

PARTNERING FOR SUCCESS

XILINX AND PHOTONIC BRIDGES

Xilinx embedded processing solution helps Photonic Bridges develop a higher-performance, lower-cost RPR solution

THE CHALLENGE

Design a high-performance, reliable, lower-cost RPR solution for the MetroWave™ product family.

THE SOLUTION

Leverage the Xilinx Virtex-II Pro™ embedded PowerPC™ processor, to offload the RPR algorithm from a stand-alone processor.

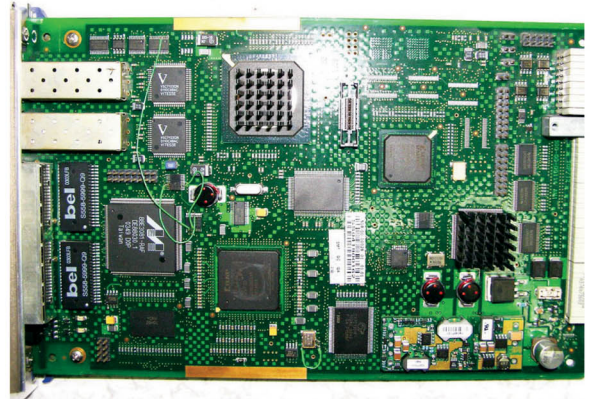
THE RESULTS

- Photonic Bridges uses the Virtex-II Pro platform for programmable systems to deliver MetroWave MSTPs on time
- The product is fully compliant with the newly approved RPR standard
- The high level of system integration greatly simplifies PCB design

Building state-of-the-art optical networking equipment with emerging Resilient Packet Ring (RPR) features requires high performance processing power with fast input and output response time. The Xilinx Virtex-II Pro FPGA with embedded PowerPC processors and Multi-Gigabit Transceivers (MGT) enabled Photonic Bridges Inc. to meet the challenging specifications and deliver RPR technology on time, and on budget

Known as one of “the 10 Hottest Technologies for 2004,”* RPR (Resilient Packet Ring) is a demanding new feature in state-of-the-art optical networking equipment. Telecom equipment vendors want to ship RPR-ready equipments as soon as possible.

To build new RPR features into their MetroWave Multi-Service Transport Platform (MSTP) products, Photonic Bridges needed to address challenges in RPR specifications, such as fairness algorithm, spatial reuse, and sub-50ms fail-over restoration time. MetroWave MSTPs are leading-edge products that enable telephone companies to use their highly reliable voice-oriented networks to economically transport and manage a variety of high-growth data services.



SDH RPR processing card

Designing RPR through traditional methods requires designers to separate SW implementation of complex algorithms in stand-alone processors, and place the fast-response portion in hardware logic. However, this methodology is risky and often costly. The nature of RPR requires considerably faster communication between hardware and software, which increases the communication challenges among software, firmware, and hardware designers. At the same time, high-performance processors for algorithm computing add significant cost to the system.

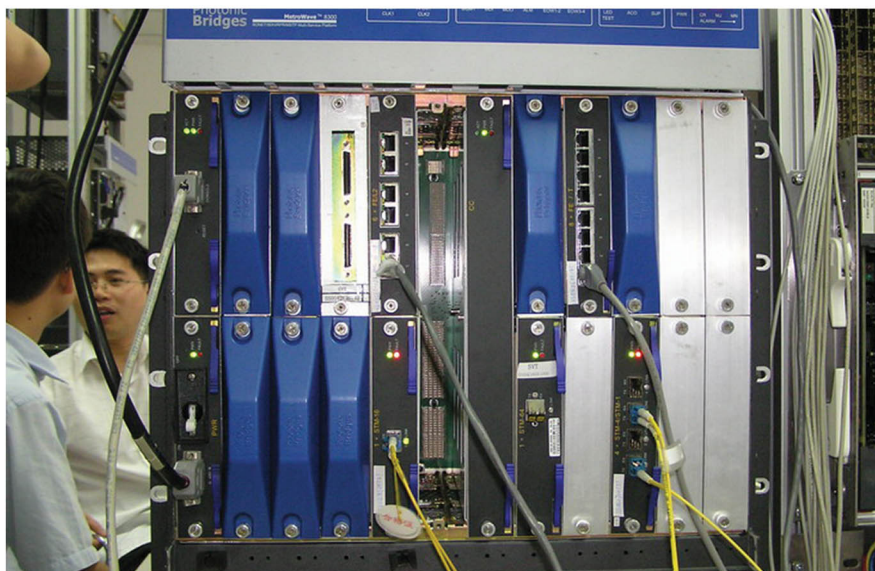
“The Xilinx platform for programmable systems enabled Photonic Bridges to design the demanding technical features of RPR into our MetroWave MSTP products in record time. The Virtex-II Pro FPGA was able to lower our total system cost as well.”

