

Clock generator

File: clock_gen.kicad_sch

PCIe switch

File: pcie_switch.kicad_sch

RC 4-lines PCIe

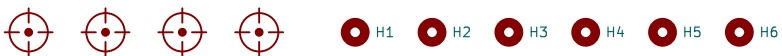
File: RC_4-lines-PCle.kicad_sch

4 x 1-lanes PCIe

File: 4_1-lines_PCle.kicad_sch

Direct PCIe

File: direct_PClc.kicad_sch



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Sheet: /

File: openpci2-backplane.kicad_sch

Title:

Size: A4

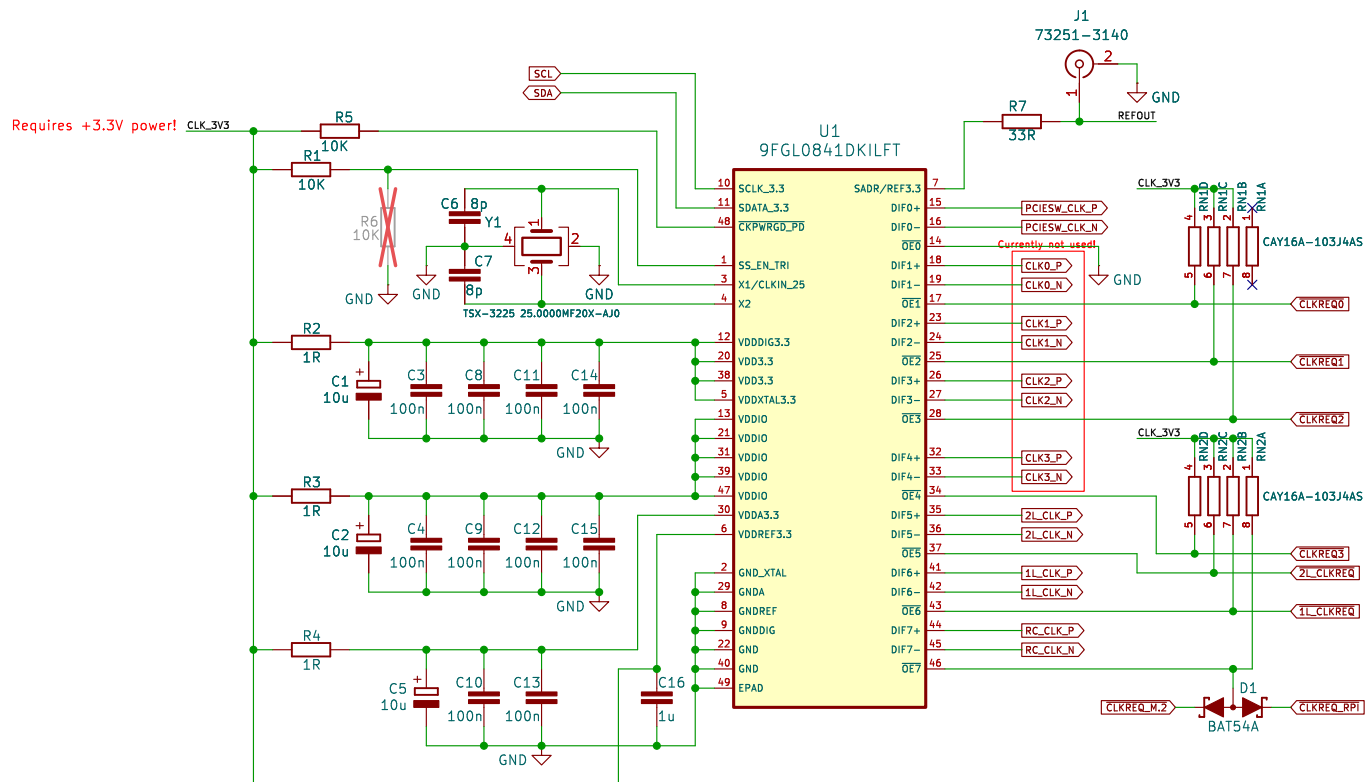
Date: 2025-01-29

Rev: r1B1

Size: A4	
KiCad E.D.A. 8.0.8	

Id: 1/6

Clock generator & fanout



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Sheet: /Clock generator/
File: clock_gen.kicad_sch

