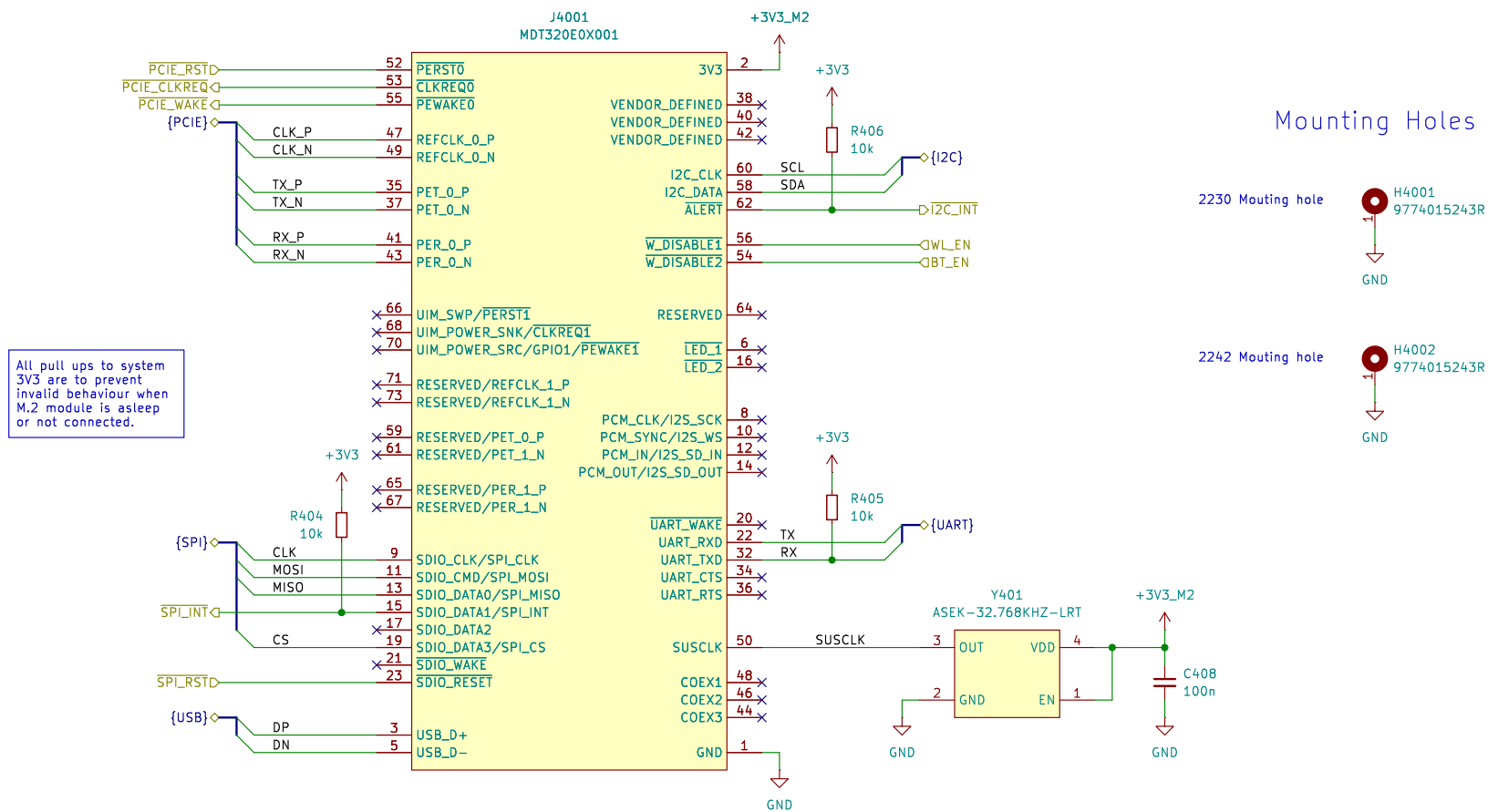


M.2 E-Key



U.FL to SMA converters



Sheet: /M.2 E-Key/
File: m-2-e-key.kicad_sch

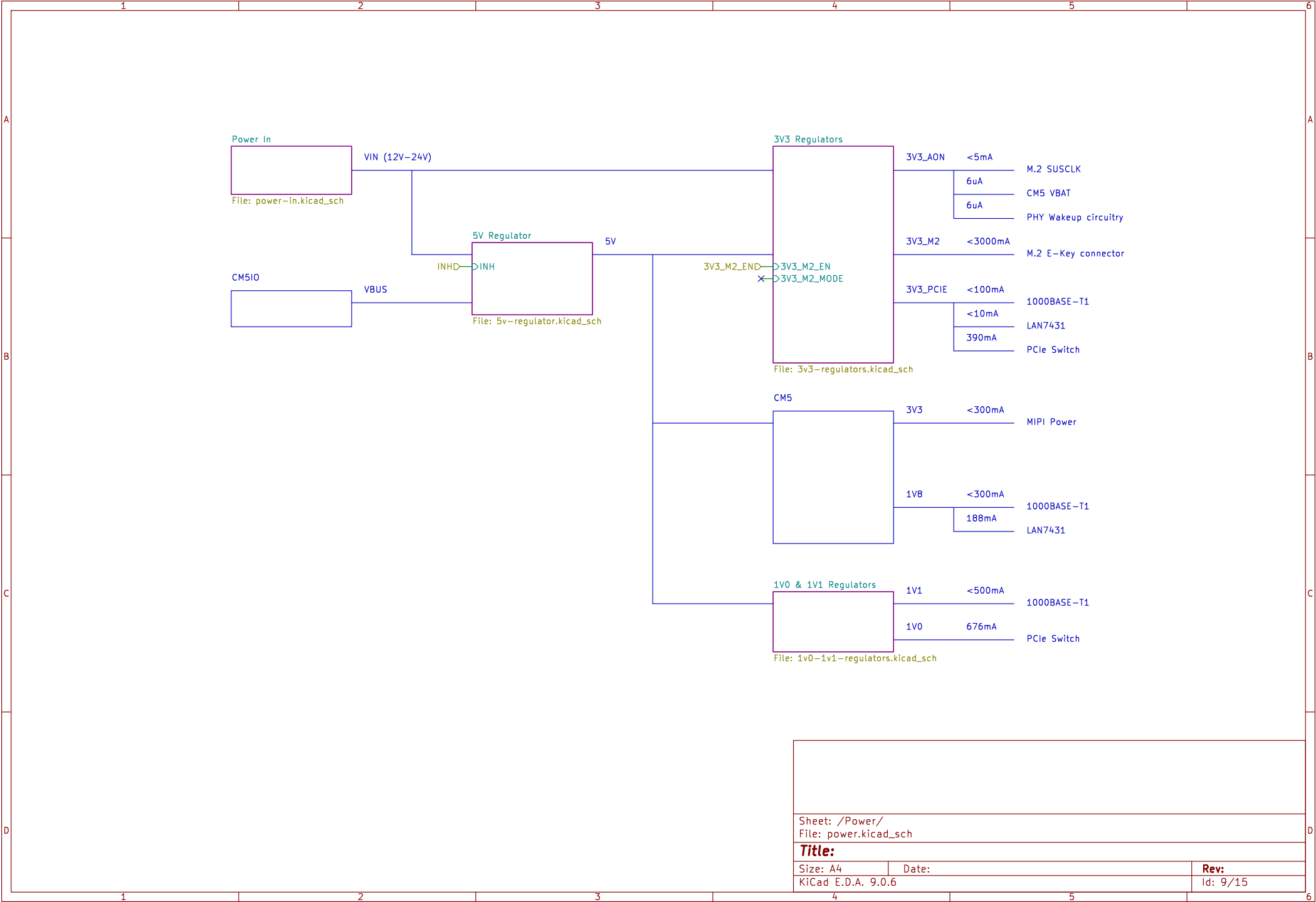
Title:

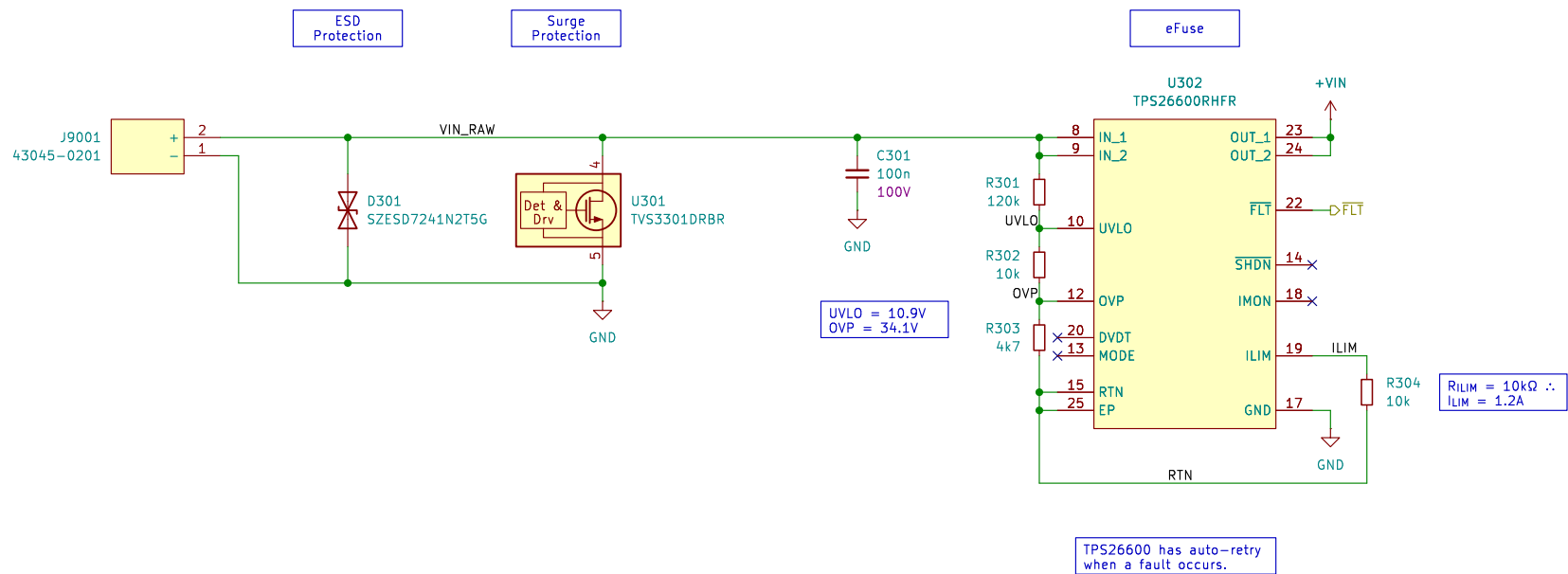
Size: A4 Date:

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Rev:

Id: 4/15





Sheet: /Power/Power In/
File: power-in.kicad_sch

Title:

Size: A4 Date:

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Rev:

Id: 12/15

INH signal is connected to +3V3_AON through a PMOS in the ethernet PHY. Normally the PHY asserts INH, keeping it high.

