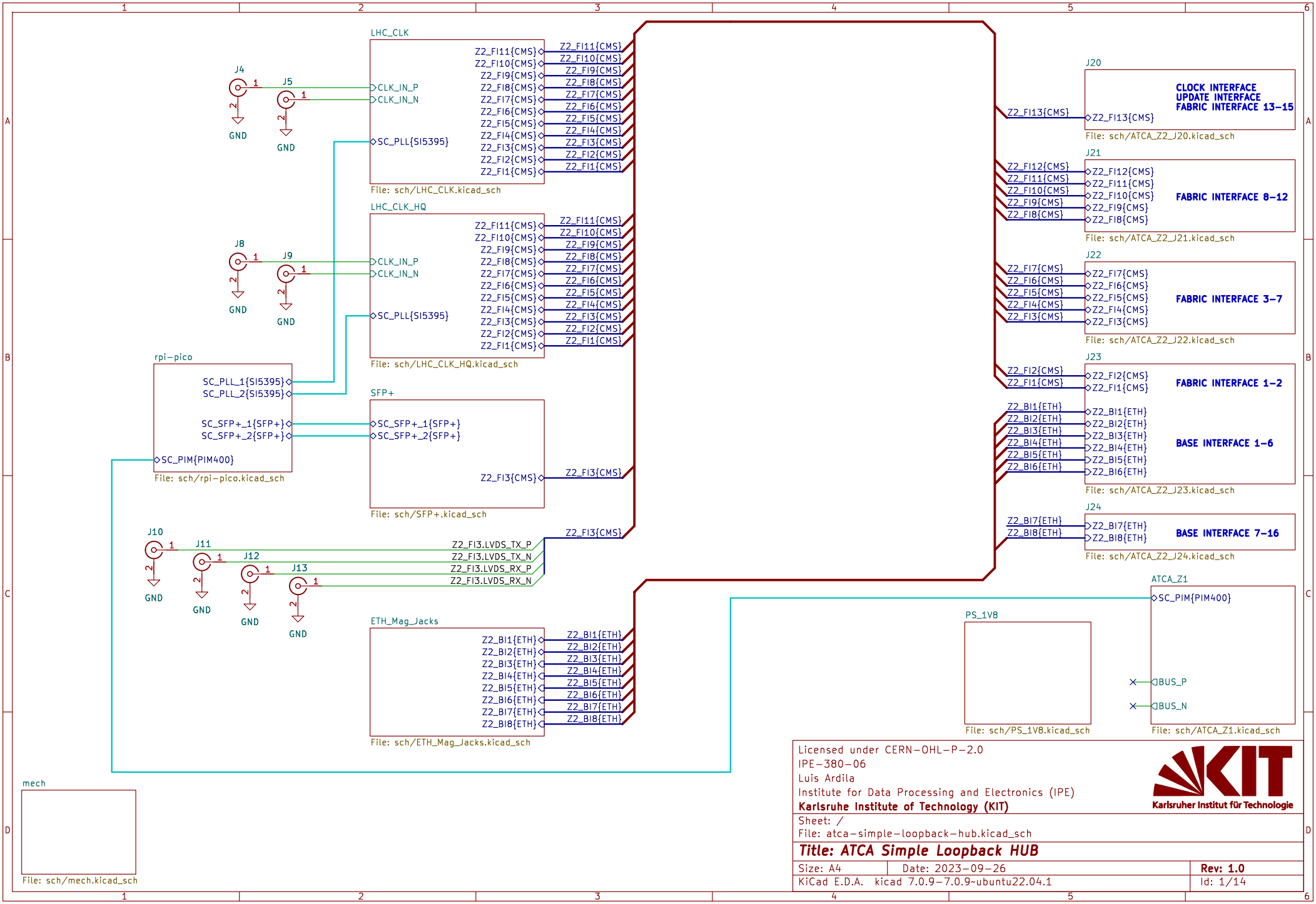

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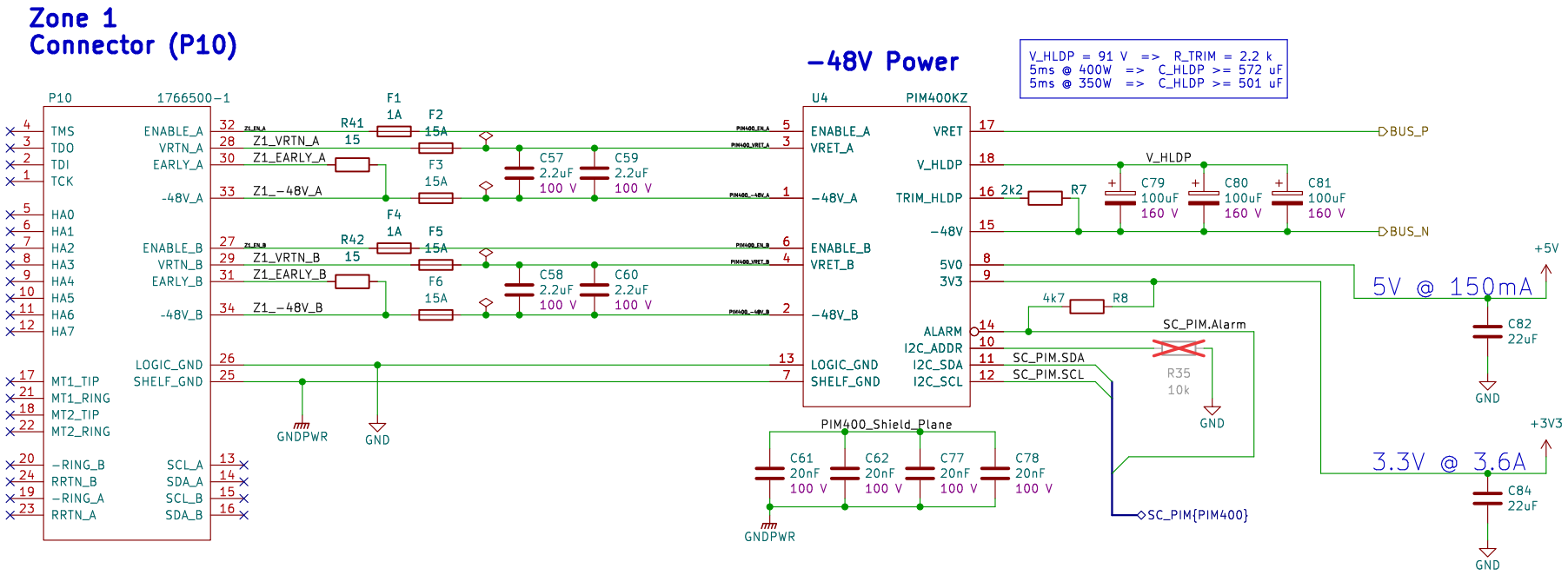
Karlsruhe Institute of Technology (KIT)

Sheet: /
File: atca-simple-loopback-hub.kicad_sch

Title: ATCA Simple Loopback HUB

Size: A4	Date: 2023-09-26	**Rev: 1.0**
KiCad E.D.A. kicad 7.0.9-7.0.9~ubuntu22.04.1		Id: 1/14



