bus

File: bus.kicad_sch

power

File: power.kicad_sch

buffers

File: buffers.kicad_sch

fpanel

File: fpanel.kicad_sch

65816CPU

File: 65816CPU.kicad_sch

GALS

File: GALS.kicad_sch

bus sharing

File: bussharing.kicad_sch

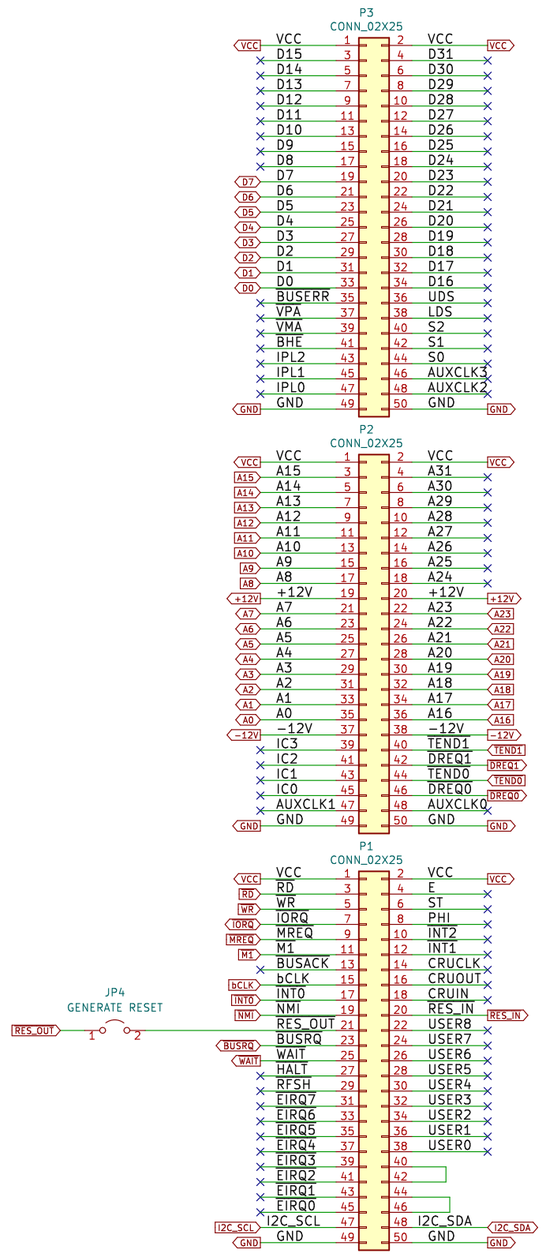
mapper

File: mapper.kicad_sch

Sheet: /
File: processor.65816.kicad_sch

Title: Duodyne 65816 CPU board

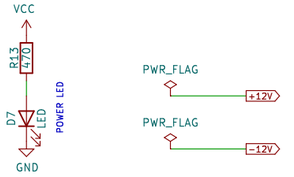
Size: B	Date: 2024-05-19	**Rev: V1.3**
KiCad E.D.A. kicad (6.0.11)		Id: 1/9

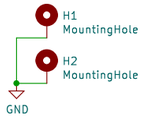


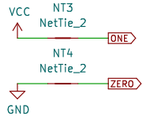
Sheet: /bus/
File: bus.kicad_sch

Title: Duodyne 65816 CPU board

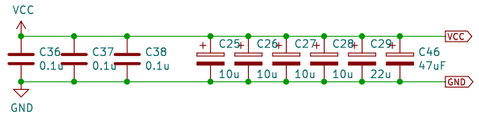
Size: B	Date: 2024-05-19	**Rev: V1.3**
KiCad E.D.A. kicad (6.0.11)		Id: 2/9