When the PHY wants to enter sleep mode it deasserts INH, which gets pulled to GND by the resistor.

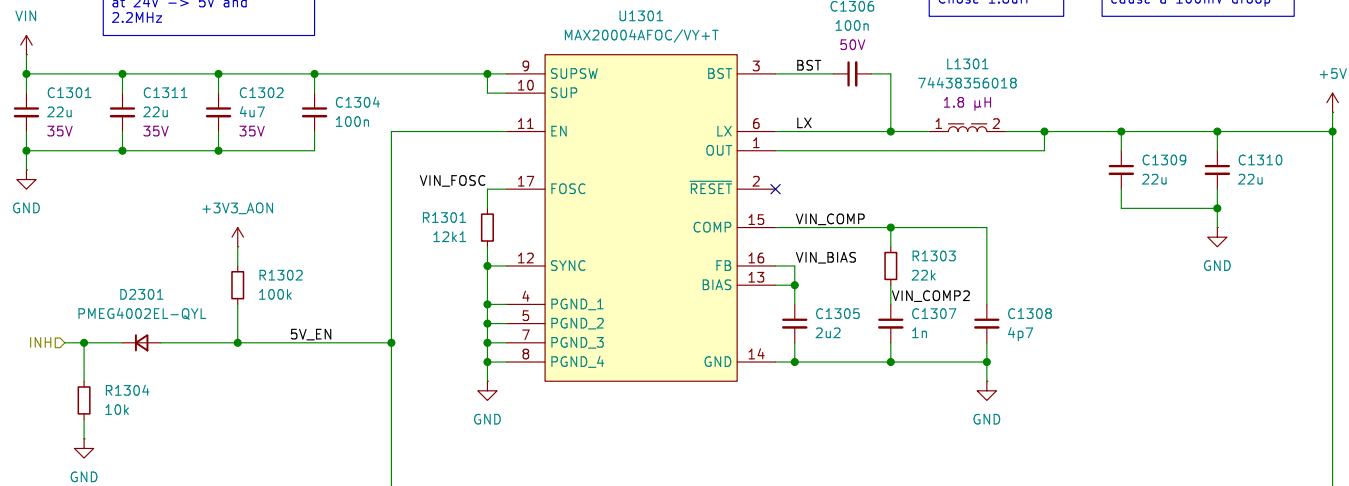
When VBUS is present, all of this behavior is overridden, and 5V_EN is kept low.

29uF of input capacitance required for 10mV ripple at 24V -> 5V and 2.2MHz

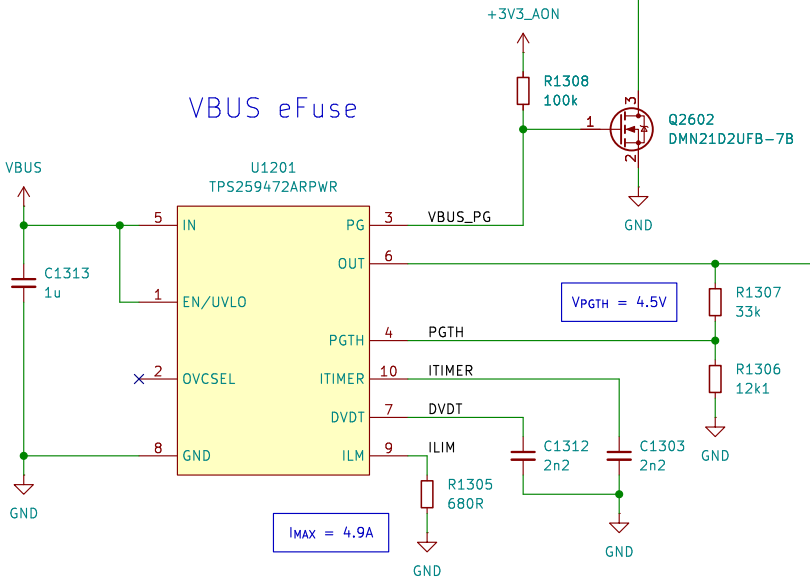
$L_{MIN} = 1.5\mu H$ for 24V -> 5V at 2.2MHz. Chose 1.8uH

