



The Low Power Programmable Leader

# Virtual Partner Summit

November 2025

# WELCOME PARTNERS!



# Logistics



Participants are in  
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# Agenda

- Welcome Notes, Events & Newsletter
- Lattice Corporate Update
- Silicon, SW, & IP Roadmap Updates
- Focus Applications
  - Edge AI
  - Video/Vision
  - Connectivity
  - Embedded
  - Security/Servers
- Q&A

## Partner Network Team



**Kambiz Khalilian**  
Ecosystem Partnerships



**Harvey Caponpon**  
Partner Network Management

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## Today's Presenters



**Esam Elashmawi**  
Chief Strategy & Marketing Officer



**Joel Coplen**  
Sr. Dir., Product Planning



**Karl Wachswender**  
Sr. Principal System Architect



**Mamta Gupta**  
AVP, Datacenter, Telcom, Security

# 2025 Calendar of Events

Quarter	Show	Show Dates	Location
Q1'25	CES	January 7–10	Las Vegas, NV
	Automotive World	January 22–24	Tokyo, Japan
	FPGA Forum	February 5–6	Royal Garden Hotel (Trondheim)
	MWC	March 3–6	Barcelona, Spain
	Embedded World	March 11–13	Nuremberg, Germany
	SEFUW – Space FPGA Users Workshop	March 25–27	ESTEC, Noordwijk, Netherlands
Q2'25	Intel Client Ecosystem Symposium	April 23–24	Taipei, Taiwan
	New Tech	May 20–21	Tel Aviv, Israel
	Embedded Vision Summit	May 20–22	Santa Clara, CA
	Computex	May 20–23	Taipei, Taiwan
	HMI Car Europe	June 16–17	Berlin, Germany
	FAIM (Intl Conf on Flexible Automation & Intelligent Manufacturing)	June 21–24	New York City, NY
Q3'25	FPGA Conference Europe	July 1–3	Munich, Germany
	APAC Technical Summit	July 17	Tokyo, Japan
	FPGA World	Sept. 9	Stockholm, Sweden
	Electronica India	Sept. 17–19	Bengaluru, India
Q4'25	FPGA Horizons	Oct. 7	Pullman London St. Pancras, London, UK
	AutoSens	Oct. 7–9	Barcelona, Spain
	OCP Summit	Oct. 13–16	San Jose, CA
	AutoTech Science Fair Expo	Oct. 16	Silicon Valley, CA

## Events Highlights



**20 events in 2025 with over 100 Partner Participations (Demos & Presentations)**

# Upcoming Events '25/ '26

Quarter	Show	Show Dates	Location
Q4'25	Auto Tech China	November 20-22, 2025	Guangzhou, China
	SPS Drives	November 25-27, 2025	Nuremberg, Germany
Q1'26	FPGA Forum	February 11-12, 2026	Trondheim, Norway
	Mobile World Congress	March 2-5, 2026	Barcelona, Spain
	Embedded World	March 10-12, 2026	Nuremberg, Germany
Q2'26	Embedded Vision Summit	May 19-21, 2026	Santa Clara, California
	New Tech Expo	May 26-27, 2026	Tel Aviv, Israel
	Computex	June 2-5, 2026	Taipei, Taiwan
	FPGA Conference Europe	June 30 - July 2, 2026	Munich, Germany

*\*Subject to change*

## Partner with Lattice at Industry Events

Explore opportunities to collaborate with us at upcoming [events](#).  
Contact us at [partners@latticesemi.com](mailto:partners@latticesemi.com)

# Partner Network Newsletter



## Lattice Semiconductor Partner Network Updates for Q3'25

Welcome New Program Partners!



### What's Inside?

- Early Access Program: Lattice MachXO5™-NX (LFMXO5-55TDQ)
- Partner Solutions Update on Broad Market Calls
- EDA & Embedded Partner Types Now Live on the Lattice Website
- Partner Spotlight: intoPIX Accelerates Automotive Innovation With TicoRAW
- Webinar: Unlock the Power of Edge AI for Human-Machine Interfaces
- Webinar: TPMs and FPGAs: A Powerful Combination for System Security
- Recent & Upcoming Lattice Events

### Early Access Program

#### Lattice MachXO5™-NX TDQ (LFMXO5-55TDQ)

The soon-to-be-announced Lattice MachXO5™-NX TDQ devices, built on Lattice's low power Nexus platform, expand the MachXO5-NX FPGA family's capabilities for secure control applications with root-of-trust features supporting state-of-the-art classical cryptography and CNSA 2.0 approved Post-Quantum Cryptography (PQC) to address the increased threat to system security. With full suite of CNSA 2.0 prescribed PQC algorithm support, these devices ensure robust protection against emerging quantum threats, future-proofing your security infrastructure.

**Not receiving our Partner Network Quarterly newsletter?**

To subscribe, contact us at [partners@latticesemi.com](mailto:partners@latticesemi.com)

# LATTICE CORPORATE UPDATE

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**Esam Elashmawi**  
Chief Strategy and Marketing Officer

# Q3 2025 Earnings Overview & Highlights

REVENUE

\$133.3M

7.6% Growth QoQ

GROSS MARGIN

69.5%\*

ADJUSTED EBITDA

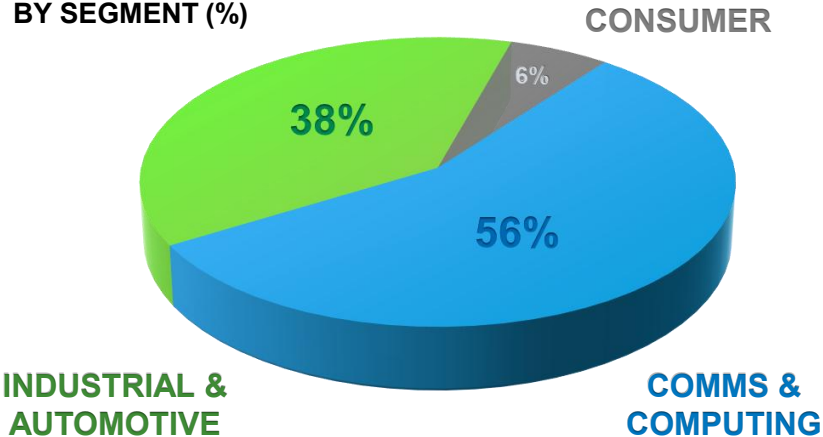
35.6%\*

"We delivered a strong quarter, with broad-based growth across our end markets, and grew non-GAAP earnings 17% quarter over quarter. Our Communications and Computing business achieved record revenue, and we are expecting continued growth into the fourth quarter and beyond. We continue to drive operating leverage and expand profitability, with significant revenue and non-GAAP EPS growth of 13% and 29%, respectively, expected in the second half of 2025 compared to the first half of 2025."

Ford Tamer, CEO

End Market Overview

Q3'25 REVENUE  
BY SEGMENT (%)



Highlights

- Grew Q3'25 revenue, gross margin, and profitability sequentially; Highest sequential revenue growth in more than four years; Guiding both revenue and profitability up in Q4
- Record Communications & Computing segment revenue in Q3, up 21% YoY, with an expanding footprint in general purpose and AI servers
- Percentage of AI usage across products expected to be in the high teens in 2025 and in the mid-20's in 2026
- Launched the Lattice MachXO5™-NX TDQ family, industry's 1<sup>st</sup> PQC-ready FPGA
- Industrial and Automotive channel inventory normalization remains on track for year-end
- Remain on track to hit goal of high-teens percentage of new product revenue for full year 2025

