

### Overview

Why not enjoy the benefits of Dynamith Systems' new iPROVE in verifying FPGA-based design? iPROVE offers easy C-based test stimuli generation on PCI and FPGA execution along with C/HDL co-simulation. iPROVE enables FPGA users to verify their designs in a more efficient and versatile fashion than conventional verification schemes provided by the FPGA vendors.

The main features of iPROVE include C/C++, HDL interfaces through API, PLI, and FLI for testing and HW/SW co-simulation purposes. An extremely versatile Built-in Logic Analyzer (BILA) enables designers to monitor various signals. Also, a Data Pumping Port (DPP) enables designers to send and receive data through external connections.

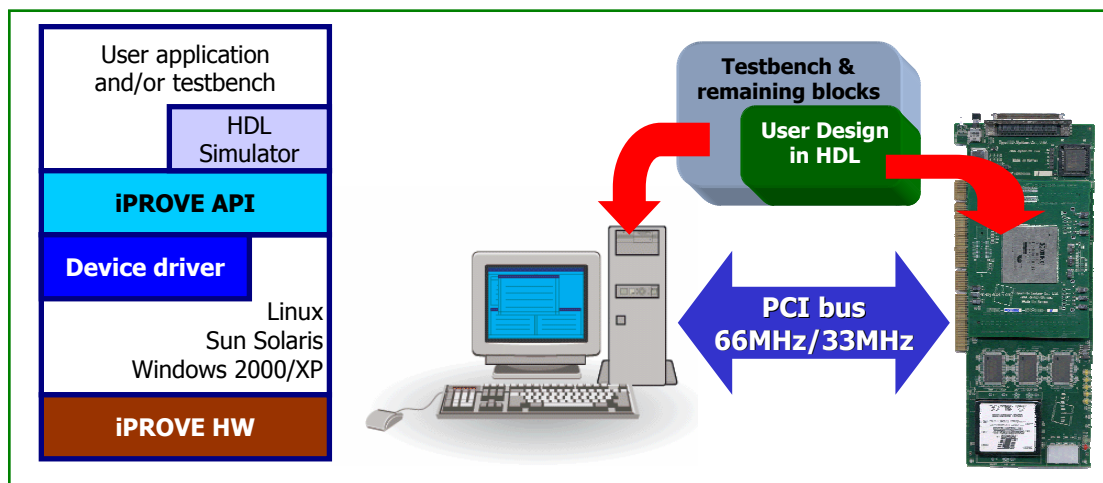
### iPROVE Features

#### Hardware

- PCI controller block for 66MHz/33MHz, 64bit/32bit with DMA capability
- BILA for hardware debugging
- DPP as an external interfacing port
- Xilinx VirtexII/Virtex 4 support
- Reconfiguration through PCI

#### Software

- Windows device driver
- Various APIs for C/C++ and Verilog/VHDL co-simulation or testing
- FPGA netlist builder for Xilinx/Altera
- Supporting cycle-level and transaction-based verification modes



**HDL Simulation Acceleration**

**IP Verification**

**FPGA Prototyping**

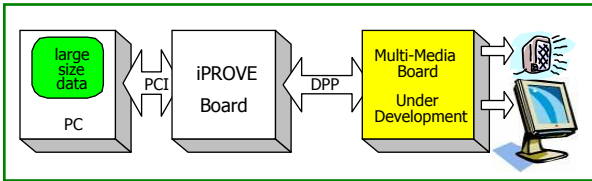
**HW/SW Co-Simulation**

### Major Application Area

- **Chip design:** Blocks/modules to be tested can be easily verified with remaining blocks in various formats, e.g., C/HDL/EDIF and other already verified IP blocks can be simulated.
- **IP development:** Hardware prototyping can be replaced by iPROVE for highly reliable IP.
- **Device driver development:** Hardware prototype is available prior to getting a real chip.
- **PCI card development:** Pilot hardware prototype board can be easily developed on the PCI I/F.
- **HW/SW co-verification :** Software models on the PC can be co-simulated with hardware prototype in the same platform using iPROVE.

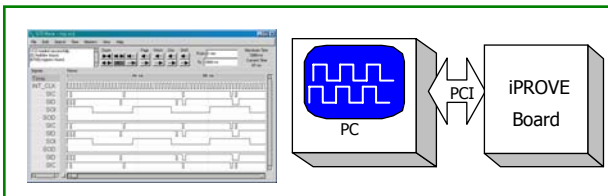
## Other Features

### Data Pumping Port (DPP)



External design can be connected to the DUT in the FPGA of iPROVE. For example, DPP is connected with the multimedia board under development that requires high bandwidth and large amount of multimedia stream data. As a result, the multimedia application can be verified at high speed using DPP of the iPROVE board as buffers.

### Built-In Logic Analyzer (BILA)



iPROVE supports Built-In Logic Analyzer (BILA) to debug the design mapped in the iPROVE board without external logic analyzer. BILA helps designers to save valuable time and effort in debugging their design. The resulting waveform can be viewed with any waveform viewer that supports VCD (Value Changed Dump) data format. The designer can monitor not only external pin signals, but also internal nodes using BILA in iPROVE.

## Overall Specification

Host PC	
OS	Windows 2000/XP; Solaris; Linux
Host interfacing	
PCI bus	66MHz/ 64bit, 33MHz/32bit
FPGA supporting	
FPGA	Xilinx Virtex II / Virtex 4
capacity	~ 20M gates per board
BILA (Built-In Logic Analyzer)	
Pin Count	Up to 384 pins
DPP (Data Pumping Port)	
Data width	54 pins
3rd party tools supported	
C/C++ compiler	Visual C++; Borland C; GNU GCC
P&R tools	Xilinx ISE
Waveform viewer	VCD file readable waveform viewer such as UT, SignalScan and GTKWave
HDL simulator	Most HDL simulators, such as ModelSim, NC-Sim and VCS.
HDL synthesizer	Most HDL synthesizers <ul style="list-style-type: none"> <li>• Synopsys : Design Compiler with FPGA Compiler / FPGA Compiler II</li> <li>• Synplicity : Synplify, Synplify Pro</li> <li>• Mentor Graphics : LeonardoSpectrum</li> </ul>

- **H.Q.:** Dynalith Systems Co., Ltd.

14-2, Yangjae-dong, Taejin Bldg. 2nd Fl.,  
Seocho-gu, Seoul 137-888, KOREA (R.O.K.)  
Tel: +82-2-556-0020  
Fax: +82-2-556-2252

- **R&D Center:**

373-1 Guseong-Dong, Yuseong-Gu  
CHiPS B/D 3rd Fl., KAIST,  
Daejeon 305-701, Korea (ROK)  
Tel: +82-42-862-6411  
Fax: +82-42-862-6410

- **USA Office:** Dynalith Systems, Inc.

10130 Firwood Dr., Cupertino,  
CA 95054, USA  
Tel: +1-408-517-8917  
Fax: +1-408-517-8917

Copyright © 2001-2006 by Dynalith Systems Co., Ltd. All rights reserved.

Dynalith is registered trademark of Dynalith Systems Co., Ltd. The Dynalith logo, iPROVE, the iPROVE logo, BILA and DPP are trademarks of Dynalith Systems Co., Ltd.

All other brand or product names may be trademarks or registered trademarks of their respective holders.

**Web:** [www.dynalith.com](http://www.dynalith.com)

**E-mail:** [info@dynalith.com](mailto:info@dynalith.com)