

IAR Embedded Workbench[®] for the Microchip PIC18 family of microcontrollers

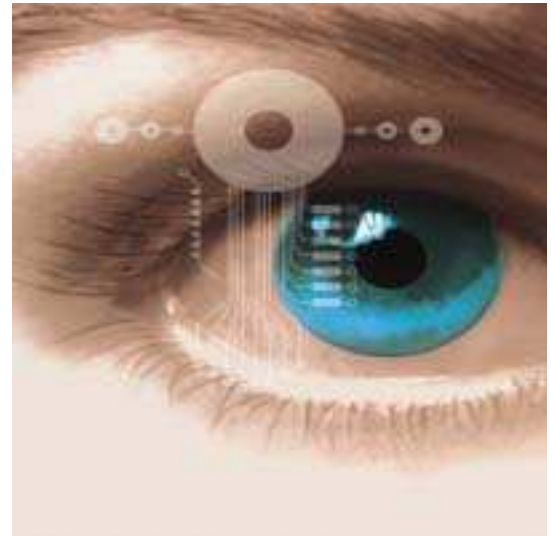
IAR Embedded Workbench[®] is a set of highly sophisticated and easy-to-use development tools for programming embedded applications. It integrates the IAR C/C++ compiler, assembler, linker, librarian, text editor, project manager, and C-SPY[™] debugger in one integrated development environment (IDE). With its built-in chip-specific code optimizer, IAR Embedded Workbench generates very efficient and reliable FROMable code for the PIC18 microcontroller. In addition to this solid technology, IAR Systems also provides professional worldwide technical support.

INTEGRATED DEVELOPMENT ENVIRONMENT (IDE)

- A modular and extensible IDE running under Windows 98SE/ME/NT4/2000/XP
- Create projects, edit files, compile, assemble, link and debug your applications within the seamlessly integrated environment
- Tool options configurable on global, group of source files, or individual source files level
- Multiple projects in the same workspace
- Hierarchical project representation shows all different source and output files and gives an overview of their settings
- Window management through docking views
- Source browser
- XML-based project files
- Easy to integrate external tools such as code analysis tools in the build process
- Linker command files, device description files and header files for all available PIC18 derivatives
- MPLAB IDE plugin DLL available on www.iar.com
- Multi-byte editor
- Integration with source code control systems
- Template projects
- HTML-based online help

C/C++ COMPILER

- Highly optimized ISO/ANSI standard C and C++ compiler
- Extended support for C++ templates
- Multiple levels of optimizations for code size and execution speed
- Built-in advanced PIC18-specific optimizer
- Extended PIC18-specific keywords
- MISRA C support



- Easy and fast interrupt handling directly in C and C++
- Static overlay and stack-based code models
- Mixed C/C++ and assembler listings
- Support for inline assembler
- Multi-byte support

EXTENDED EMBEDDED C++ for PIC18

Using C++ to develop embedded systems is now a realistic alternative for 8- and 16-bit targets—you can benefit from the possibilities available in C++ without risking that the code size increases.

IAR Systems' extended implementation of Embedded C++ includes essentially all the C++ features that do not carry an overhead in efficiency or size. Most importantly, IAR Embedded Workbench supports C++ templates and include the Standard Template Library that provides convenient and efficient containers and algorithms.

- C++ templates
- Standard Template Library (STL)
- Namespace
- Full support for memory attributes in C++
- Class memory, multiple heaps etc
- C++ cast variants: `static_cast<>`, `const_cast<>`, and `reinterpret_cast<>`
- Mutable specifier

ASSEMBLER

- A powerful relocating macro assembler with a versatile set of directives and operators
- Built-in C language preprocessor, accepting all C macro definitions

Different Architectures One Solution

IAR XLINK LINKER

- Complete linking, relocation and format generation to produce FLASH/PROMable code
- Flexible segment commands allowing detailed control of code and data placement
- Support for a wide range of industry-standard symbolic formats, making it compatible with the most popular emulators and Microchip's MPLAB IDE
- Links only functions/variables needed by the application
- Links raw binary images, eg multimedia files
- Generates arbitrary number of checksums of code for run-time checking
- Comprehensive cross-reference and dependency memory maps

IAR XLIB and XAR LIBRARY TOOLS

- For creating and maintaining library projects, libraries and library modules
- Listings of entry points and symbolic information

ISO/ANSI C and EC++ LIBRARIES

- All required ISO/ANSI C libraries included (character handling, input/output, general utilities, string handling, math and trigonometric, low-level routines, etc)
- Extended C and Embedded C++ library (100+ functions) with math and floating point support including STL (Standard Template Libraries)
- Easy customization of C and Embedded C++ libraries

- All low-level routines such as writechar and readchar provided in full source code for user customization

IAR C-SPY SIMULATOR DEBUGGER

- Complex code and data breakpoints
- C/C++ call stack with parameters
- Complete support for stack unwinding even at high optimization levels
- Backstep possibility via the call stack
- I/O and interrupt simulation
- Versatile monitoring of registers, structures, call chain, locals, global variables and peripheral registers
- Fine-grain single-stepping
- Profiling and code coverage
- Plug-in architecture allows support for any RTOS-aware debugging
- Trace
- Multiple register, watch, memory, auto, live watch and breakpoint usage windows
- SFR window for each supported device
- STL container awareness
- Powerful C-style macro language for maximum flexibility

COMPREHENSIVE DOCUMENTATION

- Perfect-bound user guides with detailed information
- Extensive step-by-step tutorials
- Help and hypertext versions of the user documentation available online

FREE EVALUATION SOFTWARE

For more product information and free evaluation software, visit www.iar.com

PROFESSIONAL EDITION

IAR Embedded Workbench Professional includes efficient graphical tools for system design, test and documentation:

- Graphical representation of any complex system with UML-based state charts, a very suitable format for real-time systems with many concurrent and interrelated processes or execution threads
- Detailed diagrams give an overview of the system structure and makes it easier to discuss the system design with others—both engineers and non-engineers
- Advanced testing and simulation facilities detect errors at an early stage of the software development process
- Automatic generation of well-structured system documentation in Rich Text Format or HTML saves valuable time and energy

visualSTATE® for PIC18

visualSTATE is a suite of fully integrated tools for the entire embedded software development process. It includes a UML-compliant graphical design environment, advanced verification and validation tools, and a very powerful code generator. When developing with visualSTATE the entire

application is based on the design, and due to the unique technology it is possible to perform exhaustive testing and to generate reliable and production-ready C code—in just a few seconds. The generated code is absolutely consistent with the design; it executes deterministically and can even be more compact than handwritten code.

Together with IAR Embedded Workbench, visualSTATE forms a complete set of development tools for PIC18, supporting you through the entire development process. **From Idea to Target®**

For more product information, visit <http://www.iar.com>

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