# Our Mission



## To Be the Low Power Programmable Leader

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### **DIFFERENTIATED**

FPGA Platform  
Optimized for Small  
and Mid-range

### **DIVERSIFIED**

Across Largest and  
Fastest Growing  
Applications

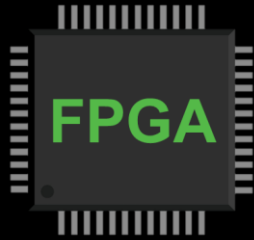
### **DELIVERING**

Faster Than  
Industry Growth

# Differentiated FPGA Platform Optimized for Small and Mid-range



VS

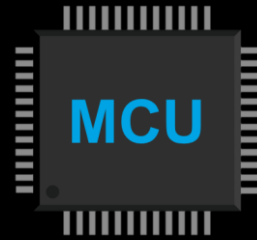


## LATTICE BENEFITS

- Lower Power
- Smaller Size
- Better Value
- Faster Boot Time
- Longevity



VS

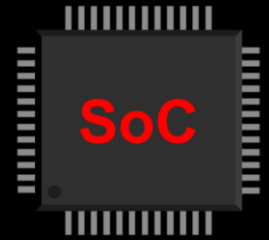


## LATTICE BENEFITS

- Lower Latency
- Deterministic
- Higher Precision
- Faster Performance
- More Connectivity
- Future Proofing



VS



## LATTICE BENEFITS

- Partnerships with MPU leaders provide flexible customer solutions
- Marry optimal FPGA with best MPU for application
- Code in C, PyTorch, TensorFlow

# Diversified Across Largest and Fastest Growing Applications

## COMMS & COMPUTING



### Control, Security, and Manageability for AI Platforms

- Multi-generation programmable flexibility for XPU, Switch, NIC, Storage, BMC, ASIC
- Multi-function: boot, security, bridging, I/O expansion, power sequencing, board/rack management

## INDUSTRIAL & AUTOMOTIVE



### Traditional and Emerging Applications

- Companion chip to vision and motion control, in humanoid, AMR, industrial robots, medical, A&D
- AI “brain” in Far Edge/Physical AI
- Multi-function: HMI, camera/lidar/radar sensor fusion, signal processing, control, communication

# Deliver Faster Than Industry Growth



## PRODUCT INNOVATION



## CUSTOMER FOCUS



## EXECUTION

### KEY PRIORITIES

- Expand design wins and production ramps for highest ROI opportunities
- Gain market share in Comms/Compute & Industrial/Auto
- Lead in small FPGA by 2027, and in small/mid FPGA (non-SOC) by 2030
- Deliver faster than industry revenue growth and even faster EPS growth

# Value of Our Ecosystem

## Automotive Lidar

- MIPI CSI-2 aggregation & Bridging
- Data formatting
- Functional safety & control



## Smart Home Video System

- Complete ISP pipeline for smart home cameras
- Image quality optimization for low-light environments
- NXP i.MX8 H.264 encoding & networking



## 5G Integrated Small Cell

- 5G Small Cell PCIe® to JESD204B bridge
- PCIe Gen3x4 Endpoint, JESD204B at 6.144 Gbps x4
- Support interoperability with ADI for JESD204B



## Medical Product

- Converting video from HDMI and DisplayPort sources to USB for high-resolution medical-grade monitors in surgical or diagnostic setups





**THANK YOU,  
PARTNERS!**

**Let's Win Together in 2026 and Beyond!**

# SILICON, SW, & IP ROADMAP UPDATES

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**Joel Coplen**  
Sr. Dir., Product Planning

# Lattice Value Proposition



## The Low Power Programmable Leader



# Lattice FPGA Portfolio

PLATFORM

DEVICE FAMILIES

LATTICE  
AVANT™



Avant™-E

Edge-optimized  
Processing



Avant™-G

Cutting-edge General  
Purpose Processing



Avant™-X

Advanced  
Connectivity

LATTICE  
NEXUS 2™



Certus™-N2

ADVANCED GENERAL PURPOSE SMALL FPGAs

SYSTEM EXPANDABILITY

A server rack and an industrial robotic arm.

SECURE BRIDGING

A telecommunications tower and a car dashboard with a heads-up display.

LATTICE  
NEXUS™



CrossLink™-NX

Embedded Vision  
Processing



Certus™-NX

General Purpose  
Processing



Mach™-NX

Next Gen Hardware  
Security



CertusPro™-NX

Advanced General  
Purpose Processing



MachXO5™-NX

Enhanced System  
Monitor and Control



MachXO5T™-NX

Advanced System  
Control



CrossLinkU™-NX

Embedded Vision  
Processing with USB



MachXO5™-NX TDQ

Industry 1<sup>st</sup>  
PQC-Enabled FPGA

# FPGA Platform Leadership



Architected for applications requiring up to  
16G SERDES and up to 200k LCs



Architected for applications requiring up to  
25G SERDES and up to 500k LCs



**LOWER  
POWER**



**FASTER  
PERFORMANCE**



**SMALLER  
SIZE**

# Lattice Nexus Small FPGA Platform

## Platform Capabilities

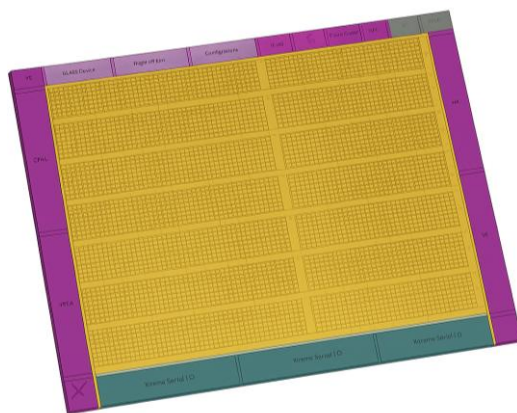
**LOWEST  
POWER**  
Up to **4X** LOWER

**HIGHEST  
PERFORMANCE**  
Up to **3X** FASTER

**SMALLEST  
SIZE**  
Up to **10X**  
SMALLER

### FPGA FABRIC

- Up to 100K LCs
- 20 mS configuration
- SEU Immunity



### SERIAL INTERFACES

- Up to eight 10G SERDES
- 10GbE, PCIe 3.0, DP/eDP
- USB 3.2/2.0

### SECURITY AND CONFIGURATION

- Bitstream encryption / authentication
- Hashing algorithms, TRNG, AES

### FAST & FLEXIBLE I/O

- LVCMOS 0.9 to 3.3V
- MIPI D-PHY up to 2.5Gbps
- LVDS up to 1.5Gbps
- DDR 3, LPDDR3/4

## Device Families

### Lattice CrossLink™-NX

- Video Connectivity FPGA
- MIPI D-PHY and USB

**New Devices Launched in 2025**

### Lattice Certus™-NX & Lattice CertusPro™-NX

- General Purpose FPGA
- Multi Protocol SERDES

### Lattice MachXO5™-NX

- Secure Control FPGA
- Integrated Flash Configuration

Comparisons based on comparable mainstream devices at time of Platform launch  
Not all capabilities on all devices

# New Lattice Certus™-NX & Lattice MachXO5™-NX

## Expanded Offering

Lowest Power, Smallest Packages with PCIe & GigE, High I/O Density, 100X Lower SER, and Security

**New Devices Released  
July 2025**

- New Lattice MachXO5-NX & Lattice Certus-NX **I/O-optimized** devices for high-I/O, space constrained applications
- New **0.8mm pitch** packages ideal for industrial and comms applications
- Package **migration** to future-proof designs

Lattice Certus-NX	Product Family		Lattice Certus-NX (Logic Optimized)				Lattice Certus-NX (I/O Optimized)			
	Product Line		LFD2NX-9	LFD2NX-17	LFD2NX-28	LFD2NX-40	LFD2NX-15	LFD2NX-25	LFD2NX-35	LFD2NX-65
	Logic	Logic Cells	9k	17k	28k	39k	15k	25k	35k	65k
	Ball Pitch	Type (Size)	Total (WRIO, HPIO, ADC)/(PCIe Gen2)							
	0.5 mm	121 BGA (6 × 6 mm)	77 (23,48,6)/(0) A	77 (23,48,6)/(0) A	81 (23,58,0)/(1) A	81 (23,58,0)/(1) A				
	0.8 mm	196 BGA (12 × 12 mm)	77 (23,48,6)/(0) A	77 (23,48,6)/(0) A	156 (92,58,6)/(0) A	156 (92,58,6)/(0) A				
		256 BGA (14 × 14 mm)			191 (111,74,6)/(1) A	191 (111,74,6)/(1) A	205 (159,40,6)/(0)	205 (159,40,6)/(0)	181 (145,30,6)/(1)	181 (145,30,6)/(1)
		400 BGA (17 × 17 mm)					311 (257,48,6)/(0)	311 (257,48,6)/(0)	313 (259,48,6)/(0)	313 (259,48,6)/(0)
		484 BGA (19 × 19 mm)							371 (317,48,6)/(1)	371 (317,48,6)/(1)

