

## Welcome

Welcome to the TASKING software evaluation tools for the Intel 51/151. The evaluation software consists of EDE, our MS-Windows based Embedded Development Environment, editor, C compiler, assembler, linker/locator and the CrossView simulator and ROM monitor debuggers. You can get up and running with the tools very quickly by following the Quick Start instructions below. The software can be used for any member of the MCS<sup>®</sup> 51 family, including the 151. You will be able to compile, assemble and link programs, produce ROMable code and run it on CrossView simulator. In order to use CrossView ROM, you will need a 51 target board running Intel's ROM monitor (RISM). Preconfigured examples are delivered for the Intel 51Fx/151/251 evaluation board. If you are interested in evaluating the MCS 251 as well, please install our 251 demo (and use the corresponding quick start).

CrossView Execution Environment	Example Project File for EDE
Simulator	c:\dcc51\examples\xvw\xvw.pjt
Intel MCS 51Fx/151/251 Evaluation board	c:\dcc51\examples\xvw\xvw.pjt

Table-1 Example Projects

## Restrictions

The compiler and assembler support a limited number of symbols and operands. The linker allows up to 3K of code size. CrossView also has some restrictions, including the About box popping up every 5 minutes. Please refer to the Demo Limits help file for more details. Although these restrictions do apply, we believe that the demo package is adequate for you to be able to make a purchasing decision.

## Installation

Start MS-Windows. Insert disk 1 into drive A. For Windows 3.1x, in the Program Manager select the File | Run . . . menu item. For Windows 95, press the Start button and select the Run . . . menu item. In the dialog box type A:\SETUP and follow the instructions on the screen. At the end of the installation procedure a Program Group window will show up on the screen of your computer. It will look like the one shown in figure-1. You will use the EDE icon the most, since it presents you with a complete environment from where you can invoke the manuals and the other tools.

**NOTE** When using Windows 95 you can create a shortcut on your desktop by dragging the EDE icon to the desktop using the right mouse button!

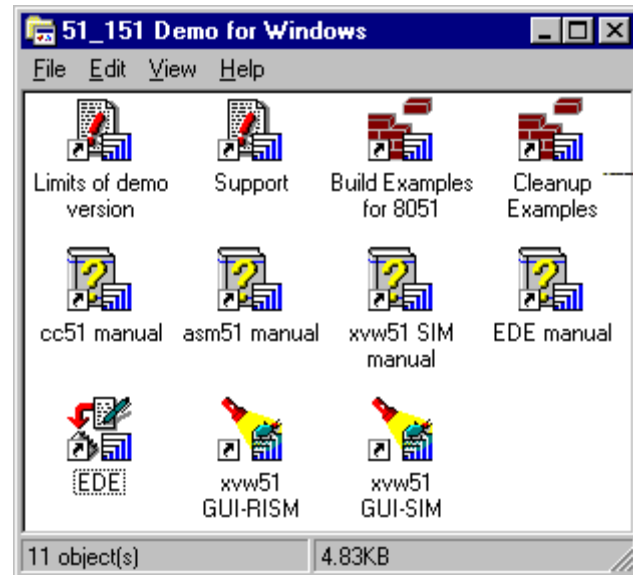


Figure 1 Program Group

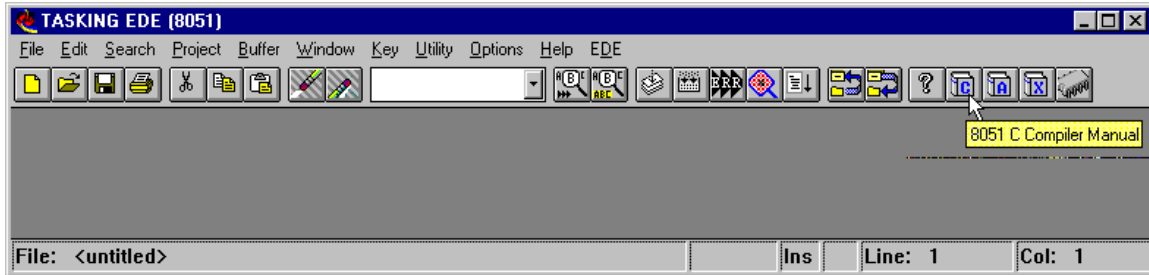
When the installation has finished please check the changes made in the AUTOEXEC . BATfile (as shown on the screen) and **restart** your PC. All instructions below assume you used the default installation directory.