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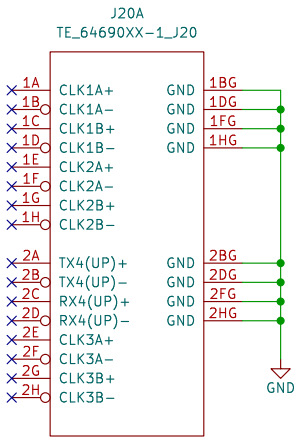
Sheet: /ATCA_Z1/
File: ATCA_Z1.kicad_sch

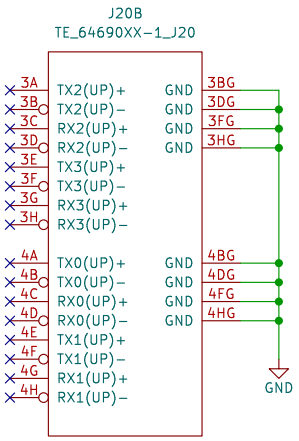
Title: ATCA Simple Loopback HUB

Size: A4	Date: 2023-09-26	**Rev: 1.0**
KiCad E.D.A. kicad 7.0.9-7.0.9~ubuntu22.04.1		Id: 2/14

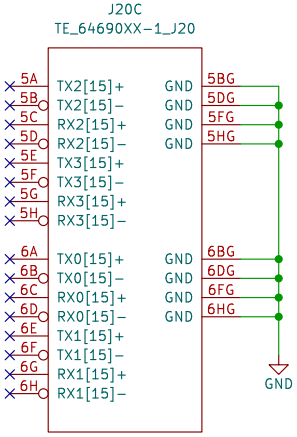
CLOCK INTERFACE



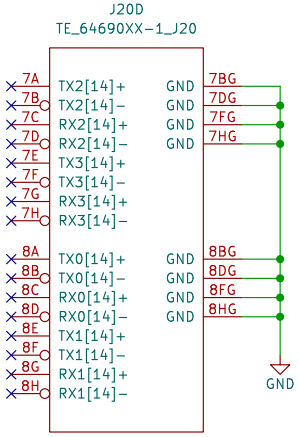
UPDATE INTERFACE



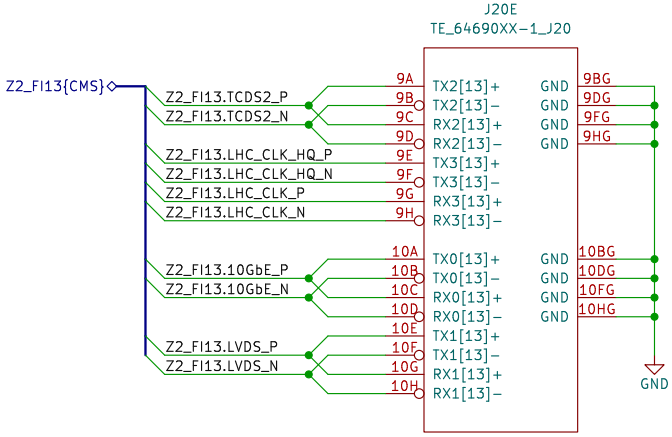
FABRIC INTERFACE 15



FABRIC INTERFACE 14



FABRIC INTERFACE 13



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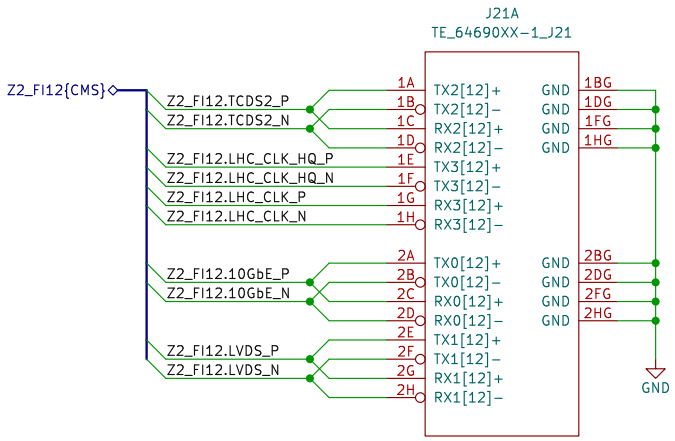
Sheet: /J20/
File: ATCA_Z2_J20.kicad_sch

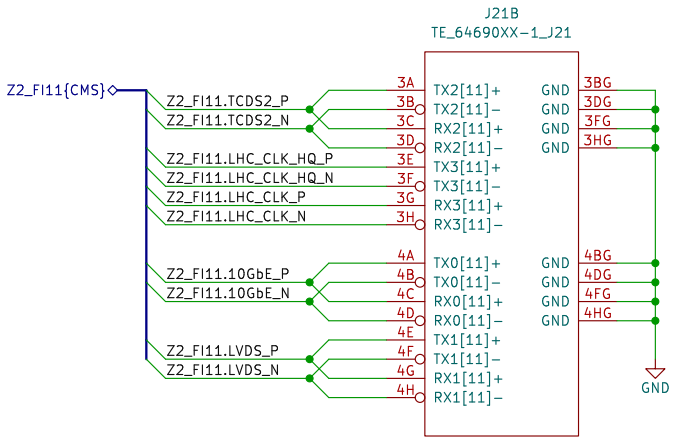
Title: ATCA Simple Loopback HUB

Size: A4	Date: 2023-09-26	**Rev: 1.0**
KiCad E.D.A. kicad 7.0.9-7.0.9~ubuntu22.04.1		Id: 3/14