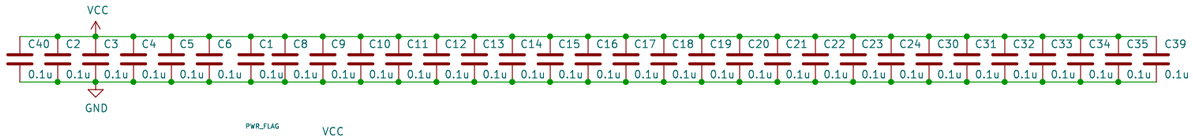


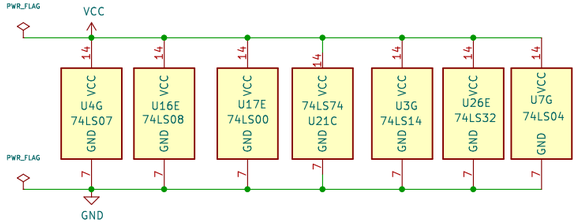


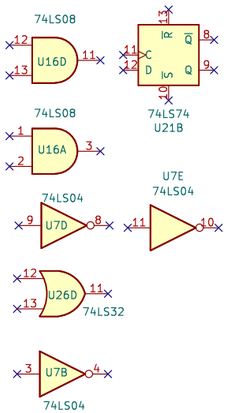


SPARE GATES

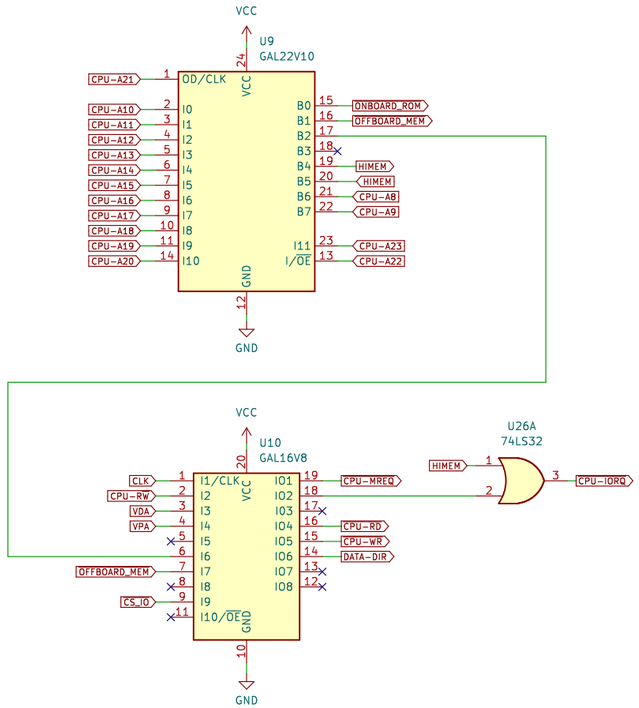








Sheet: /power/		
File: power.kicad_sch		
Title: Duodyne 65816 CPU board		
Size: B	Date: 2024-05-19	**Rev: V1.3**
KiCad E.D.A. kicad (6.0.11)		Id: 4/9