## Starting EDE

EDE is a standard Windows application which you can launch by either double-clicking the EDE icon in the Program Group, or via the Start Menu when using Windows 95.

## EDE Overview

EDE is an integrated embedded software development environment that combines a powerful editor with project management and make facility. After you invoke the EDE, the window shown in figure-2 will show up on your screen.



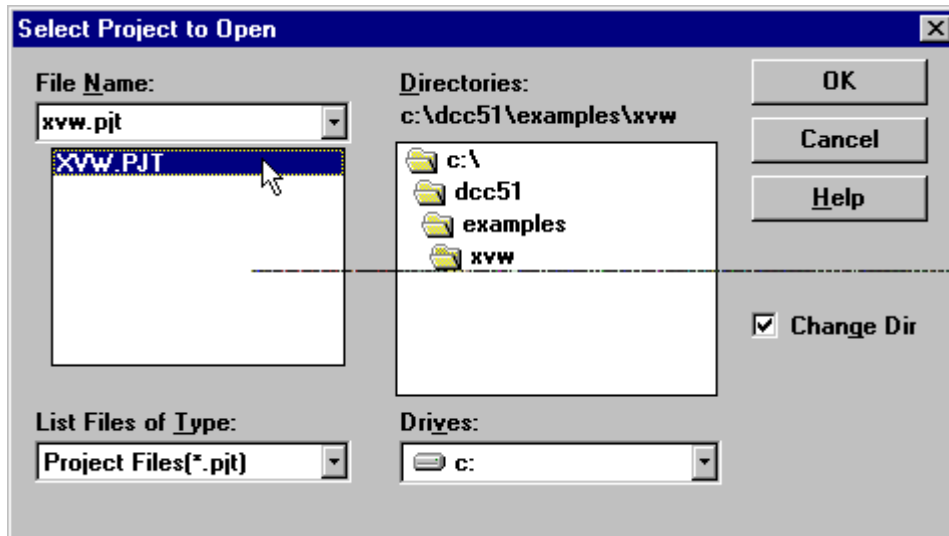
**Figure 2 Embedded Development Environment**

From this environment you can create projects, edit files, build projects (compile, assemble and link/locate applications), access on-line manuals and invoke the CrossView debugger environment.

## Opening a Project

In EDE, applications are maintained in a project file. There are a number of example demo project files included in the package. By rebuilding one of the examples you can verify the proper installation of the software and confirm that you can compile, assemble, link and debug an application. When using an existing example, you also have a preconfigured MAKEFILE that is required for building an application using V4.0 of the 51 toolset. This will no longer be required when using the next version of the 51 toolset, because this version of the product automatically generates the MAKEFILE for you.

To open a project file, select the `Project | Open . . .` menu item. This tutorial will build the CrossView demo for a number of boards (including the MCS 51Fx/151/251 evaluation board) and the simulator.



