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M32C Compact Emulator Software Release Notes

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Section 1 Notes on Using the High-performance Embedded Workshop

This section shows notes on using the High-performance Embedded Workshop .

1.1 Notes on Network Drive Issues

1.1.1 Time discrepancies between computers

The time kept by a computer differs between computers. The time when a source file or an output file is updated differs depending on a computer. It may happen that building a project can be incorrect because of difference of times kept by computers if a source file or an output file is shared via network. If such problem occurs, build a project using [Build->Build All].

1.1.2 Building a project on a network drive

When you build a project on the network an error might occur depending on the condition of the network. For example, a C/C++ compiler might output the following error message.

```
C3019(F) Cannot open source file
```

If such an error occurs, build the project again.

1.1.3 Adding a file to a project

When you add a file on a remote drive on the network via [Project->Add Files...] or else, the High-performance Embedded Workshop might cause an application error depending on the condition of the network. In this case, try to add the file to the project again. If application errors occur many times, consider copying the file to a local drive then adding to the project.

1.2 Note on Network database feature

This feature is not available if your OS is Windows® 98 or Windows® Me.

1.3 Notes on Comments of the C/C++ Language

1.3.1 Syntax coloring of the High-performance Embedded Workshop editor

With the syntax coloring capability of the High-performance Embedded Workshop, comments and keywords in a source program file are colored. But the syntax coloring of the High-performance Embedded Workshop editor does not work correctly depending on the way the source code is written. Disable the syntax coloring if you are not satisfied with the syntax coloring. To disable it, select [Setup->Options...], uncheck "Enable Syntax Coloring" on the [Editor] tab of the [Options] dialog box, and click the OK button.

Syntax colouring does not work correctly in the following cases:

Case 1. A comment is nested.

e.g. /* /* */ */ <-the underlined part is colored as comment

Case 2. "/*" or "*/" is placed in a string.

e.g. /* <-the underlined part is colored as comment
char A[]="*/"; <-the underlined part is colored as comment
*/

Try to avoid using the * characters and the / characters placed adjacent to each other in a C/C++ source file unless you specify a comment.

1.3.2 File dependencies scanned by the High-performance Embedded Workshop

The High-performance Embedded Workshop scans an include file of a C/C++ source file to show dependencies of source files on the “Projects” tab of the “Workspace” window and to decide whether to build a file or not. Even though the source code is syntactically correct, it may happen that a scan error is detected; that an include file which is not actually included might be shown as a dependent file; or that an include file which is included might not be shown as a dependent file. In these cases, (a) build all files by selecting [Build->Build All] or (b) select the source file in the “Projects” tab of the “Workspace” window and select [Build->Build File].

Dependencies are not scanned correctly in the following cases:

Case 1. “/*” or “*/” is placed in a string.

e.g. char A[] = “/*”; <- assumed as beginning of comment incorrectly
#include “file.h” <- this file is not scanned as include file
char B[] = “*/”; <- assumed as end of comment incorrectly

To support preprocessor statements such as #if, #ifdef, and #define by the High-performance Embedded Workshop, go to the [Build] menu to open the Toolchain Option dialog box. On the [Toolchain Option] tab, check [Support dependency scan of preprocessor statement].

When a preprocessor statement has an expression, the following ten kinds of operators are currently supported with the dependency check. The dependency search does not operate correctly if an operator, other than those listed below, is used.

(), !, <, <=, >, >=, ==, !=, &&, and ||.

1.4 Notes on the Navigation Facilities

1.4.1 Navigation to a Definition of a C Function

The High-performance Embedded Workshop scans a definition of a C function in a C/C++ source file and displays a tag of the definition on the “Navigation” tab of the “Workspace” window so that double-clicking the tag will navigate you to the line of the definition in a corresponding file. The High-performance Embedded Workshop ignores preprocessor directives when it searches a definition of a C function. For example, two definitions of func() might be displayed on the “Navigation” tab of the “Workspace” window in the following code.

```
#define DEF 1
#ifdef DEF
void func(void)
{
}
#else
int func(int a)
{
}
```

1.4.2 Default Setting for "C++ Classes" of the Navigation Facilities

"C++ Classes" of the navigation facilities is disabled (unchecked) at default. You can check the setting in the "Select Categories" dialog box (figure 1.1). To open the "Select Categories" dialog box, click the right-hand mouse button on the window of the "Navigation" tab and then select "Select Categories..."

