bus

File: bus.kicad_sch

VDP

File: VDP.kicad_sch

IO

File: IO.kicad_sch

power

File: power.kicad_sch

buffers

File: buffers.kicad_sch

P3
CONN_02X25

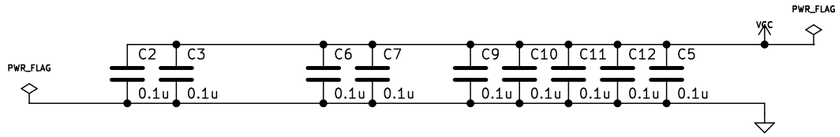
VCC	VCC	1	2	VCC	VCC
	D15	3	4	D31	
	D14	5	6	D30	
	D13	7	8	D29	
	D12	9	10	D28	
	D11	11	12	D27	
	D10	13	14	D26	
	D9	15	16	D25	
	D8	17	18	D24	
D7	D7	19	20	D23	
D6	D6	21	22	D22	
D5	D5	23	24	D21	
D4	D4	25	26	D20	
D3	D3	27	28	D19	
D2	D2	29	30	D18	
D1	D1	31	32	D17	
D0	D0	33	34	D16	
	BUSERR	35	36	UDS	
	VPA	37	38	LDS	
	VMA	39	40	S2	
	BHE	41	42	S1	
	IPL2	43	44	S0	
	IPL1	45	46	AUXCLK3	
	IPL0	47	48	AUXCLK2	
GND	GND	49	50	GND	GND

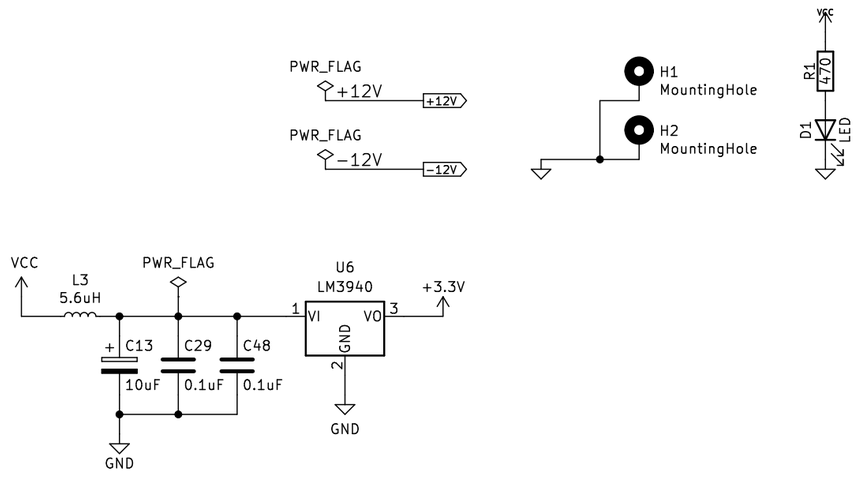
P2
CONN_02X25

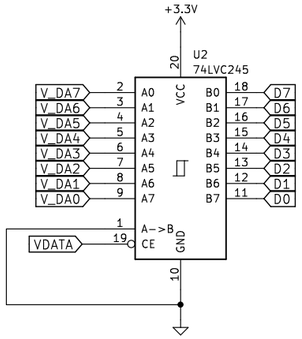
VCC	VCC	1	2	VCC	VCC
A15	A15	3	4	A31	
A14	A14	5	6	A30	
A13	A13	7	8	A29	
A12	A12	9	10	A28	
A11	A11	11	12	A27	
A10	A10	13	14	A26	
A9	A9	15	16	A25	
A8	A8	17	18	A24	
+12V	+12V	19	20	+12V	+12V
A7	A7	21	22	A23	A23
A6	A6	23	24	A22	A22
A5	A5	25	26	A21	A21
A4	A4	27	28	A20	A20
A3	A3	29	30	A19	A19
A2	A2	31	32	A18	A18
A1	A1	33	34	A17	A17
A0	A0	35	36	A16	A16
−12V	−12V	37	38	−12V	−12V
	IC3	39	40	TEND1	
	IC2	41	42	DREQ1	
	IC1	43	44	TEND0	
	IC0	45	46	DREQ0	
	AUXCLK1	47	48	AUXCLK0	
GND	GND	49	50	GND	GND

