ISA bus

File: ECBbus.kicad_sch

Decoder

File: Decoder.kicad_sch

ramrom

File: ramrom.kicad_sch

video

File: video.kicad_sch

Power

File: Power.kicad_sch

CPU

File: cpu.kicad_sch

Spare

File: Spare.kicad_sch

RTC

File: RTC.kicad_sch

acr

File: acr.kicad_sch

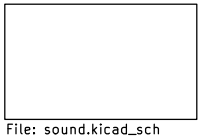
IO

File: IO.kicad_sch

Reset

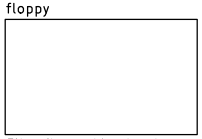
File: Reset.kicad_sch

sound



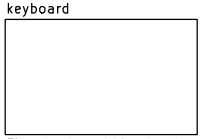
File: sound.kicad_sch

floppy



File: floppy.kicad_sch

keyboard



File: keyboard.kicad_sch

ide

File: ide.kicad_sch

serial

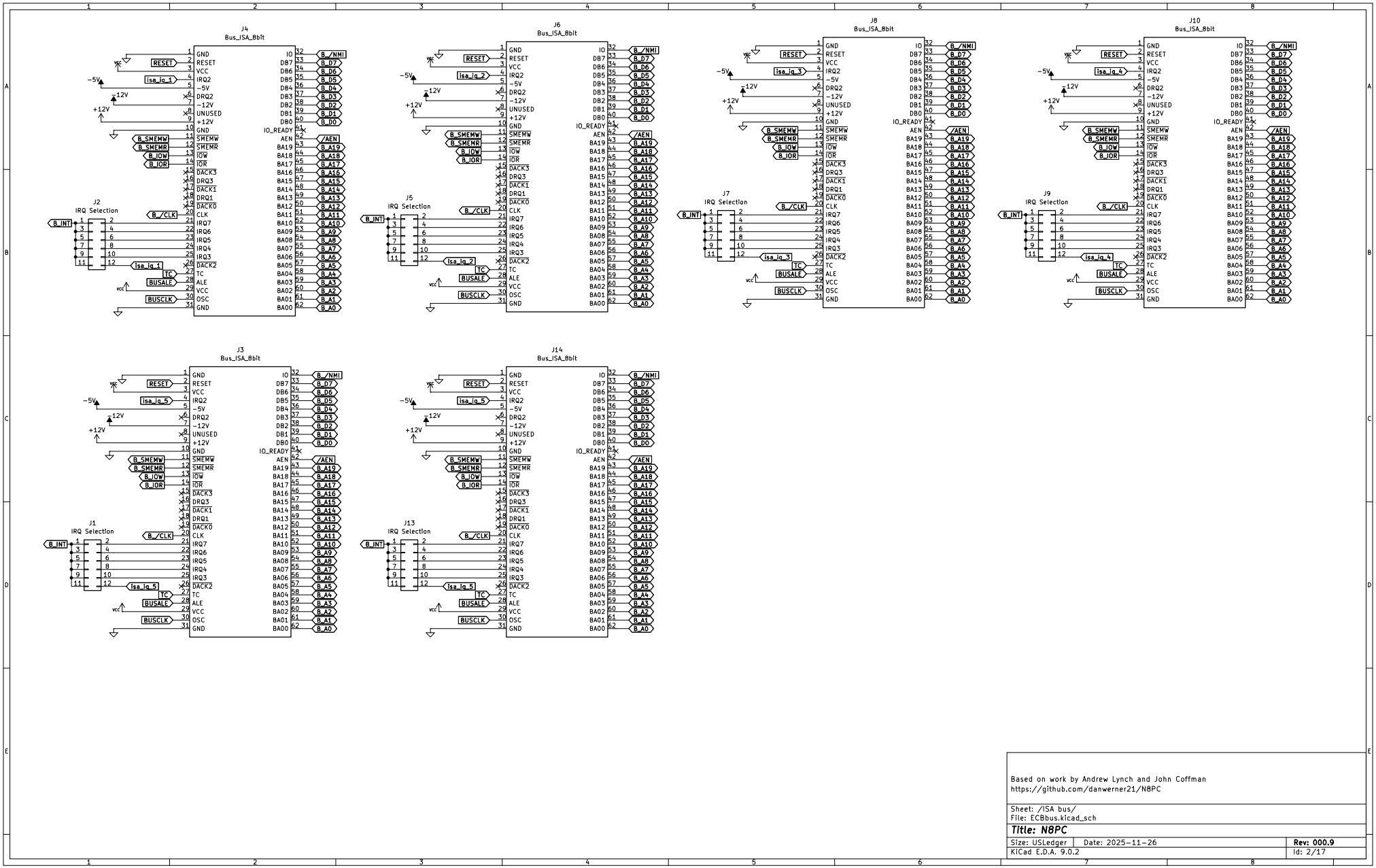
File: serial.kicad_sch

Based on work by Andrew Lynch and John Coffman
https://github.com/danwerner21/N8PC

