

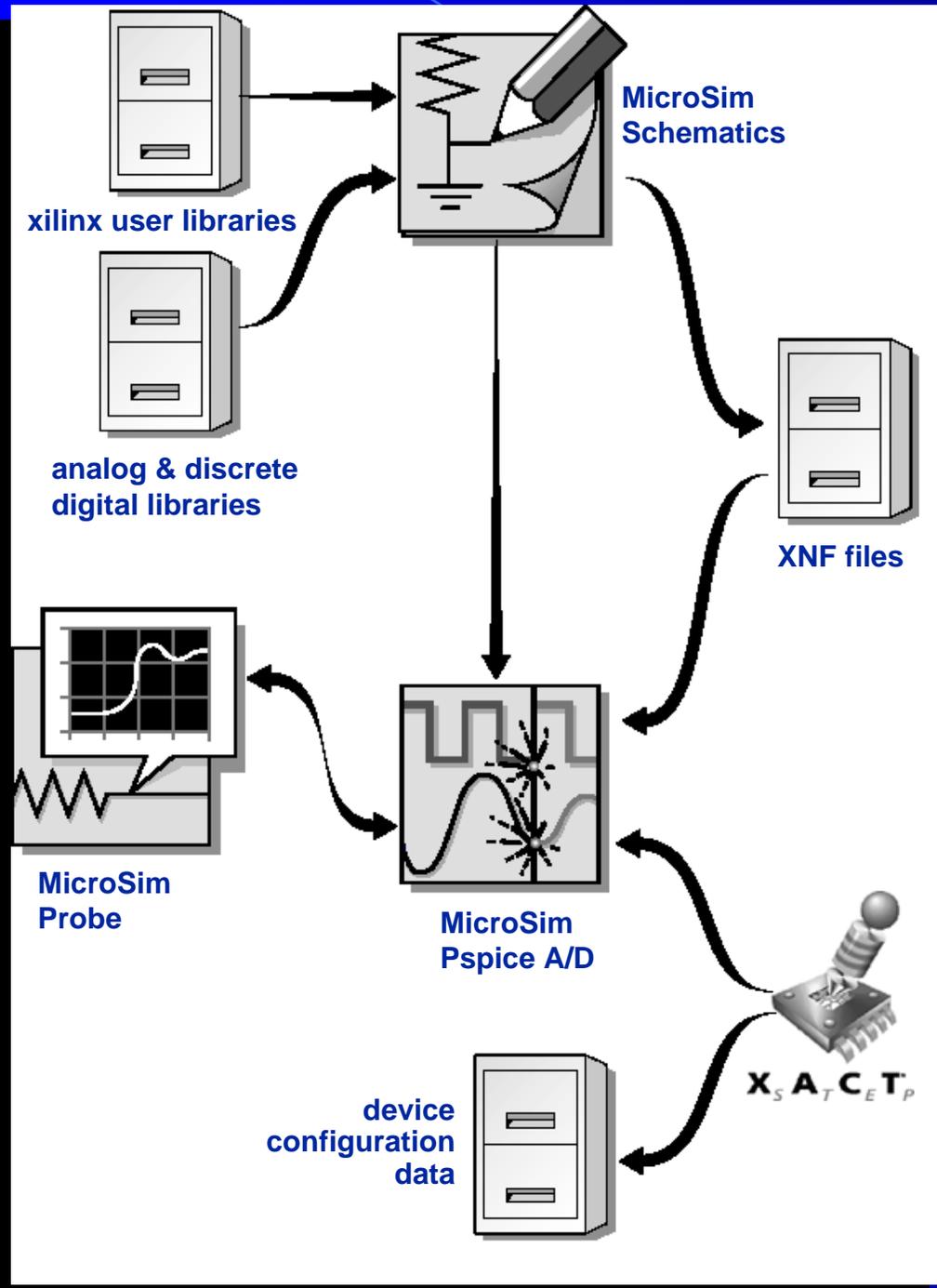
What is MicroSim FPGA?

- Used to design Xilinx FPGAs (Field Programmable Gate Arrays).
- Part of MicroSim DesignLab and works with MicroSim Schematics for design entry, and MicroSim PSpice A/D for simulation.
- Includes Xilinx Universal Library with symbols for XC2000, XC3000, XC4000, XC4000E, XC5200 device families, including XBLOX.
- Only PC-based tool that can integrate FPGAs into your overall mixed analog/digital system design.

