IAR Embedded Workbench® for RL78

IAR Embedded Workbench® is a set of highly sophisticated and easy-to-use development tools for embedded applications. It integrates the IAR C/C++ Compiler™, assembler, linker, librarian, text editor, project manager, and C-SPY® Debugger in an integrated development environment (IDE). With its built-in chip-specific code optimizer, IAR Embedded Workbench generates very efficient and reliable code for the Renesas RL78 microcontrollers. In addition to this solid technology, IAR Systems also provides professional worldwide technical support.

MODULAR AND EXTENSIBLE IDE

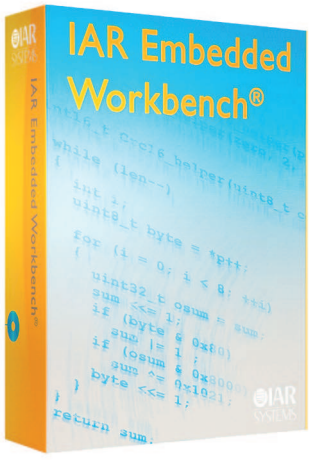
- A seamlessly integrated environment for building and debugging embedded applications
- Common environment for all supported Renesas families
- Powerful project management allowing multiple projects in one workspace
- Hierarchical project representation
- Dockable and floating windows management
- Smart source browser
- Feature-rich editor with code templates and multi-byte support
- Tool options configurable on global, group of source files, or individual source files level
- Flexible project building via batch build, pre/post-build or custom build with access to external tools in the build process.
- Integration with source code control systems
- Device selection with ready-made header files, device description files and linker configuration files automatically loaded
- Ready-made project examples for various evaluation boards

HIGHLY OPTIMIZING C/C++ COMPILER

- Support for C, EC++ and extended EC++ including templates, namespace, standard template library (STL) etc.
- Automatic checking of MISRA C rules
- Support for all RL78 devices
- Language extensions for embedded applications with target-specific support,
  - Extended keywords for data/functions defining and declaring with memory/type attributers
  - Pragma directives for controlling compiler's behavior, such as how it allocates memory
  - Intrinsic functions for direct access in C source to low-level processor operations
- 32-bit floating-point type in standard IEEE format
- Multiple levels of optimizations on code size and execution speed allowing different transformations enabled, such as function inlining, loop unrolling etc.
- Advanced global and target-specific optimizer generating the most compact and stable code

STATE-OF-THE-ART C-SPY® DEBUGGER

- Complex code and data breakpoints
- Very fine granularity execution control (function call-level stepping)
- Stack window to monitor the memory consumption and integrity of the stack
- Complete support for stack unwinding even at high optimization levels
- Profiling and code coverage performance analysis tools
- Trace utility with expressions to examine execution history
- Versatile monitoring of registers, structures, call chain, locals, global variables and peripheral registers
- Smart STL container display in Watch window
- Symbolic memory window and static watch window
- I/O and interrupt simulation
- True editing-while-debugging
- Drag and drop model
- RTOS-aware debugging with built-in plugins for
  - Micrium µC/OS-II RTOS
  - OSEK Run Time Interface (ORTI)
  - Segger embOS



IAR SYSTEMS

TIMELINE WINDOW

- Common timeline for visualizing interrupt activity and call stack
- Works with simulator driver

C-SPY HARDWARE DEBUGGING SUPPORT

- Renesas E1 emulator
- IECUBE

IAR ASSEMBLER

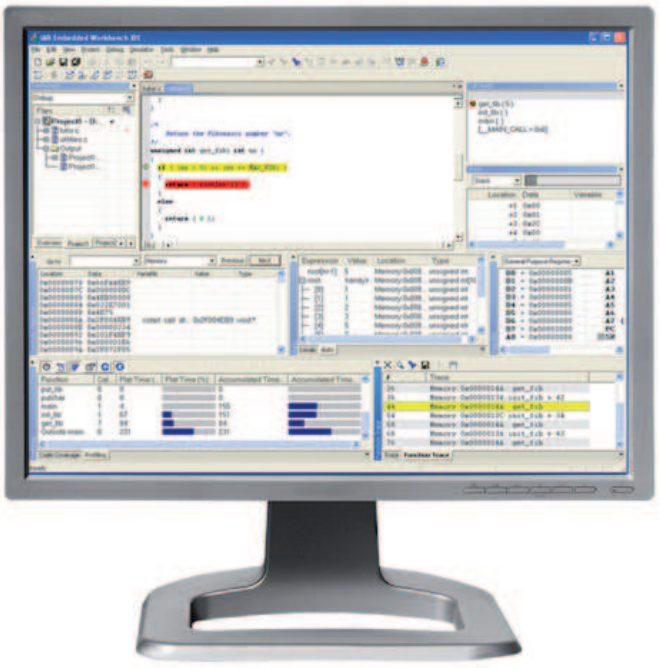
- A powerful relocating macro assembler with a versatile set of directives and operators
- Built-in C language preprocessor, accepting all C macro definitions

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
- Optimized linking removing unused code and data
- Direct linking of raw binary images, for instance multimedia files
- Optional code checksum generation for runtime checking
- Comprehensive cross-reference and dependency memory maps
- Support for over 30 industry-standard output formats, compatible with most popular debuggers and emulators

IAR LIBRARY AND LIBRARY TOOLS

- All required ISO/ANSI C and C++ libraries included
- All low-level routines such as writechar and readchar provided in full source code
- Lightweight runtime library, user-configurable to match the needs of the application; full source included
- Library tools for creating and maintaining library projects, libraries and library modules
- Listings of entry points and symbolic information



COMPREHENSIVE DOCUMENTATION

- PDF user guides with detailed usage and reference information
- Efficient coding hints for embedded application
- Extensive step-by-step tutorials
- Context sensitive help and hypertext versions of the user documentation available online

INFORMATION CENTER

Web based navigation system that gives easy access to tutorials, product documentation, and example projects.

FREE EVALUATION SOFTWARE

Free 30-day evaluation version available at www.iar.com/ewrl78

IAR visualSTATE®

IAR visualSTATE is a suite of graphical design automation tools for embedded systems.

- Design an embedded application by drawing objects, events, actions etc in a flowchart-like manner
- Perform extensive tests before committing to hardware: validation of the application behavior, regression testing, verification of the run-time model and simulation on-chip
- Automatically generate micro-tight C/C++ code that is 100% consistent with your design as well as complete design documentation

Together with IAR Embedded Workbench, visualSTATE forms a complete set of development tools for the RL78 microcontrollers, supporting you through the entire development process.

www.iar.com

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