Sheet: /
File: N8PC.kicad_sch

Title: N8PC

Size: A	Date: 2025-11-26	**Rev: 000.9**
KiCad E.D.A. 9.0.2		Id: 1/17

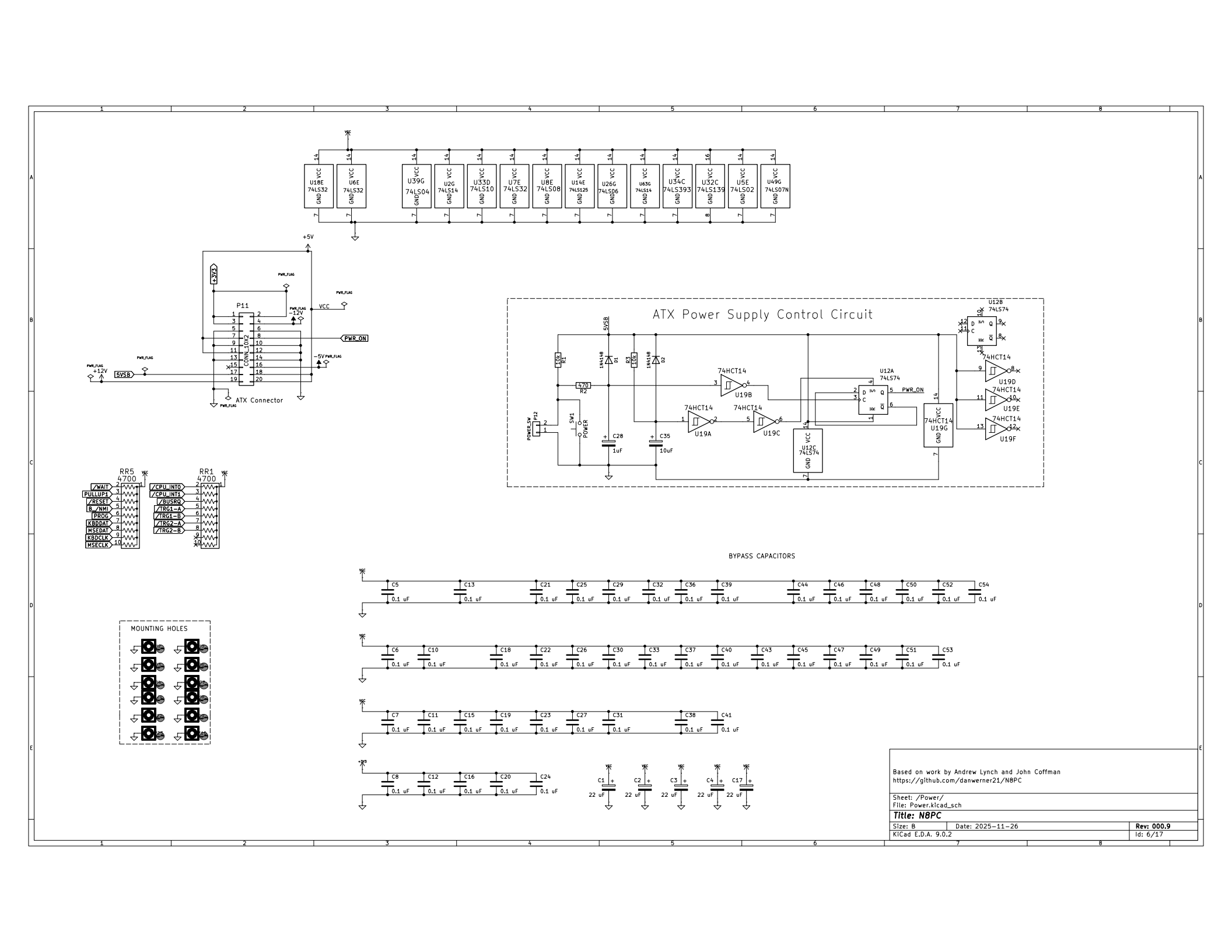


Based on work by Andrew Lynch and John Coffman
https://github.com/danwerner21/N8PC

Sheet: /ISA bus/
File: ECBbus.kicad_sch

Title: N8PC

Size: USLedger	Date: 2025-11-26	**Rev: 000.9**
KiCad E.D.A. 9.0.2		Id: 2/17

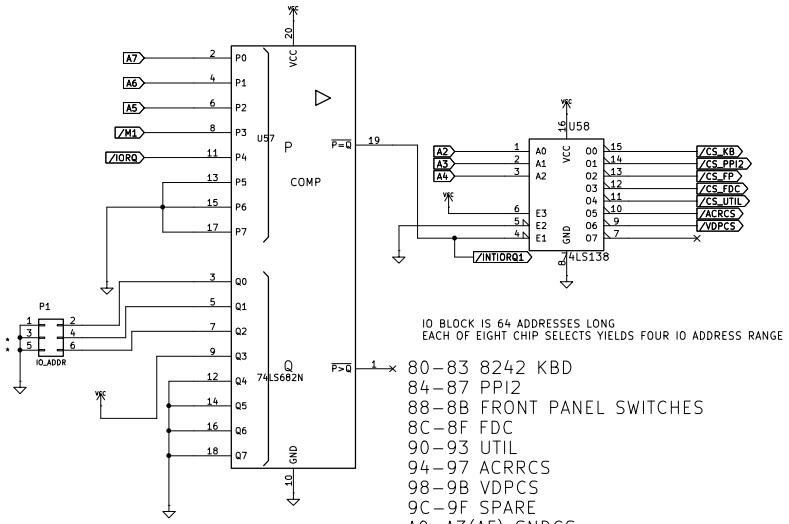


Based on work by Andrew Lynch and John Coffman
https://github.com/danwerner21/N8PC

