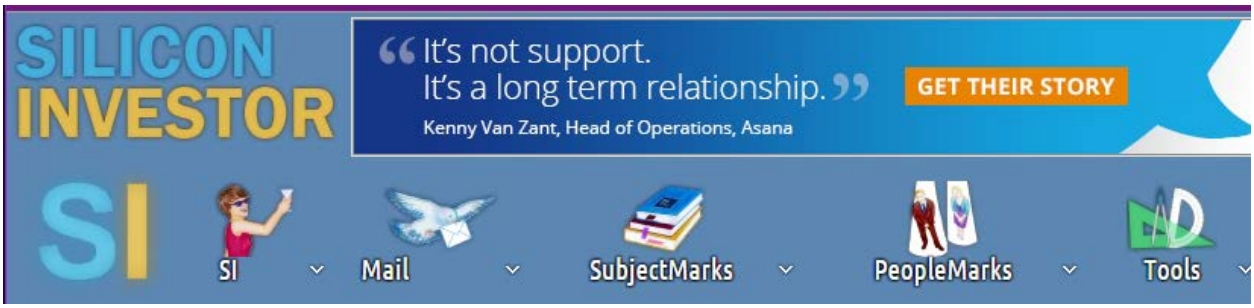


EZchip is a fabless semiconductor company that provides Ethernet network processors for networking equipment. EZchip provides solutions that scale from a few to hundreds of Gigabits-per-second. EZchip's network processors provide great flexibility and high performance coupled with superior integration and power efficiency for a wide range of applications in carrier, cloud and data center network equipment.

EZchip Technologies was formed as a spin-off in 1999 and is fully-owned by EZchip Semiconductor (NASDAQ: EZCH; formerly LanOptics Ltd.).

**Background** The demand for intelligent, increasingly complex high-speed packet processing has led to the advent of network processors (NPU). Programmable network processors provide flexibility and the high-performance required to process packets at increasing speeds. Consequently, network processors are becoming the silicon core of next generation networking equipment.

Carrier Ethernet networks are fast growing worldwide as the vehicle to deliver triple-play services of voice, data and video. The switches and routers that build the carrier Ethernet networks have evolving market requirements to provide new services, better QoS (quality of service) and support new protocols. This makes them a perfect fit for being built with programmable NPUs, and the NPU is becoming the key component on modern line cards of carrier Ethernet switches and routers. EZchip's NP family of layer 2-3 NPUs is used today in carrier Ethernet switches and routers by leading equipment vendors on line cards and in stand-alone systems.

As carrier networks evolve, more advanced features at higher speeds are required and the demand for NPUs with greater flexibility that operate at all 7 layers and provide greater velocity for adding new features is growing. Data-center and cloud networks are also under constant pressure to operate faster and do more, and as a result need smarter and greater processing capabilities, or smarter and greater NPUs. In response to these demands, EZchip is developing the NPS, a new family of network processors for smart networks. The NPS is a new breed of C-programmable NPUs for the next wave of high-performance smart carrier and data-center networks.

**Technology** For its NP family of network processors, EZchip has developed network processors that integrate multiple TOPs (Task Optimized Processors) to provide the performance required for next-generation networking products. EZchip's breakthrough

Task Optimized Processing technology (TOPcore®) employs fast, efficient and flexible processors designed and optimized for layer 2-3 packet processing. This technology enables highly integrated chips that provide very high throughput rates.

For the new NPS family of network processors, EZchip is developing innovative CTOPs (C-programmable Task Optimized Processors) that enable processing at all 7-layers and are C programmable. These processing engines build on EZchip's extensive NPU experience, are designed specifically for data-plane processing and are 10-fold smaller and faster compared to the general C-programmable RISC processors. The optimized design allows the integration of many processors, each with many threads, to achieve a vast number of virtual engines per chip. This is essential for high-speed data-plane processing where packets are arriving at an extremely high rate and every packet is processed.

In addition, EZchip's network processors integrate extensive traffic management capabilities to provide Quality of Service (QoS) for users and applications. Effective traffic management is crucial for making Ethernet a carrier-grade infrastructure, suitable for enforcing Service Level Agreements (SLA) and delivering triple-play services.

>See Technologies for additional details.

## EZchip Products

### High-speed Network Processors for Carrier Ethernet Switches and Routers

- NP-5, currently in design, is a 200-Gigabit network processor with integrated traffic management for building ultra-dense 10GE, 40GE and 100GE port line cards in switches and routers.

- NP-4 is a 100-Gigabit network processor that features integrated hierarchical traffic management, OAM processing offload and enables direct connection from the line card to Ethernet-based switching fabrics.

