(1) Power Supply

- AC/DC Power supply
-- 5VA PWR --> RPI
- DC/DC
-- FPGA PWR (1.8V,2.5VB,3.3V) (LDO)
-- AD7768 PWR (2.5VC,5VB)

File: PWR.kicad_sch

(2) Front End

- AC/DC Power supply
-- 5VA PWR --> RPI
- DC/DC
-- FPGA PWR (1.8V,2.5VB,3.3V)
-- AD7768 PWR (2.5VC,5VB)

File: FrontEnd.kicad_sch

(3) ADC

File: ADC.kicad_sch

(4) FPGA

File: FPGA.kicad_sch

(5) RPI SbC

File: MCU.kicad_sch

Stackup: Sig + PWR // GND // GND // Sig + PWR

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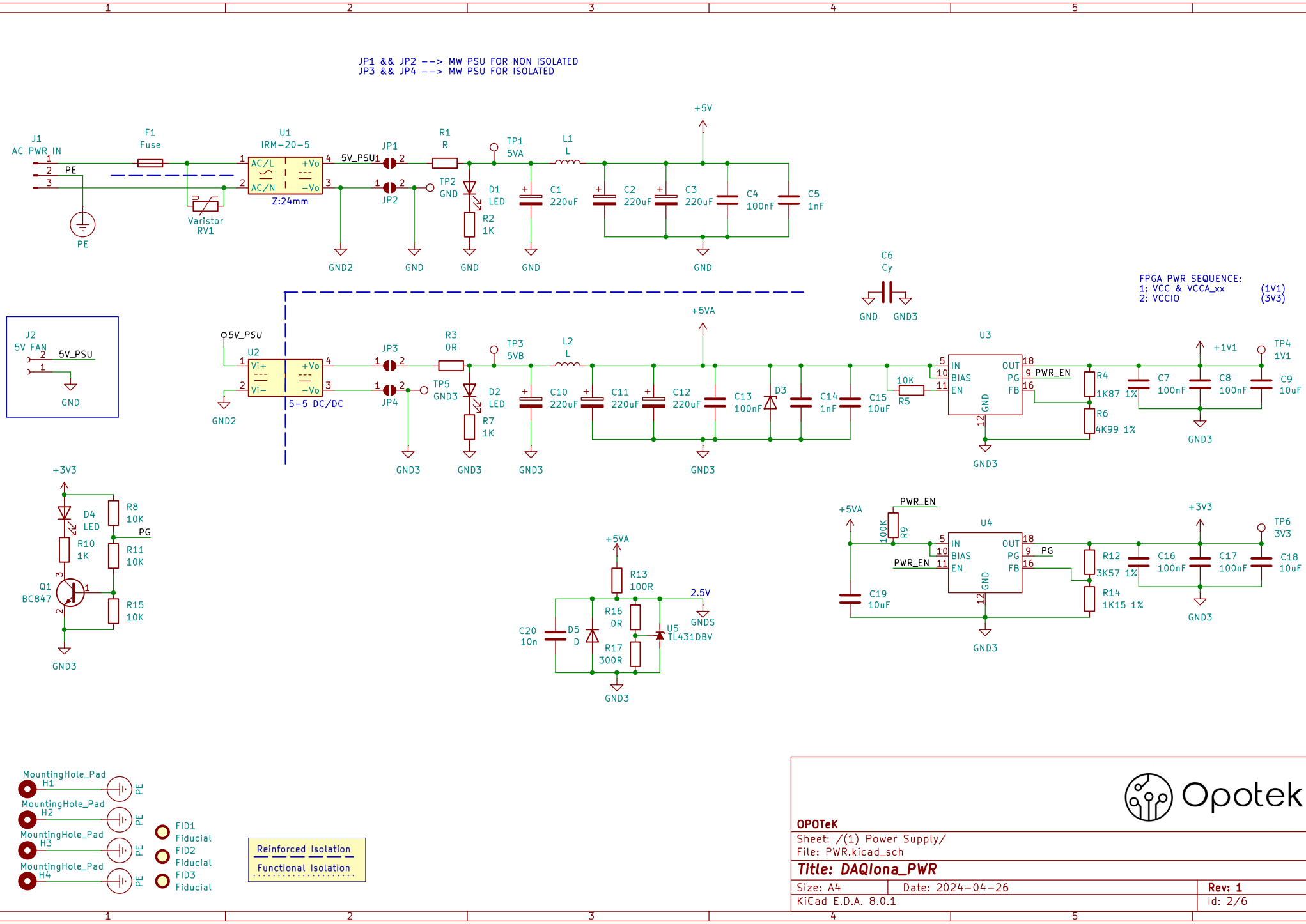
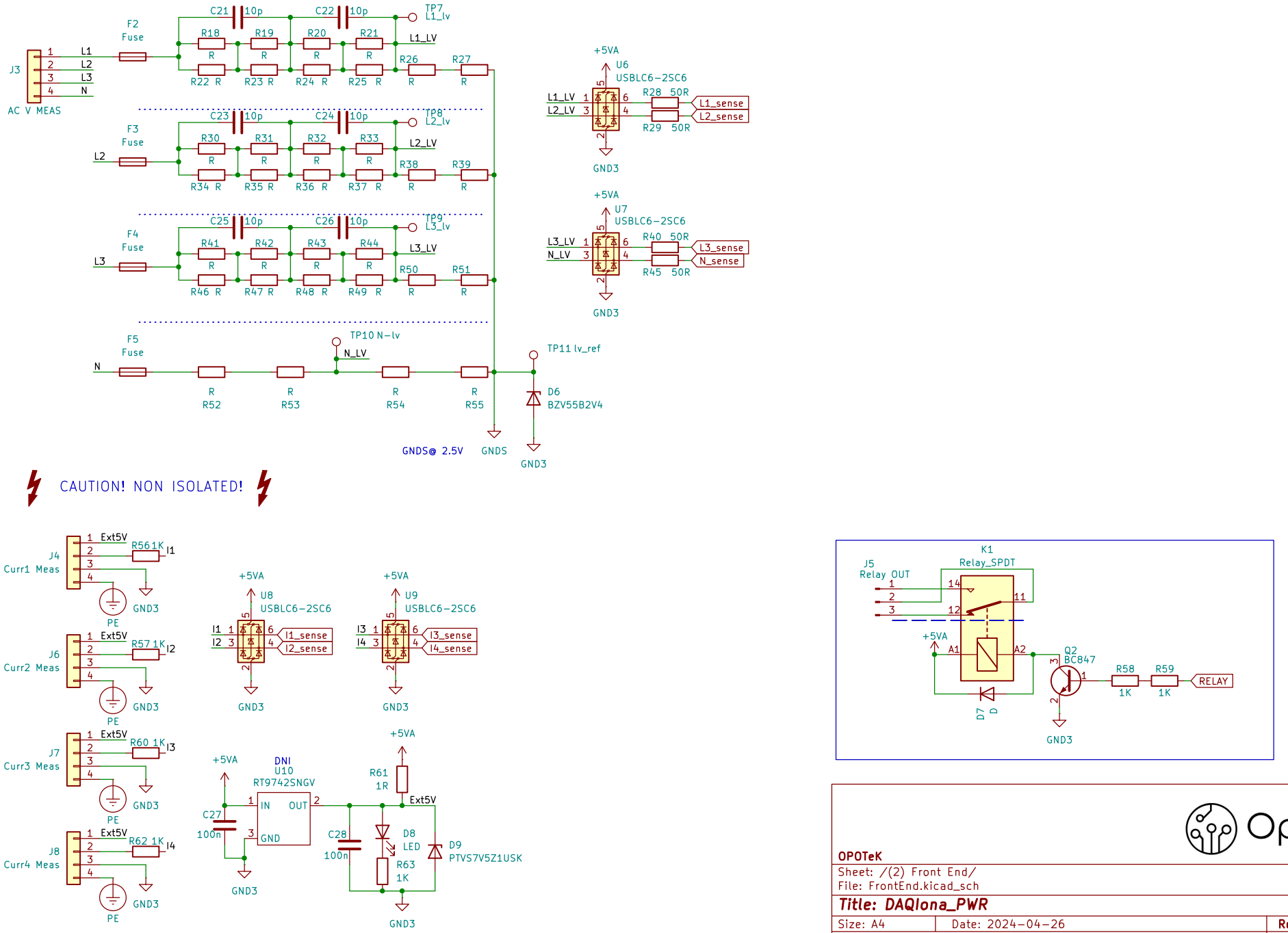
Sheet: /
File: daqIONA.kicad_sch

