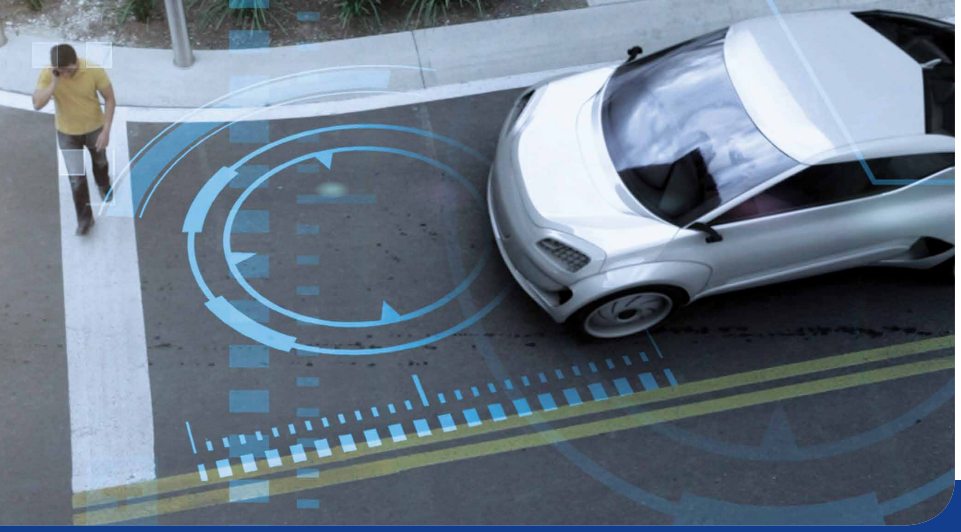


Vision and sensor fusion applications

S32V234 Processor for Advanced Driver Assistance

Targeted for ASIL B/C ADAS applications, the high-performance S32V234 automotive processor supports secure, computation-intensive vision and sensor fusion applications.

TARGET APPLICATIONS

- Front camera advanced driver assistance systems (ADAS), including applications such as pedestrian detection, object detection, lane departure warning, smart head beam control and traffic sign recognition
- Surround view applications where the image data can be received in encoded form (MJPEG or H.264) via Ethernet or in raw formats via the MIPI-CSI2 or VIU interfaces
- Smart rearview camera applications
- Sensor fusion computing in communication with a radar MCU

Designed and manufactured to our proven automotive practices, and with embedded Crypto Security Engine (CSE), the S32V234 MPU satisfies developers' needs for safety, security and reliability.

