



Pantherun Delivers Chip-Based TCP/IP Security Using Accelerated AI in Silicon

Grace L2-Series Managed Gigabit Ethernet Switches, powered by AMD-Xilinx, encrypt full packets with no drop in network speed

AT A GLANCE:

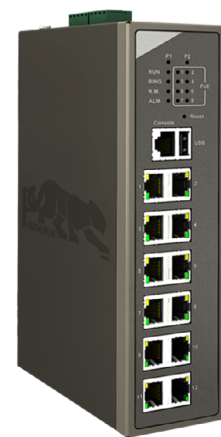
Pantherun is a fabless semiconductor cybersecurity company that creates encryption technology for the industrial communications and controls market, targeting factories, railways, transportation and smart-city applications.

Industry: Cybersecurity

Headquarters: Bangalore, India

Establishment: 2019

www.pantherun.com



Pantherun Grace L2-Series Managed Gigabit Ethernet Switch

OVERVIEW:

Electronic devices are everywhere, and many are connected through open, unencrypted TCP/IP channels. In this environment, security is a big concern. According to Pantherun, the world is hacked every 39 seconds, and every second, 75 records are stolen. The cost of cybercrime last year, alone, topped US\$600 billion, globally.

To address this challenge, Pantherun has built unique, chip-based technology for securing TCP/IP communications in industrial communications and control networks using accelerated artificial intelligence running in silicon. The solution fully encrypts TCP/IP packets, including the header, with no change in packet format or drop in communication speed, and it's built on adaptive computing technology from AMD-Xilinx, which is light in weight compared to a standard TLS-based data application/data transfer mechanism.

For railroads, Pantherun delivers EN 50155-standard-based wired and wireless devices and computing equipment to serve passengers, wireless LAN and 4G/LTE solutions for computer-based train control, and trackside communications solutions that ensure smooth railroad operations.

Pantherun also provides intelligent transportation solutions that collect and process real-time information about traffic conditions, help buses communicate accurate time-arrival information, and assist with automated parking systems.

And, in smart cities, Pantherun solutions include IoT and communications gateways for intelligent electricity systems, enable smart metering for gas, electric, and water systems, and facilitate smart parking solutions within cities.

CHALLENGE:

Pantherun was looking for a highly integrated computing platform upon which it could build its next-generation Grace L2-Series Managed Gigabit Ethernet Switch. It wanted something with plenty of processing power that could handle vast amounts of data from multiple sources in real time, and also had the flexibility to be adaptable in the field as needs changed. The solution, itself, needed to be secure and contribute to reducing total cost-of-ownership (TCO).

SOLUTION:

The answer was FPGA-based adaptive computing technology from AMD-Xilinx. Using the Zynq-7000 series SoC, Pantherun was able to integrate multiple networking and compute IPs into a single SoC and add additional security features.

The Zynq-7000 SoC family integrates the software programmability of an ARM®-based processor with the hardware programmability of an FPGA, enabling key analytics and hardware acceleration while integrating CPU, DSP, ASSP, and mixed-signal functionality on a single device.

“By using an FPGA, we don’t need to redesign the hardware to fit features on demand,” said Srinivas Shekar, CEO of Pantherun.

Pantherun was also able to take advantage of whole application acceleration, an adaptive computing design methodology that allows developers to optimize and accelerate computing across the entire application, by combining ARM® cores and programmable logic offered by the Zynq-7000 SoC.

RESULT:

Powered by AMD-Xilinx, Pantherun’s encryption solution delivers the added security and flexibility that the company was looking for, and it is priced at 1/10th the cost of other encryption methods.

“AMD-Xilinx enabled us to build a product platform that allows us to continually upgrade our product offering on the fly in the field, without complex and time-consuming hardware changes,” Shekar said.

“This elevates our offering above anything available today in the market and enables Pantherun’s customers to empower their customers with a unique, hardware-as-a-service solution offering.”

ADDITIONAL RESOURCES:

Learn More about Xilinx’s [Zynq SoCs](#)

Learn More About [Pantherun](#)

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