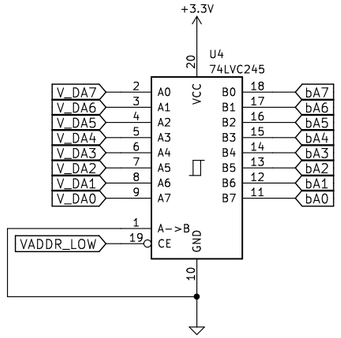
P1
CONN_02X25

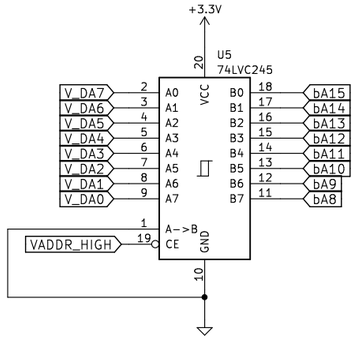
VCC	VCC	1	2	VCC	VCC
	RD	3	4	E	
WR	WR	5	6	ST	
IORQ	IORQ	7	8	PHI	
MREQ	MREQ	9	10	INT2	
M1	M1	11	12	INT1	
	BUSACK	13	14	CRUCLK	
CLK	CLK	15	16	CRUOUT	
	INT0	17	18	CRUIN	
	NMI	19	20	RES_IN	
	RES_OUT	21	22	USER8	
	BUSRQ	23	24	USER7	
	WAIT	25	26	USER6	
	HALT	27	28	USER5	
	RFSH	29	30	USER4	
	EIRQ7	31	32	USER3	
	EIRQ6	33	34	USER2	
	EIRQ5	35	36	USER1	
	EIRQ4	37	38	USER0	
	EIRQ3	39	40	BAI	
	EIRQ2	41	42	BAO	
	EIRQ1	43	44	IEI	
	EIRQ0	45	46	IEO	
	I2C_SCL	47	48	I2C_SDA	
GND	GND	49	50	GND	GND

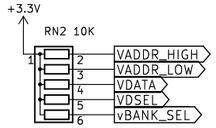

PWR_FLAG
PWR_FLAG
VCC
C2
C3
C6
C7
C9
C10
C11
C12
C5
0.1u
0.1u
0.1u
0.1u
0.1u
0.1u
0.1u
0.1u
0.1u

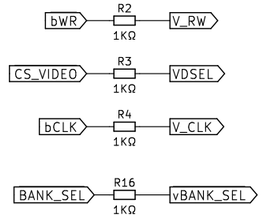

PWR_FLAG
+12V
+12V
PWR_FLAG
-12V
-12V
H1
MountingHole
H2
MountingHole
VCC
R1
470
D1
LED
VCC
L3
5.6uH
PWR_FLAG
U6
LM3940
+3.3V
1
VI
VO
3
GND
2
+
C13
C29
C48
10uF
0.1uF
0.1uF
GND
GND

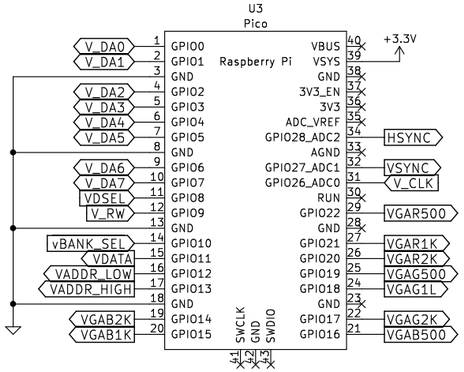

+3.3V
U2
74LVC245
V_DA7
V_DA6
V_DA5
V_DA4
V_DA3
V_DA2
V_DA1
V_DA0
VDATA
A0
A1
A2
A3
A4
A5
A6
A7
A->B
CE
VCC
GND
B0
B1
B2
B3
B4
B5
B6
B7
D7
D6
D5
D4
D3
D2
D1
D0

