Processor SDK RTOS Automotive Release Notes

Last updated: **04/05/2018**

Contents

> **NOTE**
>
> This Release Notes is for the latest Processor SDK RTOS Automotive release. If you are using an older release, see the Archived Section below.

Overview

This **Processor Software Development Kit (Processor-SDK)** provides the core foundation and building blocks that facilitate Real-time operating system (RTOS) software development on TI's DRA7xx family of automotive processors.

Licensing

Please refer to the software manifest, which outlines the licensing status for all packages included in this release. The manifest can be found on the SDK download page (http://software-dl.ti.com/infotainment/esd/jacinto6/processor-sdk-rtos-automotive/latest/index_FDS.html) or in the installed directory as indicated below.

Documentation

- **Getting Started Guide**: Provides information on getting the software and running basic examples/demonstrations bundled in the SDK.
- **Software Developer Guide** (http://software-dl.ti.com/processor-sdk-rtos/esd/docs/04_03_00_05/rtos/index.html): Provides information on features, functions, delivery package and, compile tools for the Processor SDK RTOS (which serves as the baseline for this release). This also provides detailed information regarding software elements and software infrastructure to allow developers to start creating applications.
- **Software Manifest**: Provides license information on software included in the SDK release. This document is in the release at `[INSTALL-DIR]/processor_sdk_rtos_dra7xx_<version>/docs` and available to view from the SDK download page (http://software-dl.ti.com/infotainment/esd/jacinto6/processor-sdk-rtos-automotive/latest/index_FDS.html).

Release 04.03.00

Released April 2018.

What's New

New Features

- USB MSC driver support
  - See details in Driver support below
- Integrated real-time audio with EVE PFC demo

What's changed

- Updated pad configuration procedure with integration of IODELAY sequence in Board library
  - Shared pinmux and IODELAY entries used across Board and SBL libraries, guaranteeing application compatibility when transitioning between CCS and SBL loading methods
  - See the Migration Guide (http://software-dl.ti.com/processor-sdk-rtos/esd/docs/04_03_00_05/rtos/Release_Specific.html#migration-guide) and Board Support (http://software-dl.ti.com/processor-sdk-rtos/esd/docs/04_03_00_05/rtos/Board_EVM_Abstration.html#board-support) for more details

Component Version

The following is a list of all the software components and host tools bundled into the SDK installer. See the Software Developer Guide (http://software-dl.ti.com/processor-sdk-rtos/esd/docs/04_03_00_05/rtos/index.html) for more information on each component.

Component	Version
CG_XML	2.41.0
CTOOLSLIB	2.2.0.0
DSPLIB	3.4.0.0
EDMA3 LLD	2.12.05.30B
GNU GCC ARM	6-2017-q1-update
IPC	3.47.02.00
MATHLIB	3.1.1.0
NDK	2.26.00.08
PDK	1.0.10
SYS/BIOS	6.52.00.12
TI CGT C6x	8.2.2
TI CGT ARM	16.9.3.LTS
TI CGT ARP32	1.0.8
UIA	2.21.02.07
XDAIS	7.24.00.04
XDCTOOLS	3.50.03.33

The following is a list of tools bundled into the CCS installer. If you need to install CCS, see the CCS installation section in the *Getting Started Guide*.

Component	Version
CCS	7.4.0[1]

1. Note that CCSv7.4.0 was used for full product test and is the officially supported version for this SDK release. CCSv8.0 functionality has been confirmed through select sanity testing and should be acceptable to use if requiring any critical features from the major CCS update.

Fixed Issues

Record ID	Platform	Summary
PRSDK-2452		[OSAL] Dynamic allocation needs to be removed
PRSDK-2982		EMAC: API emac_close does not free or release EMAC_GLOBAL_RX_SEM_HANDLE
PRSDK-3037		UART_stdio: API files should include definition of return values expected from API functions
PRSDK-3087		UART_Read: Possible loss of last byte when IP receives data before API is called and if returnMode is set to UART_RETURN_FULL
PRSDK-3201		OSAL cache API failure on DSP core when buffer size is not aligned to cache line
PRSDK-3203		EMAC BasicExample outputs packet match failed after successful test
PRSDK-3258		EMAC LLD: Incorrect link status returned from emac_poll API
PRSDK-3382		UART: API UART_read() reads additional byte from what requested by application and drops in case FIFO has extra bytes
PRSDK-3520		FATFS MMCSD: does not work to save large files
PSDKRA-46	DRA72x	Nimu Example tests fails with DRA72x for 1GB link
PSDKRA-75	DRA75x, DRA78x	EVE: vcop_malloc() returns 0x20 (instead of NULL) after running out of mem
PSDKRA-77	DRA72x, DRA75x	PLL settings incorrect for various OPPs

This release closely corresponds to Processor SDK RTOS for Sitara and Keystone 2 devices. Please review the Processor SDK RTOS Release Notes (http://software-dl.ti.com/processor-sdk-rtos/esd/docs/04_03_00_05/rtos/Release_Specific.html#fixed-issues) for more information on general SDK fixed issues.

Supported Platforms

Devices and EVMs

Platform/SOC	Silicon Revision	EVM Revision
DRA72x	1.1, 2.0	Rev B
DRA74x/DRA75x	1.1, 2.0	Rev G3 or later
DRA78x	2.0	Rev E

> **NOTE**
>
> For simplicity, software and documentation use "DRA75x" nomenclature to collectively refer to all DRA74x and DRA75x variants

Drivers

The following tables show RTOS driver availability per platform and EVM. A shaded box implies that the feature is not applicable for that platform/EVM.