**Figure 3 Open Project**

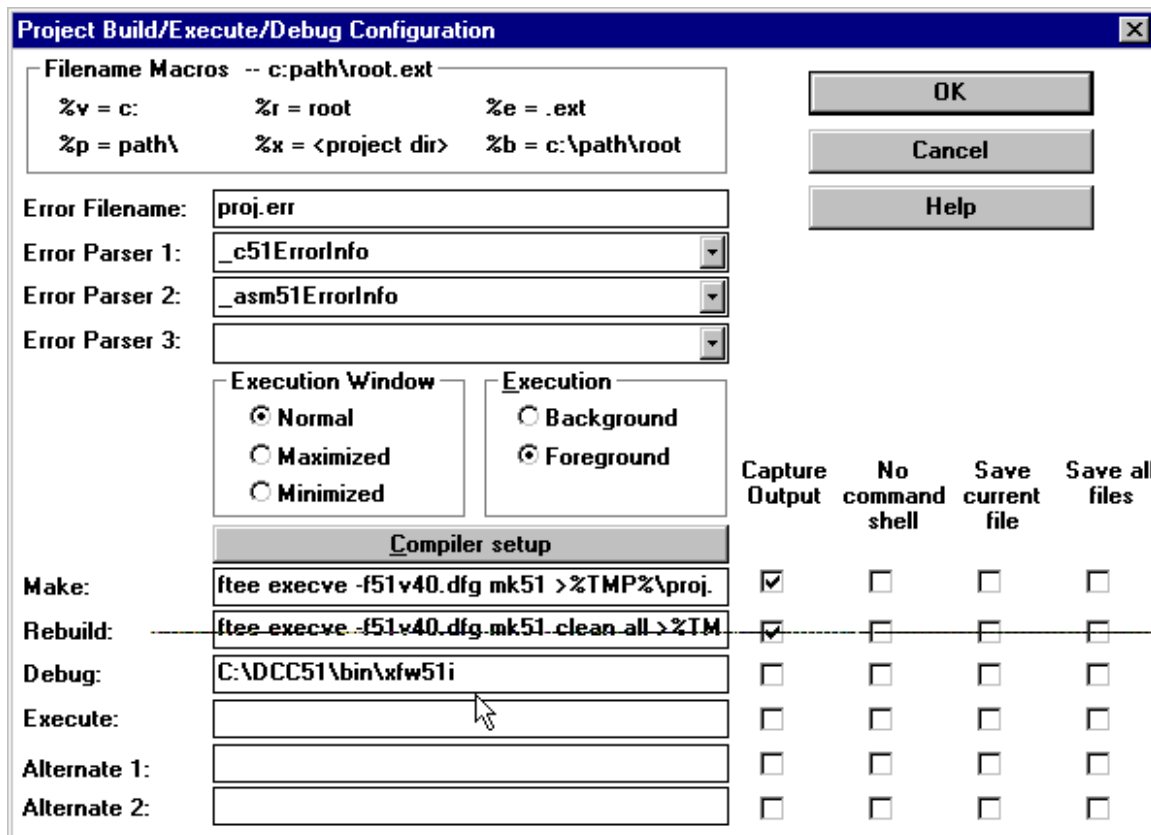
## Building the Application

You can now edit the files belonging to the project. A number of files, such as DEMO.C and ADDONE.SRC are automatically opened. To see which files are part of the project, select the Project | Load Files... menu item. The next step is to compile and link the files in your project and build the program so you can debug the application. First save any edited files and then click on the 'Make' button in the toolbar. EDE compiles and links your project and creates several absolute objects (see MAKEFILE for complete list):

Description	Absolute Object Module
Small model, Intel 51Fx/151/251 evaluation board	DEMOSI.ABS
Large model, Intel 51Fx/151/251 evaluation board	DEMOLI.ABS
Small model, Simulator or ICE	DEMOSE.ABS
Large model, Simulator or ICE	DEMOLE.ABS

## Debugging the Application with CrossView

In order to simulate code execution or download code to the 51/151 evaluation board, you need to invoke the CrossView debugging environment. Before invoking the debugger, please specify whether you want to invoke the simulator or the ROM monitor version of CrossView, by selecting the Project | Configure... menu item. The following dialog appears on the screen, which allows you to inform EDE which CrossView must be started, XFW51S for the simulator, XFW51I for the ROM monitor debugger (Intel's RISM). You do this by editing the Debug command:



**Project Build/Execute/Debug Configuration**

Filename Macros -- c:\path\root.ext

%v = c:      %r = root      %e = .ext  
 %p = path\    %x = <project dir>    %b = c:\path\root

Error Filename: proj.err

Error Parser 1: \_c51ErrorInfo

Error Parser 2: \_asm51ErrorInfo

Error Parser 3:

