

AMD Alveo[™] X3 Series

Accelerating Electronic Trading Strategies

OVERVIEW

Today's leading trading firms, market makers, hedge funds, and exchanges demand low latency trade execution and risk management for competitive advantage. For traders seeking a plug-and-play upgrade, or partners seeking ultimate flexibility to build their own fintech solutions, the new Alveo X3 series of low latency network adapters and accelerator cards offers both turnkey deployment or custom implementation paths.

Providing a convergence of low latency network technology and adaptive compute, the Alveo X3 series accelerates a range of diverse trading strategies and financial applications.

Available in two variants, the Alveo X3522 low latency network adapter provides a low latency NIC and the Alveo X3522PV adaptable accelerator card provides a fully programmable option for fintech customers to implement a customized, low latency solution.

HIGHLIGHTS

Plug-and-Play Low Latency NIC

- > Low latency networking solution with high port density (up to 4x 10/25GbE)
- > Optimized architecture for reliable operation and trade execution
- > Support for full kernel bypass using field-hardened Onload and TCPDirect
- > ef_vi API for high performance raw Ethernet networking
- > Accelerates diverse trading strategies and increases fill rate

Custom Design and Implementation for Hardware and Software Developers

> Vivado[™] Design Suite for RTL design and hardware customization





TARGET USERS

- > Brokers
- > Exchanges
- Market Data Vendors
- Sell Side Vendors
- > Proprietary Traders

USE CASES

- > Tick-to-Trade
- > Algorithmic Trading
- > A/B Line Arbitration
- > TCP Offload
- Market Data Accelerators
- > Market Data Gateways
- > Pre-Trade Risk Analysis
- Smart Order Routing
- > FIX Gateway

SPECIFICATIONS	
Adapter Hardware	 4x10/25GbE ports PCle® Gen 4 x8 / Gen 3 x8 Half Height Half Length, single PCle slot, low profile bracket default with spare full height bracket 2x DSFP (SFP28/SFP+ compatible) with support for Direct Attach Copper (DAC) cables or optical transceivers Onboard 8GB DDR4 memory 1PPS In/Out SSMB connectors Tamper resistant adapter - digitally signed firmware and secured private keys Passively cooled
Network Acceleration (X3522)	 Onload® - BSD sockets compliant TCP/UDP kernel bypass TCPDirect - TCP/UDP kernel bypass ef_vi low level API for high performance raw Ethernet networking
Adaptable Engine	 > 16nm UltraScale+[™] XCUX35 FPGA > -3 speed grade optimized for low latency > 1030K Look-Up Tables (LUTs) for custom workloads programmability (X3522PV)
OS Support (X3522)	 Red Hat RHEL, Ubuntu Server, and SUSE SLES
Tool Support	 > Vivado[™] Design Suite for RTL design and hardware customization and Card Management Subsystem IP for card management (X3522PV)
Time Synchronization and Hardware Timestamping	 On-board Stratum 3 compliant oscillator IEEE 1588-2008 PTPv2 Hardware receive and transmit timestamping
Manageability and Remote Boot	> UEFI • NC-SI over MCTP SMBus • PLDM over MCTP SMBus • MCTP PCIe VDM
Maximum Power	 X3522 (in 4-port NIC mode): 35W X3522PV: 75W
Physical Dimensions	 L: 16.75 cm (6.6 in) • W: 6.9 cm (2.7 in) End bracket height: - PCI Express standard: 12.0 cm (4.725 in), 7.92 cm (3.12 in) FCC, UL, CE, UKCA • RoHS - complies with EU directive 2011/65/EU
Temperature and Humidity	 Operating Temperature: 0°C to 55°C (32°F to 131°F) Storage Temperature: -40°C to 65°C (-40°F to 149°F) Operating Humidity: 10% to 80% Storage Humidity: 5% to 90%
ORDERING INFORMATION	
A-X3522-P08G-PQ-G	> 4-port, 10/25GbE PCIe low latency network adapter
A-X3522PV-P08-PQ-G	 4-port,10/25GbE adaptable accelerator card

TAKE THE NEXT STEP

Contact your local sales representative or complete the Product Inquiry form at www.amd.com/x3

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