32uF of output capacitance required for 2A load change to cause a 100mV droop

5V Regulator



VBUS eFuse



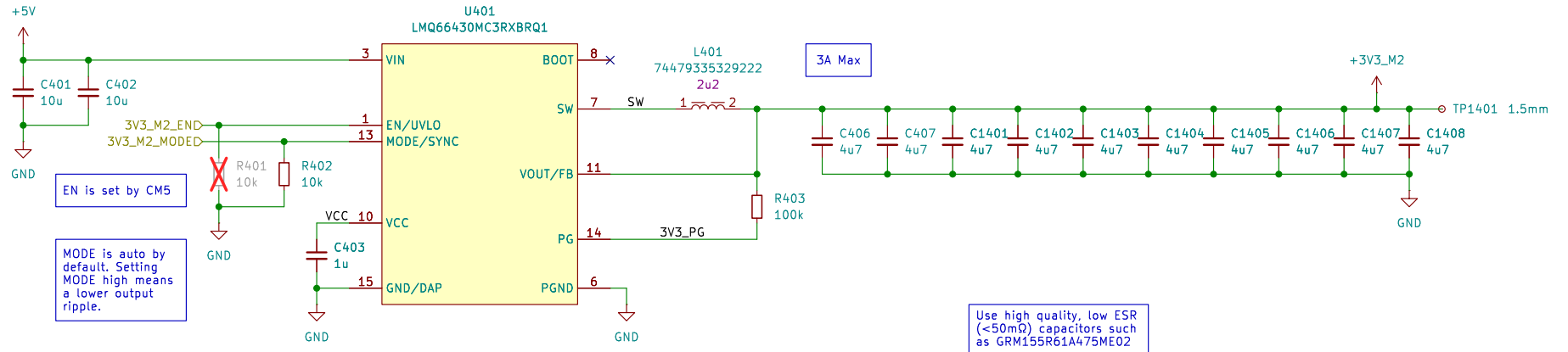
5V OR-ing Circuitry

Add LEDs

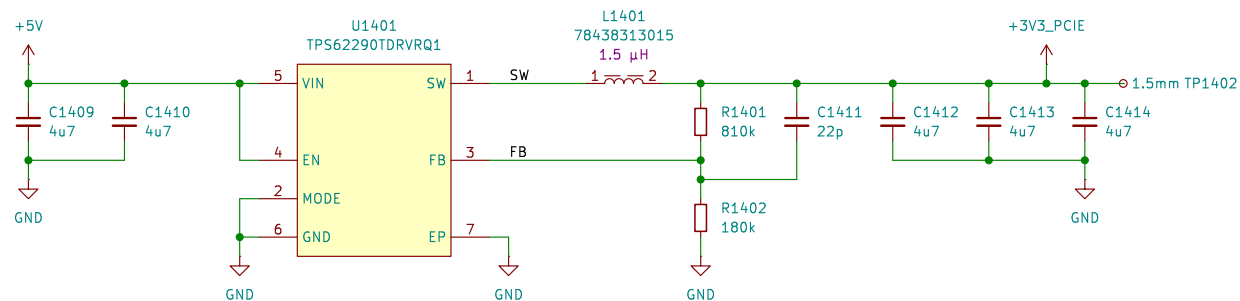
These components must be located on the USB-C connector side of the break line

Sheet: /Power/5V Regulator/ File: 5v-regulator.kicad_sch		
Title:		
Size: A4	Date:	Rev:
KiCad E.D.A. 9.0.6		Id: 13/15

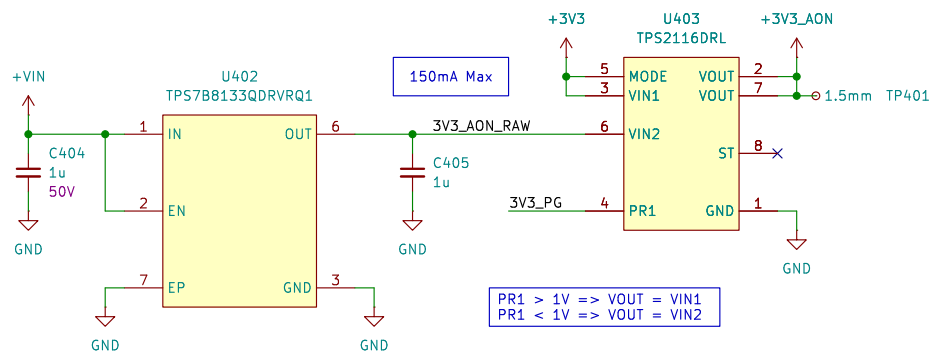
3V3 M.2 Regulator



3V3 PCIe Regulator



3V3 Always on supply



Sheet: /Power/3V3 Regulators/
File: 3v3-regulators.kicad_sch

Title:

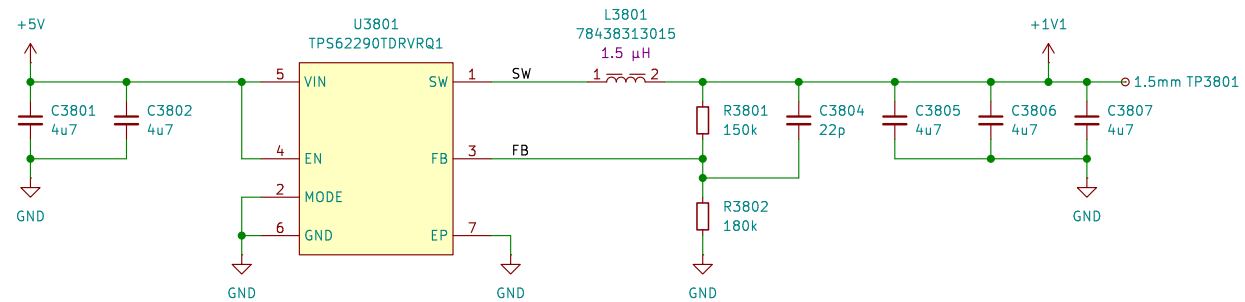
Size: A4 Date:

KiCad E.D.A. 9.0.6

Rev:

Id: 14/15

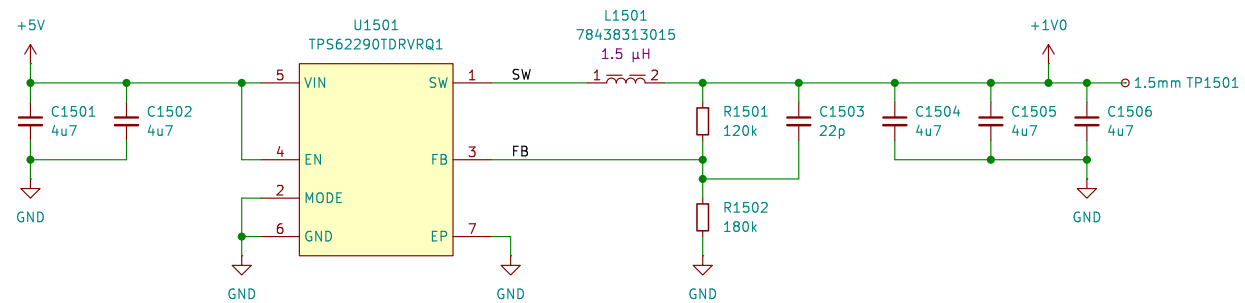
1V1 Regulator



Pulling MODE
low enters
power saving
mode at low
current draws

Use high quality, low ESR
($<50\text{m}\Omega$) capacitors such
as GRM155R61A475ME02

1V0 Regulator



Sheet: /Power/1V0 & 1V1 Regulators/
File: 1v0-1v1-regulators.kicad_sch

Title:

Size: A4

Date:

KiCad E.D.A. 9.0.6

Rev:

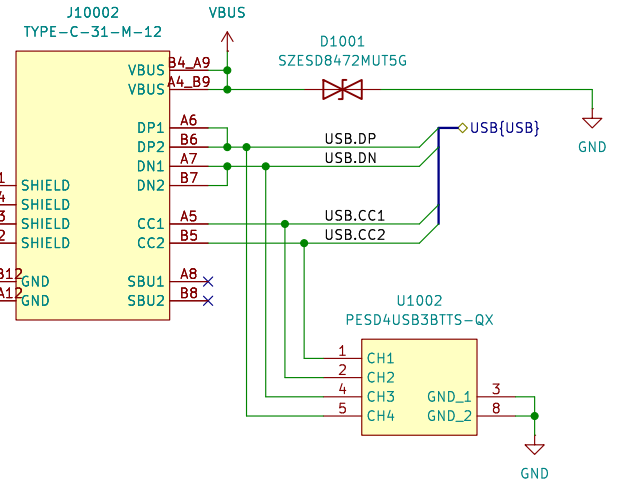
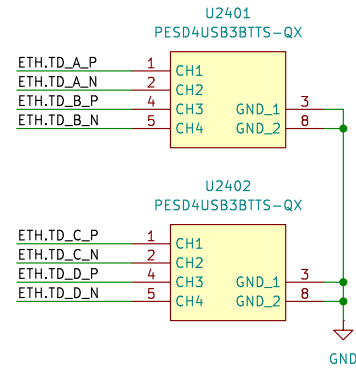
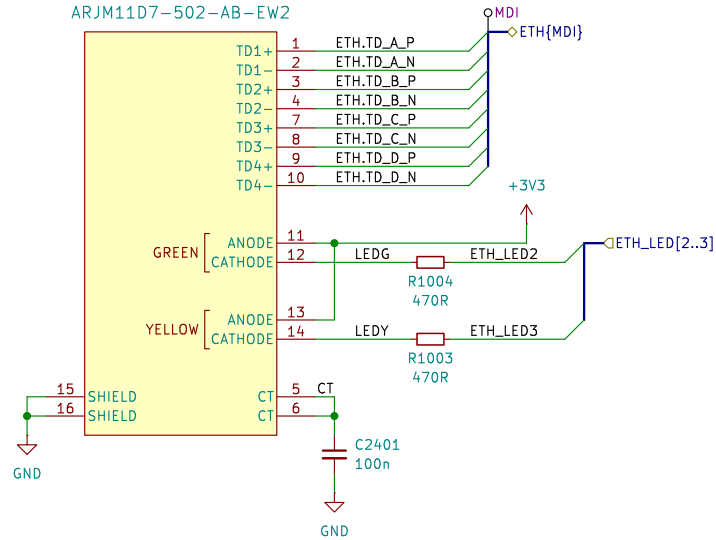
Id: 15/15

