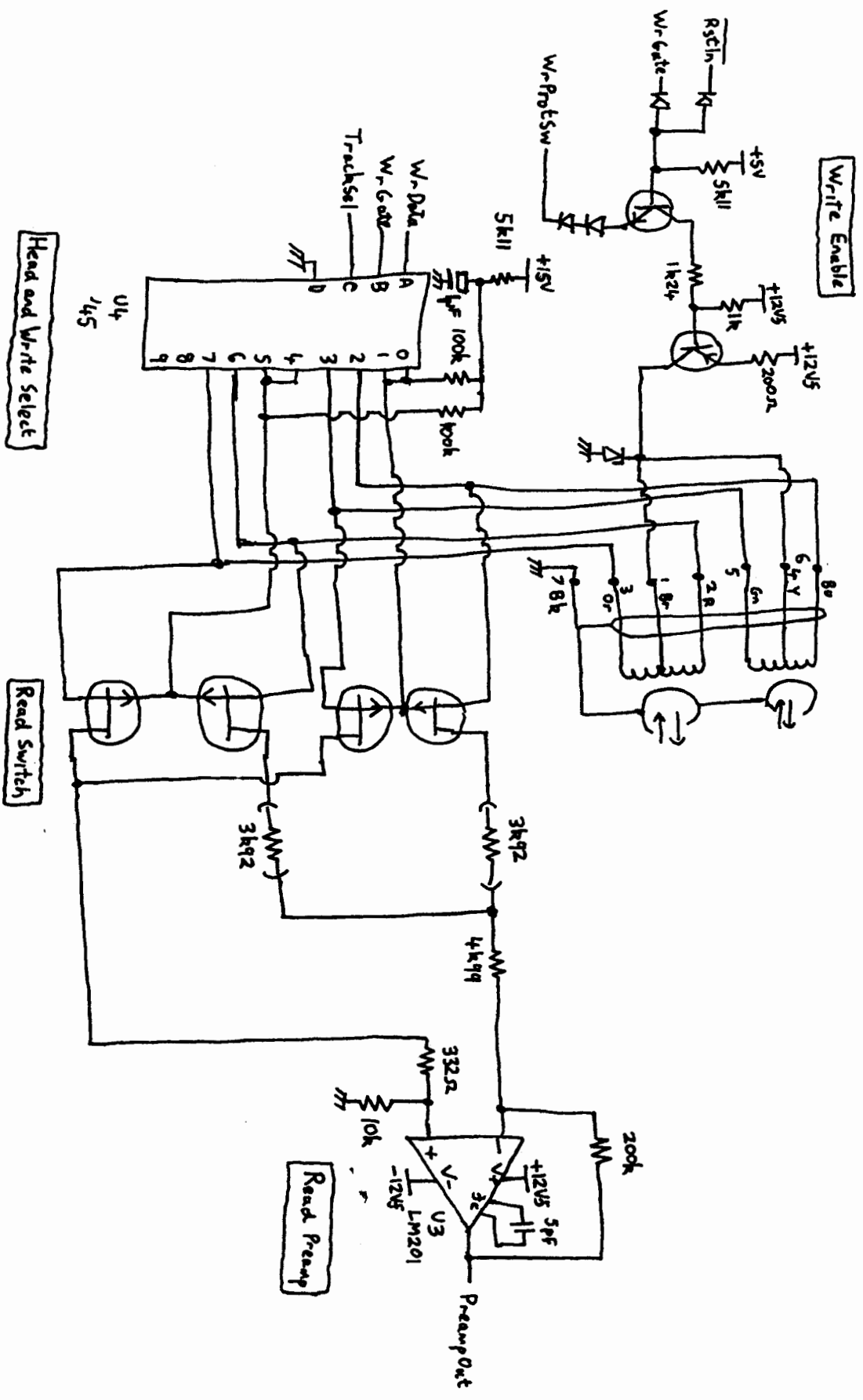
HP 9815 Tape Drive Sheet ①

09815-66504



HP9815 Tape Drive Skat ②

09815-66504



HP 9815 Tape Drive Sheet ③ 09815-66504