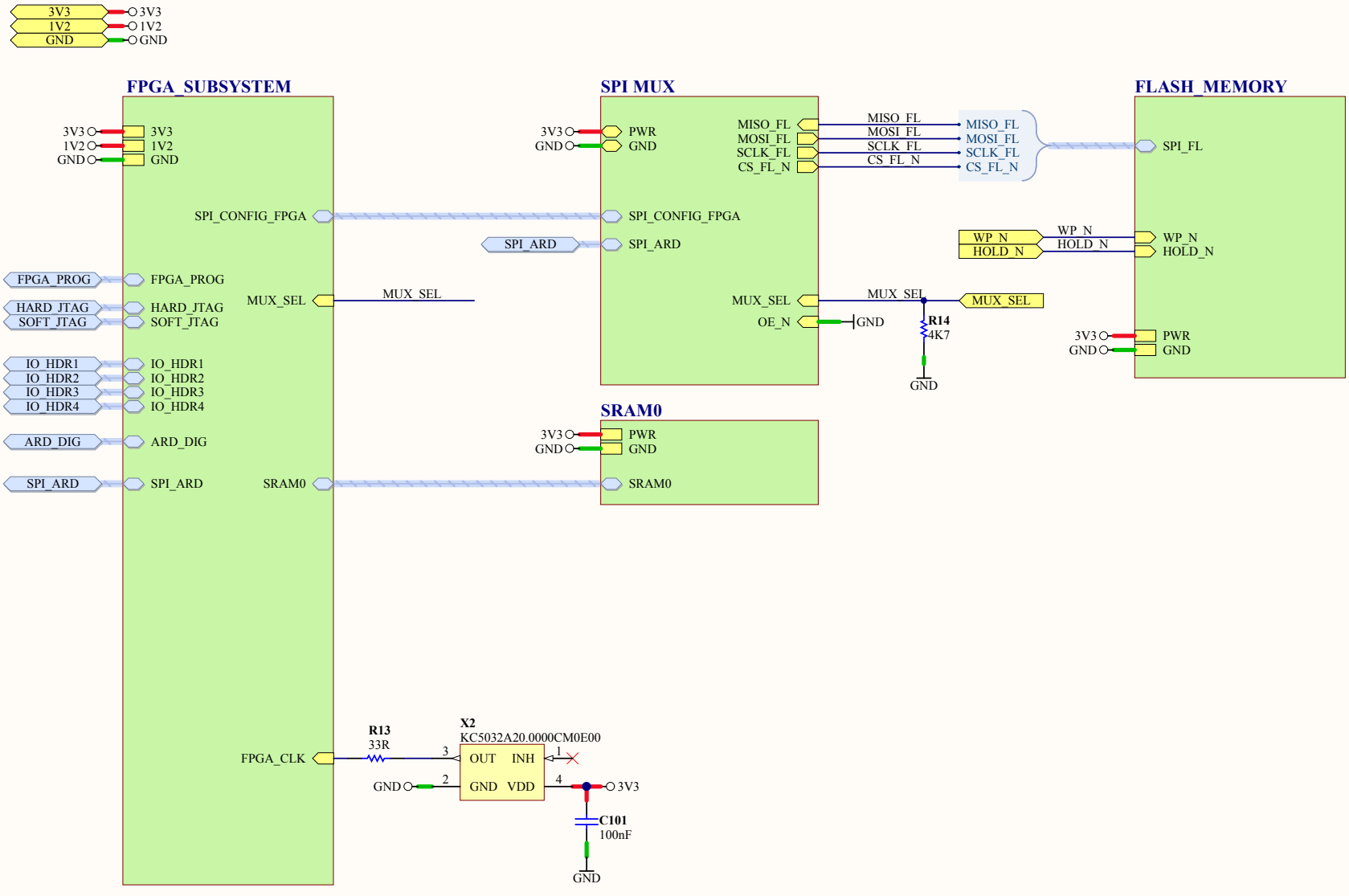
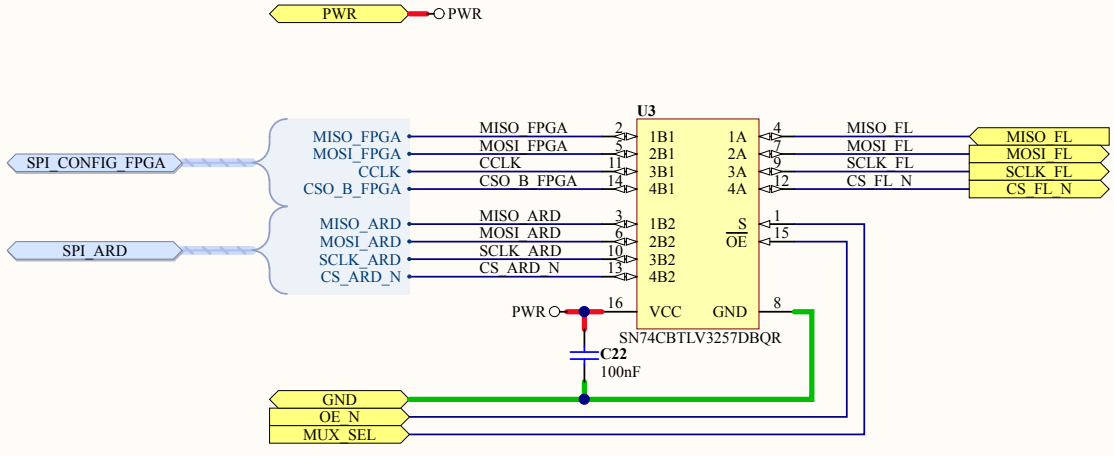
