

## Product brief

# TC397XM – AURIX™ TC3xx family

Enhanced performance for ADAS systems with MotionWise license included

AURIX™ TC397XM series is the successor of the AURIX™ TC297TT product, offering enhanced performances to enable autonomous driving sensor fusion applications, developed in cooperation with TTTech Auto.

Focus has been put not only on increasing the ISO 26262 ASIL-D computing performance capability, but also on integrating a richer set of peripherals (such as 12 CAN-FD and Ethernet Gbit/s) and a Full-EVITA HSM, to address the increasing safety and security performance and data flow requirement of future sensor fusion systems. This product in combination with TTTech Auto's MotionWise software stack provides our customers with highly optimized solutions for safety critical applications.

### System benefits

- › High integration for reduced complexity and significant cost savings
- › Innovative single supply concept leads to best in class power consumption, and reduced number of external supplies
- › Diverse lockstep core concept enables reduced development effort
- › Support for ISO 26262 decisions such as emergency braking
- › High-speed trace port enables reduced requirements on integrated RAM and reduced overhead for automotive instrumentation vision
- › Easy migration from TC297TT with MotionWise solution, for a scalable sensor fusion portfolio, supported by similar architecture between AURIX™ and AURIX™ TC3xx families

### Key benefits of MotionWise safety software platform

- › Shorter time to market
- › Scalable safety software platform for automated driving up to level 5
- › Seamless integration of software components by any vendor
- › Full support of AUTOSAR
- › Premium engineering services available

## Main features

### Application features TC397Xx

- › Six TriCore™ with up to 300 MHz
- › TriCore™ DSP functionality
- › Supporting floating point and fix point with all cores
- › Up to 16 MB flash w/ECC protection
- › 1024 KB EEPROM at 500 k cycles
- › Up to 6.9 MB RAM w/ECC protection
- › 4x 12-bit SAR ADC converter
- › Ethernet 1 Gbit
- › FlexRay, CAN-FD, LIN, SPI
- › Redundant and diverse timer modules (GTM, CCU6, GPT12)
- › Programmable HSM (Hardware Security Module), full-EVITA
- › External memory interface
- › High-speed serial interface for inter-processor communication (HSSL)
- › High-speed trace port 2.5 Gbit/s
- › Single voltage supply 5 V or 3.3 V

### Most innovative safety

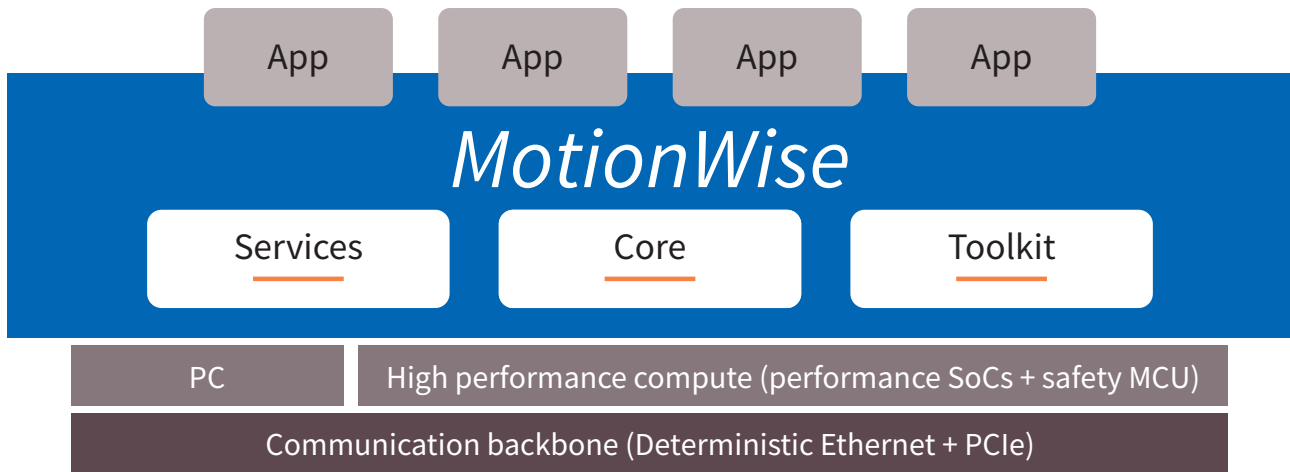
- › Diverse lockstep cores with clock delay
- › Access permission system
- › Safety management unit
- › Safe DMA
- › LBIST (Logical Built-In Self Test) and SBST (Software Based Self Test) for non-lockstep cores
- › I/O, clock, voltage monitor
- › ISO 26262 compliance to support safety requirements up to ASIL-D
- › Availability of AUTOSAR 4.x



# MotionWise

## What is MotionWise?

MotionWise is a series-proven safety software platform for automated driving. It acts as the safety mastermind for automated driving within a vehicle architecture, handling the high complexity of such systems. Each application hosted by MotionWise will run encapsulated from its peers, resulting in a safe environment where applications with different safety and real-time requirements can coexist and interact.



MotionWise comprises in-house developed core modules as well as an extensive toolkit and a comprehensive set of system services, providing a homogeneous platform out of SoCs of different safety or performance classes

MotionWise is:

› **Safe**

Safety is the centerpiece of MotionWise: the in-house developed communication and scheduling cores are the basis for the software's safety concept that adheres to highest safety standards.

› **Scalable**

Thanks to its architecture and design, MotionWise is a modular platform that can be used to realize projects from level 2 to level 5 automated driving.

› **Series-proven**

Customers benefit from our safety know-how gained in previous automotive series productions projects as well as the cross-industry experience available within the TTTech Group.

MotionWise is compliant with standards in various areas, such as safety, operating systems and standards used by application suppliers, much like AUTOSAR Classic and AUTOSAR Adaptive, TSN etc.

More details: [www.tttech-auto.com](http://www.tttech-auto.com)

## Product summary

| Type                | Core        | Software IP | eFlash [MB] | Data flash [KB]   | Frequency [MHz] | SRAM [MB] | Package   | Temp. range [°C] |
|---------------------|-------------|-------------|-------------|-------------------|-----------------|-----------|-----------|------------------|
| SAX-TC397XM-128F300 | 6x TriCore™ | MotionWise  | up to 16    | 128 <sup>1)</sup> | up to 300       | 6.912     | LFBGA-292 | -40 ... +125     |

1) EEPROM emulation (up to 500 k w/e cycles)

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