



CodeWarrior Development Studio



for StarCore DSP Architectures

Quick Start for the Windows® Edition





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SYSTEM REQUIREMENTS		
Hardware	Intel® Pentium® 4 processor, 2 GHz or faster, Intel Xeon [™] , Intel Core [™] , AMD Athlon [™] 64, AMD Opteron [™] , or later 2 GB RAM CD-ROM drive for CD installation Microsoft Mouse compliant pointing device Internet connectivity for web downloads and update access	
Operating System	Microsoft® Windows 7 (32/64-bit) Home Premium, Professional, Ultimate Operating System or Microsoft® Windows Vista® (SP2) (32/64-bit) Home Basic, Home Premium, Business, Enterprise, Ultimate Operating System or Windows® XP Professional (SP3) (32/64-bit)	
Disk Space	2 GB, additional space required during installation	

This Quick Start explains how to install the CodeWarrior software on a Windows PC. Also, the document explains how to use this software to create, build, and debug a simple StarCore DSP project.

NOTE In the procedures that follow, advanced users can use numbered steps. Novices may use the more detailed instructions provided by substeps.

Section A: Installing Software

1. Install the CodeWarrior software

NOTE If you are installing from a CD, proceed directly to substep j.

- a. Start a web browser.
- b. Point the browser to <u>https://www.freescale.com/cgi/go/189425101</u> the Freescale website's **Log-in** page appears.
- c. On this page, enter your login information.

- Click Log in the Extranet Project: CodeWarrior StarCore v10.0 web page appears.
- e. On this page, open the folder containing the release to install a list of files appears.
- f. In this file list, click the name of the web installer. The web installer is a file with **.exe** file extension the **File Download** dialog box appears.
- g. Click Save the Save As dialog box appears.
- h. Select a convenient location on your PC to save the installer.
- i. Run the installer the install wizard appears.

NOTE If you are installing from a CD, insert the **Development Studio** for **StarCore** CD into the CD-ROM drive — auto install begins.

- j. Follow the wizard instructions to install the CodeWarrior software. When the wizard is finished, the **InstallShield Wizard Completed** page appears.
- k. Check Check for program updates after the setup completes.
- I. Click Finish the CodeWarrior Updater dialog box appears.
- 2. Check for software updates

NOTE If **CodeWarrior Updater** already has the required Internet connection settings, proceed directly to substep h.

NOTE If you are not a registered user, click **Register Now** and follow the on-screen instructions.

- Click Settings the CodeWarrior Updater Settings dialog box appears.
- b. Select Check Bi-Weekly from the Update Check Scheduling drop down list.
- c. Click Settings the Internet Properties dialog box appears.
- d. Use the dialog box to modify Internet settings, if necessary.
- e. Click OK the Internet Properties dialog box closes.
- f. Click **OK** the **CodeWarrior Updater Setting** dialog box closes.
- g. In the **CodeWarrior Updater** dialog box, click **Next** the updater checks for the newer versions of CodeWarrior products.
- h. Follow the updater's on-screen instructions to download the CodeWarrior product updates to your PC.
- i. When the updater displays *Update Check Complete!* message, click **Finish** the wizard closes.

NOTE For licensing and activation of your CodeWarrior Development Studio for Freescale StarCore DSP Architectures, refer to the *CodeWarrior Development Suite Quick Start*. Save the license file, license.dat to the installation root folder, the default is *CWInstallDir\SC*, where *CWInstallDir* is the path to your CodeWarrior installation.

Section B: Creating, Building, and Debugging a Project

- 1. Launch the CodeWarrior IDE
 - a. Select Start > Programs > Freescale CodeWarrior > CW for StarCore < number> > CodeWarrior, where number is the version number of your product — the Workspace Launcher dialog box appears.

Workspace Launcher Dialog Box

🥦 Workspa	ace Launcher 🛛 🗙
Select a w	rorkspace
Freescale Co Choose a wo	odeWarrior stores your projects in a folder called a workspace. orkspace folder to use for this session.
Workenaces	
wonapace.	
Use this a	is the default and do not ask again
	OK Cancel

If you wish to change the location of your project's Workspace, click
 Browse to select a new path — the Select Workspace Directory dialog box appears.