Title: DAQIona_PWR

Size: A4	Date: 2024-04-26	**Rev: 1**
KiCad E.D.A. 8.0.1		Id: 1/6


JP1 && JP2 --> MW PSU FOR NON ISOLATED
JP3 && JP4 --> MW PSU FOR ISOLATED
J1
AC PWR IN
PE
F1
Fuse
Varistor
RV1
U1
IRM-20-5
AC/L
AC/N
+Vo
-Vo
Z:24mm
5V_PSU1
JP1
JP2
GND2
GND
R1
R
TP1
5VA
TP2
GND
D1
LED
R2
1K
C1
220uF
L1
L
C2
220uF
C3
220uF
C4
100nF
C5
1nF
+5V
C6
Cy
GND
GND3
FPGA PWR SEQUENCE:
1: VCC & VCCA_xx (1V1)
2: VCCIO (3V3)
J2
5V FAN
5V_PSU
5V_PSU
U2
Vi+
Vi-
5-5 DC/DC
JP3
JP4
R3
0R
TP3
5VB
TP5
GND3
D2
LED
R7
1K
L2
L
+5VA
C10
220uF
C11
220uF
C12
220uF
C13
100nF
D3
C14
1nF
C15
10uF
10K
R5
U3
IN
BIAS
EN
OUT
PG
FB
GND
PWR_EN
R4
1K87 1%
R6
4K99 1%
C7
100nF
C8
100nF
+1V1
C9
10uF
TP4
1V1
+3V3
D4
LED
R8
10K
R10
1K
R11
10K
PG
Q1
BC847
R15
10K
R13
100R
2.5V
R16
0R
R17
300R
C20
10n
D5
D
U5
TL431DBV
GNDS
U4
PWR_EN
100K
R9
C19
10uF
R12
3K57 1%
R14
1K15 1%
C16
100nF
C17
100nF
C18
10uF
TP6
3V3
MountingHole_Pad
H1
H2
H3
H4
PE
FID1
Fiducial
FID2
FID3
Reinforced Isolation
Functional Isolation
Opotek
OPOTeK
Sheet: /(1) Power Supply/
File: PWR.kicad_sch
Title: DAQIona_PWR
Size: A4
Date: 2024-04-26
Rev: 1
KiCad E.D.A. 8.0.1
Id: 2/6



