



Buyer's Guide

# CodeWarrior™ Development Studio for Freescale 56800/E Digital Signal Controllers

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# Contents

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1	What is new in this release? .....	3	6.1	Turbo Downloader.....	7
2	CodeWarrior Development Studio for Freescale 56800/E Digital Signal Controllers .....	4	6.2	OSEK.....	8
3	Specifications.....	4	7	Why update and upgrade? .....	8
3.1	Version of Products.....	4	7.1	Upgrade to Standard Edition .....	8
3.2	Processors Supported by the Current Release (without Service Pack) .....	4	8	Software Products: Part Numbers.....	8
3.3	Board Supported (see also: Hardware Products, p. 8).....	4	9	Hardware Products .....	8
3.4	Languages.....	4	10	Hardware Products: Part Numbers.....	8
3.4.1	Assembler .....	4	11	Pricing .....	9
3.4.2	C.....	4	12	Licensing .....	9
4	Unrivaled Features but So Easy to Use.....	5	13	Getting Started with Special Edition.....	10
4.1	Processor Expert .....	5	13.1	Obtaining CodeWarrior .....	10
4.1.1	Processor Expert Components.....	5	13.1.1	Buy Online.....	10
4.1.1.1	Free Components .....	5	13.1.2	Digital Download .....	10
4.1.1.2	Premium Components .....	5	13.2	Getting a Free License (Special Edition).....	10
4.1.1.3	Component Wizard™.....	6	14	Getting Started with Standard Edition.....	10
5	Features of Special, Standard and Professional Editions .....	7	14.1	Ordering .....	10
5.1	Technical support.....	7	14.2	Registering and Getting a License.....	10
5.2	Special Edition .....	7	15	Training and Software Services .....	10
5.3	Standard Edition .....	7	16	Useful Links.....	10
6	Additional Support .....	7	17	Benchmarks .....	11
			18	Freescale Renewal Policy .....	11

# A Guide to CodeWarrior™ Development Studio

## 1 What is new in this release?

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### CodeWarrior Development Studio for Freescale 56800/E Digital Signal Controllers v8.3

New DSC Processor Support in CodeWarrior stationery and Processor Expert

- 56F824x
- 56F825x

### Previous Version Product Improvement/Additions Included in 8.3

New Features

- Process Expert™ 3.00 update
- FreeMaster version 1.3.8
- Stand-Alone Flash Programmer v1.2
- Extended code size limitation to 64 KB for Special Edition
- Unlimited assembler for Special Edition
- Data Visualization allows more than one variable to be displayed on one chart or multiple charts

Defects Fixed

- Fixed TRW problems with Stand-Alone Flash Programmer on 56F8355
- Fixed Memory allocation issues which caused a crash when compiling large functions
- Displayed correct PMEM array variable

## IDE v5.9

### Compiler

- New Feature - Linker Memory Initialization (LMI): allows every word in a non-empty section to be initialized with a value
- New Feature - Memory Fill: In linker command files, when describing the memory segments, user can also specify the link-time initialization value to be used for watermarking a memory segment. The syntax extension used is INITVAL.
- FRTID delay-slot restrictions are checked in the Fast Interrupt pragma
- Fixed compiler crash in peephole optimization for N register based addressing mode
- Generated correct DWARF entries for variables located in registers
- Improved code generation for bitfield complement operation
- Corrected 'switch' code generation for 'case' with negative values
- Handled correct pragma interrupts
- Generated correct code for atan() and atan2() functions
- Handled byte pointer access correctly
- Type cast/sign extensions at optimization level 3 no longer corrupt the upper word of a long int

### Debugger

- Open-source BDM (JTAG) connection support for MC56F800x and MC56F824x/5x
- Displayed correct information for enum types
- Generated debug information for all functions in an ASM file
- Generated debug information for a C file which is included by another C source file with #include <\*.c>
- Generated correct debug information for variables stored in registers
- Displayed long long values correctly
- Provided workaround to show real running address in debugger window

### Processor Expert

- New component FreeMaster for all supported derivatives
- Support of new derivatives 56F8245, 56F8246, 56F8247, 56F8255, 56F8256, 56F8257 (56F824x/5x)
- New components: Init\_eFlexPWM, Init\_REF, CrossbarSwitch for 56F824x/5x
- Support of PESL for 56F824x/5x
- Demo applications for 56F824x/5x

## 2 CodeWarrior Development Studio

CodeWarrior Development Studio for Freescale 56800/E Digital Signal Controllers is an integrated suite of tools containing all the components needed to bring an application from the concept stage to the release of a finished product.

