PRODUCT BRIEF

RASIC™ CTRX8144FS 76–81 GHz radar MMIC

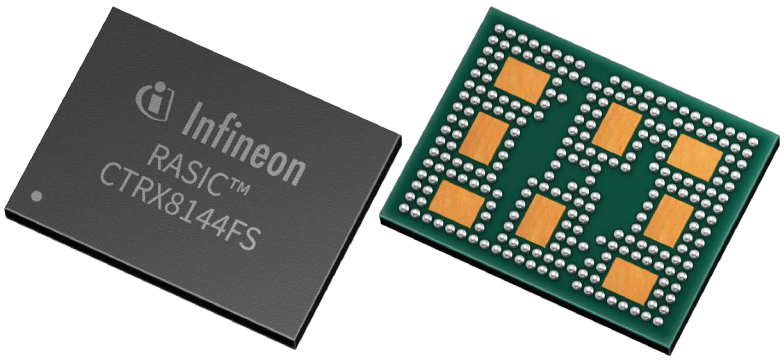
Infineon's RASIC™ 77 GHz radar for automotive ADAS applications: 76–81 GHz radar MMIC with antenna feed in package

Infineon's RASIC™ CTRX8144FS is a high-performance 77 GHz radar optimized for the industry's transition toward centralized automotive radar architectures. Featuring four transmit (TX) and four receive (RX) channels, it enables high-resolution corner radar for next-generation ADAS. The device is specifically designed to work in conjunction with central ADAS SoCs, supporting software-defined vehicle platforms by providing high-speed raw data via a flexible MIPI CSI-2 interface.

The CTRX8144FS uses innovative Antenna Feed in Package (AFIP) technology with integrated waveguide ports to reduce signal loss, simplify thermal management, and lower system cost. Its compact design enables efficient radar sensors that integrate seamlessly into vehicle exteriors.

With up to 4 GHz bandwidth, fast ramp slopes, and low-latency MIPI CSI-2 data streaming, the CTRX8144FS helps deliver reliable detection of vulnerable road users and distant objects – supporting confident, real-time ADAS decisions.

The CTRX8144FS streams raw radar data to a central processor, enabling advanced AI processing while simplifying radar nodes. This architecture supports cost-efficient sensing and software-driven performance upgrades throughout the vehicle's lifecycle.



Key features

The CTRX8144FS is an automotive 4T4R radar transceiver featuring Antenna Feed in Package (AFIP) technology, designed for centralized radar systems in advanced driver assistance applications.

Key figures

- 4TX/4RX channels with integrated RF waveguide ports
- 76–81 GHz operating range
- Up to 200 MHz/µs ramp slope
- 4 GHz chirp bandwidth
- MIPI CSI-2 up to 1.2 Gbps/lane
- Supporting requirements up to ASIL B
- AEC-Q100 Grade 1 qualified

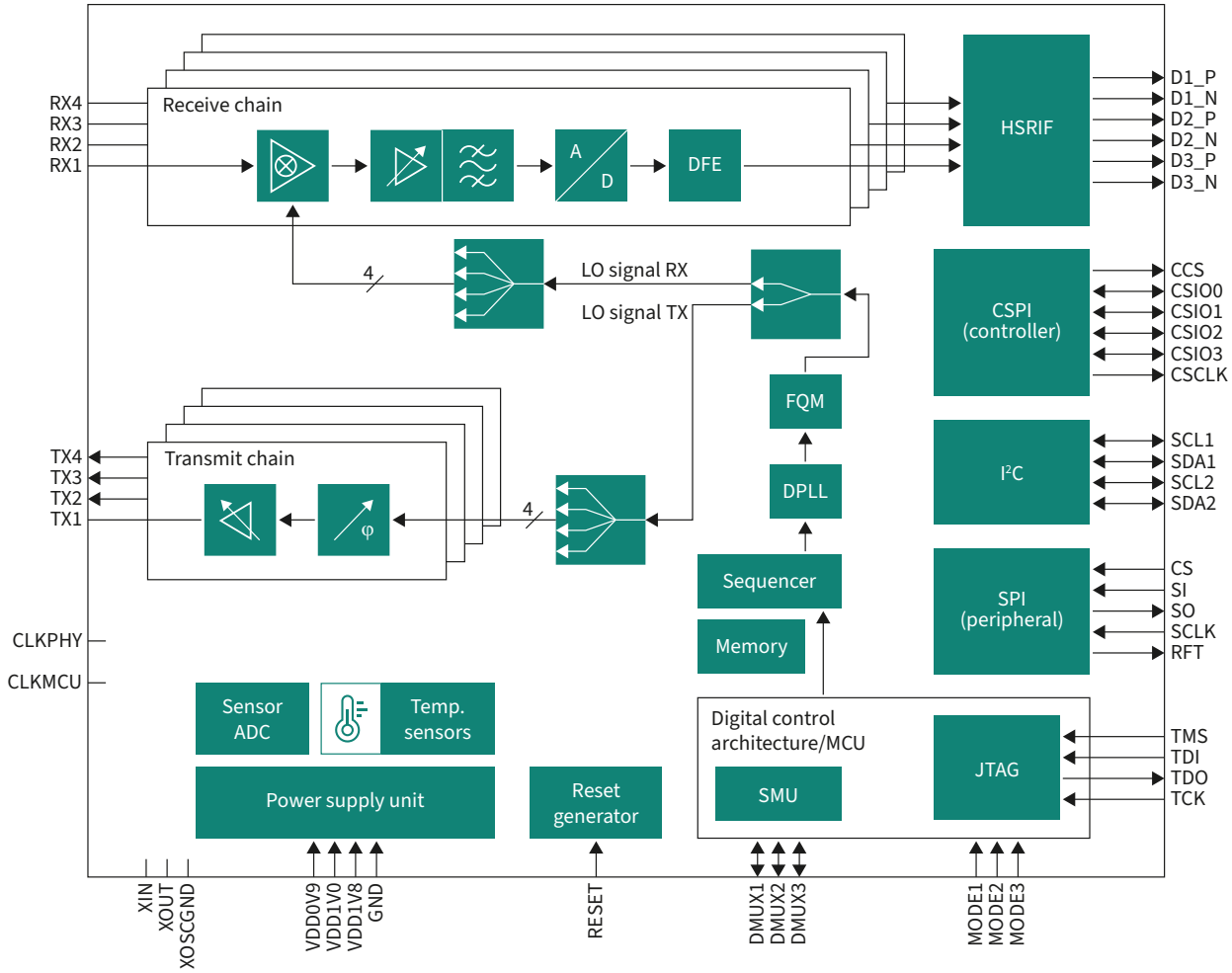
Key benefits

- Supports centralized radar architectures with high-speed raw-data streaming over MIPI CSI-2.
- Enables high-speed radar-data transfer to central ADAS processing for advanced algorithms and improved environmental perception.
- Ensures reliable operation in demanding automotive environments through low thermal resistance and efficient heat dissipation.
- Simplifies radar integration with AFIP technology and integrated LDOs, reducing the number of external supply rails and components required.
- Supports AI- and machine-learning-based sensor fusion by making radar data available to central processors for combination with other sensor data.



www.infineon.com/radar-sensors

Block diagram



Product overview

Sales name	Application area	Frequency min. Frequency max.	Qualification
CTRX8144FS	Automotive radar for ADAS functions, including Adaptive Cruise Control (ACC), Automatic Emergency Braking (AEB), lane assistance, lane-change assistance, Blind-Spot Detection (BSD), parking assistance, and autonomous parking.	76–81 GHz	AEC-Q100

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