Execution Window:  Normal,  Maximized,  Minimized

Execution:  Background,  Foreground

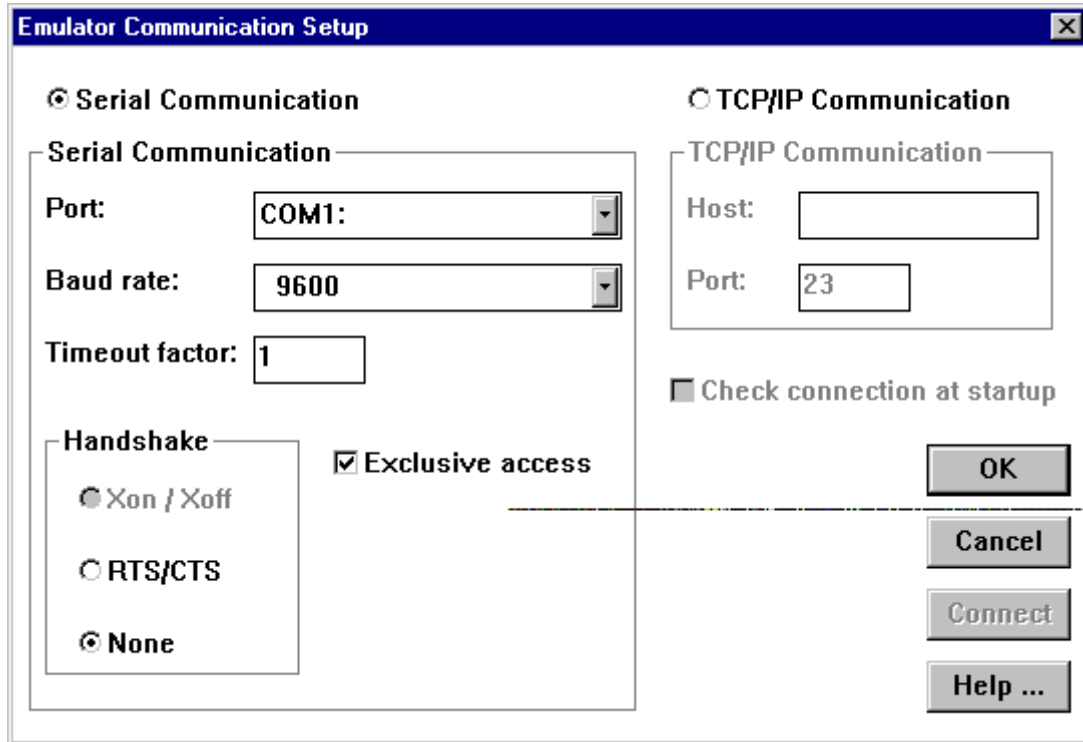
Compiler setup

	Capture Output	No command shell	Save current file	Save all files
Make: ftee execve -f51v40.dfg mk51 >%TMP%\proj.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rebuild: ftee execve -f51v40.dfg.mk51.clean.all >%TM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Debug: C:\DCC51\bin\xfw51i	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Execute:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternate 1:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternate 2:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Buttons: OK, Cancel, Help

Figure 4 Project Configuration

Now you can launch CrossView51. You do this by clicking on the 'Debug' (fly-swatter) button in the toolbar. When using CrossView ROM for the first time, you must setup the communications parameters. Select the **File|Emulator Comm. Setup...** menu item in order to invoke the Emulator Communications Setup dialog.



**Figure 5 CrossView Communications Setup**

Be sure that the 51Fx/151/251 board is configured for the 51/151 microcontroller and RISM-51. Check the Intel documentation for the correct switch settings.

## Loading the Application

The next step is to load the application. Select the File | Load Application menu item to invoke the Load Application dialog. Specify the file to be downloaded and then choose OK.

