AURIX™

TC2xx Documentation

V1.0 2019-03

Technical Documentation Overview

User's Manual

› System architecture & basic safety architecture

› Peripheral details including register description

› Use cases

Data Sheet

› Pinout, electrical characteristics e.g. power consumptions and timing parameters
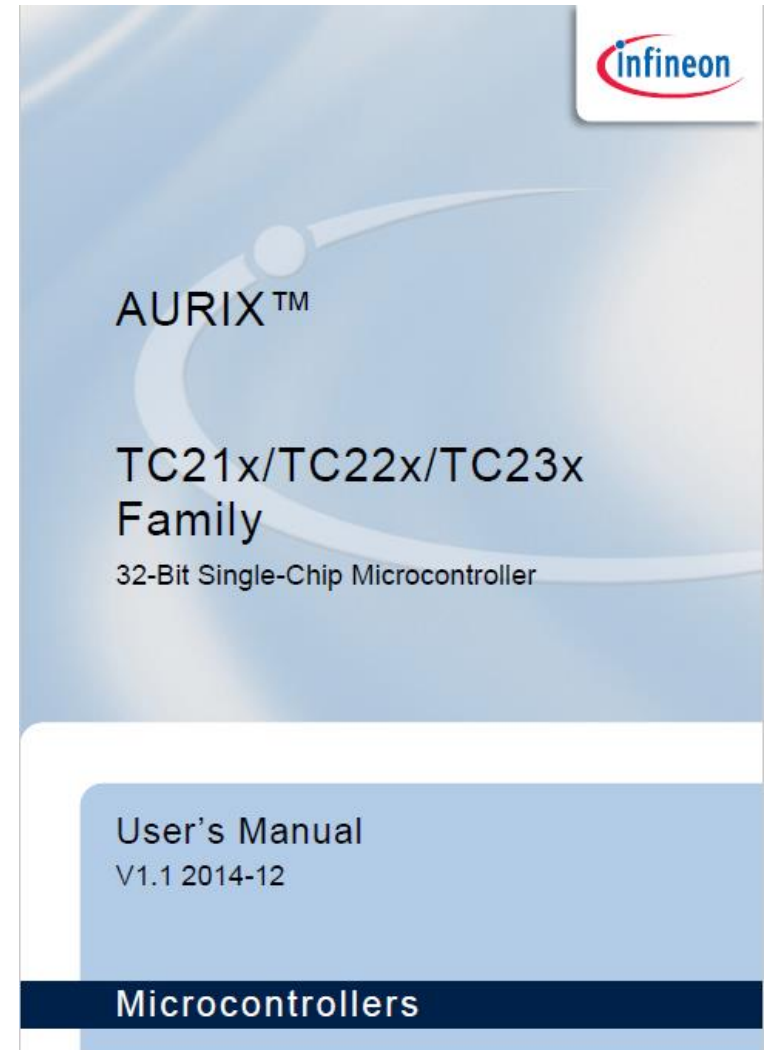
Data Sheet Addendum

› Lists all AURIX™ devices with order codes and feature set

TriCore™ Core Architecture

› TriCore™ CPU architecture and instruction set reference

Errata Sheet

› Description of known deviations from above documents

AURIX™

TC21x/TC22x/TC23x Family

32-Bit Single-Chip Microcontroller

User's Manual
V1.1 2014-12

Microcontrollers

User's Manual

› User's manual is the primary reference for programmers

› Provides:

  – Implementation specific details of one AURIX™ series device (e.g TC21x)

  – Detailed description of all functional blocks and peripherals

  – Memory maps

  – Special function register definitions (down to bit level)
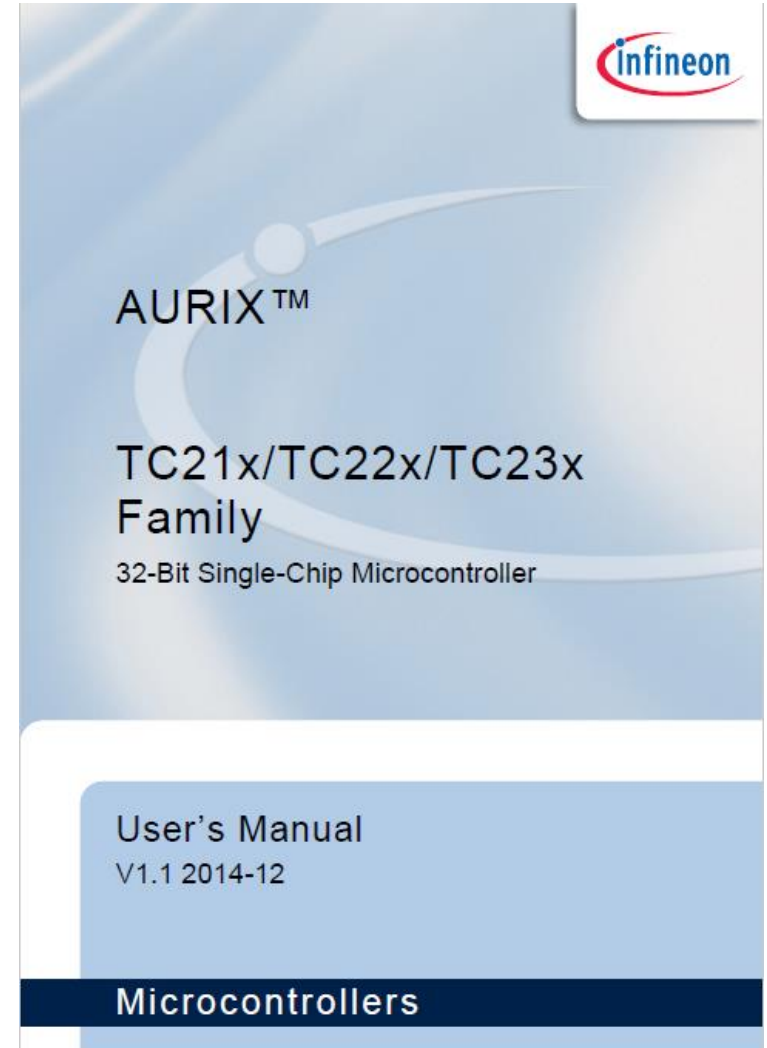
Data Sheet