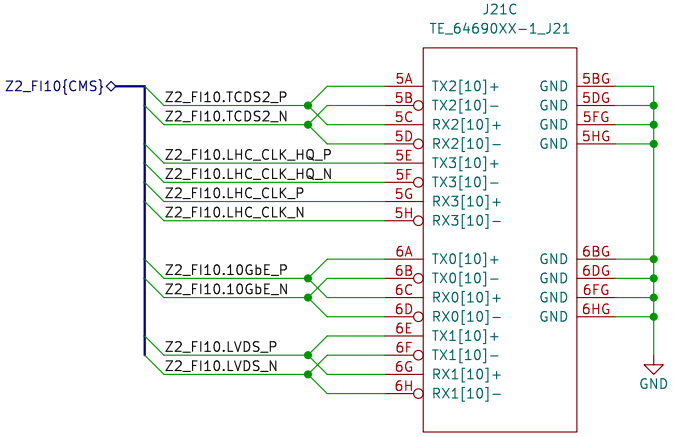
FABRIC INTERFACE 12



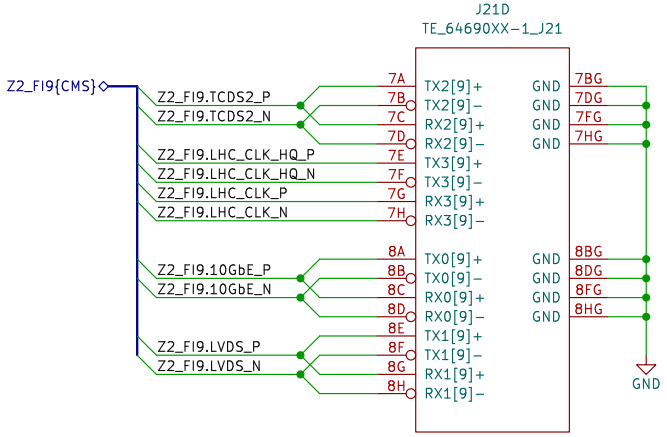
FABRIC INTERFACE 11



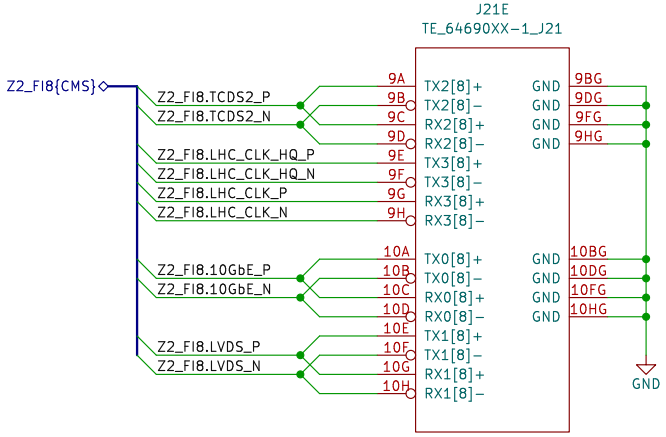
FABRIC INTERFACE 10



FABRIC INTERFACE 9



FABRIC INTERFACE 8



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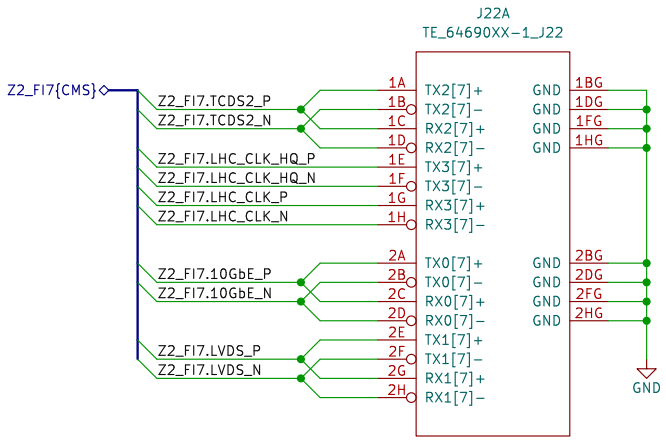
Sheet: /J21/
File: ATCA_Z2_J21.kicad_sch

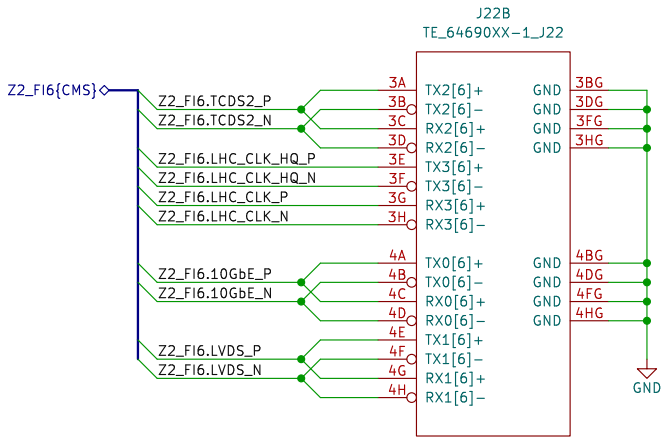
Title: ATCA Simple Loopback HUB

Size: A4	Date: 2023-09-26	**Rev: 1.0**
KiCad E.D.A. kicad 7.0.9-7.0.9~ubuntu22.04.1		Id: 4/14

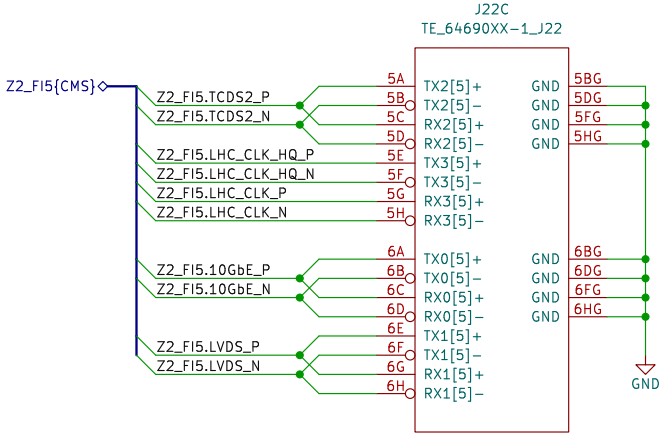
FABRIC INTERFACE 7



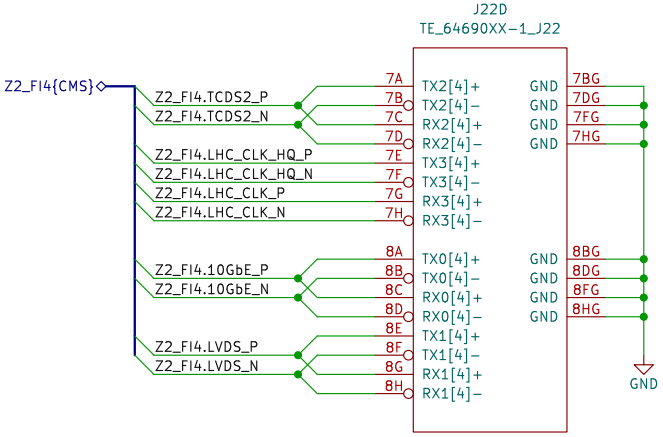
FABRIC INTERFACE 6



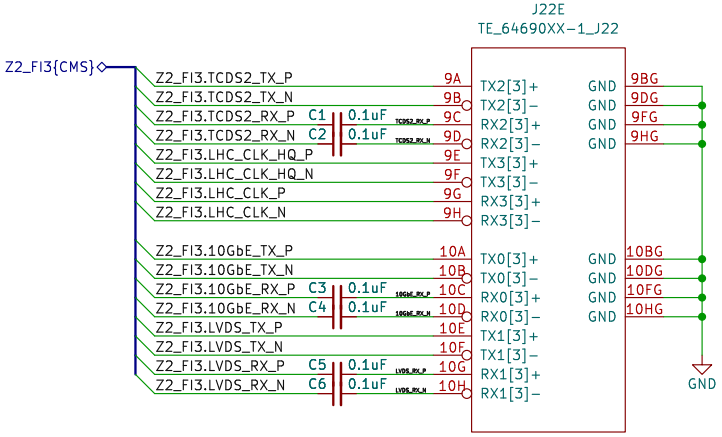
FABRIC INTERFACE 5



FABRIC INTERFACE 4



FABRIC INTERFACE 3



NOTES:
1) Fabric Interface (FI) 3 is the only one that is broken out to the front panel
2) FI3 has capacitors at the RX channel since the TX channel has capacitors at the receiving RX channel in the slot board

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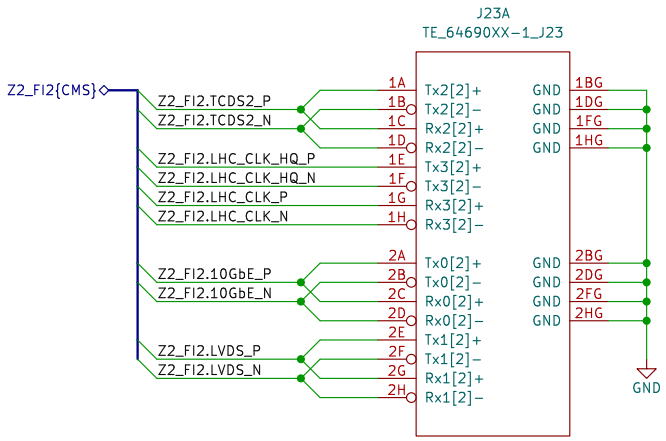
Sheet: /J22/
File: ATCA_Z2_J22.kicad_sch

