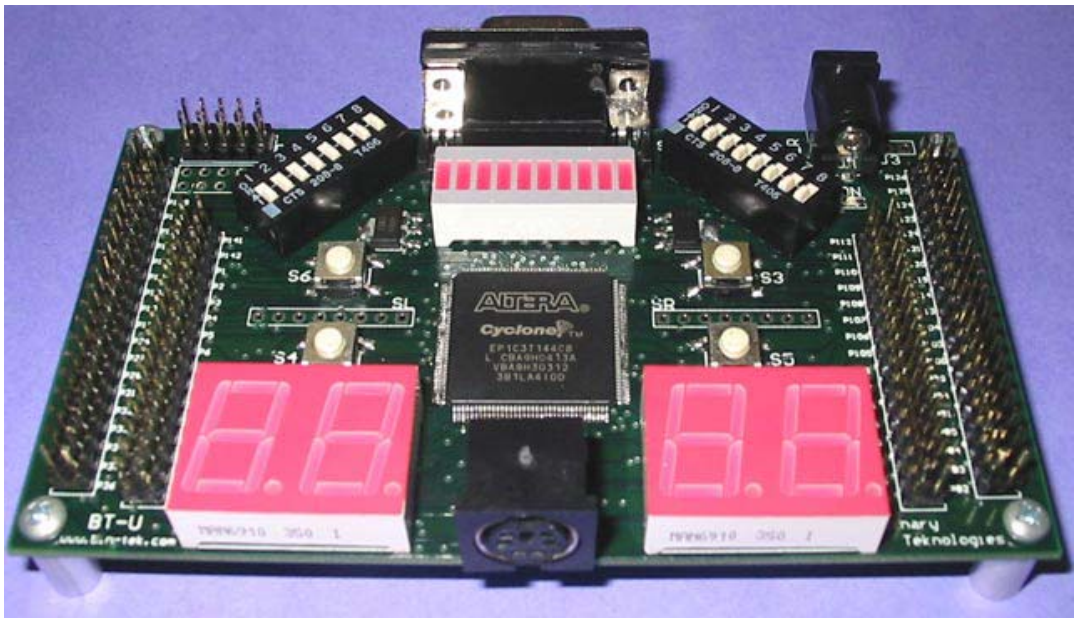
Lab 1 Supplemental

Presented by Binary Teknologies



Please just be careful and ask questions to things you do not know.