Lattice MachXO5-NX	Product Family		Lattice MachXO5-NX (I/O Optimized)				Lattice MachXO5-NX (Logic Optimized)		
	Product Line		LFMXO5-15D	LFMXO5-25	LFMXO5-35T	LFMXO5-65TD	LFMXO5-55T	LFMXO5-55TD	LFMXO5-100T
	Logic	Logic Cells	14k	27k	35k	65k	53k	53k	96k
	Ball Pitch	Type (Size)	Total (WRIO, HPIO, ADC)/(PCIe Gen2)						
	0.8 mm	196 BGA (12 × 12 mm)							
		256 BGA (14 × 14 mm)	205 (159,40,6)/(0)	205 (159,40,6)/(0)	195 (159,30,6)/(1)	195 (159,30,6)/(1)			
		400 BGA (17 × 17 mm)	305 (251,48,6)/(0)	305 (251,48,6)/(0)	336 (282,48,6)/(0)	336 (282,48,6)/(0)	297 (159,132,6)/(1+1)	297 (160,132,6)/(1+1)	297 (159,132,6)/(1+1)
		484 BGA (19 × 19 mm)			366 (330,30,6)/(1)	366 (330,30,6)/(1)			

# Lattice MachXO5™-NX Secure FPGAs

Root of Trust  
Control FPGA



**Q4 2024**

Lattice MachXO5D™-NX

Industry 1<sup>st</sup> RoT FPGA with  
Post-Quantum Cryptography



**Q4 2025**

Lattice MachXO5-NX 55 TDQ  
(Logic Optimized)

PQC-enabled FPGA  
Family Expansion



Lattice MachXO5-NX 20/30 TDQ  
(I/O Optimized)

**More I/O, Density, Security Feature Options Coming 2026/2027**

**Empowering Customers to Oversee and Safeguard Computing,  
Communication, and Industrial Systems**

# Lattice MachXO5™-NX TD/TDQ – Key Security Enhancements

More I/O, Density, Security Feature  
Options Coming 2026/2027

Security Features	LFMXO5-25/55T/100T	LFMXO5-15D/20TD/30TD	LFMXO5-55TD	LFMXO5-20/30TDQ	LFMXO5-55TDQ
Config/Program Port Lock	Yes	Yes	Yes	Yes	Yes
Flash Asset Lock	No	Yes	Yes	Yes	Yes
Bitstream Security	Yes	Yes	Yes	Yes	Yes
User Security	Yes	Yes	Yes	Yes	Yes
TRNG	Yes	Yes	Yes	Yes	Yes
AES-256	CBC	CBC	CBC, GCM	CBC	CBC, GCM
HMAC/SHA	256-bit	384-bit	512-bit	384-bit	512-bit
ECC	No	384-bit	521-bit	384-bit	384-bit
RSA	No	No	Up to 4K	No	No
XMSS, LMS	No	No	No	Yes	Yes
ML-DSA, ML-KEM	No	No	No	No	Yes
Golden/backup, Ping-pong	Yes	Yes	Yes	Yes	Yes
Version Rollback Protection	No	Yes	Yes	Yes	Yes
Pub & Priv Key Pair Gen	No	Yes	Yes	Yes	Yes
Key Mgmt & Revocation	No	Yes	Yes	Yes	Yes
Typical Application	Non-RoT Control	RoT Control	RoT Control & PFR	RoT Control	RoT Control & PFR

# Lattice Avant™ Mid-Range FPGA Platform

## Platform Capabilities

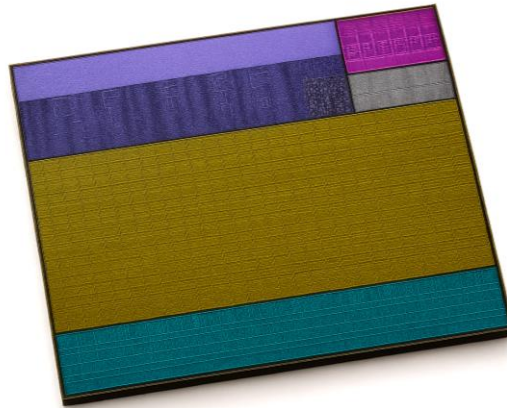
**LOWEST  
POWER**  
Up to 2.5X  
LOWER

**HIGHEST  
PERFORMANCE**  
Up to 2.5X  
FASTER

**SMALLEST  
SIZE**  
Up to 6X  
SMALLER

### FPGA FABRIC

- Up to 700K SLCs



### SERIAL INTERFACES

- Up to twenty-eight 25G SERDES
- Hardened PCIe 4.0, 25G Ethernet, DP/eDP, JESD204B/C

### SECURITY AND CONFIGURATION

- ECC521 authentication & AES-GCM encryption
- SHA3-512 PQC ready
- Anti-tamper and PUF
- User security

### FAST & FLEXIBLE I/O

- LVC MOS 0.9 to 3.3V
- MIPI D-PHY up to 1.8Gbps
- LVDS up to 1.5Gbps
- DDR4, LPDDR4, DDR5

## Device Families

Launched Dec. 2022

### Lattice Avant™-E

- LPDDR4
- Bitstream encryption & authentication

Launched Dec. 2023

### Lattice Avant™-G

- Lattice Avant-E plus
- 12.5 Gbps SERDES

### Lattice Avant™-X

- Lattice Avant-G Plus
- 25 Gbps SERDES, DDR5 & user security

Rollout Continues

Comparisons based on comparable mainstream devices at time of Platform launch  
Not all capabilities on all devices

# Lattice Nexus 2 Small FPGA Platform

## Platform Capabilities

### LOWEST POWER

Up to  
**3X LOWER**

#### FPGA FABRIC

- Up to 220K SLCs
- 20 mS configuration
- SED / SEC

#### SERIAL INTERFACES

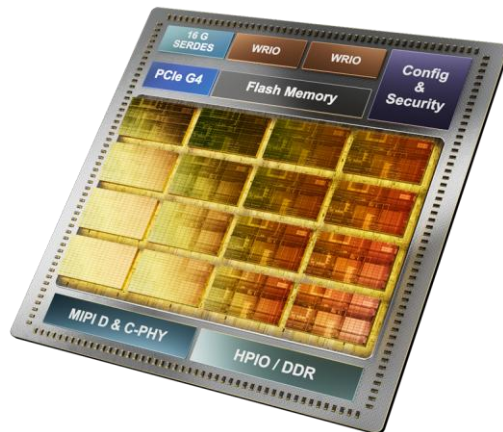
- Up to eight 16G SERDES
- 10GbE, PCIe 4.0, DP/eDP

#### SECURITY AND CONFIGURATION

- Bitstream encryption / authentication
- Hashing algorithms, TRNG, AES

#### FAST & FLEXIBLE I/O

- LVCMOS 0.9 to 3.3V
- MIPI D-PHY up to 2.5Gbps
- LVDS up to 1.5Gbps
- DDR4, LPDDR4
- 4.5Gbps MIPI D-PHY & 7.98Gbps C-PHY



### HIGHEST PERFORMANCE

Up to  
**3X FASTER**

### SMALLEST SIZE

Up to  
**5X SMALLER**

## Device Families

Launched Dec. 2024

### Lattice Certus™-N2

- General Purpose FPGA
- Multi-protocol SERDES

Under Development

### Lattice CrossLink™-N2

- Video Connectivity FPGA
- MIPI D-PHY and USB

### Lattice Mach™-N2

- Secure Control FPGA
- Integrated Flash Configuration

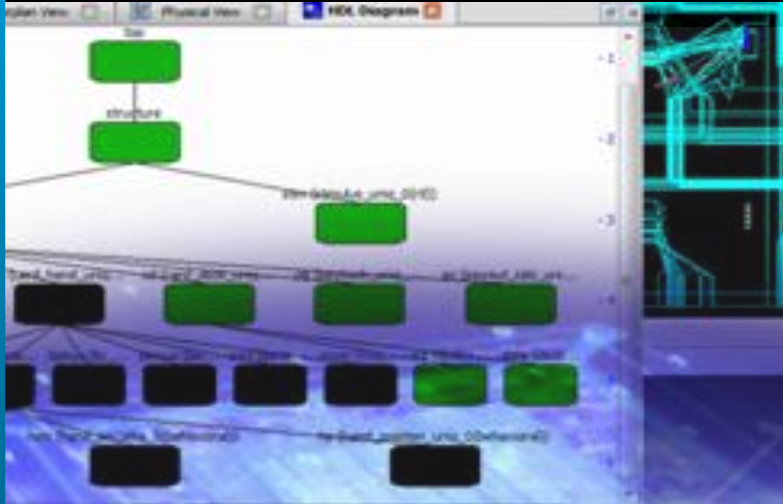
Comparisons based on comparable mainstream devices at time of Platform launch  
Not all capabilities on all devices

