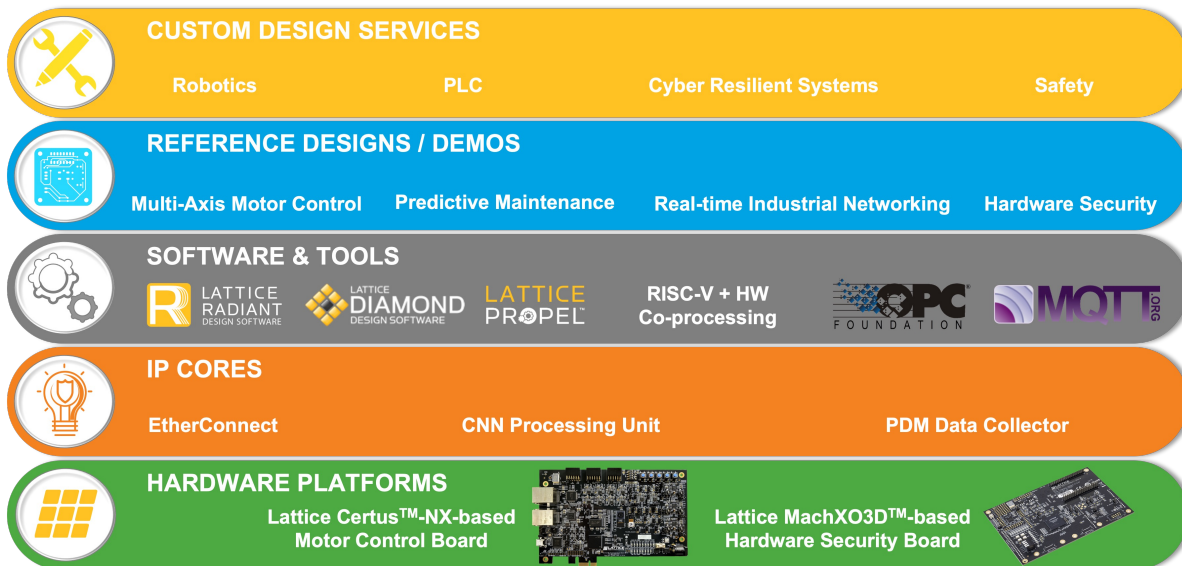


Lattice Automate™ Solution Stack

Accelerating Factory Automation

Lattice Automate™ helps designers accelerate high performance, low power, secure solutions for next generation factory automation applications. The stack includes hardware development boards, software-programmable reference designs, and demos that simplify and accelerate implementation of applications like robotics, scalable multi-channel motor control plus AI-predictive maintenance, real-time industrial networking, MQTT and OPC-UA.



Hardware Platform

The Lattice Automate solution stack runs on the [CertusPro-NX and Certus-NX Versa](#) development board which supports the main processing subsystem, connections to the Host PC, and also the embedded real time Ethernet links. The Motor Control nodes also utilize the Versa board.

IP Cores

- EtherConnect – compact, low power, modular real-time sense and control over embedded Ethernet connections
- CNN Processing Unit – Provides AI accelerator for Predictive Maintenance processing
- PDM Data Collector – Collects data from the Motor Control Nodes for input to the CNN Processing Unit

Software & Tools

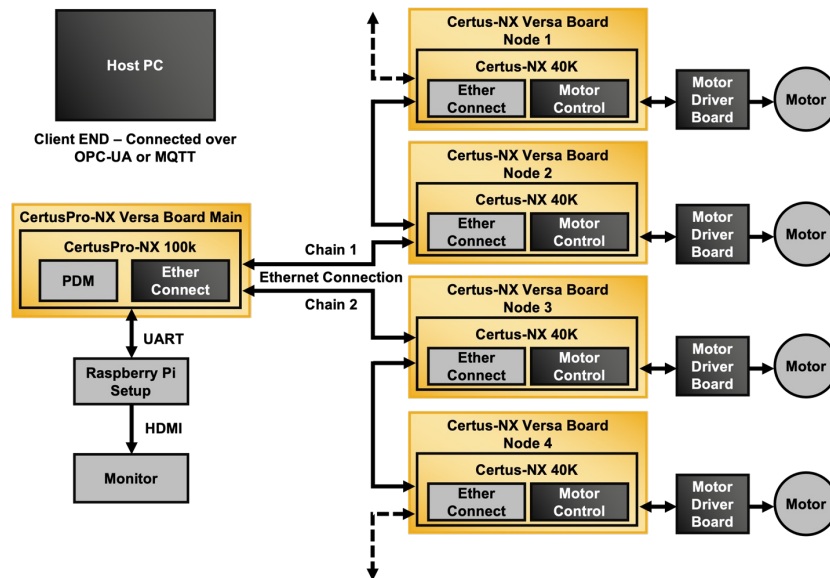
The Lattice Automate solution stack uses Lattice's standard Radiant and Diamond FPGA design tools and Lattice Propel, enabling RISC-V based SW and HW co-processing for ease of use and fast system design.



Reference Designs & Demos

Multi-Channel Motor Control with Predictive Maintenance and Embedded Real Time Networking

- Multi-Channel BLDC Motor Control
- AI enabled support for Predictive Maintenance
- Embedded Real-Time Networking and OPC-UA Server/Client
- GUI for controlling and monitoring the design
- PCIe DMA Design with Windows and Linux driver



Demo Hardware

- [CertusPro-NX Versa](#)
Platform with PCIe (Gen3) 4lanes , SFP+, 10GbE, LPDDR4 Memory, and 100K Logic Cells. Main Controller CertusPro-NX Versa board.
- [Certus-NX Versa](#)
Platform with 5G PCIe, SGMII, DDR3 Memory, and 40K Logic Cells. Nodes use the Certus-NX Versa board.
- [Terns TEP0002-03-Pmod-compatible-motor-driver-board-15A-0-30V](#)
- [Anaheim Automation BLY171S-24-4000](#) BLDC Motor

Hardware Root-of-Trust Reference Design for Cyber Resiliency using MachXO3D

- Demonstrate and test the ability to authenticate firmware of protected devices before boot
- Detect and block illegal SPI and Flash operations
- Automatically replace compromised firmware in the protected subsystem

Custom Design Services

Need help putting together solutions for Factory Automation? The Lattice Automate stack includes an ecosystem of select, global design service partners that can deliver custom solutions for a range of end-applications, including factory, smart home, smart city, and smart cars. Please contact your local Lattice sales representative to request more information.

Applications Support

<https://www.latticesemi.com/support>



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