



SafeTpack for AURIX™ TC3xx
A shortcut to the safety manual requirements

> Product Brief



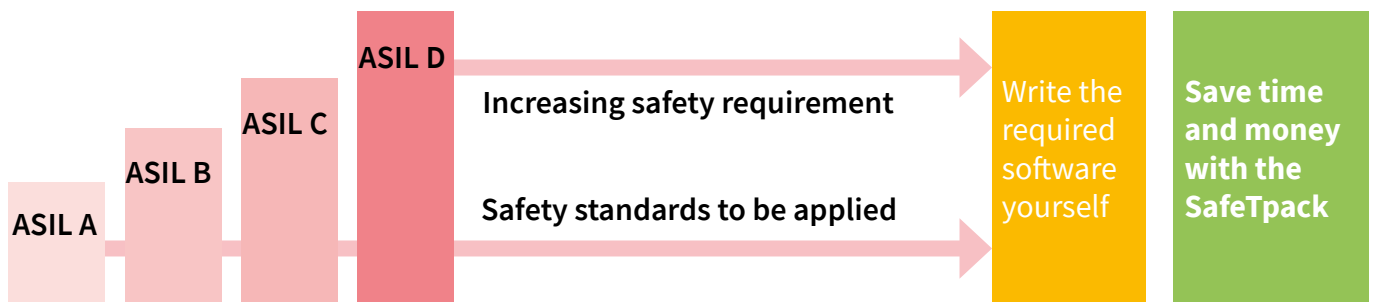
Hitex SafeTpack
Safety solution for AURIX™ TC3xx & TC4xx

Basics

What is the Hitex SafeTpack?

The Hitex SafeTpack is a safety solution for the AURIX™ Infineon microcontroller family, second generation. It covers most safety use cases for applications according to ASIL A to ASIL D. As its name suggests, the AURIX TC3xx SafeTpack safety manager is equipped with everything you need for your application.

Hitex created this safety manager as a shortcut to implementing the most common AURIX™ safety manual requirements. SafeTpack is PRO-SIL™ ready and provides a rapid way to achieve ISO 26262 certification for safety applications using AURIX™, all in a timely and cost-efficient manner.



To achieve your safety goals in your AURIX™ project, you have to evaluate, if the Automotive Safety Integrity Level of your AURIX device is still given.

Why do I need a SafeTpack?

For safety-critical projects you must make sure that all applications are developed according to the relevant safety standards (e.g. ISO 26262). The AURIX safety manual contains a list of necessary internal safety mechanisms (SM) and also external safety mechanisms (ESM) for every use case. The AURIX™ safety manual is based on ISO 26262 and comes complete with additional documents.

The information contained in these documents provides real and valuable information for your project. However, to implement the necessary safety measure, qualified source code is required.

There are 2 options here. The first option is to write your own code. The second however, is much more efficient and will save both time and money: The Hitex SafeTpack.

■ Functionality

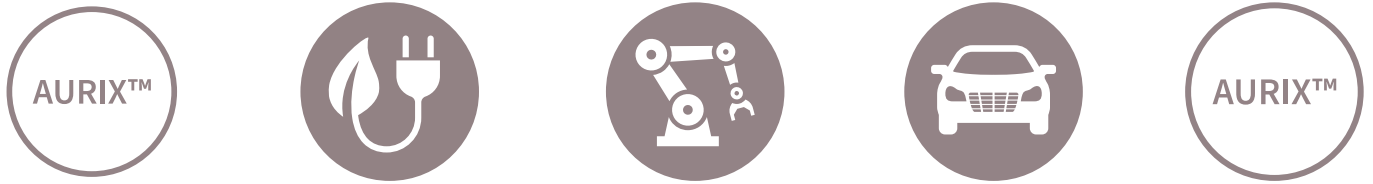


What does the SafeTpack offer?