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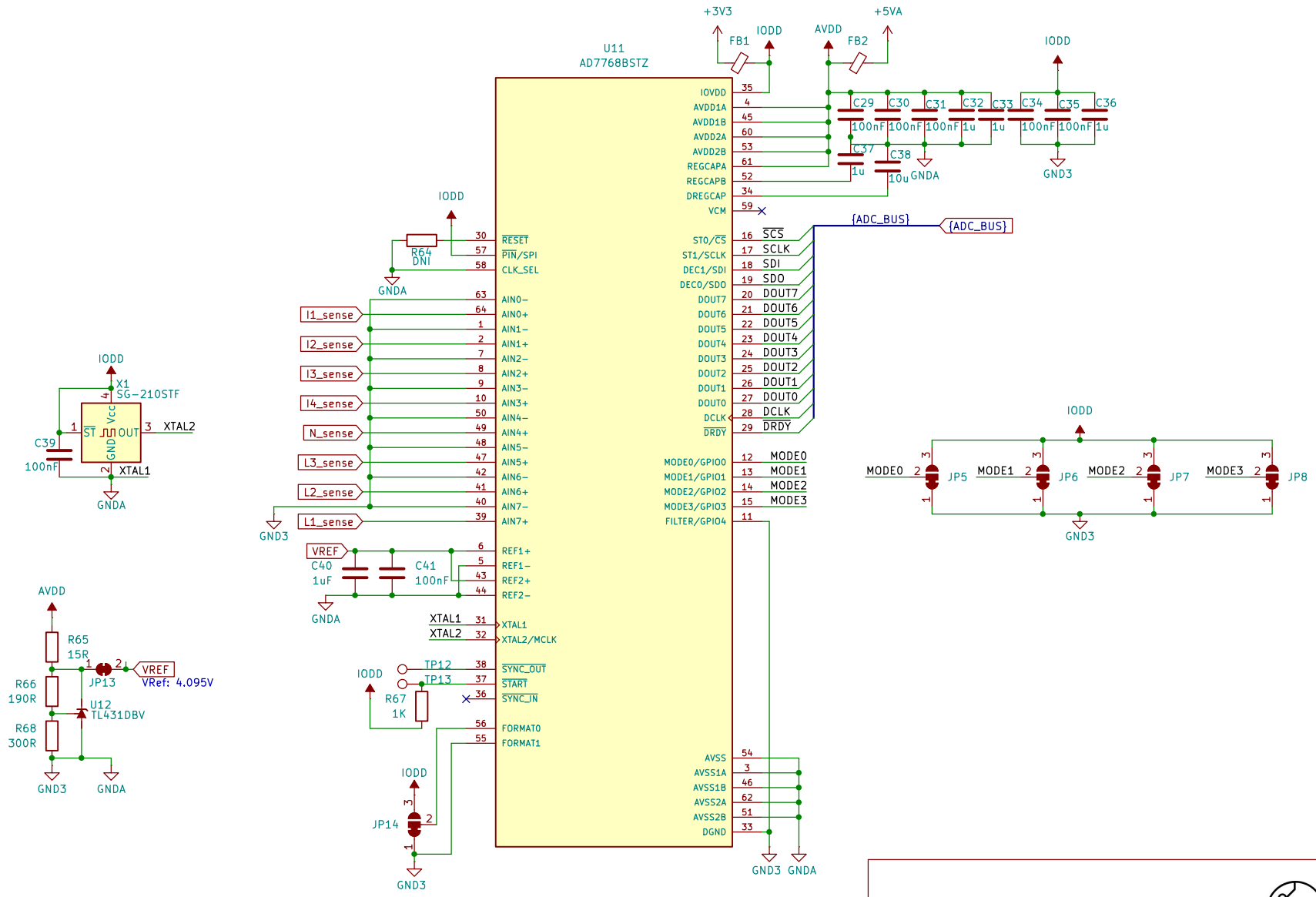
OPOTeK		
Sheet: /(2) Front End/		
File: FrontEnd.kicad_sch		
Title: DAQIona_PWR		
Size: A4	Date: 2024-04-26	**Rev: 1**
KiCad E.D.A. 8.0.1		Id: 3/6



