Clock Module

(for MRISC-CPU)

Purpose

The Clock Module does two things:

- Generating Clock Signals (CLK: Clock, !CLK: Inverse Clock, L_CLK: Clock, but the rising edge is offset in time, L!CLK: Inverse Clock but the rising edge is offset in time; the L means late)
- Turn other components on/off using switches (ALU, CU, Memory, Persistent Storage, Registers, AUX0…5)

Interfaces

USB (for power)

On the bottom-right corner, there's a USB-A (non 3.0) interface for PD, **don't connect to USB-C using an adapter**. It should work, but there are faulty adapters -> might deliver 20V.

Clock Singals

On the bottom-left corner, there are four pins delivering the clock signals (CLK, !CLK, L_CLK, L!CLK). Those pins might not be inserted as soldered wires are better for connections in case it generates a high-frequency signal (basically 100Hz+, not really that high honestly). From top to bottom, the correct order of the pins is:

- L!CLK
- !CLK
- L_CLK
- CLK

Power Outputs

The top has 10 power outputs, 8 of which are 5V (5 fixed functionality, 5 auxiliary), 2 of which are 3.3V (both auxiliary). The outputs can be deactivated temporarily using a switch.

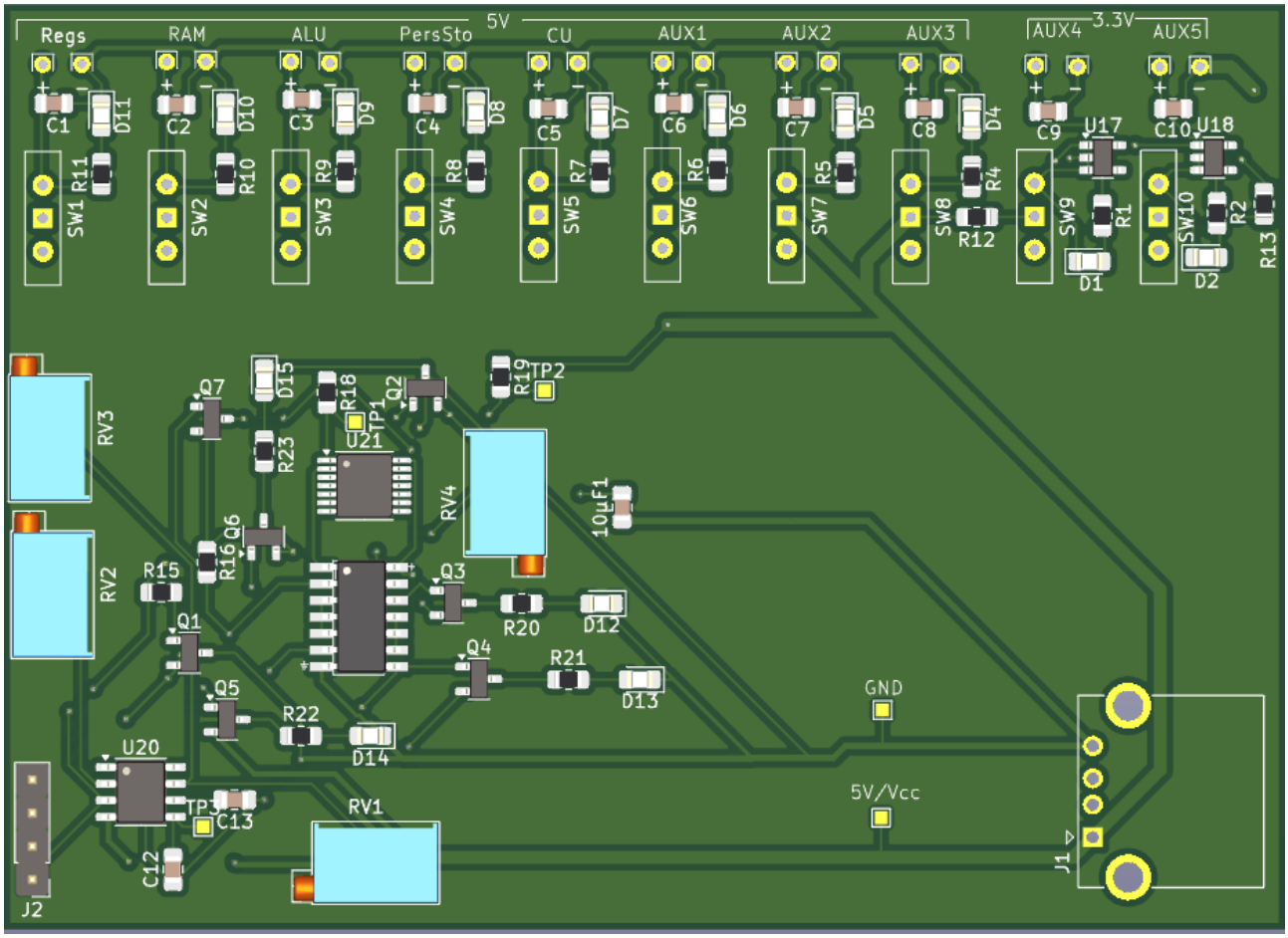
Potentiometers

The two potentiometers on the left side control the length of the clock's up-cycle. The one closest to the bottom controls the amount time between the falling edge and the rising edge. The fourth potentiometer controls the offset from CLK to L_CLK (and their inverted counterparts).

Maximum power ratings

All connected devices might use a maximum of 7.5W while each individual connection supports up to 5W.

Images


Regs
RAM
ALU
PersSto
5V
CU
AUX1
AUX2
AUX3
AUX4
3.3V
AUX5
GND
5V/Vcc