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# IEC60730B_CM0+_2.0 Release Notes

## 1. Overview

IEC60730B_CM0+_2.0 is the second version of the core self-test library for Kinetis CM0+ devices. The library is certified by VDE and can be used in applications that are related to Safety class B standard (specified by IEC 60730).

This release was created in close corporation with the application team, who have vast experience in customer projects.

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# 2. What is new

When compared to the previous version of the library, the main changes are:

- Testing of ADC, Digital I/O, and Stack.
- Testing of Watchdog is not included in this release.
- The release of the library in a form of precompiled object code.
- The main focus is the use of test functions in application runtime.
- The API of the test functions is changed for easier implementation into final projects.

# 3. Description

The supported devices are:

- MKV1x
- MKLxx
- MKExx

The tested components are:

- CPU Registers
- Program Counter
- Variable memory (RAM)
- Invariable memory (FLASH)
- Clock
- Digital I/O
- Analog I/O
- Stack

The library is compiled using IAR Embedded Workbench version 7.40.

Optimizations and improvements:

- The critical runtime functions (where the interruption is ineligible) are as short as possible.
- The restrictions about interrupting are stated in the documentation.
- The Program Counter test comes with a new philosophy that brings much faster execution time.
- The variable memory test is able to check also memory containing application stack during the runtime.
- The CPU registers test is split into more functions for easier use during runtime.
- The Clock test is designed in two versions, providing more opportunities for implementation in projects.

The complete list of functions is:

- IEC60730B_CPU_RegisterTest()
- IEC60730B_CPU_NonStackedRegisterTest()
- IEC60730B_CPU_PrimaskTest()
- IEC60730B_CPU_SPmainTest()
- IEC60730B_CPU_SPprocessTest()
- IEC60730B_CPU_ControlTest()
- IEC60730B_Flash_HWTest()
- IEC60730B_Flash_SWTest()
- IEC60730B_RAM_AfterResetTest()
- IEC60730B_RAM_RuntimeTest()
- IEC60730B_RAM_SegmentMarchC()
- IEC60730B_RAM_SegmentMarchX()
- IEC60730B_RAM_CopyToBackup()
- IEC60730B_RAM_CopyFromBackup()
- IEC60730B_CLK_Init()
- IEC60730B_CLK_LPTMR_Trigger()
- IEC60730B_CLK_RTC_Trigger()
- IEC60730B_CLK_LPTMR_End()
- IEC60730B_CLK_RTC_End()
- IEC60730B_CLK_Check()
- IEC60730B_CLK_SYNC_Init()
- IEC60730B_CLK_SYNC_LPTMR_Isr()
- IEC60730B_CLK_SYNC_RTC_Isr()
- IEC60730B_DIO_InputTest()
- IEC60730B_DIO_OutputTest()
- IEC60730B_AIO_InputInit()
- IEC60730B_AIO_InputTrigger()
- IEC60730B_AIO_InputSet()
- IEC60730B_AIO_InputCheck()
- IEC60730B_PC_Init()
- IEC60730B_PC _Test()
- IEC60730B_Stack_Init()
- IEC60730B_Stack_Test()

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