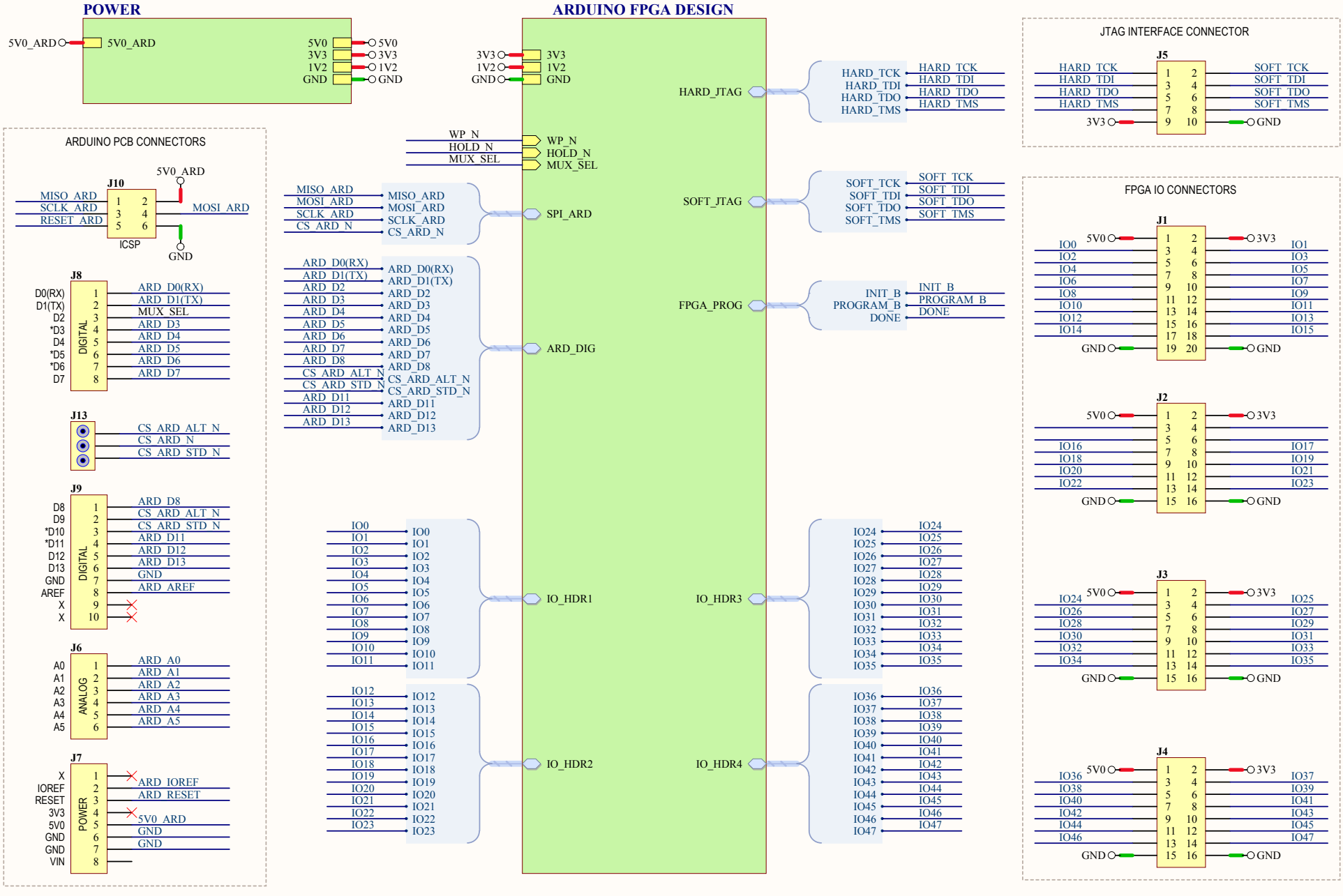
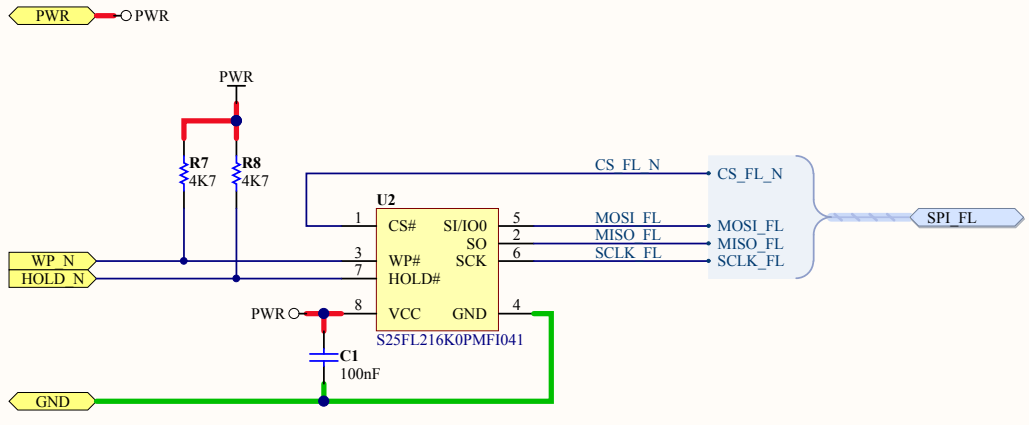

