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

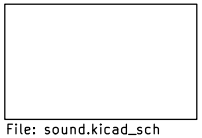
IO

File: IO.kicad_sch

Reset

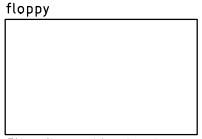
File: Reset.kicad_sch

sound



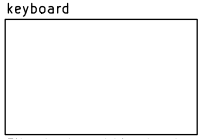
File: sound.kicad_sch

floppy



File: floppy.kicad_sch

keyboard



File: keyboard.kicad_sch

ide

File: ide.kicad_sch

serial

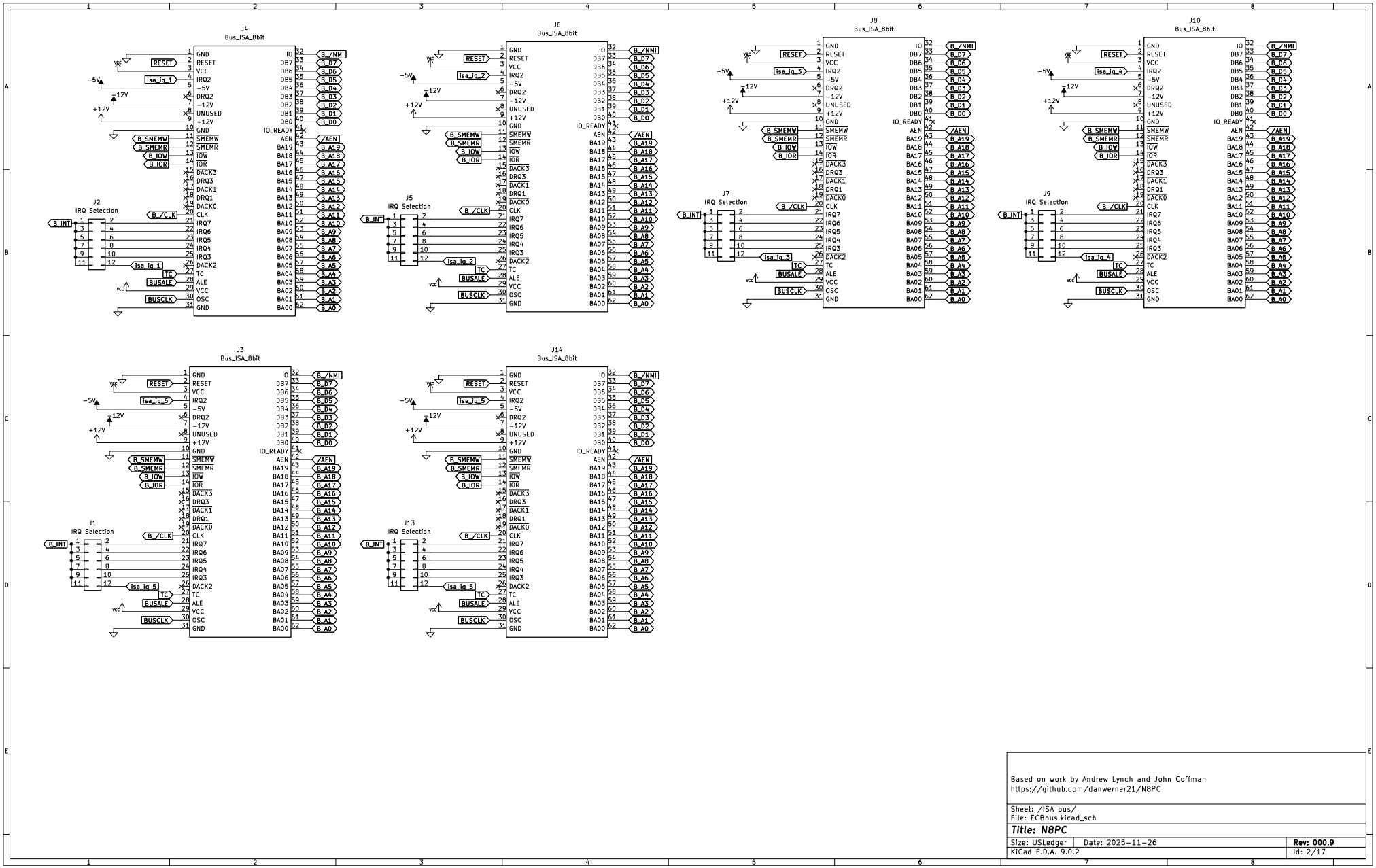
File: serial.kicad_sch

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

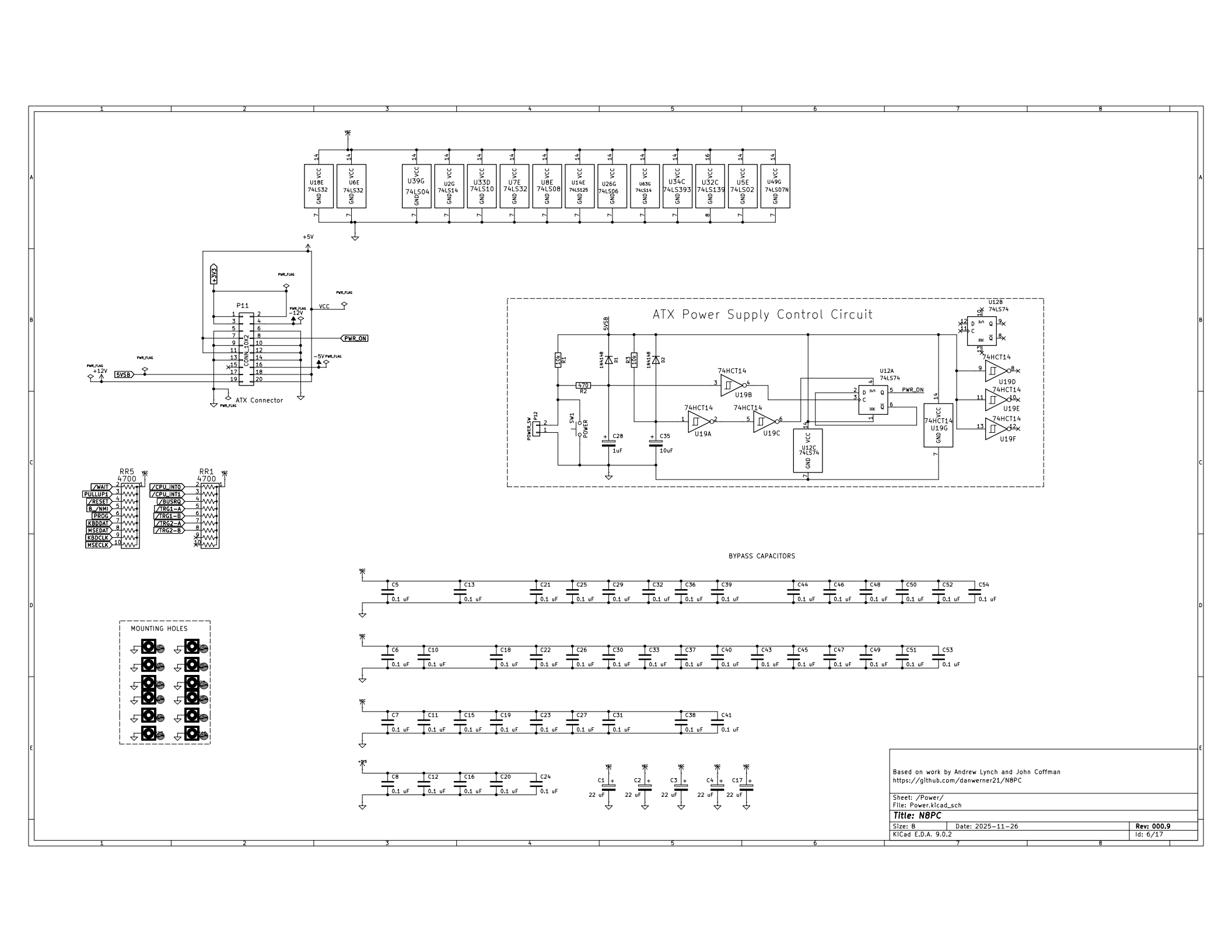


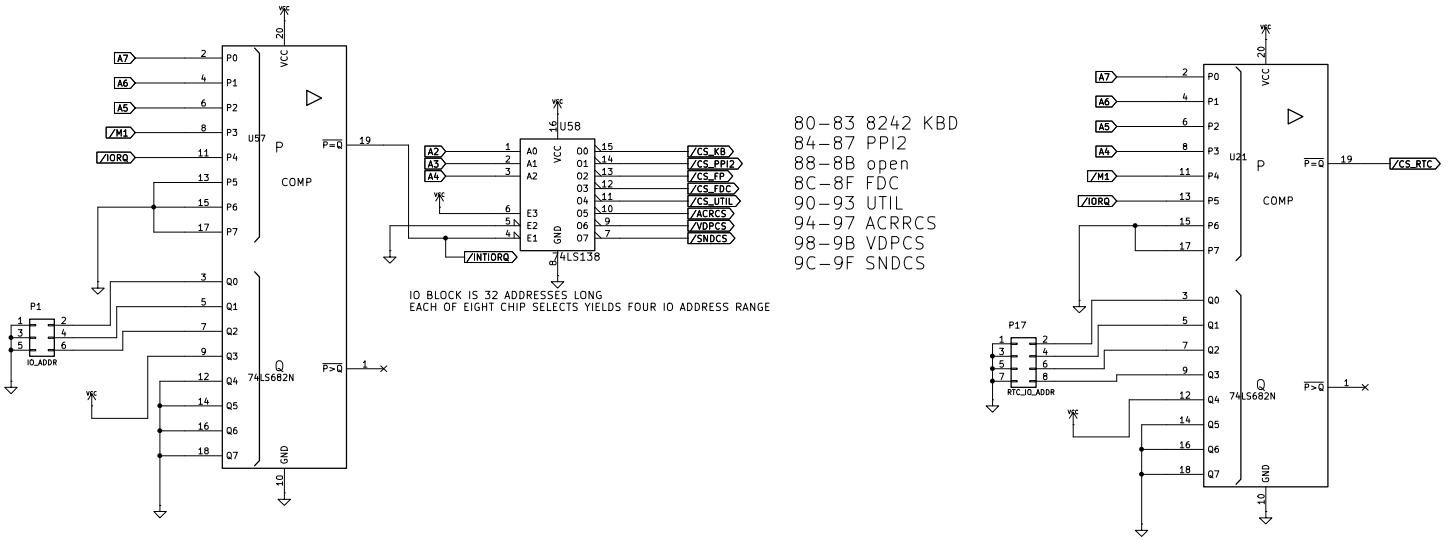
Based on work by Andrew Lynch and John Coffman
https://github.com/danwerner21/N8PC

