

# proFPGA Cut (Partitioning Tool)



## Product Summary

The new proFPGA Cut is a perfect extension to the proFPGA Product Portfolio. The Software includes a guided partitioning tool that handles all required tasks from importing RTL files till exporting it for synthesis and place & route. In Addition its is designed to reduce the design implementation time to a minimum. The proFPGA Cut software is optimized for proFPGA hardware and takes full advantage of the system's modular and flexible interconnection architecture. Besides the GUI mode, the tool also offers a command line mode which allows the user to script all processes and to fully integrate it into its automated design flow.

## Fast-Growing Design Sizes

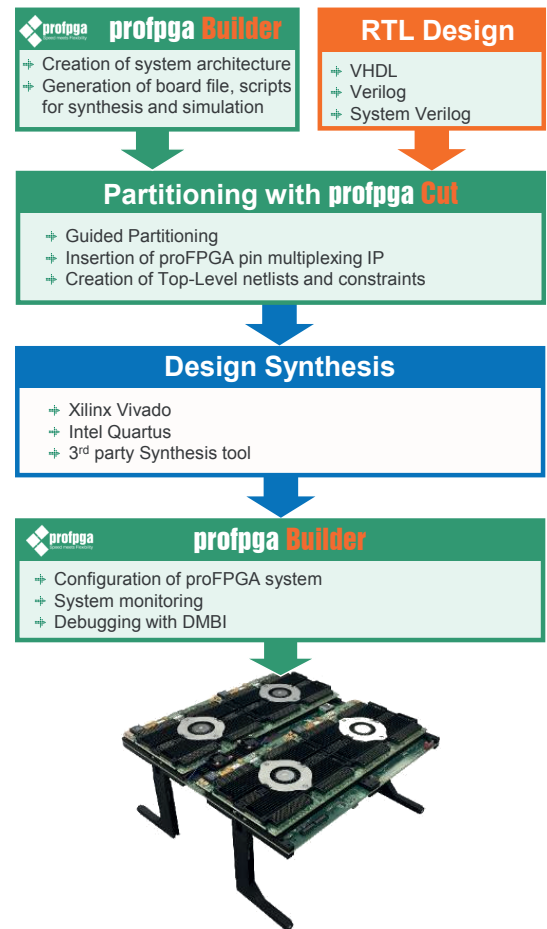
The proFPGA systems handle complex ASIC and SoC Designs up to 2 Billion ASIC gates and give design and verification engineers unprecedented speed for high-speed verification and bug hunting to shorten the time to market by eliminating costly re-spins and by providing early prototypes for software development and/or to end customers. Because of the fast-growing design sizes and the increasing number of required FPGAs, design bring-up and design partitioning are very challenging and time consuming tasks.

## Guided Partitioning Tool

Due to the fact that the performance is the most important and critical factor, PRO DESIGN pursues with its new proFPGA Cut tool a different approach. Instead of offering a completely automated "push button" flow with limited control, proFPGA Cut guides the user through the partitioning process step by step from importing RTL to the export to the synthesis tool. Consequently, the user has still full control over the design and the tool supports him to shorten this usually time consuming and complex process. proFPGA Cut offers the insertion of pin multiplexing IPs, logic optimization, constraints setting, conversion of multi-point interconnections into point-to-point interconnections, semi-automated movement of instances/ nets, the possibility of scripting etc.

## Very User Friendly

The easy-to-use software guides the user step-by-step through the design implementation flow, which gives him a structured overview. A tree structure is used to display the design hierarchy. All external access ports (IOs) are shown and can be mapped to physical pins. Furthermore the visualizer displays all design interconnections between FPGAs and how they are physically mapped. In addition, proFPGA CUT can handle different FPGA technologies and a combination of these.



### Key Features

- ✦ Guided Design Partitioning
- ✦ Maximum Design Speed
- ✦ Supports VHDL, Verilog and System Verilog
- ✦ From Importing RTL to synthesizable Export
- ✦ GUI mode and command line mode (script mode)
- ✦ Graphical view of hierarchal netlist available
- ✦ Mixture of different FPGA technologies possible
- ✦ Built-In proFPGA Pin multiplexing IP
- ✦ Generation of synthesis and P&R scripts

## Innovative Technologies



### Smart Stacking Technology

- Board detection when boards are plugged
- Automatic and right I/O voltage setting and programming with conflict detection
- Integrated interconnection self and performance test
- Smart I/O resource management. No I/O resources get lost or blocked by connectors



### FPGA Mixing Technology

- Easy plugging and unplugging of FPGA modules on motherboards
- Various FPGAs from different vendors can be mixed
- Automatic scan and detection of FPGA modules, when plugged
- Different FPGA configurations are controlled by proFPGA Builder software



### Device Message Box Interface

- High speed, low latency data exchange system
- Enables various use modes and functionalities like remote system configuration and monitoring, debug, application level programming and co-simulation
- Up to 3.5 Gbps data transfer rate
- Runs over USB, Ethernet or PCIe