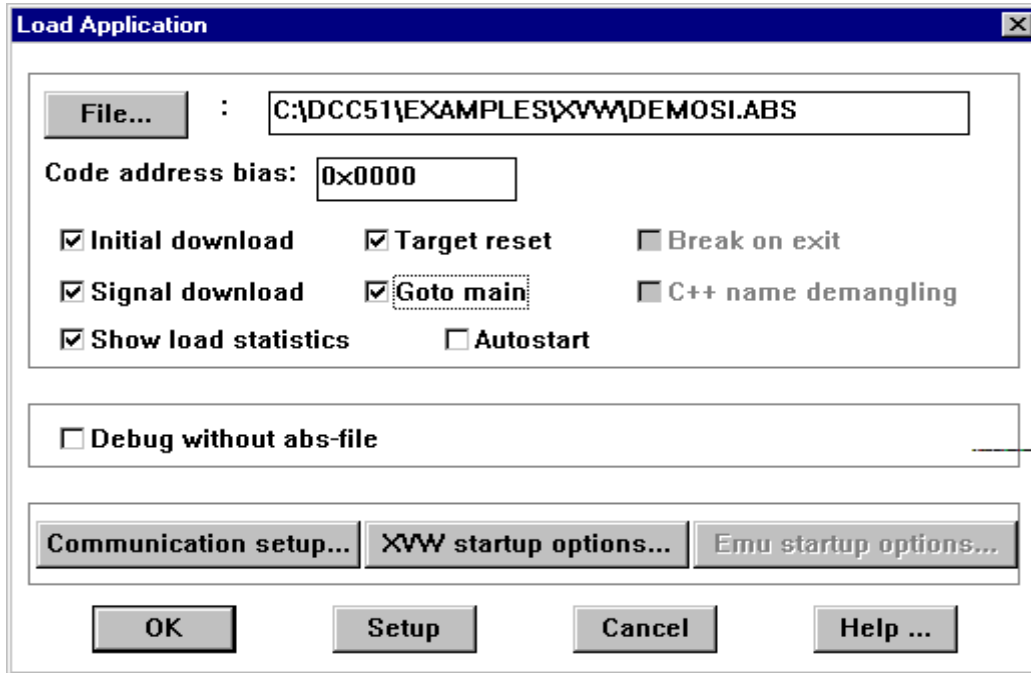


Figure 6 CrossView Load Application

## Register Window Setup

Before clicking on View | Register, you can specify the contents of your Register Window with Debug | Register Window Setup...