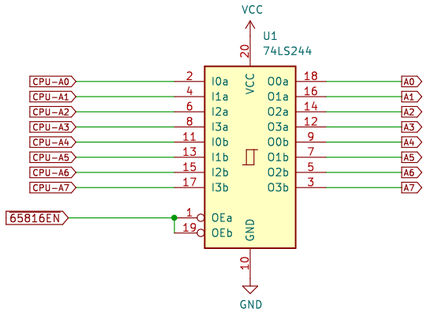


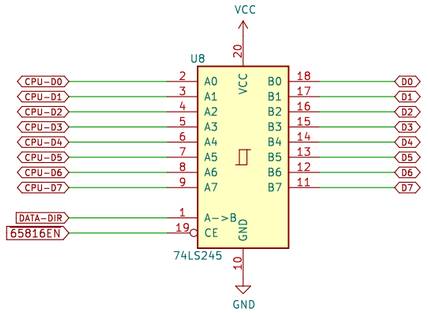
Sheet: /GALS/
File: GALS.kicad_sch

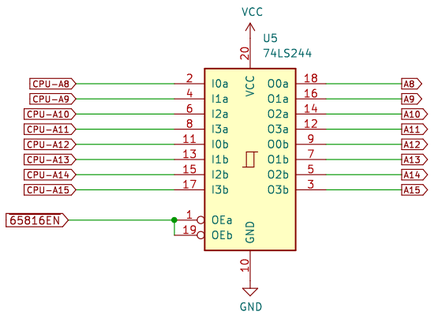
Title: Duodyne 65816 CPU board

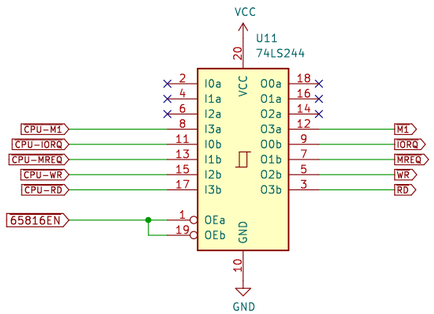
Size: B	Date: 2024-05-19	**Rev: V1.3**
KiCad E.D.A. kicad (6.0.11)		Id: 5/9

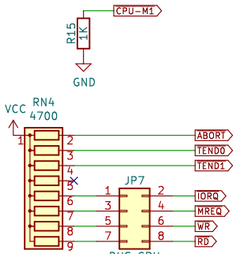
Z80 BUS INTERFACE

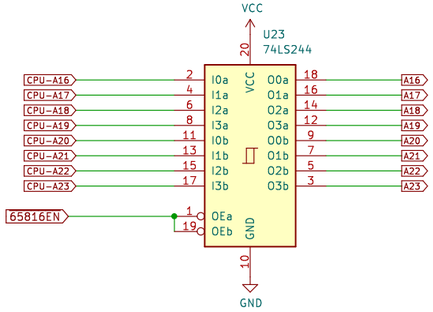


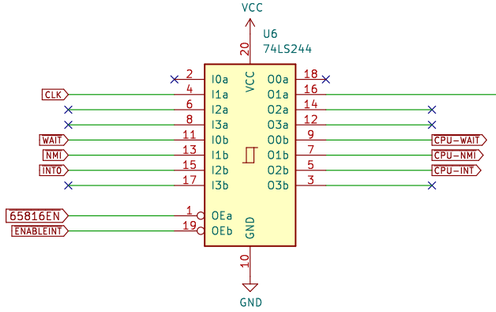


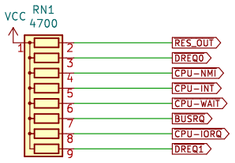










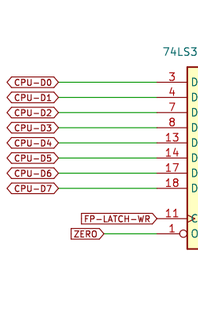


Sheet: /buffers/
File: buffers.kicad_sch

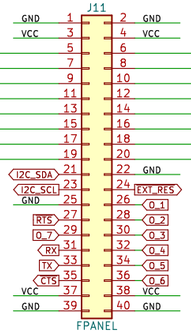
Title: Duodyne 65816 CPU board

Size: B	Date: 2024-05-19	**Rev: V1.3**
KiCad E.D.A. kicad (6.0.11)		Id: 6/9

FRONT PANEL LED OUTPUT



U33 NOTE: USE 74HCT374 TO SOURCE OR SINK ADEQUATE CURRENT TO DRIVE LEDS ON FRONT PANEL



J11 NOTE:

PINS 5, 7, 9, 11, 13, 15, 17, 19 ARE FOR LED STATUS FOR ROMWBW FRONT PANEL INDICATOR

PINS 6, 8, 10, 12, 14, 16, 18, 20 ARE FOR SWITCH INPUTS FOR ROMWBW FRONT PANEL

PINS 21, 23 ARE FOR I2C CONNECTION (SDA & SCL)

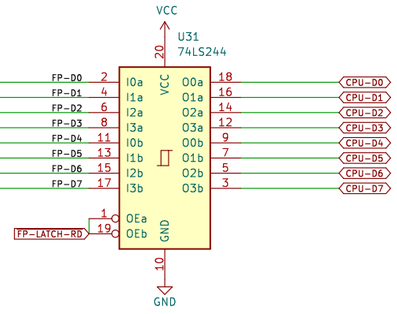
PINS 25, 27, 29, 31, 33, AND 35 ARE FOR TTL SERIAL CONNECTOR TO UART