# Lattice MachXO4™: Next Generation of Lattice Mach FPGAs

- Up to 4X lower static power
- Up to 36% more I/O per package area
- Most secure control FPGA in its class
  - On-chip dual-boot
  - Bitstream security (encryption + authentication)
- Resilient supply chain and reliable production support for 20+ years
- Access simplified design with Lattice Radiant® tool and the latest software solution stacks



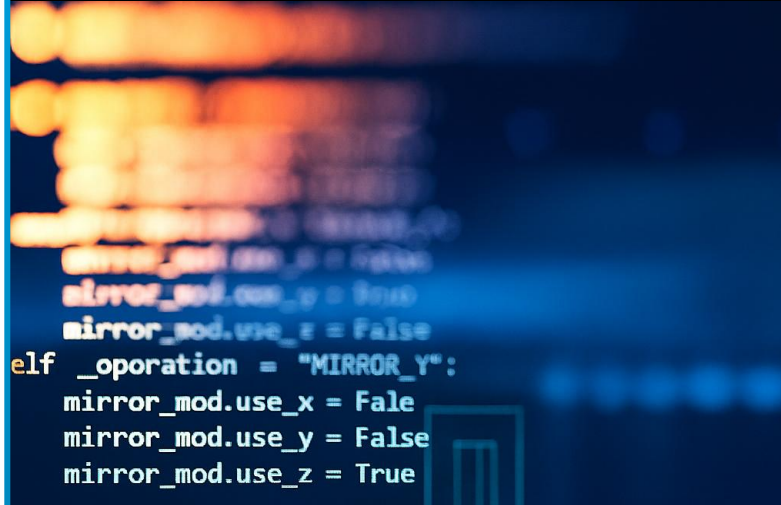
# Easy-to-use Software



## Powerful FPGA Design & Verification Environment

Easy Design Exploration  
Easy to Use Powerful Tools  
Optimized for Lattice Devices

**Pre-Nexus Tool**  
**1 Release Per Year**



## Best-in-class, Easy-to-use Design Software

Simplified Flow for Faster Design  
Increase Re-use with IP Tools  
Leading Synthesis & Simulation

**Focus Tools**  
**2 Release Per Year**



## Complete Toolset for Embedded System Design

IP System Integration Environment  
Software Development Kit & Libraries  
Build, Compile, Analyze, Debug

# Lattice Tools Roadmap

		2025	2026*	2027*
QoR	Lattice Avant	Lattice Avant Design Optimization Guide	LSE QoR improvement +FMAX Improvement Timing Closure Recommendation Tool	+FMAX Improvement Compile Time Improvement
	Lattice Nexus	New Lattice Nexus Analytic Placement Engine +FMAX improvement	+FMAX Improvement Compile Time Improvement	
Debug		SERDES Debug – BERT External Memory Controller Debug Incremental Post-PAR Debug	Reveal Ease of Use Remote Debug	Reveal Ease of Use
IP Flows		Execute Program from External Flash – Flash XIP mode Project Templates for Low-Power and Multi-Processor Designs	Mathworks Custom IP Flow	Mathworks Optimized Libraries Mathworks Hardware in the Loop Simulation Flow Tighter Propel Integration with Radiant
Ease of Use		Report Files Upgrade	Timing Analysis Reporting Radiant Messages Usability Expanded Tcl commands capability	Fully Scripted Interactive Design Flow Advanced Floorplanning
Power		Power Optimization – Dynamic Clock Gating for Nexus & Avant	Power Optimization via Area Reduction for Avant Simplified IP Flow for Estimation Mode (PLL, DDR, I/O)	Simplified

# Soft IP Overview

## Primary focus on horizontal IP categories

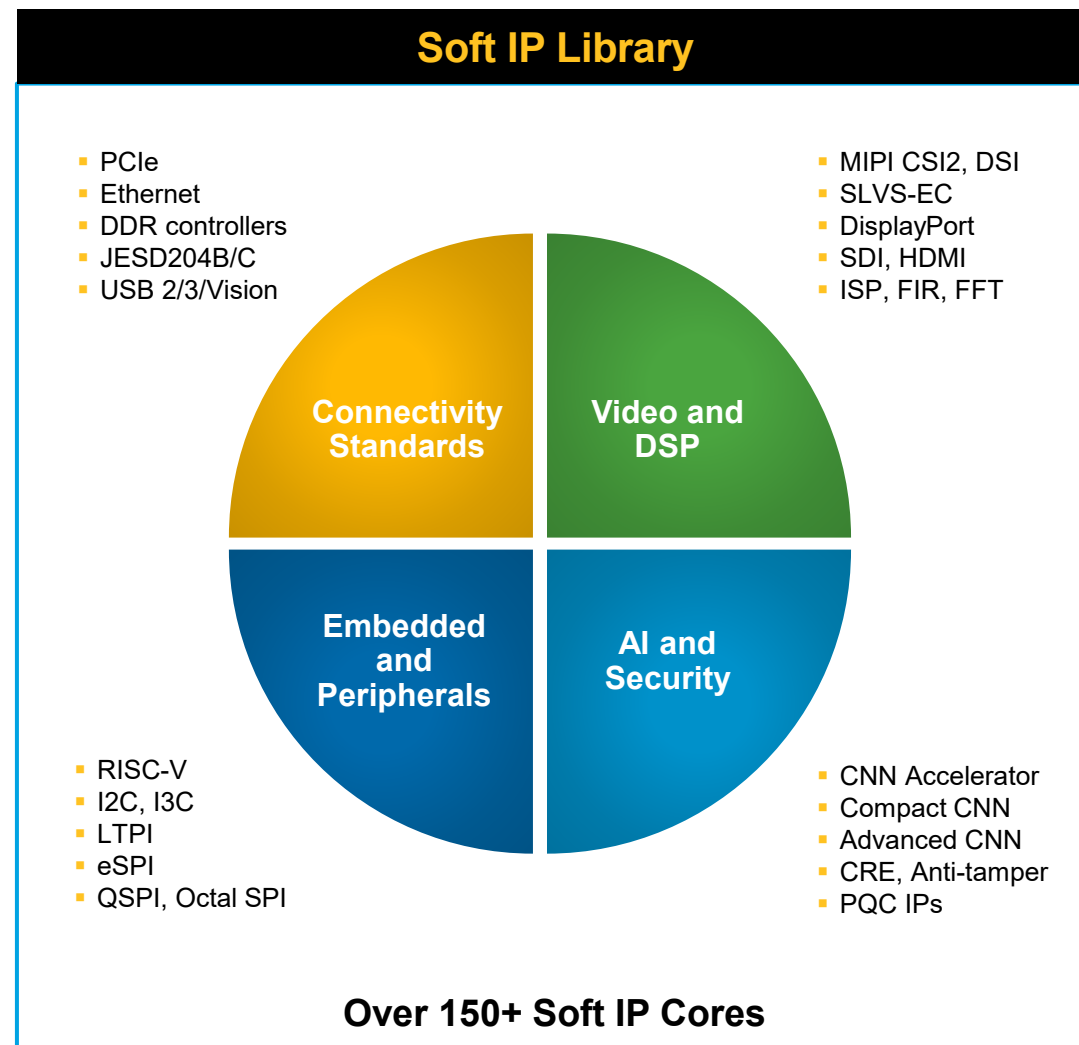
- PCIe, Ethernet, DDR, MIPI, security, peripherals
- Quality, features, drivers, & MPPHY