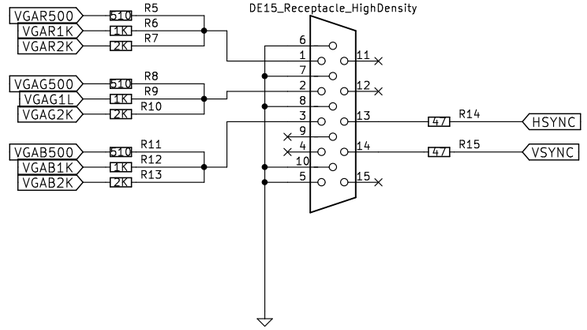

+3.3V
U4
74LVC245
V_DA7
V_DA6
V_DA5
V_DA4
V_DA3
V_DA2
V_DA1
V_DA0
VADDR_LOW
A0
A1
A2
A3
A4
A5
A6
A7
A->B
CE
VCC
GND
B0
B1
B2
B3
B4
B5
B6
B7
bA7
bA6
bA5
bA4
bA3
bA2
bA1
bA0


+3.3V
U5
74LVC245
V_DA7
V_DA6
V_DA5
V_DA4
V_DA3
V_DA2
V_DA1
V_DA0
VADDR_HIGH
A0
A1
A2
A3
A4
A5
A6
A7
A->B
CE
VCC
GND
B0
B1
B2
B3
B4
B5
B6
B7
bA15
bA14
bA13
bA12
bA11
bA10
bA9
bA8

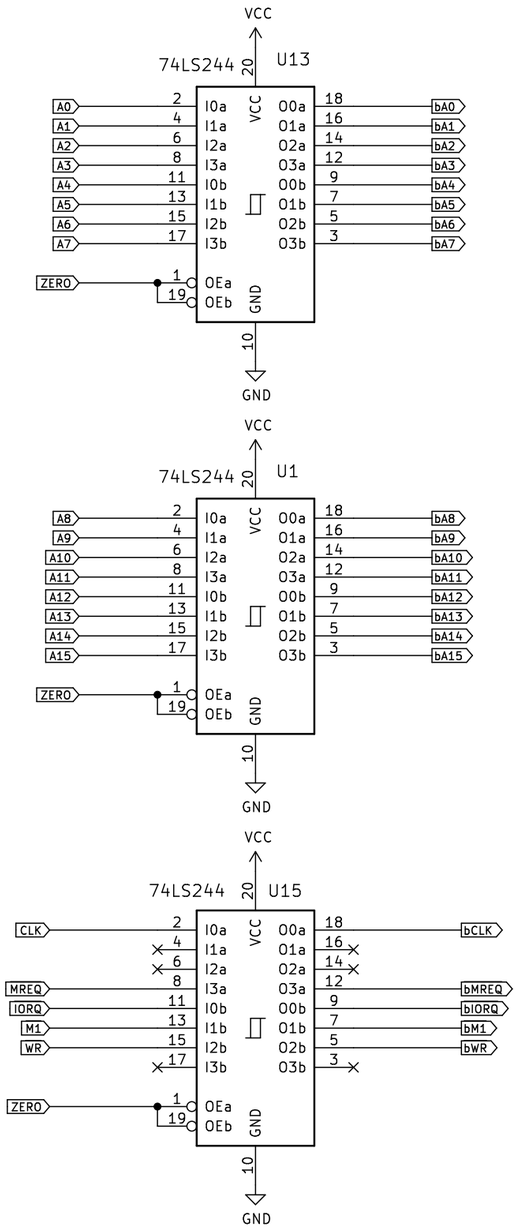

+3.3V
RN2 10K
VADDR_HIGH
VADDR_LOW
VDATA
VDSEL
vBANK_SEL


bWR
R2
1KΩ
V_RW
CS_VIDEO
R3
1KΩ
VDSEL
bCLK
R4
1KΩ
V_CLK
BANK_SEL
R16
1KΩ
vBANK_SEL


U3
Pico
Raspberry Pi
V_DA0
V_DA1
V_DA2
V_DA3
V_DA4
V_DA5
V_DA6
V_DA7
VDSEL
V_RW
vBANK_SEL
VDATA
VADDR_LOW
VADDR_HIGH
VGAB2K
VGAB1K
GPIO0
GPIO1
GPIO2
GPIO3
GPIO4
GPIO5
GPIO6
GPIO7
GPIO8
GPIO9
GPIO10
GPIO11
GPIO12
GPIO13
GPIO14
GPIO15
GND
VBUS
VSYS
3V3_EN
3V3
ADC_VREF
GPIO28_ADC2
AGND
GPIO27_ADC1
GPIO26_ADC0
RUN
GPIO22
GPIO21
GPIO20
GPIO19
GPIO18
GPIO17
GPIO16
SWCLK
SWDIO
+3.3V
HSYNC
VSYNC
V_CLK
VGAR500
VGAR1K
VGAR2K
VGAG500
VGAG1L
VGAG2K
VGAB500
VGAB1K
VGAB2K