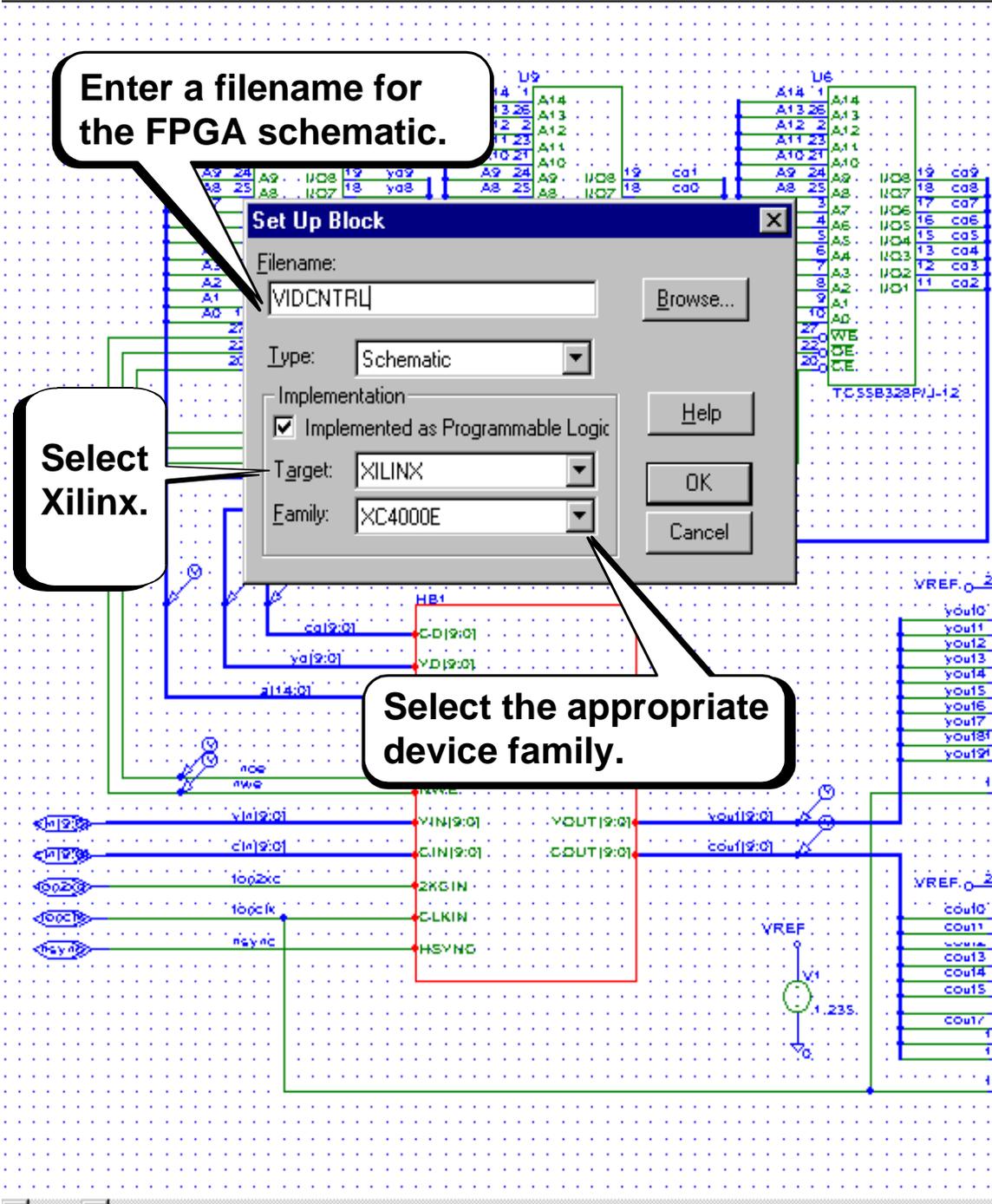
Why Use MicroSim FPGA?

- **Create** integrated designs combining FPGAs with analog and discrete digital devices.
- **Design** stand-alone FPGAs.
- **Perform** functional simulation (before place and route).
- **Perform** timing simulation (after place and route).
- **Access** Xilinx XACTstep from MicroSim Schematics.