## Reference designs to accelerate TTM

- Modular RDs with seamless IP interconnect
- Soft RISC-V GSRD and connectivity focus

## Partner eco-system for application specific IPs

- Video: SLVS-EC, HDMI, SDI, CoaXPress, SMPTE, IPMX, ISP, VIP, CV
- Industrial/Comm: JESD204B/C, MACSEC, PTP/TSN, Aurora, CAN, eCPRI



**Contact Lattice for joint promotion of partner IPs based on Nexus and Avant**

# EDGE AI, VIDEO/VISION, CONNECTIVITY & EMBEDDED



**Karl Wachswender**  
Sr. Principal System Architect

# Focus Application: Far Edge AI Sensor Processing

## ■ Edge AI Challenges

- Processing at the edge requires low power specialized acceleration
- Building a POC has become simpler, building production use case is complex
- Limited AI skill, tool expertise, and inadequate dataset

## ■ Our Offerings

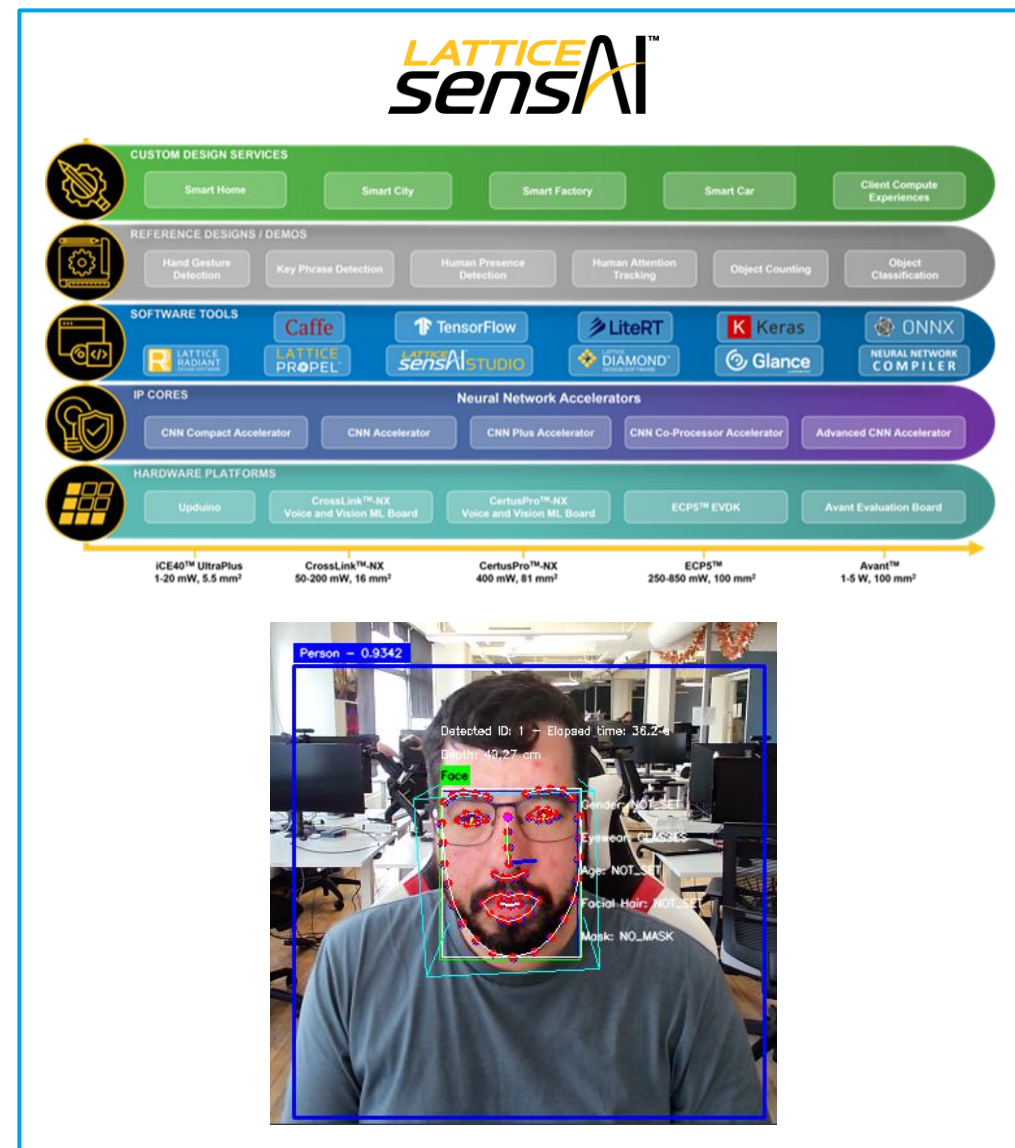
- Lattice FPGAs connect wide range of sensors with on device AI inferencing
- Pretrained and purpose-built models offering quick time to market
- Tools for model training and tuning, programable and future-proof acceleration

## ■ What Sets Us Apart

- Optimized and accurate application specific AI Models
- Millions of units deployed globally in various conditions
- Low power and deterministic latency FPGAs

## ■ Example Use cases

- Factory Automation: Industrial machine vision, defect detection, and HMI
- Automotive: Internal and external monitoring, CMS, DMS, EMS, OMS
- Smart City: Traffic monitoring and analysis



# Success Story

## BACKGROUND

Application	Industrial HMI
Lattice Device	LFCPNX-100
Socket Function	Operator Compliance HMI Solution
Customer Requirements	Standalone always on vision sensor with USB interface, processing and providing data on operator status