BT-U BOARD DESCRITPION

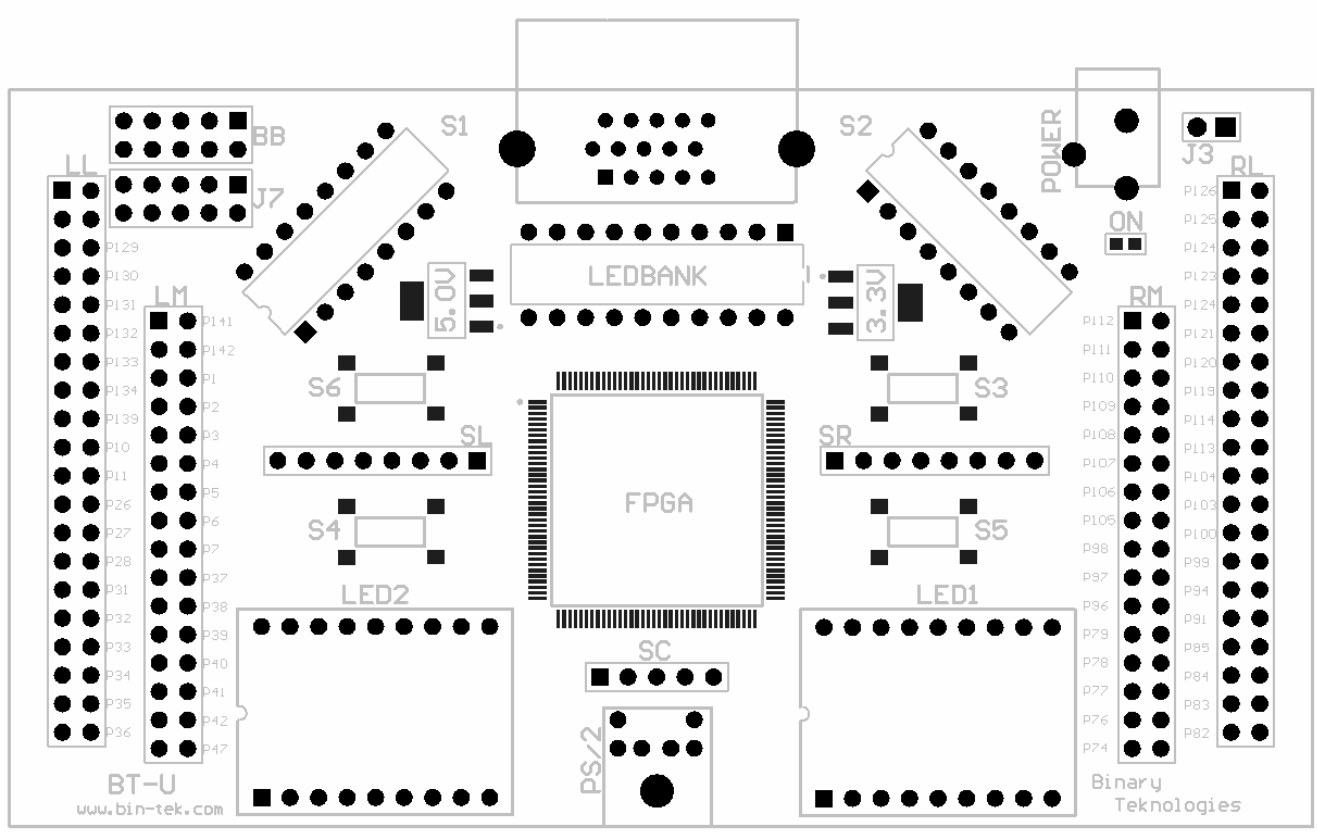


Figure 1. **BT-U Block Diagram**

BB HEADER

The 10-Pin female plug on Altera's byte blaster or Binary Teknologies BT-Blaster cable connects to the BB 10-pin male header on the BT-U board. The board provides power and ground to the programmers. Data is shifted into the devices via the TDI pin and shifted out via the TDO pin. When connecting a programmer, make sure the red-stripe is on the same side as the **'BB'** label. ***Please also note*** that two jumpers (or wire-wrap wires) are needed on J7 located below the BB header in order to program your device.

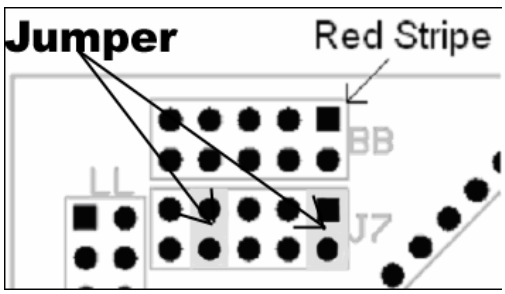


Figure 2. **JTAG Connector for programming**

Using the internal Clock

When setting up quartus, please remember to set PIN 16 as the internal 25.157MHZ clock. This is the on board clock that is automatically connected to pin 16. When you want to use this clock for external device, please use a 'wire' symbol and then assign it to an output pin.

