MPLAB® C30 C Compiler

Summary

The MPLAB® C30 C compiler is a fully ANSI compliant product with standard libraries for the dsPIC® architecture. It is highly optimizing and takes advantage of many dsPIC architecture specific features to provide efficient software code generation. MPLAB C30 also provides extensions that allow for excellent support of the hardware, such as interrupts and peripherals. It is fully integrated with the MPLAB IDE for high level, source debugging.

MPLAB C30 comes complete with its own assembler, linker and librarian. These allow the user to write Mixed mode C and assembly programs and link the resulting object files into a single executable file.

MPLAB C30 is distributed with a complete ANSI C standard library. The library includes functions for string manipulation, dynamic memory allocation, data conversion, timekeeping, and math functions (trigonometric, exponential and hyperbolic). The standard I/O functions for file handling are also included, and, as distributed, they support full access to the host file system using the command-line simulator.

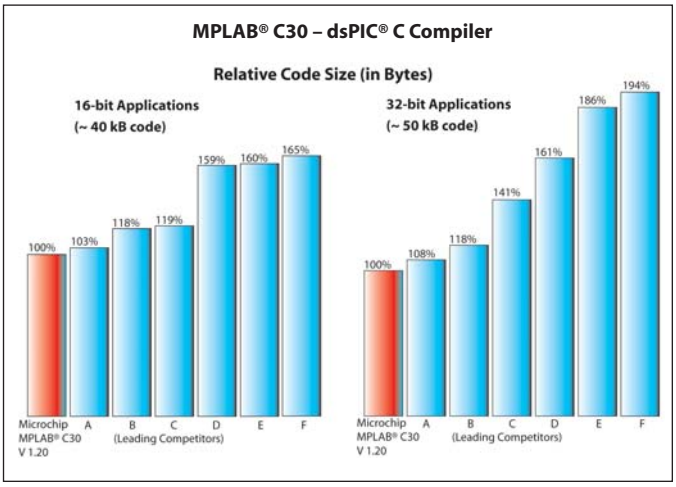
The compiler supports both large and small code and data models. The small code model takes advantage of a more efficient form of call instructions, while the small data model supports the use of compact instructions for accessing data in SFR space.

MPLAB C30 includes a powerful command-line driver program. Using the driver program, application programs can be compiled, assembled, and linked in a single step

Features

Key features of the MPLAB C30 C Compiler include:

- ANSI-compliant
- Integrated with MPLAB IDE for easy-to-use project management and source-level debugging
- Generates relocatable object modules for enhanced code reuse
- Fully compatible with object modules generated with MPLAB ASM30 Assembler, allowing complete freedom to mix Assembly and C in a single project
- Interrupt code can be written in C or Assembly
- Flexible memory models take advantage of small memory applications and the storage of data in SFR space.
- Strong support for inline assembly when total control is absolutely necessary
- Super-efficient code generator engine with multi-level optimization



Features (Continued)

- Extensive library support, including standard C, math, DSP and dsPIC30F peripheral libraries
- Application libraries are available options: TCP/IP protocol stack, v.32/v/22 embedded modem solutions, speech recognition, RTOS and OSEK and CAN drivers.

Package Contents

- MPLAB® C30 C Compiler Software
- MPLAB® IDE Software and Documentation CD
- *MPLAB® ASM30, MPLAB LINK30 and Utilities User's Guide*
- *MPLAB® C30 Compiler User's Guide*
- *dsPIC® Language Tools Getting Started*

Host System Requirements

- PC-compatible system with an Intel Pentium® class or higher processor, or equivalent
- A minimum of 16 MB RAM
- A minimum of 40 MB available hard drive space
- CD ROM drive
- Microsoft Windows® 98, Windows NT® 4.0, Windows

MICROCHIP
Development Systems

Part Numbers and Ordering Information

dsPIC30F Speech Encoding/Decoding Library		
Part Number	**Description**	**Availability**
SW006012	MPLAB® C30 C Compiler	Now
A 60-day full-featured demo is available from the Microchip web site at www.microchip.com		

dsPIC® DSC Development Tools from Microchip	
MPLAB® IDE	Free
MPLAB® Visual Device Initializer (included in MPLAB® IDE)	
MPLAB® C30 C Compiler	SW006012
MPLAB® ICD 2 In-Circuit Debugger/Programmer	DV164005, DV164007
MPLAB® ICE 4000	ICE4000
MPLAB® PM3 Universal Device Programmer	DV007004
dsPIC30F Math Library (included in download of MPLAB® C30 C Compiler)	Free
dsPIC30F DSP Library	Free
dsPIC30F Peripheral Library	Free
dsPICworks™ Data Analysis and DSP Software	Free
dsPIC® DSC Digital Filter Design	SW300001
dsPIC30F Soft-Modem Library	SW300002/3/4/5
dsPIC® DSC Speech Recognition Library	SW300010/11/12
dsPIC® DSC Symmetric Key Embedded Encryption Library	SW300050
dsPIC® DSC Asymmetric Key Embedded Encryption Library	SW300055
dsPIC30F Acoustic Echo Cancellation Library	SW300060
dsPIC30F Noise Suppression Library	SW300040
CMX-RTX™ for dsPIC30F	SW300031
CMX-Tiny+™ for dsPIC30F	SW300032
CMX-Scheduler™ for dsPIC® Devices	Free at www.cmx.com
dsPICDEM™ Starter Demonstration Board	DM300016
dsPICDEM™ 28-pin Starter Demonstration Board	M300017
dsPICDEM™ 1.1 General Purpose Development Board	DM300014
dsPICDEM™ MC1 Motor Control Development System	DM300020
dsPICDEM.net™ 1 Connectivity Development Boards	DM300004-1
dsPICDEM.net™ 2 Connectivity Development Boards	M300004-2

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