

S32R294 RADAR MICROCONTROLLER

32-bit Multicore MCU for Automotive and Industrial Radar Sensor Applications



OVERVIEW

The S32R294 is a 32-bit Power Architecture® based MCU designed to extend the existing S32R product family that already includes the MPC5775K, S32R274 and the S32R372 devices. The S32R294 product family is targeted at the automotive ADAS, industrial, and consumer electronics radar markets with dedicated software and enablement targeted at this application space. The S32R294 helps enable customers to build scalable, safe and secure radar systems with low power consumption to address the challenges of the automotive ADAS radar market.

KEY FEATURES

- Dual Power Architecture e200z7 32-bit CPU for application processing
- Dedicated safety processing e200z4 cores in lockstep mode
- Signal Processing Toolkit (SPT 2.8) for optimized radar signal processing acceleration to maximize performance/watt
- Power Architecture platform that enables backward compatibility with MPC5775K and S32R27/26 with 2x the CPU and SPT performance and half the typical power of S32R27/26
- Designed to meet ASIL D ISO26262 Applications
- Cryptographic Services Engine with secure boot and advanced security algorithms
- Scalable family with several options for performance and feature levels

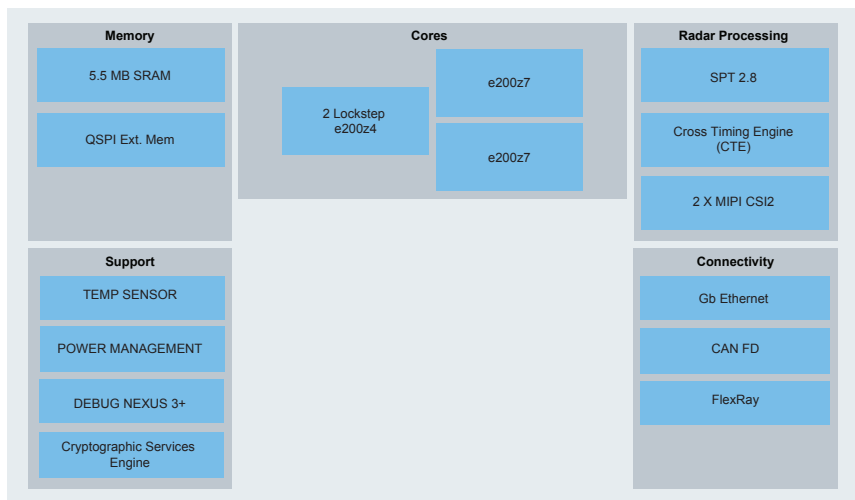
ENABLEMENT SOFTWARE AND TOOLS

- Radar SDK for S32R29x with support for NXP TEF82xx and TEF81xx front ends
- AUTOSAR® Safety MCAL and non-AUTOSAR MCAL
- Structural Core Self-Test for Power PC e200z7
- Model-based design in MATLAB® for radar accelerator
- S32 Design Studio IDE support with plug-ins for third-party tool vendor compilers and debuggers
- SDK with low-level drivers integrated in S32DS IDE
- Compiler support by WindRiver, GreenHills®
- Debugger support by Lauterbach, P&E, iSystems

TARGET APPLICATIONS

The S32R294 provides additional family scalability when compared to the previous device, S32R274. It provides up to 5.5 MB SRAM, an additional MIPI CSI-2 interface, along with a doubling of the clock frequency for the cores. The S32R294 provides an optimized solution to the "Corner Sensor" application segment as shown in figure 1.

S32R294 RADAR PROCESSOR



APPLICATION BLOCK DIAGRAM

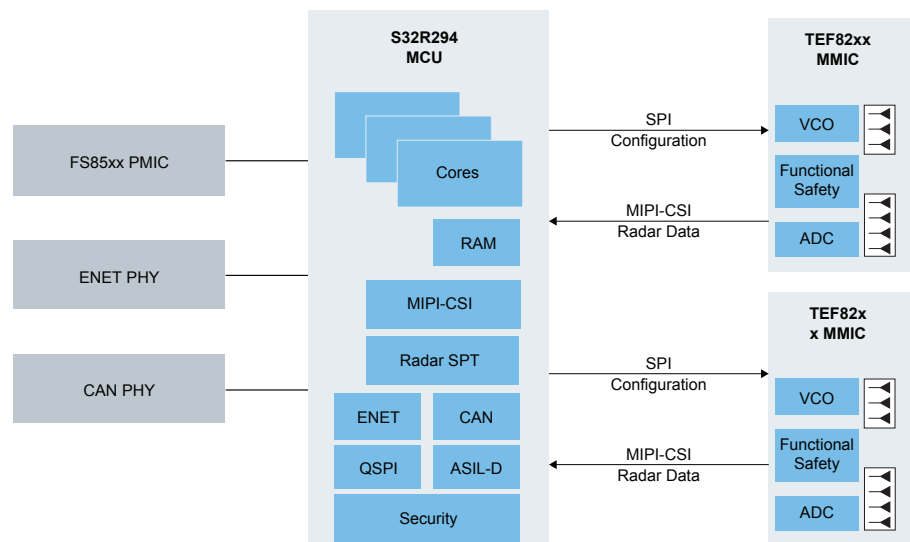


Figure 1: Target radar application

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