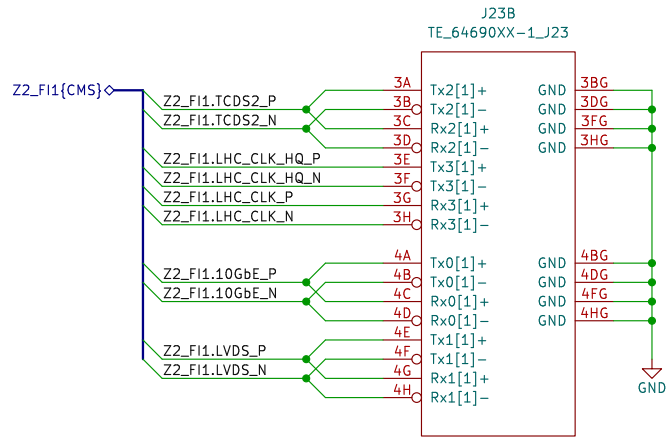
Title: ATCA Simple Loopback HUB

Size: A4	Date: 2023-09-26	**Rev: 1.0**
KiCad E.D.A. kicad 7.0.9-7.0.9~ubuntu22.04.1		Id: 5/14

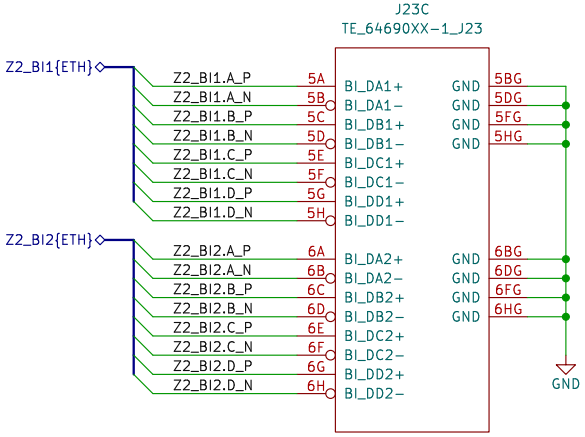
FABRIC INTERFACE 2



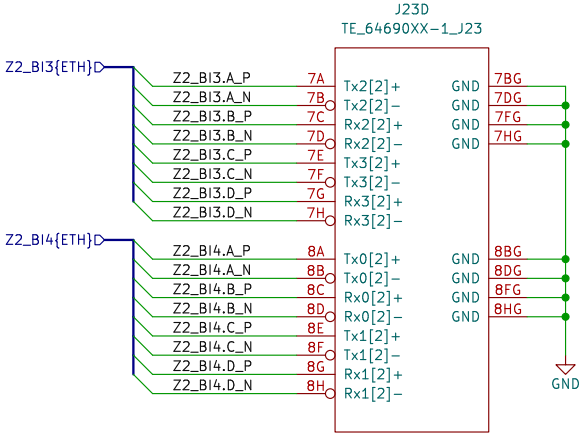
FABRIC INTERFACE 1



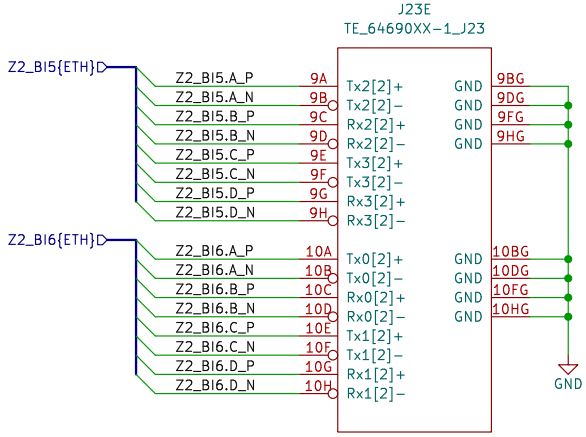
BASE INTERFACE 1–2



BASE INTERFACE 3–4



BASE INTERFACE 5–6



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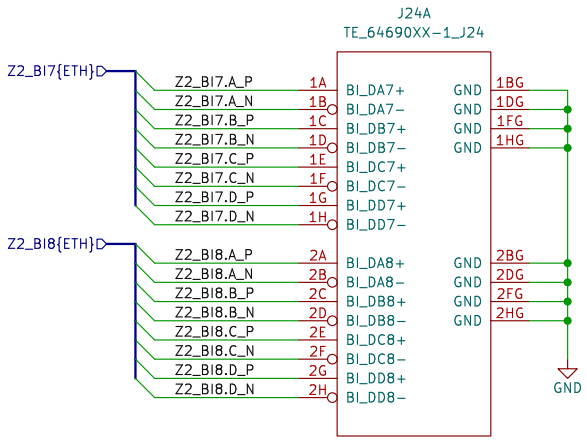
Sheet: /J23/
File: ATCA_Z2_J23.kicad_sch

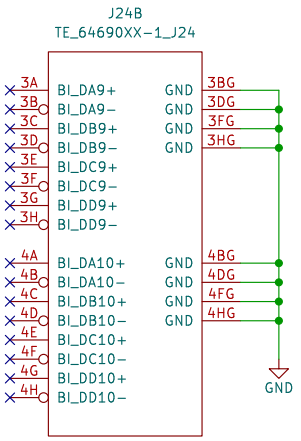
Title: ATCA Simple Loopback HUB

Size: A4	Date: 2023-09-26	**Rev: 1.0**
KiCad E.D.A. kicad 7.0.9-7.0.9~ubuntu22.04.1		Id: 6/14

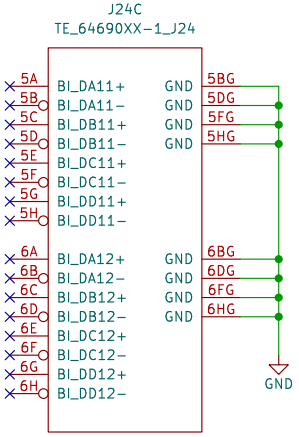
BASE INTERFACE 7-8



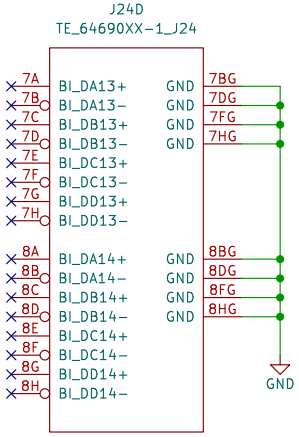
BASE INTERFACE 9-10



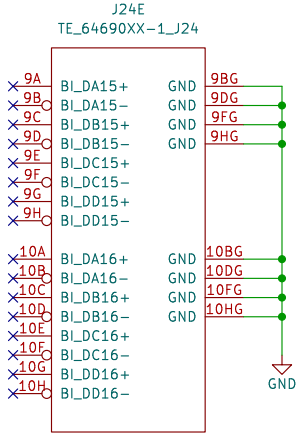
BASE INTERFACE 11-12



BASE INTERFACE 13-14



BASE INTERFACE 15-16



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Sheet: /J24/
File: ATCA_Z2_J24.kicad_sch