Using MicroSim FPGA



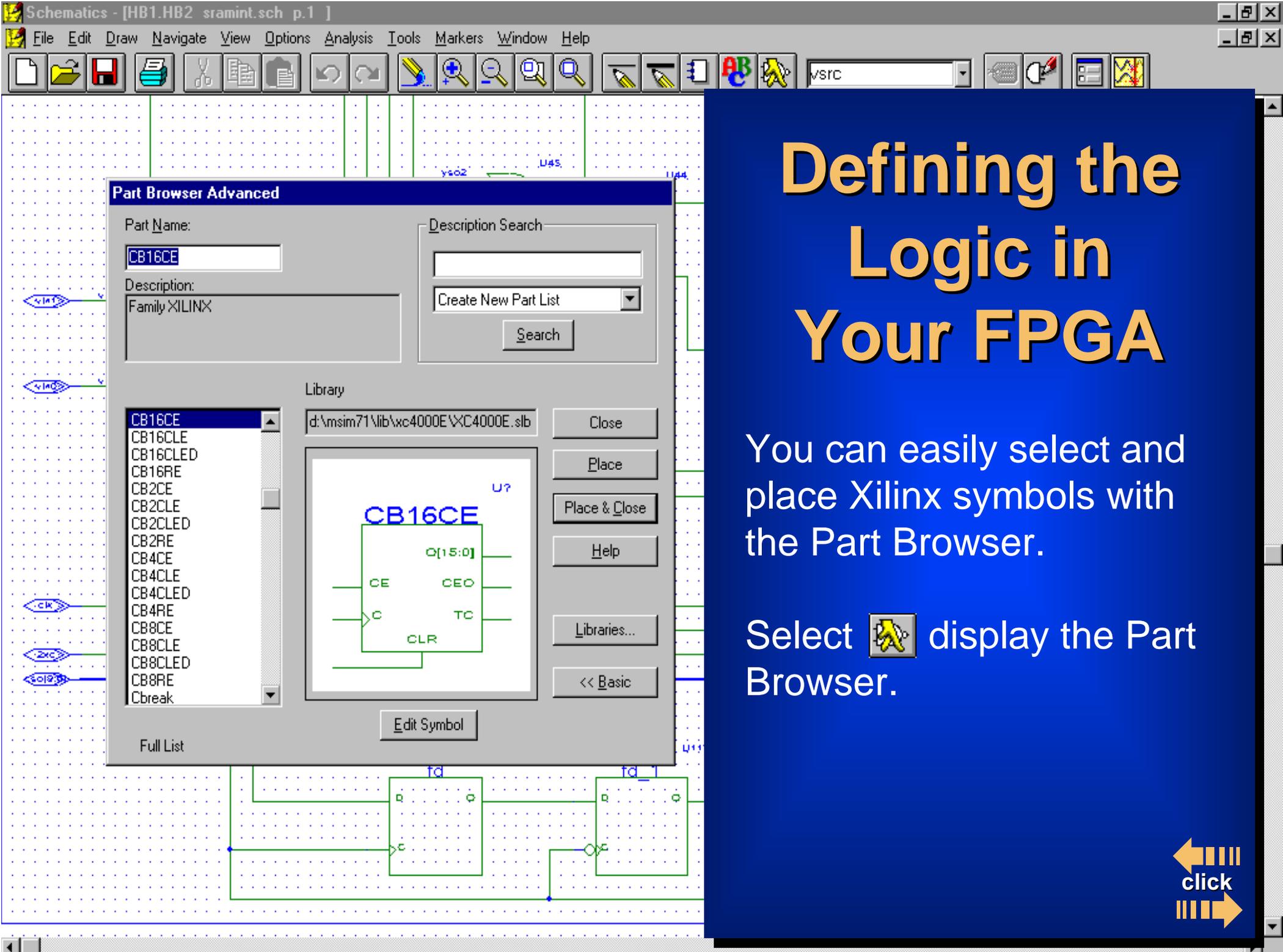
- 1 Design entry in MicroSim Schematics.
- 2 Functional simulation, analysis of simulation results in MicroSim Probe.
- 3 Place and route in Xilinx XACTstep.
- 4 Timing simulation, analysis of simulation results in Probe.