CodeWarrior Development Studio contains the following set of tools:

- Integrated Development Environment (IDE)
- Project Wizard, Project Manager
- Processor Expert with components—Premium Component/Component Wizard sold separately (Contact Sales)
- Editor, Compiler, Linker and Assembler
- Graphical Debugger with New Debug Module and Multi-Target Interface Capability
- Instruction Set Simulator
- Flash programming tools
- Many features can be set to user's preferences with the project preferences panel and the targets preferences panels.

(1) Processor Expert helps save design time by assisting the user in the definition of the application environment and generating support code without having to read and learn a lot about the device, its peripherals, the registers and their bit field settings.

It is possible to evaluate the full-featured product by requesting a license, free of charge, valid for 30 days. Contact Freescale Sales US at 1-800-377-5416.

## 3 Specifications

### 3.1 Version of Products

Current release of CodeWarrior Development Studio for Freescale 56800/E Digital Signal Controllers is v8.3.

### 3.2 Processors Supported by the Current Release (without Service Pack)

CodeWarrior supports all the Freescale 56800/E derivatives in production at the time of its development. In v8.3, MC56F824x/5x is supported.

### 3.3 Board Supported (see also: Hardware Products, p. 8)

We will provide stationery support for evaluation boards that we receive information on. TWR-56F8257 Tower Board support is added in this release.

All EVM boards are available from Freescale. Please contact sales for pricing.

### 3.4 Languages

CodeWarrior Development Studio for Freescale 56800/E Digital Signal Controllers supports Assembler and C.

#### 3.4.1 Assembler

The Assembler not only processes assembly code for the Freescale DSP instruction set, but also offers a set of useful directives and macros, which makes your assembly coding much easier. Assembler is unlimited in all the Editions.

#### 3.4.2 C

C is code-size limited to 64 KB of code in the "free of charge" Special Edition. There are two upgrade license keys from the Special Edition: a 256 KB and a Standard Edition-C is unrestricted with the Standard Edition.

## 4 Unrivaled features but so easy to use

CodeWarrior for Freescale 56800/E Digital Signal Controllers has been designed to simplify the development of DSP/microcontroller-based applications by helping engineers concentrate on the key part of their project: writing the code. CodeWarrior can be made as simple to use as small assembly-code applications require or as feature-full as the most demanding developers can ask for. Furthermore, CodeWarrior for Freescale 56800/E Digital Signal Controllers combines tools whose features are unrivaled today: the Processor Expert tool at the definition phase of a project with its libraries of standard, complex and software components, and the Component Wizard which enables a user to create their own components or modify existing ones.

The Component Wizard is optional, please contact sales for pricing.

### 4.1 Processor Expert

Processor Expert is a Rapid Application Design (RAD) tool that combines easy-to-use component-based application creation with an expert knowledge system. Functionality of CPU and on-chip peripherals as well as higher levels of specific applications are encapsulated into components called Embedded Components.

This powerful tool frees up developers from the long effort of learning bits and bytes of new peripherals and how to properly set them up to implement the desired functions by allowing the developer to describe how built-in peripherals and their hardware environment will be used and automatically generate the code to properly initialize, write to and read these peripherals. This tool dramatically saves the time to learn about a new device and the time to correct mistakes and help concentrate on the real part of the application, the added value of a project.

For Processor Expert documentation, visit [www.freescale.com/webapp/sps/site/prod\\_summary.jsp?code=PROCESSOR-EXPERT](http://www.freescale.com/webapp/sps/site/prod_summary.jsp?code=PROCESSOR-EXPERT).

#### 4.1.1 Processor Expert Components

Consult Freescale's Processor Expert Web site to get a list of the beans available. For specific details on components that are included in our digital signal products, visit [www.freescale.com/files/soft\\_dev\\_tools/doc/support\\_info/950-00610.pdf?fp=1](http://www.freescale.com/files/soft_dev_tools/doc/support_info/950-00610.pdf?fp=1).

#### 4.1.1.1 Free Components

Basic Components (or Standard Components) refer to the basic blocks such as parallel ports, timers, A/D converters and simple serial interfaces as well as simple functions using them. Examples of Basic Components are bit and byte access, timing and analog to digital converter functions. The Software Components library (or free components) is a collection of software modules developed to interface to popular external peripherals.

