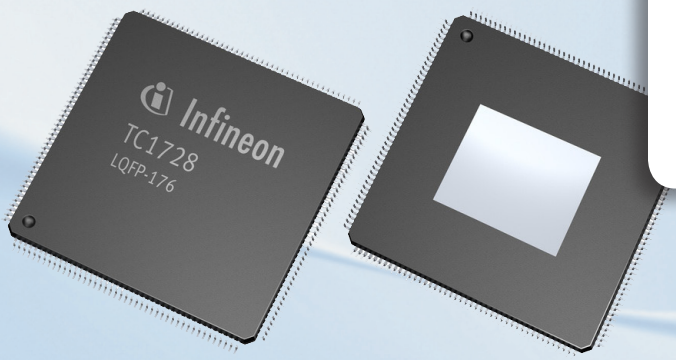
Product Brief



TC1728 – AUDO MAX family

Automotive 32-bit TriCore™ Microcontroller

The 32 Bit TriCore™ microcontroller TC1728 is one of the entry level derivatives of the AUDO MAX family. It provides enhanced microcontroller performance at 133MHz, 1.5 MB embedded Flash and extensive SRAM of 152KB. Package is the easy-to-mount QFP-176 with exposed pad to facilitate thermal management. For reduced system cost an embedded voltage controller (EVR) is implemented which generates I/O and core voltage internally. Another major focus was put on safety requirements. TC1728 offers a comprehensive set of safety features like e.g. Error Code Correction (ECC) for the full memory set (Flash and SRAM). Also SW will be made available to meet safety requirements in accordance to our PRO-SIL™ safety standard. The comprehensive and consistent tool support known from earlier TriCore™ products will also be provided for TC1728.

Applications

- Low End Engines (e.g. 2cylinder/Multi-Point injection)
- Selective Catalytic Reduction
- Transmission (e.g. AMT/DCT)
- Hybrid and electric vehicle (e.g. Battery Management)
- Suspension systems
- Chassis Domain Controller

Execution performance

- High performance 32-bit super-scalar TriCore™ V1.3.1 CPU with 4 stage pipeline
  - 133MHz at full automotive temperature range
  - Superior real-time performance
  - Strong bit handling
  - Fully integrated DSP capabilities
  - Single precision floating point unit
- 32-bit Peripheral Control Processor with single cycle instruction (PCP2)

Performance Benchmark

- Same performance as TC1767/133MHz

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Main Features

- Memories:
  - 1.5MB embedded program flash with ECC
  - 64KByte data flash
  - 152KByte on-chip SRAM
  - 4KByte Data cache (configurable)
  - 8KByte Instruction cache (configurable)
- 16 DMA channels
- 1 General Purpose Timer Array
- 2 FlexRay™ channels (optional)
- 1 Micro Second bus interface (MSC)
- 2 asynchronous/synchronous serial interfaces (ASC)
- 4 high speed synchronous serial interfaces (SSC)
- 1 High-speed Micro Link Interface (MLI)
- 3 CAN nodes and 64 message objects
- 2 channel fast analog-to-digital converter
- 36 channel analog-to-digital converter (5/3.3V)
- On-chip debug support (OCDS)
- Dedicated emulation device chip (ED) for multicore debugging, tracing and calibration
- Low Bill-of-Material Features
- Extensive set of safety features
- Full automotive temperature range -40° to +125°C
- QFP-176 Package

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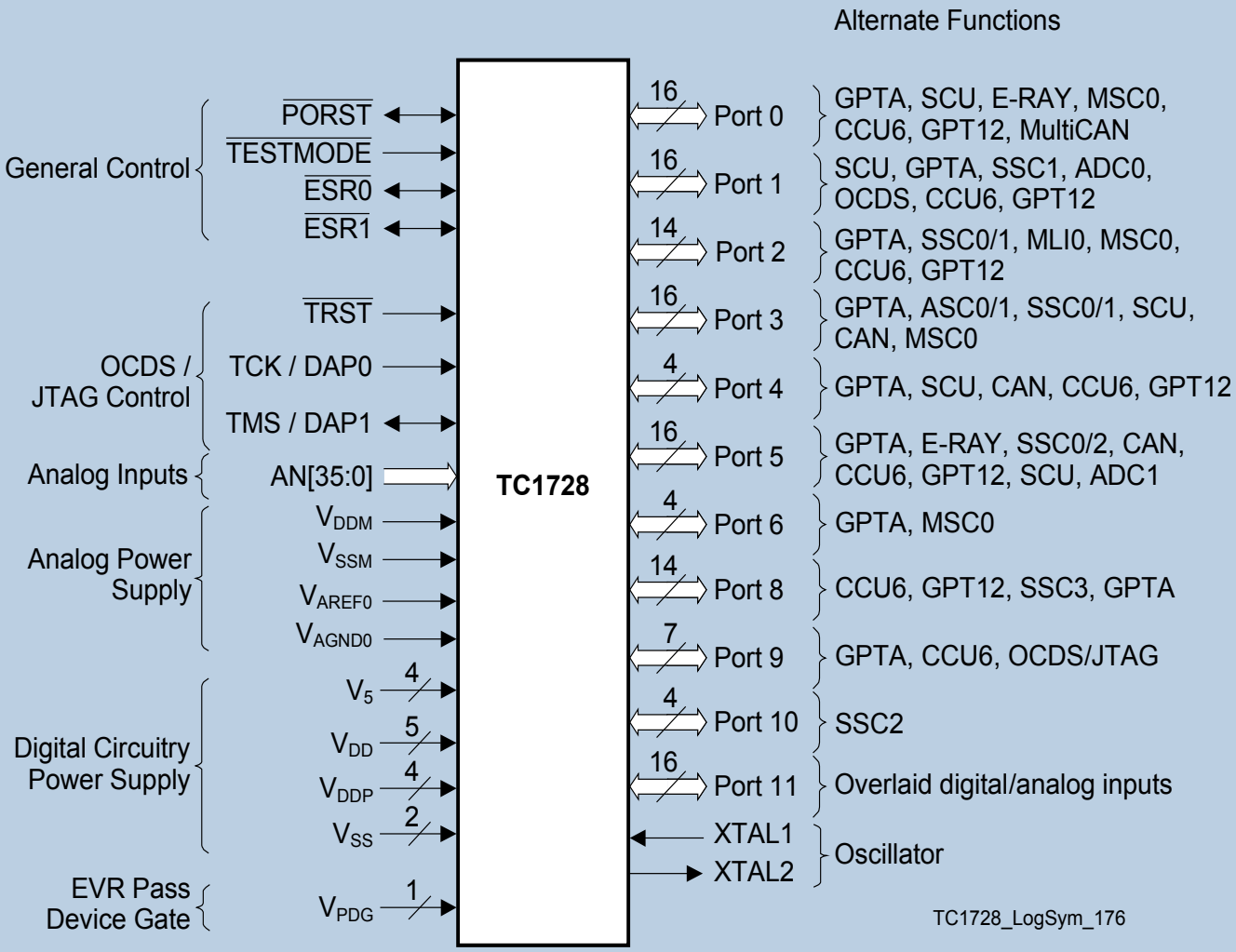
System Diagram



Product Summary

Type	eFlash	Data Flash	Frequency	SRAM	Package	Temp. Range
SAK-TC1728N-192F133HL	1.5MB	64KB**	133MHz	152KB*	PG-QFP-176	-40...+125°C
SAK-TC1728F**-192F133HL	1.5MB	64KB**	133MHz	152KB*	PG-QFP-176	-40...+125°C

*EEPROM emulation (up to 60k w/e cycles)

**F stands for FlexRay included

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