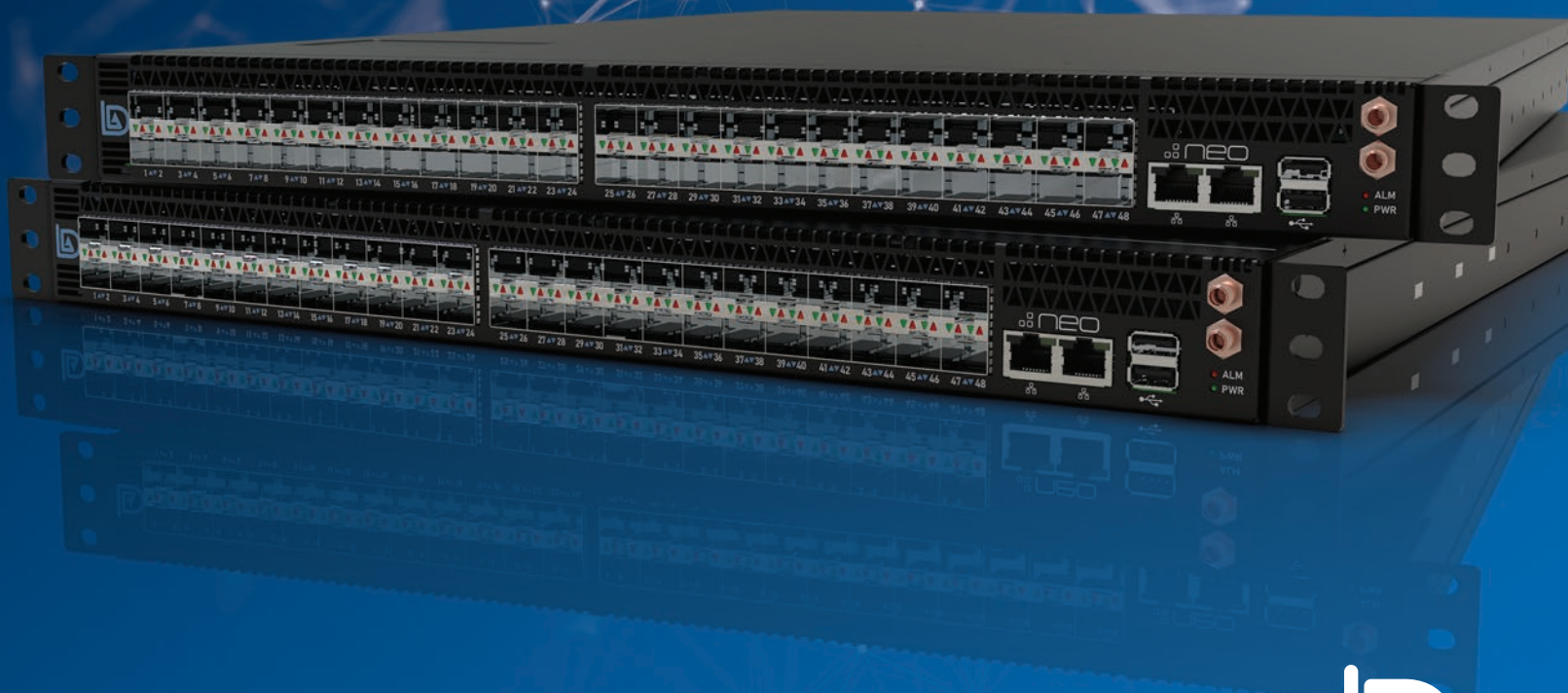
neo

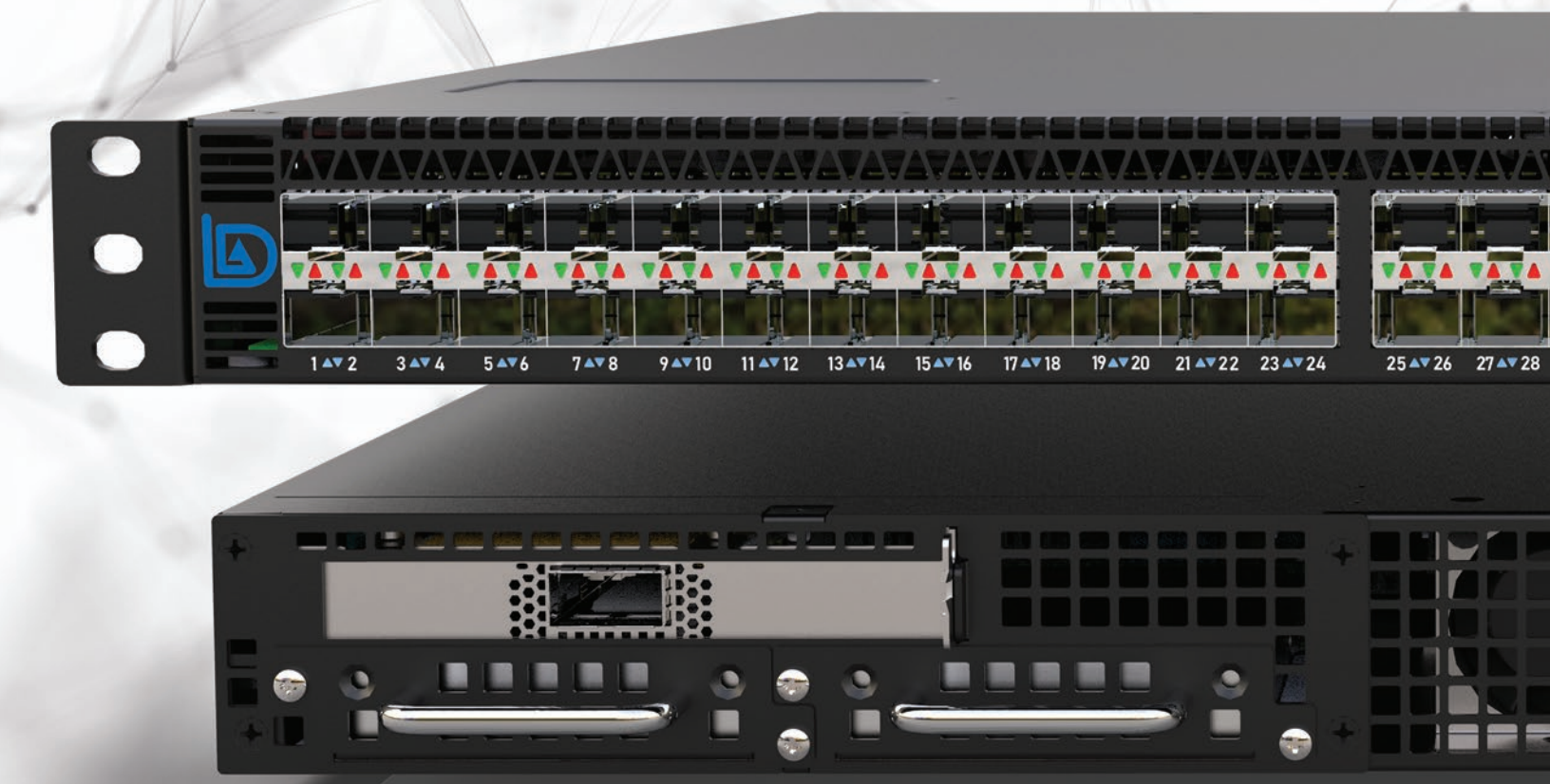
RECONFIGURABLE NETWORKING PLATFORM



LDA TECHNOLOGIES™

ENABLING FPGA NETWORKING SOLUTIONS

- 48x 25 GbE ports with 2 ns Layer 1 fabric
- XEON Gold 2nd Gen, 128 GB DDR4, 4 NVME SSD
- Extra PCIe x8 slot for an add-on card
- Optional equalized latency across all 48 ports: < 150 ps variance
- Support for any PCIe form factor FPGA board:
  Full height / Full length / Double slot



LAYER 1

NEO offers ultra-low latency (2 ns) Layer 1 replication between front panel ports, simultaneously delivering data to the FPGA board. Layer 1 fabric is provided as an optional add-on card. User can choose not to populate it if replication is considered to be a security threat in their environment.

HW CONFIGURATION OPTIONS

The device runs standard Mini ITX motherboard allowing unlimited configuration options. It supports a variety of server-grade processors up to Intel XEON 2nd Gen 205 W TDP CPU and is upgradable at any time. The device also provides up to 128GB DDR4 ECC memory, and 4 NVME PCIe X4 drives.

NEO is the next device in LDA Technologies' family of FPGA board enclosures. Powered by proprietary Direct SerDes Access (DSDA™) technology, it transforms any FPGA board – no matter what type or vendor – into a high-end network device.

DSDA is a technology for repurposing standard interfaces into transport for other communication protocols. One of its most common applications is the usage of PCI Express connector as a set of electrical level links with FPGA to push high-speed data in any convenient non-PCIe protocol (Ethernet, Interlaken, Aurora, etc.)

DSDA™
Direct SerDes Access

DSDA is the cornerstone of LDA Technologies' devices that allows exposing any I/O that FPGA and board have to offer. One of its most significant advantages is that it enables connecting to FPGA directly without any "CPU-in-the-middle" saving both operation time and resources.

