

EDMA3 Driver

Release version 01.10.00.XX

Release Notes

July 13, 2009

The product release notes in this document are for EDMA3 Driver, which is a part of the EDMA3 Low Level Driver package. EDMA3 Driver is a functional library providing APIs for programming, scheduling and synchronizing with EDMA transfers and many more. The EDMA3 Driver is made generic across SoCs and across Operating Systems.

TABLE OF CONTENTS

1	In This Release.....	3
2	System Requirements	5
3	Installation and Usage	5
4	Un-installation	5
5	Fixed In This Release	6
6	Known Issues.....	7
7	Revision history	8
8	Appendix: Changes from last release	11

1 In This Release

This is the 01.10.00.XX release of EDMA3 Driver and contains libraries, sample initialization libraries, standalone sample applications and support documents.

This release contains sample OS adaptation layer for BIOS 5, which could be used by BIOS 5 based applications

❖ **New features in the components of release**

- 1) ECN # TIDSP00011985 (Addition of new API EDMA3_DRV_disableLogicalChannel API in EDMA3 Driver) has been implemented.
- 2) ECN# TIDSP00012004 (Migration to new BSD license) has been implemented.

❖ **Instructions to build the EDMA3 package in non-RTSC environment:**

- 1) The term REF_PATH used in this document refers to <local path where the current EDMA3 LLD version is installed>.
- 2) Open CCS and build the EDMA3 libraries for debug and release for EDMA3 Driver and EDMA3 Driver Sample Initialization Libraries from "<<REF_PATH>>\packages\ti\sdo\edma3\drv\".

❖ **Instructions to build the EDMA3 package in RTSC environment:**

- 1) The term REF_PATH used in this document refers to <local path where the current EDMA3 LLD version is installed>.
- 2) Install XDC version 3.10.02 from the XDC website.
- 3) Set PATH environment variable to XDC installation folder. For e.g., if you have installed XDC in C:\ in folder "xdc_3_10_02", append "C:\xdc_3_10_02;" to the PATH environment variable.
- 4) Modify the "
<<REF_PATH>>\packages\ti\sdo\edma3\common\edma3_xdcpaths_common.dat" file.
 - Set the "edma3RootDir" variable to the <<REF_PATH>> folder.
USE /FORWARD/ SLASHES FOR ALL DIRECTORIES IN THIS VARIABLE.
- 5) If you are going to build applications using the pre-built EDMA3 libraries, skip following steps and build the sample applications. Otherwise follow the below mentioned steps.
- 6) Open a command prompt window.
- 7) On the command prompt, go to <<REF_PATH>>\docs\Others\.
- 8) Run "xdc_edma3_build.bat" script from the command prompt. It will throw some warnings, just ignore them.

- 9) Open CCS and build the EDMA3 libraries for debug and release for EDMA3 Driver and EDMA3 Driver Sample Initialization Libraries from "`<REF_PATH>\packages\ti\sdo\edma3\drv\`".
- 10) Build all the libraries first. **YOU SHOULD NOT BUILD ANY APPLICATION AT THIS STAGE.**

Precautions 1: Your PATH environment variable should point to the XDC installation folder first without pointing to any other XDC tool chain path. So you should put your XDC installation directory before any other folder in the PATH variable.

Note 1: Steps in which user runs batch files are required only once per view per PC. Please note that these steps create intermediate files, which will be used by the RTSC tool chain during the build process.

Note 2: Sometimes the XDC tool chain throws an error like: "**Access is denied**" only if you are building from Clearcase. Just try to clean build again.

Note 3: For any kind of build related problem, try to do a clean build.

2 System Requirements

This release requires the following products (apart from the PSP package):

- ❖ CCS 3.3.80.11
- ❖ Any of the supported platforms: DM644x, DM646x, DM643x, DM648, C6424, C6452, C6455, OMAP2430, OMAP25xx, OMAP3430, OMAP35xx, DRx40x, DM360, C6474, TCI6488, DA830, C6747, OMAPL137, DRA44x, DRX45x, C6748 and OMAPL138 EVMs.
- ❖ DSP-BIOS 5.33.05 or higher
- ❖ CG Tools 6.1.5
- ❖ XDC tool 3.10.02
- ❖ eBinder IDE – 1.7
- ❖ PrKernel version 4
- ❖ BSPs (if required)

3 Installation and Usage

1) Install the required components as per instructions provided along with the package.

2) EDMA3 Driver source files are available in "edma3_ild_<CURRENT_VERSION>\packages\ti\sdo\edma3\drv\" folder.

3) Build the EDMA3 Driver Project files in the build directory (edma3_ild_<CURRENT_VERSION>\packages\ti\sdo\edma3\drv\build\) to build the debug/release library.

4) Sample libraries and sample project files are provided with the EDMA3 Driver and are in "edma3_ild_<CURRENT_VERSION>\packages\ti\sdo\edma3\drv\sample\build\" folder, in the platform specific folders.

4 Un-installation

Un-install the package as per instructions provided with the package.

