



Release Notes for ADuCM302x Device Family Pack 3.2.0

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1 Introduction

Thank you for installing the ADuCM302x Device Family Pack (DFP). This document describes the changes for the ADuCM302x Device Family Pack 3.2.0. ADuCM302x Device Family Pack 3.2.0 is supported in Keil uVision, CrossCore Embedded Studio® (CCES) and IAR Embedded Workbench.

2 Release Notes for ADuCM302x Device Family Pack 3.2.0

2.1 Differences between version 3.2.0 and prior versions

ADuCM302x Device Family Pack has been updated with software modifications CM3029DFP-60, CM3029DFP-65, CM3029DFP-67, CM3029DFP-72, CM3029DFP-85, CM3029DFP-89, CM3029DFP-95, CM3029DFP-101, CM3029DFP-103, CM3029DFP-105, CM3029DFP-106, MSKUV-261, MSKUV-328, MSKUV-331.

2.1.1 System Initialization

CM3029DFP-60

Disable ISRAM before calling SystemInit if ISRAM is to be disabled .

CM3029DFP-89

The `adi_system_EnableRetention` function now supports the combination of bank1 and bank2.

CM3029DFP-105

Replace obsolete `bool_t` type with `bool` for ADuCM3027. Correct invalid headers files in include statements for ADuCM3027.

CM3029DFP-106

Add missing `pinmux` file for ADuCM3027.

MSKUV-261

Support for relocating the vector table in SRAM re-introduced.

2.1.2 FreeRTOS

CM3029DFP-95

Default interrupt priority now configurable with non-0 values, a requirement when using FreeRTOS.

2.1.3 Crypto

CM3029DFP-67

Following the addition of the HMAC feature for the ADuCM4x50 family, some crypto examples stopped working properly. This fix was introduced in release 3.1.2.

MSKUV-328

The crypto driver has been made common to ADuCM302x and ADuCM4x50 families.

MSKUV-331

Allow 0-length input data for CCM mode.

2.1.4 PWR

CM3029DFP-85

Watchdog timer control register is now saved before entering hibernate and restored on wake up.

2.1.5 RTC

CM3029DFP-65

Function `adi_rtc_SetAutoReloadValue` now assign register `SS1ARL` as expected.

CM3029DFP-72

All the input capture channels should now be properly supported by the RTC driver.

CM3029DFP-101

Removed interferences between ADuCM4x50 specific support for RTC and ADuCM302x.

MSKUV-328

Eliminate compilation failures caused by modifications specific to ADuCM4x50.

2.1.6 UART

CM3029DFP-103

When a second buffer was submitted for a transmit, using another buffer, while a first buffer was already being transmitted (non-blocking), the first buffer was sent twice .

3 Release Notes for ADuCM302x Device Family Pack 3.1.2

3.1 Differences between version 3.1.2 and prior versions

ADuCM302x Device Family Pack has been updated with software modifications MSKUV-289, MSKUV-292, MSKUV-293, MSKUV-300.

3.1.1 Crypto

Following the introduction of struct member `pHmacKey` in struct `ADI_CRYPT_TRANSACTION`, for ADuCM4050, member `pKey` has been renamed `pAesKey`.

3.1.2 GPIO

MSKUV-300

GPIO driver API extended with `adi_gpio_GroupInterruptPolarityEnable` to determine if the interrupts are generated on the rising or falling edge of the corresponding GPIO pin.

3.1.3 RTC Driver

MSKUV-289

RTC driver modified to eliminate the risk of counter overflows.

3.1.4 RTOS

MSKUV-293

The RTOS mapping has been extended with Micrium μ C/OS-II.

3.1.5 UART Driver

MSKUV-292

UART driver updated for PIO Rx transfers to support all the FIFO trigger levels. (Previous versions supported 1-byte but not 4-byte/8-byte/14-byte.)

A minor change was required in `adi_uart_SetRxFifoTriggerLevel` for this modification: the `hDevice` parameter cannot be constant anymore as the Rx FIFO trigger level must be recorded.

ADuCM302x DFP 3.1.2

```
ADI_UART_RESULT adi_uart_SetRxFifoTriggerLevel(  
    ADI_UART_HANDLE const hDevice,  
    ADI_UART_TRIG_LEVEL const eTriglevel  
);
```

ADuCM302x DFP 3.1.0

```
ADI_UART_RESULT adi_uart_SetRxFifoTriggerLevel(  
    ADI_UART_CONST_HANDLE const hDevice,  
    ADI_UART_TRIG_LEVEL const eTriglevel  
);
```

4 Release Notes for ADuCM302x Device Family Pack 3.1.0

4.1 Differences between version 3.1.0 and prior versions

The main changes in version 3.1.0 is the extended support for IAR Embedded Workbench.

