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

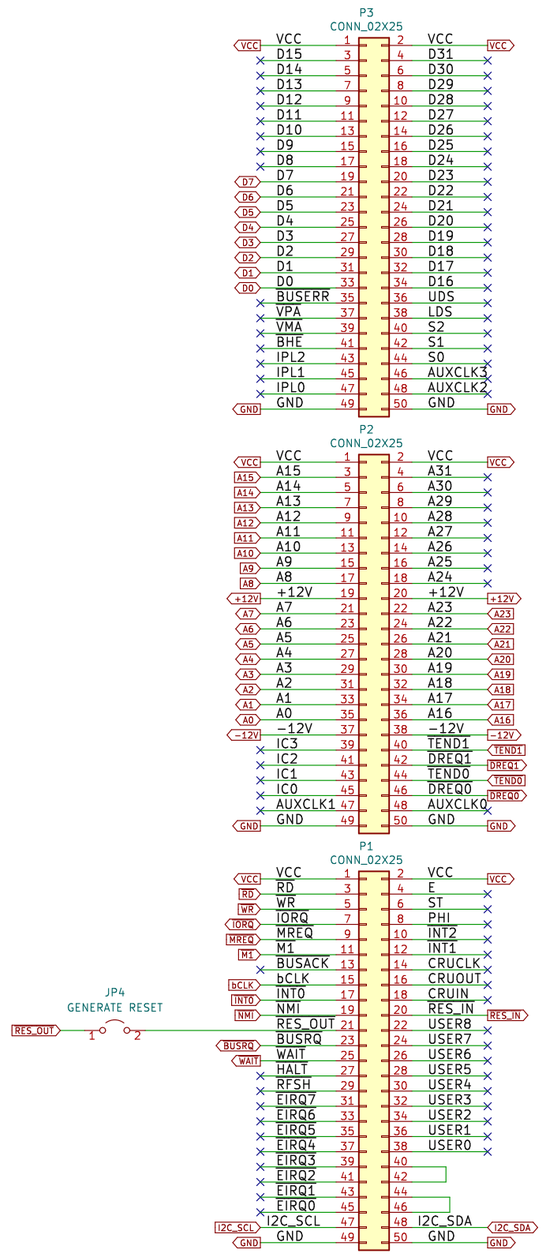
mapper

File: mapper.kicad_sch

Sheet: /
File: processor.65816.kicad_sch

Title: Duodyne 65816 CPU board

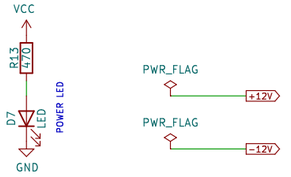
Size: B	Date: 2024-05-05	**Rev: V1.3**
KiCad E.D.A. kicad (6.0.11)		Id: 1/9

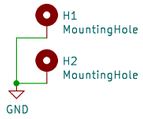


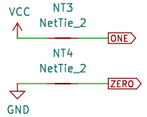
Sheet: /bus/
File: bus.kicad_sch

Title: Duodyne 65816 CPU board

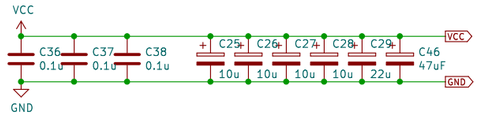
Size: B	Date: 2024-05-05	**Rev: V1.3**
KiCad E.D.A. kicad (6.0.11)		Id: 2/9