Title: ATCA Simple Loopback HUB

Size: A4	Date: 2023-09-26	**Rev: 1.0**
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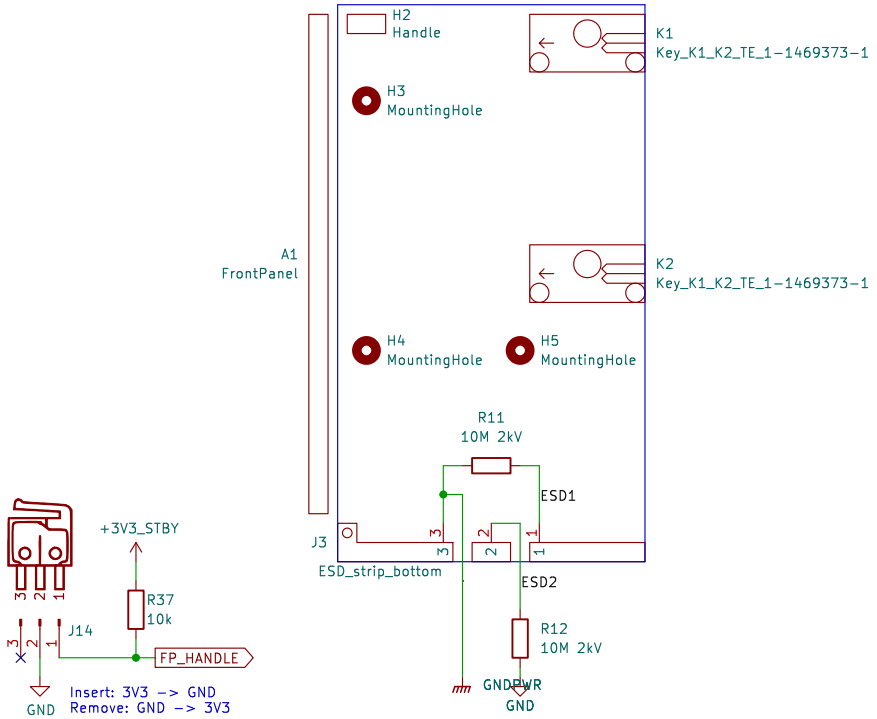

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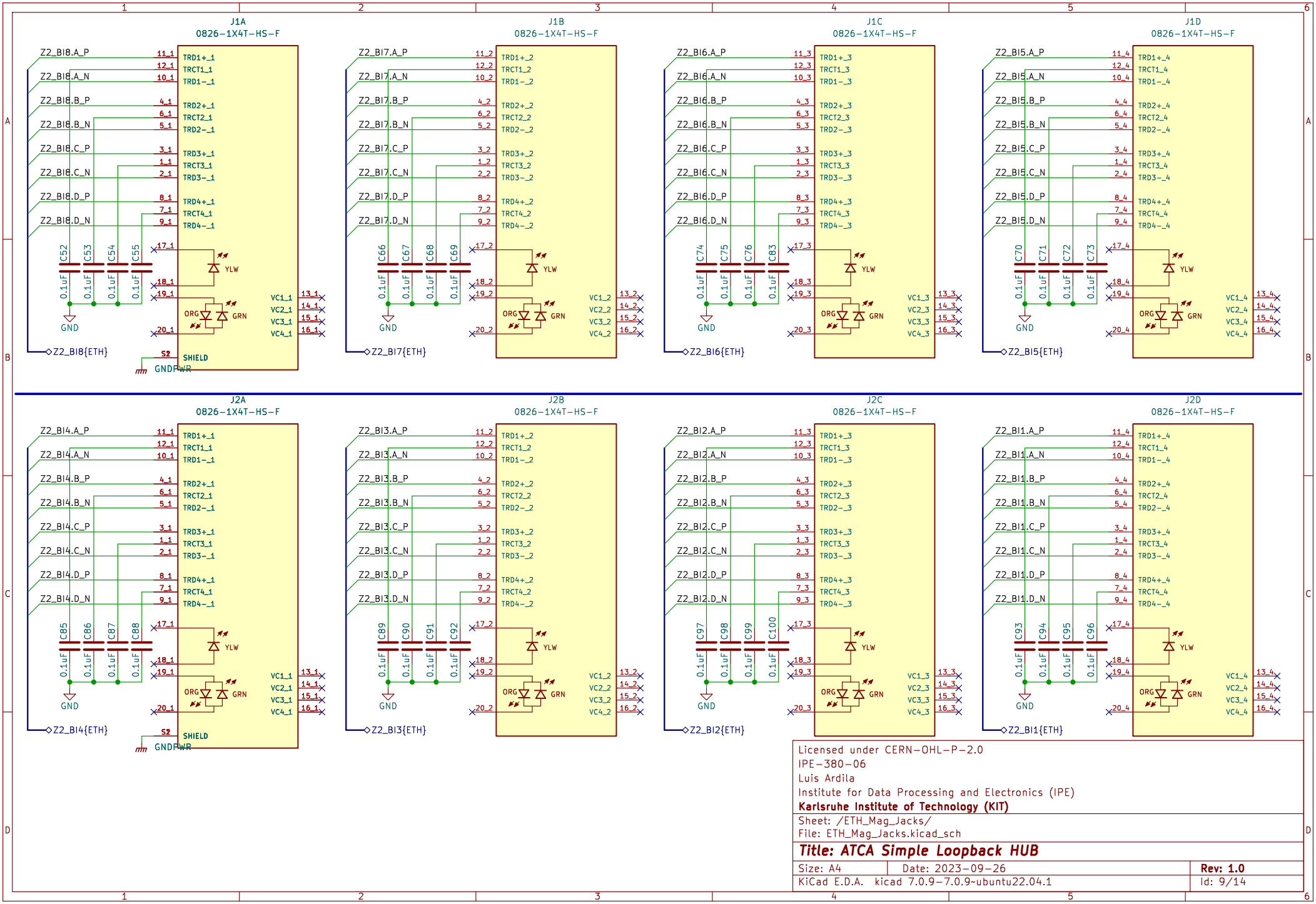
Sheet: /mech/
File: mech.kicad_sch

Title: ATCA Simple Loopback HUB

Size: A4	Date: 2023-09-26	**Rev: 1.0**
KiCad E.D.A. kicad 7.0.9-7.0.9~ubuntu22.04.1		Id: 8/14