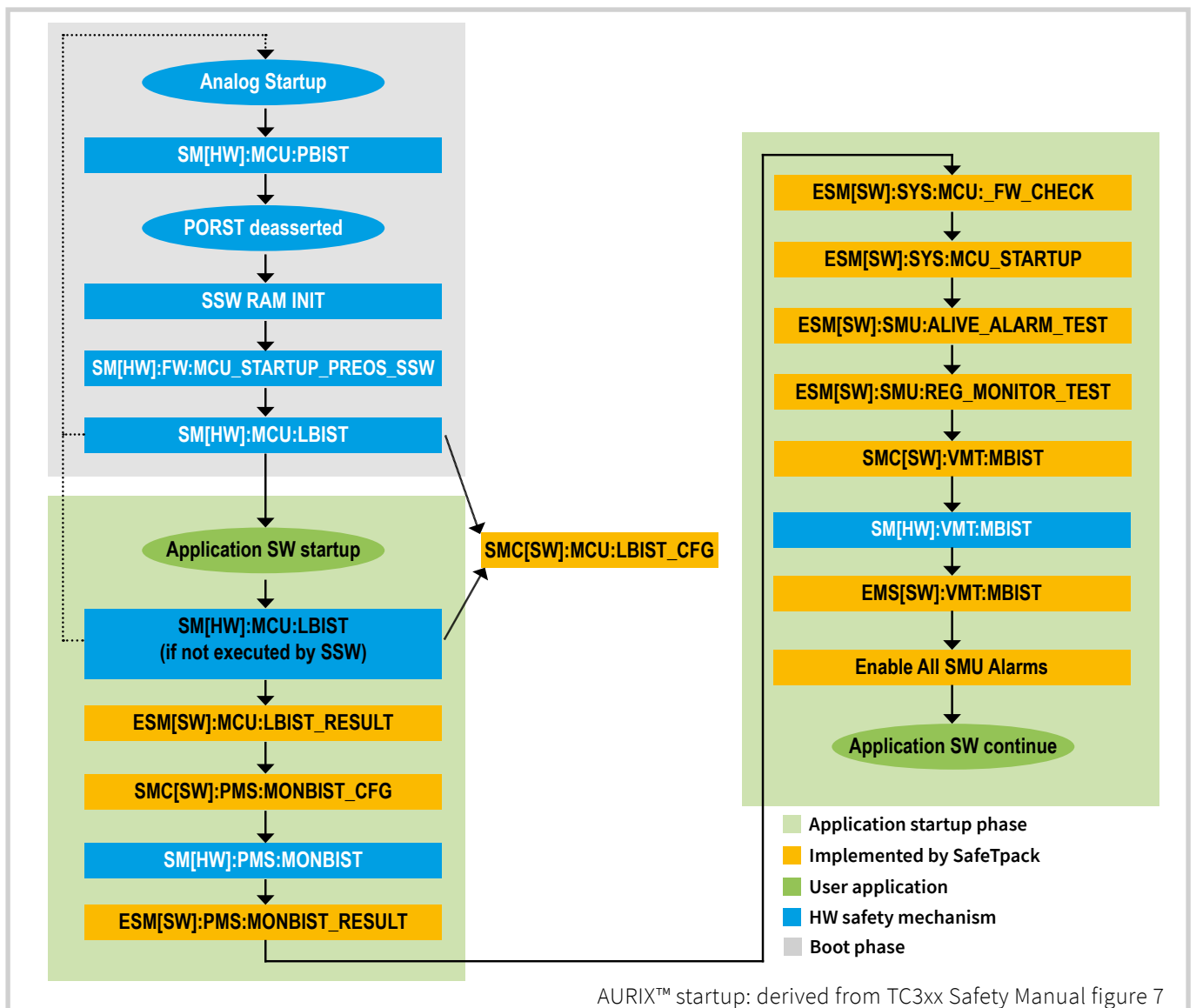
- ✓ Coordinates the execution and evaluation of startup tests
- ✓ Supports the necessary ESMs
- ✓ Provides cyclic tests that ensure the correct operation of the AURIX™ CPU and internal busses through a mixture of hardware and software modules
- ✓ Manages the watchdog system and an optional combined watchdog and power controller (eg. TLF35584/5)

SafeTpack Features

SafeTpack provides functional safety by managing the complex Logic Built-In Self-Tests (LBIST) and other safety features of AURIX™.

