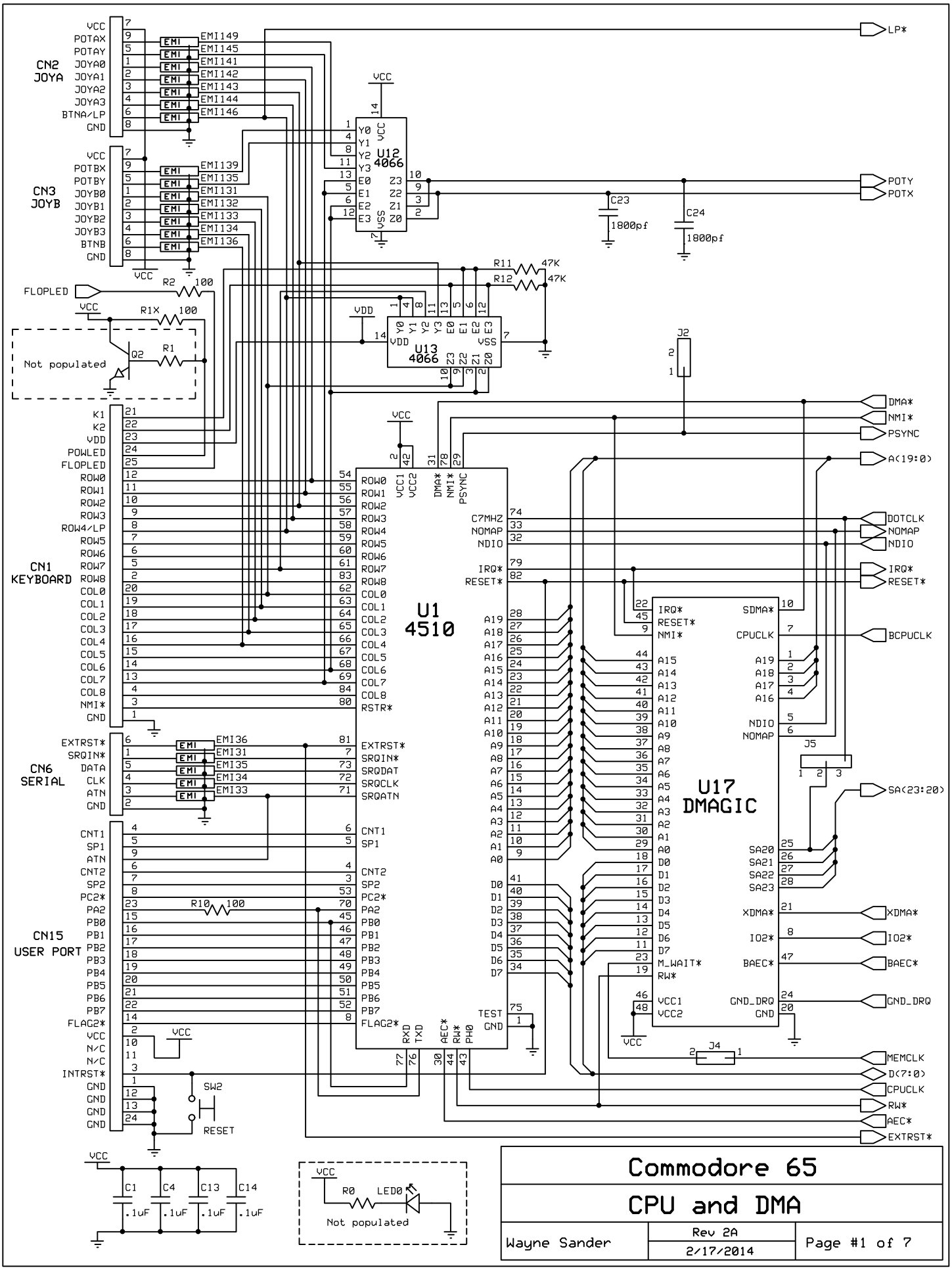
CN2 JOYA
CN3 JOYB
CN1 KEYBOARD
CN6 SERIAL
CN15 USER PORT
U1 4510
U12 4066
U13 4066
U17 DMAGIC
Not populated
Not populated
SW2
RESET
LP*
POTY
POTX
DMA*
NMI*
PSYNC
A(19:0)
DOTCLK
NOMAP
NDIO
IRQ*
RESET*
BCPUCLK
SA(23:20)
