

## **Automotive Radar Systems**

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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 Transceiver	¥
	CAN Transceiver	Radar Processing Platform ADCs, DAC, SPT (Signal Processing Toolbox)		Signal Generation & Transmission	¥
	FlexBay		<b>+</b>	Receivers,	
	FlexRay Interface	← CPU Platform		Signal Conditioning & Digitization	<b>↓</b>
	Automotive Ethernet	Connectivity		Functional Safety	
				1	
	Non NYP Technology	Power Managemer	it IC		
NXP Technology	Non NXP Technology	Power Managemer	t IC		
		Optional Technology	t IC		
Recommended Produc	• S32R41: S32R • S32R45: S32R	Optional Technology	- High-R		
Recommended Produc	• S32R41: S32F • S32R45: S32F • S32R294: Rad • TEF82xx: Fully	S  A  A  High-Performance Processor for  A  S  S  C  C  C  C  C  C  C  C  C  C  C	- High-R - Imagin motive F	ng Radar Radar Transceiver	
NXP Technology Recommended Produc Radar MCU Radar Transceiver CAN Transceiver	• S32R41: S32R           • S32R41: S32R           • S32R45: S32R           • S32R294: Rad           • TEF82xx: Fully           • TEF810X: TEF           • TJA144x: Auto           • TJA144x: Auto           • TJA144x: Auto           • TJA1443: High           • TJA1463: CAN	S R41 High-Performance Processor for R45 High-Performance Processor for dar Microcontroller y Integrated 77 GHz RFCMOS Autor	• High-R • Imagin motive F ır Transı dby and nsceive	ng Radar Radar Transceiver sceiver d Sleep Mode er with Sleep Mode	

	PF5024: Multi-Channel (4) PMIC for Automotive Applications – 4 High Power, Fit for ASIL B Safety Level
FlexRay Interface	• TJA1081G: FlexRay <sup>™</sup> Node Transceiver - Clamp 30
Automotive Ethernet	<ul> <li>TJA1121: TJA1121, MACsec Enabled ASIL B Compliant Automotive Ethernet 1000BASE-T1 PHY Transceiver</li> <li>TJA1120: TJA1120, ASIL B Compliant Automotive Ethernet 1000BASE-T1 PHY Transceiver</li> <li>SJA1110: Multi-Gig Safe and Secure TSN Ethernet Switch with Integrated 100BASE-T1 PHYs</li> <li>SJA1105PQRS: SJA1105PEL/QEL/REL/SEL Series Ethernet Switches</li> <li>TJA1104: TJA1104, MACsec Enabled ASIL B Compliant Automotive Ethernet 100BASE-T1 PHY Transceiver</li> <li>TJA1103: TJA1103, ASIL B Compliant Automotive Ethernet 100BASE-T1 PHY Transceiver</li> <li>TJA1101: TJA1101B, IEEE 100BASE-T1 Compliant Automotive Ethernet PHY Transceiver</li> </ul>
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 Systems.

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