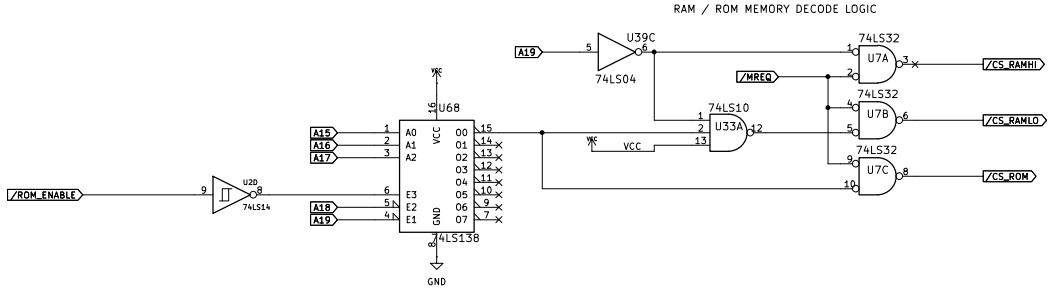
Sheet: /ISA bus/
File: ECBbus.kicad_sch

Title: N8PC

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


U18E 74LS32
U6E 74LS32
U39G 74LS04
U2G 74LS14
U33D 74LS10
U7E 74LS32
U8E 74LS08
U14E 74LS125
U26G 74LS06
U63G 74LS14
U34C 74LS393
U32C 74LS139
U5E 74LS02
U49G 74LS07N
VCC
GND
+5V
+3V3
PWR_FLAG
P11
CONN_10X2
VCC
PWR_ON
-12V
-5V
+12V
5VSB
ATX Connector
ATX Power Supply Control Circuit
R1 10k
R2 470
R3 10k
D1 1N4148
D2 1N4148
POWER_SW
SW1
POWER
C28 1uF
C35 10uF
74HCT14
U19A
U19B
U19C
U19D
U19E
U19F
U19G
U12A 74LS74
U12B 74LS74
U12C 74LS74
PWR_ON
RR5 4700
RR1 4700
/WAIT
PULLUP1
/RESET
B_/NMI
PROG
KBDDAT
MSEDAT
KBDCLK
MSECLK
/CPU_INT0
/CPU_INT1
/BUSRQ
/TRG1-A
/TRG1-B
/TRG2-A
/TRG2-B
BYPASS CAPACITORS
C5 C13 C21 C25 C29 C32 C36 C39 C44 C46 C48 C50 C52 C54
C6 C10 C18 C22 C26 C30 C33 C37 C40 C43 C45 C47 C49 C51 C53
C7 C11 C15 C19 C23 C27 C31 C38 C41
C8 C12 C16 C20 C24
C1 C2 C3 C4 C17
0.1 uF
22 uF
MOUNTING HOLES
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