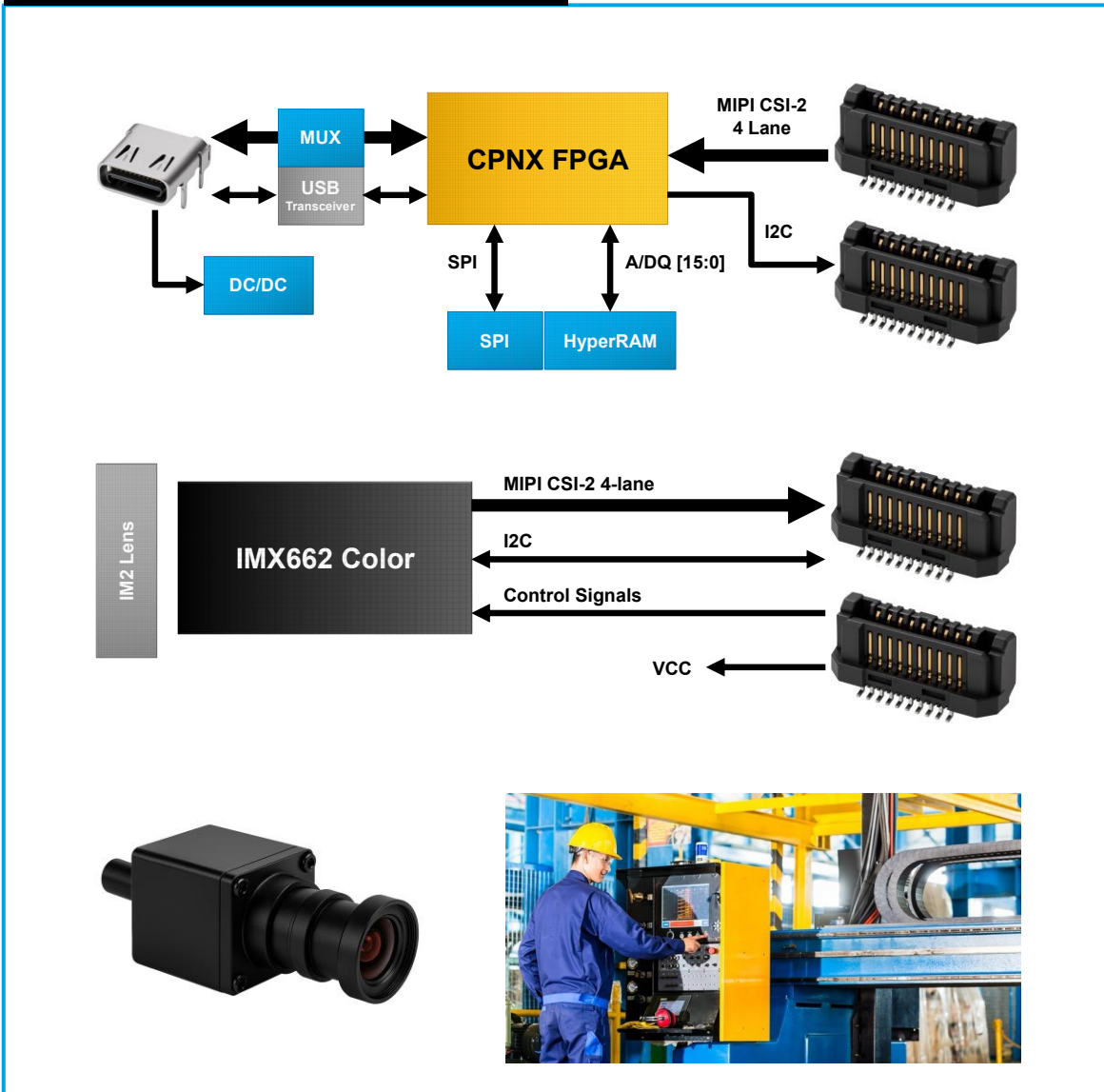
## HOW LATTICE WON

Lattice Advantages	<ul style="list-style-type: none"><li>Pretrained models</li><li>High accuracy</li><li>Off the shelf hardware</li></ul>
Actions Taken to Win	<ul style="list-style-type: none"><li>Demonstrated leadership in small models for HMI</li><li>Easy to use demo for use case validation</li><li>Partner provided camera hardware</li><li>Developed additional models for the customer</li></ul>

## CALL TO ACTION:

- Build cameras HW for target applications such as industrial machine vision and automotive
- Leverage HMI, multi object and defect detection purpose built and pretrained models
- Port your own models into Lattice FPGAs
- Download Lattice sensAI™ 8.0 (launching in Dec. '25) to build new edge AI use cases

## BLOCK DIAGRAM



# Focus Application Sensor-bridge & Pre-processing

## ■ Edge AI: NVIDIA Holoscan

- Hardware & software platform for creating real-time, AI-powered applications for sensor processing, especially at the edge
- Designed to handle data streams from sensors like cameras and lidar, using optimized libraries and microservices for low-latency processing
- Application areas: medical imaging, robotics, media production

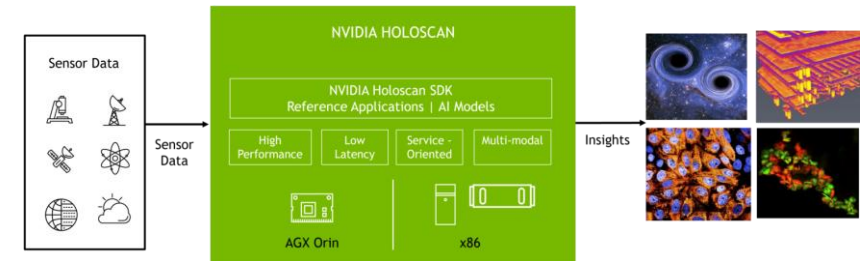
## ■ Lattice FPGA Holoscan Sensor Bridge (HSB)

- FPGA based development kit for sensor to Ethernet bridging
  - Sensor aggregation, preprocessing, packetization
- Low latency, low power, extremely flexible & scalable
- Starting point : Holoscan Sensor Bridge Reference Design

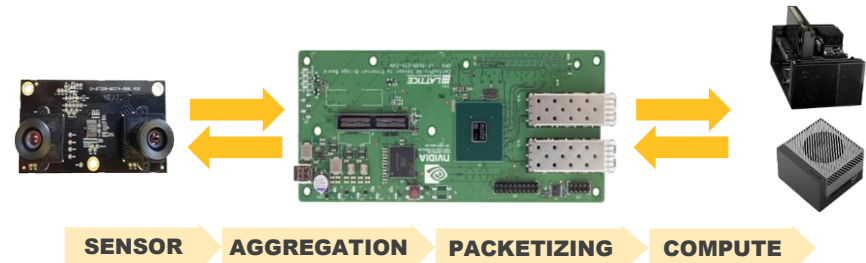
## ■ Holoscan Bridge Board Ecosystem

- NVIDIA/Lattice ecosystem partners: sensor modules, derivative HSB boards, interface & adapter cards, FPGA IP, Design services
- Dozens of customers – many need HW/SW design support

### NVIDIA Holoscan for HPC Workflow



### Sensor Bridge Kit



### Growing Lattice HSB Ecosystem Partnerships

ADVANTECH

D3 Embedded

e-con Systems  
Think Camera. Think e-con.

LEOPARD  
IMAGING

LIPS

PhotonLogic

RidgeRun

SENSING  
森云智能

TAURO  
TECHNOLOGIES

YUAN

# Success Story

## BACKGROUND

Application	Humanoid Robotics
Lattice Device	<ul style="list-style-type: none"><li>▪ LFCPNX-100-9LFG672IAQT</li><li>▪ LFCPNX-100-9CBG256IAQT</li><li>▪ LIFCL-40-9MG121I</li></ul>
Socket Function	Holoscan Sensor Bridge (HSB)
Customer Requirements	Small, low power, low latency bridge between sensors and NVIDIA Jetson Thor™ via HSB

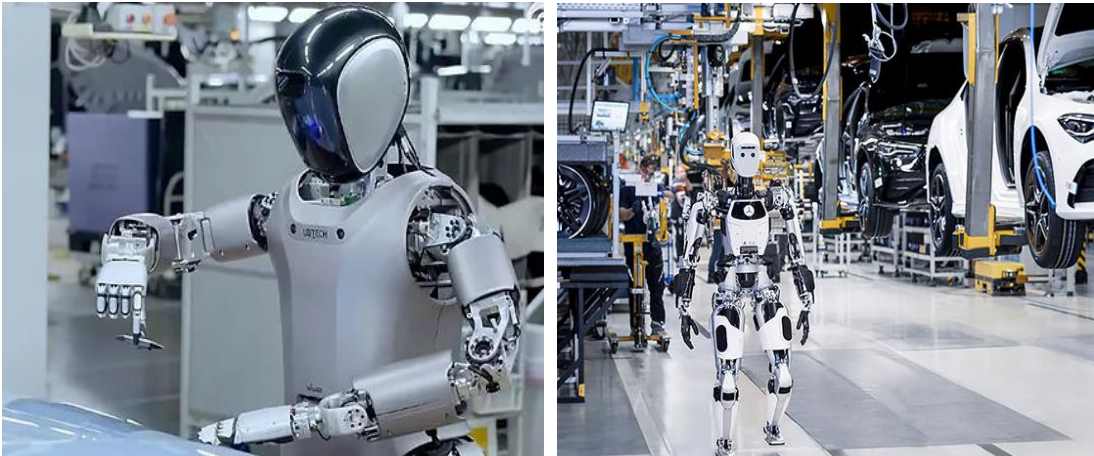
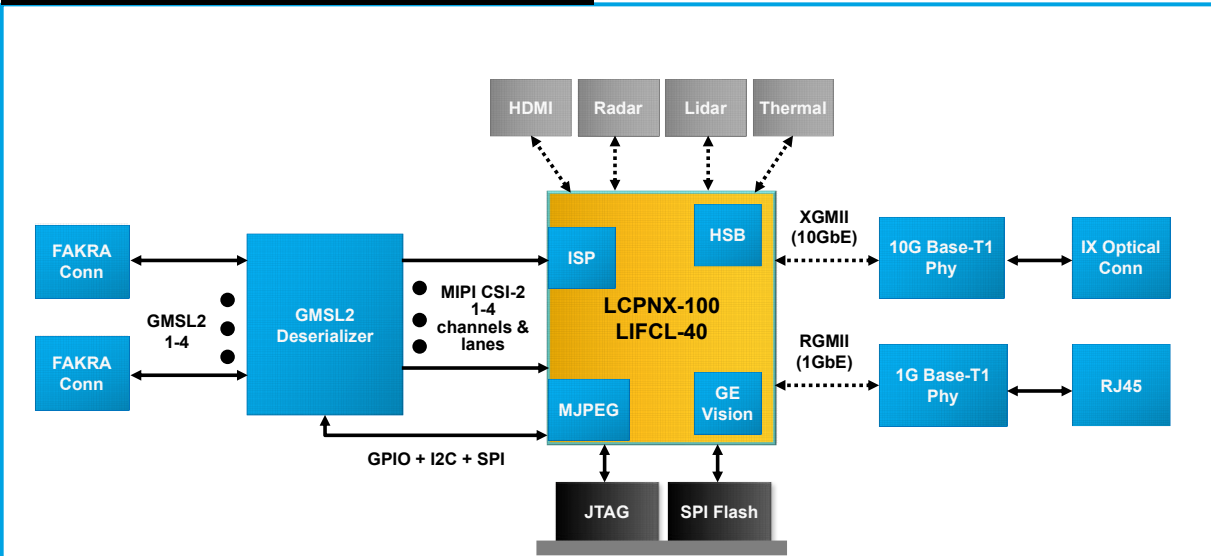
## HOW LATTICE WON