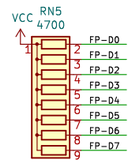
PINS 29, 37 ARE FOR SERIAL VCC POWER ENABLE

PINS 22, 24 ARE FOR EXTERNAL RESET SWITCH

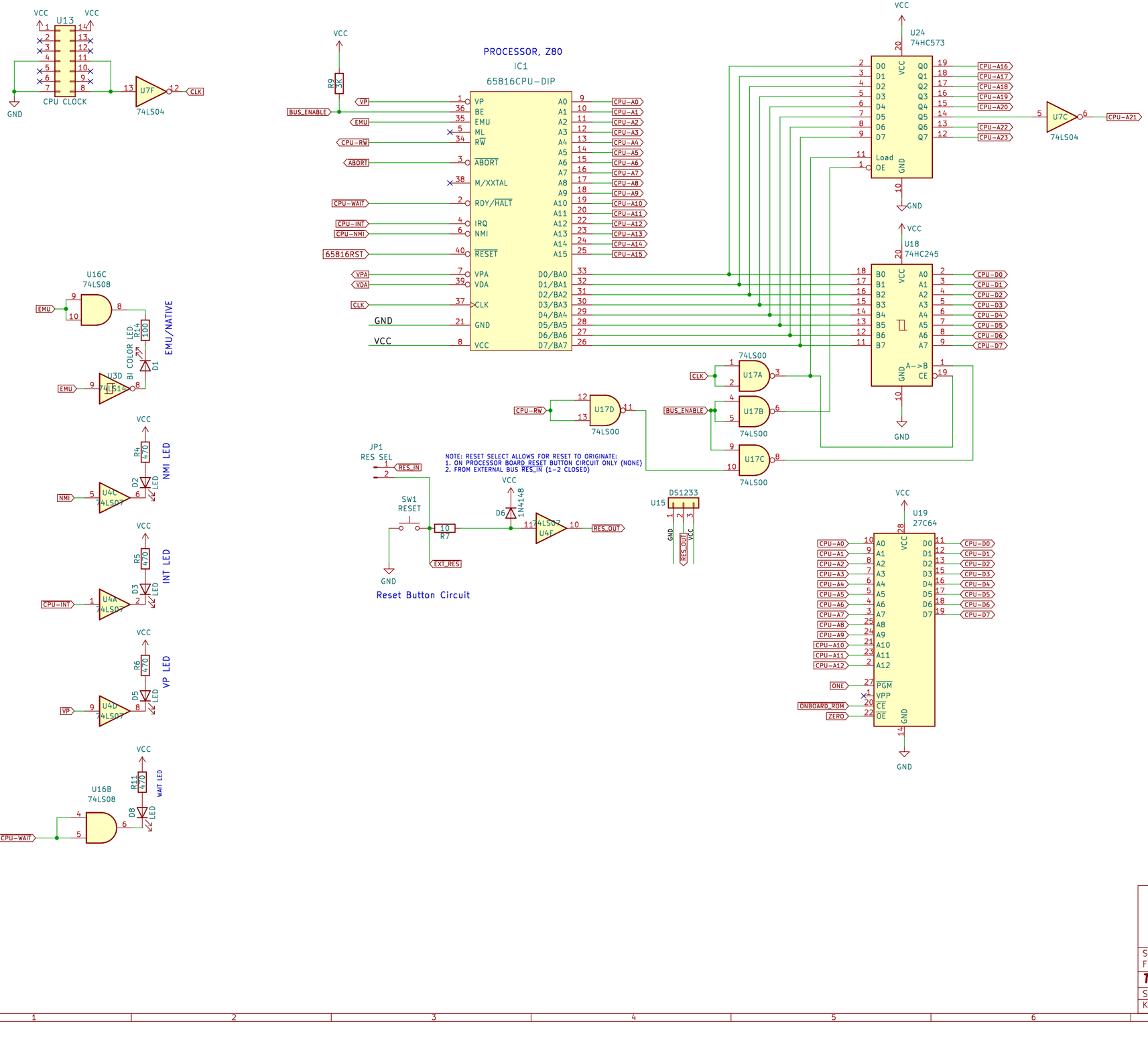
PINS 26, 28, 30, 32, 34, 36 are aux output bits from option register