#### 4.1.1.2 Premium Components

Premium Components (or complex components) refer to the beans supporting complex peripherals. The following Premium Components are available and can be purchased through Freescale sales.

#### Freescale PN: DLP-568-FLXCN-CX

##### FlexCAN Component

High-level component that encapsulates the functionality of the CAN peripheral and is intended for expert use of the respective peripherals. This component implements the peripheral initialization of an internal Controller Area Network (FlexCAN) asynchronous communication protocol module of the Freescale 56800 MCU derivatives.

#### Freescale PN: DLP-568-MSCAN-CX

##### Freescale Scalable Controller Area (MSCAN)—Peripheral Initialization Component

High-level component that encapsulates the functionality of the CAN peripheral and is intended for expert use of the respective peripherals. This component implements the peripheral initialization of an internal Freescale Scalable Controller Area Network (MSCAN) asynchronous communication protocol module of the Freescale 56800 MCU derivatives.

#### Freescale PN: DLP-568-VRLIT-CX

##### Voice Recognition Functionality Support—BeanVR\_Lite1

Voice Recognition (VRLite-1) algorithm. Many products, such as a mobile phone, require a voice recognition system to operate the phone through voice. VRLite-1 provides a solution for this requirement. VRLite-1 is a memory-optimized, isolated-word, speaker-dependent speech recognition system. This means that the system must be trained to the voice of a particular user and that it can recognize only isolated words. For example, if the user trained the word "call" and "Bob," the algorithm can recognize both "call" and "Bob," but not the phrase "call Bob."

#### **Freescale PN: DLP-568-FPHON-CX**

This component includes support for CID Type 1, CID Type 2, Generic Echo Canceller, FDSPK, CID Type 1 and 2.

#### **Bean CIDType1 2**

The Type 1 and 2 Telephony Features Library interface provides Caller ID, Visual Message Waiting Indicator (VMWI) and other related services, which occur in the on-hook or off-hook state. The Type 1 and 2 Telephony Features Library supports FSK signals with a baud rate of 1200 bps. The library demodulates the FSK into ASCII words and passes the data payload to the application program for processing and presentation. The FSK message can be in single or multiple data message format per Telcordia SR-3004. In the on-hook state, the actual FSK message is received between the first and second ring. If an FSK message is not detected during this period, no information will be available until the next call. Other services, such as VMWI, may not involve power ringing at all. In the off-hook state, the Type 1 and 2 Telephony Features Library detects CAS tones and generates the DTMF D acknowledgement signal to the PSTN switching system for Caller ID delivery. FSK data received in the off-hook state uses the multiple data message format (MDMF), as described in Telcordia SR-3004 and other references describing CIDCW and CWD.

#### **The Generic Echo Canceller Library**

The Generic Echo Canceller Library provides the procedures for the cancellation of echo in a system for applications; for example, the line echo on a telephone line for telephony applications. The output of the Generic Echo Canceller is typically used by a Caller ID module or a speakerphone module. Depending on the application, the output can also go unused. Because of this, the output of the module is given out separately and the module itself does not overwrite the input samples that are echo-laden (contain echoes). Please remember that enough dynamic memory pod must be assigned.

#### **Component FDSPK**

##### **Full Duplex Speakerphone Interfaces**

This component encapsulates the Full Duplex Speakerphone interface. This component provides procedures to diagnose and use the speakerphone. This library implements the algorithm for a Full Duplex Speakerphone in Customer Premises Equipment (CPE). It uses two adaptive echo cancellers with variable filter lengths to cancel echoes on both the line side and on the acoustic side. It also has an elaborate suppression analysis algorithm to complement the echo cancellers, making it completely full duplex in nature.

#### **The Type 1 and 2 Telephony Parser Library**

The Type 1 and 2 Telephony Parser Library has two arguments. The first argument is used to pass a parser control structure. The parser control structure includes parser control information, a demodulated Caller ID buffer, and a processed parser buffer. The second argument is used to pass a line control structure, since the Parser must interface with line control. For example, to execute the Type 1 and 2 Telephony Parser Library, the Parser needs to know that a Caller ID message has been processed; this information is passed in the line control structure.

#### **Freescale: DLP-568-G729A-CX**

##### **G729A/B Vocoder Component**

The principal application of G.729AB vocoder is for Voice over IP (VoIP) telephony. It codes speech at 8 kbps using the Conjugate-Structure Algebraic-Code-Excited Linear-Prediction model. The coder operates on speech frames of 80 samples, at a sampling rate of 8000 samples per second (each frame corresponds at 10 ms of speech). The vocoder provides a compression rate of 10:1, and even better for silent frames.