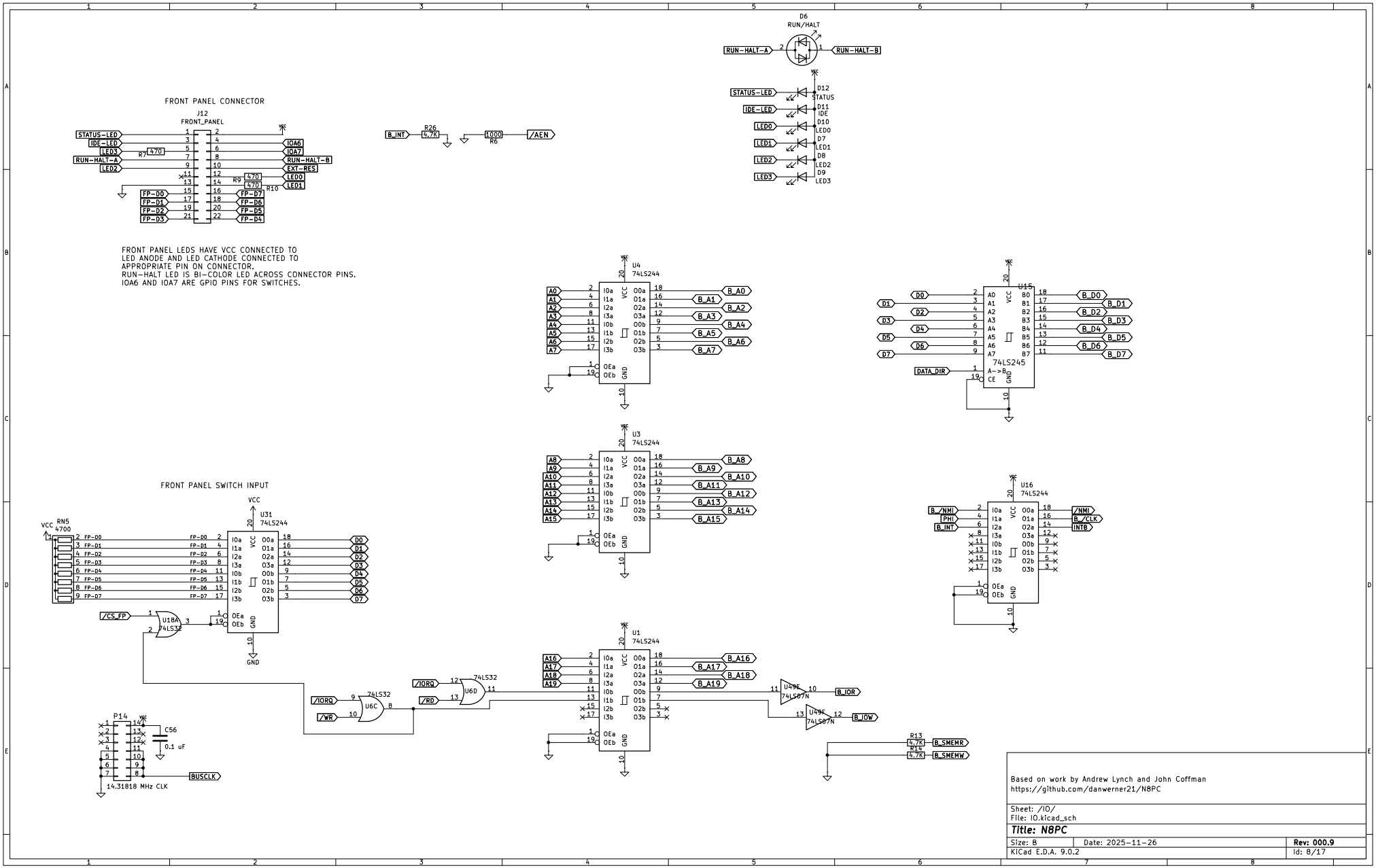


Based on work by Andrew Lynch and John Coffman
https://github.com/danwerner21/N8PC

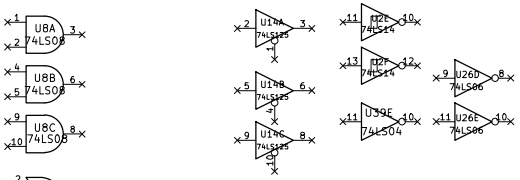
Sheet: /Decoder/
File: Decoder.kicad_sch

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
FP-D0
FP-D1
FP-D2
FP-D3
R7 470
R9 470
R10 470
IOA6
IOA7
RUN-HALT-B
EXT-RES
LED0
LED1
FP-D7
FP-D6
FP-D5
FP-D4
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.
B_INT
R26 4.7K
R6 1000
/AEN
D6
RUN/HALT
RUN-HALT-A
RUN-HALT-B
STATUS-LED
IDE-LED
LED0
LED1
LED2
LED3
D12 STATUS
D11 IDE
D10 LED0
D7 LED1
D8 LED2
D9 LED3
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
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
74LS32
U6D
74LS32
U49F
74LS07N
B_IOR
B_IOW
R13 4.7K
R14 4.7K
B_SMEMR
B_SMEMW
P14
C56
0.1 uF
14.31818 MHz CLK
BUSCLK
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

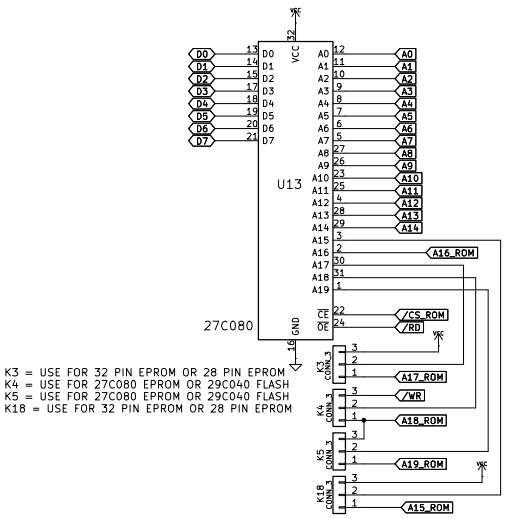


Based on work by Andrew Lynch and John Coffman
https://github.com/danwerner21/N8PC