FRONT PANEL SWITCH INPUT

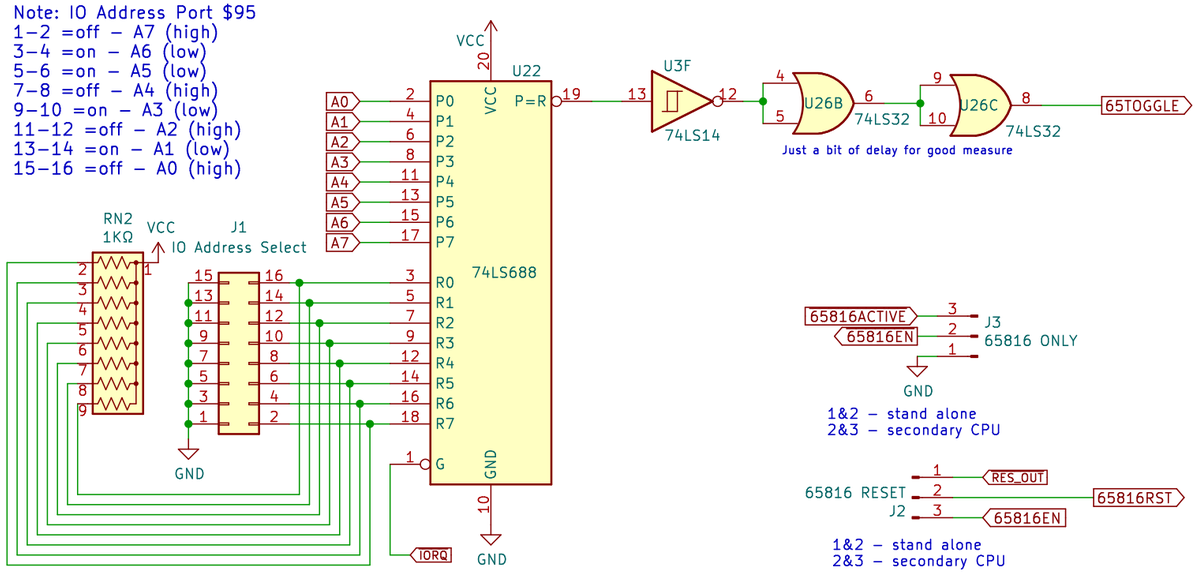




Sheet: /fpanel/		
File: fpanel.kicad_sch		
Title: Duodyne 65816 CPU board		
Size: B	Date: 2024-05-19	**Rev: V1.3**
KiCad E.D.A. kicad (6.0.11)		Id: 8/9