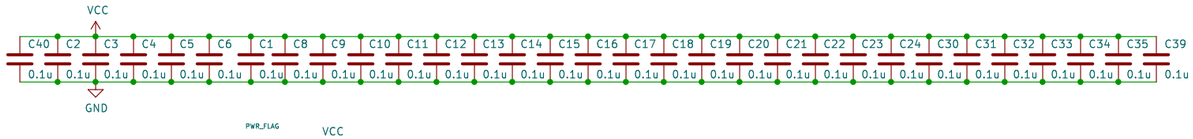


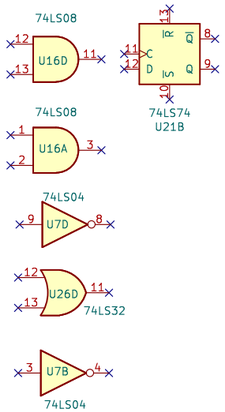


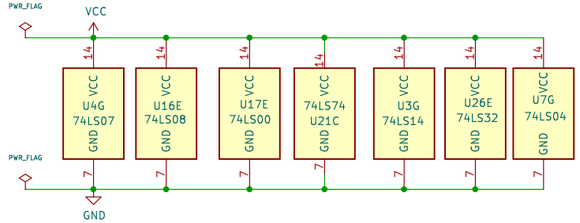


SPARE GATES

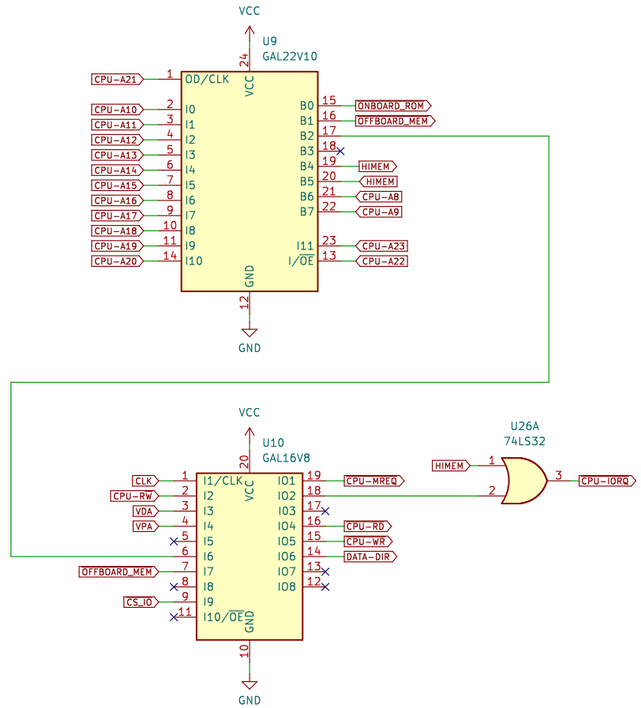








Sheet: /power/		
File: power.kicad_sch		
Title: Duodyne 65816 CPU board		
Size: B	Date: 2024-05-05	**Rev: V1.3**
KiCad E.D.A. kicad (6.0.11)		Id: 4/9

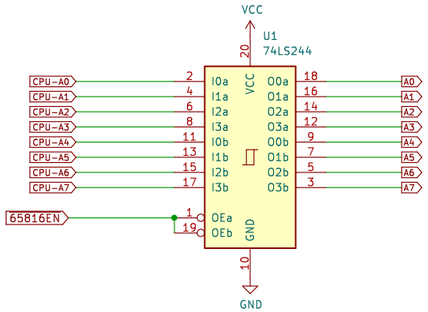


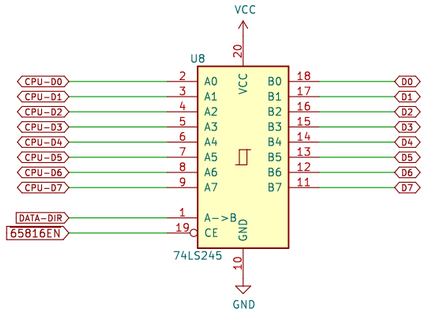
Sheet: /GALS/
File: GALS.kicad_sch

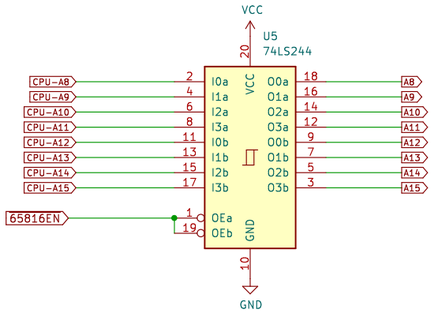
Title: Duodyne 65816 CPU board

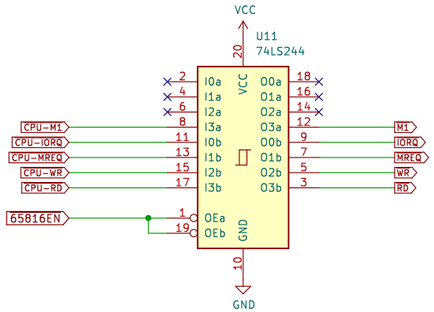
Size: B	Date: 2024-05-05	**Rev: V1.3**
KiCad E.D.A. kicad (6.0.11)		Id: 5/9