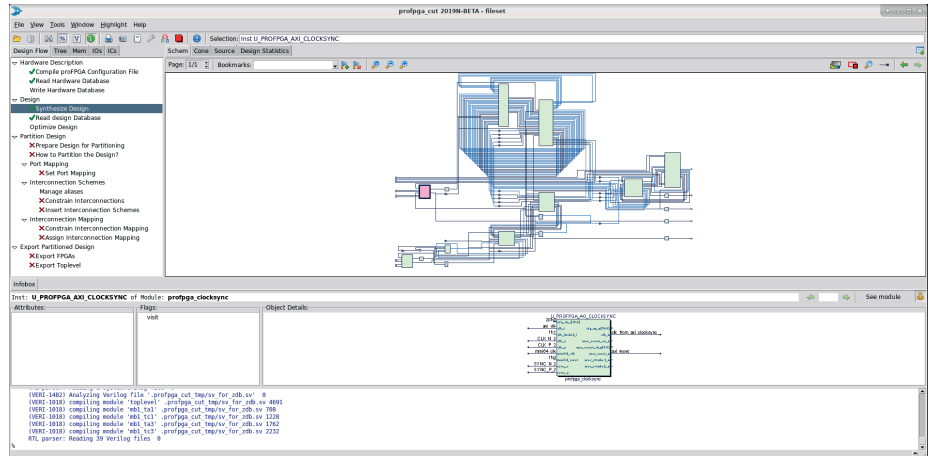


### Advanced Clock Management

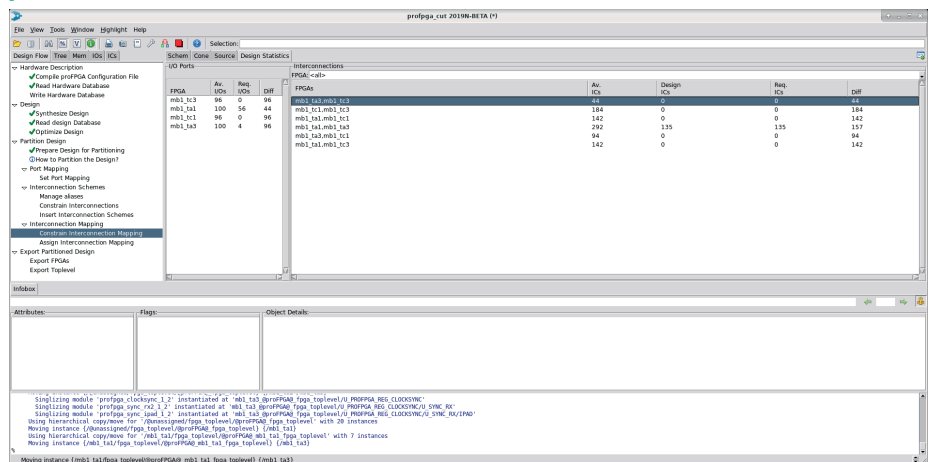
- 8 fixed clocks
- Run-time configurable local clocks
- Each clock with sync signals

## proFPGA CUT Structure

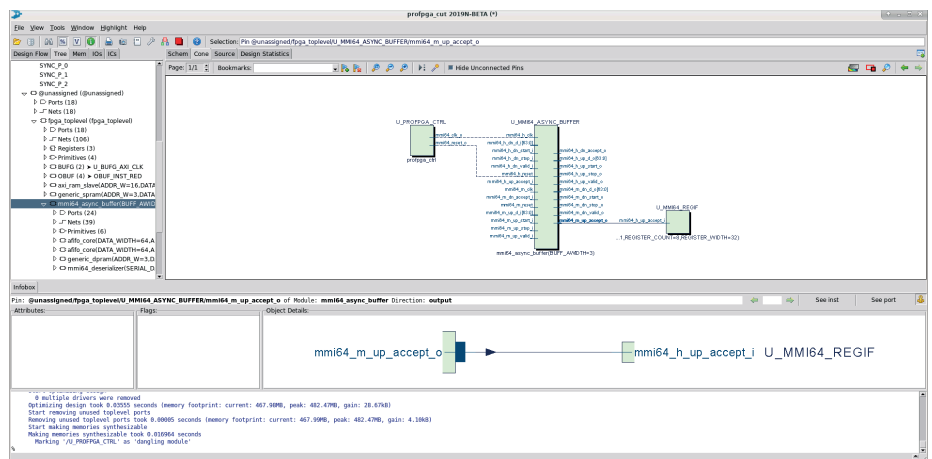
### proFPGA CUT - Schematic View



### proFPGA CUT - Resources Window



### proFPGA CUT - Cone View



## proFPGA CUT Software Requirements

Operating System	- Linux based on x86_64 (AMD64, EM64T) CPU architecture - RHEL - CentOS 5/6/7 (glibc 2.5+)
proFPGA Software	- Version 2019A or later
Order Code	- PROF-SW-CUT -P (Perpetual License w/o Maintenance) - PROF-SW-CUT-TB12 (Time Based License (12 months))