Lattice Advantages	<ul style="list-style-type: none"><li>▪ HSB Leader</li><li>▪ Low power &amp; small FF leadership</li><li>▪ MIPI, HDMI, JPEG, GigE vision, &amp; ISP IP</li><li>▪ Outstanding technical, sales and marketing support</li></ul>
Actions Taken to Win	<ul style="list-style-type: none"><li>▪ Demonstrate HSB leadership</li><li>▪ Close collaboration with NVIDIA, customer, and design service &amp; IP partners</li><li>▪ Weekly sync meetings</li><li>▪ Engage vertical apps team</li><li>▪ Executive alignment</li></ul>

## CALL TO ACTION:

- Leverage Lattice Holoscan reference design; explore new business opportunities
- Provide engineering services around Lattice HSB Solution (sensor boards, derivative/custom boards, adapter boards, FPGA IP, ...)

## BLOCK DIAGRAM



# Focus Application Real Time Ethernet

## ■ Connectivity and Bridging

- Support industrial Ethernet protocols with low power up to FPGA families IP
- Enable analog front end or bridge analog part to standard interfaces like PCIe like JESD204
- Application areas: motor control, robotic and SDN, T&M

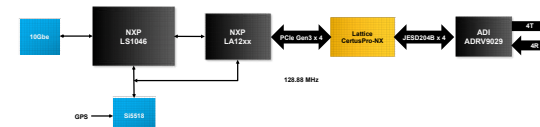
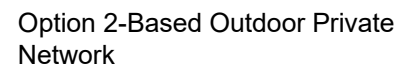
- **Lattice FPGA IP offering**

- FPGA based EtherCat® IP from Beckhoff
  - Ref design on Analog Device/Arrow/Lattice MCB Q1/2026
- Low latency, low power, extremely flexible & scalable
- NXP partnership small cell for PCIe to JESD204

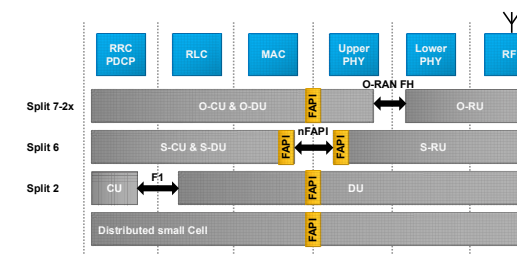
- **Ecosystem**

- Supplier ecosystem partners: motor control boards, interface & adapter cards, FPGA IP, design services and protocol stack

## BLOCK DIAGRAM



## ORAN Split Design (4T4R NXP/ADI) – All-in-One Box



## Ecosystem Partnerships



# Success Story

## BACKGROUND

Application:	Industrial PLC
Lattice Device:	Lattice MachXO5™-NX 35/65
Socket Function:	EtherCAT Real-Time Networking
Customer Requirements:	Small, low power, low latency, flash-based FPGA

## HOW LATTICE WON

Lattice Advantages:	<ul style="list-style-type: none"><li>Industrial FLSH-based FPGA Leader</li><li>Low power &amp; small FF leadership</li><li>Partnership with RT-Labs</li><li>Outstanding technical, sales and marketing support</li></ul>
Actions Taken to Win:	<ul style="list-style-type: none"><li>Demonstrate EtherCat®</li><li>Close collaboration with RT-Labs</li><li>Design service in house SSAE team (engage vertical apps team)</li><li>Executive alignment</li></ul>

## CALL TO ACTION:

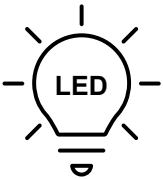
- Leverage Lattice EtherCat reference design; explore new business opportunities
- Provide engineering services around industrial Ethernet (partnership with ADI and RT-Labs)

## Motor Control – EtherCAT Reference Design ADI-MCB (LFCPNX-100) GSRD Based



### PoC – Demonstration of Basic Functionality:

1. Basic parameters are hard-coded (LED toggling)
2. Integrated into ADI-MCB GSRD-based system
3. Basic integration Test Suite (TBD) with GSRD



### RD – Testable Baseline:

1. Configurable Parameters for Motor Application
2. Functional Test Suite for EtherCAT (TBD) w/GSRD
3. Functional Test Suite for PROFINET (TBD) w/GSRD
4. U-Phy Stack basic operation and setup w/GSRD
5. Motion Control control basic BLDC test w/GSRD



Motor Control

EnDat 2.2

BLDC

### Stack – Developmental Baseline:

1. Performance benchmarking data w/GSRD
2. Fully Functional Test Suite (TBD) w/GSRD
3. Fully Functional U-Phy Stack with EtherCAT and PROFINET w/GSRD
4. Integrate Motion Control basic BLDC test w/GSRD
5. Integrate Motion Control basic FoC test w/GSRD



Motor Control

EnDat 2.2

BLDC

FOC



# Focus Application GSRD/GHRD

## ■ Soft SoC Design for Embedded Systems

- Soft SoC for Lattice Nexus and Lattice Avant with MB with FreeRTOS, Zephyr Linux support
- eBOOT enabled Soft SOC ref design
- Application areas: SMART sensor, RT-Ethernet motor control, robotic

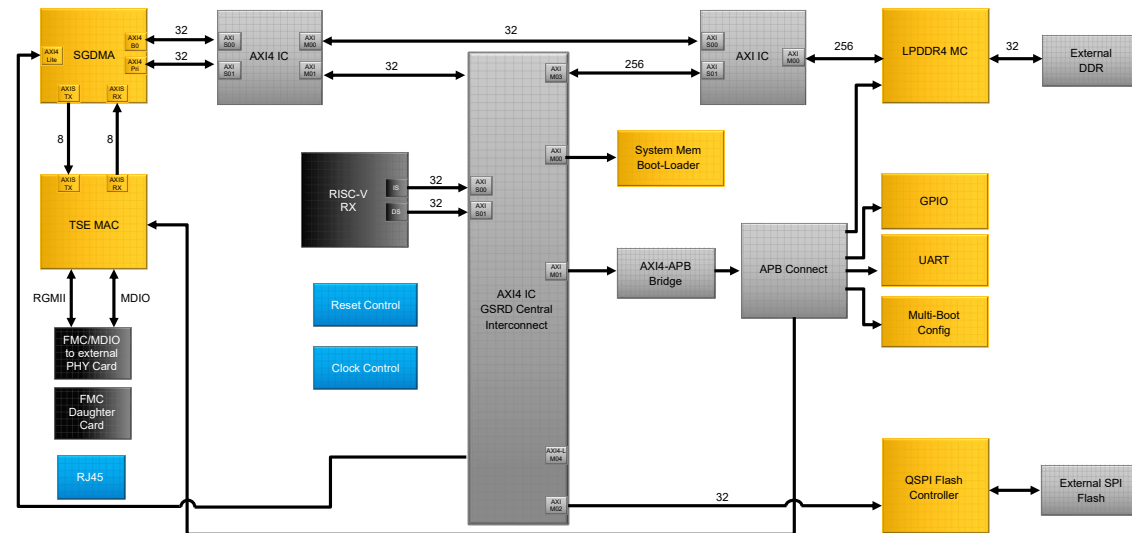
## ■ Lattice FPGA Offering

- Ref. Design for C2NX, CPNX, and Lattice Avant-E devices
  - Version 3.0 released October 31st
- Low latency, low power, extremely flexible & scalable
- Soft SoC design used in motor control and EtherCat demo

