

What's New in v4.0

XA SOFTWARE DEVELOPMENT TOOLSET

HIGHLIGHTS

- **Enhanced EDE**
- **Easy/Expert tools configuration modes**
- **Huge memory model**
- **New compiler features for better code control and code optimization**
- **'MISRA C' enhanced code checking**
- **File System Simulation in CrossView Pro debugger**
- **Plug-and-play ROM monitor support for new FDI and Phytex boards**
- **Programmable Data Analysis in debugger**
- **Bubble-Spy™ technology for easy and quick inspection of variable contents**
- **Seamless integration with the TASKING 8051 toolset**

INTRODUCTION

Altium's TASKING XA Software Development Toolset is the best selling programming package for the 16-bit XA microcontroller architecture from Philips Semiconductors. The new version 4.0 has become the most powerful and mature product in the industry. The toolset can be integrated seamlessly with Altium's TASKING 8051 Development Toolset.

The toolset consists of the following:

- **ISO C++ compiler, scalable to EC++ for efficiency**
- **ANSI C compiler, with additional 'MISRA C' code checking**
- **Assembler with Macro Preprocessor**
- **Linker and Locator**
- **Full ANSI C and C++ Library sets**
- **CrossView Pro debugger with two execution environments:**
 - **XA Instruction Set Simulator**
 - **ROM Monitor**
- **Embedded Development Environment (EDE), which provides a composite, user-friendly interface to integrate all toolset components**

ENHANCED EDE

The XA Embedded Development Environment has been significantly enhanced, resulting in numerous new features.

Easy/Expert modes allow simplified configuration of the TASKING tools and the XA target processor for the less experienced user. After switching to 'Expert' mode, all advanced options become available.

Project Spaces allow grouping of multiple projects in one view, thus offering improved project management for more complex developments. Altium has created a default Project Space containing all the bundled example projects.

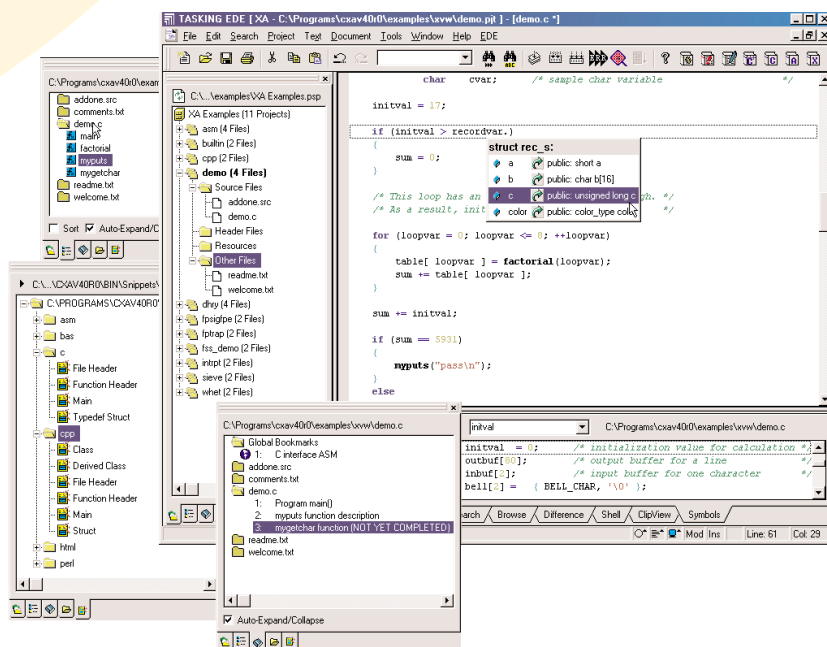
CodeSense advanced coding assistance offers rich type-ahead features, which help you to select the next expected function parameter or available structure members. When positioning your mouse pointer over a function name, the function prototype will be displayed.

Tags Browsing offers a graphical overview of the application's cross references and allows easy navigation through the available variables and functions.

CodeFolio offer easy insertion of template code, thus adding to coding efficiency and consistency. It allows macro expansion and prompted input as you insert the code.

HTML View Window has been integrated, to allow browsing through the product manuals, your project or code documentation or even surfing the Internet.

XML Collapsible Grid Viewer displays a hierarchy of the elements and element attributes in an XML document.



Split Windows provide full control over source code, by allowing you to split your file horizontally or vertically to up to four interactive edit windows.

GUIDING USERS TOWARDS BETTER CODE

For all developers concerned with the quality and robustness of their embedded application, v4.0 now offers specific features to enforce more stringent coding.

MISRA C enhanced code checking is a set of configurable extra C language code checks based on the 'MISRA C Guidelines'. This system of strict code checking helps prevent the use of error-prone C-constructs and will improve future maintainability of the code. More information on the MISRA C Guidelines can be found at <http://www.misra.org.uk>

MORE C COMPILER ENHANCEMENTS

With v4.0, many major enhancements to the XA compiler tools are available to the broad market:

- Structures and nested structures that only contain character type members can be packed
- To optimize allocation of enumerations and bit fields, the C compiler can treat bit fields and enumerations that fit in 8-bit as 'char' types instead of 'int' types
- 6 additional intrinsic functions
- Generic pointer support
- New memory model 'huge' (in total 6 models now)
- Several new and modified function qualifiers:
 - Pass all arguments via the stack
 - Call functions via a software trap instruction
 - Locate interrupt functions in segment zero
 - Control which registers must be saved for a particular interrupt function
 - `_interrupt()` and `_using()` are extended to accept a list of arguments

Check the support section of our web site for more detailed information.

CROSSVIEW PRO FILE SYSTEM SIMULATION

CrossView Pro Simulated I/O has been upgraded to File System Simulation (FSS), a very versatile feature. File System Simulation allows the use of standard ANSI C system calls such as `open()`, `read()`, `printf()` and `scanf()` within an embedded application in order to interact with

XA DERIVATIVES SUPPORTED

- XA-C3 (CAN)
- XA-G1/G2/G3 (General)
- XA-G49 (Flash)
- XA-H3/H4 (Telecom/Control)
- XA-S3 (I²C)
- XA-SCC (Telecom)
- ArtistIC (TV Sets)
- SmartXA (Smart Cards)

the host PC file I/O services. Using FSS, you can read from and write to files on the host PC or a CrossView Pro Virtual I/O window, directly. File System Simulation will work in the simulator as well as the ROM monitor execution engine.

PROGRAMMABLE DATA ANALYSIS

The new Programmable Data Analysis feature eases quick detection of

gross errors in your signal processing routines by reducing large sets of data into meaningful visual diagrams. The CrossView Pro debugger can analyze the data according to pre-defined or user-defined specifications, and display the data the way you need it. This eliminates the need for reviewing or post-processing large files of raw data. You can also view the same set of data in several ways at the same time (e.g., in the time and the frequency domains).

INTERNET CONNECTIVITY

We help you connect your XA application to the Internet using the EMIT[®] technology from emWare, or TCP/IP solutions from CMX.

PRODUCT PACKAGING & ORDERING CODES

Product Code	Package Contents
TK012-002	EDE, C and MISRA C Compiler, Assembler/Linker, CrossView Pro Simulator
TK012-024	EDE, C/C++/EC++ and MISRA C Compiler, Assembler/Linker, CrossView Pro ROM monitor & Simulator debugger
TK012-041	CrossView Pro ROM monitor and Simulator debugger

A product evaluation package is available on request or downloadable from our web site. Tools are available on PC/Windows, PC/Linux and Unix workstations.

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