Setting Up Your FPGA in a Mixed Design

- 1 Place a block to represent the FPGA.
- 2 Enter information for the FPGA in the Setup Block dialog box.
- 3 Libraries are automatically configured based on the device family selected.





Defining the Logic in Your FPGA

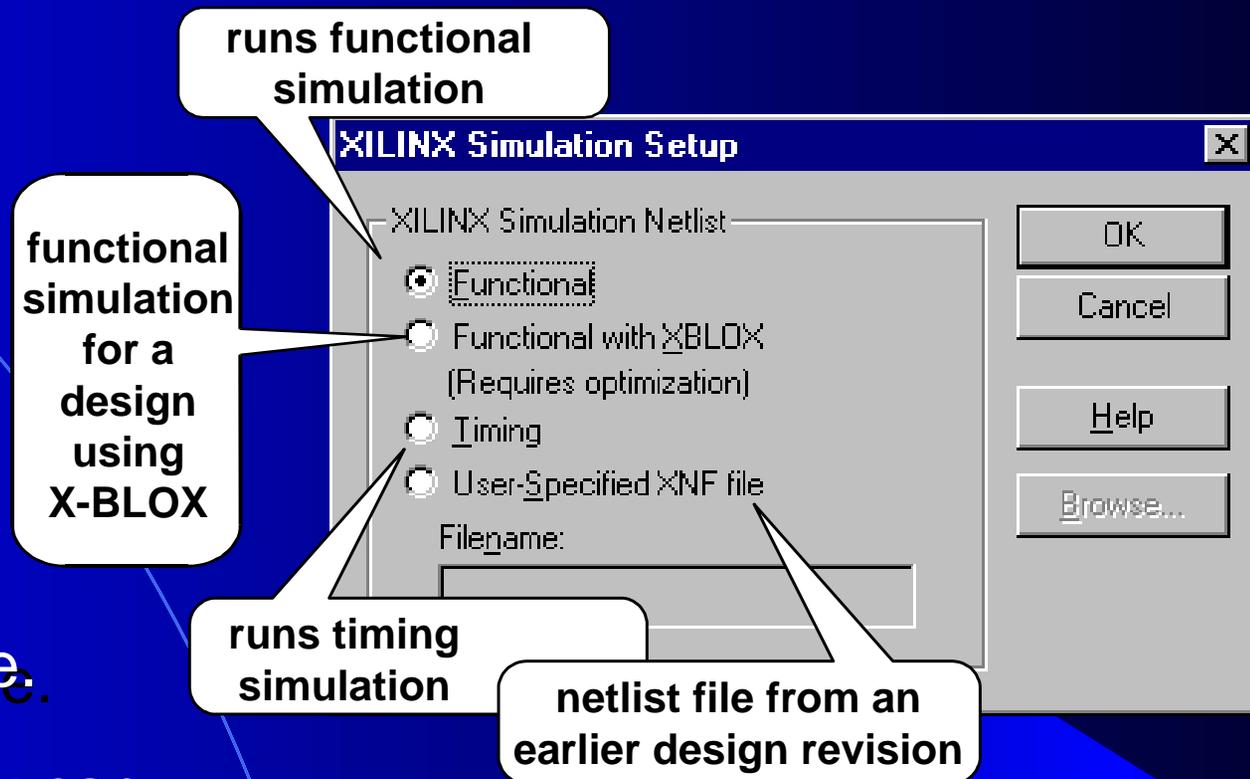
You can easily select and place Xilinx symbols with the Part Browser.