Sheet: /Power/
File: Power.kicad_sch

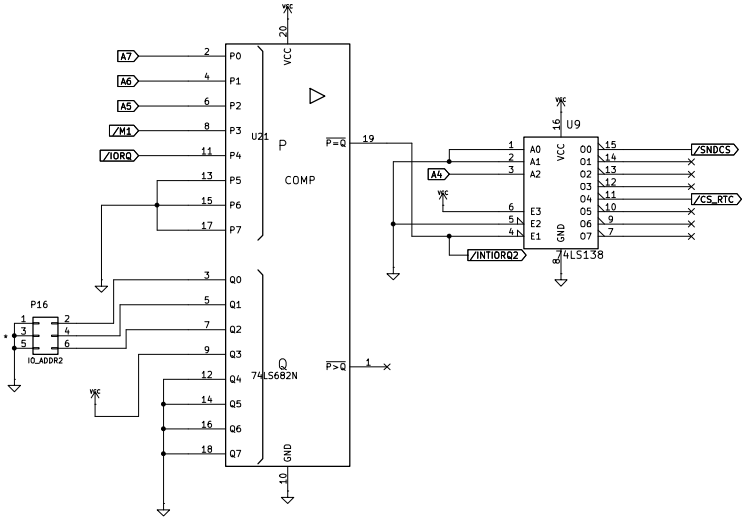
Title: N8PC

Size: B	Date: 2025-11-26	**Rev: 000.9**
KiCad E.D.A. 9.0.2		Id: 6/17

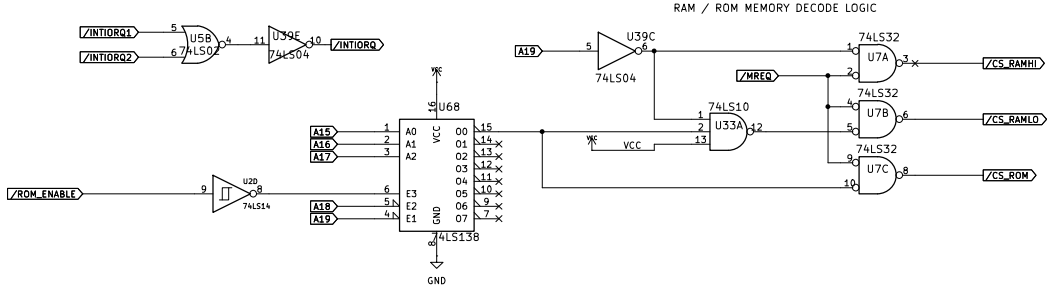


IO BLOCK IS 64 ADDRESSES LONG
EACH OF EIGHT CHIP SELECTS YIELDS FOUR IO ADDRESS RANGE

80–83 8242 KBD
84–87 PPI2
88–8B FRONT PANEL SWITCHES
8C–8F FDC
90–93 UTIL
94–97 ACRRCS
98–9B VDPCS
9C–9F SPARE
A0–A3(AF) SNDCS
B0–BF RTC



RAM / ROM MEMORY DECODE LOGIC

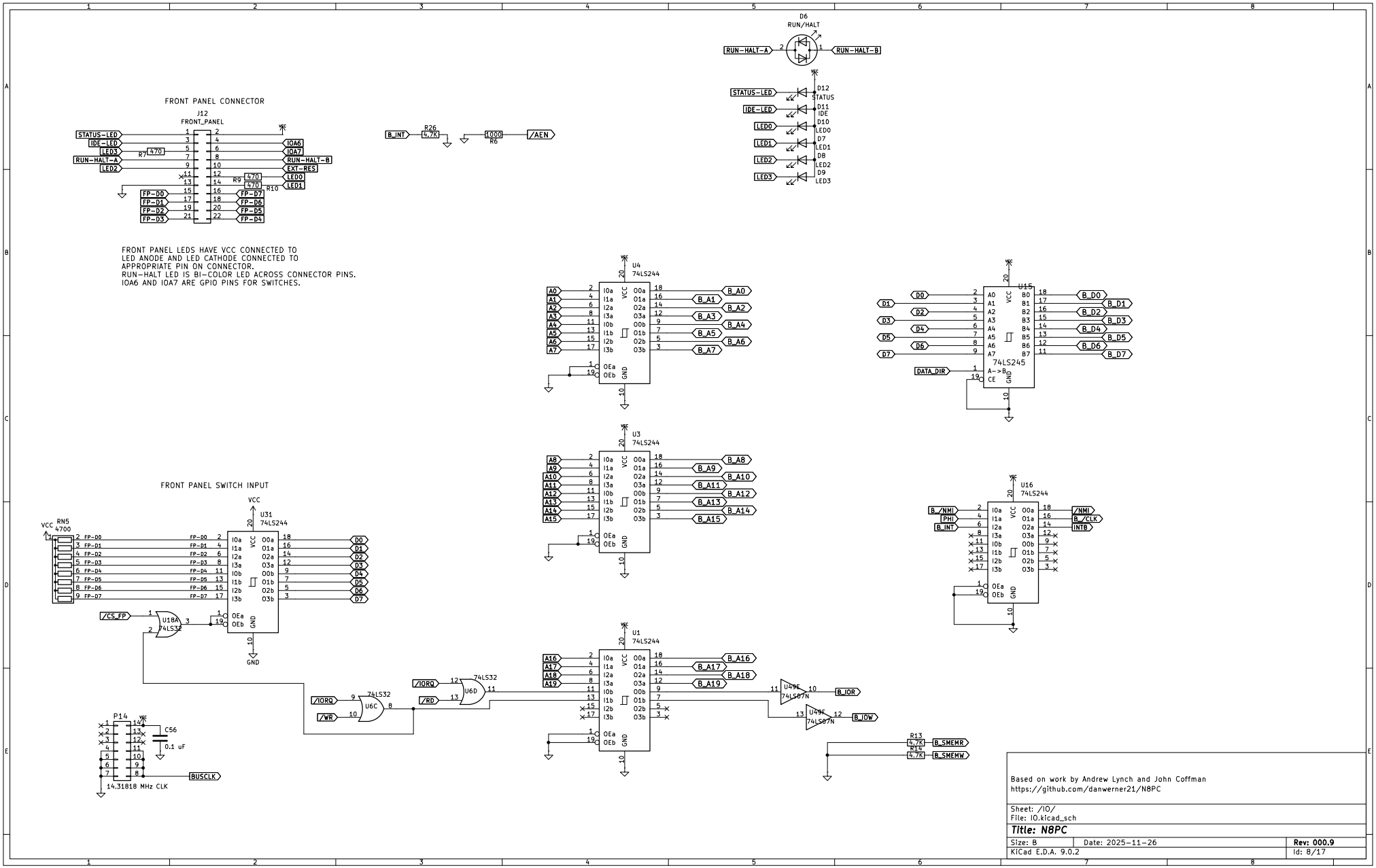


Based on work by Andrew Lynch and John Coffman
https://github.com/danwerner21/N8PC

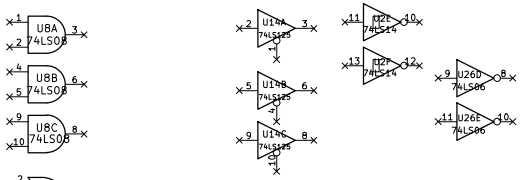
Sheet: /Decoder/
File: Decoder.kicad_sch

