



Product Brief

AURIX™ TC39xXA

High-performance radar and autonomous driving microcontroller

Infineon releases its second generation AURIX™ microcontroller in embedded flash 40 nm technology. It comes back with an increase in performance, memory sizes, connectivity and more scalability to address the new automotive trends and challenges. This family has more than 20 products to provide the most scalable portfolio of safety microcontroller. In terms of performance, the highest end product (TC39x) offers 6 cores running at 300 MHz and up to 6.9 MBytes embedded RAM, and consuming below 2 W. Its mirrored embedded flash banks offers A/B swap capabilities.

For radar applications, the TC397XA comes in a small BGA-292 package (17 x 17 mm). It embeds specific accelerators and offers high amount of embedded RAM (1x 4 Mbyte block). The SPU (Signal Processing Units) is dedicated to the radar processing, and offers not only FFT acceleration, but also filtering and mathematical transforms functions (e. g.: CFAR, binning, windowing, ...). A complete tool chain is also provided to help customers develop optimized algorithms.

The TC397XA is software and pin to pin downward compatible to the more cost effective radar microcontroller TC375TA.

Safety is the core know-how of Infineon, and all products provide safety mechanism (including but not limited to lock-step cores, LBIST, ECC RAM) to ensure a safety platform supporting ASIL-D ISO 26262. The TC39x has 4 lock-stepped cores and 2 non lock-stepped cores, providing up to 2700 DMIPS in ASIL-D and 1300 DMIPS in ASIL-B.

In terms of security, this product has an HSM compliant eVita full, ensuring the implementation of future proofed security measure. On top of this, it offers extensive connectivity with CAN FD, FlexRay, LINs, QSPI and new high speed communicating interfaces such as Gbit.

Key features

- > 6 TriCore™ running at 300 MHz with 4 additional checker cores delivering 4000 DMIPS
- > 16 MB flash and up to 6.9 MB SRAM
- > 1 Gbit Ethernet and 12 CAN FD
- > 1x eMMC/SDIO
- > ISO 26262 ASIL-D support
- > eVita Full HSM (ECC256 and SHA2)
- > AUTOSAR 4.2 support
- > 165°C junction temperature

Radar cluster

- > LVDS radar interface
- > Lock-stepped radar processor
- > High bandwidth radar SRAM

Key benefits

- > Infineon chipset: front-end and safe power supply
- > Highly integrated solution for performance demanding radar applications
- > Fully compatible with TC357TA for more cost effective solutions

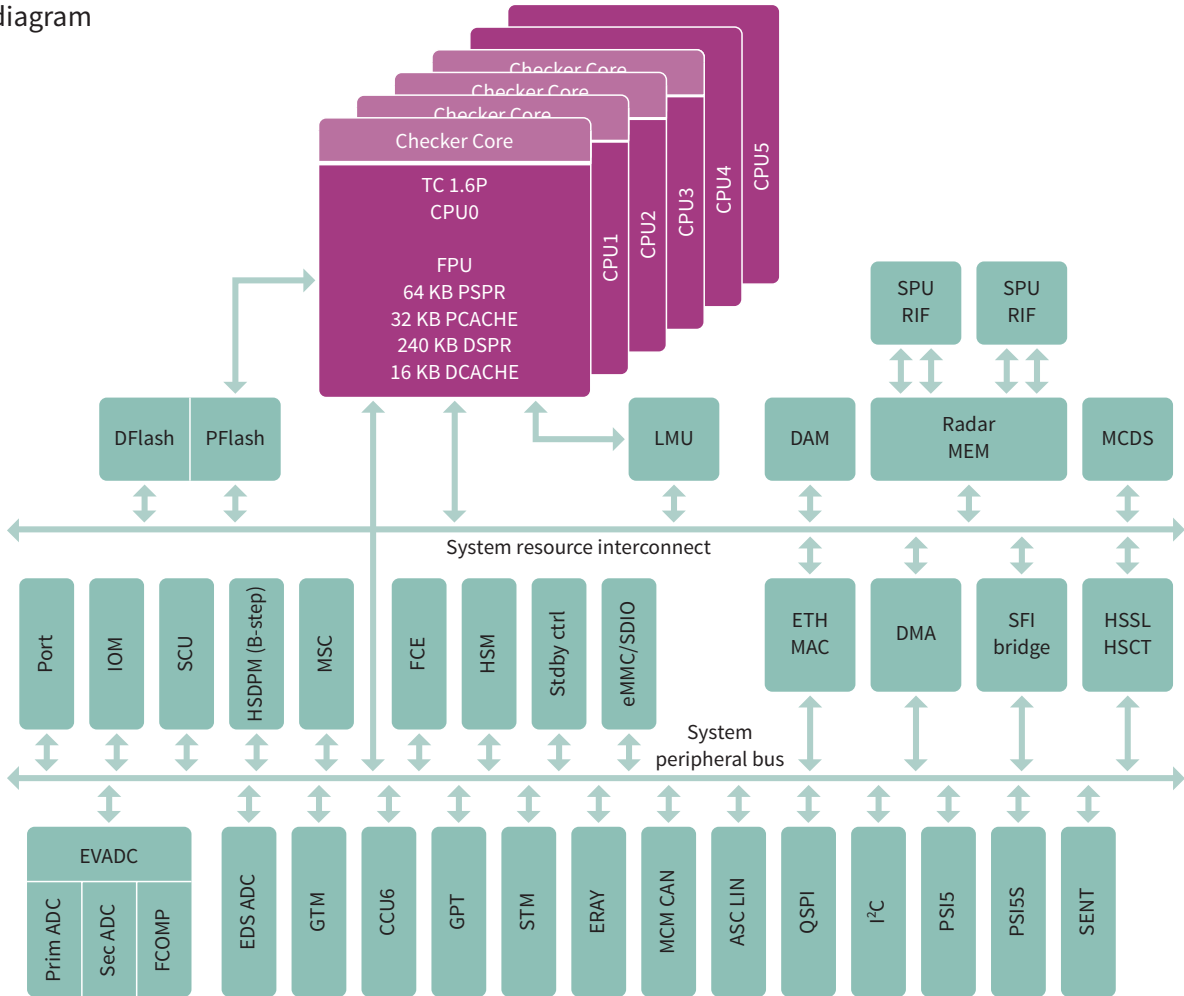
Key applications

- > Long range and medium range radars: LRR and MRR
- > Sensor fusion and autonomous driving computers

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Block diagram



Product table

| Type | Description | Ordering code |
|----------------------|---|---------------|
| SAK-TC397XA-256F300S | 6x 300 MHz TriCore™, 16 MB Flash, 6.9 MB SRAM, 2x SPU, Radar interface, 1 Gbit/s Ethernet, 12 CAN FD, eVita Full HSM, LFBGA-292 | on request |
| KIT_A2G_TC397A_S_TRB | Eval Board: 6x 300 MHz TriCore™, 16 MB Flash, 6.9 MB SRAM, 2x SPU, Radar interface, 1 Gbit/s Ethernet, 12 CAN FD, eVita Full HSM, LFBGA-292 | on request |

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