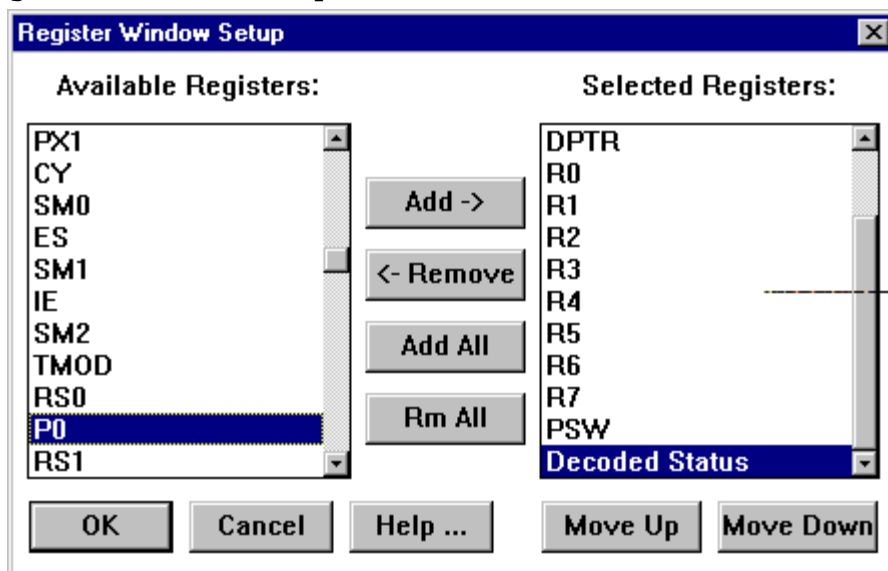
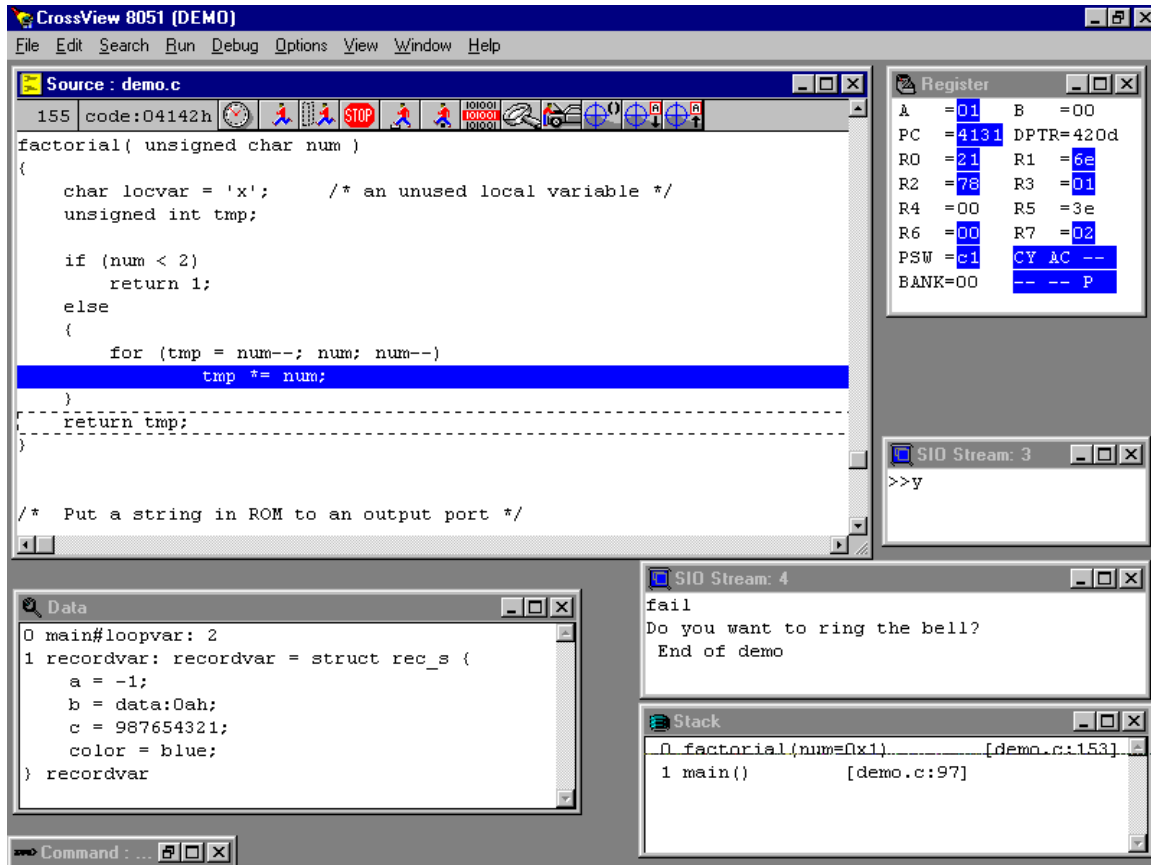


Figure 7 CrossView Register Window Setup

## Stepping Through

Click on View | Source | High Level in the menu bar to open the high level Source Window. In the Load Application dialog you have specified to reset the software and execute the C-startup code. So now you are at the entry point of the application, the C function main( ).



**Figure 8 CrossView51 ROM**

Using the toolbar or the menu bar you can set breakpoints, monitor data, display registers, simulate I/O and much more. Please note that all the User Manuals are available as help files with hypertext links for easy navigation. Every manual also has a tutorial session of its own.

## Questions or Problems?

Depending on where you are located call one of the following numbers and tell customer support that you are using the Intel 51/151 demo.

**USA:** 1-800-458-8276, fax 617 320 9212, e-mail: support\_us@tasking.com  
**Europe:** +31 33 4558584, fax +31 33 4551005, e-mail: support\_nl@tasking.com  
**Japan:** +81 3 5389 0721, fax +81 3 53890620, e-mail: support\_jp@tasking.com

See us also at:

<http://www.tasking.com>