Title:

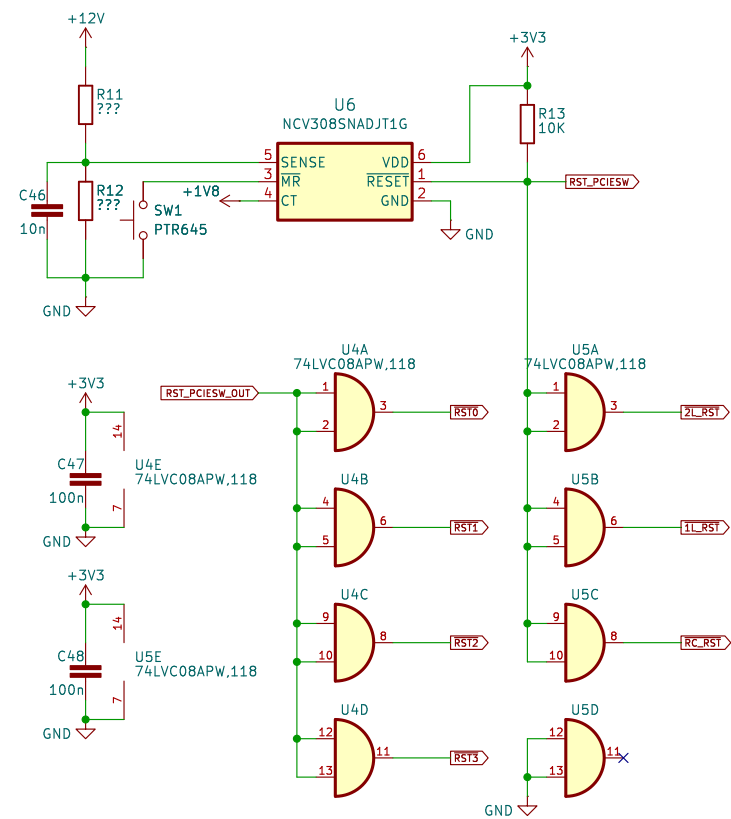
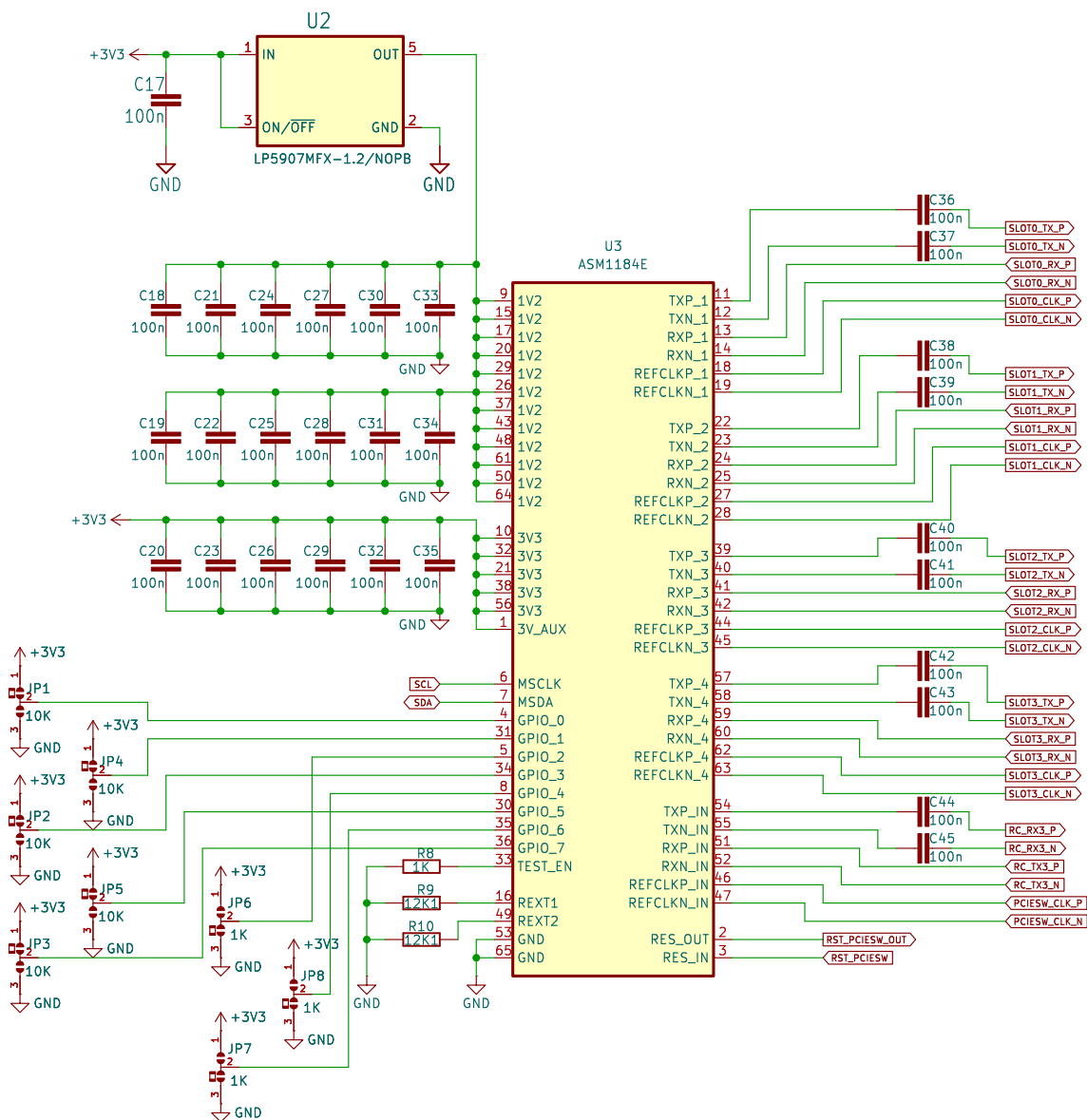
Size: A4 Date: 2025-01-29
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Rev: r1B1
Id: 2/6

