NEWS

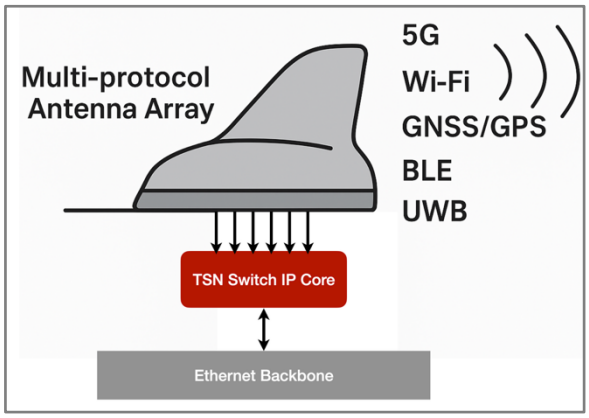
RANiX Employs Time-Sensitive Networking IP Core from CAST in Advanced Automotive Antenna System

TSN Switch connects diverse antenna transceivers to the automotive Telematics Control Unit (TCU) through an Ethernet backbone

Woodcliff Lake, New Jersey — September 4, 2025 — Semiconductor intellectual property core provider CAST today announced that the TSN Switch IP core it offers has been integrated by RANiX Inc. in their new automotive Integrated Micro Flat Antenna System (IMFAS) system on chip (SoC).

RANiX is a global leader in the design and manufacture of communication chips for the automotive and IoT industries. Their IMFAS SoC manages a multi-element antenna array by synchronizing the wireless signals required for today's smart vehicles — including the 5G, WiFi, GNSS/GPS, BLE, and UWB protocols — and safely and efficiently routing them to the central processing unit through the in-vehicle Ethernet network.

This industry-leading application of Time-Sensitive Networking (TSN) technology by RANiX eliminates long radio frequency cable runs while ensuring the proper prioritization and synchronization of the various signals. In this way, the new IMFAS reduces system complexity and cost, improves signal performance, and is ready for integration into Ethernet-based Software-Defined Vehicle (SDV) platforms.



The TSN Switch IP Core coordinates multiple signals received by the antenna array for communication through a vehicle's Ethernet backbone.

RANiX chose the TSN Switch IP core from CAST for its timing synchronization accuracy, flexible traffic shaping options, and support of critical drivers to simplify software integration. Additionally, the core's proven reliability, cost-effectiveness, and fully dedicated technical support were clear advantages in the CAST offering.

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No Hyoung Lee, RANiX's chief technology officer, said, "With TSN standards constantly evolving, it was imperative to choose a vendor that is at the forefront of implementing the latest standards and who will be responsive to our needs now and in the future. CAST's TSN products have a rich feature set, and having used CAST IP in the past, we are confident in their quality and their commitment to providing Functional Safety features required in the automotive industry."

Alexander Mozgovenko, TSN product manager for CAST, commented: "We are excited to see RANiX so effectively exploiting the capabilities of the TSN Switch IP core in their state-of-the-art IMFAS automotive SoC. While other firms are still contemplating the adoption of TSN, RANiX has embraced the technology to deliver a superior solution to its customers that significantly reduces in-vehicle communications complexity and cost. A valued CAST customer since 2011, RANiX has licensed a variety of IP cores from CAST, and we look forward to helping them overcome new technology challenges in the future."

The TSN-SW Multiport TSN Ethernet Switch IP core offers ultra-low latency and technology independence in a small silicon area. It supports the latest TSN standards and is highly configurable for optimum results in many applications. With RANiX's implementation in the IMFAS, the core facilitates the connection of an antenna unit receiving multiple different inputs to a vehicle's central telematics control unit. Other TSN Switch applications may integrate multiple sensors (such as ultrasonic, camera, and radar) into a single domain for purposes like automated parking or environmental sensing.

The TSN-SW core is a member of CAST's Automotive Bus Controller IP core family, which also includes TSN Endpoint, TSN Switched Endpoint, CSENT, CAN 2.0/CAN-FD/CAN-XL, LIN, Low-Latency 1G eMac, and SafeSPI IP cores. Several of these are also available with ISO 26262 ASIL-D ready versions in CAST's Functional Safety family, along with a RISC-V FuSa processor. Contact CAST sales for more information.

About RANiX

RANiX is an industry leader in the field of automotive security and communication SoC sector and has achieved 80% market share in the chipset for tolling solutions in South Korea. With its in-house semiconductor design, hardware/software capabilities, and humanistic approach, RANiX aims to create a safer, more efficient, smarter world. For more information, visit www.ranix.co.kr.

About CAST

Computer Aided Software Technologies, Inc. (CAST) is a silicon IP provider founded in 1993. The company's ASIC and FPGA IP product line includes security primitives and comprehensive SoC security modules; microcontrollers and processors; compression engines for data, images, and video; interfaces for automotive, aerospace, and other applications; and various common peripheral devices. Learn more by visiting www.cast-inc.com.

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