3V3
1V2
GND
FPGA_SUBSYSTEM
SPI MUX
FLASH_MEMORY
SPI_CONFIG_FPGA
SPI_ARD
FPGA_PROG
HARD_JTAG
SOFT_JTAG
MUX_SEL
IO_HDR1
IO_HDR2
IO_HDR3
IO_HDR4
ARD_DIG
SRAM0
MISO_FL
MOSI_FL
SCLK_FL
CS_FL_N
SPI_FL
WP_N
HOLD_N
OE_N
PWR
R14
4K7
SRAM0
FPGA_CLK
R13
33R
X2
KC5032A20.0000CM0E00
OUT
INH
GND
VDD
C101
100nF

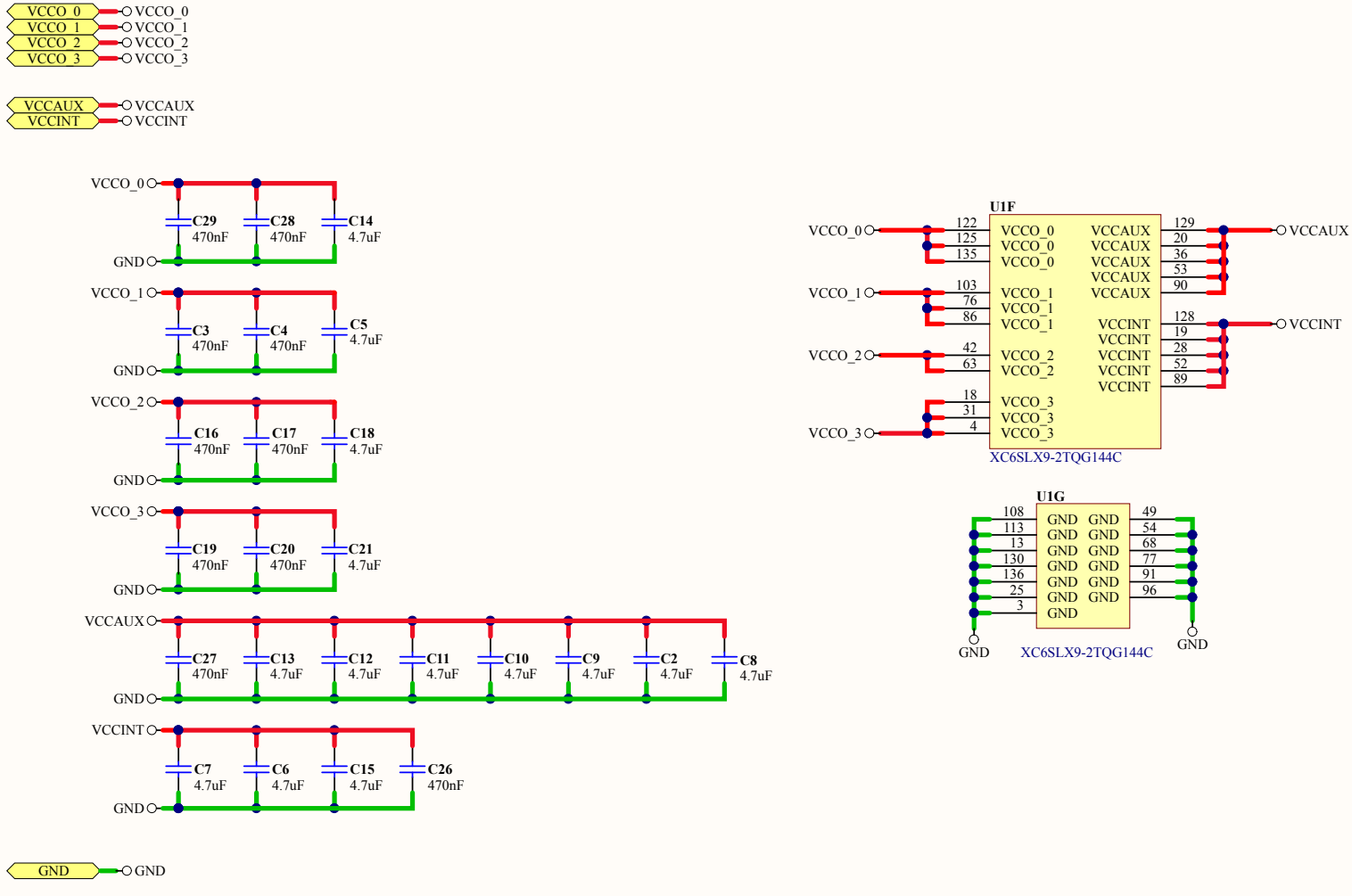


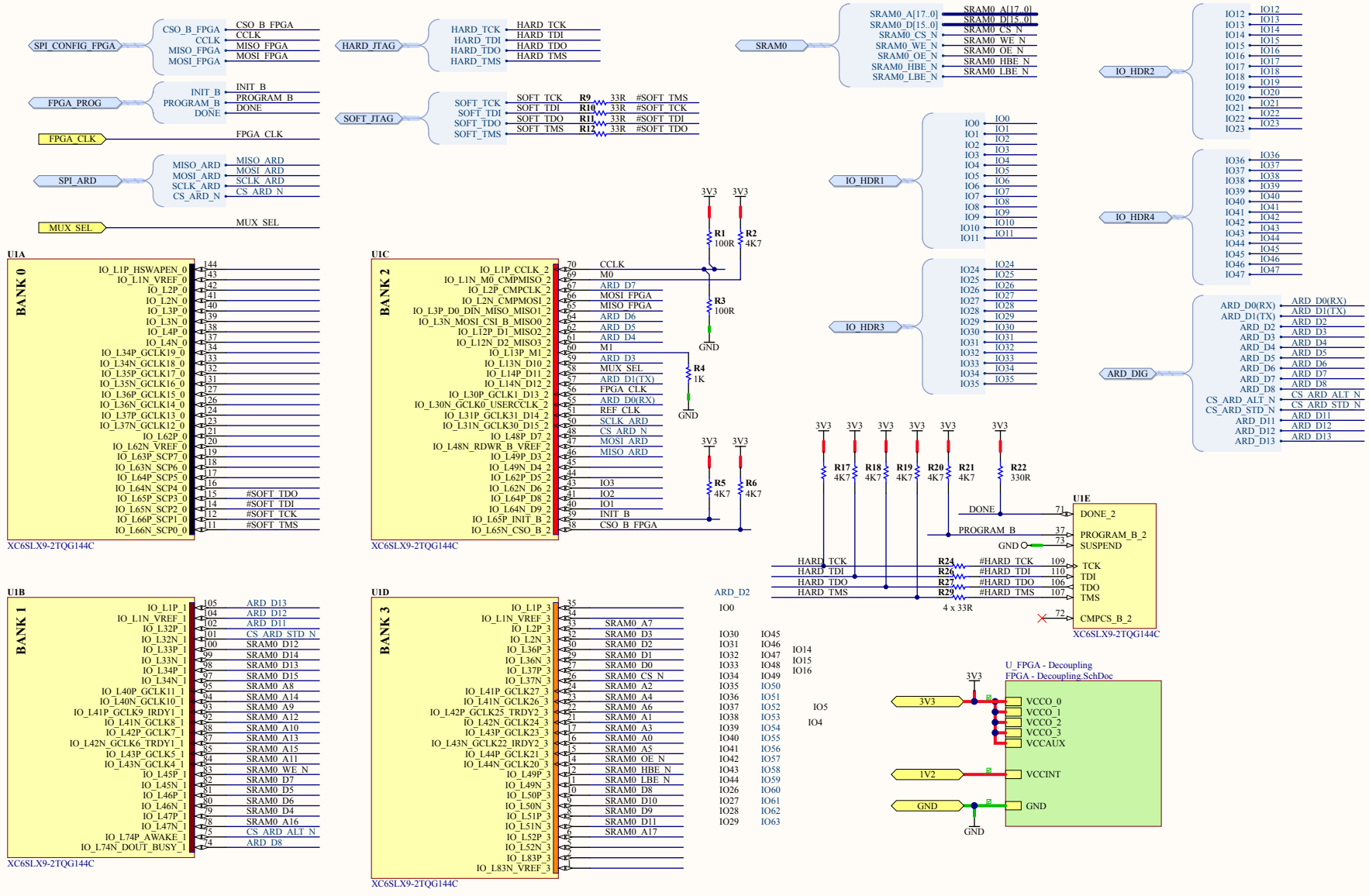
INPUTS		FUNCTION
/OE	S	
L	L	A port = B1 port
L	H	A port = B2 port
H	X	Disconnect