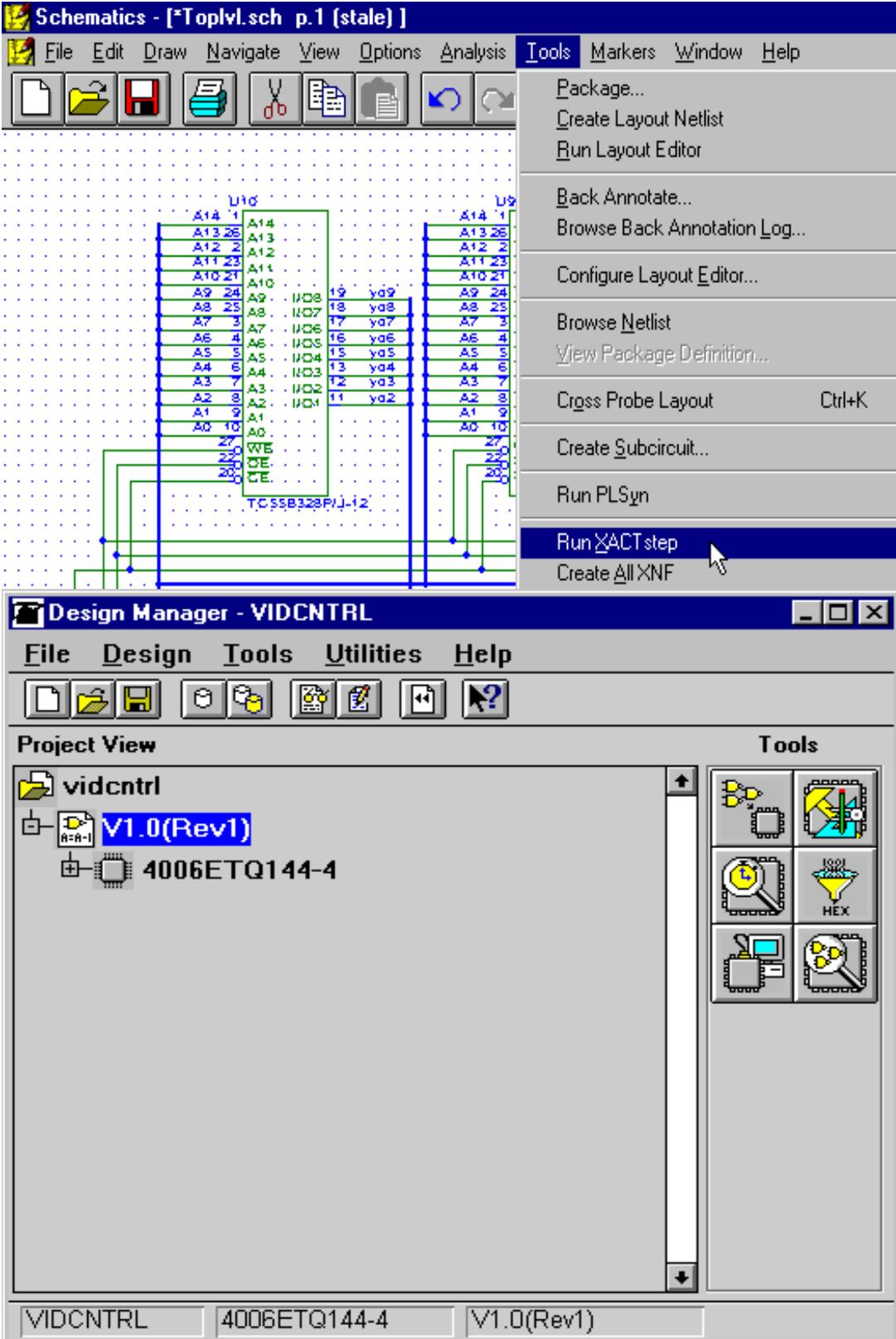
Select  display the Part Browser.



Functional Simulation

- Use functional simulation to quickly debug designs prior to place and route.
- For mixed designs, you can simulate the entire design or the FPGA only.
- Easy simulation setup—select functional simulation in the Simulation Setup dialog box, then start simulation.
- View simulation results in Probe.





Running Xilinx XACTstep

- Running XACTstep from Schematics is easy—just select Run XACTstep from the Tools menu.
- Each time you run XACTstep, XNF files are automatically updated as needed.



