

Product Brief

AURIX™ – TC275T/TC277T

Performance meets safety

AURIX™ is Infineon's brand new family of microcontrollers serving exactly the needs of the automotive industry in terms of performance and safety. Its innovative multicore architecture, based on up to three independent 32-bit TriCore™ CPUs, has been designed to meet the highest safety standards while increasing the performance at the same time.

Using the AURIX™ platform, automotive developers will be able to control powertrain, body, safety and ADAS applications with one single MCU platform. Developments using AURIX™ will require less effort to achieve the ASIL-D standard than with a classical lock-step architecture.

Customers are now able to cut down their MCU safety development significantly. By the same token, a performance surplus of 50 percent up to 100 percent allows for more functionality and offers a sufficient resource buffer for future requirements, keeping the power consumption on the singlecore microcontroller level.

Leading edge performance

- > Three high performance 32-bit super-scalar TriCore™ V1.6.1 CPUs running at 200 MHz in the full automotive temperature range
- > Dedicated closely coupled memory areas per core
- > Innovative general timer module, additional redundant diverse GPT1 timer unit

System benefits

- > Diverse lockstep architecture to reduced development effort for ISO 26262 systems
- > High integration for reduced complexity and significant cost savings
- > Delta-sigma analog-to-digital converters for fast and accurate measurements
- > Innovative single supply concept leads for low power consumption and low cost external supply
- > Scalable package family for flexibility across platform concepts
- > Dedicated emulation device chip (ED) for multicore debugging, tracing and calibration
- > Hot package options for extended temperature range

Main features

Features TC275T/TC277T

- > Triple TriCore™ with 200 MHz
- > TriCore™ DSP functionality
- > Up to 4 MB flash w/ECC protection
- > 64 KB EEPROM at 500 k cycles
- > Up to 472 KB RAM w/ECC protection
- > 64x DMA channels
- > 6 diff. ch. delta-sigma ADC
- > 60x 12-bit SAR ADC converter
- > Powerful Generic Timer Module (GTM)
- > SENT, PSI5, PSI5S sensor interfaces
- > Ethernet 100 Mbit
- > FlexRay, CAN, LIN, SPI including data rate enhanced CAN FD
- > Programmable HSM (Hardware Security Module)
- > Single voltage supply 5 V or 3.3 V
- > LQFP-176 package
- > LFBGA-292 package, 17 x 17 mm small

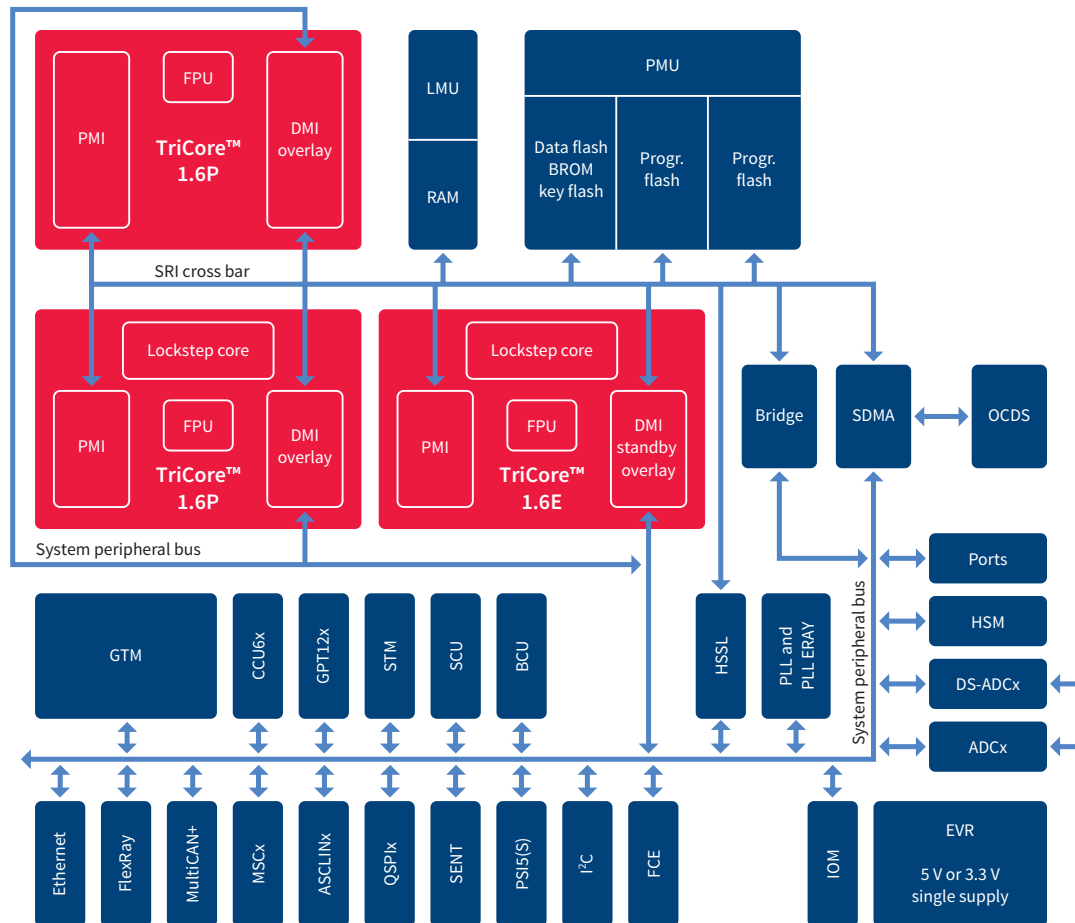
Most innovative safety

- > Diverse lockstep core with clock delay
- > Redundant and diverse timer modules (GTM, CCU6, GPT12)
- > Access permission system
- > Safety management unit
- > Safe DMA
- > I/O, clock, voltage monitor
- > ISO 26262 compliance to support safety requirements up to ASIL-D
- > AUTOSAR V3.2 and V4.x

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Block diagram



Product summary

Type	eFlash [MB]	Data flash [KB]	Frequency [MHz]	SRAM [KB]	Package	Temp. range [°C]
SAL-TC270T-64F200	4	64 ¹⁾	200	472	Bare die	-40 ... +170
SAK-TC277T-64F200S	4	64 ¹⁾	200	472	LFBGA-292	-40 ... +125 ²⁾
SAK-TC275T-64F200W	4	64 ¹⁾	200	472	LQFP-176	-40 ... +125 ²⁾

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

2) Hot package options with $T_a = 150^\circ\text{C}$ are available on request

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