Title: N8PC

Size: B	Date: 2025-11-26	**Rev: 000.9**
KiCad E.D.A. 9.0.2		Id: 7/17


FRONT PANEL CONNECTOR
J12
FRONT_PANEL
STATUS-LED
IDE-LED
LED3
RUN-HALT-A
LED2
R7 470
R9 470
R10 470
LED0
LED1
IOA6
IOA7
RUN-HALT-B
EXT-RES
FP-D0
FP-D1
FP-D2
FP-D3
FP-D7
FP-D6
FP-D5
FP-D4
B_INT
R26 4.7K
1000 R6
/AEN
D6
RUN/HALT
RUN-HALT-A
RUN-HALT-B
D12 STATUS
D11 IDE
D10 LED0
D7 LED1
D8 LED2
D9 LED3
FRONT PANEL LEDS HAVE VCC CONNECTED TO
LED ANODE AND LED CATHODE CONNECTED TO
APPROPRIATE PIN ON CONNECTOR.
RUN-HALT LED IS BI-COLOR LED ACROSS CONNECTOR PINS.
IOA6 AND IOA7 ARE GPIO PINS FOR SWITCHES.
U4
74LS244
A0 A1 A2 A3 A4 A5 A6 A7
B_A0 B_A1 B_A2 B_A3 B_A4 B_A5 B_A6 B_A7
U15
74LS245
D0 D1 D2 D3 D4 D5 D6 D7
B_D0 B_D1 B_D2 B_D3 B_D4 B_D5 B_D6 B_D7
DATA_DIR
A->B
CE
U3
74LS244
A8 A9 A10 A11 A12 A13 A14 A15
B_A8 B_A9 B_A10 B_A11 B_A12 B_A13 B_A14 B_A15
FRONT PANEL SWITCH INPUT
VCC
RN5
4700
U31
74LS244
/CS_FP
U1B
74LS32
U16
74LS244
B_/NMI
PHI
B_INT
/NMI
B_/CLK
/INTB
U1
74LS244
A16 A17 A18 A19
B_A16 B_A17 B_A18 B_A19
/IORQ
/RD
/WR
U6C
U6D
74LS32
U49F
74LS07N
B_IOR
B_IOW
P14
C56
0.1 uF
14.31818 MHz CLK
BUSCLK
R13 4.7K
R14 4.7K
B_SMEMR
B_SMEMW
GND
Based on work by Andrew Lynch and John Coffman
https://github.com/danwerner21/N8PC
Sheet: /IO/
File: IO.kicad_sch
Title: N8PC
Size: B
Date: 2025-11-26
Rev: 000.9
KiCad E.D.A. 9.0.2
Id: 8/17

SPARE

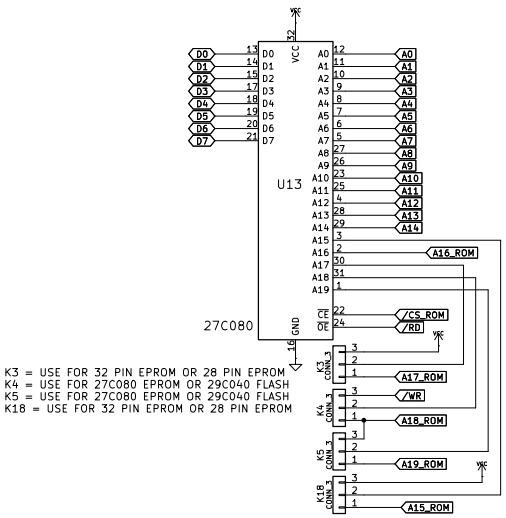


Based on work by Andrew Lynch and John Coffman
https://github.com/danwerner21/N8PC

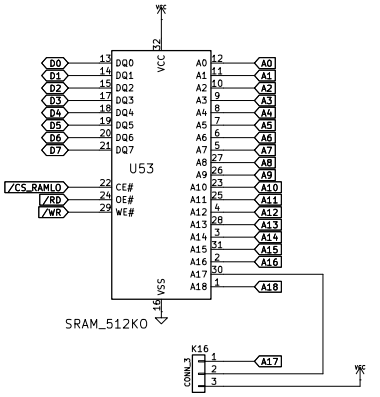
Sheet: /Spare/
File: Spare.kicad_sch

Title: N8PC

Size: B	Date: 2025-11-26	**Rev: 000.9**
KiCad E.D.A. 9.0.2		Id: 9/17



K3 = USE FOR 32 PIN EPROM OR 28 PIN EPROM
K4 = USE FOR 27C080 EPROM OR 29C040 FLASH
K5 = USE FOR 27C080 EPROM OR 29C040 FLASH
K18 = USE FOR 32 PIN EPROM OR 28 PIN EPROM



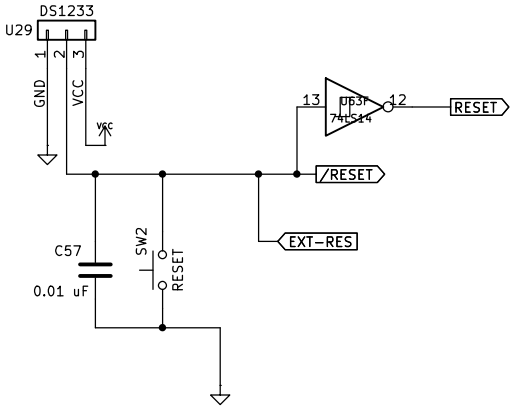
K16 = USE FOR 512K SRAM OR 128K SRAM

Based on work by Andrew Lynch and John Coffman
https://github.com/danwerner21/N8PC