AVDD1: 5V
AVDD2: 5V
Vref: 4.095V
IODD: 3V3

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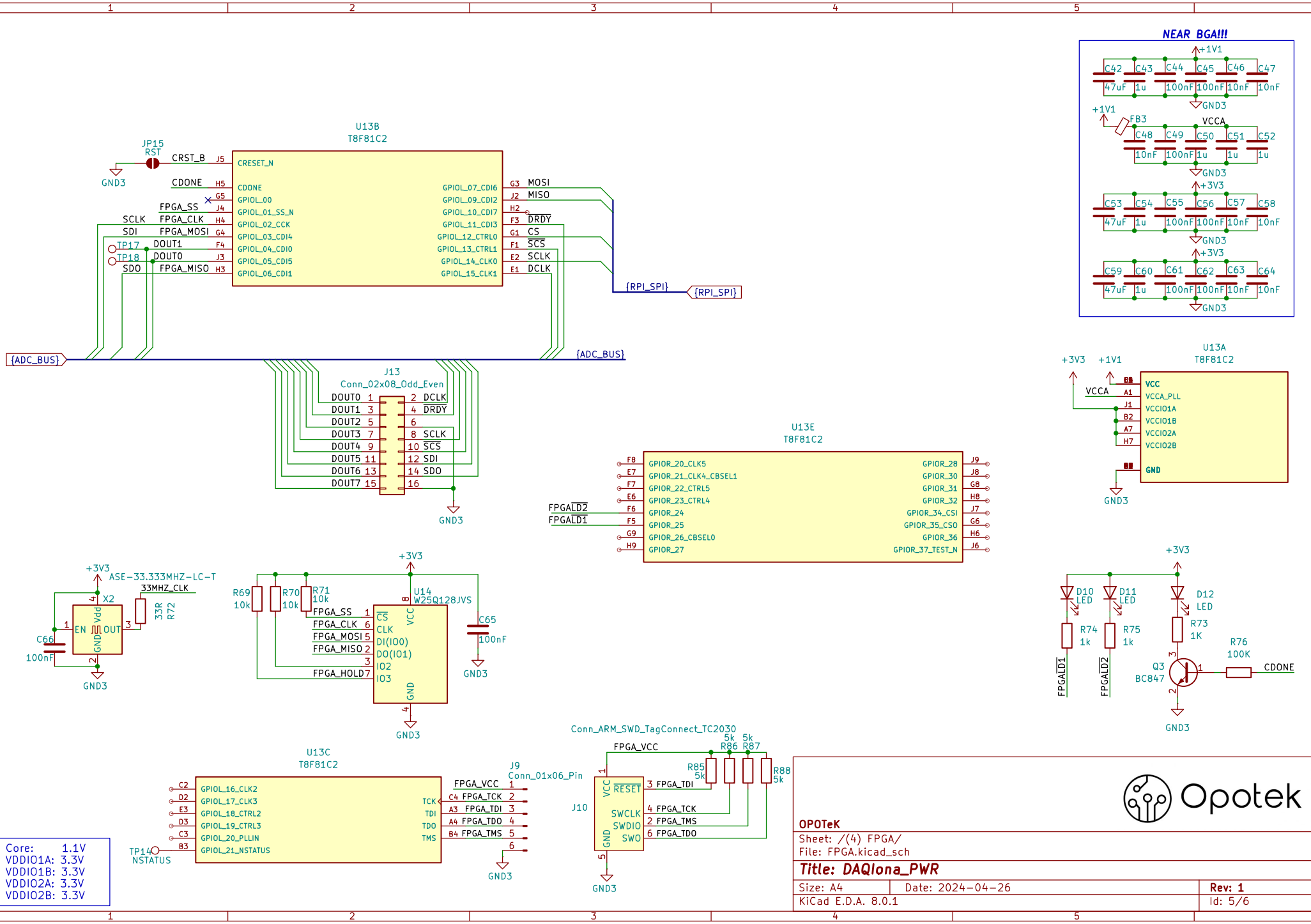
