S32R45 High-Performance Processor for Imaging Radar

S32R45

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To build a complete radar system, please check out the fully integrated 77 Ghz RFCMOS companion Transceiver TEF82xx.

S32R45 is a 32-bit automotive radar microprocessor unit (MPU) based on Arm® Cortex® - A53 and Arm® Cortex® - M7 cores. Focused on advanced high resolution long-range front or rear radar sensors, providing imaging radar resolution capabilities. The high performance radar processing and power efficiency enable the latest ADAS radar applications with a dedicated processor suitable for volume adoption, while also covering industrial and consumer applications where dedicated high performance radar processing is required.

Designed to satisfy the latest security requirements through its HSE security engine, and meeting ASIL ISO26262 ASIL B(D) requirements, the S32R45 is the complete device for high performance radar processing.
S32R45 Radar MPU Block Diagram

Memory
- 8 MB SRAM
- QSPI/HYPERFLASH
- DDR3/LPDDR4

Cores
- Arm A53
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- Arm A53
- Arm A53
- Arm® M7 LS

Safe Interconnect

Support
- TEMP SENSOR
- POWER MANAGEMENT
- DEBUG NEXUS 3+
- 2 x SAR ADC

Safety and Security
- HSE-H SECURITY
- FCCU

Connectivity
- 2 x PCIe
- 2 x GB ENET
- 8 x CAN FD

Environmental Modelling
- LINEAR ALGEBRA ACCELERATOR

S32R45 Software Ecosystem Block Diagram

RADAR Processing Applications
- LAX API
- RFE Abstract
- CTE driver
- CSI2 driver
- SPTdriver

AUTOSAR or RTOS
- IPCF

Operating System
- Linear Algebra Library
- LAX 1.0
- Linux

Board Support Package
- Arm® A53

Structural Core Self-Test
- Kernels
- Dispatcher

SPT model tool
dsp model tool

S32 Design Studio:
Pin MUX tool
Clock tool
Peripheral tool
SAF configuration tool

TRACE 32

Real Time Drivers
- S32 Flash Tool
- RADAR extension package

Green Hills Software

NXP Software
Hardware
Firmware
Software
Tools
Application
View additional information for S32R45 High-Performance Processor for Imaging Radar.

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