

# Multicore SDK (MCSDK) v2.4.0

## Release Notes

### 1 Overview

These are the release notes for the NXP Multicore Software Development Kit (MCSDK) version 2.4.0. This software package contains components for efficient work with multicore devices as well as for the multiprocessor communication.

### 2 What is new

- eRPC: Improved code size of generated code
- eRPC: Generating CRC value is optional
- eRPC: Fixed CMSIS UART driver. Removed dependency on MCUXpresso SDK
- eRPC: List names are based on their types. Names are more deterministic
- eRPC: Service objects are as a default created as global static objects
- eRPC: Added missing doxygen comments
- eRPC: Forbid users use reserved words
- eRPC: Removed outByref for function parameters
- eRPC: Added support for 64-bit numbers
- eRPC: Added support of program language specific annotations
- eRPC: Optimized code style of callback functions
- Supported evaluation boards (multicore examples):

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## Development tools

- LPCXpresso54114
- LPCXpresso54102
- Supported evaluation boards (multiprocessor examples):
  - FRDM-K22F
  - FRDM-K28F
  - FRDM-K28FA
  - FRDM-K64F
  - FRDM-K66F
  - FRDM-K82F
  - FRDM-KL25Z
  - FRDM-KL27Z
  - FRDM-KL43Z

## 3 Development tools

The Multicore SDK (MCSDK) version 2.4.0 was compiled and tested with these development tools:

- IAR Embedded Workbench for Arm® version 8.22.2
- MDK-ARM Microcontroller Development Kit (Keil)® version 5.24a
- Makefiles support with GCC revision 7-2017-q4-major from Arm Embedded
- MCUXpresso IDE v10.2.0

## 4 Release contents

This table describes the release contents. Not all MCUXpresso SDK packages contain the whole set of these components.

**Table 1. Release contents**

Deliverable	Location
Multicore SDK location within the MCUXpresso SDK folder structure	<MCUXpressoSDK_install_dir>/middleware/multicore/...
Documentation	<MCUXpressoSDK_install_dir>/docs/multicore/...
Embedded Remote Procedure Call component	<MCSDK_dir>/erpc/...
Multicore Manager component	<MCSDK_dir>/mcmgr/...
RPMsg-Lite	<MCSDK_dir>/rpmmsg_lite/...
Multicore demo applications	<MCUXpressoSDK_install_dir>/boards/<board_name>/multicore_examples/...
Multiprocessor demo applications	<MCUXpressoSDK_install_dir>/boards/<board_name>/multiprocessor_examples/...

## 5 Multicore SDK release overview

Together, the Multicore SDK (MCSDK) and the MCUXpresso SDK (SDK) form a framework for the development of software for NXP multicore devices. The MCSDK release consists of the following elementary software components for multicore:

- Embedded Remote Procedure Call (eRPC)
- Multicore Manager (MCMGR) - included just in SDK for multicore devices
- Remote Processor Messaging - Lite (RPMsg-Lite) - included just in SDK for multicore devices

The MCSDK is also accompanied with documentation and several multicore and multiprocessor demo applications.

## 6 Demo applications

The multicore demo applications demonstrate the usage of the MCSDK software components on supported multicore development boards. The following multicore demo applications are located together with other MCUXpresso SDK examples in the `<MCUXpressoSDK_install_dir>/boards/<board_name>/multicore_examples...` subdirectories.

- erpc\_matrix\_multiply\_rpmsg
- erpc\_matrix\_multiply\_rpmsg\_rtos
- hello\_world
- low\_power
- multicore\_manager
- rpmsg\_lite\_pingpong
- rpmsg\_lite\_pingpong\_rtos

The eRPC multicore component can be leveraged for inter-processor communication and remote procedure calls between SoCs / development boards. The following multiprocessor demo applications are located together with other MCUXpresso SDK examples in the `<MCUXpressoSDK_install_dir>/boards/<board_name>/multiprocessor_examples...` subdirectories.

- erpc\_client\_matrix\_multiply\_spi
- erpc\_server\_matrix\_multiply\_spi
- erpc\_client\_matrix\_multiply\_uart
- erpc\_server\_matrix\_multiply\_uart
- erpc\_server\_dac\_adc
- erpc\_remote\_control

## 7 Revision history

This table summarizes revisions to this document.

**Table 2. Revision history**

Revision number	Date	Substantive changes
0	09/2015	Initial release
1	03/2016	Updated for the KSDK 2.0.0 and the MCSDK 1.1.0
2	08/2016	Updated for the MCSDK 2.0.0 and the LPCXpresso54114 support
3	09/2016	Updated for the MCSDK 2.1.0

*Table continues on the next page...*

**Table 2. Revision history (continued)**

Revision number	Date	Substantive changes
4	03/2017	Updated for the MCSDK 2.2.0
5	06/2017	Updated for the MCSDK 2.2.1 and the LPCXpresso54102 support
7	11/2017	Updated for the MCSDK 2.3.0 and MCUXpresso SDK 2.3.0 release
8	05/2018	Updated for the MCSDK 2.4.0 and MCUXpresso SDK 2.4.0 release

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