#### **Freescale PN: DLP-568-G723-CX**

##### **G.723.1A Speech Codec Library**

Dual Rate Speech Coder with Annex A Silence Compression Scheme, Codec algorithm. The ITU-T Recommendation G.723.1 Dual Rate Speech Coder provides a coded representation used for compressing speech in either of two very low bit rates. The higher 6.3 kbps rate produces a greater quality reproduction, while the lower 5.3 kbps rate provides system designers additional flexibility. Both rates are mandatory, and it is possible to switch between the rates on any 30 ms frame boundary. Annex A of this Recommendation (G.723.1A) provides an optional silence compression system used to reduce the transmitted bit rate during silent intervals of speech. This coder was optimized to represent speech with a high quality of the two rates using a limited amount of complexity. Music and other audio signals are not represented as faithfully as speech, but can be compressed and decompressed using this coder.

For additional documentation on all Premium Components listed above, visit [www.processorexpert.com/BeansLib.html](http://www.processorexpert.com/BeansLib.html).

Premium Components are optional, please contact sales for pricing.

##### **4.1.1.3 Component Wizard™**

The Component Wizard is the tool that allows you to create your own components that address the specific needs of an application, like the support of using a generic peripheral in a very specific way. This tool is sold separately and not included in the Special Edition, Compiler Upgrade Edition or Standard Edition—please contact sales for pricing. For more information, visit [www.processorexpert.com/BeanWiz.html](http://www.processorexpert.com/BeanWiz.html).

## 5 Features of Special, Compiler Upgrade and Standard Editions

CodeWarrrior for 56800/E is available in different versions to suit customers' silicon requirements. A description of the different versions can be found below:

Product Versions: 64 KB Special Edition, 256 KB Compiler Upgrade Edition, Standard Edition

Part Numbers: CWX-568-SE (64 KB), CWA-BASIC-NL (256 KB), CWA-STANDARD-NL (Standard)

CodeWarrrior Development Studio	
IDE 5.x	Y
*Compiler	Y
Assembler	Y
Pre-Configured Projects	Y
Flash Programming	Y
Simulator	Y
Library Archiver	Y
RTOS Awareness debug API	Y
Processor Expert™	Y
Software Components	Y
Premium Components	O
Component Wizard™	O
Open Source BDM	O
Parallel Port Command Converter	O
USB TAP	O

O = Optional Y = Included

\*Compiler-Three code size options are available to suit silicon requirements

### 5.1 Technical Support

- Access to Technical Support via e-mail, Web and phone
- Ability to query outstanding service requests they have submitted
- Online support services that allow visibility to available updates and online FAQ
- Service packs in support of new silicon releases
- Software patches, software updates
- Free access to new version renewals

### 5.2 Special Edition

TARGET: Special Edition is targeted at assembly code projects or small projects with a limited amount of C code. Debugging is mostly done with Evaluation Boards or directly on the target application.

Features: there are some limitations to the Special Edition:

- Assembler unlimited
- C compiler limited to 64 KB of object code
- IDE unlimited

- Data Visualization unlimited
- Access to all Process Expert Components (not to include Premium Components) to accelerate application designs

### Options available for the Special Edition

For customers developing C based applications and using more than 64 KB of code, two upgrade options are available in a full 256 KB option and an unlimited Standard Edition.

The upgrade to the full 256 KB offers:

- C compiler object code for up to 256 KB

### 5.3 Standard Edition

Target: Standard Edition is targeted at projects developed with C, assembly or a mix of the languages and up to the maximum memory size of the 56800 or 56800E family. It adds the possibility to closely simulate the interfaces to the processor, making the debugging easier and the time to market shorter.

Features: Standard Edition provided support for all 56800/E processors:

- Unlimited C compiler/debugger code size
- RTOS Awareness Debug API

Customers can upgrade from 64 KB Special Edition to 256 KB, to Standard Edition. Upgrading from the 64 KB Special Edition (free) to the 256 KB Edition = Regular MSRP

Upgrading from the 64 KB Special Edition (free) to the Standard Edition = Regular MSRP

Please contact sales for pricing.

## 6 Additional Support

CodeWarrrior for 56800E family has the capability to provide additional support for specific functions.