Lucas Hsu
VP of Research and Development
Photonic Bridges



www.xilinx.com

XILINX
The Programmable Logic Company™



APPLICATION AREAS

Design complex Resilient Packet Ring (RPR) algorithm and high-speed SDH backplane interface in a single Virtex-II Pro platform for programmable systems.

PRODUCT USED

- PowerPC in a Virtex-II Pro FPGA
- MGT transceivers in a Virtex-II Pro FPGA
- EDK

To lower design risk and cost, Photonic Bridge turned to Xilinx Virtex-II Pro FPGAs with embedded PowerPC processing and MGT technologies. In their design, Photonic Bridge off-loaded the RPR algorithm from a stand-alone processor into the Xilinx Virtex-II Pro's PowerPC. This not only satisfied their algorithm processing needs, but it also significantly shortened the communication time between hardware and software. Plus, system engineers didn't have to worry about potential performance degrade, which happens in the traditional design method. As a result, the expensive high-performance external processor was replaced by the Xilinx Virtex-II Pro FPGA.

Additionally, in the same FPGA, Photonic Bridges utilizes four multi-gigabit transceivers for SDH backplane interfaces. By increasing the level of system integration, Photonic Bridges reduced system complexity and increased system stability.

About Photonic Bridges

Photonic Bridges, founded in California's Silicon Valley in 2000, designs and produces advanced optical telecommunication equipment focused on the Metro market segment, the key growth area in the telecommunications/data market. By combining western-style technology, innovation, and management philosophy with Chinese service-orientation and low-cost manufacturing, Photonic Bridges is developing as a world-class telecommunications equipment provider. Photonic Bridges' headquarters, along with R&D, manufacturing and logistic support, are located in Shanghai. Sales support operations are in Beijing, Shanghai, Shenyang, and Guangzhou, with additional offices to support its growing business planned in 2004. For more information about Photonic Bridges, please visit www.photonicbridges.com.

* Telecommunications® Magazine at SUPERCOMM 2004

Corporate Headquarters

Xilinx, Inc.
2100 Logic Drive
San Jose, CA 95124
Tel: (408) 559-7778
Fax: (408) 559-7114
Web: www.xilinx.com

European Headquarters

Xilinx, Ltd.
Citywest Business Campus
Saggart,
Co. Dublin
Ireland
Tel: +353-1-464-0311
Fax: +353-1-464-0324
Web: www.xilinx.com

Japan

Xilinx, K.K.
Shinjuku Square Tower 18F
6-22-1 Nishi-Shinjuku
Shinjuku-ku, Tokyo
163-1118, Japan
Tel: 81-3-5321-7711
Fax: 81-3-5321-7765
Web: www.xilinx.co.jp

Asia Pacific Headquarters

Asia Pacific Pte. Ltd.
No.3 Changi Business Park Vista, #04-01
Singapore 486051
RCB: 200312557M
Tel: 65-6544-8999
Fax: 65-6789-8886
Web: www.xilinx.com

FORTUNE 2004
100 BEST COMPANIES TO WORK FOR

XILINX
The Programmable Logic Company™