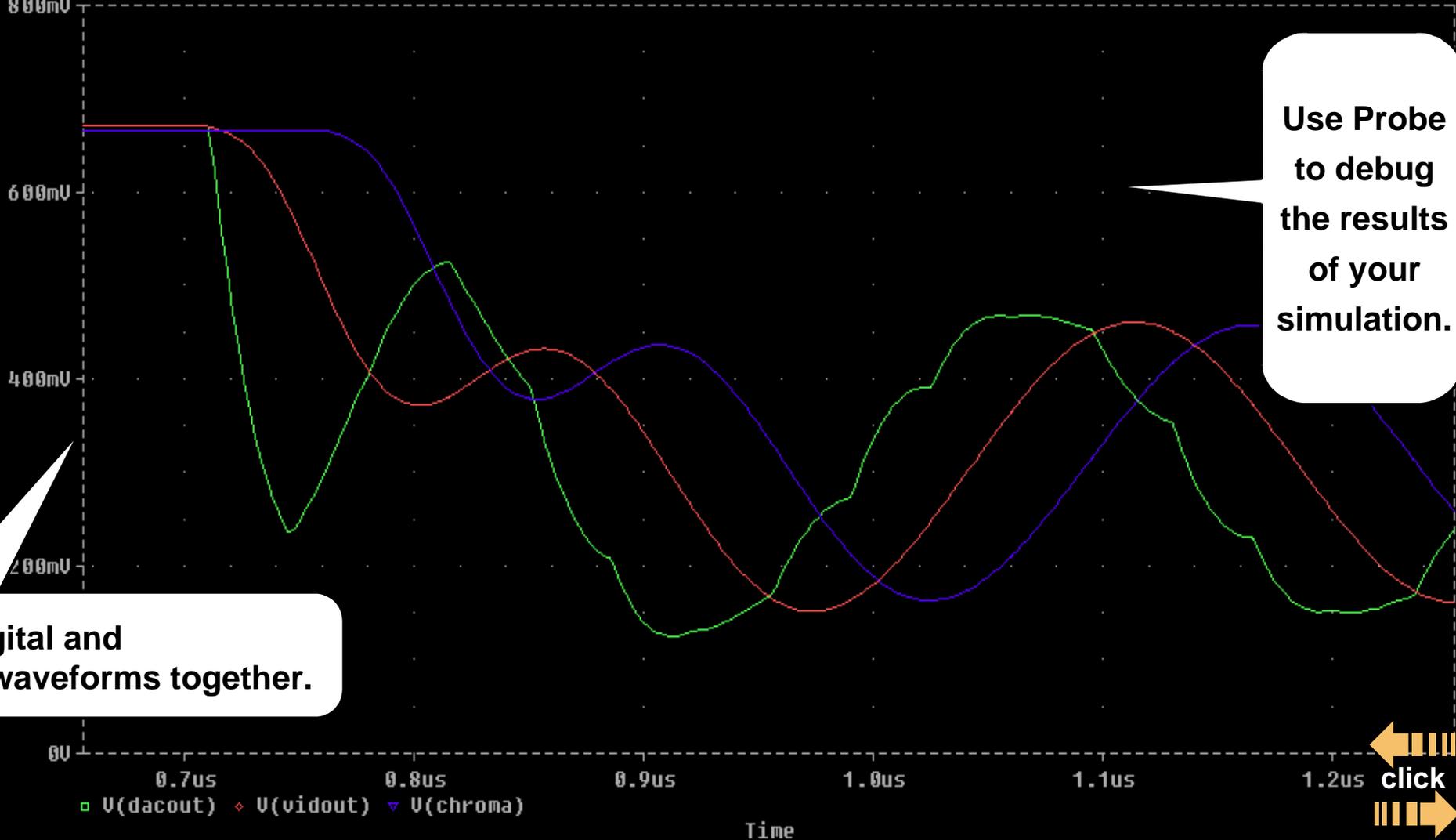
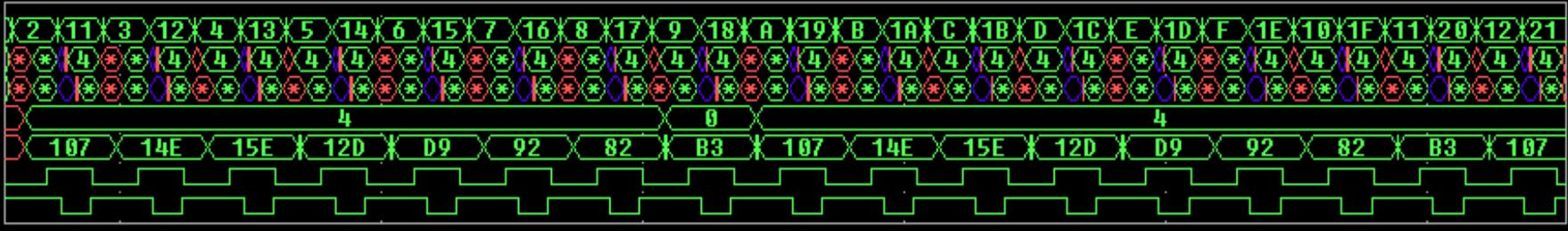