XDMA*
IO2*
BAEC*
GND_DRQ
MEMCLK
D(7:0)
CPUCLK
RW*
AEC*
EXTRST*
C23
1800pf
C24
1800pf
C1
.1uF
C4
.1uF
C13
.1uF
C14
.1uF
Commodore 65
CPU and DMA
Wayne Sander
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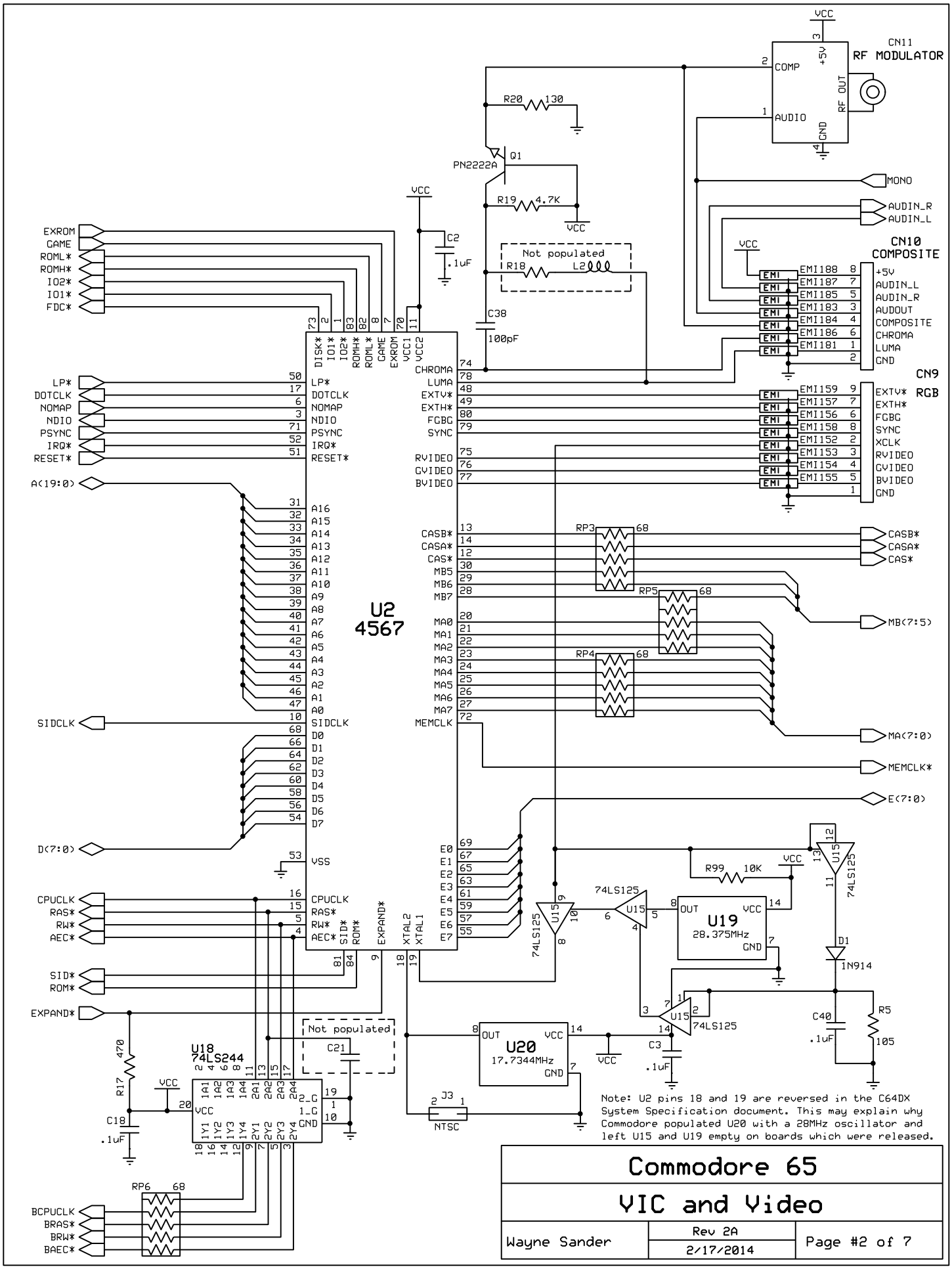