- ADuCM302x_DFP\3.1.0\ARM\config now including material to fully support ADuCM302x in CMSIS Pack, e.g. ICF files, DDF files, flash programmer.
- Source for building the flash programmer used by IAR available in ADuCM302x_DFP\3.1.0\ARM\src\flashloader\AnalogDevices\FlashADuCM3027 and ADuCM302x_DFP\3.1.0\ARM\src\flashloader\AnalogDevices\FlashADuCM3029.

4.2 Required Software

4.2.1 Keil uVision

To use this ADuCM302x Device Family Pack with Keil uVision , you must first obtain and install:

- Keil uVision MDK v5.22 or later with ARM Compiler version 1.1.0 or later;
- Segger J-Link LITE v5.10p or later.

Install the Keil software first, then install the Segger J-Link LITE software.

4.2.2 CrossCore Embedded Studio

To use this ADuCM302x Device Family Pack with CrossCore Embedded Studio, you must first obtain and install:

- CrossCore Embedded Studio 2.7.0 or later.

4.2.3 IAR Embedded Workbench

To use this ADuCM302x Device Family Pack with IAR Embedded Workbench, you must first obtain and install:

- IAR Embedded Workbench for ARM 8.20.1 or later.

4.3 Release Testing

4.3.1 Keil uVision

This ADuCM302x Device Family Pack has been tested with

EZ-KIT	Emulator
ADuCM3029 EZ-KIT version 1.2 BOM Rev 1.6	J-Link Lite
EV-COG-AD3029LZ	CMSIS-DAP

4.3.2 CrossCore Embedded Studio

This ADuCM302x Device Family Pack has been tested with

EZ-KIT	Emulator
ADuCM3029 EZ-KIT version 1.2 BOM Rev 1.6	ICE-2000

4.3.3 IAR Embedded Workbench

This ADuCM302x Device Family Pack has been tested with

EZ-KIT	Emulator
ADuCM3029 EZ-KIT version 1.2 BOM Rev 1.6	J-Link Lite
EV-COG-AD3029LZ	CMSIS-DAP

4.4 License Checking

Use of ADuCM302x Device Family Pack software is subject to the Software License Agreement presented during installation.

The details of this Software License Agreement can be found in the CMSIS pack installation directory, in AnalogDevices\ADuCM302x_DFP\3.1.0\License.

4.5 Release Content

This release contains the following sets of components:

- Source files for the ADuCM302x device family drivers. These components are authored by Analog Devices, for use on the ADuCM302x processor.
- Toolchain support. These components are authored by Analog Devices, and are installed into the toolchain to configure it to recognize the ADuCM302x processor family.
- Additional utilities. These components are authored by Analog Devices, and assist in the generation of applications for the ADuCM302x processor family.
- Documentation.

4.6 Source files for device family drivers

ADuCM302x.h	Device descriptions and macro files
System	Source and include files
Startup	Source and include files

Various peripheral device driver sources and include files in “Source” and “Include” directories.

4.6.1 Location

The ADuCM302x Device Family Pack 3.1.0 will be installed into the CMSIS pack directory for the targeted development environment:

Keil uVision	<keil_root>\ARM\PACK\AnalogDevices\ADuCM302x_DFP\3.1.0
CCES	<cces_root>\ARM\PACK\AnalogDevices\ADuCM302x_DFP\3.1.0
IAR Embedded Workbench	<iar_packrepo>\AnalogDevices\ADuCM302x_DFP\3.1.0

with

- `<keil_root>`
 - The location where Keil uVision is installed
e.g. `C:\Keil_v5`.
- `<cces_root>`
 - The location where CrossCOre Embedded Studio is installed,
e.g. `C:\Analog Devices\CrossCore Embedded Studio 2.7.0`.
- `<iar_packrepo>`
 - The location where IAR Embedded Workbench installs CMSIS packs,
e.g. `C:\Users\<windows_username>\AppData\local\IAR Embedded Workbench\PackRepo`.

4.6.2 Device Driver Thread Safety

All Device Drivers are **not** thread-safe. They are re-entrant but not thread-safe. If an RTOS is present, then drivers will use the RTOS semaphores for implementing the blocking calls.

4.6.3 Contacting Technical Support

You can reach Analog Devices software and tools technical support in the following ways:

- Post your questions in the [software and development tools support community](#) at [EngineerZone®](#).
- E-mail your questions about processors and processor applications to [processor.support@analog.com](mailto:support@analog.com).
- For Greater China, Processors and DSP applications and processor questions can be sent to: processor.china@analog.com.
- Submit your questions to technical support directly via <http://www.analog.com/support>.
- Contact your [Analog Devices sales office](#) or authorized distributor.

4.6.4 Examples

This ADuCM302x Device Family Pack comes with a very simple example which requires multiple drivers (DMA, UART, Power)

Examples for drivers

1.	HelloWorld	<ul style="list-style-type: none"> • Demonstrate how to create a simple application that prints "Hello, world!".
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4.7 Known Issues

For the latest anomalies please consult our [Software and Tools Anomalies Search](#) page.