

Power Supply

Power supply circuit diagram showing 5V and 3.3V regulators. The 5V regulator (U3) is a TLV73312PDBV, and the 3.3V regulator (U4) is a TLV73333PDBV. Both regulators are connected to a 5V input and ground. The 5V regulator output is connected to a 1.2V LED (D3) and a 1.2V output (TP6). The 3.3V regulator output is connected to a 3.3V LED (D4) and a 3.3V output (TP7). The circuit also includes a 5V input connector (J1), a 3.3V input connector (J2), and a 3.3V output connector (J3).

Power supply circuit diagram showing 3.3V regulators. The 3.3V regulator (U5) is a TLV73312PDBV, and the 3.3V regulator (U6) is a TLV73333PDBV. Both regulators are connected to a 3.3V input and ground. The 3.3V regulator output is connected to a 3.3V LED (D5) and a 3.3V output (TP8). The circuit also includes a 3.3V input connector (J4), a 3.3V output connector (J5), and a 3.3V output connector (J6).

Power supply circuit diagram showing a PLL and a 3.3V regulator. The PLL (U1A) is an ICE40-HX4K-TQ144. The 3.3V regulator (U2) is a TLV73312PDBV. The PLL is connected to a 3.3V input and ground. The 3.3V regulator output is connected to a 3.3V LED (D6) and a 3.3V output (TP9). The circuit also includes a 3.3V input connector (J7), a 3.3V output connector (J8), and a 3.3V output connector (J9).

Clock

Clock circuit diagram showing a 3.3V input and a clock output. The circuit includes a 3.3V input connector (J10), a 3.3V input capacitor (C2), and a clock output (TP5).

Programming

Programming circuit diagram showing a 3.3V input and a programming output. The circuit includes a 3.3V input connector (J11), a 3.3V input capacitor (C3), and a programming output (TP6).

FPGA

FPGA pinout diagram for ICE40-HX4K-TQ144. The diagram shows the pinout for the FPGA, including the 3.3V input, the 3.3V output, and the 3.3V output.

Peripherals

Peripheral circuit diagram showing buttons, LEDs, and connectors. The circuit includes a 3.3V input, a 3.3V output, and a 3.3V output.

FLASH

FLASH circuit diagram showing a 3.3V input and a FLASH output. The circuit includes a 3.3V input connector (J12), a 3.3V input capacitor (C4), and a FLASH output (TP7).

FLASH circuit diagram showing a 3.3V input and a FLASH output. The circuit includes a 3.3V input connector (J13), a 3.3V input capacitor (C5), and a FLASH output (TP8).

pullup on ss means configure as SPI master to read configuration from FLASH at boot

FPGA pinout diagram for ICE40-HX4K-TQ144. The diagram shows the pinout for the FPGA, including the 3.3V input, the 3.3V output, and the 3.3V output.

things to check:
clock and reset gbin, will pll be ok?
flash - pullups needed?
check fpga pinout against lattice docs

Sheet: /		
File: first-fpga-pcb.sch		
Title: Matt-FPGA		
Size: A3	Date: 2019-12-30	Rev: 0.1
KiCad E.D.A. kicad 5.1.5-52549c584ubuntu18.04.1		Id: 1/1

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