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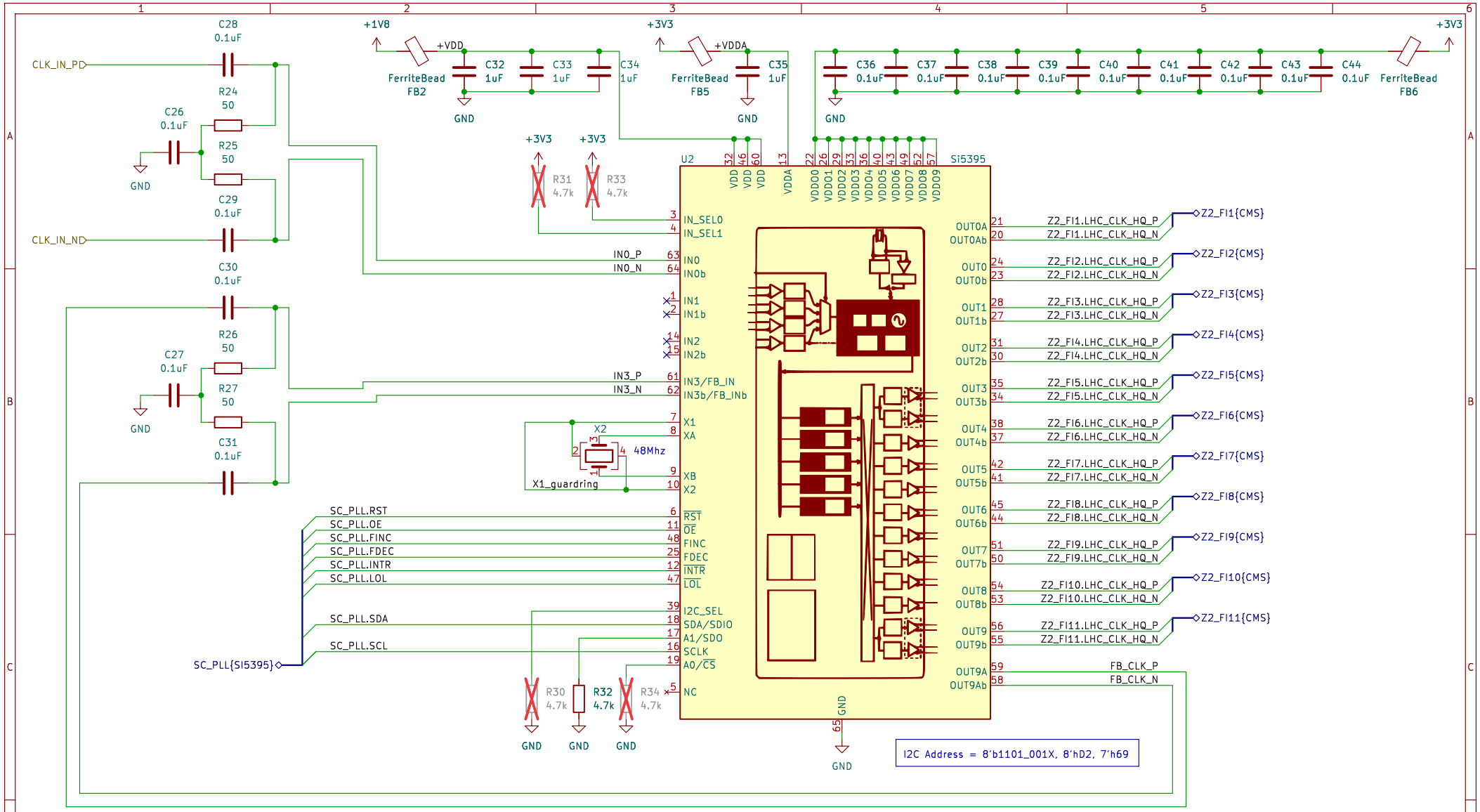
Sheet: /ETH_Mag_Jacks/
File: ETH_Mag_Jacks.kicad_sch

Title: ATCA Simple Loopback HUB

Size: A4	Date: 2023-09-26	**Rev: 1.0**
KiCad E.D.A. kicad 7.0.9-7.0.9~ubuntu22.04.1		Id: 9/14



NOTES:
1) IN_SELL (I): Input Reference Select, pins are internally pulled low
2) RSTb (I): Device Reset. This pin is internally pulled-up and can be left unconnected when not in use
3) OEb (I): Output Enable. This pin disables all outputs when held high. This pin is internally pulled low and can be left unconnected when not in use.
4) FINC (I): Step-up the output frequency of a selected output. This pin is internally pulled low and can be left unconnected when not in use.
5) FDEC (I): Step-down the output frequency of a selected output. This pin is internally pulled low and can be left unconnected when not in use.
6) INTRb (O): Interrupt, asserted low when a change in device status has occurred. It should be left unconnected when not in use.
7) LOLb (O): Loss of Lock, indicates when the DSPLL is locked (high) or out-of-lock (low). It can be left unconnected when not in use
8) I2C_SEL (I): I2C (I2C_SEL = 1) or SPI (I2C_SEL = 0). This pin is internally pulled up by a ~ 20 kΩ resistor to the voltage selected by the IO_VDD_SEL reg
9) A1 (I): In I2C mode, this pin is open-drain and functions as the A1 address input pin. It does not have an internal pull-up or pull-down resistor.
10) A0 (I): hardware controlled address A0 in I2C mode. This pin is internally pulled-up by a ~20 kΩ resistor and can be left unconnected when not in use.
11) Power: 1V8 @ 260mA & 3V3 @ 130 + 30 * 12 = 490mA

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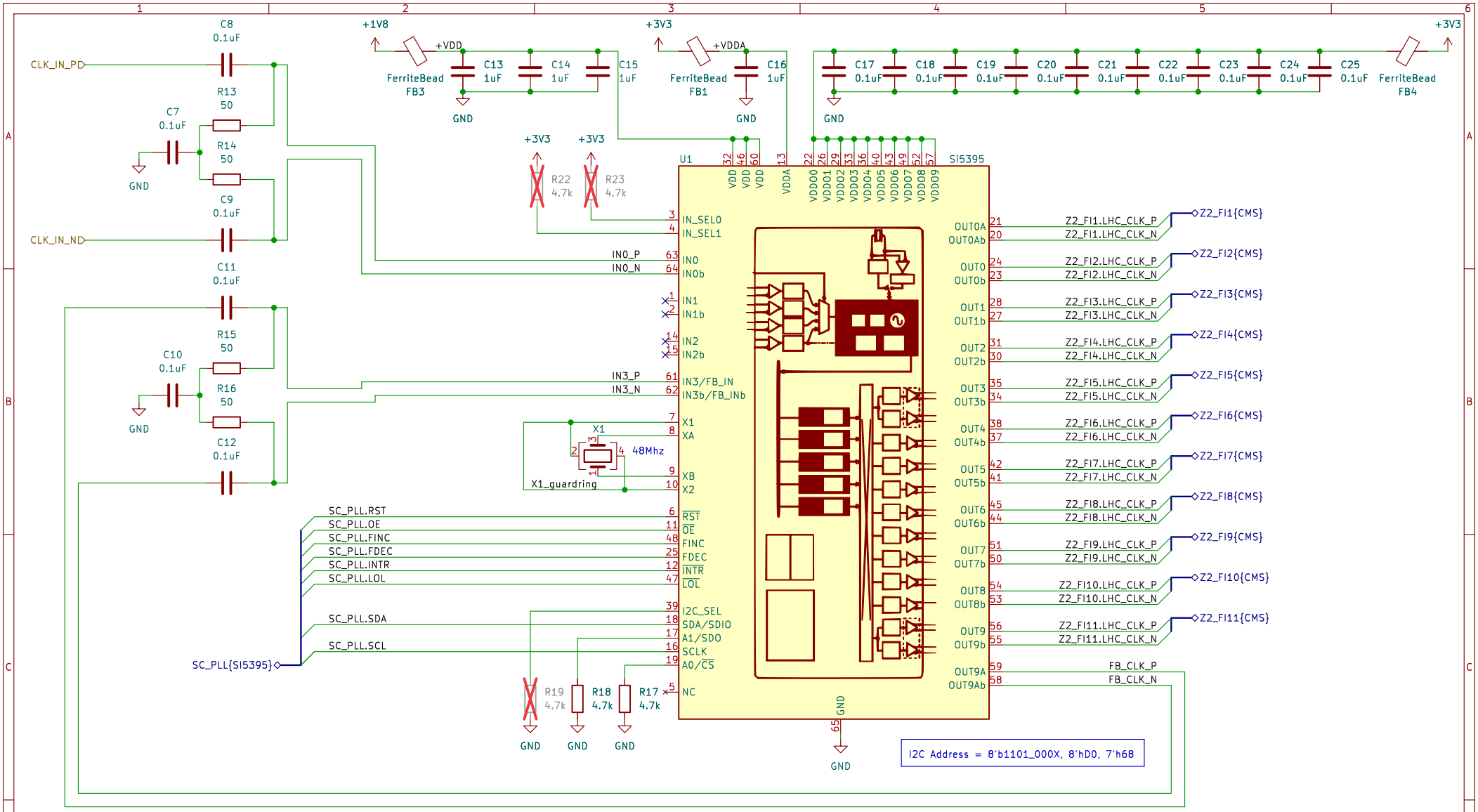
Sheet: /LHC_CLK_HQ/
File: LHC_CLK_HQ.kicad_sch