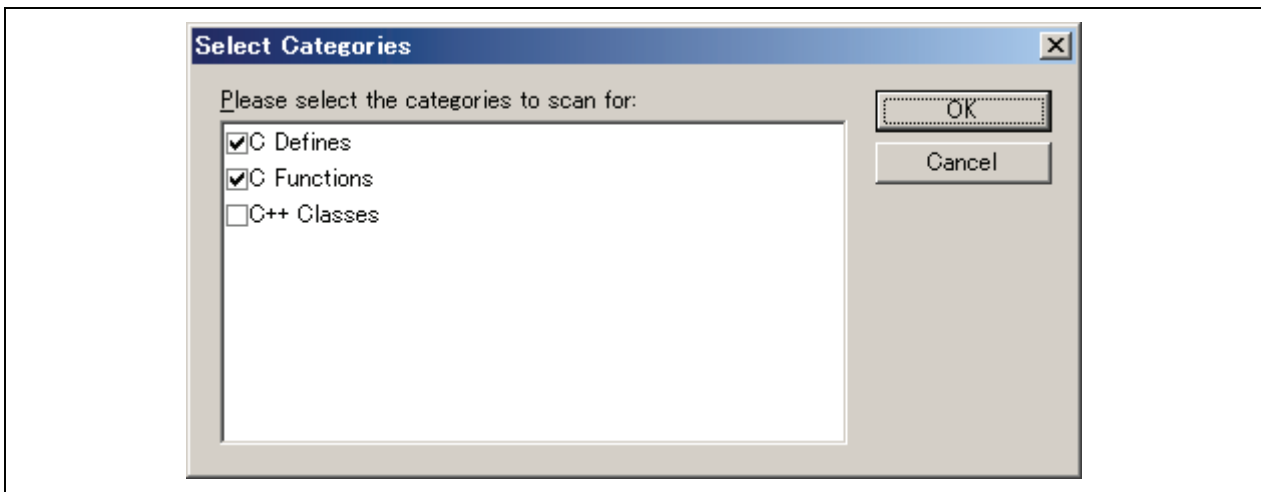


Figure 1.1 Select Categories Dialog Box

1.4.3 Warning Message by "C++ Classes" of the Navigation Facilities

When "C++ Classes" of the navigation facilities is enabled (checked), the warning message will appear (figure 1.2). While this item is enabled, the navigation facilities run in the background. The CPU usage of your host computer may be shown as 100% and the reaction of the High-performance Embedded Workshop may be slow.

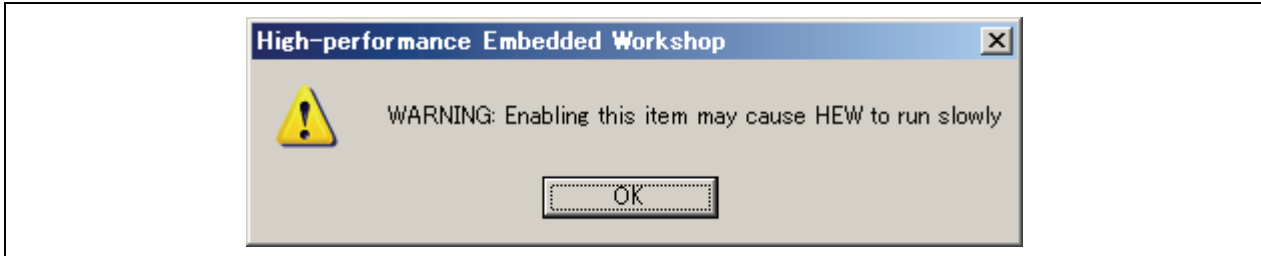


Figure 1.2 Warning Message

1.5 Note on Expression

1. A function name of the C++ program cannot be specified for the expression symbol.
2. No overloaded operator can be used as a function name.

