

DSP/BIOS

Quick Start Reference Guide

What is DSP/BIOS?

DSP/BIOS is a scalable real-time kernel. It is designed for applications that require real-time scheduling and synchronization, host-to-target communication, or real-time instrumentation. DSP/BIOS provides preemptive multi-threading, hardware abstraction, real-time analysis, and configuration tools.

DSP/BIOS is packaged as a set of modules that can be linked into an application. Your executable program includes only those DSP/BIOS functions that are referenced (directly or indirectly) by the program code. In addition, the DSP/BIOS Configuration Tool allows you to optimize code size and speed by disabling DSP/BIOS features not used in a program.

You can use DSP/BIOS to instrument any application to be probed, traced, and monitored in real-time. Programs that take advantage of the multi-threading capabilities of DSP/BIOS are implicitly instrumented.

DSP/BIOS is integrated with Code Composer Studio™, requires no runtime license fees, and is fully supported by Texas Instruments. DSP/BIOS is a key component of TI's eXpressDSP™ technology.

DSP/BIOS supports the TMS320C5000 and TMS320C6000 DSP platforms. This includes configuration template support for EVMs, DSKs, simulators, and some third-party boards. Existing configuration templates are easily adaptable to provide support for custom boards and other third-party boards.

DSP/BIOS Components

DSP/BIOS includes the following components:

- **DSP/BIOS Configuration Tool.** This tool allows you to create and configure the DSP/BIOS objects used by your program. You can also use this tool to configure memory, thread priorities, interrupt handlers, and Chip Support Library (CSL) settings.

To open the DSP/BIOS Configuration Tool, choose [File](#) → [New](#) → [DSP/BIOS Configuration](#) within Code Composer Studio. Select the template for your DSP target and click OK.

For help on the Configuration Tool, press F1 while the Configuration Tool window is active.

- **DSP/BIOS Real-Time Analysis Tools.** These tools allow you to view program activity in real time. For example, the Execution Graph shows a diagram of thread activity.

To open a DSP/BIOS analysis tool, use the DSP/BIOS menu or the Real Time Analysis toolbar within Code Composer Studio.

For help on a DSP/BIOS analysis tool, press F1 while the tool window is active.

- **DSP/BIOS API.** Your C, C++, and assembly language programs can call over 150 DSP/BIOS API functions.

For reference information on the DSP/BIOS API, choose [Help](#) → [Contents](#) and open the DSP/BIOS book in the Contents tab.

Learning about DSP/BIOS

See the following documents and on line locations for information about DSP/BIOS.

Use this document:	If you need this information:	How to open it:
DSP/BIOS Tutorial	How to get started with DSP/BIOS and gain a hands-on introduction to various modules.	Online Help: Within Code Composer Studio, choose Help → Tutorial . Go to the Using DSP/BIOS section of the tutorial.
DSP/BIOS User's Guide	How DSP/BIOS works. This manual includes an overview of DSP/BIOS and discusses the threading model, real-time analysis and instrumentation, memory management, and I/O.	Adobe Acrobat file: In Code Composer Studio, choose Help → Contents . Open the CCS Documentation book in the Contents tab, and select the Manuals topic for your DSP platform. Follow the link to view the manual list. In the web page that opens, follow the link to open the DSP/BIOS User's Guide.
DSP/BIOS API Reference	Reference information about DSP/BIOS modules, objects, API functions, device drivers, and utilities. This information is also provided in the DSP/BIOS online help.	Adobe Acrobat file: In Code Composer Studio, choose Help → Contents . Open the CCS Documentation book in the Contents tab, and select the Manuals topic for your DSP platform. Follow the link to view the manual list. In the web page that opens, follow the link to open the DSP/BIOS API Reference.
DSP/BIOS Online Help	Answers to questions about how to use DSP/BIOS; reference information about DSP/BIOS modules, objects, API functions, device drivers, and utilities; troubleshooting information.	Online help: Within Code Composer Studio, choose Help → Contents and open the DSP/BIOS book in the Contents tab.
DSP/BIOS Web Page	The DSP/BIOS area of the TI web site includes links to the following: <ul style="list-style-type: none">• Feature lists and benefits• Discussion group• General and technical FAQs• Application notes• Benchmarks• Technical support and training• DSP Developer's Village	Web site: On the Web go to: http://www.ti.com Follow the links to the TI DSP Developer's Village and then to DSP/BIOS.