ENABLEMENT TOOLS

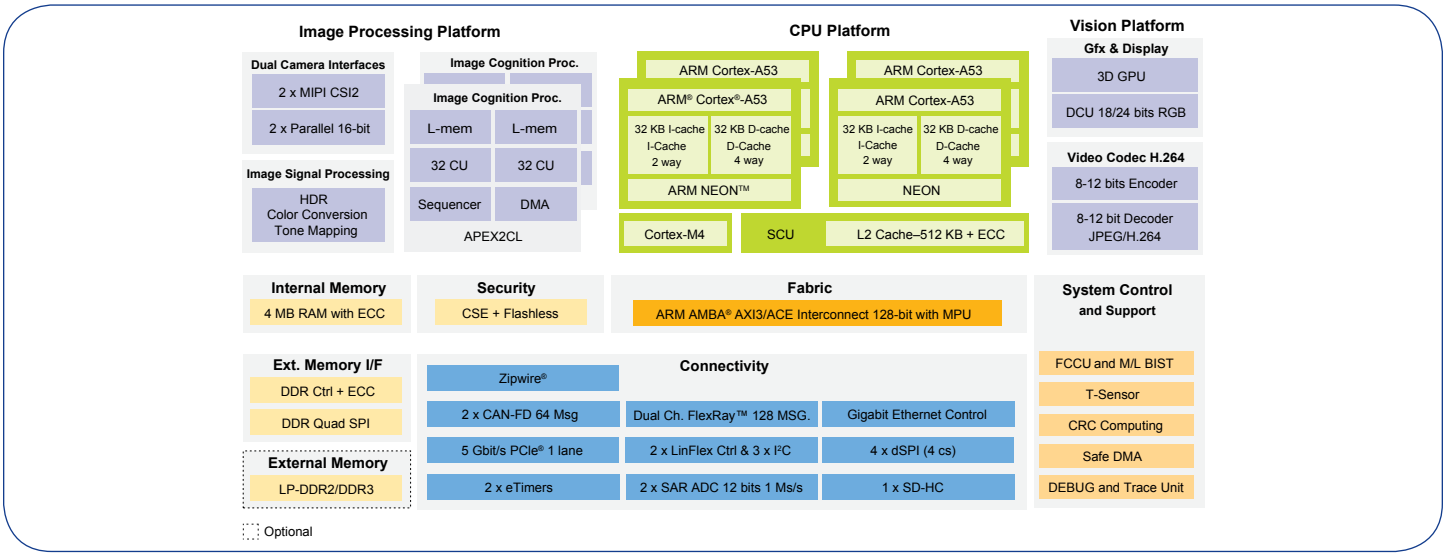
- SBC-S32V234 evaluation board (EVB)
- S32V234 EVB
- BlueBox autonomous vehicle platform S32VLS2-RDB
- S32V234 Vision-based camera options
  - MXOV10635-S32V
  - MAX9286S32V234
  - OV10640CSP-S32V, S32V- SONYCAM
- AUTOSAR OS and MCAL
- S32 Design Studio IDE with integrated vision SDK
- Strong third-party support
- Simulation and early code development solutions available

S32V234 MCU FAMILY

Key Features	Benefits
Designed and manufactured to satisfy automotive reliability and ISO 26262 ASIL B/C functional safety requirements	Enables adherence to ISO 26262 ASIL B standard for automotive safety applications
Quad 1 GHz Arm® Cortex®-A53 core + Arm NEON™ core platform	9.2 K DMIPS processing horsepower (without acceleration) for management of ADAS tasks
Arm Cortex-M4 core at 133 MHz for I/O control and AUTOSAR OS	Enables automotive OS such as AUTOSAR to control interfaces to external devices without impacting Cortex-A53 performance
Embedded security	Security engine together with Arm TrustZone® technology provides protection against IP theft and malicious hacking
Dual APEX-2 image processing engine	Allows high-performance, low-power processing of incoming image data
Image signal processor	Performs image housekeeping tasks such as HDR and color conversion, plus some dedicated image processing tasks
3-D graphics processing unit (GPU)	For rendering 3-D images; may also be used for additional image analysis tasks
Video input: dual MIPI-SCI; dual video input unit (VIU)	Supports mono, stereo and surround view camera inputs; H.264 decode and encode also supported
Memory interfaces	DRAM support for LPDDR2/DDR3L/DDR3 for high-bandwidth data access, plus dual QuadSPI for external flash

The S32V234 is part of our SafeAssure® program and designed specifically to address ISO 26262 ASIL B/C functional safety requirements.

S32V234 BLOCK DIAGRAM



SafeAssure PROGRAM

Functional safety. Simplified.

Our SafeAssure functional safety program is designed to help system manufacturers more easily achieve system compliance with International Standards Organization (ISO) 26262 and International Electrotechnical Commission (IEC) 61508 functional safety standards. The program highlights our solutions—hardware and software—that are optimally designed to support functional safety implementations and come with a rich set of enablement collateral.
For more information, visit **www.nxp.com/SafeAssure.**

SAFE ASSURE™ by NXP

www.nxp.com

NXP, the NXP logo and the SafeAssure logo are trademarks of NXP B.V. All other product or service names are the property of their respective owners. Arm, Cortex and TrustZone are registered trademarks of Arm Limited (or its subsidiaries) in the EU and/or elsewhere. NEON is a trademark of Arm Limited (or its subsidiaries) in the EU and/or elsewhere. © 2017 NXP B.V.

Document Number: S32V234FS REV 3