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VIC and Video

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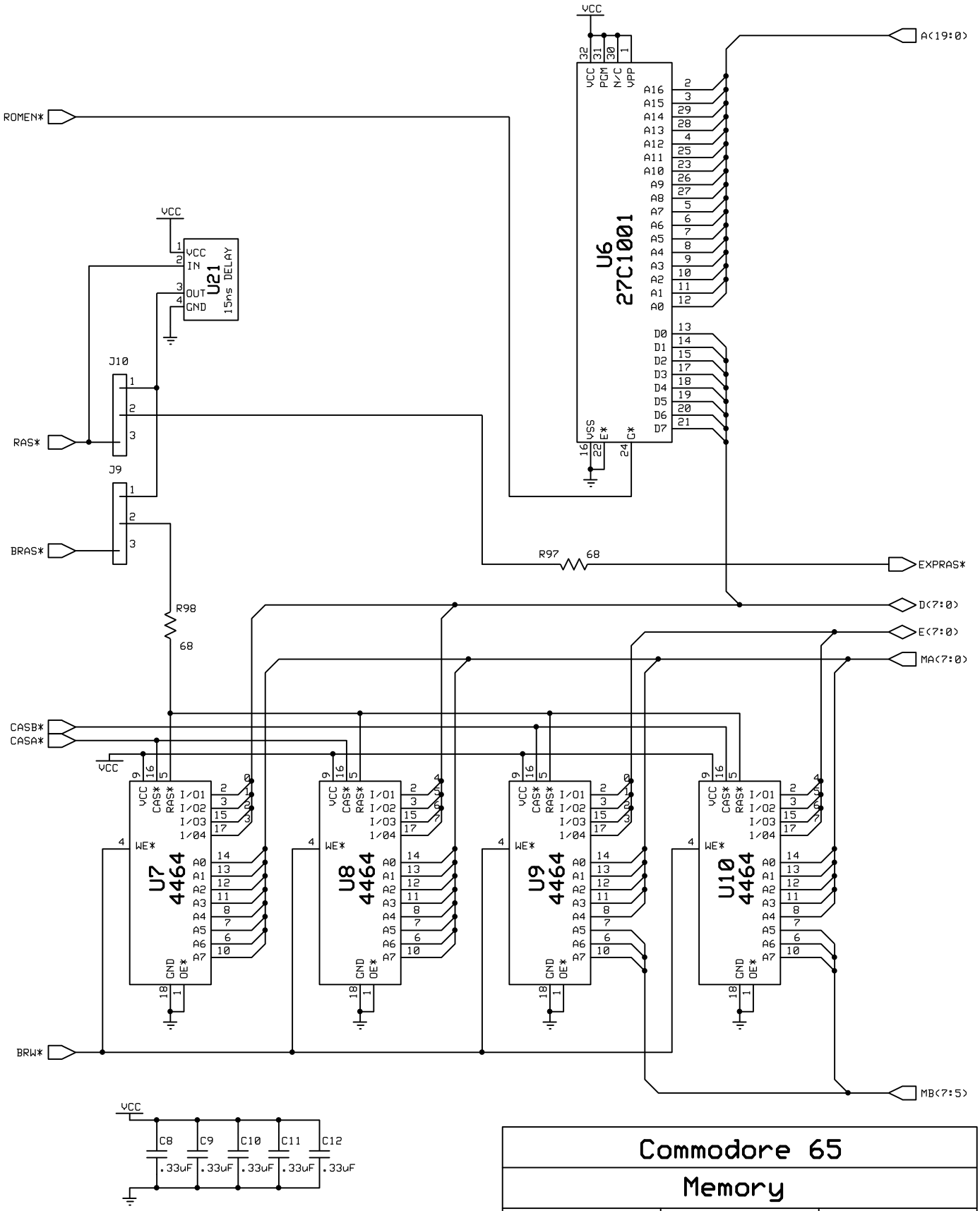

