



High performance 32 bit TriCore™ based Microcontroller for Automotive Applications

Audo Future TC1797

The TC1797 is the performance optimized flagship of the Audo Future product family designed for automotive applications. Its 180MHz award-winning TriCore™ CPU provides high-end microcontroller performance combined with sophisticated DSP capabilities.

A dedicated peripheral control processor (PCP) manages on-chip peripherals and relieves the TriCore™ from standard processing tasks. On top of this, a fast interrupt response time assures low latencies and low performance overhead for interrupt driven systems.

Equipped with 4MByte of embedded Flash and a total of 224KB RAM the TC1797 is one of the highest performing devices for embedded real-time automotive applications. It sits on the top end of the Audo Future family where tailored products greet emerging to high end markets. Comprehensive tool support emphasizes the great scalability of our products.

Applications

- Engine and transmission control units
- Performance demanding functions like radar equipped adaptive cruise control or chassis domain control
- High-end piezo direct injection engine control

Features

- High performance 32-bit super-scalar TriCore™ V1.3.1 CPU with 4 stage pipeline
 - 180MHz at full automotive temperature range
 - Superior real-time performance
 - Fully integrated DSP capabilities
 - Single precision floating point unit (FPU)
- 32bit Peripheral Control Processor with single cycle instruction (PCP2)
 - 48KByte on-chip SRAM
- Memories
 - 4MByte embedded program flash with ECC
 - 16KByte EEPROM (emulated by 64KByte data Flash)
 - 156KByte on-chip SRAM
 - 4KByte data cache
 - 16KByte instruction cache

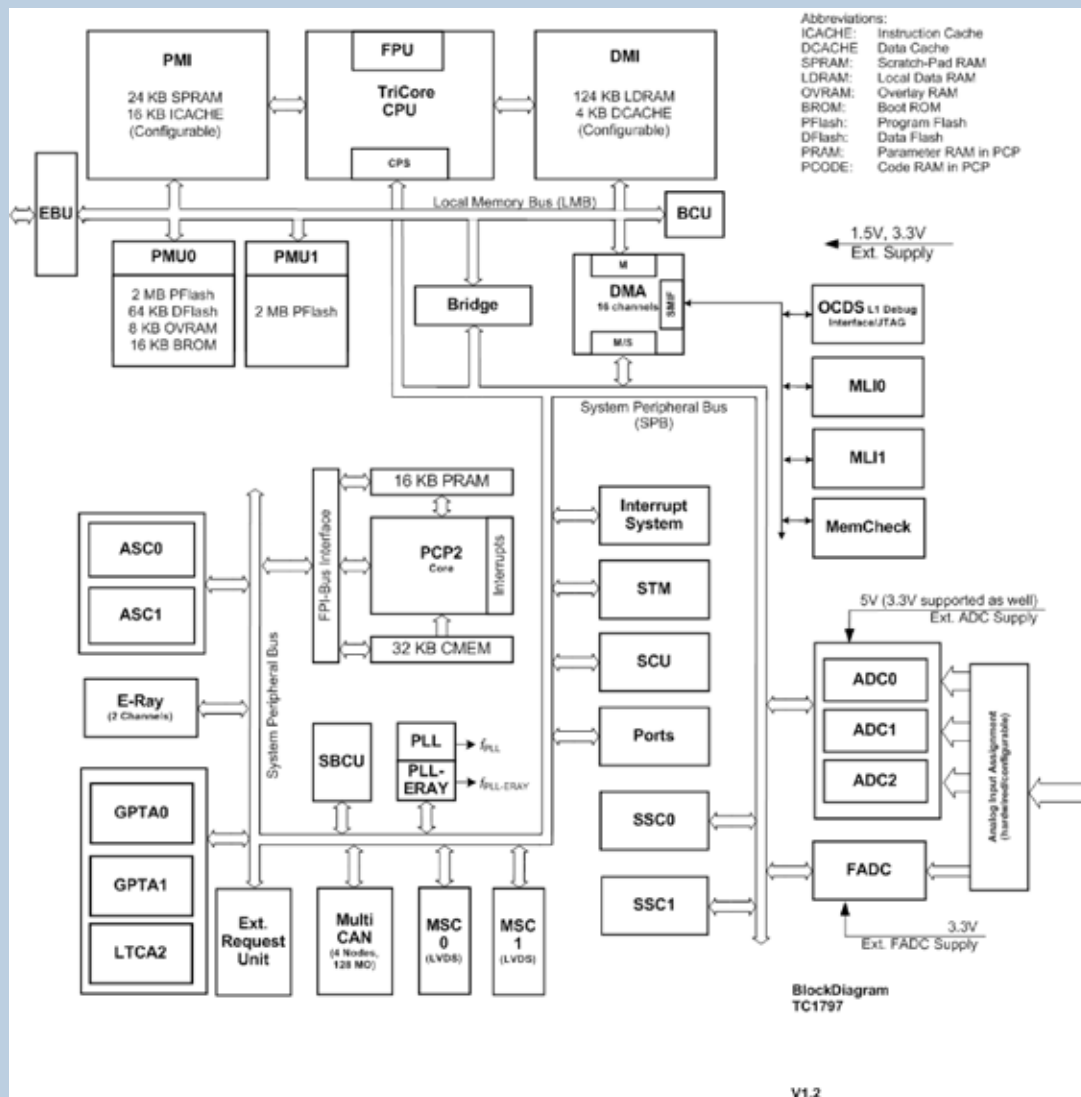
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- 16 DMA channels
- 2 FlexRay channels with 8KByte message RAM
- 32bit external memory interface supporting synchronous burst access
- 2 General Purpose Timer Arrays
- 2 Micro Second bus interfaces (MSC)
- 2 Asynchronous/synchronous serial interfaces (ASC)
- 2 high-speed synchronous serial interfaces (SSC)
- 2 high-speed Micro Link interfaces (MLI)
- MultiCAN module with four CAN nodes & 128 message objects
- 4 channel fast analog-to-digital converter
- 48 channel analog-to-digital converter @ 5V
- 219 digital general purpose I/O lines
- On-chip debug support (OCDS)
- Dedicated emulation device chip for multicore debugging, tracing and calibration
- Supply voltage 1.5V
- I/O voltage 3.3V
- Full automotive temperature range -40° to +125°C
- BGA-416 package

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Block Diagram



Product Summary

Type	CPU Clock	Temperature	Program Flash	Package
SAK-TC1797-512F180E	180MHz	- 40/125°C	4MByte	BGA-416

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