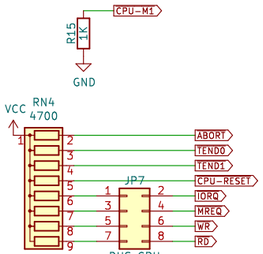
Z80 BUS INTERFACE

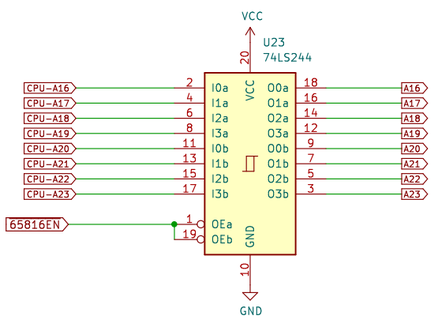


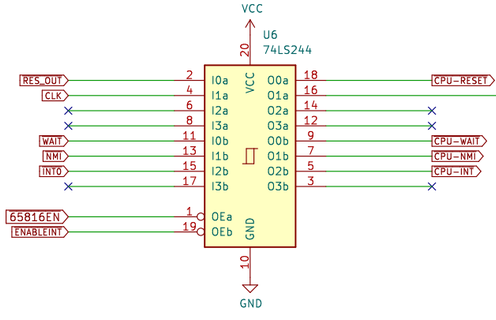


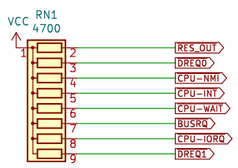










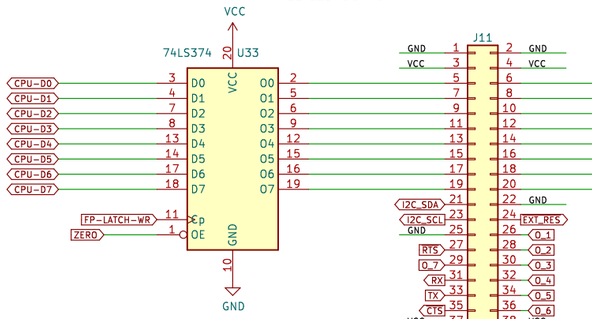


Sheet: /buffers/
File: buffers.kicad_sch

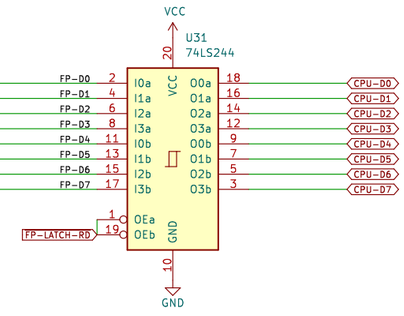
Title: Duodyne 65816 CPU board

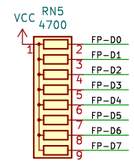
Size: B	Date: 2024-05-05	**Rev: V1.3**
KiCad E.D.A. kicad (6.0.11)		Id: 6/9