Select Workspace Directory Dialog Box

Select Workspace Directory	? 🔀
Select the workspace directory to use.	
Workspace 1	^
Ci Workspace2	
Ci Workspace3	
C Workspace4	
Workspace5	
C Workspace6	
Workspace7	
Workspace8	×
	2
Folder: Workspace1	
Make New Folder OK C	ancel

- Select the required folder or click Make New Folder to create a new folder for storing your projects.
- d. Click OK the Select Workspace Directory dialog box closes.
- e. Click **OK** to store the project at the specified location CodeWarrior launches and displays the **Welcome** page.

Welcome Page



- **NOTE** The **Welcome** page is displayed when CodeWarrior is run for the first time. You can always return to this page by selecting **Help > Welcome** from the CodeWarrior IDE menu bar.
- 2. Create a new project
 - From the CodeWarrior IDE menu bar, select File > New > Project the New Project dialog box appears.
 - b. Select StarCore Project.

New Project Dialog Box

🥦 New Project	_ 🗆 🔀
Select a wizard Create a new StarCore project	
Wizards:	
type filter text	
Show All Wizards.	
(?) < Back Next > Finish	Cancel

c. Click Next — the Create a StarCore Project page appears.

NOTE You can also open the **Create a StarCore Project** page directly by selecting **File > New > StarCore Project**.

d. In the Project name field, type Demo.

New StarCore Project Wizard

🥦 New StarCore Project	_ 🗆 🔀
Create a StarCore Project - Step 1 of 6	
Choose the location for the new project	
New Project Name: Demo	
✓ Use default location	
Location: D:/test/Demo	Browse
⑦ < <u>B</u> ack <u>N</u> ext > <u>F</u> inish	Cancel

- e. Click Next the Devices page appears.
- f. Select the SC3x00 option in the Device Family Group.
- g. Select the Application option from Project Type.

Devices Page

🥬 New StarCore Project	
Devices - Step 2 of 6 Choose the target device for this project.	
Device Family Group: 	
Project Type:	
Select this option to generate projects for the following single-core targets: SC3x00 ISS, SC3x00 Platform PACC.	Platform
? <gadk< td=""> Next ></gadk<>	Cancel

h. Click Next — the Build Settings page appears.

NOTE The **Build Settings** and **Simulators** pages appear according to target device selected from **Devices** page.

Build Settings Page

🎾 New StarCore Project	
Build Settings - Step 3 of 6	
Memory model: Huge	
Languages:	
οc	
OC++	
○ Assembly	
 	Cancel

- i. Click Next the Launch Configurations page appears.
- j. Check the **Disable memory verification after program download** checkbox if you do not want to verify the program download.
- **NOTE** For certain programs, verification of programs might prevent connection to TAP. If you can connect to a TAP, this option does not affect trace collection.
 - In the Launch Configuration Options, select the Create launch configurations for both debug and release targets option to generate both debug and release launch configurations.

Launch Configurations Page



I. Click Next — the Simulators page appears.

Simulators Page



- m. If target device is SC3x00, check Local SC3x00 Platform ISS or Local SC3x00 Platform PACC checkbox to use Instruction Set simulator or Platform Accurate simulator respectively.
- **NOTE** For other target devices check appropriate checkbox from the available simulators.
 - n. Click $\ensuremath{\text{Next}}\xspace$ the Software Analysis Trace and Profile page appears.

	Software A	Analysis	Trace and	d Profile	Page
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- Check the Enable trace and profile checkbox to collect trace and profiling data.
- **NOTE** If you selected the Local SC3x00 Platform ISS checkbox on the Simulators page, the Enable trace and profile checkbox appears disabled.
 - p. Click Finish the IDE creates the project. You can view the newly created project in the CodeWarrior Projects view in the IDE.

CodeWarrior Projects View



- 3. Build and debug program
 - a. Select the project in the CodeWarrior Projects view.
 - b. Select Project > Build Project to build the project. Alternatively, you can right-click on the project in the CodeWarrior Projects view and select Build Project from the context menu.
 - c. From the CodeWarrior IDE menu bar, select Run > Debug Configurations — the Debug Configurations dialog box appears.
 - d. Select CodeWarrior Download > demo Debug_SC3x00_PACC -SC3x00 Platform PACC in the left pane.