### 6.1 Turbo Downloader (56800E Controllers Support)

The "Turbo Downloader" feature in CodeWarrrior will allow for faster flash and RAM downloads on 56800E digital signal controller devices. This feature is transparently enabled through as license key and once the capability is unlocked, will enable you to download data \*7x faster than your current parallel port connection. The downloader uses High Speed Synchronous Technology (HSST) to achieve transfer speeds, which will ultimately speed up development time.

\*Connection using 700 MHz—Pentium III and DSP 56F8346 board

This feature is included in all versions from v7.2 and greater and all Editions of the CodeWarrrior Development Studio for Freescale 56800/E digital signal controllers.

## 6.2 OSEK

The CodeWarrior Development Studio for Freescale 56800/E Digital Signal Controllers Standard Edition is “RTOS aware.” Current OSEKturbo support for MC56F8346 device.

Freescale OSEKturbo is a small, fast, reliable, scalable real-time operating system (RTOS) that provides a valuable set of RTOS services that can be leveraged by your embedded application. Developed in accordance with the Software Engineering Institute’s (SEI) highest Capability Maturity Model (CMM) rating and fully compliant to the latest OSEK/VDX specifications, the operating system is designed to occupy very little memory, provide fast context switching times and increase reusability of your embedded application.

For additional information, visit [www.freescale.com/webapp/sps/site/prod\\_summary.jsp?code=OSEKTURBO](http://www.freescale.com/webapp/sps/site/prod_summary.jsp?code=OSEKTURBO).

Highlights:

- High-quality, efficient, reliable and scalable operating system
- Compliant with OSEK/VDXTM OS Specification (Version 2.2)
- Developed by an SEI CMM Level 5 organization
- Supports deterministic scheduling capabilities (timing analysis) to uncover timing problems early in the design phase
- Works seamlessly with CodeWarrior Development Studio
- Supports industry-leading compilers from Freescale. Also supports third-party compilers such as Diab, Cosmic and more.
- Available for multiple 8-, 16- and 32-bit silicon architectures from Freescale
- Industry-leading support, training and services

## 7 Update and Upgrade

There are multiple reasons to upgrade to a new release or upgrade from Special Edition to Standard Edition, the most important being the reduction in maintenance costs due to a reduced design time, improvements in quality of the product and its re-usability.

### 7.1 Upgrade to Standard Edition

Standard Edition adds many features to the special edition:

- No limitation on C code size

## 8 Software Products: Part Numbers

Base Product Part Number

CodeWarrior CD in DVD Case: Evaluation Edition

Special Edition Part Number CWX-568-SE

Options for Special Edition Part number

C compiler/debugger Upgrade to 256 KB from Special Edition

CWS-568-64K-CX (Included in Basic Suite)

Standard Edition from Special Edition CWS-568-CX

(Included in Standard, Professional Suite)

Evaluation Part Number CWX-568-EX

## 9 Hardware Products

The following connection is available to enable 56800/E application development. CodeWarrior has built-in drivers to communicate with this interface and make the function transparent to the user.

- CodeWarrior USBTAP® (Order Part#: CWH-UTP-ONCE-HE)
- Open Source BDM (HCS08JM60 based) (Only support 56F800x, 56F824x/5x)

## 10 Hardware Products: Part Numbers

### Product Part number

Digital Signal Contollers Development Sytems/Evaluation Boards:

- DSP56F800DEMO 56F800 Demonstration Kit with US Power Supply
- DSP56F827EVM Evaluation Kit for the DSP56F827
- DSP56852EVM Evaluation Kit for DSP56852
- DSP56858EVM Evaluation Kit for DSP56858 Embedded Systems
- MC56F8323EVM Evaluation Kit for the 56F8322 and 56F8323
- MC56F8367EVM Evaluation Kit Supports 56F834x and 56F835x Processor Families
- DEMO56F8013 (E)\* Evaluation Kit for MC56F8013
- DEMO56F8014 (E)\* Evaluation Kit for MC56F8014
- MC56F8037EVM Evaluation Kit for the 56F8037
- MC56F8006DEMO Demo Board for MC56F8006
- TWR-56F8257 Tower Board for MC56F8257 (New)

\* Add E to part number for European orders



## 11 Pricing

Part Numbers	Products
CWS-568-CX (Note: Individual part number is no longer in use, product is now included in <b>Standard</b> and <b>Professional Suites</b> )	CodeWarrior Development Studio for 56800/E Digital Signal Controllers, Standard Edition
CWS-568-C64K-CX (Individual part number is no longer in use, product is now included in <b>Basic Suite</b> )	CodeWarrior Development Studio for 56800/E Digital Signal Controllers, 256 KB Edition
CWX-568-SE	CodeWarrior Development Studio for 56800/E Digital Signal Controllers, Special Edition 64 KB Code Size Limit

CodeWarrior Development Studio for 56800/E Digital Signal Controllers is included in the CodeWarrior Development Tool Suites. To order the product, select the part number for the CodeWarrior Development Tool Suite that meets your needs.

