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REAL WORLD SIGNAL PROCESSING™

Products Applications Support

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## C3X/4X Code Composer

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### TMS3240130

#### PRODUCT INFORMATION

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#### RELATED DEVICES

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- [TMS320C40](#)
- [TMS320C32](#)
- [TMS320C30](#)
- [TMS320VC33](#)

Details	
Tool Type	Code Composer Studio(TM) IDE
Current Version	v4.1
Host	PC
Operating System	Windows
Supplier	Texas Instruments
* Price	1495.1
* Purchase Tool	Americas: <a href="#">TI Authorized Distributor</a> Asia: <a href="#">TI Authorized Distributor</a> Europe: <a href="#">TI Authorized Distributor</a> Japan: <a href="#">TI Authorized Distributor</a>

#### RELATED PRODUCTS

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- [C5000 DSPs](#)
- [C2000 DSPs](#)
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#### DESCRIPTION

##### Code Composer 4.1 Service Pack 2 is now available!

See: <http://focus.ti.com/docs/general/symlink.jhtml?name=ccpack>

Code Composer is the DSP industry's first fully integrated development environment (IDE) with DSP-specific functionality. With its familiar MS-Visual C++ like environment, Code Composer lets you edit, build, debug, profile and manage projects from a single unified environment. Other unique features include graphical signal analysis, injection/extraction of data signals via file I/O, multi-processor debugging, automated testing and customization via a C-interpretive scripting language and much more.

#### FEATURES

Code Composer Version 4.10 builds on an already extensive and unique feature set and includes additional capabilities to further reduce development time.

- Integrated Development Environment with Leading Edge GUI
- Debug ide
- Compiler/Assembler/linker
- Simulator
- Advanced watch Windows
- Tightly integrated Editor
- File i/o / probe Points and Graphical Algorithm Scope Probes
- Advanced graphical Signal Analysis
- Interactive Profiling
- Automated testing and Customization via Scripting
- Visual project Management System
- Compile in the Background While Editing and Debugging
- Multi-processor Debugging
- Help on the target DSP
- Platforms supported

Code Composer is a fully-integrated DSP software development environment with a similar look and feel as MS-Visual C++, yet built for DSP. Within a single application you can edit, compile in the background, debug, do performance profiles, analyze signals and run test cases. You have easy access to these and other advanced features, specially tailored to DSP designers' needs, which will further help you to design better code in less time!

Code Composer includes all the major features provided by the standard HLL Debugger and sells for about the same price. You get so many more advanced features within the Code Composer environment that you'll

quickly see your development projects completed in much less time than ever before.

**SPECIFICATIONS**

Code Composer has an unbeatable price/performance ratio whose capabilities are light years ahead of the HLL Debugger. Note that each HLL debugger supports only one processor while Code Debugger often supports two processors in the same package.

Capabilities	Code Composer V4	Code Explorer	TI HLL Debugger
<b>Integrated Development Environment</b>	*		
Familiar User Interface like MS-Visual C++	*		
Integrated Editor	*		
Integrated Project Management System	*		
Integrated Debugger	*		
Integrated Profiler	*		
Seamless Integration with Code Generation Tools	*		
Leading Edge GUI with dockable/draggable windows, enhanced toolbars	*		Only 'C6x & 'C54x
On-line context-sensitive Help includes info on DSP target register definition and instruction set	*	*	
<b>Integrated Editor</b>			
Integrated with the Debugger	*		
Multiple Views of Files (C and/or Assembly)	*		
Edit Multiple C and ASM files simultaneously	*		
On-Line Context Sensitive Help for Specific Processor Instruction Set	*		
Floating Editor Toolbars -- advanced editor features (find/replace capabilities, settable tab stops, mark next matching brace etc.)	*		
Right Mouse Button hot keys	*		
Find-in Files	*		
<b>Visual Project Manager</b>			
Organize all files into functional categories (C source, ASM source, CMD, GEL, libraries, config etc.)	*		
Drag & Drop from MS File Manager	*		
Double Click on file to open it	*		
Save all compile options with project	*		
<b>Compiling / Building Projects</b>			
Select build options from dialogs boxes in plain English	*		
Launch compile			

- A visual project management system to easily visualize, access & manipulate project files
- A leading edge GUI with enhanced dockable toolbars and

- windows that can be dragged outside of their parent's frame
- Multiple watch windows

The C Compiler accepts ANSI C source code and produces efficient C3x or C4x assembly language source code, performing a wide variety of optimizations to improve the efficiency of the compiled code. The compiler incorporates four levels of state-of-the-art generic and target-specific optimizations. The level of optimizations is selectable. The C compiler was validated with the Perenial, Plum-Hall C Validation Suite and the K&R Test.

**Optimizations include:**

Specific TMS320 Floating-Point Optimizations

- Register variables,
- Cost-based register allocation,
- Auto increment addressing,
- Repeat blocks,
- Delay branches, calls, and returns,
- Use of registers for passing function arguments,
- Parallel instructions,
- Conditional instructions.

General Optimizations

- Branch optimizations/control-flow simplification,
- Algebraic reordering, symbolic simplification, constant folding,
- Alias disambiguation,
- Copy propagation,
- Common sub expression elimination,
- Redundant assignment elimination,
- Loop induction variable optimizations/strength reduction,
- Loop rotation,
- Loop invariant code motion,
- Inline expansion of function calls,
- File level optimizations.

Works with these Devices:

[TMS320C3X](#), [TMS320C4X](#)

**What you need to use this product**

Code Composer supports nearly all of the TI TMS320 family of Digital Signal Processors and works with numerous hardware and software platforms:

<b>Supported DSP Processors</b>	<b>Supported Host Operating Systems</b>
<ul style="list-style-type: none"> <li>• 'C3x</li> <li>• 'C4x</li> </ul>	<ul style="list-style-type: none"> <li>• MS-Windows 3.1, 95 and NT</li> </ul>
<b>Supported Hardware Configurations</b>	<b>Compatible Kernels/operating systems</b>
<ul style="list-style-type: none"> <li>• Emulators from TI and <a href="#">Third parties</a></li> <li>• Development boards including EVMs &amp; DSKs from TI and Third party boards</li> <li>• Simulator (no hardware target)</li> </ul>	<ul style="list-style-type: none"> <li>• Parallel c from 3L</li> <li>• Virtuoso from Eonic Systems</li> </ul>

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Code Composer IDE, Code Generation Tools, C3x, C4x Simulator and Emulation S/W

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[Application Notes for Code Composer Studio\(TM\) IDE](#)



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