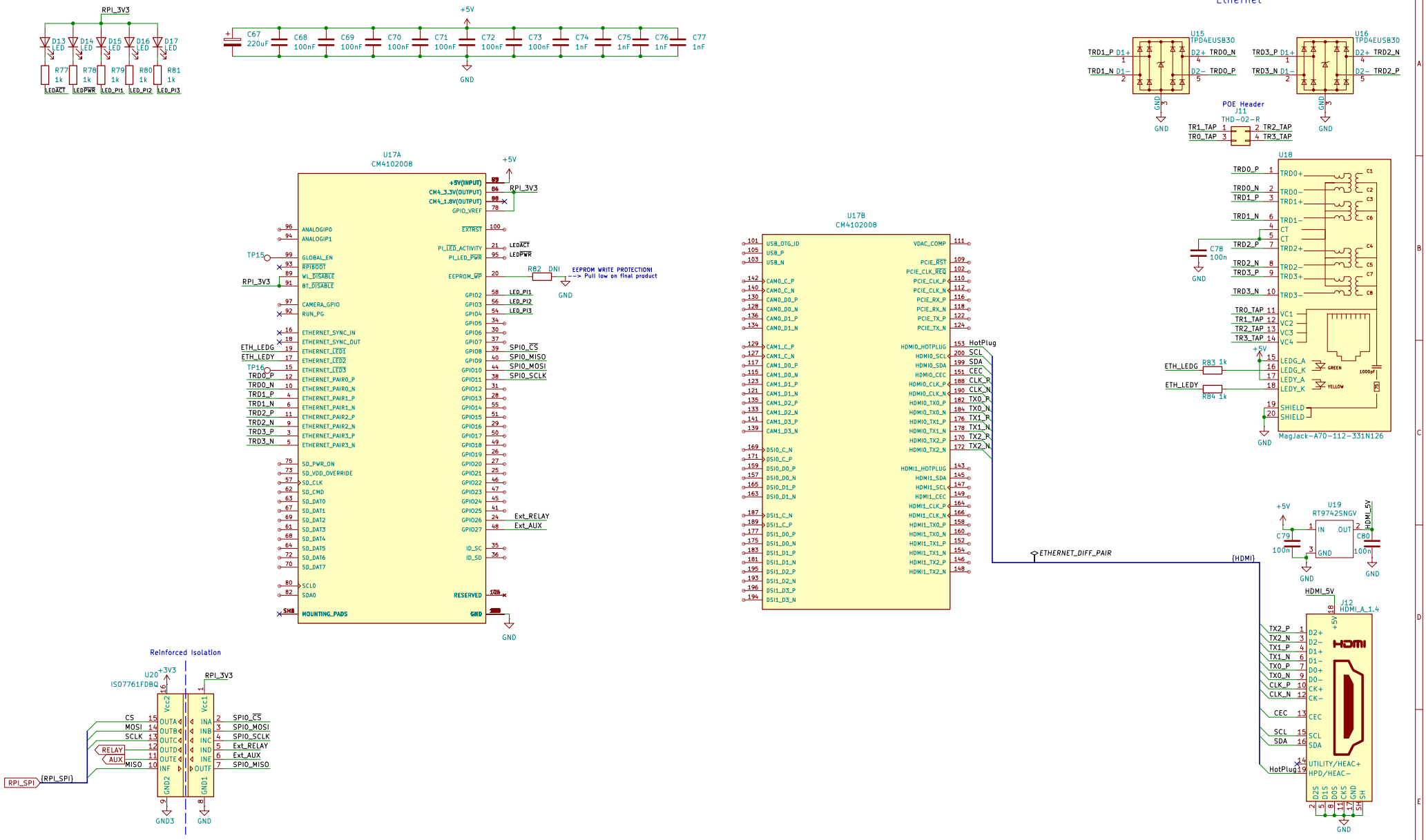
OPOTeK	
Sheet: /(3) ADC/	
File: ADC.kicad_sch	
Title: DAQIona_PWR	
Size: A4	Date: 2024-04-26
KiCad E.D.A. 8.0.1	Id: 4/6