Sheet: /ramrom/
File: ramrom.kicad_sch

Title: N8PC

Size: USLedger	Date: 2025-11-26	**Rev: 000.9**
KiCad E.D.A. 9.0.2		Id: 10/17

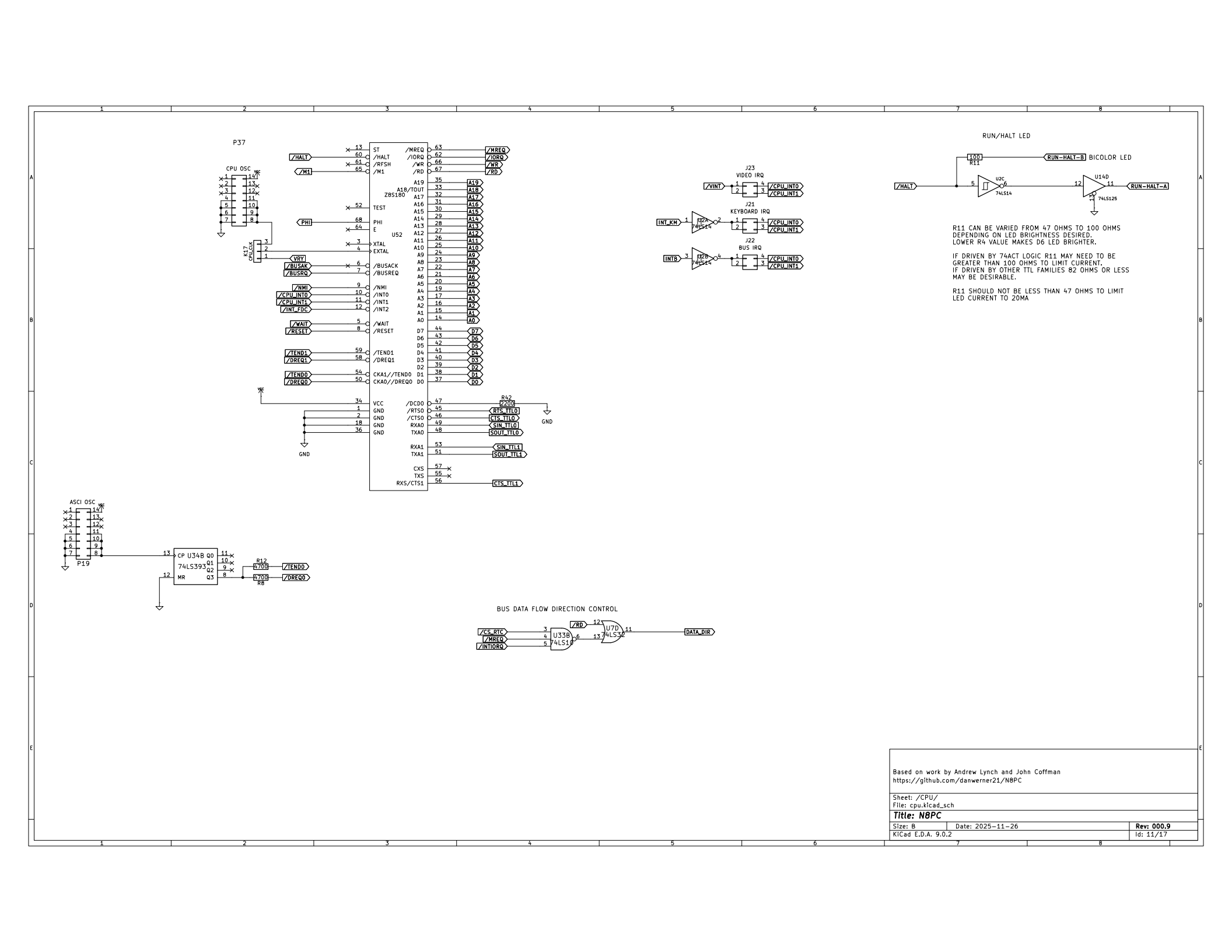


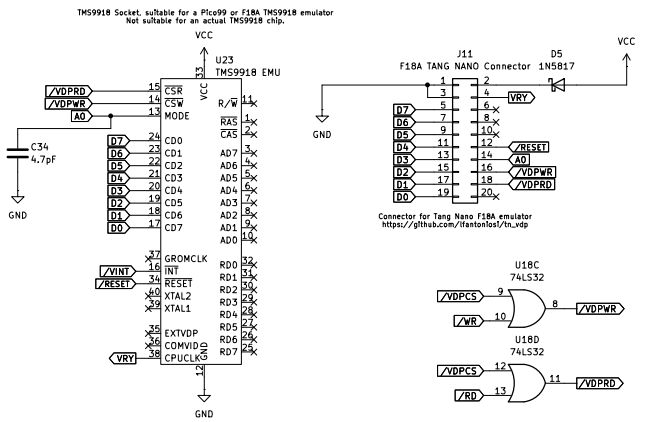
Based on work by Andrew Lynch and John Coffman
https://github.com/danwerner21/N8PC

