DSP/BIOS™ Link

Platform Guide

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Read This First

About This Manual

This document describes platform specific information need for DA8XX platforms.

How to Use This Manual

This document includes the following chapters:

Please go through the Release Notes document available in the release package before starting the installation.

Notation of information elements

The document may contain these additional elements:

Warning

This is an example of warning message. It usually indicates a non-recoverable change.

Caution

This is an example of caution message.

Important

This is an example of important message.

Note

This is an example of additional note. This usually indicates additional information in the current context.

Tip

This is an example of a useful tip.

If You Need Assistance

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Platform Guide for DA8XX

Table of Contents

1.1. Introduction

1.1.1. Purpose and Scope

DSP/BIOS™ LINK is foundation software for the inter-processor communication across the GPP-DSP boundary. It provides a generic API that abstracts the characteristics of the physical link connecting GPP and DSP from the applications. It eliminates the need for customers to develop such link from scratch and allows them to focus more on application development.

This document provides the users necessary information to install DSP/BIOS™ LINK on the development host.

This document corresponds to the product release Version 1.65.00.03 dated JUL 12, 2010.

1.1.2. Terms and Abbreviations

CCS	Code Composer Studio
IPC	Inter Processor Communication
GPP	General Purpose e.g. ARM
DSP	Digital Signal Processor e.g. DM6437
DSPLink	A generic term used for DSP/BIOS™ Link. It appears in italics in all usages
CGTools	Code Gen Tools, e.g. Compiler, Linker, Archiver

Table 1.1. Terms and Abbreviations

1.1.3. References

1	User Guide
2	InstallGuide_OS_Da8xx
3	Porting Guide

Table 1.2. References

1.2. Configuring CCS

1.2.1. Configuring CCS for DA8XX

To use CCS for debugging the DSP side application, you will need to configure CCS to use both ARM and DSP with the DA8xx EVM.

1.3. Run SWI samples

1.3.1. Steps to run SWI samples in no boot mode for DA8xx

- Need to use polling method to synchronize with the GPP side DSPLINK.Set "NOLOADER" and "DSP_BootMode_NoBoot" in LINKCFG_dspObjects in CFG file.
- Change the fill value to zero in the dsp side samples linker command file.For example: Data: DSPLINK_shmBaseAddress: fill=0x00000000 {} > SDRAM
- Define the macro SWI_MODE in COMPONENT file (dsp/src/samples/$(SAMPLE)/DspBios/COMPONENT) of dsp side samples application. But donot define DSP_BOOTMODE_NOBOOT macro in this component file since it is polling mode (i.e DSPLINK_init on dsp side loops until PROC_start from GPP side).
- Add utils.importFile ("dsplink-iom.tci"); utils.importFile ("dsplink-dio.tci"); utils.importFile ("dsplink-zcpydata-swi.tci"); in the .cfg or .tcf file of loop and scale sample.
- GPP side in main.c file assigns the DSPLINK_shmBaseAddress address to strShmAddr manually.
- Build and run the sample.

1.4. ADDITIONAL INFORMATION

1.4.1. Read write samples

The addresses to be passed as parameters for readwrite samples are platform specific.

Read write sample can be used for addresses in DDR, GEM L1D RAM and L2 RAM on DA8XX platform.

1.4.2. CFG_DA8XXGEM_SHMEM.c setting for KICK register UNLOCK

The ARG4 of configuration objects for the DSPs (LINKCFG_dspObject) is used for KICK register. If it is 0 "unlock the kick register".If it is 1 "do not touch the KICK register". By Default the ARG4 is set to 1 for DA8XX.