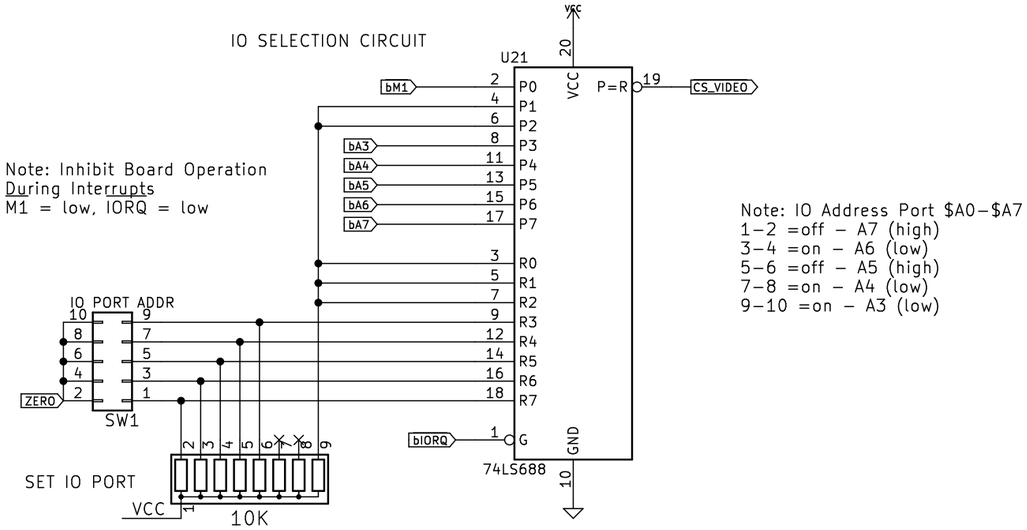

J1
DE15_Receptacle_HighDensity
VGAR500
VGAR1K
VGAR2K
VGAG500
VGAG1L
VGAG2K
VGAB500
VGAB1K
VGAB2K
510
1K
2K
R5
R6
R7
R8
R9
R10
R11
R12
R13
R14
R15
47
HSYNC
VSYNC

Z80 BUS INTERFACE

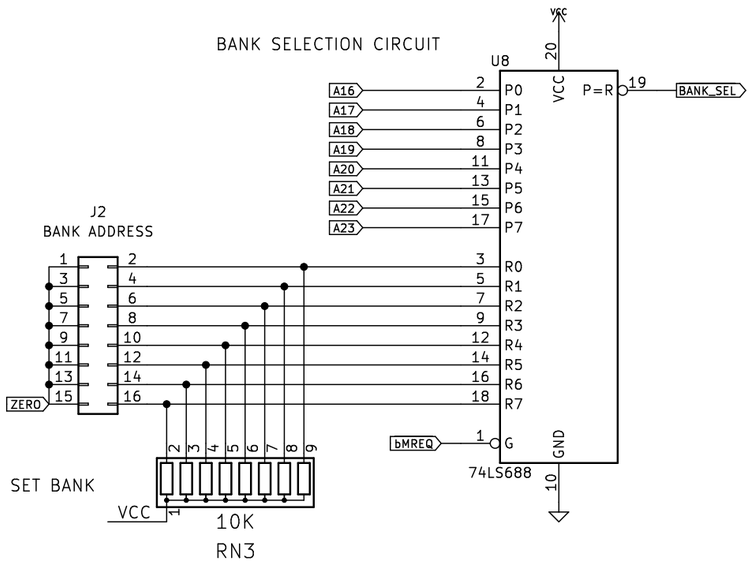


Note: Buffers and Transceivers
respond to IO and MEM cycles

IO SELECTION CIRCUIT



Note: Inhibit Board Operation
During Interrupts
M1 = low, IORQ = low

Note: IO Address Port $A0–$A7
1–2 =off – A7 (high)
3–4 =on – A6 (low)
5–6 =off – A5 (high)
7–8 =on – A4 (low)
9–10 =on – A3 (low)

BANK SELECTION CIRCUIT