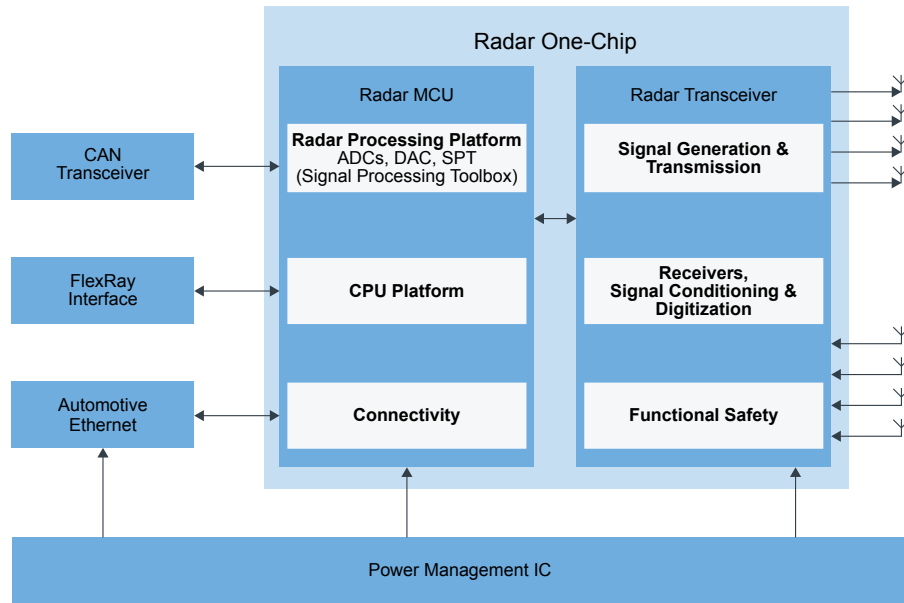# Automotive Radar Solutions

Last Updated: Jan 24, 2025

Radar sensors play an essential role for automotive ADAS to enhance road safety and increase driver convenience. NXP provides a scalable portfolio of highly integrated, safe and secure product families of MMICs, processors and SoCs, addressing increasing safety requirements and enabling autonomous driving levels 2+ and beyond.

System designers require a portfolio with a scalable, streamlined and highly-integrated processing platform that strikes the optimal balance of compute agility and power efficiency for the next-generation of radar sensor solutions. NXP's offering consists of fully integrated 77 GHz RFCMOS transceivers, high-performance processors and small form factor one-chip SoCs to enable the full application spectrum for different types of automotive radar sensors from corner to long-range up to 4D imaging radar. Combined with NXP's comprehensive solutions of PMIC, CAN, Ethernet and FlexRay products, NXP eases time of development for engineers when developing scalable solutions to meet the next generation safety requirements and applications.

Radar Systems Block Diagram

Radar One-Chip

Radar MCU

Radar Processing Platform
ADCs, DAC, SPT
(Signal Processing Toolbox)

CPU Platform

Connectivity

Radar Transceiver

Signal Generation & Transmission

Receivers, Signal Conditioning & Digitization

Functional Safety

CAN Transceiver

FlexRay Interface

Automotive Ethernet

Power Management IC

■ NXP Technology   ▢ Non NXP Technology   ⬚ Optional Technology

Recommended Products for Radar Systems	
Radar MCU	• S32R41: S32R41 High-Performance Processor for High-Resolution Radar • S32R45: S32R45 High-Performance Processor for Imaging Radar • S32R294: Radar Microcontroller
Radar Transceiver	• TEF82xx: Fully Integrated 77 GHz RFCMOS Automotive Radar Transceiver • TEF810X: TEF810x Fully-Integrated 77 GHz Radar Transceiver
CAN Transceiver	• TJA144x: Automotive CAN FD Transceiver Family • TJA1043: High-Speed CAN Transceiver with Standby and Sleep Mode • TJA1463: CAN Signal Improvement Capability Transceiver with Sleep Mode • TJA1462: CAN Signal Improvement Capability Transceiver with Standby Mode
Power Management IC	• PF5200: Dual-Channel PMIC for Automotive Applications – 2 High Efficient LVBUCK, Fit for ASIL B Safety Level • FS84: Safety System Basic Chip for S32 Microcontrollers, Fit for ASIL B

	• PF5024: Multi-Channel (4) PMIC for Automotive Applications – 4 High Power, Fit for ASIL B Safety Level
FlexRay Interface	• TJA1081G: FlexRay™ Node Transceiver - Clamp 30
Automotive Ethernet	• TJA1121: TJA1121, MACsec Enabled ASIL B Compliant Automotive Ethernet 1000BASE-T1 PHY Transceiver • TJA1120: TJA1120, ASIL B Compliant Automotive Ethernet 1000BASE-T1 PHY Transceiver • SJA1110: Multi-Gig Safe and Secure TSN Ethernet Switch with Integrated 100BASE-T1 PHYs • SJA1105PQRS: SJA1105PEL/QEL/REL/SEL Series Ethernet Switches • TJA1104: TJA1104, MACsec Enabled ASIL B Compliant Automotive Ethernet 100BASE-T1 PHY Transceiver • TJA1103: TJA1103, ASIL B Compliant Automotive Ethernet 100BASE-T1 PHY Transceiver • TJA1101: TJA1101B, IEEE 100BASE-T1 Compliant Automotive Ethernet PHY Transceiver
Radar One-Chip	• SAF86XX: One-Chip RFCMOS Automotive Radar SoC for Distributed Architectures • SAF85XX: High Performance 77GHz RFCMOS Automotive Radar One-Chip SoC

View our complete solution for Automotive Radar Solutions.

Note: The information on this document is subject to change without notice.

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