Timing Simulation

```

{a[14:0]}
{yd[9:0]}
{cd[9:0]}
{yout[9:0]}
{cout[9:0]}
noe
nwe

```



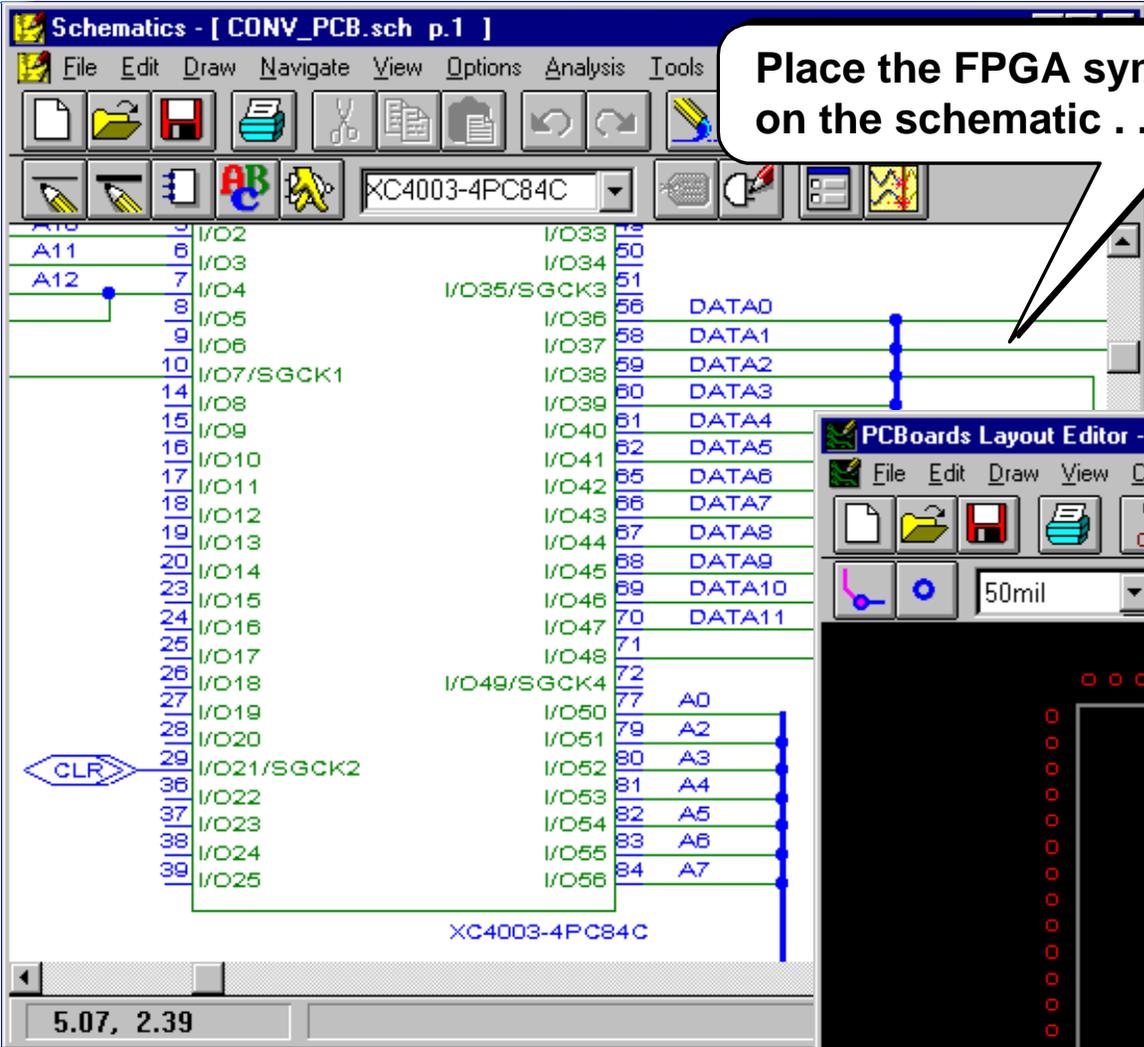
Use Probe to debug the results of your simulation.

