

Enhanced Computing Performance for Diverse and Demanding Edge Applications

Silicom Ltd. Connectivity Solutions



About Silicom Ltd. Connectivity Solutions

Silicom Ltd. Connectivity Solutions provides high density networking and acceleration solutions to enhance cloud and data center efficiency. Trusted by major cloud providers, service providers, telcos, and OEMs, Silicom is a leading partner for boosting server and network performance, supporting advanced technologies like NFV, SD-WAN, and Cyber Security.

Powerful Design to Tackle More Demanding Workloads

The demand for robust computing and connectivity capabilities at the edge has never been higher as industries are grappling with the limitations of existing platforms, struggling to adapt to diverse and evolving applications. Scalable solutions are now critical, supporting a range of processors, memory, and storage options, all while ensuring optimal networking performance. Deploying edge applications at scale presents its own set of challenges, as maintaining the necessary infrastructure can be complex. With the proliferation of edge applications such as uCPE (Universal Customer Premises Equipment), SD-WAN (Software-Defined Wide Area Networking), SASE (Secure Access Service Edge), and other critical services, there is a pressing need for platforms that are not only powerful, but also cost-effective and adaptable to increasingly demanding requirements.

The Ibiza-1U series by Silicom is a compact, yet powerful uCPE solution designed to meet the evolving demands of workloads at the edge. It utilizes Intel Atom® x7000 processors for Edge Applications that have 2, 4, and 8 core options and 4800 MT/s LPDDR5 memory, this platform helps businesses effortlessly handle high-bandwidth applications while future-proofing their network infrastructure.

Cost-Effective, Compact, and Versatile Platform to Support High Volume Edge Applications

The Ibiza-1U series is a cost-effective solution for high-volume applications with strategic component selection, printed circuit board (PCB) material, and compact size design. Encased in a 1U metal enclosure with half-rack width, it fits two devices in a single 1U space, reducing physical footprint and minimizing additional rack units. This design streamlines installation, enables scalability, and reduces real estate, operational, and future expansion costs.

Silicom's uCPE integrates essential motherboard functions, including four M.2 slots, a low-profile PCIe slot, Power over Ethernet (PoE++) expansion, and a Light's-Out-Management (LOM) board, consolidating functions and reducing complexity and costs for end-users. PoE++ support on each 2.5 GbE port enhances versatility, enabling power delivery to various devices, such as remote cameras and access points, boosting operational efficiency.

Key Features

- **Gain seamless wireless connectivity** with support for up to two LTE/5G cellular cards, each with dual SIM, enabling active-active connections, along with high-power WIFI AP or client cards.
- **Optimize wired connectivity** with 4x 2.5GbE RJ45 ports and 1x 1GbE (SFP or RJ45), expandable via low-profile PCIe slot for additional Ethernet ports (1G, 2.5G, 10G, or 25G) and potential bypass Ethernet cards.
- **Achieve performance enhancements** harnessing the power of Intel Atom® x7000 processor options and OpenVINO™ toolkit to accommodate AI-supported edge applications.
- **Optimize boot processes and enable remote updates seamlessly** with the royalty-free, fast, and secure Slim Bootloader, offering an easier path for remote updates compared to traditional BIOS vendors.
- **Enhance management capabilities with lights-out-management (LOM) support**, enabling in-band management through the 1GbE interface, accessible over its own LTE connection.

Intel Ingredients

Intel Atom® x7000 processors for Edge Applications

IoT-centric options for extended temperature operation, expanded I/O, real-time performance, and functional safety provide the low-power compute and graphics performance needed for small form factor designs and applications.

OpenVINO™ Toolkit

Optimized AI performance and deep learning for applications like Machine Vision and AI Process Control.

Intel® Advanced Vector Extensions 2.0 (Intel® AVX2)

Supports 256-bit registers, FMA instructions and gather operations doubling the data width of predecessor technologies, helping reduce the number of CPU cycles required to process input data and improving performance of cryptographic operations, image processing & high-performance computing, without the use of additional hardware accelerators. Intel AVX2 also provides bit manipulation instructions that benefit encryption.

Intel® Ethernet Network Adapter I210

Compatible with Media Access Control (MAC) and Physical Layer (PHY) functionalities. Delivers lower cost with NCSI support for management and flexible options for copper and fiber connectivity.

Intel® Ethernet Network Adapter I226

Compatible with Media Access Control (MAC) and Physical Layer (PHY) functionalities cost-optimized for 2.5GbE support.

Learn More

- [Intel Foundational Developer Kits](#)
- [Silicom Ltd. | Ibiza 1U Universal CPE Product Page](#)

Intel Foundational Developer Kits allow you to get started on your targeted application development with a superior out-of-the-box experience. Deploy your application at scale by building customized systems via Intel ecosystem partners.

Performance varies by use, configuration, and other factors. Learn more on the Performance Index site.

No product or component can be absolutely secure.

Your costs and results may vary.

Intel technologies may require enabled hardware, software, or service activation.

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