## ■ Ecosystem

- Supplier ecosystem partners: motor control boards, interface & adapter cards, FPGA IP, design services and protocol stack

## BLOCK DIAGRAM



## Ecosystem Partnerships



# Lattice CrossLinkU™-NX USB3 Vision Reference Design

## BACKGROUND

Application:	Industrial Camera
Lattice Device:	CLNX-33U
Socket Function:	USB3 Vision with Zephyr OS
Customer Requirements:	Small, low power, low latency, flash-based FPGA

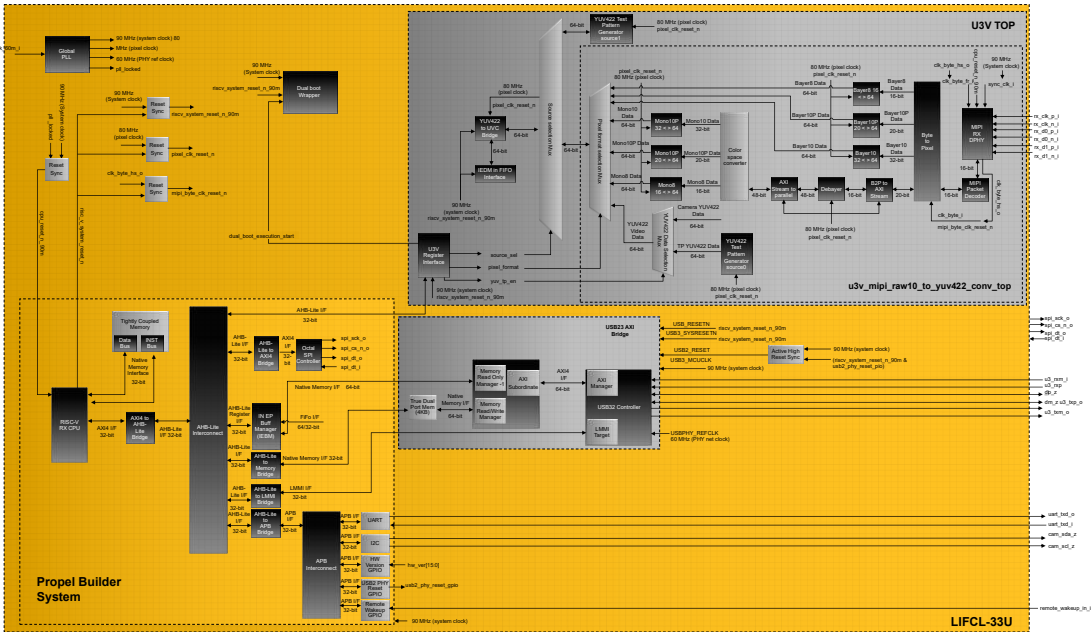
## HOW LATTICE WON

Lattice Advantages:	<ul style="list-style-type: none"><li>Single chip solution</li><li>Low power &amp; small FF leadership</li><li>Partnership with SLS</li><li>Outstanding technical, sales and marketing support</li></ul>
Actions Taken to Win:	<ul style="list-style-type: none"><li>Demonstrate USB3 vision on single chip</li><li>Close collaboration with SLS</li><li>Design service in house SSAE team (engage vertical apps team)</li><li>Executive alignment</li></ul>

## CALL TO ACTION:

- Leverage Lattice U3V/GSRD deference design; explore new business opportunities
- Provide engineering services around industrial SoftSOC (Partnership with SLS, Bluespec or Moschip)

## BLOCK DIAGRAM



## Ecosystem Partnerships



<https://info.bluespec.com/latticefpga>



<https://moschip.com/semiconductor/getting-started-with-risc-v-and-its-architecture/>

# SECURITY/SERVERS

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**Mamta Gupta**

AVP, Datacenter, Telcom, Security

# Urgent Need for Post-Quantum Crypto for Future Proof Security

## Rising Threats to Digital Trust

- Nation-state actors and sophisticated cybercriminals are targeting critical systems
- IoT, datacenter, and edge devices are proliferating—each a new attack surface
- Quantum computers are evolving, threatening today's encryption
- Classical cryptography is no longer future-proof

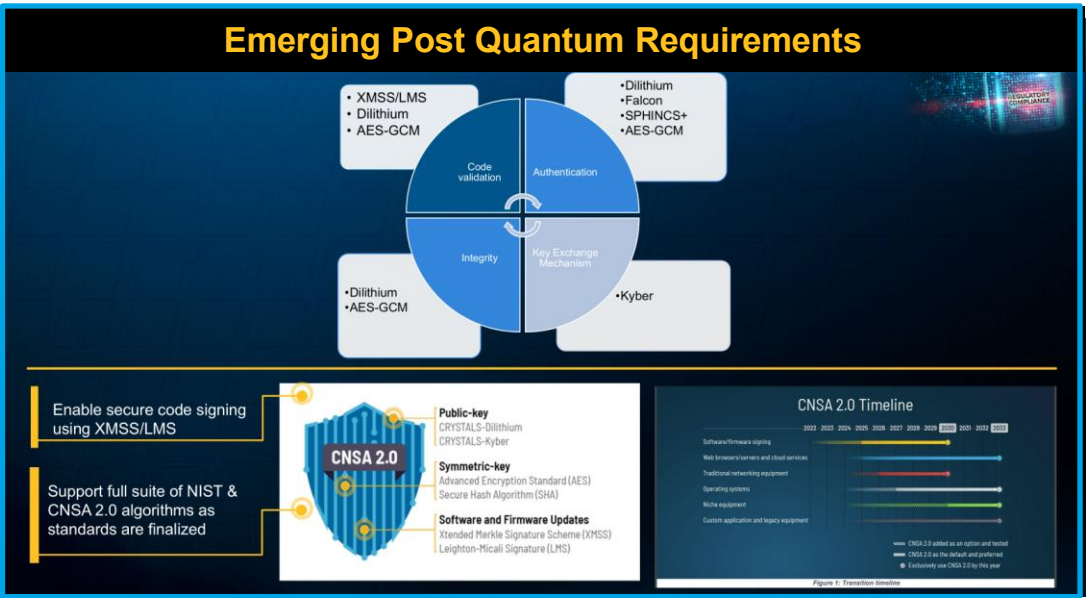


## What's Forcing the Shift – The Impetus for Post-Quantum Crypto

- Harvest Now, Decrypt Later (HNDL): Attackers are storing encrypted data today to decrypt once quantum computers are viable
- Regulatory Pressure: CNSA 2.0, NIST, EU ENISA, and ETSI
- Ecosystem Shift: Software and cloud vendors are transitioning to PQC



## Emerging Post Quantum Requirements



# Lattice Offers Industry First Post-Quantum Safe FPGA: Lattice MachXO5™-NX TDQ



Full CNSA 2.0 Compliant PQC Algorithms



Advanced Cryptography with Crypto Agility



Hardware Root of Trust



Secure Bitstream Key Management



## Ecosystem Partnerships



## Extensible Crypto Functions

- Crypto-Agile block supports classical (ECC 384 and above) and Post-Quantum Crypto (LMS/XMSS, ML-KEM, ML DSA)
- NIST and CNSA 2.0 approved algorithms
- Verifiable quantum entropy solutions

- Integrated flash
- External-boot via SPI interface
  - Support for classical and PQC algorithms

## Key Applications

- PQC and hybrid secure boot
- PQC enabled PFR in datacenter
- Verifiable entropy with QRNG
- Telecommunications
- Industrial

## Call To Action

- Accelerate innovation by co-developing reference designs, differentiated applications and solutions leveraging Lattice's PQC FPGAs
- Engage in joint go-to-market activities, technical workshops, and customer success stories to showcase our joint PQC leadership
- Represent together in industry consortia and standards bodies to advocate for quantum safe security



**THANK YOU  
PARTNERS!**

**Let's Win Together in 2026 and Beyond!**



The Low Power Programmable Leader