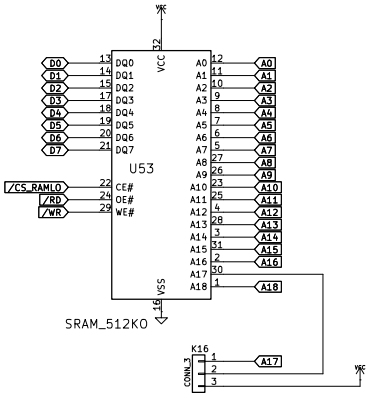
Sheet: /Spare/
File: Spare.kicad_sch

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



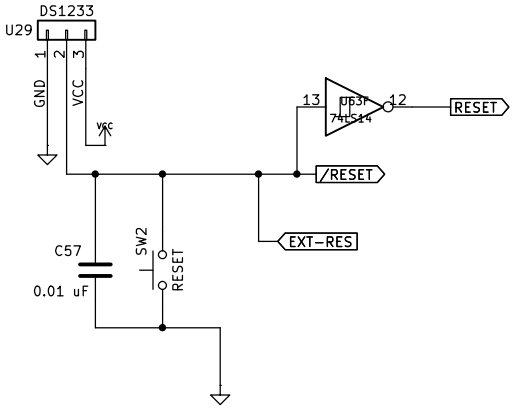
K16 = USE FOR 512K SRAM OR 128K SRAM

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

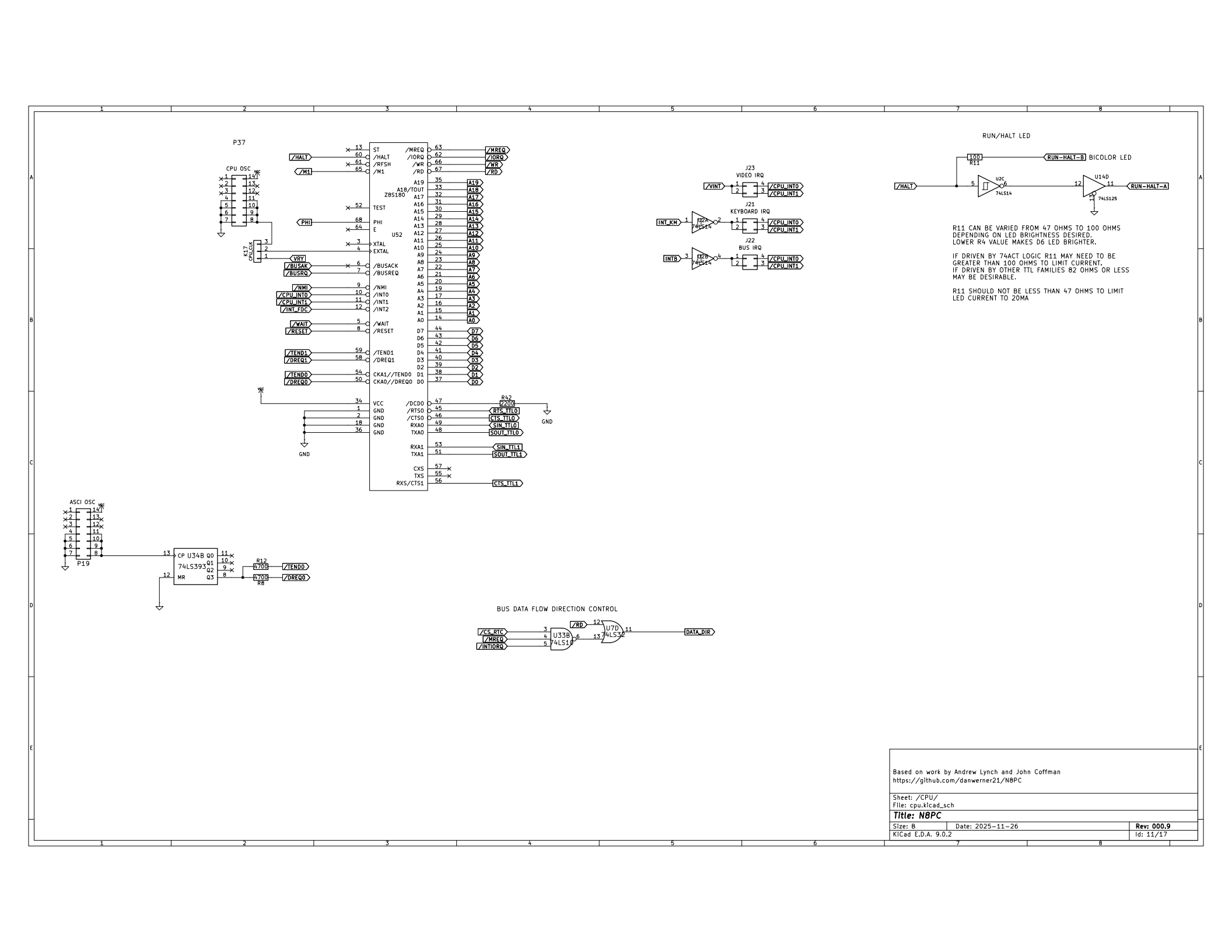


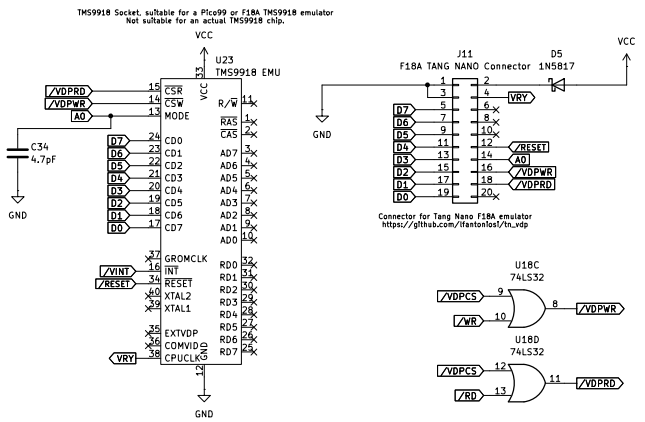
Based on work by Andrew Lynch and John Coffman
https://github.com/danwerner21/N8PC

