Xilinx WebPACK Software Now Includes ModelSim

A complete design environment, including simulation, for Xilinx CoolRunner and XC9500 CPLDs...

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Simulation is one of the keys to creating fast compact designs, with the least time and effort. Now you can simulate your functional and post-route VHDL and Verilog CPLD designs using the Xilinx WebPACK software, which includes the ModelSim software from Model Technology, Inc. (MTI).

Using the MTI ModelSim simulator gives you the ability to use HDL testbenches which allow you to behaviorally describe the stimulus for your design. Describing stimulus behaviorally allows the simulation to more accurately represent the system conditions and to vary based on the response received by the device. HDL testbenches also enable concurrent stimulation of different functions within the design and can be defined to compare the results from the device with expected results, eliminating the need to inspect waveforms to insure that the device is functioning properly.

MTI ModelSim Xilinx Edition (MXE)

The inclusion of ModelSim in WebPACK is through an exclusive OEM arrangement between MTI and Xilinx. MTI licenses to Xilinx a special edition of ModelSim called the ModelSim Xilinx Edition (MXE). MXE Starter is a free trial version available to Xilinx WebPACK customers that allows you to run up to 500 debuggable lines of code before performance reductions occur. Upgrades to the ModelSim Personal Edition (PE) and the Elite Edition (EE) are available from MTI and both upgrades are compatible with WebPACK.

Downloading MXE

MXE is included in the latest backPACK module of WebPACK as shown in Figure 1. Downloading the required design entry

and CPLD fitter modules of WebPACK and the MXE backPACK module results in a tight integration between WebPACK's Project Navigator design environment and MTI's simulation tools. WebPACK is available at: www.xilinx.com/products/software/webpowered.htm.

MXE Licensing

Licenses are required for MXE and can be obtained at the end of the installation process or after the product has been installed. With either method, your Web browser will be directed to an online license request form. Upon completion of this form, the MXE license and instructions for installing the license will be quickly e-mailed to you.

Using MXE with the WebPACK Project Navigator

Once you have installed MXE, you can import HDL testbenches into design projects in the same manner as other source files. When an HDL testbench is selected in Project Navigator, the ModelSim Functional and Post-route simulation processes are available as shown in Figure 2. You can create simulation command files (ModelSim ".do" files) as Project Navigator invokes the MXE simulator, or you can specify existing .do files.

Execution of either of the simulator processes results in ModelSim simulating the design and displaying the specified windows as shown in Figure 3.

Conclusion

With ModelSim and WebPACK you can quickly and easily create CPLD designs that work perfectly, the first time.

A detailed application note (XAPP338) instructing you on the operation of MXE within WebPACK for both CoolRunner

and XC9500 CPLDs, leads you through a simple and complex design example using MXE for both functional and post-route simulations. XAPP338 is available on the Xilinx website at:
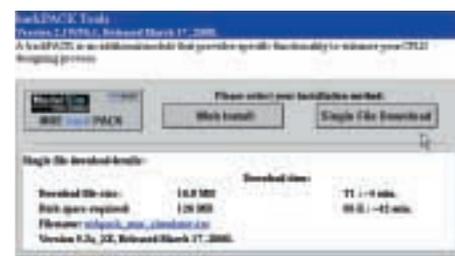
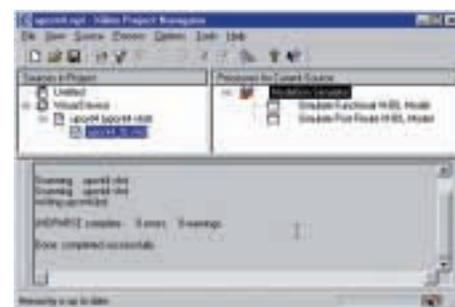www.xilinx.com/xapp/xapp338.pdf.

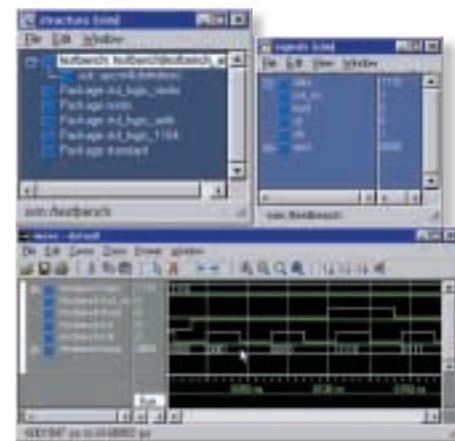*Figure 1 - MXE backPACK Module.*

Figure 2 - ModelSim Simulator processes.

Figure 3 - Resulting ModelSim windows.