Sheet: /Reset/
File: Reset.kicad_sch

Title: N8PC

Size: A	Date: 2025-11-26	**Rev: 000.9**
KiCad E.D.A. 9.0.2		Id: 10/17


P37
CPU OSC
Z8S180
U52
/HALT
/M1
/RFSH
/MREQ
/IORQ
/WR
/RD
PHI
TEST
E
XTAL
EXTAL
/BUSACK
/BUSREQ
/NMI
/INT0
/INT1
/INT2
/WAIT
/RESET
/TEND1
/DREQ1
CKA1//TEND0
CKA0//DREQ0
/DCD0
/RTS0
/CTS0
RXA0
TXA0
RXA1
TXA1
CTS
TXS
RXS/CTS1
A19
A18/TOUT
A17
A16
A15
A14
A13
A12
A11
A10
A9
A8
A7
A6
A5
A4
A3
A2
A1
A0
D7
D6
D5
D4
D3
D2
D1
D0
VCC
GND
R42
2200
RTS_TTL0
CTS_TTL0
SIN_TTL0
SOUT_TTL0
SIN_TTL1
SOUT_TTL1
CTS_TTL1
K17
CPU_CLK
VRY
/BUSAK
/BUSRQ
/CPU_INT0
/CPU_INT1
/INT_FDC
/TEND0
/DREQ0
ASCI OSC
P19
CP U34B 74LS393
Q0
Q1
Q2
Q3
MR
R12
4700
R8
J23
VIDEO IRQ
/VINT
J21
KEYBOARD IRQ
INT_KM
J22
BUS IRQ
INTB
U2A
U2B
74LS14
BUS DATA FLOW DIRECTION CONTROL
/CS_RTC
/MREQ
/INTIORQ
U33B
74LS10
U7D
74LS32
DATA_DIR
RUN/HALT LED
100
R11
RUN-HALT-B
BICOLOR LED
U2C
U14D
74LS125
RUN-HALT-A
R11 CAN BE VARIED FROM 47 OHMS TO 100 OHMS
DEPENDING ON LED BRIGHTNESS DESIRED.
LOWER R4 VALUE MAKES D6 LED BRIGHTER.
IF DRIVEN BY 74ACT LOGIC R11 MAY NEED TO BE
GREATER THAN 100 OHMS TO LIMIT CURRENT.
IF DRIVEN BY OTHER TTL FAMILIES 82 OHMS OR LESS
MAY BE DESIRABLE.
R11 SHOULD NOT BE LESS THAN 47 OHMS TO LIMIT
LED CURRENT TO 20MA
Based on work by Andrew Lynch and John Coffman
https://github.com/danwerner21/N8PC
Sheet: /CPU/
File: cpu.kicad_sch
Title: N8PC
Size: B
Date: 2025-11-26
Rev: 000.9
KiCad E.D.A. 9.0.2
Id: 11/17

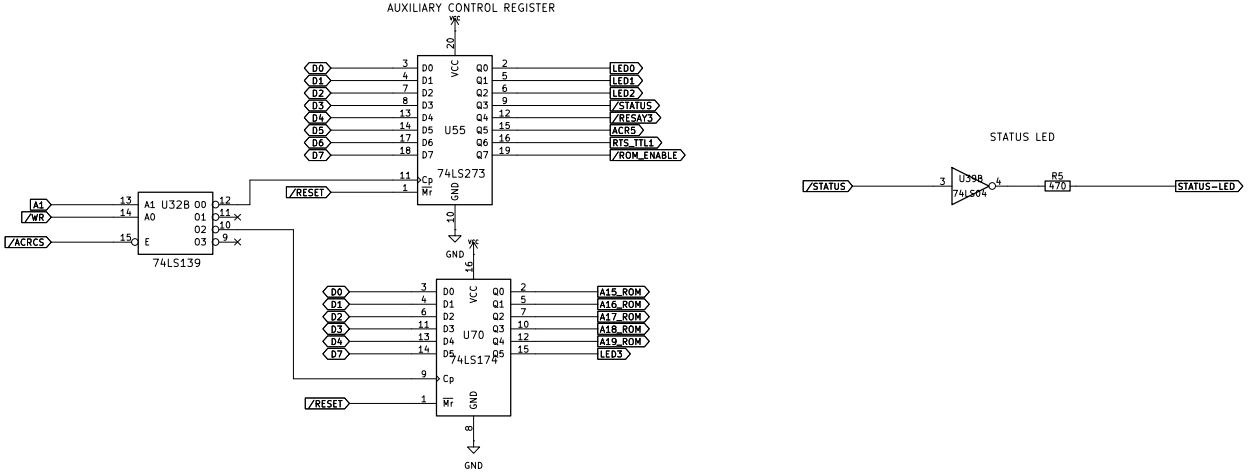


Based on work by Andrew Lynch and John Coffman
https://github.com/danwerner21/N8PC

Sheet: /video/
File: video.kicad_sch

Title: N8PC

Size: USLedger	Date: 2025-11-26	**Rev: 000.9**
KiCad E.D.A. 9.0.2		Id: 11/17

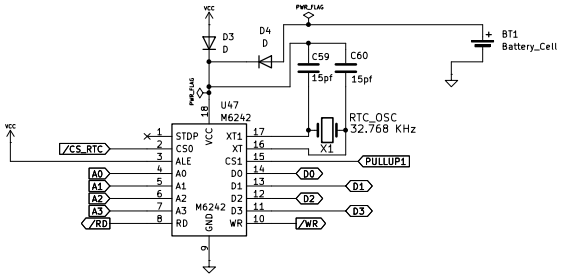


Based on work by Andrew Lynch and John Coffman
https://github.com/danwerner21/N8PC

Sheet: /acr/
File: acr.kicad_sch

Title: N8PC

Size: USLedger	Date: 2025-11-26	**Rev: 000.9**
KiCad E.D.A. 9.0.2		Id: 12/17

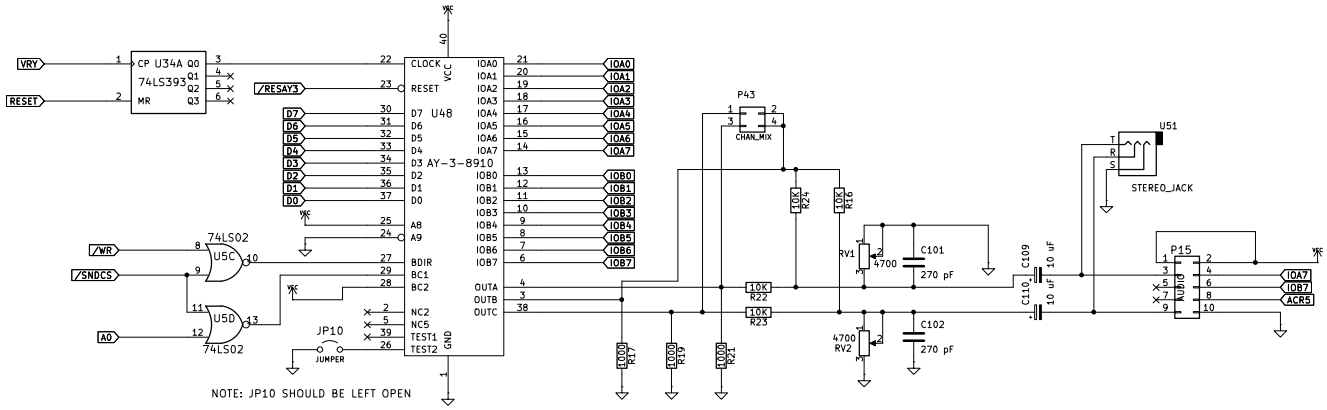


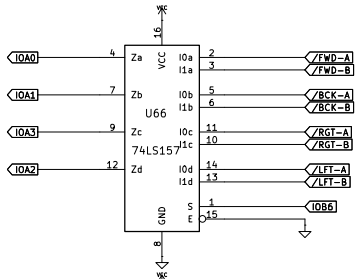
Based on work by Andrew Lynch and John Coffman
https://github.com/danwerner21/N8PC