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
/MREQ
/IORQ
/WR
/RD
/HALT
/M1
/RFSH
TEST
PHI
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
J23
VIDEO IRQ
/VINT
/CPU_INT0
/CPU_INT1
J21
KEYBOARD IRQ
INT_KM
J22
BUS IRQ
INTB
RUN/HALT LED
100
R11
RUN-HALT-B
BICOLOR LED
RUN-HALT-A
74LS14
74LS125
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
ASCI OSC
P19
74LS393
R12
4700
R8
/TEND0
/DREQ0
BUS DATA FLOW DIRECTION CONTROL
/CS_RTC
/INTIORQ
U33B
U7D
DATA_DIR
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

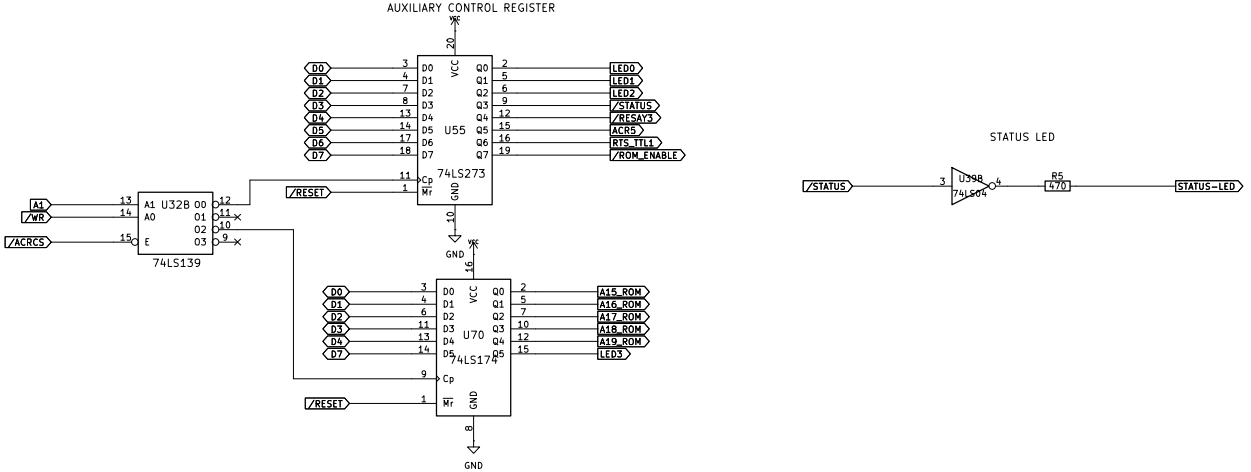


Based on work by Andrew Lynch and John Coffman
https://github.com/danwerner21/N8PC

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

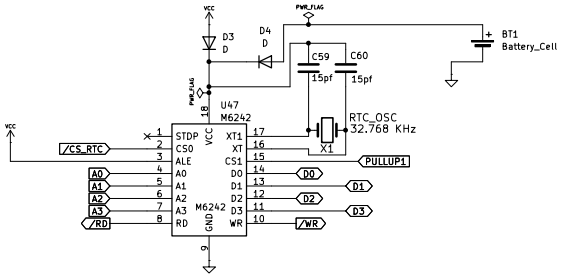


Based on work by Andrew Lynch and John Coffman
https://github.com/danwerner21/N8PC

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

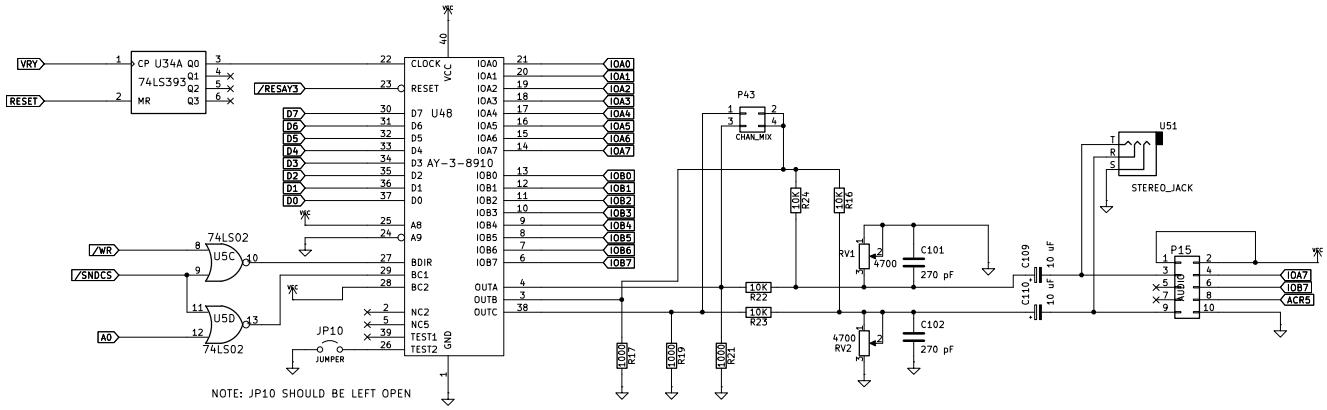


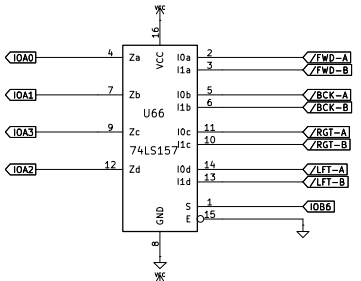
Based on work by Andrew Lynch and John Coffman
https://github.com/danwerner21/N8PC