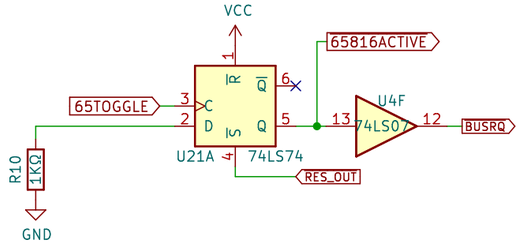

U13
CPU CLOCK
U7F
74LS04
CLK
PROCESSOR, Z80
IC1
65816CPU-DIP
R9
3K
BUS_ENABLE
EMU
CPU-RW
ABORT
CPU-WAIT
CPU-INT
CPU-NMI
65816RST
VPA
VDA
CLK
GND
VCC
VP
ML
M/XXTAL
RDY/HALT
IRQ
NMI
RESET
A0
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
A13
A14
A15
D0/BA0
D1/BA1
D2/BA2
D3/BA3
D4/BA4
D5/BA5
D6/BA6
D7/BA7
U24
74HC573
Load
OE
U7C
CPU-A16
CPU-A17
CPU-A18
CPU-A19
CPU-A20
CPU-A21
CPU-A22
CPU-A23
U18
74HC245
B0
B1
B2
B3
B4
B5
B6
B7
A->B
CE
CPU-D0
CPU-D1
CPU-D2
CPU-D3
CPU-D4
CPU-D5
CPU-D6
CPU-D7
U16C
74LS08
EMU/NATIVE
R14
100
BI COLOR LED
D1
U3D
74LS14
74LS00
U17A
U17B
U17C
U17D
JP1
RES SEL
RES_IN
NOTE: RESET SELECT ALLOWS FOR RESET TO ORIGINATE:
1. ON PROCESSOR BOARD RESET BUTTON CIRCUIT ONLY (NONE)
2. FROM EXTERNAL BUS RES_IN (1-2 CLOSED)
SW1
RESET
R7
10
EXT_RES
RES_OUT
D6
1N4148
U4F
74LS07
Reset Button Circuit
U15
DS1233
U19
27C64
ONE
ONBOARD_ROM
ZERO
PGM
VPP
CE
OE
U4C
NMI
R4
470
NMI LED
D2
LED
U4A
INT LED
R5
D3
U4D
VP LED
R6
D5
U16B
WAIT LED
R11
D8
Sheet: /65816CPU/
File: 65816CPU.kicad_sch
Title: Duodyne 65816 CPU board
Size: USLedger
Date: 2024-05-19
Rev: V1.3
KiCad E.D.A. kicad (6.0.11)
Id: 9/9

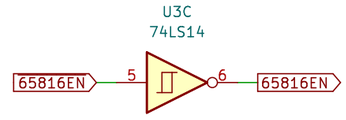
Note: IO Address Port $95
1–2 =off – A7 (high)
3–4 =on – A6 (low)
5–6 =on – A5 (low)
7–8 =off – A4 (high)
9–10 =on – A3 (low)
11–12 =off – A2 (high)
13–14 =on – A1 (low)
15–16 =off – A0 (high)

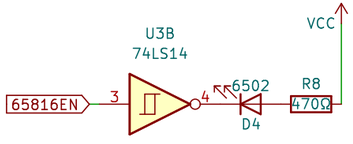


1&2 – stand alone
2&3 – secondary CPU

1&2 – stand alone
2&3 – secondary CPU







Sheet: /bus sharing/		
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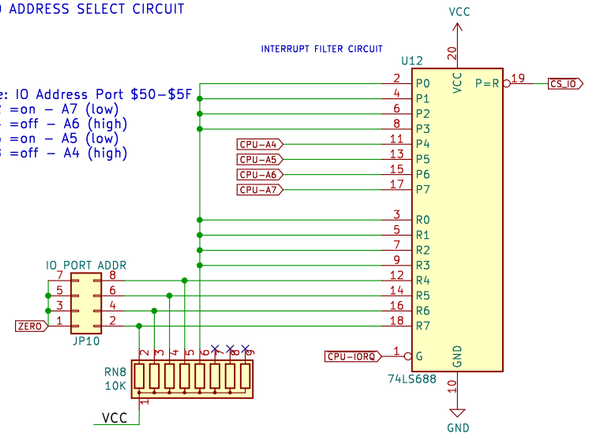
Title: Duodyne 65816 CPU board		
Size: A4	Date: 2024-05-19	**Rev: V1.3**
KiCad E.D.A. kicad (6.0.11)		Id: 9/9

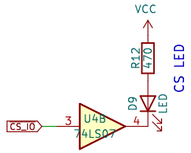
IO ADDRESS SELECT CIRCUIT

Z80 MEMORY MAPPER AND
EXPANSION IO PORT DECODER

INTERRUPT FILTER CIRCUIT

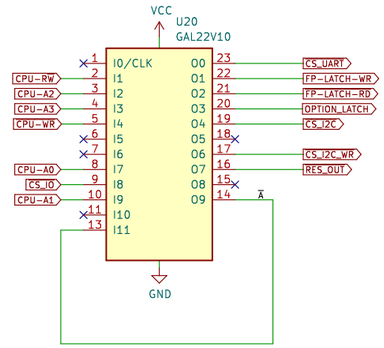
Note: IO Address Port $50-$5F
1-2 =on - A7 (low)
3-4 =off - A6 (high)
5-6 =on - A5 (low)
7-8 =off - A4 (high)