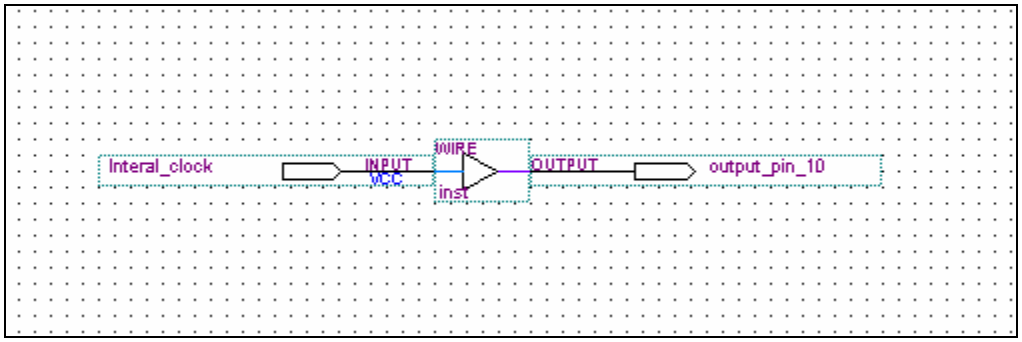


Figure 1. Setting the internal clock to an output pin

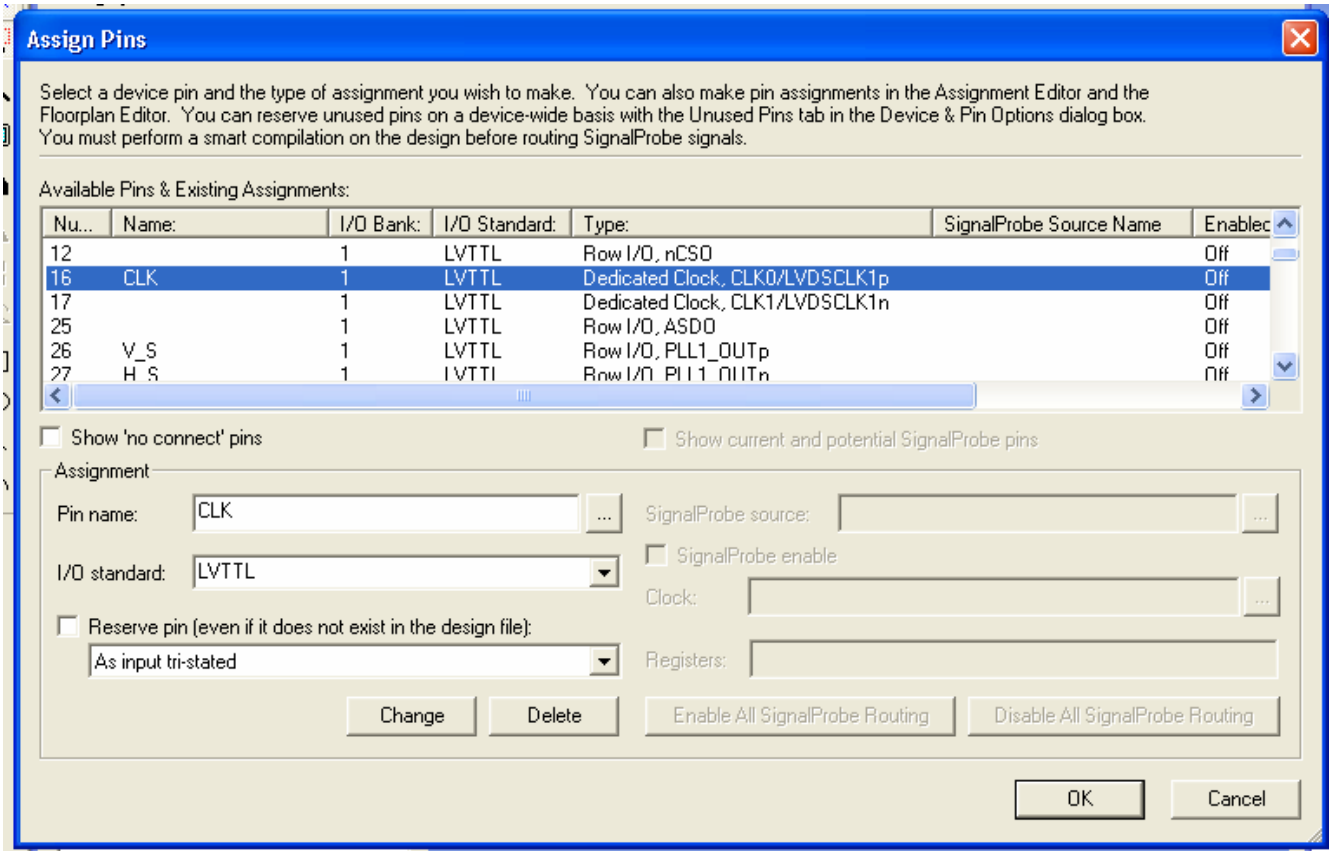


Figure 2. Setting the internal clock to the appropriate pin 16 for the FPGA

Using your own external Clock

Simply set one of your input pins to accept the new clock. Then connect this pin to all of your desired components that support a clock signal.

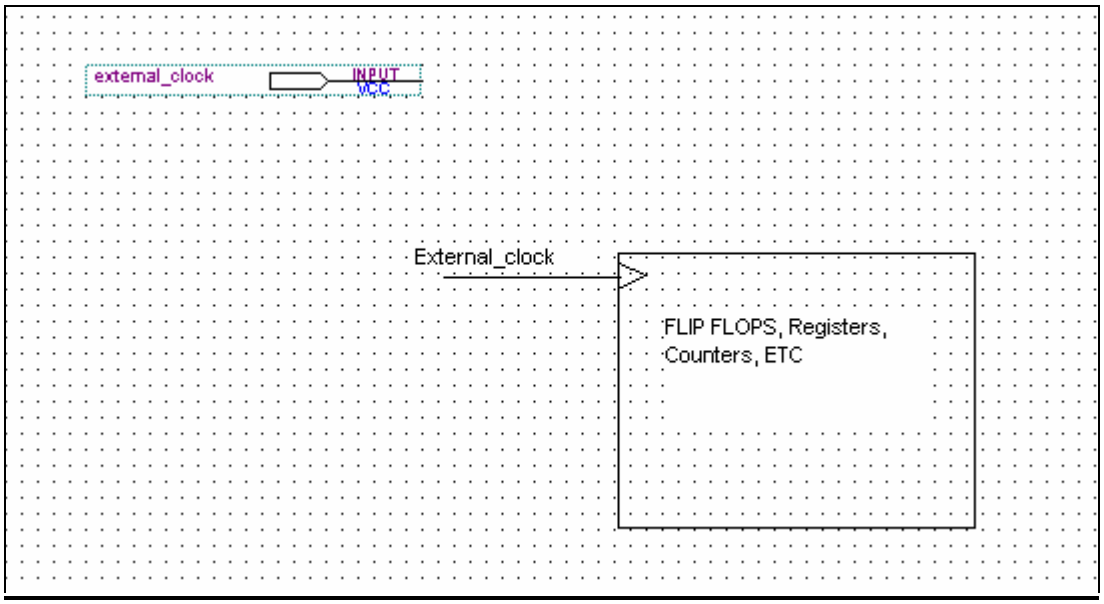


Figure 3 Setting up your external clock to control logic

PLEASE SEE BT-U MANUAL FOR DETAILED PIN OUT FOR THE BOARD