MODCOUPLER MODULES

PSIM

Quick VHDL and Verilog code validation for FPGA implementation

The ModCoupler-VHDL Module and ModCoupler-Verilog Module provide the link for co-simulation between PSIM and ModelSim for VHDL and Verilog code support.

Due to its speed and flexibility, FPGA has been increasingly used in digital control implementation in power electronics. For the design of such a system, a simulation environment is essential in order to validate the controller implemented in VHDL or Verilog code and make sure that the digital and analog parts of the circuit work together properly. The simulation of both analog and digital circuits is a difficult task, involving the simultaneous usage of an analog and a digital simulator, or a mixed signal simulator.

With the ModCoupler Modules, the power circuit can be implemented in PSIM, and the control circuit in VHDL or Verilog code which can then be simulated by ModelSim for hardware implementation in FPGA.

The co-simulation has proven to be very effective in the design of digital controllers implemented in FPGA for power converters, as it allows users to fully test and debug the control algorithm and VHDL/Verilog code in the easy-to-use simulation environment instead of on the actual hardware.

FEATURES & BENEFITS

- Simple interface
- Capability to support VHDL and Verilog code for FPGA implementation
- Easy design validation and debugging in simulation environment
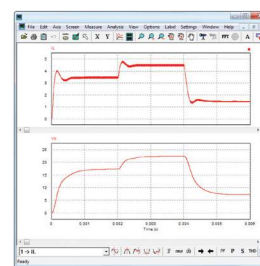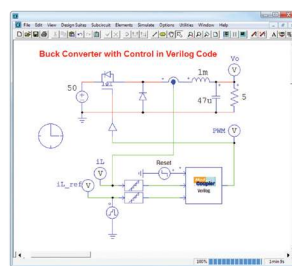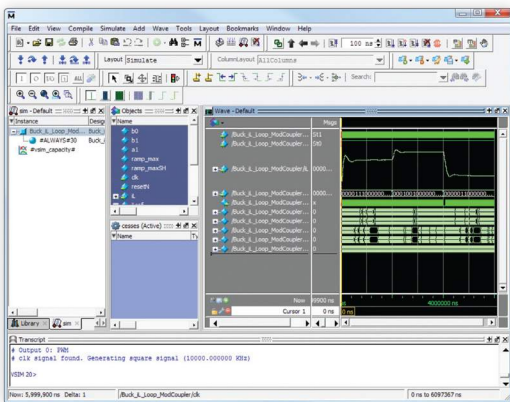
Above: **Buck converter** with control implemented in Verilog code.

Left: **ModelSim** interface.