Rev: 1


NEAR BGA!!!
U13B
T8F81C2
JP15
RST
CRST_B
CDONE
FPGA_SS
SCLK
FPGA_CLK
SDI
FPGA_MOSI
TP17
DOUT1
TP18
DOUT0
SDO
FPGA_MISO
GND3
CRESET_N
CDONE
GPIOL_00
GPIOL_01_SS_N
GPIOL_02_CCK
GPIOL_03_CDI4
GPIOL_04_CDI0
GPIOL_05_CDI5
GPIOL_06_CDI1
GPIOL_07_CDI6
GPIOL_09_CDI2
GPIOL_10_CDI7
GPIOL_11_CDI3
GPIOL_12_CTRL0
GPIOL_13_CTRL1
GPIOL_14_CLK0
GPIOL_15_CLK1
MOSI
MISO
DRDY
CS
SCS
SCLK
DCLK
{RPI_SPI}
{ADC_BUS}
J13
Conn_02x08_Odd_Even
DOUT0
DOUT1
DOUT2
DOUT3
DOUT4
DOUT5
DOUT6
DOUT7
DCLK
DRDY
SCLK
SCS
SDI
SDO
U13E
T8F81C2
FPGALD2
FPGALD1
GPIOR_20_CLK5
GPIOR_21_CLK4_CBSEL1
GPIOR_22_CTRL5
GPIOR_23_CTRL4
GPIOR_24
GPIOR_25
GPIOR_26_CBSEL0
GPIOR_27
GPIOR_28
GPIOR_30
GPIOR_31
GPIOR_32
GPIOR_34_CSI
GPIOR_35_CSO
GPIOR_36
GPIOR_37_TEST_N
U13A
T8F81C2
+3V3
+1V1
VCCA
VCC
VCCA_PLL
VCCIO1A
VCCIO1B
VCCIO2A
VCCIO2B
GND
GND3
+1V1
FB3
VCCA
C42
C43
C44
C45
C46
C47
47uF
1u
100nF
10nF
C48
C49
C50
C51
C52
C53
C54
C55
C56
C57
C58
C59
C60
C61
C62
C63
C64
+3V3
ASE-33.333MHZ-LC-T
X2
33MHZ_CLK
33R
R72
C66
100nF
EN
Vdd
GND
OUT
R69
10k
R70
10k
R71
10k
U14
W25Q128JVS
FPGA_SS
FPGA_CLK
FPGA_MOSI
FPGA_MISO
FPGA_HOLD
CS
CLK
DI(IO0)
DO(IO1)
IO2
IO3
VCC
GND
C65
100nF
D10
LED
D11
LED
D12
LED
R74
1k
R75
1k
R73
1K
R76
100K
Q3
BC847
CDONE
FPGALD1
FPGALD2
U13C
T8F81C2
GPIOL_16_CLK2
GPIOL_17_CLK3
GPIOL_18_CTRL2
GPIOL_19_CTRL3
GPIOL_20_PLLIN
GPIOL_21_NSTATUS
TP14
NSTATUS
TCK
TDI
TDO
TMS
J9
Conn_01x06_Pin
FPGA_VCC
FPGA_TCK
FPGA_TDI
FPGA_TDO
FPGA_TMS
Conn_ARM_SWD_TagConnect_TC2030
J10
RESET
SWCLK
SWDIO
SWO
R85
5k
R86
5k
R87
5k
R88
5k
Core: 1.1V
VDDIO1A: 3.3V
VDDIO1B: 3.3V
VDDIO2A: 3.3V
VDDIO2B: 3.3V
Opotek
OPOTeK
Sheet: /(4) FPGA/
File: FPGA.kicad_sch
Title: DAQIona_PWR
Size: A4
Date: 2024-04-26
Rev: 1
KiCad E.D.A. 8.0.1
Id: 5/6



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Sheet: /(5) RPI SbC/

File: MCU.kicad_sch

Title: DAQIona_PWR

Size: A3	Date: 2024-04-26	Rev: 1
KiCad E.D.A. 8.0.1		Id: 6/6