View digital and analog waveforms together.

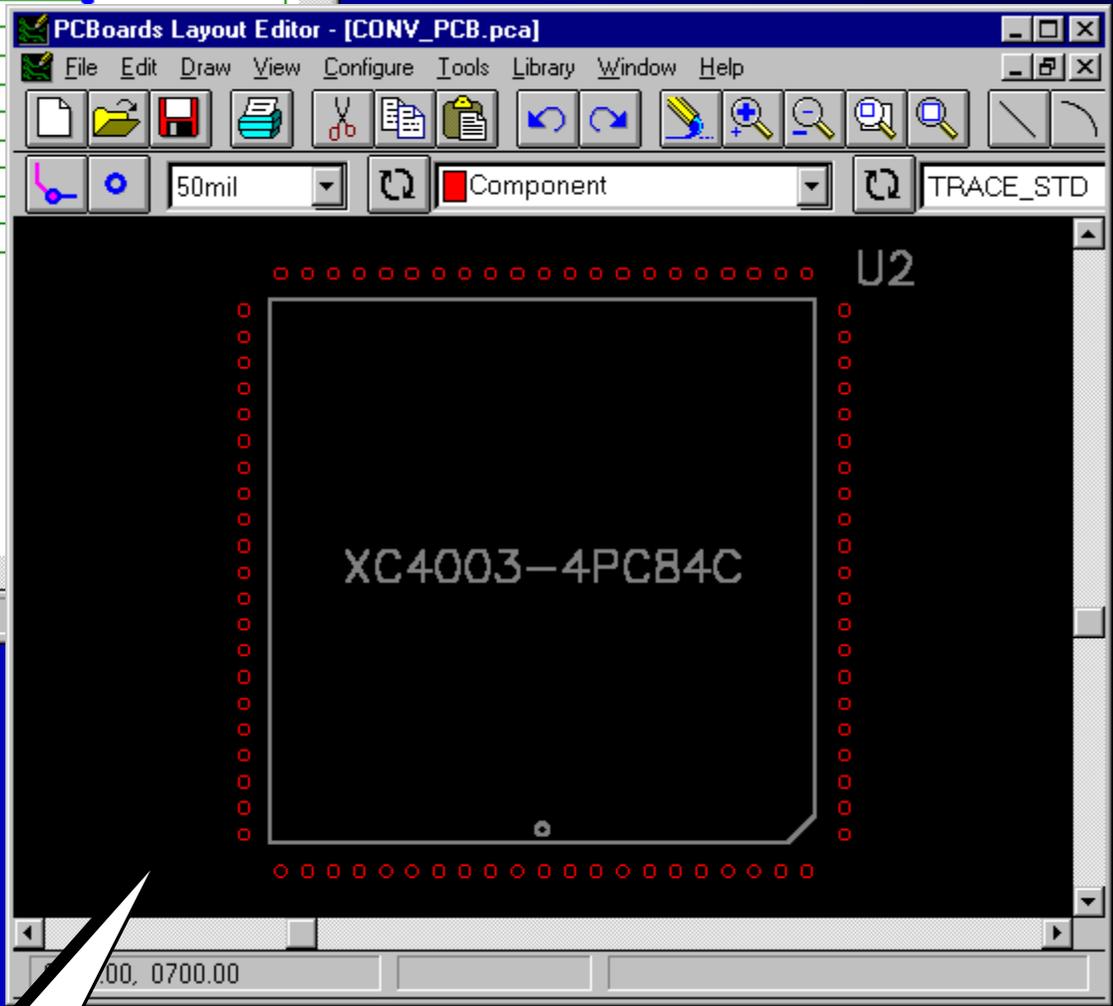


0.7us 0.8us 0.9us 1.0us 1.1us 1.2us
 □ U(dacout) ◇ U(vidout) ▼ U(chroma)

Time



Preparing for PCB Layout



FPGA, symbol, package and footprint libraries are included.

... then lay out the board in MicroSim PCBoards.



MicroSim FPGA

Lets you bring accurate circuits to market faster!

- Only PC-based tool that integrates FPGAs with analog and discrete digital devices in a complete system design.
- Integrated simulation—functional and timing analysis are accessed through Schematics.
- Quick access to XACTstep.

Press  to return to the Acrobat Reader.