5 Fixed In This Release

Following IRs have been fixed as a part of this release:

IR	Description
SDOCM00058021	EDMA 3 LLD Assumes ECM 7, 8, 9 and 10 are used by PSP drivers on BIOS OS
SDOCM00058057	CCS project files for OMAPL138 sample libraries are missing
SDOCM00058147	Wrong TCF file for DRx40x EDMA3 Driver Sample Application
SDOCM00058401	Wrong platform name in the Jacinto-DDR tcf file

6 Known Issues

1.	Sample application on DM350 PrOS (Pre-Silicon DM360) platform fails.
<p>Release Note</p> <p>Linking test case in the EDMA3 Driver sample application is not working properly, for DM350 PrOS (Pre-Silicon DM360) platform. The issue needs further analysis and will be fixed in the next release.</p>	
<p>Workaround</p> <p>None</p>	
2.	EDMA3 hardware doesn't work properly in FIFO mode with all the controllers.
<p>Release Note</p> <p>Very few peripherals support EDMA3 FIFO mode. EMIF controller doesn't support the same. So EDMA3 CANNOT be used in FIFO mode for doing a mem-2-mem data transfers, EDMA3 being configured in the FIFO mode. Applications trying to use EDMA3 in FIFO mode should first check their respective peripheral-controller document for this mode support.</p>	
<p>Workaround</p> <p>None</p>	
3.	Intermittent hang observed on one of the DSP cores when data transfers are triggered on all the 3 cores.
<p>Release Note</p> <p>Intermittent hang is observed on one of the DSP cores of TCI6488 when data transfers are triggered on all the three cores simultaneously. Moreover, the hang is not always 100% reproducible. The issue needs further analysis and will be fixed in future EDMA3 LLD release.</p>	
<p>Workaround</p> <p>None.</p>	

7 Revision history

Date	Author	Comments	Version
	Anuj Aggarwal	Modified it for EDMA3 package and added multiple instances capability.	0.2.0
Nov 14, 2006	Anuj Aggarwal	a) Modified it for more run time configuration. b) Made EDMA3 package OS independent.	0.2.1
Jan 16, 2007	Anuj Aggarwal	Critical section handling code modification. Uses semaphore and interrupts disabling mechanism for resource sharing.	0.2.2
Mar 6, 2007	Anuj Aggarwal	a) Renamed EDMA3_DVR to EDMA3_DRV. b) IPR bit clearing in RM ISR issue fixed. c) Sample application made generic.	0.3.0
Mar 23, 2007	Anuj Aggarwal	a) DMA/QDMA channel event missed issue fixed.	0.3.1
Apr 23, 2007	Anuj Aggarwal	a) New APIs to support POLL mode provided. b) API to set CC Register provided. c) Sample application made generic and more test cases added.	0.3.2
May 9, 2007	Anuj Aggarwal	a) MR# DPSP00007800 (Result of resource allocation is overwritten by the semaphore release result in EDMA3 Resource Manager) Fixed. b) MR# DPSP00007803 (Exit from EDMA3_RM_allocContiguousResource () in case of error is incorrect) Fixed.	1.0.0
May 14, 2007	Anuj Aggarwal	a) MR# DPSP00007858 (Issue in EDMA3 DRV causes false missed events) Fixed.	1.0.0.1
June 18, 2007	Anuj Aggarwal	Made the EDMA3 package RTSC compliant.	1.0.0.02

July 13, 2007	Anuj Aggarwal	<ul style="list-style-type: none"> a) Changed the directory structure as per RTSC standard. b) MR# DPSP00008525 (Request for the EDMA3_DVR_setPaRAMField API handle the shift of newPaRAMFieldVal) Fixed. 	1.0.0.03
September 14, 2007	Anuj Aggarwal	<ul style="list-style-type: none"> a) Moved the platform specific configuration to the Resource Manager. b) Modified the chaining API. c) Divided the sample app into sample initialization library and the standalone sample application. 	1.01.00.01
September 28, 2007	Anuj Aggarwal	<ul style="list-style-type: none"> a) Added support for DM6467. b) Fixed MRs (see Fixed in this release above). 	1.02.00.01
October 21, 2007	Anuj Aggarwal	<ul style="list-style-type: none"> a) C6452 support has been added in this release. Now C6452 applications can also be built in the RTSC environment. b) All the CCS PJT files now come under two flavors: one for the RTSC environment and the other for the non-RTSC environment. c) IOCTL interface has been added in the EDMA3 Driver. d) Fixed MRs (see Fixed in this release above). 	1.03.00.01
January 9, 2008	Anuj Aggarwal	<ul style="list-style-type: none"> a) Fixed MRs (see Fixed in this release above). 	1.03.01.01
January 28, 2008	Anuj Aggarwal	<ul style="list-style-type: none"> a) Implemented ECNs DPSP00009671, DPSP00009815 and DPSP00010035 (see New in this release above). 	1.04.00.01
March 20, 2008	Anuj Aggarwal	<ul style="list-style-type: none"> a) MRs DPSP00010071, DPSP00010187, DPSP00010479 and DPSP00010480 are fixed. b) Implemented ECNs DPSP00010463 and DPSP00010478 (see New in this release above). <p>See release notes for more information.</p>	1.05.00.01