FRONT PANEL LED OUTPUT



FRONT PANEL SWITCH INPUT





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

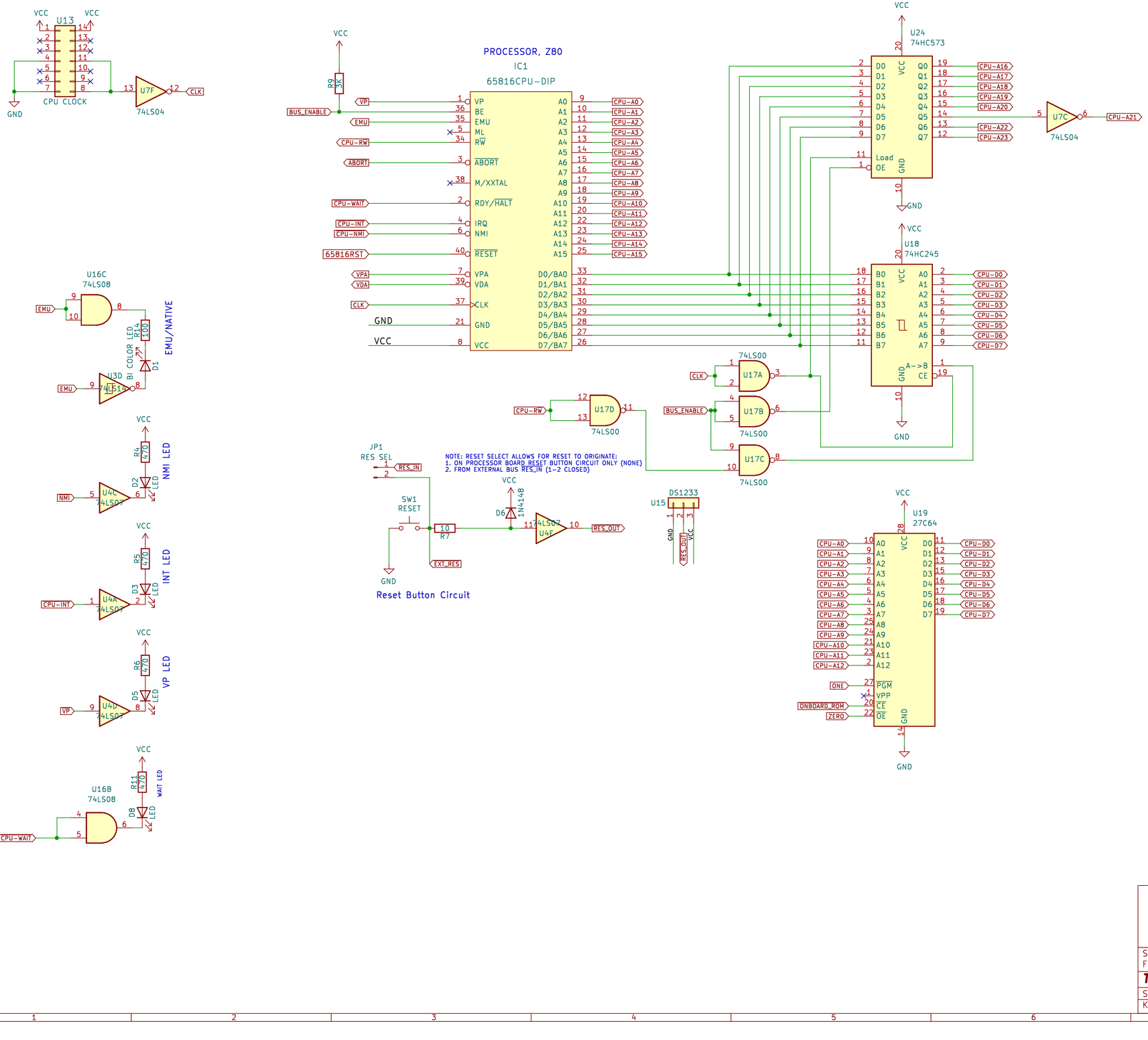
PINS 22, 24 ARE FOR EXTERNAL RESET SWITCH