› Data Sheet is the primary reference for hardware designer

› Provides:

  − Details for specific AURIX™ devices (ex: TC233, TC234, TC237)

  − Summary of features

  − Package and pinning definition

  − Electrical parameters (AC, DC, and signal timing)

  − Flash target parameters

  − Package outline and reliability data

32-Bit
Microcontroller

TC233 / TC234 / TC237
32-Bit Single-Chip Microcontroller
AC-Step

32-Bit Single-Chip Microcontroller

Data Sheet

V 1.0, 2017-03

Microcontrollers

Data Sheet Addendum

› The Data Sheet Addendum lists all orderable AURIX™ devices

› Provides:

  – Order numbers of AURIX™ devices

  – Top level feature list for each device

  – Memory Mapping for each memory variant

AURIX™ variants

Data Sheet Addendum

About this document

Scope and purpose

This document is an addendum to the TC2xx Data Sheet listing all intended product variants, key parameters such as memory size, and optional features.

Naming Conventions

Prefix

- SAK: $T_{ambient}$ Temperature Range from -40 °C up to +125 °C
- SAL: $T_{ambient}$ Temperature Range from -40 °C up to +150 °C (packaged device)

Feature Package

- T – Standard type without HSM
- TP – Standard type with HSM enabled
- TA – ADAS feature package – HSM enabled
- TX – Truck / SRAM extension – HSM enabled

Table of contents

Addendum
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Please read the Important Notice and Warnings at the end of this document
page 1 of 9
v1.0
2019-03-31

TriCore™ Core Architecture

› This document describes the Core Architecture and the Instruction Set of TriCore™

› Provides:

  – Volume1:

    – Description of the TC1.6P and TC1.6E Core Architecture and system interaction

  – Volume 2:

    – TriCore™ Instruction Set description

    – Description of Floating Point Unit

    – Description of Memory Management Unit (MMU) extensions

32-bit
Microcontrollers

TriCore® TC1.6P & TC1.6E

Core Architecture
32-bit Unified Processor Core
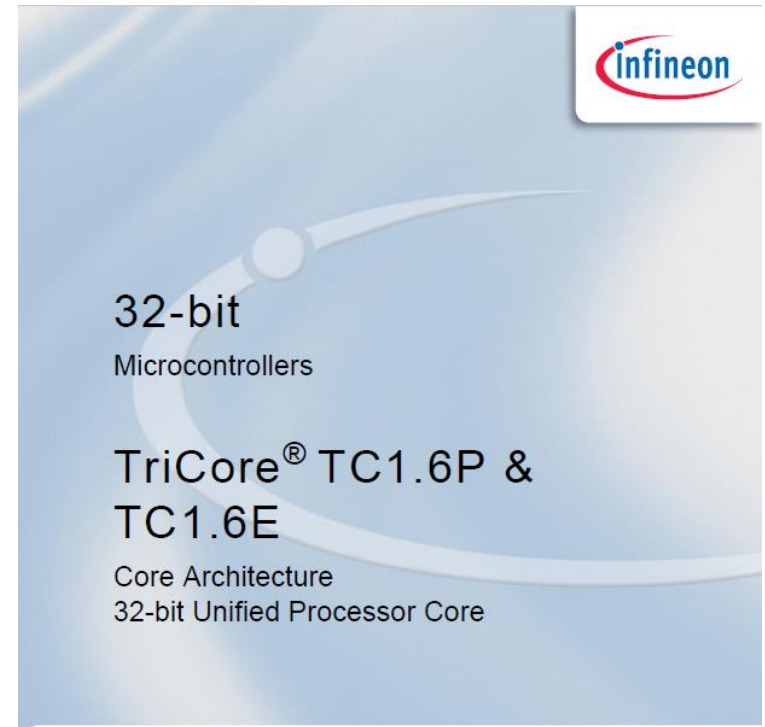
User Manual (Volume 1)
V1.0 2012-02

Microcontrollers

Errata Sheet

› This document refers to a dedicated AURIX™ device and describes it's deviations from the current user documentation like

  › User's Manual

  › Data Sheet

  › TriCore™ Core Architecture

› Provides

  › Functional deviations

  › Deviations from Electrical- and Timing Specification

  › Application Hints

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