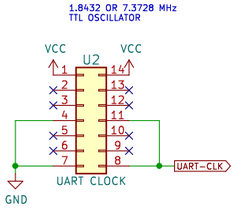


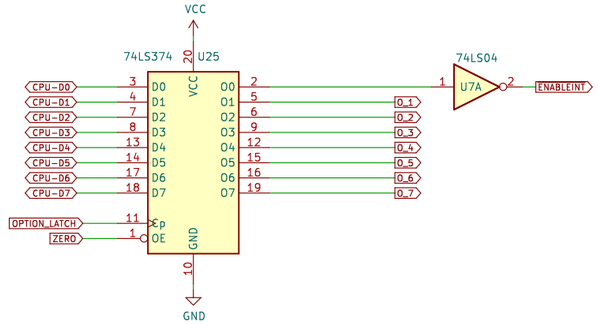


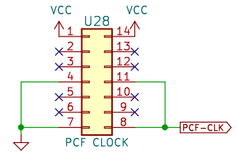
IO Address Port $50-$5F

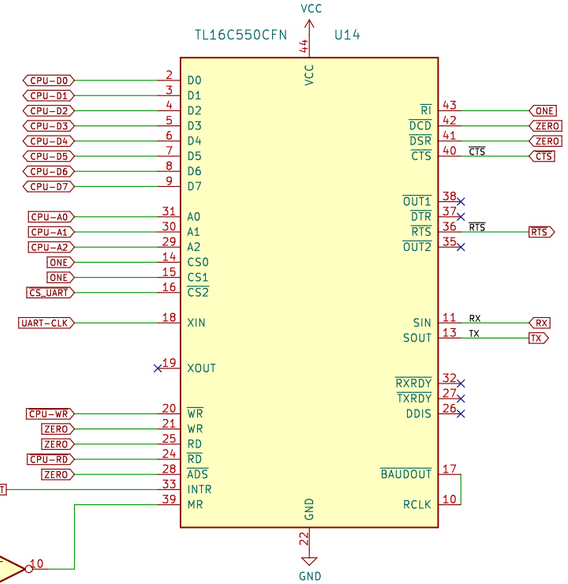
$50 FRONT PANEL
$51 OPTION LATCH
$52
$53 RESET
$54
$55
$56-$57 I2C(RW)
$58-$5F UART (RW)

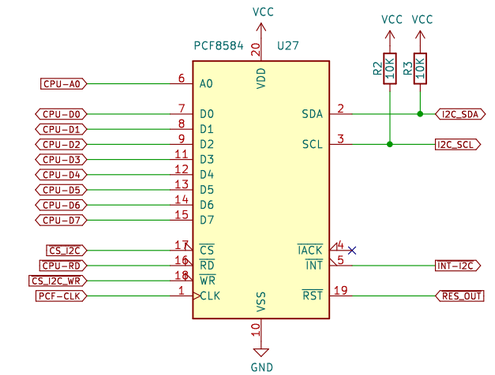


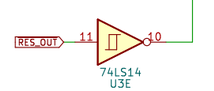


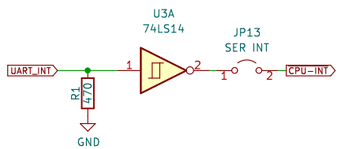


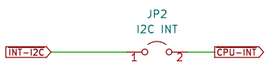












NOTE: INTERRUPTS RELY ON 4700
OHM PULL UP RESISTOR ON PROCESSOR

Sheet: /mapper/
File: mapper.kicad_sch

Title: Duodyne 65816 CPU board

Size: B	Date: 2024-05-19	**Rev: V1.3**
KiCad E.D.A. kicad (6.0.11)		Id: 11/9