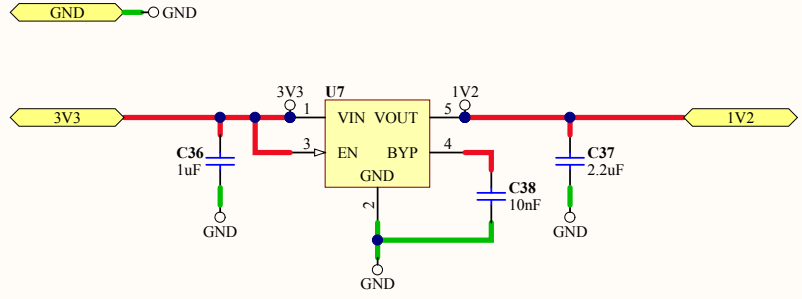

POWER
5V0_ARD
5V0_ARD
5V0
3V3
1V2
GND
ARDUINO FPGA DESIGN
3V3
1V2
GND
HARD_JTAG
HARD_TCK
HARD_TDI
HARD_TDO
HARD_TMS
WP_N
HOLD_N
MUX_SEL
SOFT_JTAG
SOFT_TCK
SOFT_TDI
SOFT_TDO
SOFT_TMS
SPI_ARD
MISO_ARD
MOSI_ARD
SCLK_ARD
CS_ARD_N
FPGA_PROG
INIT_B
PROGRAM_B
DONE
ARD_DIG
ARD_D0(RX)
ARD_D1(TX)
ARD_D2
ARD_D3
ARD_D4
ARD_D5
ARD_D6
ARD_D7
ARD_D8
CS_ARD_ALT_N
CS_ARD_STD_N
ARD_D11
ARD_D12
ARD_D13
IO_HDR1
IO_HDR2
IO_HDR3
IO_HDR4
IO0
IO1
IO2
IO3
IO4
IO5
IO6
IO7
IO8
IO9
IO10
IO11
IO12
IO13
IO14
IO15
IO16
IO17
IO18
IO19
IO20
IO21
IO22
IO23
IO24
IO25
IO26
IO27
IO28
IO29
IO30
IO31
IO32
IO33
IO34
IO35
IO36
IO37
IO38
IO39
IO40
IO41
IO42
IO43
IO44
IO45
IO46
IO47
ARDUINO PCB CONNECTORS
J10
5V0_ARD
MISO_ARD
SCLK_ARD
RESET_ARD
MOSI_ARD
ICSP
GND
J8
DIGITAL
D0(RX)
D1(TX)
D2
*D3
D4
*D5
*D6
D7
MUX_SEL
J13
CS_ARD_ALT_N
CS_ARD_N
CS_ARD_STD_N
J9
DIGITAL
D8
D9
*D10
*D11
D12
D13
GND
AREF
X
X
ARD_AREF
J6
ANALOG
A0
A1
A2
A3
A4
A5
J7
POWER
X
IOREF
RESET
3V3
5V0
GND
GND
VIN
ARD_IOREF
ARD_RESET
5V0_ARD
JTAG INTERFACE CONNECTOR
J5
FPGA IO CONNECTORS
J1
J2
J3
J4