Debug Configurations		×
Create, manage, and run configurati Download an application to a target, then debug	ons or run the application.	-
CodeWarrior Attach CodeWarrior Attach CodeWarrior Connect CodeWarrior Connect CodeWarrior Connect CodeWarrior Connect Codewarrior Download Codewarrior Download Codewarrior Connect Codewarrice Codewarrior Connect Codewarrior Connect Codewarri	Name: demo - Debug_SC3:x00 PACC - SC3:x00 Platform PACC Main 40+ Arguments Trace and Profile Project: demo Common @ Trace and Profile C/C++ Application: Erowse C/C++ Application: Erowse Connect process input output to a terminal. Erowse	
Filter matched 6 of 6 items	Apply Revert	
0	Debug Close	

Debug Configurations Dialog Box

e. Click **Debug** — program downloads to simulator.

f. Click **Yes** — the **Debug** perspective appears and the execution halts at the first statement of main().

Debug Perspective

	Debug - demo/Source/starcore_main.c - Freescale CodeWarrior File Edit Refactor Navigate Search Project Profiler Run Window Help			
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	~		ŝ.	≪a⊟ ∦* × % ▽
	🍇 🕸 🕀 🗈 🗴 🗧 🗤 3. 👁 🖈 🗮 🗗 🖉 🖉 👘 👘 👘	Name	Value	Location
	demo - Debug_SC3x00_PACC - SC3x00 Platform PACC [CodeWarrior Download]			
	Thread [ID: 0x0] (Suspended: Signal 'Halt' received. Description: User halted the second s			
	2 main() D: (workspace 1)demo (Source (starcore_main.c:65 0x40000000) 1 (AemSaction)() d: () bid(b)(23, 10, 2, 4, 3x50), library length) available	<		2
	D:\workspace1\demo\Debug_SC3x00_PACC\demo.eld (10/12/09 12:06 PM)			A
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Marker	R starcora main c 32			Securina Col
Bar	return(0); }		int main() Ox40000000 { return	<main>: addi</main>
	int main()		0x40000002	<main+2>: jsr</main+2>
	<pre>(return funcl(); }</pre>		0x40000008 0x4000000a 0x4000000c 0x4000000c	<main+8>: move <main+10>: move <main+12>: sube <main+14>: rts</main+14></main+12></main+10></main+8>
			> < .	2
	🖳 Console 🗵 🧟 Tasks 🟮 Memory 🔞 Target Tasks 🔣 Problems 💽 Executables)	- × 🖗 🖻 🖬 🖉 🖉	🛛 🛫 🗳 • 📑 • 🗖 •
	StarCore DSP, demo.eld, core 0			100
	<u>(3)</u>			<u>></u>
	1 D*		demo - De	bug_SC 0 100

- g. Click on the thread in the **Debug** view the program counter icon on the marker bar points to the next statement to be executed.
- h. In the **Debug** view, click **Step Over** (2) the debugger executes the current statement and halts at next statement.
- 4. Set breakpoint and execute program to breakpoint.
 - a. In the editor area, scroll to this statement: for (i = 0; i < DataBlockSize/2; i++)</p>
 - Double-click on the marker bar next to the statement the breakpoint indicator (blue dot) appears next to the statement.
 - c. In the **Debug** view, click **Resume** \bigcirc the debugger executes all statements up to but not including the breakpoint statement.
- 5. Control program
 - a. In the **Debug** view, click **Step Over** 💮 the debugger executes the breakpoint statement and halts at the next statement.
 - b. In the **Debug** view, click **Resume □** → the program outputs to the **Console** window at the bottom.
 - c. In the **Debug** view, click **Terminate =** the debug session ends.

- 6. Close the Console window
- 7. Select **File > Exit** the CodeWarrior IDE window closes.

Congratulations!

You have created, built, and debugged a StarCore DSP Simulator project using CodeWarrior!

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