Special Suite – CodeWarrior for 56800/E Digital Signal Controllers, Special Edition	
Special Edition	CWX-568-SE
Basic Suite – C Compiler Upgrade	
<b>Perpetual</b>	<b>\$995</b>
• Node Locked	CWP-BASIC-NL
• Floating	CWP-BASIC-FL
• Tech Support <i>After first year</i>	CWT-BASIC \$195
<b>Annual Subscription</b>	<b>\$395</b>
• Node Locked	CWA-BASIC-NL
• Floating	CWA-BASIC-FL
Standard Suite – CodeWarrior for 56800/E Digital Signal Controllers, Full Product	
<b>Perpetual</b>	<b>\$2495</b>
• Node Locked	CWP-STANDARD-NL
• Floating	CWP-STANDARD-FL
• Tech Support <i>After first year</i>	CWT-STANDARD \$495
<b>Annual Subscription</b>	<b>\$995</b>
• Node Locked	CWA-STANDARD-NL
• Floating	CWA-STANDARD-FL

Professional Suite – CodeWarrior for 56800/E Digital Signal Controllers, Full Product	
<b>Perpetual</b>	<b>\$4995</b>
• Node Locked	CWP-PRO-NL
• Floating	CWP-PRO-FL
• Tech Support <i>After first year</i>	CWT-PRO \$995
<b>Annual Subscription</b>	<b>\$1995</b>
• Node Locked	CWA-PRO-NL
• Floating	CWA-PRO-FL

Contact your local Freescale representative for more information.

## 12 Licensing

Web licensing is in the works, look for an update in future releases of this document.

CodeWarrior Development Studio for Freescale 56800/E Digital Signal Controllers can be licensed in different ways:

- The Special Edition includes a default key limited to 64 KB “free of charge.” This key is not timed or node locked/limited and is available via download and is included in all 56800/E evaluation kits.
- The Special Edition license key is not time limited or node locked/limited.
- The 256 KB and Standard Editions require license keys that can be floating licenses, dongle licenses or locked to a computer

## 13 Getting Started with Special Edition

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### 13.1 Obtaining CodeWarrior

There are several ways to obtain CodeWarrior Development Studio for Freescale 56800/E Digital Signal Controllers.

#### 13.1.1 Buy Online

CodeWarrior Development Studio for Freescale 56800/E Digital Signal Controllers can be purchased directly at [www.freescale.com/webapp/sps/site/prod\\_summary.jsp?code=CW-56800E-DSC](http://www.freescale.com/webapp/sps/site/prod_summary.jsp?code=CW-56800E-DSC).

#### 13.1.2 Digital Download

CodeWarrior for 56800/E can be downloaded at [www.freescale.com](http://www.freescale.com).  
 Special Edition: [www.freescale.com/webapp/sps/site/overview.jsp?nodeId=01272600610BF1](http://www.freescale.com/webapp/sps/site/overview.jsp?nodeId=01272600610BF1) (Support Resuming Download)  
 Eval Edition: [www.freescale.com/webapp/sps/site/overview.jsp?nodeId=01272600612247](http://www.freescale.com/webapp/sps/site/overview.jsp?nodeId=01272600612247)

CodeWarrior for 56800/E is included in all Freescale 56800/E EVB kits.

### 13.2 Getting a Free License (Special Edition)

The Special Edition is included in all evaluation kits and is available for download on the Freescale CodeWarrior product page. A default license is included with the Special Edition of CodeWarrior installation and is limited to 64 KB code size. You may upgrade your license to 256 KB or Standard (unlimited code size) by purchasing it at [www.freescale.com/codewarrior](http://www.freescale.com/codewarrior) or by contacting your local Freescale salesperson or Distribution salesperson.