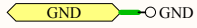
Power Supply 2V4 to 3V7

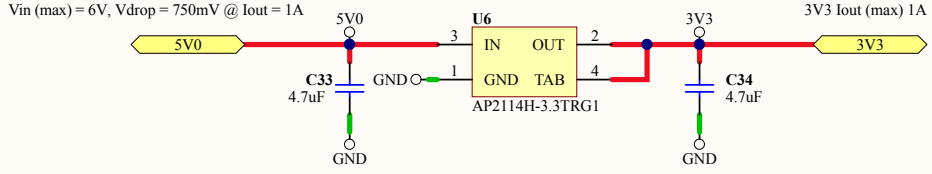


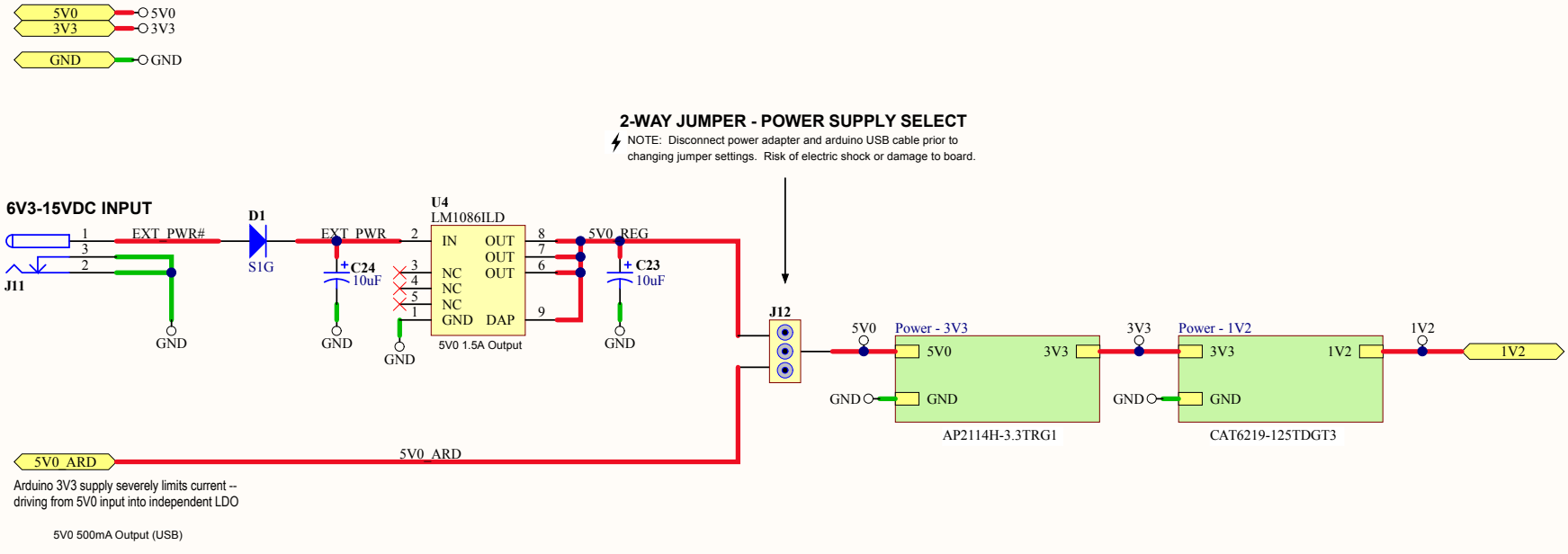

VCCO_0
VCCO_1
VCCO_2
VCCO_3
VCCAUX
VCCINT
GND
C29 470nF
C28 470nF
C14 4.7uF
C3 470nF
C4 470nF
C5 4.7uF
C16 470nF
C17 470nF
C18 4.7uF
C19 470nF
C20 470nF
C21 4.7uF
C27 470nF
C13 4.7uF
C12 4.7uF
C11 4.7uF
C10 4.7uF
C9 4.7uF
C2 4.7uF
C8 4.7uF
C7 4.7uF
C6 4.7uF
C15 4.7uF
C26 470nF
U1F
XC6SLX9-2TQG144C
U1G
XC6SLX9-2TQG144C