November 4, 2008	Anuj Aggarwal	a) Added support for new platforms. b) IR SDOCM00049778 is fixed. See release notes for more information.	01.06.00.01
May 15, 2009	Anuj Aggarwal	a) Add support for new platforms: C6748, OMAPL138, DRA44x and DRX45x.	01.07.00.01
July 9, 2009	Anuj Aggarwal	a) ECN# TIDSP00012004 (Migration to new BSD license) and TIDSP00011985 (Addition of new API EDMA3_DRV_disableLogicalChannel API in EDMA3 Driver) implemented. b) IRs# SDOCM00058021, SDOCM00058057, SDOCM00058147 and SDOCM00058401 fixed. See release notes for more information.	01.10.00.01

8 Appendix: Changes from last release

Changes from 1.07 Release to 01.10 Releases:

- i. Implemented ECNs (see New in this release above).
- ii. Fixed IRs (see Fixed in this release above).

Changes from 1.06 Release to 01.07 Releases:

- i. Implemented ECNs (see New in this release above).
- ii. Fixed IRs (see Fixed in this release above).

Changes from 1.05 Release to 01.06 Releases:

- i. Implemented ECNs (see New in this release above).
- ii. Fixed IRs (see Fixed in this release above).

Changes from 1.04 Release to 1.05 Releases:

- i. Implemented ECNs DPSP00010463 and DPSP00010478 (see New in this release above).
- ii. Fixed MRs (see Fixed in this release above).

Changes from 1.03.01.01 Release to 1.04 Releases:

- i. Implemented ECNs DPSP00009671, DPSP00009815 and DPSP00010035 (see New in this release above).

Changes from 1.03.00.01 Release to 1.03.01.01 Releases:

- i. Fixed MRs (see Fixed in this release above).

Changes from 1.02.00.01 Release to 1.03.00.01 Releases:

- i. C6452 support has been added in this release. Now C6452 applications can also be built in the RTSC environment.
- ii. All the CCS PJT files now come under two flavors: one for the RTSC environment and the other for the non-RTSC environment.
- iii. IOCTL interface has been added in the EDMA3 Driver.
- iv. Fixed MRs (see Fixed in this release above).

Changes from 1.01.00.01 Release to 1.02.00.01 Releases:

- i. Added support for DM6467.
- ii. Fixed MRs (see Fixed in this release above).

Changes from 1.00.00.3 Release to 1.01.00.01 Releases:

- i. Moved the platform specific configuration to the Resource Manager.
- ii. Modified the chaining API.

- iii. Divided the sample app into sample initialization library and the standalone sample application.

Changes from 1.0.0.2 Release to 1.00.00.03 Releases:

- iv. Changed the directory structure as per RTSC standard.
- v. MR# DPSP00008525 (Request for the EDMA3_DVR_setPaRAMField API handle the shift of newpaRAMFieldVal) Fixed.

Changes from 1.0.0.1 Release to 1.0.0.02 Releases:

- a) Made the EDMA3 package RTSC compliant.

Changes from 1.0.0 Release to 1.0.0.1 Releases:

- a) MR# DPSP00007858 (Issue in EDMA3 DRV causes false missed events) Fixed.

Changes from 0.3.2 Release to 1.0.0 Releases:

- a) MR# DPSP00007800 (Result of resource allocation is over-written by the semaphore release result in EDMA3 Resource Manager) Fixed.
- b) MR# DPSP00007803 (Exit from EDMA3_RM_allocContiguousResource () in case of error is incorrect) Fixed.

Changes from 0.3.1 Release to 0.3.2 Releases:

- a) Poll mode support provided for the users who don't want to use the interrupt mechanism to receive the callback. New APIs are provided to check the transfer status, while working in Poll mode.
- b) New API to modify the Channel Controller registers is provided.
- c) Sample application is made more generic and new functions added to test the new APIs.

Changes from 0.3.0 Releases to 0.3.1 Releases:

- a) Event miss could occur on the DMA/QDMA Channel because of lack of mapping between the channel and TCC code. It is fixed after modifying the Resource Manager interface.

Changes from 0.2.2 Releases to 0.3.0 Releases:

- a) Renamed EDMA3_DVR to EDMA3_DRV in all locations (header files, source files, project files etc). Also, renamed the directory edma3\src\edma3_dvr to edma3\src\edma3_drv.

- b) IPR bit clearing in the EDMA3 resource manager ISR issue fixed. Now the IPR bit related to other resources NOT allocated by the resource manager would not be cleared.
- c) EDMA3 driver sample application is broken into multiple files for better understanding and easy porting across different SoCs and OSes.
- d) Common exhaustive Register Layer is now used for EDMA3 Channel and Transfer Controller, to make porting easier.