PCIe 4-slot switch

Voltage Supervisor, Manual Reset and Reset fanout

A
B
C
D



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Sheet: /PCIe switch/
File: pcie_switch.kicad_sch

Title:

Size: A4
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Date: 2025-01-29

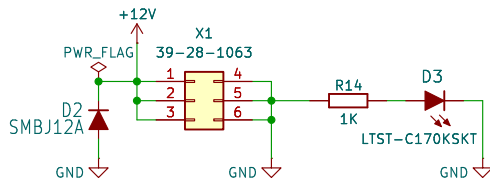
Rev: r1B1

Id: 3/6

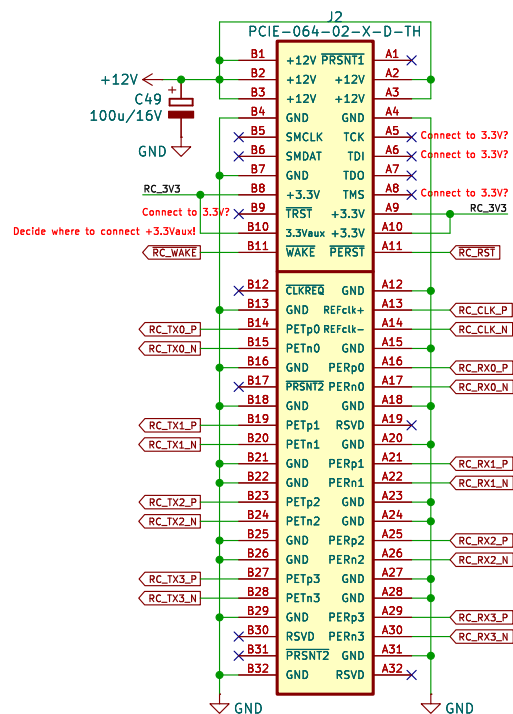
A
B
C
D

+12V Power input

One high power down converter or one per slot?