Ethernet RJ45

USB2

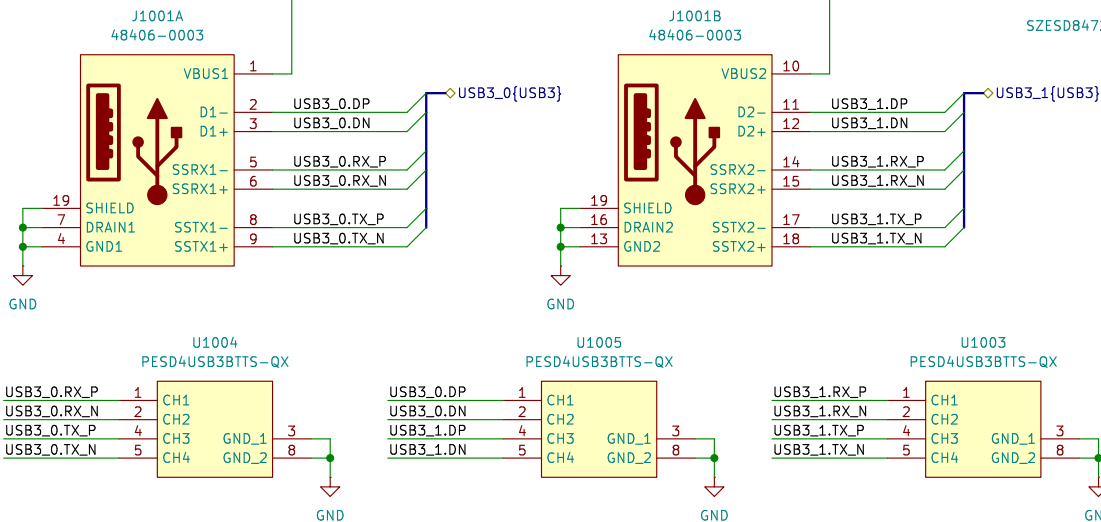
VBUS Load Switch

J10001
ARJM11D7-502-AB-EW2



USB3 0

USB3 1



More capacitance