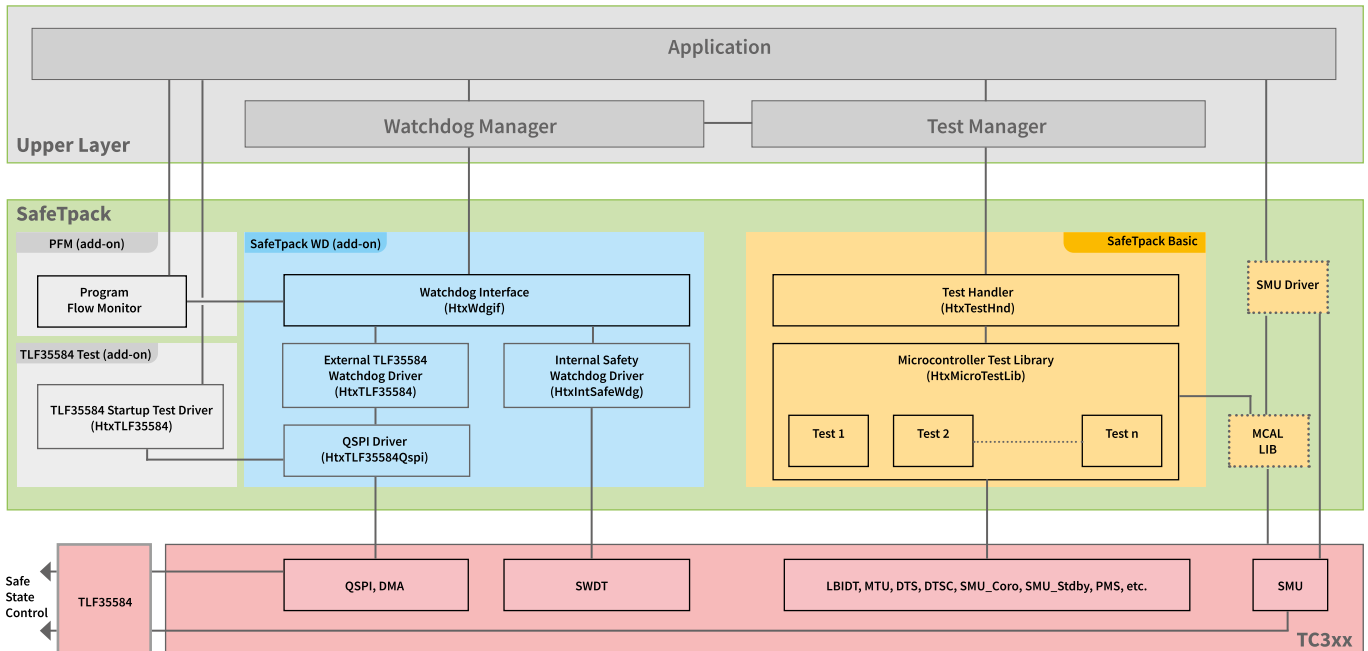


By retaining the existing PRO-SIL™ SafeTlib overall structure and API, migration of existing TC2xx safety applications to TC3xx is much easier. SafeTpack provides safety functions such as program flow monitoring or cyclic control of special function registers.



SafeTpack customized

SafeTpack's modular system makes it easy to customize and supplement individual functions. Depending on your precise requirements, different SafeTpack packages can be selected:



This is what is included in all packages:

- ✓ Complete source code of each package together with a demo workspace
- ✓ Elektrobit's EB tresos tool with all plugins required with a EB tresos example configuration
- ✓ All documentation such as the user manual, safety manual, release notes, configuration verification manual and a demo description

The *Basic Package* includes:

- ✓ Test handler
- ✓ Startup tests
- ✓ Runtime tests

The optional *Watchdog Package* adds:

- ✓ Watchdog Interface
- ✓ Internal watchdog driver
- ✓ External TLF35584/5 watchdog driver

The optional *TLF35584/5 package*:

- ✓ Startup tests according to the safety manual TLF35584/5

The optional *PFM* package*:

- ✓ Monitors the program execution flow of safety critical software

* Program Flow Monitor

Supported AURIX devices

The SafeTpack supports many AURIX™ devices. In the table below you will find an overview of the current options. Questions? Go and ask your Hitex contact for more information.

