

Product Brief

TC297TA – AURIX™ family

Dedicated to driver assistance systems

AURIX™ family – TC297TA series is dedicated to the Advanced Driver Assistance Systems (ADAS) segment, addressing radar and camera applications.

Innovation has been focused on system partitioning in order to further integrate system functionality and consequently reduce the complexity and area, providing our customers with highly optimized solutions.

The new devices include high-speed interfaces, integrated hardware acceleration and enhanced ECU validation and instrumentation tools.

All **ADAS** devices have been designed in accordance with the ISO 26262 safety methodology, meaning that they can be involved in automatic decisions to assist drivers, such as emergency braking.

Dedicated radar peripherals

- › Radar signal processing accelerator (FFT) with hardware windowing functionality
- › Flexibility in radar signal acquisition with 4x internal ADCs
- › 16-bit parallel interface to connect external ADCs
- › High-precision input timers
- › High-precision output timers for DAC

Dedicated vision peripherals

- › Picture pre-processing unit
- › Camera interface up to 100 MHz
- › MJPEG compression

System benefits

- › High integration for reduced complexity and significant cost savings
- › Innovative single supply concept leads to best-in-class power consumption, and reduced number of external supplies
- › Diverse lockstep core concept enables reduced development effort
- › Support for ISO 26262 decisions such as emergency braking
- › High-speed trace port enables reduced requirements on integrated RAM and reduced overhead for automotive instrumentation vision

Main features

Application features TC297TA

- › Triple TriCore™ with up to 300 MHz
- › TriCore™ DSP functionality
- › Supporting floating point and fix point with all cores
- › Dedicated FFT HW acceleration unit
- › Up to 8 MB flash w/ECC protection
- › 128 KB EEPROM at 500 k cycles
- › Up to 728 KB + 2 MB RAM w/ECC protection for radar/camera image storage
- › 4x 12-bit SAR ADC converter
- › Ethernet 100 Mbit
- › FlexRay, CAN, LIN, SPI including data rate enhanced CAN FD
- › Redundant and diverse timer modules (GTM, CCU6, GPT12)
- › Programmable HSM (Hardware Security Module)
- › External memory interface
- › High-speed serial interface for inter-processor communication
- › High-speed trace port 2.5 GHz for real time vision and radar data tracking
- › Single voltage supply 5 V or 3.3 V
- › LFBGA-292 package

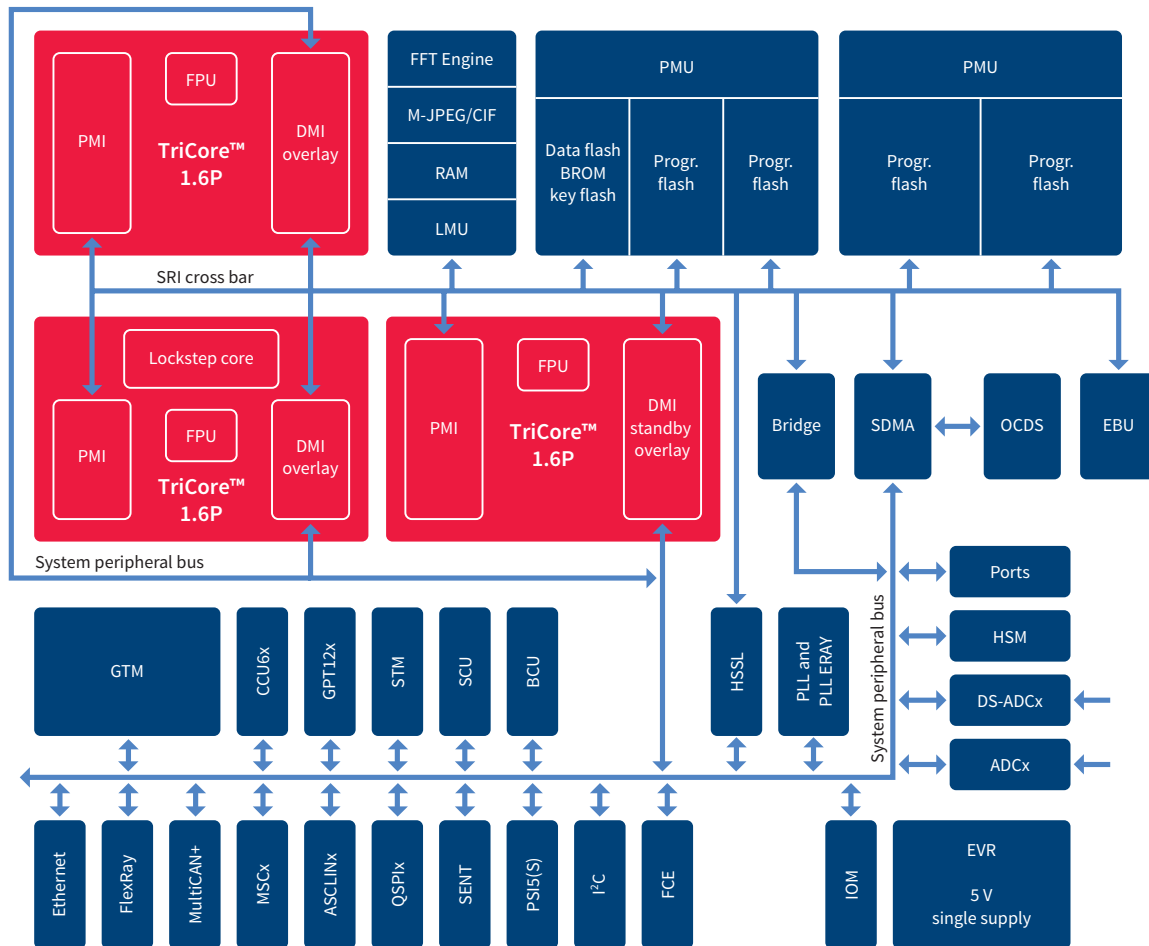
Most innovative safety

- › Diverse lockstep core with clock delay
- › Access permission system
- › Safety management unit
- › Safe DMA
- › I/O, clock, voltage monitor
- › ISO 26262 compliance to support safety requirements up to ASIL-D
- › Availability of AUTOSAR 4.x

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Block diagram



Product summary

Type	Core	Accelerator	eFlash [MB]	Data flash [KB]	Frequency [MHz]	SRAM [MB]	Package	Temp. range [°C]
SAK-TC297TA-128F300	3x TriCore™	FFT/pixel	up to 8	128 ¹⁾	up to 300	2.75	LFBGA-292	-40 ... +125

1) EEPROM emulation (up to 500 k w/e cycles)

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