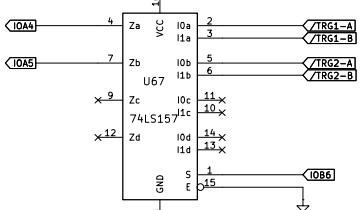
Sheet: /RTC/
File: RTC.kicad_sch

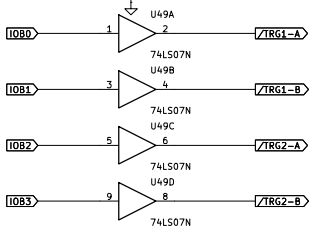
Title: N8PC

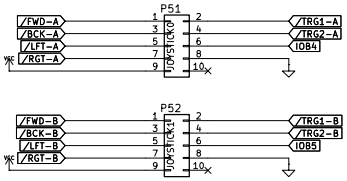
Size: USLedger	Date: 2025-11-26	**Rev: 000.9**
KiCad E.D.A. 9.0.2		Id: 13/17

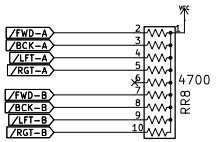










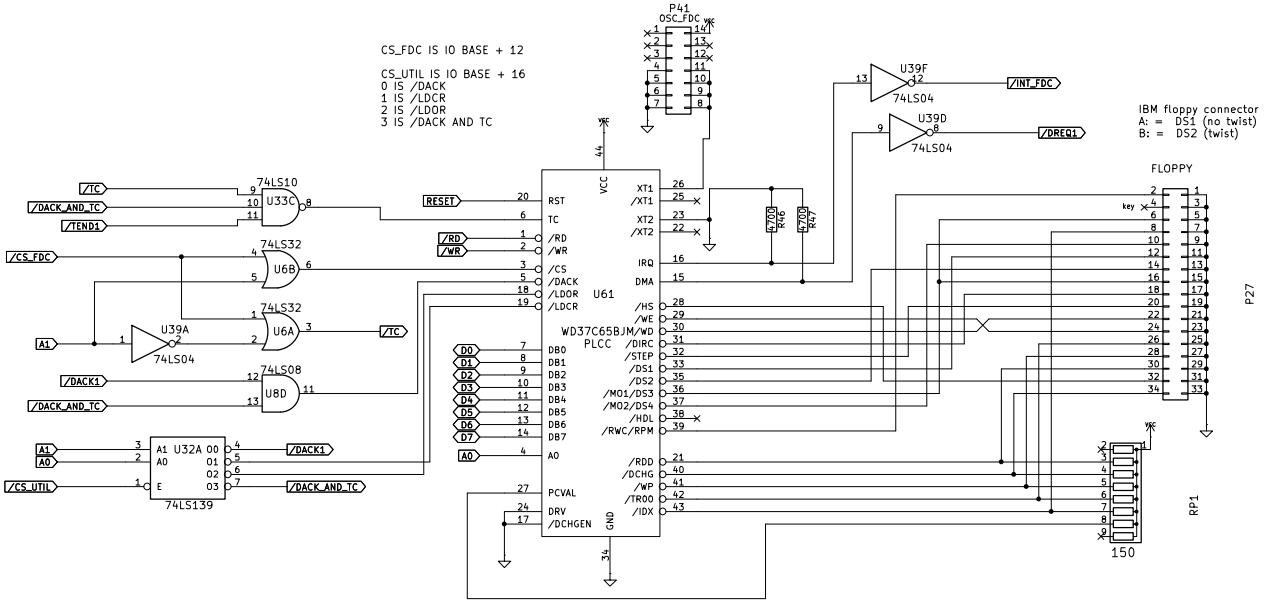


Based on work by Andrew Lynch and John Coffman
https://github.com/danwerner21/N8PC

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

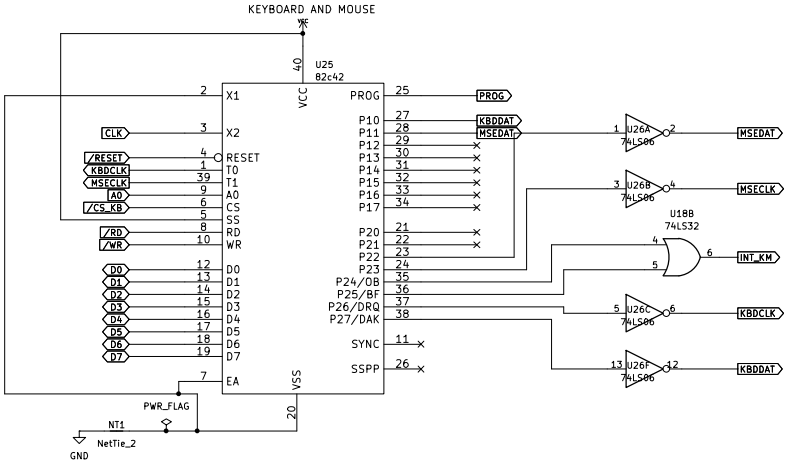
Size: USLedger | Date: 2025-11-26 | **Rev: 000.9**
KiCad E.D.A. 9.0.2 | Id: 14/17