Title: ATCA Simple Loopback HUB

Size: A4	Date: 2023-09-26	**Rev: 1.0**
KiCad E.D.A. kicad 7.0.9-7.0.9~ubuntu22.04.1		Id: 10/14



NOTES:
1) IN_SELL (I): Input Reference Select, pins are internally pulled low
2) RSTb (I): Device Reset. This pin is internally pulled−up and can be left unconnected when not in use
3) OEb (I): Output Enable. This pin disables all outputs when held high. This pin is internally pulled low and can be left unconnected when not in use.
4) FINC (I): Step−up the output frequency of a selected output. This pin is internally pulled low and can be left unconnected when not in use.
5) FDEC (I): Step−down the output frequency of a selected output. This pin is internally pulled low and can be left unconnected when not in use.
6) INTRb (O): Interrupt, asserted low when a change in device status has occurred. It should be left unconnected when not in use.
7) LOLb (O): Loss of Lock, indicates when the DSPLL is locked (high) or out−of−lock (low). It can be left unconnected when not in use
8) I2C_SEL (I): I2C (I2C_SEL = 1) or SPI (I2C_SEL = 0). This pin is internally pulled up by a ~ 20 kΩ resistor to the voltage selected by the IO_VDD_SEL reg
9) A1 (I): In I2C mode, this pin is open−drain and functions as the A1 address input pin. It does not have an internal pull−up or pull−down resistor.
10) A0 (I): hardware controlled address A0 in I2C mode. This pin is internally pulled−up by a ~20 kΩ resistor and can be left unconnected when not in use.
11) Power: 1V8 @ 260mA & 3V3 @ 130 + 30 * 12 = 490mA

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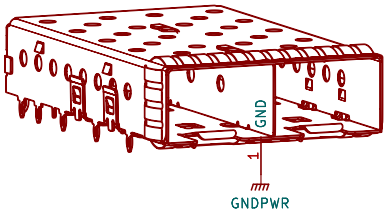
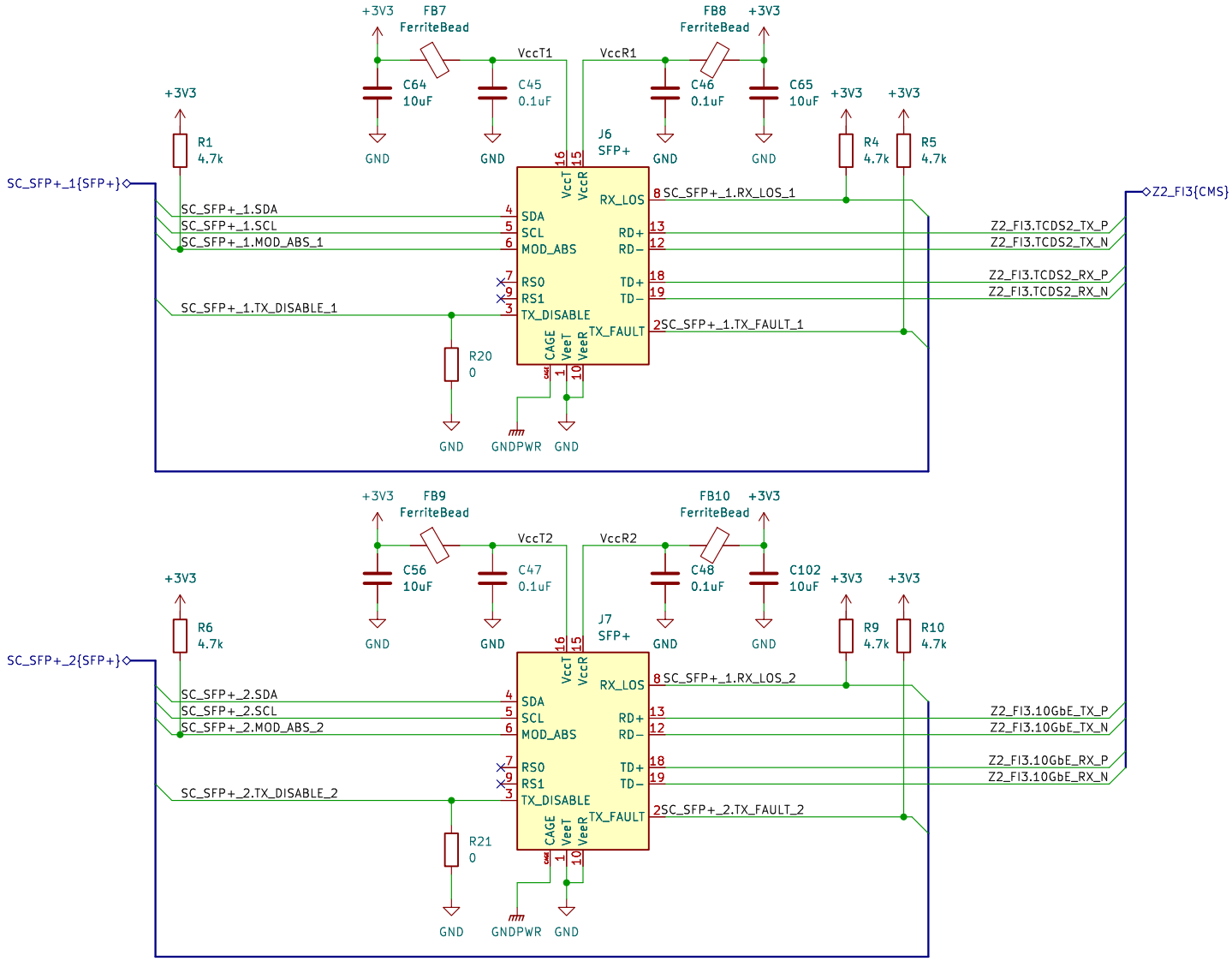
Sheet: /LHC_CLK/
File: LHC_CLK.kicad_sch

Title: ATCA Simple Loopback HUB

Size: A4	Date: 2023−09−26	**Rev: 1.0**
KiCad E.D.A. kicad 7.0.9−7.0.9~ubuntu22.04.1		Id: 11/14