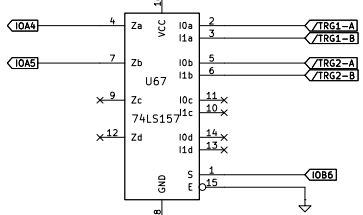
Sheet: /RTC/
File: RTC.kicad_sch

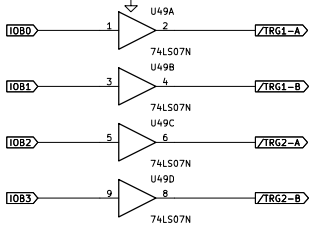
Title: N8PC

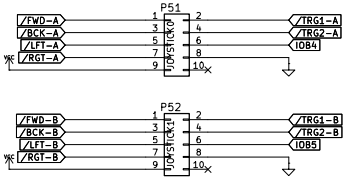
Size: USLedger	Date: 2025-11-26	**Rev: 000.9**
KiCad E.D.A. 9.0.2		Id: 13/17

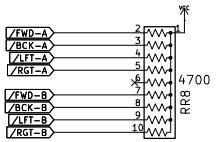










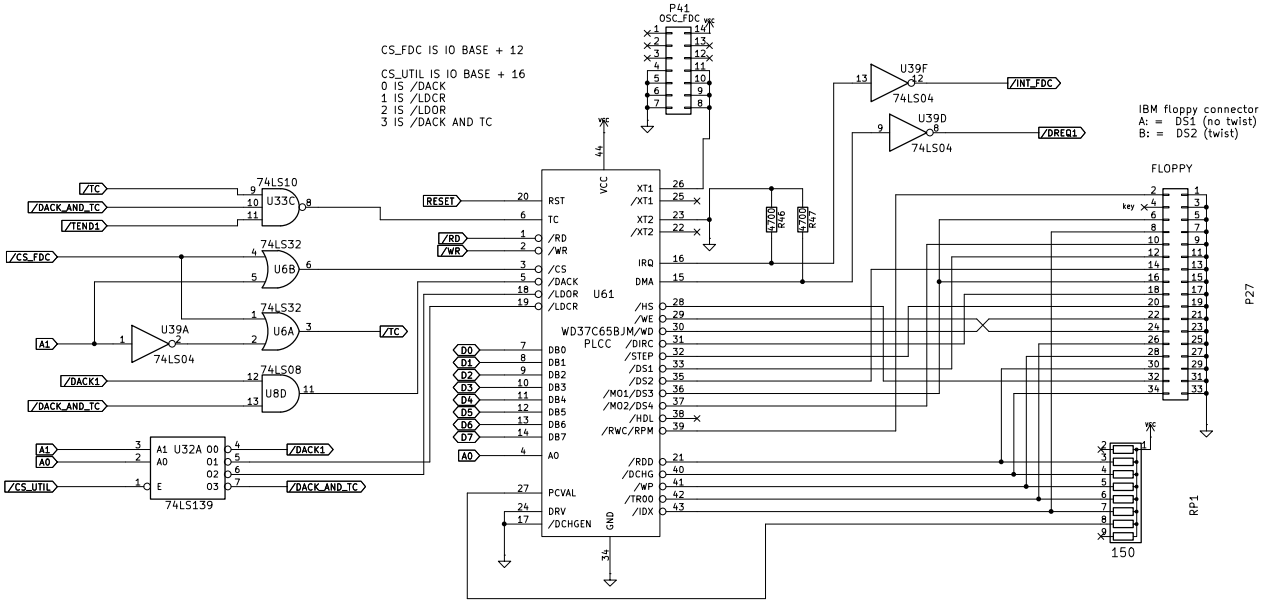


Based on work by Andrew Lynch and John Coffman
https://github.com/danwerner21/N8PC

Sheet: /sound/
File: sound.kicad_sch

Title: N8PC

Size: USLedger | Date: 2025-11-26 | **Rev: 000.9**
KiCad E.D.A. 9.0.2 | Id: 13/17



Based on work by Andrew Lynch and John Coffman
https://github.com/danwerner21/N8PC

Sheet: /floppy/
File: floppy.kicad_sch

Title: N8PC

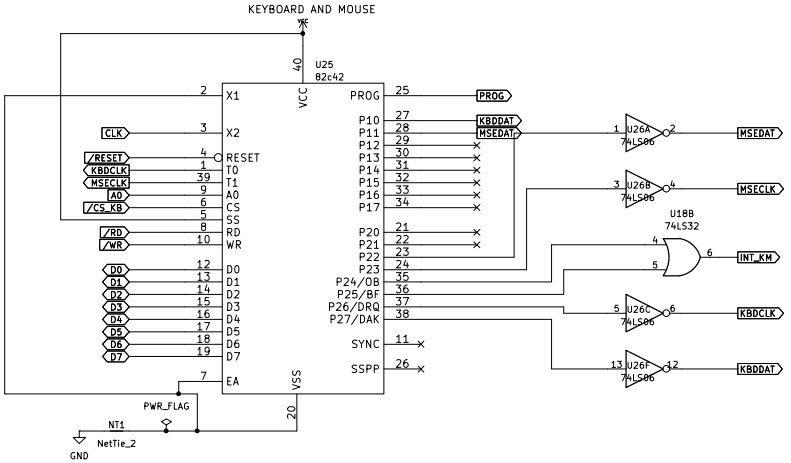
Size: USLedger | Date: 2025-11-26 | **Rev: 000.9**
KiCad E.D.A. 9.0.2 | Id: 14/17

