

ADSP-CM40x Enablement Software package v1.2.0 Release Notes

These release notes subsume the release notes for previous updates. Release notes for previous updates can be found at the end of this document.

Release Dependencies

This release was tested with the following hardware:

- Segger J-Link emulators (Ultra+ and Lite)
- Evaluation boards:

	Board Rev	BOM Rev
ADSP-CM403F EZ-KIT	1.0	0.5
ADSP-CM408F EZ-KIT	0.2	0.5

This release was tested with the following 3rd party software:

The ADSP-CM40x Enablement Software requires IAR Embedded Workbench for ARM to build, load and debug projects. The ADSP-CM40x Enablement Software package installer will add various required system files to the IAR installation. These system files allow the IAR tool chain to recognize, generate code and debug ADSP-CM40x applications.

- IAR Embedded Workbench for ARM version 7.30
- Segger J-Link emulator software version 4.92
- The following Micrium Software components have been tested:

Micrium Software Component	Tested Version
uC/OS-III for ARM Cortex-M4	3.03.01.02
uC/TCP-IP Core	2.13.02
uC/DHCPc	2.09.01
uC/USB Core	4.01.02
uC/USB Vendor	4.01.02

New features and examples in this release

- UART Flash Programmer tool
- Read_AFEID example added which demonstrates how to read the AFE ID register.
- The Device Driver User's Guide (CM40x_Device_Drivers_User_Guide.pdf) has been added to the doc directory

UART Flash Programmer Tool

A UART Flash Programmer tool has been provided with this release. This tool allows the user to write their applications to, and then boot, from the flash memory of ADSP-CM40x devices. More details can be found in the Software User's Guide and in the README.TXT in the tool's directory:

<install directory>\ADSP-CM40x\CM403F_CM408F_EZ-KIT\tool\UARTFlashProgrammer\

Software issues addressed in this release

- Rename the timer handler function
- The HAE Callback example has an incorrect error check

Documentation

Device Drivers User Guide added to this release.

Known issues

- The ADCC driver returns wrong frame pointer for the ADI_ADCC_EVENT_FRAME_PROCESSED event. It is supposed to pass the start of a frame within the given buffer but it return the frame pointer beyond the given buffer.
- The user guide instructs the user to set an environment variable "*ADI_MICRIUM_PATH_CM40X*" to point to the Micrium sources. When a project is opened the environment variable is automatically substituted in the project file (.ewp file). This is a one time substitution. It cannot be undone or redone, which is not ideal if, for example, you are moving to a new Micrium source base. This is a deficiency against the IAR IDE.

For example

<file>

<name>\$ADI_MICRIUM_PATH_CM40X\$\uCOS-III\Source\os_int.c</name>

</file>

Will expand to

<file>

<name>\$PROJ_DIR\$\..\..\..\..\Micrium_3.03.01.02\Software\uCOS-III\Source\os_int.c</name>

</file>

ADSP-CM40x Enablement Software package v1.1.0 Release Notes

Release Dependencies

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- Evaluation boards:

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ADSP-CM403F EZ-KIT	1.0	0.5
ADSP-CM408F EZ-KIT	0.2	0.5

This release was tested with the following 3rd party software:

The ADSP-CM40x Enablement Software requires IAR Embedded Workbench for ARM to build, load and debug projects. The ADSP-CM40x Enablement Software package installer will add various required system files to the IAR installation. These system files allow the IAR tool chain to recognize, generate code and debug ADSP-CM40x applications.

- IAR Embedded Workbench for ARM versions 6.50.3 and 6.60.1
- Segger J-Link emulator software version 4.76a.
- The following Micrium Software components have been tested:
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Micrium Software Component Tested Version

uC/OS-III for ARM Cortex-M4	3.03.01.02
uC/TCP-IP Core	2.13.02
uC/DHCPc	2.09.01
uC/USB Core	4.01.02
uC/USB Vendor	4.01.02

Software Users Guide

A Software Users Guide document is located in the <install directory>\ADSP-CM40x\CM403F_CM408F_EZ-KIT\doc folder. This document describes the ADSP-CM40x Enablement Software package and its use on the ADSP-CM403F and ADSP-CM408F EZ-KIT's. The Software Users Guide contains important installation, usage and product configuration instructions.

New features and examples in this release

- Harmonic Analysis Engine (HAE) Driver
- Flash Programmer Driver
- Boot_Optimization_Multi_App Example
- Boot_Optimization_Single_App Example
- Flash_ReadWrite Example
- HAE_Callback Example
- HAE_Dma Example

Power On Self Test (POST)

The ADSP-CM40x EZ-KIT's are pre-programmed with the Power_On_Self_Test (POST) example in flash memory. Most examples are configured to overwrite flash. After executing an example that overwrites flash, POST can be restored by executing the the Power_On_Self_Test example project.

Software issues addressed in this release

- ADCC event time registers are programmed incorrectly
- ADSP-CM408F : All Examples generate warnings when building
- ADSP-CM408F : Generate "Data verification failed" errors when run DMA examples
- CAN module changes for Group 2 registers mailbox numbering, also access changes
- CM408F - SPI Loopback Test Failure
- Cortex Chip ID identification registers need to be public
- M4P CACHE_MEMORY register requires exposure of bit fields
- Modify the ADCC examples to use the TRU service
- Need to record Release ID somewhere during the installation
- RCU_MSG bits missing from CODA in CM40x
- SCB module changes (System Cross Bar) impacts Visibility and Names
- Some M4P Register and Bit Fields changing from Public to Private Visibility, macros will be removed
- Subset of Cortex M4 registers (NVIC and others) are required in the IAR deliverables for CM40z
- The Slater CRC examples fail
- The Timer Service should clear all configuration data when the timer is opened
- The memory offset (nMemOffset) is wrongly documented
- USB changes not in generated output in installation

Documentation

- The ADSP-CM40x Enablement Software package User's Guide is updated.
- The Driver API Reference documentation is updated.
- Engineer-to-Engineer Note (EE-359) ADSP-CM40x Boot Time Optimization and Device Initialization is added.

Known issues

- Emulator
 - Only the "Connect During Reset" IAR reset strategy is supported at this time.

- The Flash driver `adi_flash_SetMode()` API is unable to set `ADI_FLASH_MODE_MMAP_XIP` correctly. Only `ADI_FLASH_MODE_MMAP` and `ADI_FLASH_MODE_PERIPHERAL` should be used.

Source Lookup

The device driver code is provided in 'C' source code and libraries. Each provided example links with these driver libraries. When debugging application code the debugger is unable to locate the driver source files and will display a "Get Alternative File" dialog. The source code is located in the `<install directory>\ADSP-CM40x\CM403F_CM408F_EZ-KIT\src` folder. In the "Get Alternative File" dialog use the "Suggested alternative" browse (...) button to locate the source file in the src subfolders

Support and Assistance

- Submit your questions online at:
 - <http://www.analog.com/support>
- E-mail your Processor and DSP software and development tools questions from within CrossCore Embedded Studio:
 - processor.tools.support@analog.com
- E-mail your Processors and DSP applications and processor questions to:
 - processor.support@analog.com OR
 - processor.china@analog.com (Greater China support)
- Post your questions in the Processors and DSP online technical support community in Engineer Zone at:
 - <http://ez.analog.com/community/dsp>