

Product brief

AURIX™ TC33xDA

Microcontroller with optimized performance for corner radar

Infineon releases its second generation AURIX™ TC3xx microcontroller in embedded Flash 40 nm Technology. It comes with optimized performance, memory sizes, connectivity and scalability to address the new automotive trends and challenges. In terms of performance, the corner radar application optimized TC33xDA offers 2 cores at 300 MHz, up to 1.3 MBytes embedded RAM, and consumption below 1 W.

For radar applications, the TC33xDA comes in a BGA-292 package (17 x 17 mm) and in a BGA-180 package (12 x 12 mm) for space critical designs. It embeds specific accelerators and offers optimised radar specific embedded RAM for corner Radar use cases (1 MB). The SPU (Signal Processing Unit) 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 TC33xDA is software and pin to pin compatible to easily migrate to TC39xA and TC35xTA, in order to build a complete radar portfolio.

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 TC33xDA has 1 lock-stepped core and 1 non lock-stepped core, providing up to 700 DMIPS in ASIL-D and 700 DMIPS in ASIL-B.

In terms of security, this product has an HSM compliant Full EVITA, ensuring the implementation of future proofed security measure. On top of it, it offers extensive connectivity with CAN-FD, FlexRay, LINs, QSPI and new high speed communicating interfaces such as Gigabit Ethernet (RGMII).

Key features

- › 2 TriCore™ running at 300 MHz with 1 additional checker core delivering 1400 DMIPS
- › 2 MB flash and up to 1.3 MB SRAM
- › 1 Gbit Ethernet and 4 CAN FD
- › ISO 26262 ASIL-D support
- › EVITA Full HSM (ECC256 and SHA2)
- › AUTOSAR support
- › 165°C junction temperature

Radar cluster

- › LVDS radar interface
- › High bandwidth radar SRAM
- › Radar signal processing unit

Key benefits

- › Infineon chipset: front end and safe power supply
- › Highly integrated solution for performance demanding radar applications
- › Compatible with TC39xA and TC35xTA for flexibility in design

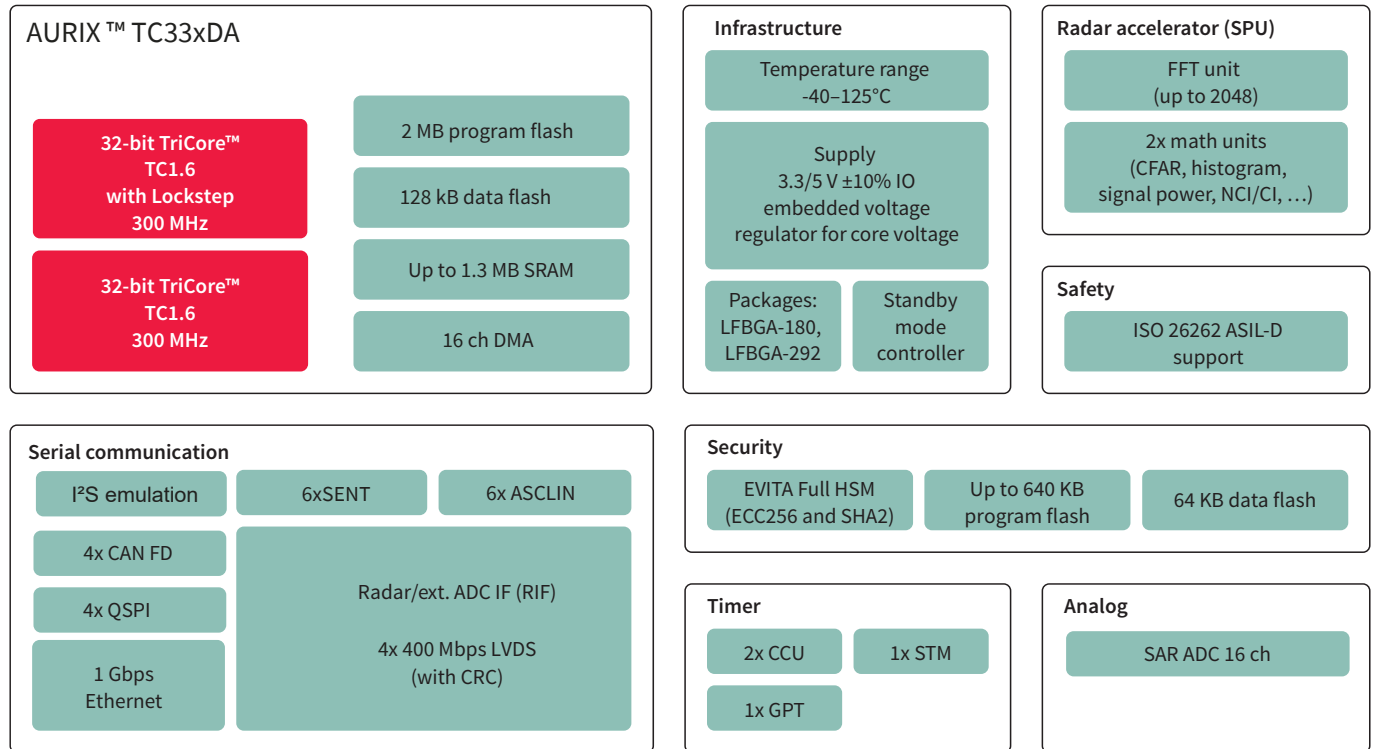
Key applications

- › short range radars 77/79 GHz (SRR), corner and blind spot detection

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Block diagram



Product table

Type	Description	Ordering code
SAK-TC33xDA-32F300S	2x 300 MHz TriCore™, 2 MB flash, 1.3 MB SRAM, 1x SPU, radar interface, 1 Gbps Ethernet, 4 CAN FD, EVITA Full HSM, LFBGA-292	On request
KIT_A2G_TC33xA_S_TRB	Eval board: 2x 300 MHz TriCore™, 2 MB flash, 1.3 MB SRAM, 1x SPU, radar interface, 1 Gbps Ethernet, 4 CAN FD, EVITA Full HSM, LFBGA-292	On request
KIT_A2G_TC33xA_TFT	Low cost kit: 2x 300 MHz TriCore™, 2 MB flash, 1.3 MB SRAM, 1x SPU, radar interface, 1 Gbps Ethernet, 4 CAN FD, EVITA Full HSM, LFBGA-292	On request

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Warnings

Due to technical requirements, our products may contain dangerous substances. For information on the types in question, please contact your nearest Infineon Technologies office.

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