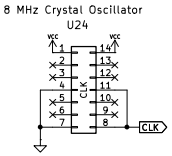
NOTE: IMPORTANT

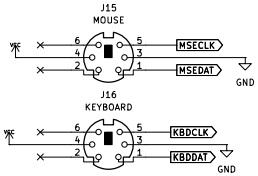
KNOWN TO WORK:
– VT82C42N (VIA)

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

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





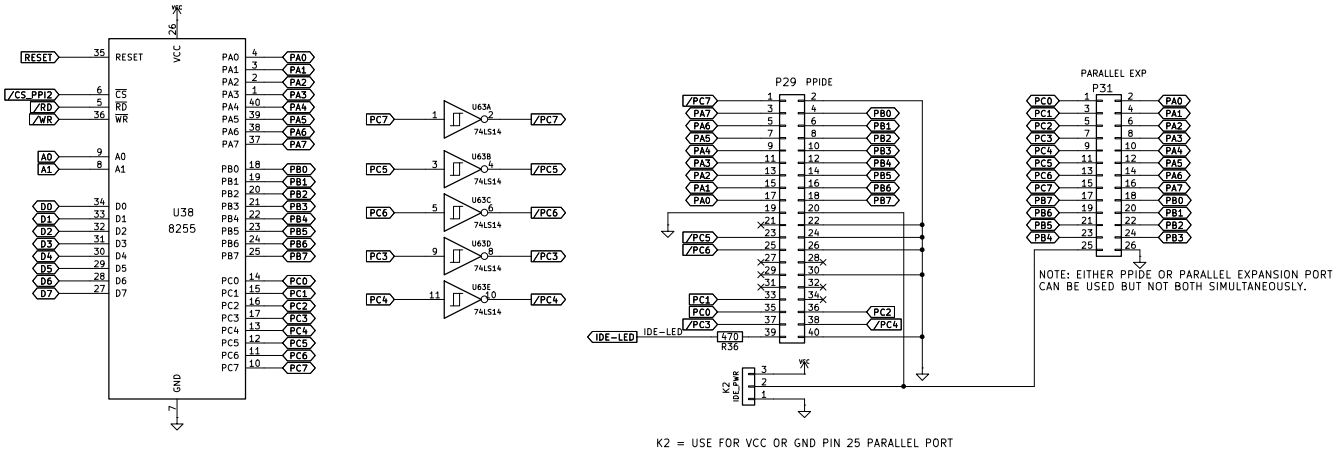


Based on work by Andrew Lynch and John Coffman
https://github.com/danwerner21/N8PC

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

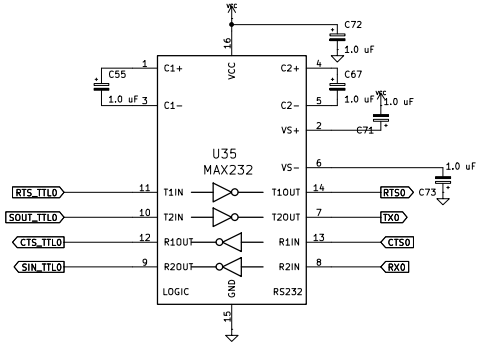


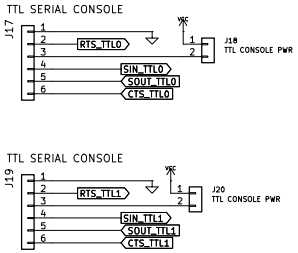
Based on work by Andrew Lynch and John Coffman
https://github.com/danwerner21/N8PC

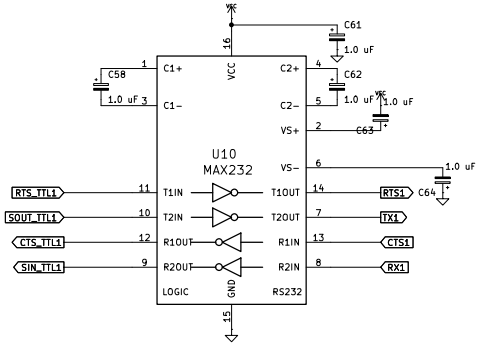
Sheet: /ide/
File: ide.kicad_sch

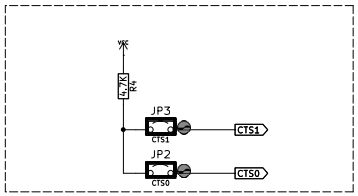
Title: N8PC

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

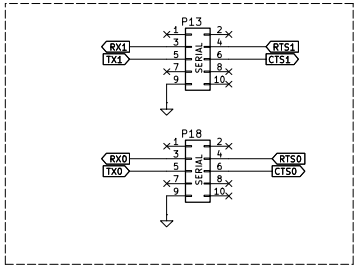








CTS is an inverted signal on the RS-232 port. So it is really /CTS. To assert the signal, it must be tied to SPACE, which is a + RS-232 voltage. (MARK, or true, is a - RS-232 voltage.)



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

Sheet: /serial/
File: serial.kicad_sch

Title: N8PC

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