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

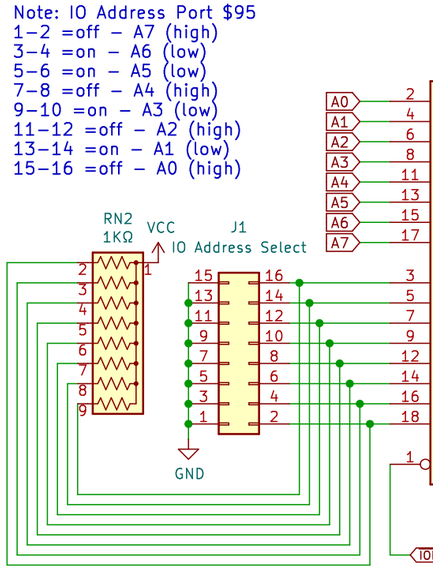
Sheet: /fpanel/
File: fpanel.kicad_sch

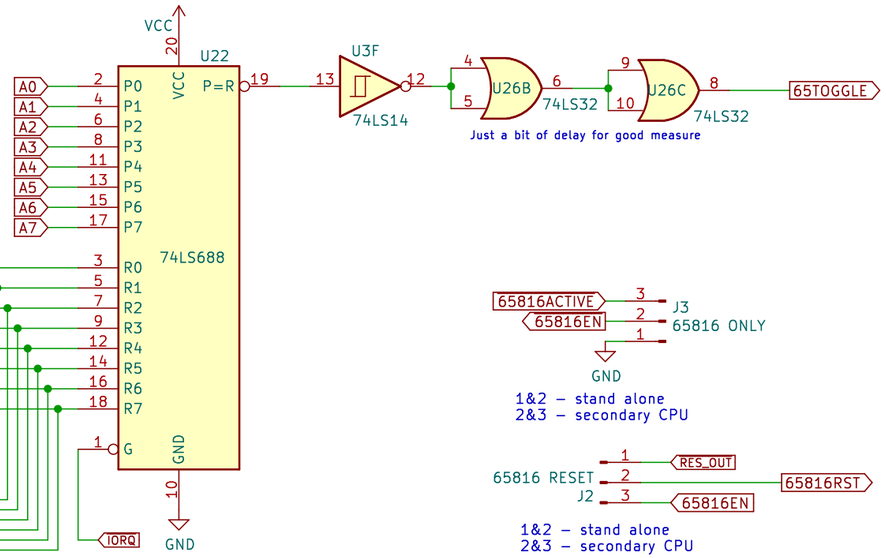
Title: Duodyne 65816 CPU board

Size: B	Date: 2024-05-05	**Rev: V1.3**
KiCad E.D.A. kicad (6.0.11)		Id: 8/9


U13
CPU CLOCK
U7F
74LS04
PROCESSOR, Z80
IC1
65816CPU-DIP
U24
74HC573
U7C
74LS04
U18
74HC245
U16C
74LS08
U3D
74LS14
BI COLOR LED
EMU/NATIVE
U4C
74LS07
NMI LED
U4A
74LS07
INT LED
U4D
74LS07
VP LED
U16B
74LS08
WAIT LED
JP1
RES SEL
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
Reset Button Circuit
U17A
U17B
U17C
U17D
74LS00
DS1233
U15
U19
27C64
Sheet: /65816CPU/
File: 65816CPU.kicad_sch
Title: Duodyne 65816 CPU board
Size: USLedger
Date: 2024-05-05
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)

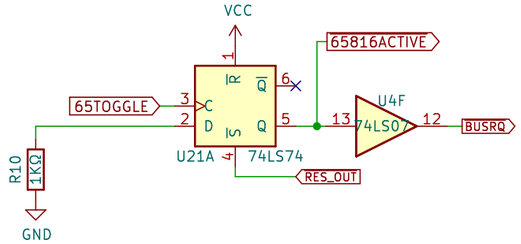


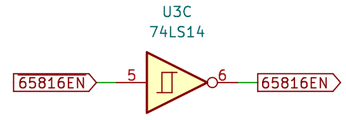


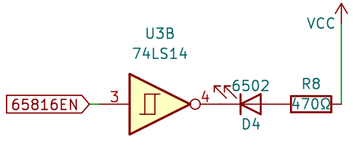
Just a bit of delay for good measure

1&2 – stand alone
2&3 – secondary CPU

1&2 – stand alone
2&3 – secondary CPU







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

Z80 MEMORY MAPPER AND
EXPANSION IO PORT DECODER

IO ADDRESS SELECT CIRCUIT

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_PORT ADDR

JP10

RN8
10K

U12
74LS688

VCC
GND
ZERO
CPU-IORQ
CS_IO
CPU-A4
CPU-A5
CPU-A6
CPU-A7

U4B
74LS07

R12
470

D9
LED

CS LED

IO Address Port $50-$5F

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

U20
GAL22V10

CPU-RW
CPU-A2
CPU-A3
CPU-A0
CPU-A1
INT-I2C
CS_UART
FP-LATCH-WR
FP-LATCH-RD
OPTION_LATCH
CS_I2C
INT-I2C
CS_I2C_WR
RES_OUT

1.8432 OR 7.3728 MHz
TTL OSCILLATOR

U2
UART CLOCK

UART-CLK

74LS374
U25

74LS04
U7A

ENABLEINT

O_1
O_2
O_3
O_4
O_5
O_6
O_7

OPTION_LATCH

U28
PCF CLOCK

PCF-CLK

TL16C550CFN
U14

CPU-D0
CPU-D1
CPU-D2
CPU-D3
CPU-D4
CPU-D5
CPU-D6
CPU-D7
CPU-A0
CPU-A1
CPU-A2
ONE
ZERO
CS_UART
UART-CLK
CPU-WR
CPU-RD
UART_INT
RI
DCD
DSR
CTS
OUT1
DTR
RTS
OUT2
XIN
XOUT
SIN
SOUT
RXRDY
TXRDY
DDIS
BAUDOUT
RCLK
WR
RD
ADS
INTR
MR

PCF8584
U27

CPU-A0
CPU-D0
CPU-D1
CPU-D2
CPU-D3
CPU-D4
CPU-D5
CPU-D6
CPU-D7
CS_I2C
CPU-RD
CS_I2C_WR
PCF-CLK
SDA
SCL
IACK
INT
RST
I2C_SDA
I2C_SCL
INT-I2C
CPU-RESET

R2
10K

R3
10K

74LS14
U3E

U3A
74LS14

JP13
SER INT

R1
470

U7E
74LS04

JP2
I2C INT

CPU-INT

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