## 14 Getting Started with Standard Edition

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### 14.1 Ordering

Standard Edition, yearly technical support packages and upgrade packages can be ordered at [www.freescale.com/webapp/sps/site/prod\\_summary.jsp?code=CW-56800E-DSC&tab=Buy\\_Parametric\\_Tab&fromSearch=false](http://www.freescale.com/webapp/sps/site/prod_summary.jsp?code=CW-56800E-DSC&tab=Buy_Parametric_Tab&fromSearch=false).

### 14.2 Installing the Key

To install keys, follow the instructions e-mailed in response to a request for a license key.

These instructions require you to copy the information received in a license.dat file and paste it into the original license.dat file on your hard disk.

## 15 Training and Software Services

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### Training

The training team can provide various types of training session, at Freescale or in-house.

### Software Services

We can extend your development capabilities and enhance your team's productivity:

- Hardware and software integration
- Custom software development
- Support for new platforms
- Custom training services
- Project porting services
- API consulting

## 16 Useful Links

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Freescale homepage:  
[www.freescale.com](http://www.freescale.com)

Technical Support:  
[www.freescale.com/webapp/sps/site/homepage.jsp?nodeId=05](http://www.freescale.com/webapp/sps/site/homepage.jsp?nodeId=05)

Licensing and registration:  
[www.freescale.com/webapp/sps/site/overview.jsp?nodeId=0127262444](http://www.freescale.com/webapp/sps/site/overview.jsp?nodeId=0127262444)

56800/E documentation:  
[www.freescale.com/webapp/sps/site/prod\\_summary.jsp?code=CW-56800E-DSC&fosp=1&tab=Documentation\\_Tab](http://www.freescale.com/webapp/sps/site/prod_summary.jsp?code=CW-56800E-DSC&fosp=1&tab=Documentation_Tab)

Links to Processor Expert and related components:  
[www.processorexpert.com](http://www.processorexpert.com)

Introduction to the components:  
[www.processorexpert.com/eb](http://www.processorexpert.com/eb)

Details on components to support external devices:  
[www.processorexpert.com/eb/beans.html](http://www.processorexpert.com/eb/beans.html)

When you get to individual components, the left menu allows you to see details and usage example.

## 17 Documentation

Documentation is available via the following:

- Direct 'F1 key' help from inside the CodeWarrior applications
- Manuals, tutorials, examples on the Web
- Manuals on the CD
- Manuals can be found by selecting on Help on the main menu bar, once IDE is launched

There is a lot of documentation on the different components of CodeWarrior Development Studio. All the manuals can be found on the CD and can be installed on the hard drive, depending on the installation chosen. Look for the folder "CodeWarrior Manuals" on the CD or in the directory where the CodeWarrior Development Studio is installed. For reasons of file size, silicon data sheets are not included. For additional information, visit [www.freescale.com/webapp/sps/site/prod\\_summary.jsp?code=CW-56800E-DSC](http://www.freescale.com/webapp/sps/site/prod_summary.jsp?code=CW-56800E-DSC).

## 18 Freescale Renewal Policy

### Patch Policy

Patches for an existing version may be downloaded at no additional cost.

Patches are defined as the following:

- They are downloadable from the [www.freescale.com](http://www.freescale.com).
- They are primarily intended to fix bugs.
- They are only a small piece of code on the web (not entire CodeWarrior product).
- They read as follows: x.x.1, x.x.2, x.x.3, etc.

### Update Policy

Registered and licensed CodeWarrior tools that are covered by Technical Support are eligible to receive product updates for the software version purchased at no additional cost.

Updates are defined as the following:

- New version of the product that incorporates patches from the previous version.
- They may add some new features and functionality.
- They may add processor support for derivatives of existing architecture families.
- They read as follows: x.1.x, x.2.x, x.3.x, etc.

### New Version Renewal Policy

Registered and licensed CodeWarrior tools with current Technical Support certificates are eligible for free new version renewals of the software as they are released. To update to the latest version, the customer may visit their Registered User Home Page at [www.freescale.com](http://www.freescale.com) to access the newest version of the tools. The customer may also renew their annual support contract from the Registered User Home Page, and they would then be eligible for the free version renewals.

Please contact your local Freescale salesperson if you have any questions on the Policy's stated in Section 18.

For customer service (sales and support), please call: 1-800-377-5416 or (512)-996-5300.

**Learn More:** For more information about Freescale products, please visit [www.freescale.com/codewarrior](http://www.freescale.com/codewarrior).