- NP-3 is a 30-Gigabit network processor with integrated hierarchical traffic management. It furthers the integration of EZchip's earlier NPUs with three 10-Gigabit interfaces, higher throughput, OAM processing offload and enhanced traffic management.

- NP-2 is a 20-Gigabit network processor with integrated traffic management. It offers integrated hierarchical traffic management as well as 1-Gigabit and 10-Gigabit Ethernet MACs. Scaled-down versions for smaller applications are also offered.

### High-speed Network Processors for Carrier and Data Center Equipment

- **NPS**, currently in design, is a new breed of C-programmable 7-layer network processors for the next wave of high-performance smart carrier and data-center equipment. Models with 400-Gigabit and 200-Gigabit throughput will be available initially.

## Access Network Processors

- **NPA-1/2/3** is a family of network processors targeting Ethernet Access applications with several models offering combinations of 100-Megabit, 1-Gigabit and 10-Gigabit Ethernet ports and an aggregate throughput of up to 10-Gigabits. They feature the same programmable processing architecture, integrated traffic management and software compatibility with EZchip's higher-speed network processors.

- **NPA-0** is a network processor with an integrated control CPU targeting Ethernet Access applications with an aggregate throughput of up to 5-Gigabits. It features the same programmable processing architecture, integrated traffic management and software compatibility with EZchip's higher-speed network processors.

## Toolsets & Systems

- **EZdesign toolset** allows designers to create, verify and implement applications to meet specific functionality and performance targets. EZdesign includes a simulator, compiler, extensive debugging facilities and traffic and database generators.

- **EZdriver SDK** facilitates the development of the control path software for systems based on EZchip's NPUs. It enables applications that run on the host CPU to communicate with the EZchip network processor.

- **Applications Library** featuring production code and tested reference code to help its customers simplify their development efforts and expedite the time-to-market of their system products.

- **NP Systems** are available with a choice of 1GE and 10GEports to expedite development of network processor based systems. Hardware platforms for software applications vendors based on an EZchip network processor. The systems are provided in stand-alone, self-contained boxes with multiple 1-Gigabit ports and/or 10-Gigabit ports and can be tailored by software vendors to a wide variety of networking applications.

>See Products & Solutions for additional details.

ApplicationsThe flexibility and integration of EZchip's NPUs allow system vendors to deliver cost effective solutions that can easily adapt to changing market requirements. Typical systems that use EZchip's NPUs on line cards in modular chassis and pizza boxes:

- Edge and Core Routers
- Transport Switches
- Ethernet Aggregation Nodes
- SDN/OpenFlow and virtualization of network elements
- Variety of Ethernet access applications:
- Optical access (GPON/EPON OLT/ONT) and copper access (DSLAM)
- Ethernet Access Devices and Demarcation
- Aggregation & Backhaul of 3G/4G and WiMax Base Stations
- Firewall, VPN, content Inspection, intrusion detection/prevention
- Server Load Balancing Switches
- Network Analytics and Monitoring

>See Products & Solutions for additional details.

Clear Product DifferentiationEZchip's network processors scale from a few to hundreds of Gigabits-per-second and offer greater processing flexibility, integration and overall lower system power and cost to enable networking equipment vendors' support of new protocols and applications at greater speeds for the dynamic and evolving environment of next generation carrier and data-center networks.

- **Product Offering** – EZchip offers the NP series of NPUs, for layer 2-3 processing, with great integration and with software portability among the various NPs. With the advent of the NPS customers will have the option of two winning alternatives, one which is for layer 2-3 line cards and systems with our NP line, and the other for advanced layer 2-7 smart line cards and systems with the NPS.

- **Flexible Packet Processing** – A flexible architecture ensures that changing market demands for new applications and features can be met simply and quickly through software upgrades. A wide range of applications and advanced services can be implemented through programming the NPUs.

- **Integrated Traffic Management** – A hierarchical traffic management, with support for a large number of users and services, congestion management and congestion avoidance features are available for switch/router vendors to provide guaranteed SLA and QoS on a per user/flow/application basis.

- **Lower System Cost** – Integration of all the major line-card functions on a single chip (processing, classifying, traffic management and Ethernet ports) offers significant savings in the system's overall board space, power dissipation and cost when compared to alternative solutions. In addition, low cost DRAM technology for storing lookup tables offers extensive headroom for growth when new applications require new and larger lookup tables.

## Key Market Forces

- Continuous deployment and bandwidth growth of carrier Ethernet and data-center networks.
- Necessity for flexible packet processing for adapting to evolving new protocols and services, at higher data rates, and lower power and cost.

- Acceptance of merchant silicon as a replacement for networking vendor's ASIC designs.>

Read our Quality Policy.