NEO platform supports the latest most powerful FPGA boards from Bittware, Xilinx, Intel, Achronix, Alpha Data, and many others exposing up to 48 ports on the front panel. All ports are multi-rate and support up to 28 Gbps.

EXPANSION SLOT

Extra PCIe slot is available for a standard network adapter, storage accelerator, or an extra FPGA board. Having a dedicated smart NIC along with the FPGA allows to significantly reduce FPGA resources used for network acceleration and processing. It results in freeing up the FPGA for more focused complex computational tasks such as network security, real-time DDoS attack detection, database acceleration, etc.

LATENCY EQUALIZATION

One of the unique features of the platform is the option of intra-device per-port latency equalization. In situations when the device serves multiple users (multi-tenant environments), giving each user the same access to the switching fabric and FPGA is very important for fair and controlled operation. NEO guaranties physical latency equalization with <150 ps variance between all 48 front panel ports.

SPECIFICATIONS

Form Factor	**1U Rackmountable**
Dimensions (W x H x D)	**17.375" × 1.75" × 24.25"** **442 mm × 43.56 mm × 616.5 mm**
Weight	**21 lbs** **9.5 kg**
Motherboard	**Mini ITX Server-grade**
CPU	**up to XEON Gold 2nd Gen**
Memory	**up to 128 GB DDR4**
SSD	**up to 4x U.2 NVME slots**
Power	**1.1 KW**
FPGA	**Full height / Full length / Double Slot**
Ports	**48x up to 25 GbE**

LDA Technologies is a leading provider of high-end FPGA-oriented solutions optimized for ultra-low latency operation; targeted for data processing acceleration, high-performance computing, low-latency networking, and high-frequency trading.

LDA Technologies has been manufacturing products and providing consultancy services since 2010 and is headquartered in Mississauga, Canada.

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