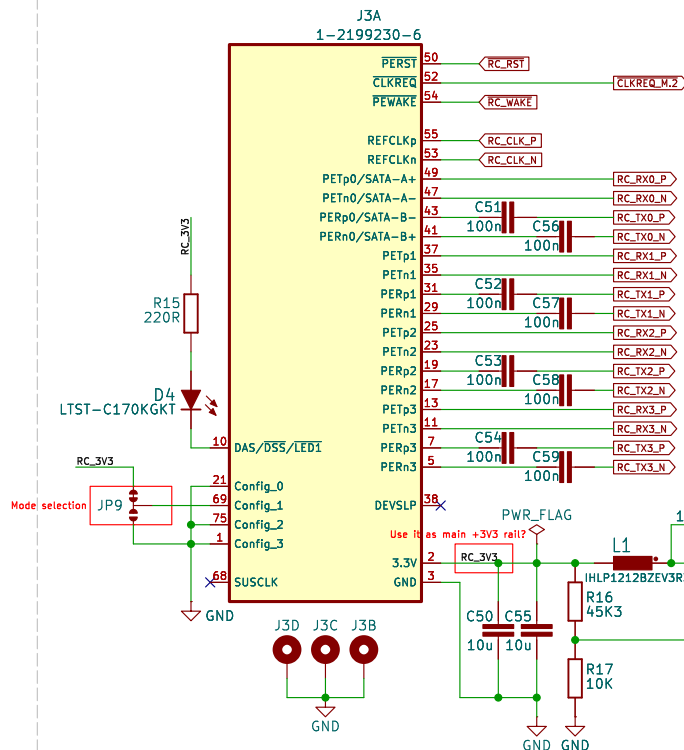


4-lines PCIe for Root Complex

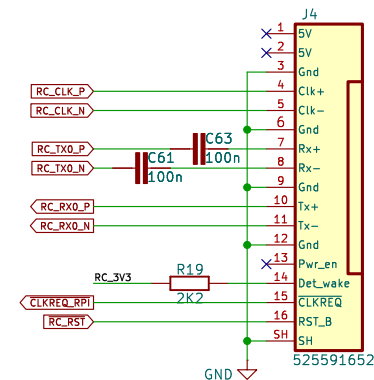


Lines #	Device
0	2-lines slot + M.2, Raspberry Pi PFC
1	2-lines slot + M.2
2	1-lines slot + M.2
3	PCIe switch for 4 x 1-lines + 4 x M.2

4-lines M.2 (Type M) for Root Complex



Raspberry Pi FPC 16-pin connector



2.1. PCIe Signals

The PCIe signals are a single lane of PCIe Gen 2, including CLKREQ and RST_B sideband signals which operate at 3.3V.

2.1.1. Pwr_en pin

This pin is a 3.3V output from the Raspberry Pi to a HAT+ or other add-on board, and signals to the HAT+ to power up any supplies. For example, in the instance of the Raspberry Pi M.2 M Key HAT+, this enables the M.2 3.3V power (which is generated from the Incoming 5V). Provide a 100K low pull on this pin on any HAT+.

2.1.2. DeLwake pin

This pin is a 3.3V input to the Raspberry Pi. Pull high to 3.3V either from a resistive divider from 5V (3k6/6k8 giving 2.35k output impedance), or from permanently enabled 3.3V (using a 2.2K resistor). The Raspberry Pi will detect this high pull at boot time, and will automatically probe the PCIe bus. Use the PCIe WAKE# to pull this low

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Sheet: /RC 4-lines PCIe/
File: RC_4-lines-PCIe.kicad_sch

Title:

Size: A4 Date: 2025-01-29
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Rev: r1B1
Id: 4/6