Commodore 65

Memory

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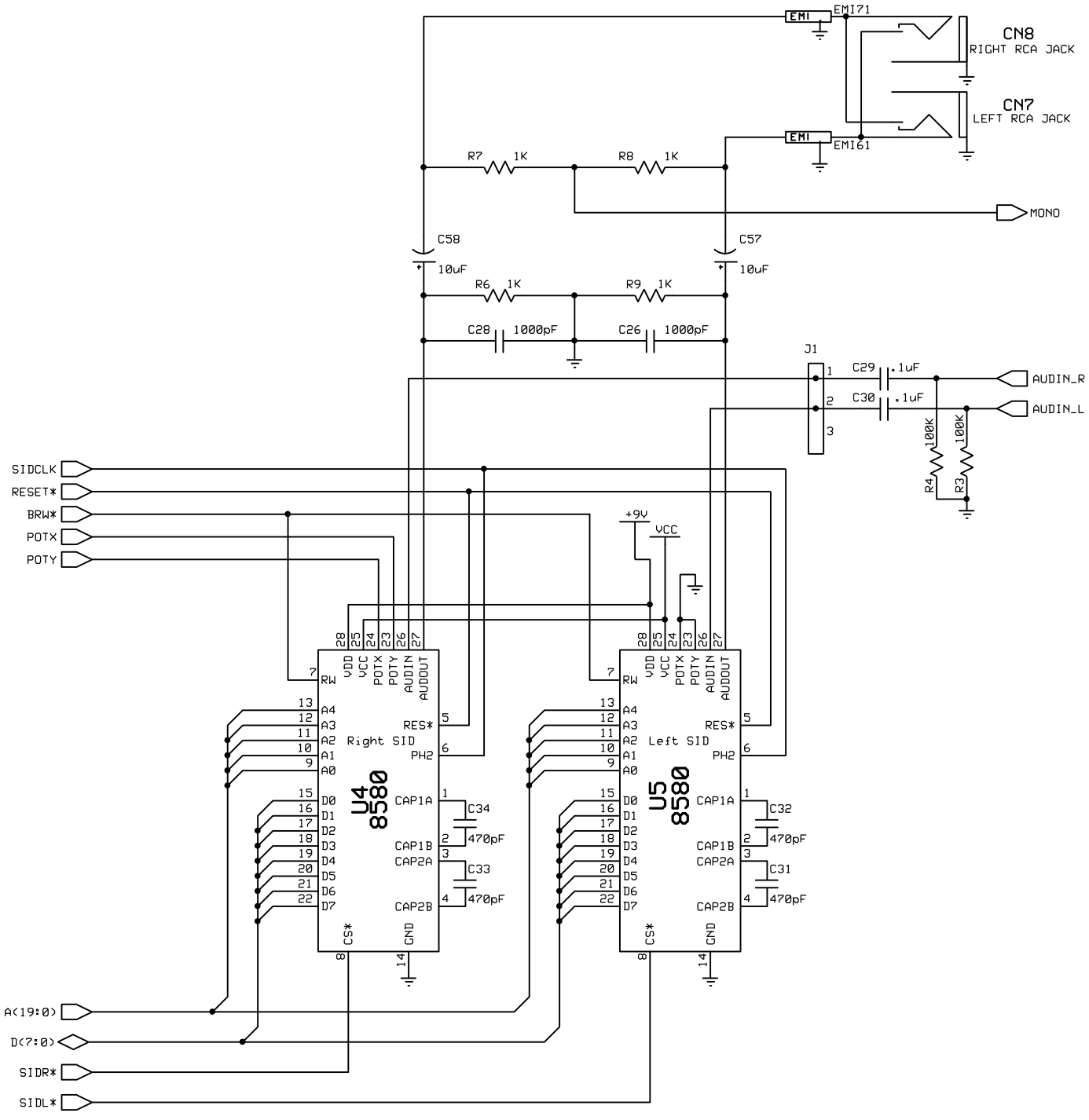

