

# S32R37 Radar Microcontroller

Power Architecture®-based MCU for Automotive and Industrial Applications

### Features

- Best in class performance/watt
- Safety with automotive pedigree
- Integrated accelerators designed for radar applications

## Product One-Pager

- [Get Samples](#)
- [Data Sheet](#)
- [Tools](#)

**Computation Cores** – Dual Power Architecture e200z7 32-bit CPU backward compatible to MPC5775K

**Scalable Family of Solutions** – Pin compatible with S32R27

**Optimized RADAR Signal Processing Acceleration to maximize performance/watt**

**Automotive Safety** – Designed for ASIL-B applications

**Security Enabled** – Embedded cryptographic security engine

**Memory** – 1.2 MB embedded Flash with 1 MB SRAM (ECC on all memories)

## Specifications

Cores	2x e200z7	Speed	e200z7: 240 MHz
On-Chip Flash	1.2 MB w/ ECC	SRAM	1.0 MB w/ ECC
Radar processing	Signal Processing Toolbox SPT 2.5	Radar I/F	MIPI-CSI2 (2 data lanes) ΣΔ-ADC (4x 12-bit, 10 MSps) DAC (10 MSps)
Safety	ISO26262 SEooC up to ASIL-B	Security	CSE2 (Cryptographic Services Engine)
Temp Range (Tj)	-40 to 150°C AEC-Q100 Grade 1	Comm. I/F	1x FlexPWM (12channels) 1x eTimers – 6 channels each 2x IIC 2x LinFlex Ctrl 2x FlexCAN/CAN-FD 2x dSPI

## Orderable Sample Part Numbers

Part Number	Flash	Temp Range	SRAM	CSE2	Package
FS32R372SDK0MMMT	1.2 MB	-40 to 125 °C	1.0 MB	Y	257 MAPBGA
FS32R372SEK0MMMT	1.2 MB	-40 to 125 °C	1.0 MB	N	257 MAPBGA

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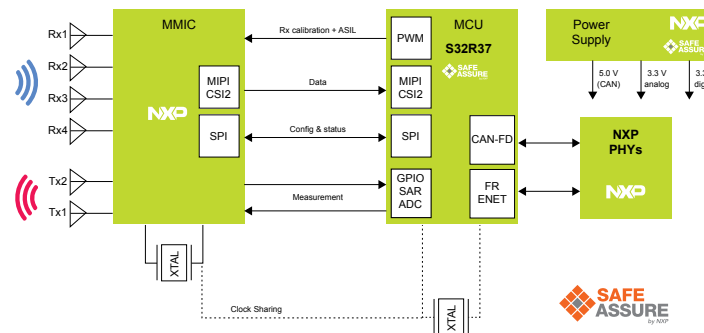
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## Product Block Diagram



## Radar Application



## Target Applications

- ▶ Automotive radar applications
  - Low to Mid range Radar incl. side-looking and surround sensors, Lane Change/Keeping Assist (LCA, LKA), Blind-Spot Detection (BSD), Rear-Traffic-Crossing Alert (RTCA)
- ▶ Non-automotive radar applications
  - Building Surveillance protecting hazardous points, areas and access
  - Smart Home detecting home accidents especially for elder people
  - Industrial Automation e.g. position determination and safety guard

## Enablement Tools

- ▶ AUTOSAR safety MCAL and non-AUTOSAR MCAL
- ▶ S32 Design Studio IDE support with plugins 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

