



## Lattice Brings Best-in-Class Embedded Vision Optimized FPGA to Automotive Applications

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*CrossLink-NX FPGAs Deliver Fast MIPI Performance to ADAS and In-Vehicle Infotainment Applications*

HILLSBORO, Ore.--(BUSINESS WIRE)--Mar. 31, 2021-- [Lattice Semiconductor Corporation](#) (NASDAQ: LSCC), the low power programmable leader, today expanded its award-winning Lattice Crosslink™-NX family with new FPGAs specified for automotive applications such as advanced driver assistance systems (ADAS) and in-vehicle infotainment (IVI) systems. The new CrossLink-NX FPGAs bring best-in-class low power, small form factor, high-performance I/O, and reliability to embedded vision applications for today's technologically advanced automobiles. Lattice CrossLink-NX FPGAs are currently the only FPGAs in their class to support embedded MIPI D-PHY interfaces with speeds up to 10 Gbps.

The automotive industry is increasingly adopting new technologies to enhance vehicle functionality, with the ADAS sensor market alone predicted to grow to \$40.8 billion in 2030, at an 11.7 percent CAGR between 2020 and 2030.<sup>1</sup> Many of these radar, LiDAR, and camera sensors are based on the MIPI interface to leverage the economies of scale MIPI devices provide because of their use in billions of mobile devices over the years.

"As automotive systems grow in capability and complexity, the number of integrated sensors and displays increases. This presents a challenge to automotive system designers that need to quickly and reliably process image data to deliver real-time performance to enable a compelling - and safety-focused - user experience," said Jay Aggarwal, Director of Silicon Product Marketing, Lattice. "With support for automotive operating temperatures, class-leading dedicated high-performance MIPI interfaces, low power consumption, and high reliability, these new CrossLink-NX FPGAs are an ideal platform for automotive embedded vision systems."

"To meet the performance and data bandwidth requirements of increasingly complex ADAS systems, product managers need a low power hardware platform to perform signal splitting, duplication, and aggregation of image sensor outputs, as well as offload Edge AI processing from the main ADAS processor," said K. Ganesh Rao, Practice Head – FPGA Solutions, Tata Elxsi. "Lattice CrossLink-NX FPGAs are a compelling hardware option for these applications, and we applaud Lattice's decision to release automotive-grade versions of this flexible embedded vision platform."

Key features of CrossLink-NX FPGAs for automotive applications include:

- Automotive certification and high reliability – AEC-Q100 qualification up to Grade 2 ( $T_A = 105^\circ \text{C}$ ) and a Soft Error Rate (SER) up to 100 times lower than similar competing FPGAs make CrossLink-NX FPGAs a compelling choice for mission-critical applications that must operate safely and reliably in challenging environments.
- Low power operation – Built on the Lattice Nexus™ FPGA platform, which leverages an FD-SOI manufacturing process and FPGA architectural innovations to boost power efficiency, CrossLink-NX FPGAs deliver up to 75 percent lower power consumption in comparison to similar competing FPGAs. This low power consumption provides extra thermal headroom for ADAS and IVI applications running at higher temperatures.
- Best-in-class performance – CrossLink-NX FPGAs deliver enhanced performance enabled by three key elements:
  - Fast I/O support - CrossLink-NX FPGAs are well-suited for embedded vision applications thanks to support for multiple fast I/Os, including MIPI, PCIe (5 Gbps Gen 2), and DDR3 memory.
  - Instant-on performance – to better support applications like automotive displays where a long system boot time is unacceptable, CrossLink-NX FPGAs enable ultra-fast I/O configuration in 3 ms and total device configuration in less than 15 ms.
  - High memory-to-logic ratio – CrossLink-NX FPGAs efficiently process image data using 170 bits of memory per logic cell, the highest memory-to-logic ratio in its class.
- Small form factor – CrossLink-NX FPGAs are up to 10 times smaller than similar competing FPGAs, making them ideal for space-constrained automotive systems that need the smallest ICs possible.
- Ease-of-use – To facilitate the design of FPGA-based systems, CrossLink-NX automotive FPGAs support the latest versions of the Lattice Radiant® (version 2.2.1) and Lattice Propel™ (version 1.1) software tools to simplify and accelerate embedded vision system design. CrossLink-NX FPGAs are also supported by the Lattice mVision™ and sensAI™ solution stacks so designers can leverage the stacks' modular hardware platforms, reference designs, neural network IP cores, and custom design services to further accelerate automotive vision system design.

For more information about these new CrossLink-NX FPGAs and other Lattice products and technologies mentioned above, please visit:

- [www.latticesemi.com/CrossLink-NX](http://www.latticesemi.com/CrossLink-NX)

- [www.latticesemi.com/LatticeNexus](http://www.latticesemi.com/LatticeNexus)
- [www.latticesemi.com/LatticeRadiant](http://www.latticesemi.com/LatticeRadiant)
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- [www.latticesemi.com/mVision](http://www.latticesemi.com/mVision)
- [www.latticesemi.com/sensAI](http://www.latticesemi.com/sensAI)

For more information about Lattice solutions for automotive systems, please visit [www.latticesemi.com/en/Solutions/SolutionCategories/Automotive](http://www.latticesemi.com/en/Solutions/SolutionCategories/Automotive).

#### **About Lattice Semiconductor**

Lattice Semiconductor (NASDAQ: LSCC) is the low power programmable leader. We solve customer problems across the network, from the Edge to the Cloud, in the growing communications, computing, industrial, automotive, and consumer markets. Our technology, long-standing relationships, and commitment to world-class support let our customers quickly and easily unleash their innovation to create a smart, secure, and connected world.

For more information about Lattice, please visit [www.latticesemi.com](http://www.latticesemi.com). You can also follow us via [LinkedIn](#), [Twitter](#), [Facebook](#), [YouTube](#), [WeChat](#), [Weibo](#), or [Youku](#).

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<sup>1</sup> <https://www.psmarketresearch.com/market-analysis/adas-sensor-market>

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