Commodore 65		
Audio		
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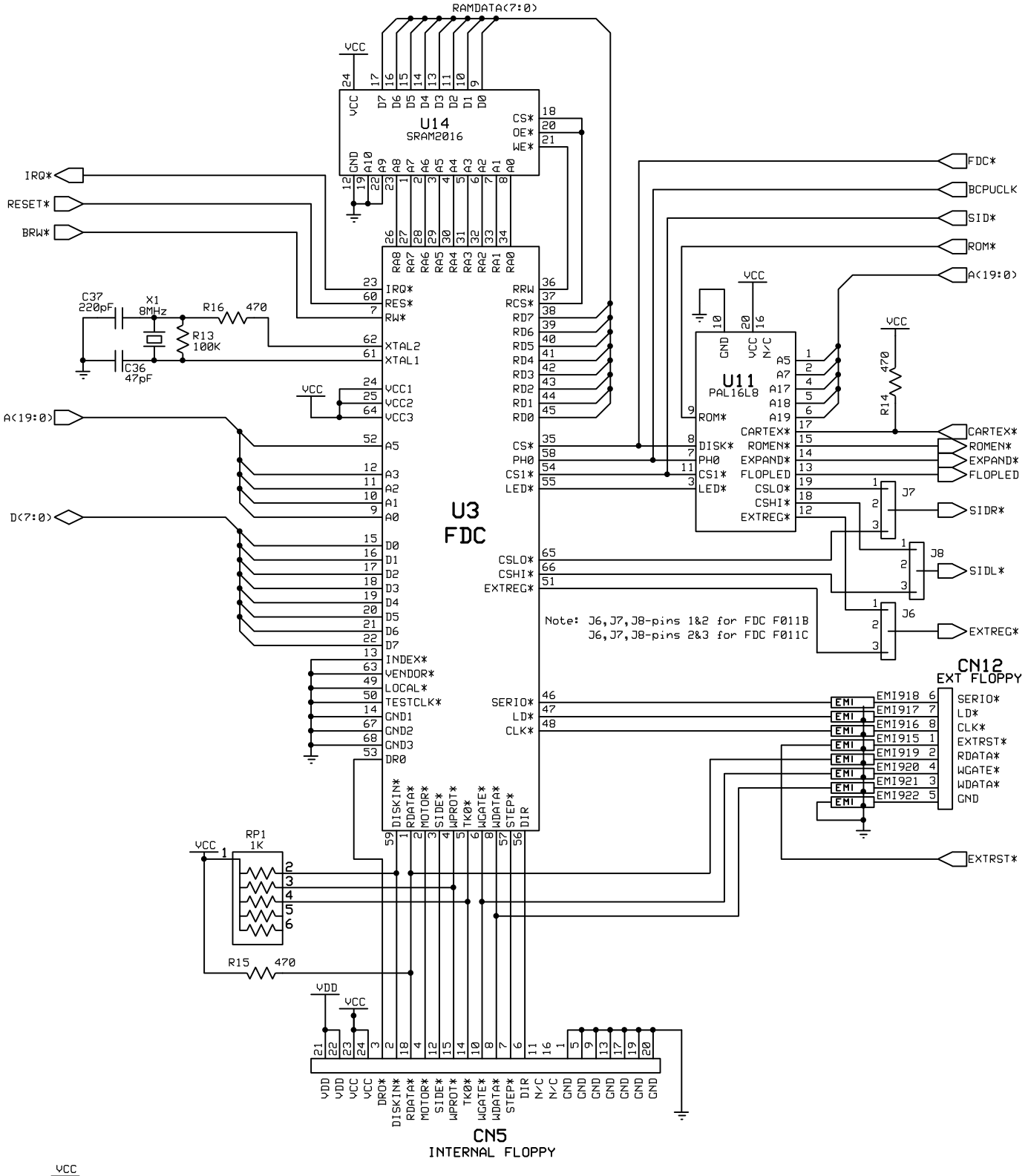