ILIM = 1742mA

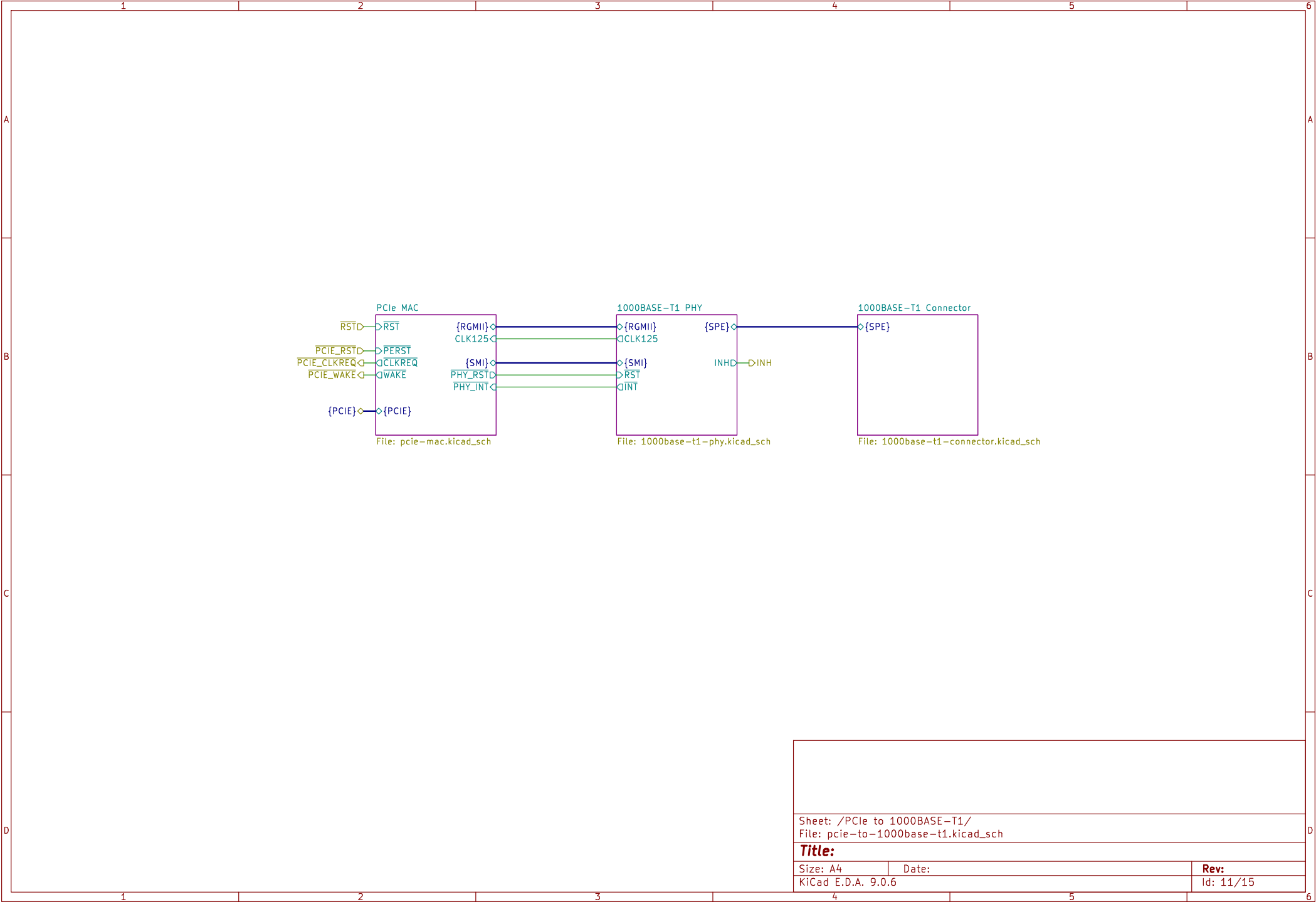
Sheet: /CM5IO/
File: cm5io.kicad_sch

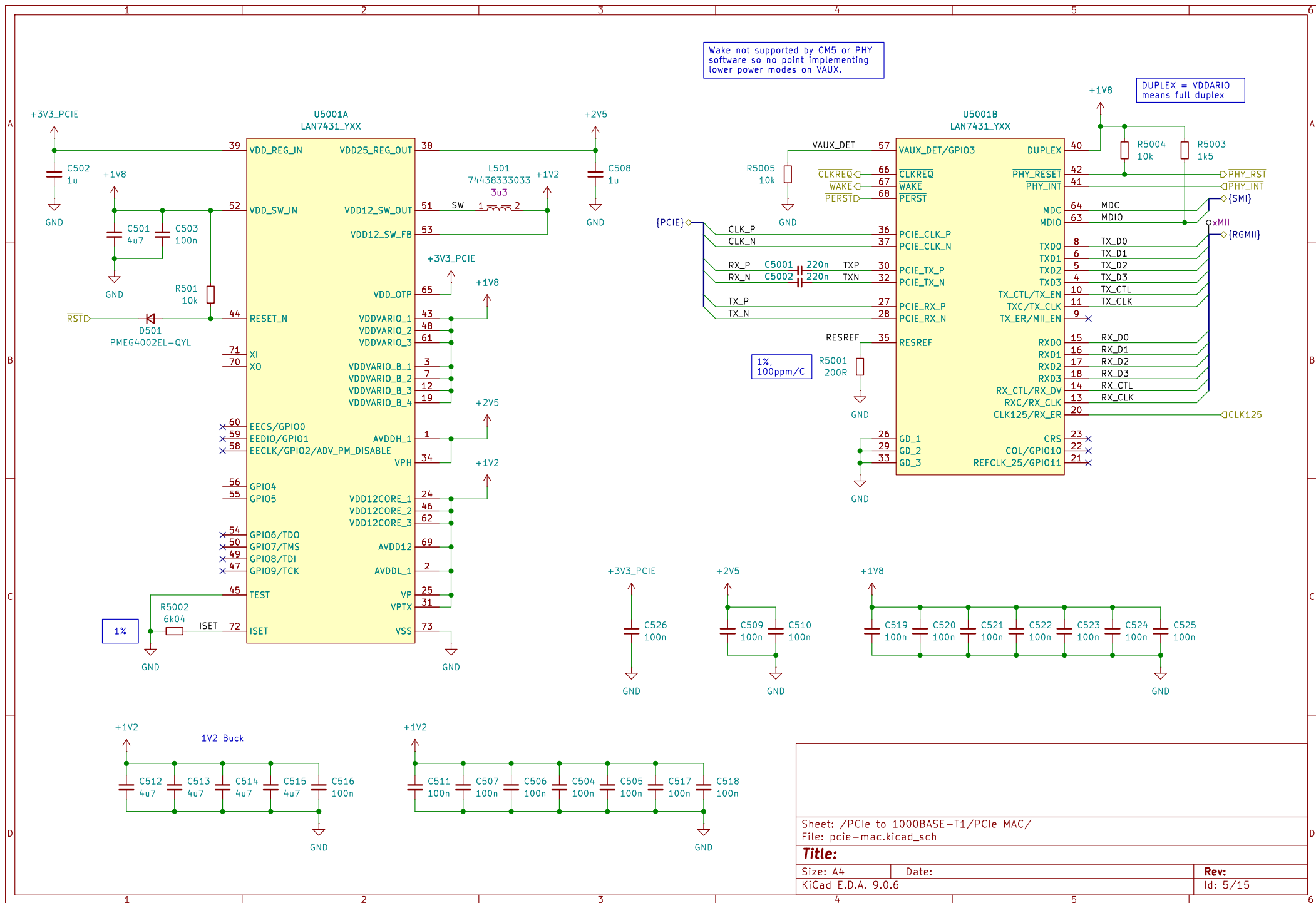
Title:

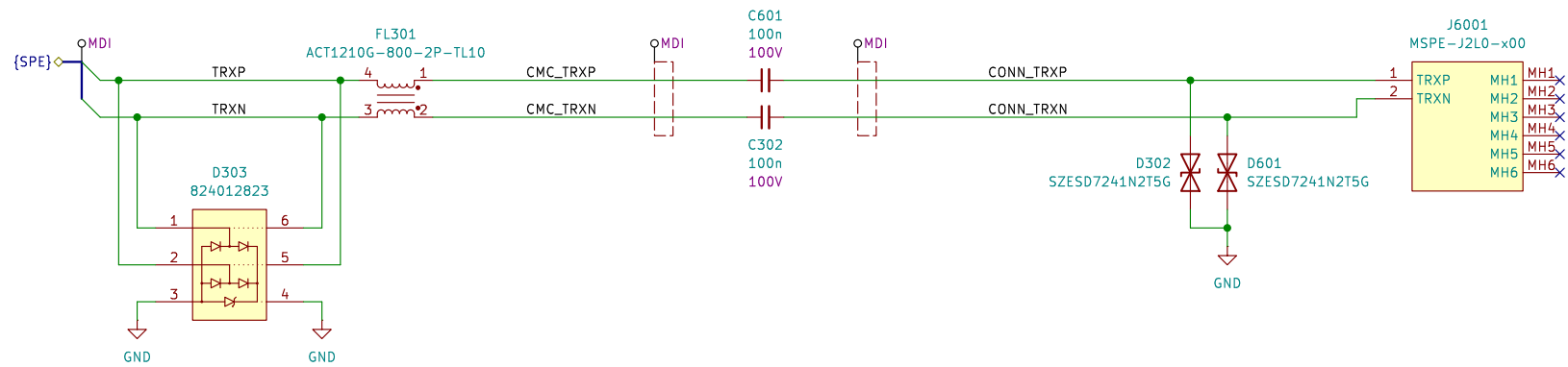
Size: A4
KiCad E.D.A. 9.0.6

Date:

Rev:
Id: 10/15



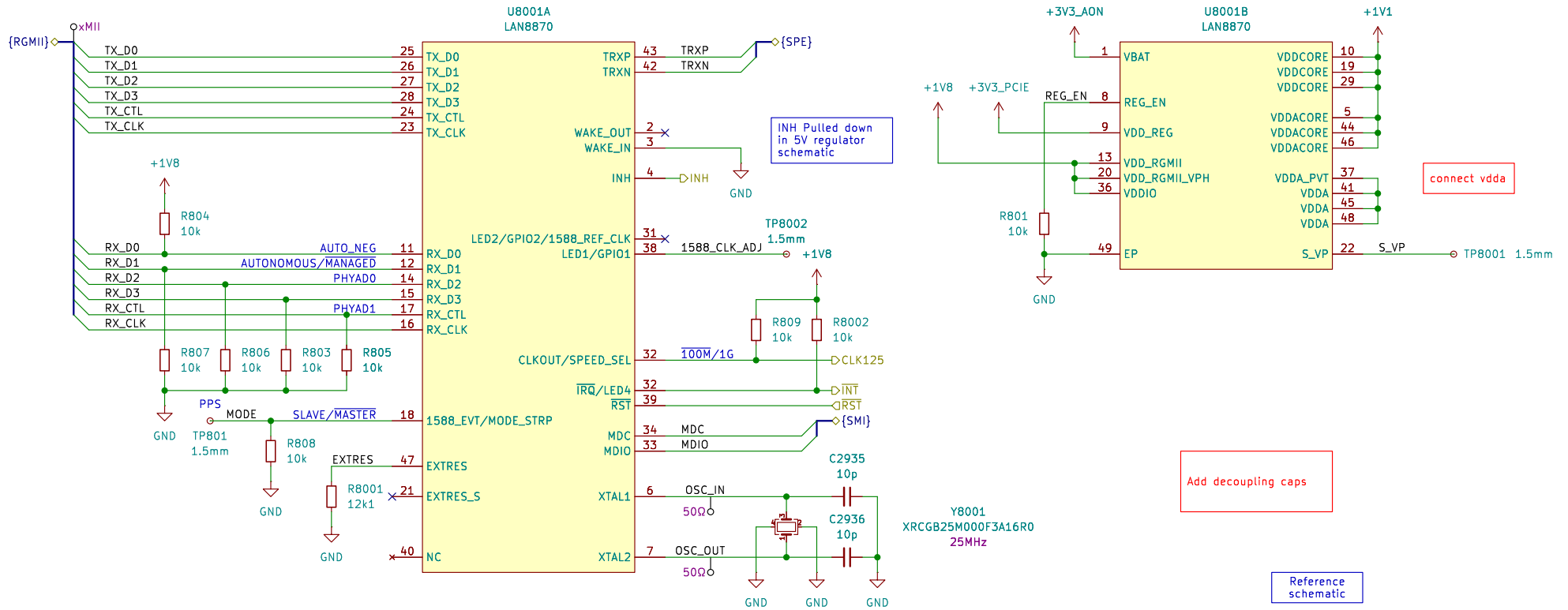




Sheet: /PCIe to 1000BASE-T1/1000BASE-T1 Connector/
File: 1000base-t1-connector.kicad_sch

Title:		
Size: A4	Date:	Rev:
KiCad E.D.A. 9.0.6		Id: 6/15

When in managed mode:
 - SPEED_SEL = PHYAD4
 - AUTO_NEG = PHYAD3
 - MODE = PHYAD2
 ∴ PHYAD = 0b11000 = 0x18



The reference schematic
 uses a
 VX7-9013-25M000000
 which is very expensive

Add decoupling caps

Reference
 schematic

Sheet: /PCIe to 1000BASE-T1/1000BASE-T1 PHY/
 File: 1000base-t1-phy.kicad_sch

Title:

Size: A4

Date:

KiCad E.D.A. 9.0.6

Rev:

Id: 8/15