Driver	Platform/SOC/Core								EVM		
	DRA72x			DRA75x			DRA78x		evmDRA72x	evmDRA75x	evmDRA78x
	A15	M4	C66	A15	M4	C66	M4	C66			
CSL	X	X	X	X	X	X	X	X	X	X	X
EMAC	X	X		X	X		X		X	X	X
EDMA3	X	X	X	X	X	X	X	X	X	X	X
GPIO	X	X	X	X	X	X	X	X	X	X	X
I2C	X	X	X	X	X	X	X	X	X	X	X
McASP	X	X	X	X	X	X	X	X	X	X	
McSPI	X	X	X	X	X	X	X	X	X	X	X
MMC-SD	X	X	X	X	X	X	X	X	X	X	X
QSPI	X	X	X	X	X	X	X	X	X	X	X
UART	X	X	X	X	X	X	X	X	X	X	X
USB$_2$	X	X		X	X				X	X	

2. Only MSC protocol supported. A15 supports both Host and Device mode, M4 only supports Device mode.

Other Features

The following table shows other feature availability per platform and EVM:

Feature	Platform/SOC			EVM		
	DRA72x	DRA75x	DRA78x	evmDRA72x	evmDRA75x	evmDRA78x
Board Support	X	X	X	X	X	X
Boot (SBL)	X	X	X	X	X	X
FATFS	X	X	X	X	X	X
Network (CPSW)	X	X	X	X	X	X

Demonstrations

The following table shows demonstrations availability per platform and EVM. A shaded box implies that the feature is not applicable for that platform/EVM:

Demo	Platform/SOC				EVM		
	DRA72x	DRA75x	DRA78x		evmDRA72x	evmDRA75x	evmDRA78x
EVE FFT		X	X			X	X
EVE PFC$_3$		X	X			X	X
EVE FIR		X	X			X	X
Multicore Streaming		X	X			X	X

3. This demo can be run as a standalone unit test or integrated with real-time audio.

Known Issues

This section contains the list of known issues at the time of making the release and any known workaround.

Record ID	Platform	Summary	Workaround
PSDKRA-53	DRA72x	Various tests fail on Rev C/D EVM	Rev C DRA72x is not officially supported in this release. Please use Rev B EVM until support for later revisions is added to the SDK.
PSDKRA-115	DRA72x, DRA75x	Sporadic EMMC test failures	Test sometimes shows instability on cold boot. Reloading and rerunning the application will succeed.

This release closely corresponds to Processor SDK RTOS for Sitara and Keystone 2 devices. Please review the Processor SDK RTOS Release Notes (http://software-dl.ti.com/processor-sdk-rtos/esd/docs/04_03_00_05/rtos/Release_Specific.html#known-issues) for more information on general SDK known issues.

Installation and Usage

The Getting Started Guide provides instructions on how to setup up your development environment, install the SDK and start your development.

To uninstall the SDK, remove the individual component directories from the installed path. This is safe to do even in Windows since these components do not modify the Windows registry.

Host Support

The recommended development host is

- **Windows**: Windows 7 on 64-bit machine
- **Linux**: Ubuntu 16.04 on 64-bit machine

To support legacy 32-bit machines, the installers are 32-bit. For Linux, run the below command to install the required 32-bit libraries needed by the Processor-SDK and Code Composer Studio v7.1.0:

```
sudo apt-get install libc6:i386 libx11-6:i386 libasound2:i386 libatk1.0-0:i386 libcairo2:i386 libcups2:i386 libdbus-glib-1-2:i386 libgconf-2-4:i386
libgdk-pixbuf2.0-0:i386 libgtk-3-0:i386 libice6:i386 libncurses5:i386 libsm6:i386 liborbit2:i386 libudev1:i386 libusb-0.1-4:i386 libstdc++6:i386
libxt6:i386 libxtst6:i386 libgnomeui-0:i386 libusb-1.0-0-dev:i386 libcanberra-gtk-module:i386 gtk2-engines-murrine:i386
```

Technical Support and Product Updates

For further information or to report any problems, contact TI E2E:

- DRA7xx Infotainment SoCs Forum (http://e2e.ti.com/support/arm/automotive_processors/f/1020)

Archived

Processor SDK RTOS Automotive 4.1.0 Release Notes (http://processors.wiki.ti.com/index.php?title=Processor_SDK_RTOS_Automotive_Release_Notes&oldid=231497)

Processor SDK RTOS Automotive 4.0.0 Release Notes (http://processors.wiki.ti.com/index.php?title=Processor_SDK_RTOS_Automotive_Release_Notes&oldid=229480)

Processor SDK Automotive Audio 3.3.1 Release Notes (http://processors.wiki.ti.com/index.php?title=Processor_SDK_Automotive_Audio_Release_Notes&oldid=227543)

Processor SDK Automotive Audio 3.2.1 Release Notes (http://processors.wiki.ti.com/index.php?title=Processor_SDK_Automotive_Audio_Release_Notes&oldid=224840)

Processor SDK Automotive Audio 3.1.1 Release Notes (http://processors.wiki.ti.com/index.php?title=Processor_SDK_Automotive_Audio_Release_Notes&oldid=223508)

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1. switchcategory:MultiCore=

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- For questions related to the BIOS MultiCore SDK (MCSDK), please use the BIOS Forum

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- For questions related to the BIOS MultiCore SDK (MCSDK), please use the BIOS Forum

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