Commodore 65

Floppy Disk and PAL

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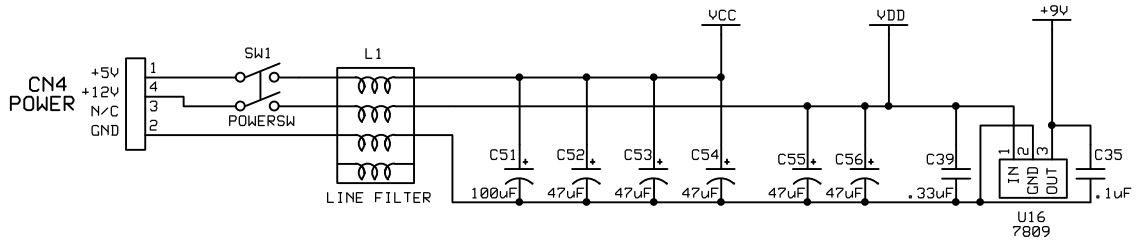

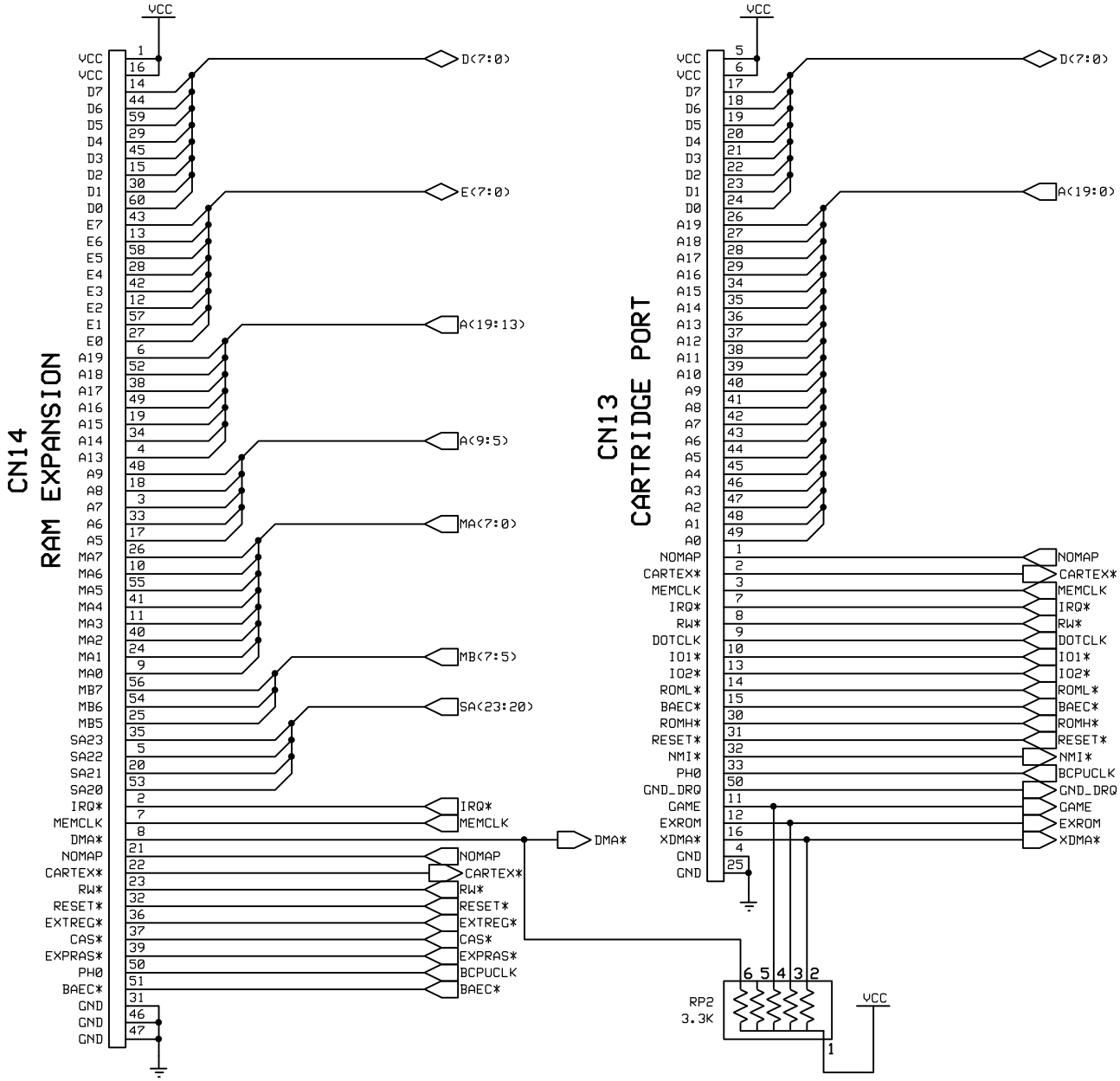

Commodore 65		
Power and Expansion		
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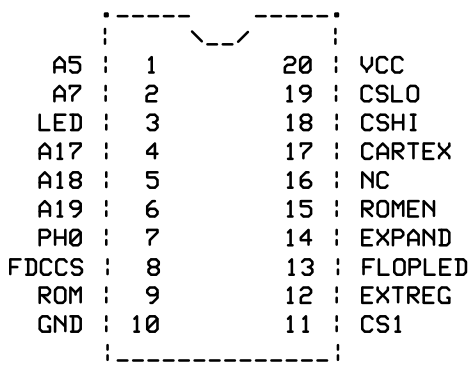
PAL16L8BCN

Chip diagram (DIP)



PAL16L8BCN

Pin Descriptions

Pin	Label	Type
1	A5	pos,com input
2	A7	pos,com input
3	LED	pos,com input
4	A17	pos,com input
5	A18	pos,com input
6	A19	pos,com input
7	PH0	pos,com input
8	FDCCS	unused
9	ROM	pos,com input
10	GND	ground pin
11	CS1	pos,com input
12	EXTREG	neg,com output
13	FLOPLED	neg,com output
14	EXPAND	neg,com output
15	ROMEN	neg,com output
16	NC	unused
17	CARTEX	pos,com input
18	CSHI	neg,com output
19	CSLO	neg,com output
20	VCC	power pin

PAL Equations

```
; C65 Revision 2A ELMER PAL.

chip ELMER PAL16L8

A5=1 A7=2 LED=3 A17=4 A18=5 A19=6 PH0=7 FDCCS=8 ROM=9 GND=10 CS1=11 EXTREG=12
FLOPLED=13 EXPAND=14 ROMEN=15 NC=16 CARTEX=17 CSHI=18 CSLO=19 VCC=20

equations

/CSLO = /A7 * /A5 * /CS1
CSLO.oe = vcc
/CSHI = /A7 * A5 * /CS1
CSHI.oe = vcc
/ROMEN = A17 * /A18 * /A19 * PH0
   + /ROM
ROMEN.oe = vcc
/EXPAND = A17 * /A18 * /A19
   + /CARTEX
EXPAND.oe = vcc
/FLOPLED = LED
FLOPLED.oe = vcc
/EXTREG = A7 * /CS1
EXTREG.oe = vcc
```

Note: These equations were taken from a Revision 2A Elmer chip with a hand-written checksum label that said "$35A9." These equations were used to generate a new fusemap file which also gave the checksum of "$35A9" so I believe them to be complete and correct. It is possible that other versions with different checksums exist and they may or may not be compatible with these. Use them at your own risk. Also note that these equations will most likely NOT WORK in a Revision 2B C65.