DFE LLD

Release Notes

TEXAS INSTRUMENTS

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Contents

DFE LLD version 01.00.00.09

Overview

This document provides the release information for the latest DFE Low Level Driver which should be used by drivers and application that interface with DFE IP.

DFE LLD module includes:
- Compiled library (Big and Little) Endian of DFE LLD.
- Source code.
- API reference guide
- Design Documentation

LLD Dependencies

LLD is dependent on following external components delivered in PDK package:
- o TCI6630K2L CSL

New/Updated Features and Quality

This is a release tested by the development team on TCI6630K2L EVM.

Release 1.0.0.9

- o Updated buildlib.xs to add RULES_MAKE macro to support build based on custom Rules.make

Release 1.0.0.8

- o Fixed exception handler code so that it does not interact with status interrupts that are used by the functional code. This resolves a race-condition where the exception handler could potentially clear a status interrupt before it was read by the functional code.

Release 1.0.0.7

- o Rename test project name to align with new rules in pdkProjectCreate script

- o Fix CSL header include path error to align with Proc-SDK CSL

Release 1.0.0.6

- o Added support for DPDA at LLD API level

- o DFE Init procedure: added software padding delays to get robust DFE initialization in the CFR and JESD blocks, readjusted some of the initial sync counter uses to be specific to DL, JESD, and UL
- o Updated test utilities for:
  - o Generic Serdes CSL APIs
  - o Change of the DFE PLL programming to match the PLL user guide recommendations
- o Bug fixes

Release 1.0.0.5

- o Further enhancements to the exception handling
- o Lld test utilities moved to sysbios and unit test verified on secure devices
- o Added support for 66AK2L06 device (DPD and DPDA disabled via specific flags in the DFE driver object)

Release 1.0.0.4

- o Fix for rms (average) and peak computations in BB power meter read APIs
- o Added support in Dfe Lld test utilities to test of CTL traffic together with Iqn2 Lld
- o Doxygen updates for Lld APIs

Release 1.0.0.3

- o Added support for DFE exception monitoring

Release 1.0.0.2

- o Fix for internal system tests

Release 1.0.0.1

- o Documentation update
- o Coverity fixes

Release 1.0.0.0

- o Initial release

Resolved Incident Reports (IR)

Table 1 provides information on IR resolutions incorporated into this release.

Table 1   Resolved IRs for this Release

IR Parent/ Child Number	Severity Level	IR Description
PRSDK-2194	NA	Add RTOS Installer script to autoset SDK_INSTALL_PATH

Known Issues/Limitations

IR Parent/ Child Number	Severity Level	IR Description
SDOCM00108236	low	SUMMER Shift gain test is failing (likely a test framework issue)

Licensing

Please refer to the software Manifest document for the details.

Delivery Package

There is no separate delivery package. The DFE LLD is being delivered as part of PDK.

Installation Instructions

The LLD is currently bundled as part of Platform Development Kit (PDK). Refer installation instruction to the release notes provided for PDK.

Directory structure

The following is the directory structure after the DFE LLD package has been installed:
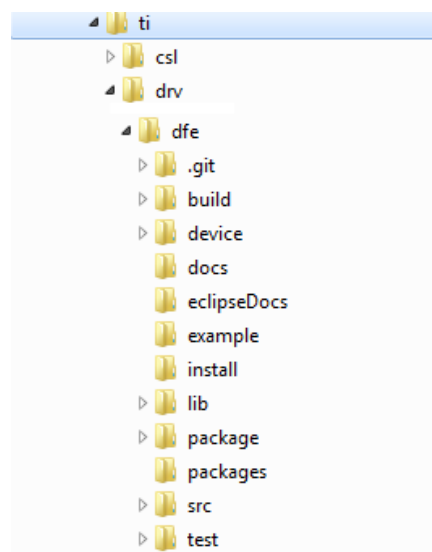
The following table explains each individual directory:

Directory Name	Description
ti/drv/dfe	The top level directory contains the following:- 1. *Environment configuration batch file* The file "setupenv.bat" is used to configure the build

	environment for the DFE low level driver. 2. *XDC Build and Package files* These files (`config.bld`, `package.xdc` etc) are the XDC build files which are used to create the DFE package. 3. *Exported Driver header file* Header files which are provided by the DFE low level driver and should be used by the application developers for driver usage.
`ti/drv/dfe/build`	The directory contains internal XDC build related files which are used to create the DFE low level driver package.
`ti/drv/dfe/include`	The "include" directory has private DFE low level driver header files. These files should not be used by application developers.
`ti/drv/dfe/lib`	The "`lib`" folder has pre-built Big and Little Endian libraries for the DFE low level driver along with their *code/data size information*.
`ti/drv/dfe/package`	Internal DFE low level driver package files.
`ti/drv/dfe/src`	Source code for the DFE low level driver.
`ti/drv/dfe/test`	The "`test`" directory in the DFE low level driver has unit test cases which are used by the development team to test the DFE low level driver.
`ti/drv/dfe/eclipseDocs`	The "eclipse" directory has files required to integrate DFE low level driver documentation with Eclipse IDE's Help Menu.
`ti/drv/dfe/docs`	The directory contains the DFE low level driver documentation.

Customer Documentation List

Table 2 lists the documents that are accessible through the **/docs** folder on the product installation CD or in the delivery package.

Table 2   Product Documentation included with this Release

Document #	Document Title	File Name
1	API documentation (generated by Doxygen)	docs/dfelldDocs.chm
2	Design Document	docs/ DFE_LLD_SDS.pdf
3	Software Manifest	docs/DFE_LLD_SoftwareManifest.pdf

Test Instructions for TCI6630K2L EVM

When MCSDK is installed in the user environment, an Eclipse workspace is created with all PDK DSP examples in <mcsdk_install_path>/pdk_keystone2_x_xx_xx_xx/packages/exampleProjects

Alternatively, users can follow instructions from:
http://processors.wiki.ti.com/index.php/MCSDK_UG_Chapter_Developing_PDK#Steps_to_run
_example_and.2For_unit_test_projects_on_C66x_Target

   o **Switching from CPRI to DFE mode**

First step is to verify that the EVM BMC version and FPGA bit file are up-to-date. Early versions don't support the following. We tested the below with this info from BMC prompt:

BMC Version	EVM Version	EVM S/N	FPGA ver	UCD VER
1.1.0.3	1.0.1.1	18	3.2	1.0

From EVM BMC prompt, change the current bootmode to properly set bit #27:

<u>Example for "dsp no-boot"</u>

CSISC2_0_MUX to 1 → 0x08100001 (set bit no 27) → CSIS2_0 is assigned to AIL (lane 0 and 1)
CSISC2_0_MUX to 0 → 0x00100001 (reset bit no 27) → CSIS2_0 is assigned to DFE/JESD (lane 0 and 1)

<u>BMC command line</u>

BMC> bootmode #15 0x00000000 0x08100001 dsp no-boot → sets mode #15 as DSP no boot mode for CPRI
BMC> bootmode #15 0x00000000 0x00100001 dsp no-boot → sets mode #15 as DSP no boot mode for DFE