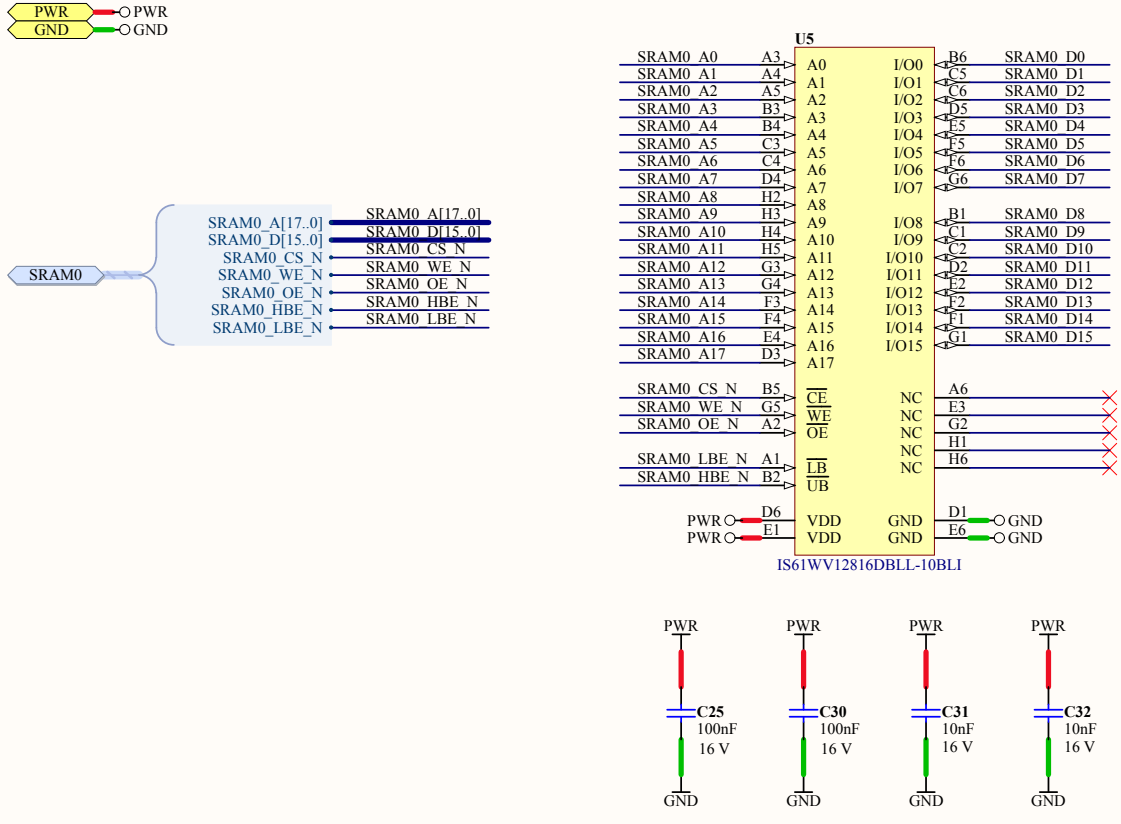

SPI_CONFIG_FPGA
CSO_B_FPGA
CCLK
MISO_FPGA
MOSI_FPGA
FPGA_PROG
INIT_B
PROGRAM_B
DONE
FPGA_CLK
SPI_ARD
MISO_ARD
MOSI_ARD
SCLK_ARD
CS_ARD_N
MUX_SEL
HARD_JTAG
HARD_TCK
HARD_TDI
HARD_TDO
HARD_TMS
SOFT_JTAG
SOFT_TCK
SOFT_TDI
SOFT_TDO
SOFT_TMS
R9 33R #SOFT_TMS
R10 33R #SOFT_TCK
R11 33R #SOFT_TDI
R12 33R #SOFT_TDO
SRAM0
SRAM0_A[17..0]
SRAM0_D[15..0]
SRAM0_CS_N
SRAM0_WE_N
SRAM0_OE_N
SRAM0_HBE_N
SRAM0_LBE_N
IO_HDR2
IO_HDR1
IO_HDR4
IO_HDR3
ARD_DIG
U1A
BANK 0
XC6SLX9-2TQG144C
U1C
BANK 2
XC6SLX9-2TQG144C
U1B
BANK 1
XC6SLX9-2TQG144C
U1D
BANK 3
XC6SLX9-2TQG144C
3V3
R1 100R
R2 4K7
R3 100R
R4 1K
R5 4K7
R6 4K7
GND
R17 4K7
R18 4K7
R19 4K7
R20 4K7
R21 4K7
R22 330R
U1E
DONE_2
PROGRAM_B_2
SUSPEND
TCK
TDI
TDO
TMS
CMPCS_B_2
R24 #HARD_TCK
R26 #HARD_TDI
R27 #HARD_TDO
R29 #HARD_TMS
4 x 33R
U_FPGA - Decoupling
FPGA - Decoupling.SchDoc
VCCO_0
VCCO_1
VCCO_2
VCCO_3
VCCAUX
1V2
VCCINT

