

# S32R27/S32R26 Radar Microcontroller

## Power Architecture®-based MCU for Automotive and Industrial Applications

### Product One-Sheet

Get Sample

Data Sheet

Tools

**Computation cores**—Dual Power Architecture e200z7 32-bit CPU compatible with MPC5775K and S32R27/26

**Dedicated safety processing cores**—Dual cores with checker core (available in lockstep operation)

**Optimized RADAR signal processing acceleration to maximize performance/watt**

**Scalable family of solutions**—Pin-compatible with S32R37

**Automotive safety**—Designed for ASIL D applications

**Security enabled**—Embedded cryptographic security engine

**Optimized EMC**—Improved EMC performance in the GLONASS band when using S32R264

### Specifications

Cores	2 x e200z7 2 x e200z4 (lock-step)	Speed	e200z7: 240 MHz e200z4: 120 MHz
On-Chip Flash	2 MB w/ ECC	SRAM	1.5 MB w/ ECC
RADAR processing	Signal Processing Toolbox SPT 2.0	RADAR I/F	MIPI-CS12 (4 data lanes) $\Sigma\Delta$ -ADC (4 x 12-bit, 10 MSps) DAC (10 MSps)
Safety	ISO26262 SEooC up to ASIL D	Security	CSE2 (Cryptographic Services Engine)
Temp Range (Tj)	-40 °C to 150°C AEC-Q100 Grade 1	Comm. I/F	Zipwire (MCU I/F) 2 x SAR-ADC 2 x SPI 2 x I <sup>2</sup> C 3 x FlexCAN (incl. 2 x CAN FD) FlexRay™ LINFlexD Ethernet

### Features



Exceptional performance/watt

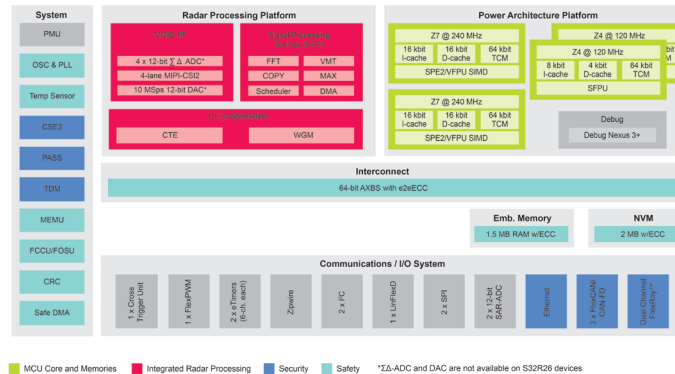


Safety with automotive pedigree

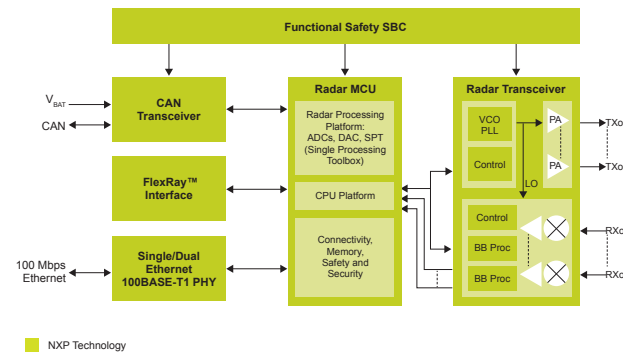


Integrated accelerators designed for radar applications

### S32R2x Product Block Diagram



### Radar Application



### Target Applications

- Automotive radar applications
  - Low- to mid-range radar, including side-looking and surround sensors, lane change/keeping assist, blind spot detection, rear-traffic-crossing alert
  - Long-range radar, including forward-looking sensor, adaptive cruise control, autonomous emergency braking, pedestrian protection
- Non-automotive radar applications
  - Building surveillance, protecting hazardous points, areas and access
  - Smart home accident detection for the elderly
  - Industrial automation, e.g., position

### Enablement Tools

- AUTOSAR® Safety MCAL and non-AUTOSAR MCAL
- S32 Design Studio IDE support with plug-ins for third-party tool vendor compilers and debuggers
- Compiler support by WindRiver, GreenHills®
- Debugger support by Lauterbach, P&E, iSystems
- Radar accelerator graph editor and radar SDK
- SDK with low-level drivers integrated in S32DS IDE
- Model-based design in MATLAB® for radar accelerator
- RDK-S32R274 automotive radar reference platform
- Hardware and software tools compatible with S32R37 microcontroller

[www.nxp.com/S32R27](http://www.nxp.com/S32R27)

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