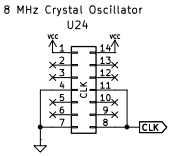
NOTE: IMPORTANT

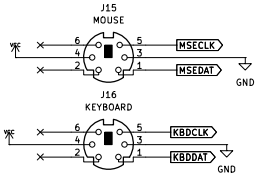
KNOWN TO WORK:
– VT82C42N (VIA)

LIKELY TO WORK BUT UNTESTED:
– HT6542B (Holtek)
– 83C42 (Western Digital)
– KBD42W11 (SMSC)

KNOWN DO NOT WORK:
– 8042 (Intel & clones of PC/AT era)





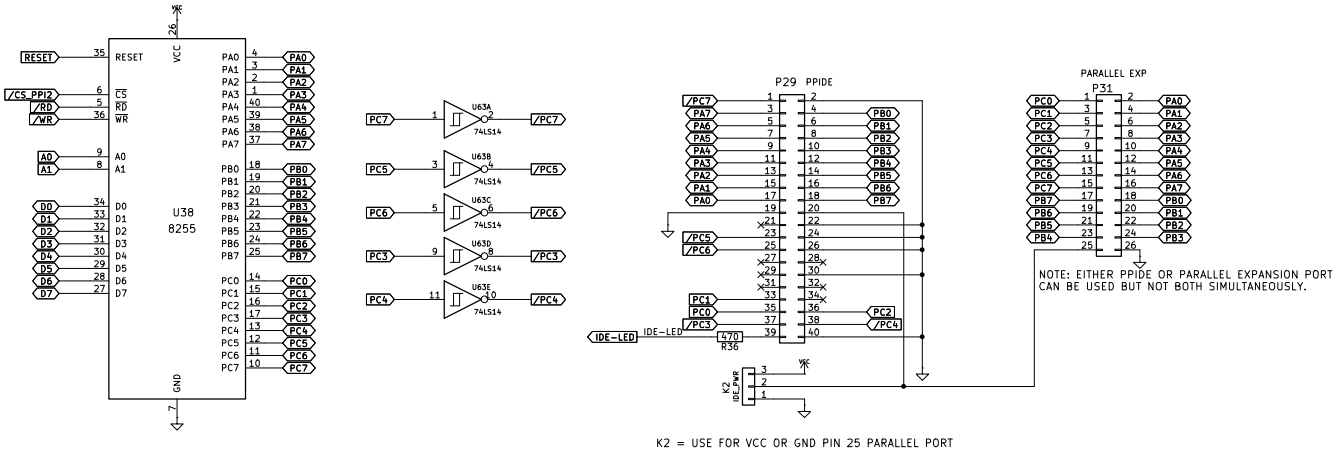


Based on work by Andrew Lynch and John Coffman
https://github.com/danwerner21/N8PC

Sheet: /keyboard/
File: keyboard.kicad_sch

Title: N8PC

Size: USLedger | Date: 2025-11-26 | **Rev: 000.9**
KiCad E.D.A. 9.0.2 | Id: 15/17

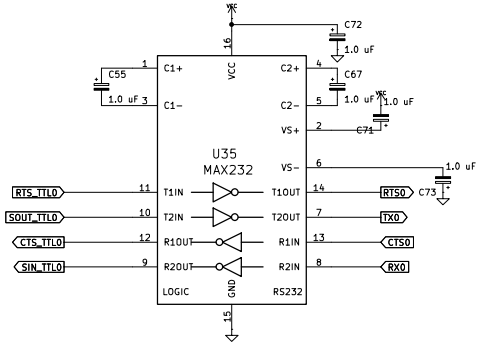


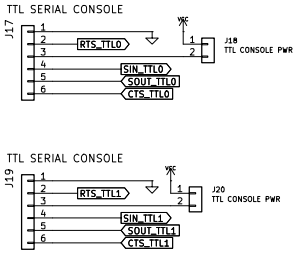
Based on work by Andrew Lynch and John Coffman
https://github.com/danwerner21/N8PC

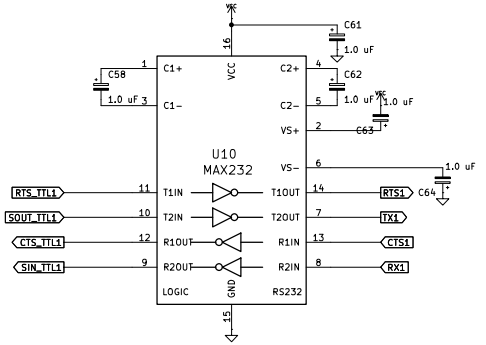
Sheet: /ide/
File: ide.kicad_sch

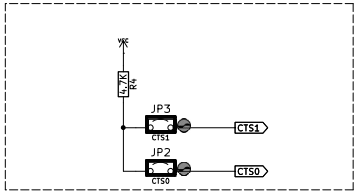
Title: N8PC

Size: USLedger	Date: 2025-11-26	**Rev: 000.9**
KiCad E.D.A. 9.0.2		Id: 16/17

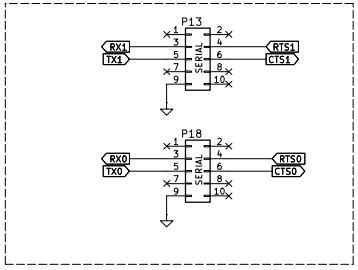








CTS is an inverted signal on the RS-232 port. So it is really /CTS. To assert the signal, it must be tied to SPACE, which is a + RS-232 voltage. (MARK, or true, is a - RS-232 voltage.)



Based on work by Andrew Lynch and John Coffman
https://github.com/danwerner21/N8PC

Sheet: /serial/
File: serial.kicad_sch

Title: N8PC

Size: USLedger | Date: 2025-11-26 | **Rev: 000.9**
KiCad E.D.A. 9.0.2 | Id: 18/17