

IEC60730BCM4CM7L42RN

IEC60730B Library Release notes CM4/CM7 v4.2

Rev. 0 — 30. September 2021

Release Notes

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1 Introduction

IEC60730B_CM4_CM7_4_2 is the actual version of the core self-test library for NXP devices with the CM4 and CM7 core. The library is certified by VDE. It is dedicated for use in applications compliant with the Safety class B standard (specified by IEC 60730, IEC60335 and/or UL 60730, and UL 1998).

The library is released in a precompiled format, together with functional example projects and documentation describing the respective tests.

The library is created in close cooperation with the application team, who have vast experience in customer projects. The customer feedback is also taken into consideration.

2 What is new

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

The AIO functions were renamed and consolidated. See the dedicated function chapter in the library user guide for your device or [Library](#).

The DIO test functions were updated. The API was not changed, but it has more informative return values.

The following devices were added to the CM4/CM7 library: LPC540x, LPC54S0x, MIMXRT116x, and K32L3Ax.

2.1 Description

The supported devices are as follows:

- MKV3x
- MKV4x
- MKV5x
- MKE1xF
- MK2xF
- MIMXRT10xx
- MIMXRT117x
- MIMXRT116x
- MIMX8MNx
- MIMX8MMx
- LPC540x
- LPC54S0x
- K32L3Ax

The supported/recommended IDEs are as follows:

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- IAR v9.10.2 and higher
- Keil µVision V5.34(C compiler V6) and higher
- MCUXpresso IDE V11.4 and higher

The tested components are as follows:

- CPU registers
- Program counter
- Variable memory (RAM)
- Invariable memory (flash)
- Clock
- Digital I/O
- Analog I/O
- Stack
- Watchdog
- Touch Sensing Interface (TSI)

3 Optimizations, improvements, and changes

3.1 Library

The AIO functions were renamed and consolidated. See the dedicated function chapter in the respective library user guide for your device or [Table 1](#).

Table 1. Analog test function conversion table

Function name in version 4.1	New function name
FS_AIO_InputInit_LPC_ADC16 FS_AIO_InputInit_IMXRT117X	FS_AIO_InputInit_A1
FS_AIO_InputSet_LPC55SXX FS_AIO_InputSet_IMXRT117X_SWTRIG	FS_AIO_InputSet_A1
FS_AIO_InputInit	FS_AIO_InputInit_A2346
FS_AIO_InputSet()	FS_AIO_InputSet_A23
FS_AIO_InputCheck	FS_AIO_InputCheck_A23
FS_AIO_InputSet_KE	FS_AIO_InputSet_A4
FS_AIO_InputCheck_KE	FS_AIO_InputCheck_A4
FS_AIO_InputInit_LPC_ADC12	FS_AIO_InputInit_A5
FS_AIO_InputSet_LPC_ADC12	FS_AIO_InputSet_A5
FS_AIO_InputCheck_LPC_ADC12	FS_AIO_InputCheck_A5
FS_AIO_InputSet_IMXRT10XX_SWTRIG	FS_AIO_InputSet_A6
FS_AIO_InputCheck_IMXRT10XX_SWTRIG	FS_AIO_InputCheck_A6

Table continues on the next page...

Table 1. Analog test function conversion table (continued)

Function name in version 4.1	New function name
FS_AIO_InputInit_CYCLIC	FS_AIO_InputInit_A7
FS_AIO_InputSet_CYCLIC	FS_AIO_InputSet_A7
FS_AIO_InputCheck_CYCLIC	FS_AIO_InputCheck_A7

The DIO test function was updated. It now has an extended set of error types that the functions can return:

```
#define FS_FAIL_DIO (FS_DIO_CODE + 0x1U)
#define FS_FAIL_DIO_OUTPUT (FS_DIO_CODE + 0x2U)
#define FS_FAIL_DIO_INPUT (FS_DIO_CODE + 0x3U)
#define FS_FAIL_DIO_NOT_SET (FS_DIO_CODE + 0x4U)
#define FS_FAIL_DIO_NOT_CLEAR (FS_DIO_CODE + 0x5U)
#define FS_FAIL_DIO_MODE (FS_DIO_CODE + 0x6U)
#define FS_FAIL_DIO_WRONG_VALUE (FS_DIO_CODE + 0x7U)
```

For more information, see the corresponding chapter in the library user guide.

New devices were added to the library for LPC540x, LPC54S0x, MIMXRT116x, and K32L3Ax.

There is a new flash-test function *FS_FLASH_C_HW16_L*. This function has a different API than the software version of the function. See the corresponding chapter in the library user guide.

3.2 Documentation

The documentation for the library is a part of the SDK package and it is also available at www.nxp.com/iec60730.

The documentation of the IEC60730B library consists of:

- IEC60730B_Library_User_Guide_CM4_CM7_v4_2.pdf
- IEC60730B_Library_Release_Notes_CM4_CM7_v4_2.pdf

The example applications have dedicated release notes and user guides.

3.3 Functional example projects

All information about the IEC60730B library are available at www.nxp.com/iec60730.

The example projects are available only in the MCUXpresso SDK as middleware.

To open an example, use the link from the table at <http://www.nxp.com/iec60730> or perform the following steps:

- Go to <http://mcuxpresso.nxp.com>.
- Click [Select Development Board](#).
- Select the supported board and add the [Safety](#) middleware.
- Build and download the SDK package.

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