NOTES:
1) TX_Fault: TX_Fault is a module output pin that when High, indicates that the module transmitter has detected a fault condition related to laser operation or safety. The TX_Fault output pin is an open drain/collector and must be pulled up to the Host_Vcc with 4.7k–10k ohms on the host board.
2) TX_Disable: TX_Disable is a module input pin. When TX_Disable is asserted High or Left open, the SFP+ module transmitter output must be turned off. The TX_DIS pin must be pulled up to VccT in the SFP+ module with 4.7k to 10k resistor.
3) RS0/RS1: RS0 and RS1 are module input rate select pins and are pulled low to VeeT with a >30kΩ resistor in the module. RS0 is an input hardware pin which optionally selects the optical receive data path rate coverage for an SFP+ module. RS1 is an input hardware pin which optionally selects the optical transmit path data rate coverage for an SFP+ module.
4) MOD_ABS: Mod_ABS is pulled up to Host_Vcc with 4.7kΩ–10kΩ on the host board and connected to VeeT or VeeR in the SFP+ module. MOD_ABS is then asserted "High" when the SFP+ module is physically absent from a host slot. In the SFP MSA (INF8074i) this pin had the same function but is called MOD_DEF0.
5) SCL/SDA: SCL is the 2–wire interface clock and SDA is the 2–wire interface data line. SCL and SDA are pulled up to a voltage in the range of 3.14V to 3.46V on the host.
6) RX_LOS: RX_LOS when High indicated an optical signal level below that specified in the relevant standard. The RX_LOS pin is an open drain/collector output and must be pulled up to host Vcc with a 4.7kΩ–10kΩ on the host board. RX_LOS assert min and de–assert max are defined in the relevant standard.
7) Power can be up to 2.5W each SFP+

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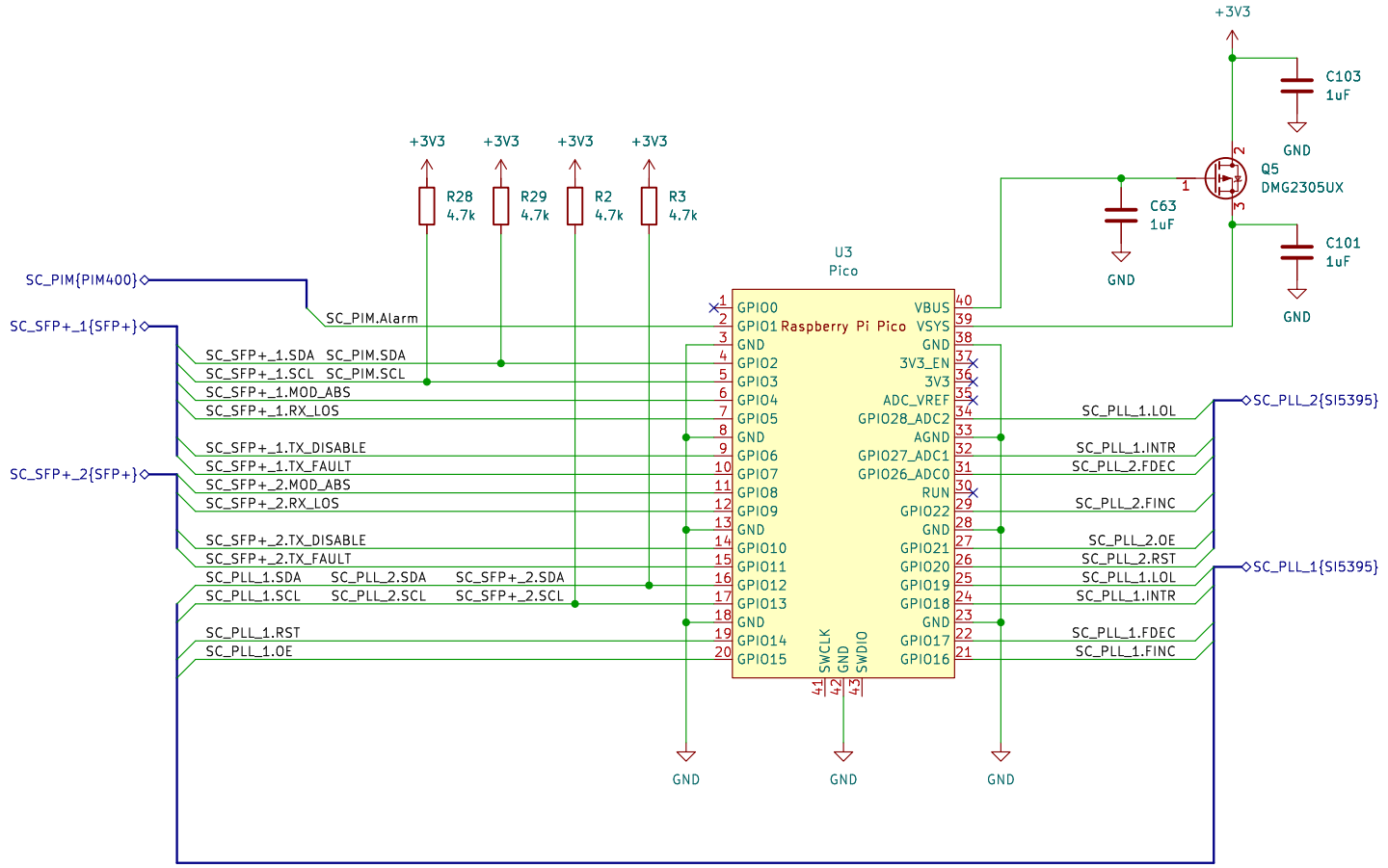
Sheet: /SFP+/
File: SFP+.kicad_sch

Title: ATCA Simple Loopback HUB

Size: A4	Date: 2023–09–26	**Rev: 1.0**
KiCad E.D.A. kicad 7.0.9–7.0.9~ubuntu22.04.1		Id: 12/14



I2C BUS 0

SFP+_2
I2C Address = 8'b1010_000X, 8'hA0, 7'h50

SI5395_1
I2C Address = 8'b1101_000X, 8'hD0, 7'h68

SI5395_2
I2C Address = 8'b1101_001X, 8'hD2, 7'h69

I2C BUS 1

SFP+_1
I2C Address = 8'b1010_000X, 8'hA0, 7'h50

PIM400
I2C Address = 8'b0101_111X, 8'h5E, 7'h2F

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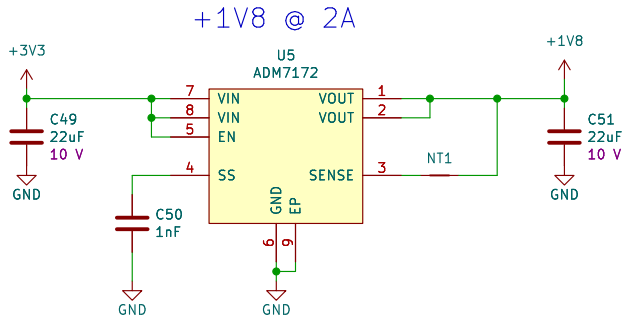
Sheet: /rpi-pico/
File: rpi-pico.kicad_sch

Title: ATCA Simple Loopback HUB

Size: A4	Date: 2023-09-26	**Rev: 1.0**
KiCad E.D.A. kicad 7.0.9-7.0.9~ubuntu22.04.1		Id: 13/14



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Sheet: /PS_1V8/
File: PS_1V8.kicad_sch

Title: ATCA Simple Loopback HUB

Size: A4	Date: 2023-09-26	**Rev: 1.0**
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