		Control & Actuate Sense & Compute												
6x 300 MHz	9xA Series 16 MB						TC397A 300 MHz							
6x 300 MHz	9x Series 16 MB										TC397X 300 MHz	TC399X 300 MHz		
4x 300 MHz	Ex Series 12 MB										TC387Q 300 MHz			
4x 300 MHz	8x Series 10 MB										TC387Q 300 MHz	TC389Q 300 MHz		
3x 300 MHz	7xX Series 6 MB										TC377X 300 MHz			
3x 300 MHz	7x Series 6 MB										TC377T 200 MHz			
2x 300 MHz	6x Series 4 MB							TC364Q 300 MHz	TC366Q 300 MHz	TC365Q 300 MHz		TC367Q 300 MHz		
3x 300 MHz	5xA Series 4 MB								TC356TA 300 MHz			TC357TA 300 MHz		
2x 300 MHz	3xA Series 2 MB								TC336QA 300 MHz			TC337QA 300 MHz		
1x 200 MHz *	3x Series 2 MB						TC337L 200 MHz *	TC333L 200 MHz *	TC334L 200 MHz *	TC338L 200 MHz *		TC337L 200 MHz *		
1x 160 MHz	2x Series 1 MB	TC322L 160 MHz	TC323L 160 MHz	TC324L 160 MHz			TC327L 160 MHz							
Flash	Package	TQFP-80	TQFP-100	T/LQFP-144	BGA-180	LQFP-176	BGA-216	LFBGA-292	LFBGA-516					

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Supported devices in the SafeTpack Standard Package in this family
 Not yet supported in the SafeTpack Standard Package, please contact Hitex!

Our services around SafeTpack and Functional Safety

- Web based training for SafeTpack integrators: first-hand information and valuable hints on safe and reliable integration
- Project-related consulting
- SafeTpack integration into your application as a full service
- Hard- and software development in the context of AURIX™ and functional safety

■ Main advantages of the SafeTpack

- ✓ Developed according to ISO 26262-2018
- ✓ Similar to the AURIX™ TC2xx SafeTlib: Easy handling, no changeover
- ✓ Modular: Only pay what is used
- ✓ Comes with a demo application
- ✓ Included configuration tool, to set up all parameters individually
- ✓ Can be used either with or without AUTOSAR
- ✓ 100% compatible with the Infineon MCAL but can still be used independently
- ✓ Includes Elektrobit's Tresos tool to configure SafeTpack
- ✓ Provides drivers and watchdog interface for Infineon TLF35584/85 and AURIX™ Internal Safety Watchdog including signature handling

Why should I choose Hitex and the SafeTpack?

Specialized development

As a 100% subsidiary of Infineon, Hitex worked closely with them to create the Hitex SafeTpack. We have contact and access to Infineon to help our customers in their specific challenges to implement the AURIX™ safety and external safety measurements.

Quality

To meet all your safety needs the SafeTpack was developed and validated according to ISO 26262-2018.

Ready for the future

SafeTpack is constantly being improved and expanded: Support for additional derivatives of AURIX™ and PMICs, and for the next AURIX™ generation (TC4xx) are in development.

Real-world expertise and experience

Hitex SafeTpack is a success story: our customers are well-known TIER1s and OEMs from all over the world! We offer project, product and buyout license, especially designed to your needs.



Hitex meets the highest quality standards, thus ensuring comprehensive and competent advice. Hitex has been recognised by Infineon as a **Preferred Design House (PDH) for the AURIX™ family**, and in addition for XMC™, Embedded Power™ and Traveo™ II.

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