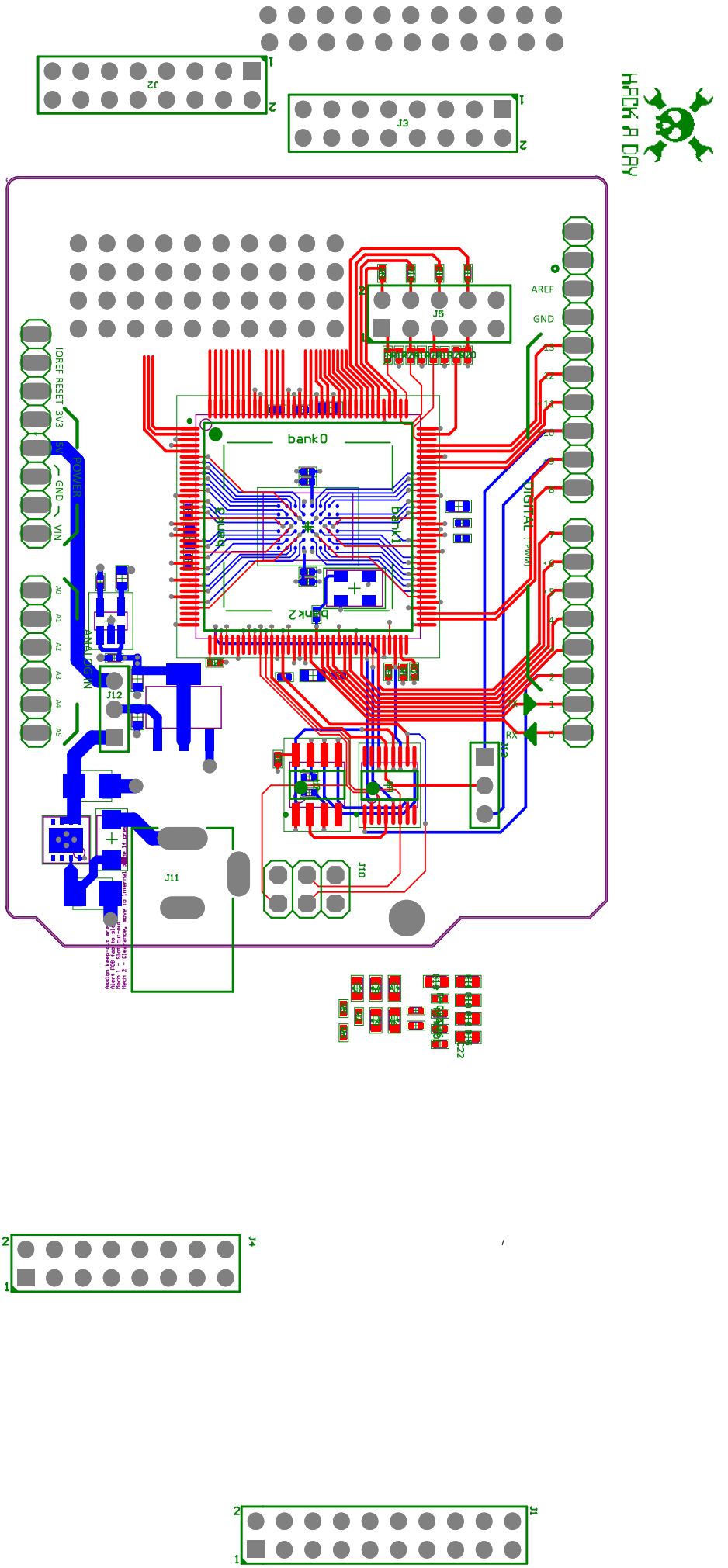

GND
GND
3V3
3V3
U7
1
VIN
VOUT
5
1V2
1V2
3
EN
BYP
4
GND
2
C36
1uF
GND
C38
10nF
C37
2.2uF
GND
GND


GND
GND


Vin (max) = 6V, Vdrop = 750mV @ Iout = 1A
5V0
5V0
U6
3
IN
OUT
2
3V3
3V3 Iout (max) 1A
3V3
C33
4.7uF
GND
1
GND
TAB
4
AP2114H-3.3TRG1
C34
4.7uF
GND
GND


5V0
3V3
GND
5V0
3V3
GND
2-WAY JUMPER - POWER SUPPLY SELECT
NOTE: Disconnect power adapter and arduino USB cable prior to changing jumper settings. Risk of electric shock or damage to board.
6V3-15VDC INPUT
J11
EXT_PWR#
D1
S1G
EXT_PWR
C24
10uF
U4
LM1086ILD
IN
OUT
OUT
NC
NC
NC
GND
OUT
DAP
5V0 1.5A Output
5V0_REG
C23
10uF
J12
5V0
Power - 3V3
5V0
3V3
GND
GND
AP2114H-3.3TRG1
3V3
Power - 1V2
3V3
1V2
GND
GND
CAT6219-125TDGT3
1V2
1V2
5V0_ARD
5V0_ARD
Arduino 3V3 supply severely limits current -- driving from 5V0 input into independent LDO
5V0 500mA Output (USB)


PWR
GND
PWR
GND
SRAM0
SRAM0_A[17..0]
SRAM0_D[15..0]
SRAM0_CS_N
SRAM0_WE_N
SRAM0_OE_N
SRAM0_HBE_N
SRAM0_LBE_N
SRAM0_A[17..0]
SRAM0_D[15..0]
SRAM0_CS_N
SRAM0_WE_N
SRAM0_OE_N
SRAM0_HBE_N
SRAM0_LBE_N
U5
SRAM0_A0 A3 A0
SRAM0_A1 A4 A1
SRAM0_A2 A5 A2
SRAM0_A3 B3 A3
SRAM0_A4 B4 A4
SRAM0_A5 C3 A5
SRAM0_A6 C4 A6
SRAM0_A7 D4 A7
SRAM0_A8 H2 A8
SRAM0_A9 H3 A9
SRAM0_A10 H4 A10
SRAM0_A11 H5 A11
SRAM0_A12 G3 A12
SRAM0_A13 G4 A13
SRAM0_A14 F3 A14
SRAM0_A15 F4 A15
SRAM0_A16 E4 A16
SRAM0_A17 D3 A17
SRAM0_CS_N B5 CE
SRAM0_WE_N G5 WE
SRAM0_OE_N A2 OE
SRAM0_LBE_N A1 LB
SRAM0_HBE_N B2 UB
PWR D6 VDD
PWR E1 VDD
I/O0 B6 SRAM0_D0
I/O1 C5 SRAM0_D1
I/O2 C6 SRAM0_D2
I/O3 D5 SRAM0_D3
I/O4 E5 SRAM0_D4
I/O5 F5 SRAM0_D5
I/O6 F6 SRAM0_D6
I/O7 G6 SRAM0_D7
I/O8 B1 SRAM0_D8
I/O9 C1 SRAM0_D9
I/O10 C2 SRAM0_D10
I/O11 D2 SRAM0_D11
I/O12 E2 SRAM0_D12
I/O13 F2 SRAM0_D13
I/O14 F1 SRAM0_D14
I/O15 G1 SRAM0_D15
NC A6
NC E3
NC G2
NC H1
NC H6
NC
GND D1
GND E6
IS61WV12816DBLL-10BLI
PWR
C25
100nF
16 V
GND
PWR
C30
100nF
16 V
GND
PWR
C31
10nF
16 V
GND
PWR
C32
10nF
16 V
GND


J2
J3
HACK A DAY
J5
AREF
GND
IOREF RESET 3V3
GND VIN
ANALOG IN
DIGITAL (PWM)
bank0
bank1
bank2
J12
J11
J10
J4
J1