1.6 Note on Opening a File which Caused an Error

This is a note when you double click an error/warning message of the C/C++ Compiler or the Assembler on the "Output" window and open the corresponding line of the corresponding file. If the corresponding file window, however, has been minimized in the editor window area, the file is not opened on double clicking the error/warning message. In this case, restore the file window or maximize it.

1.7 Note on Use of a Relative Path on a Option Dialog Box

Using the [Build] menu of the High-performance Embedded Workshop, you can launch an option dialog box on which you can specify options to a tool such as a compiler. Do NOT specify a relative path when you specify a path on an option dialog box. Especially, when “Custom directory” is selected in the “Relative to” field on a dialog box as shown in figure 1.3, do specify an absolute path in the “Directory” field.

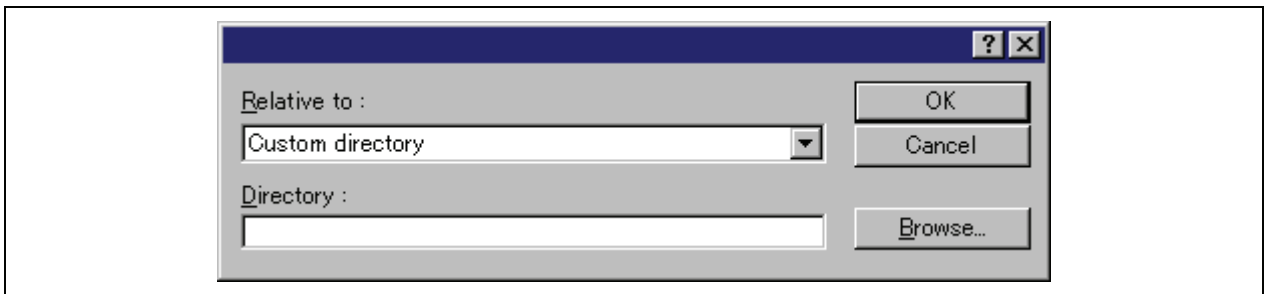


Figure 1.3 Dialog Box to Specify a Directory Path

1.8 Note on Debugging (Common)

1.8.1 Source-Level Execution

Even standard C libraries are executed by [Step In]. To return to a higher-level function, enter the [Step Out] button. In a “for” statement or a “while” statement, executing a single step does not move to the next line. To move to the next line, execute two steps.

1.8.2 Moving Source File Position after Creating Load Module

When the source file is moved after the load module has been created, the [Open] dialog box, which specifies the source file, may be displayed during debugging the created load module. Select the corresponding source file and click the [Open] button.

1.8.3 Editor window

After modifying the program displayed in the editor window and reloading the source files and load modules, close the editor window then open it again; otherwise the program displayed in the window may not be correct.

1.8.4 Stack trace window

When the stack trace window is displayed with the interruption function executed, the display before the interruption function becomes incorrect.

1.8.5 Font in Memory window

Some data may not be displayed when a proportional font is used in the [Memory] window.

1.8.6 Entry Point

Even when an entry point is specified by the ENTRY option of the linkage editor, the entry point address is not set for the PC during program downloading. Set the PC before program execution.

1.9 Note on Debugging (M16C Family Debugging Platform)

1.9.1 Line Assembly

Regardless of the Radix setting, the default for line assembly input is decimal. Specify H as the radix for a hexadecimal input.

1.9.2 Event Setting

- TAB order in Set Event Status dialog box

Even when you press [TAB] key, the next input control may not be focused on the Set Event Status dialog boxes opened from H/W Break, Time Measurement, and Trace Point.

- In-place-edit mode on event list

On event list in H/W Break, Time measurement and Trace Point, High-performance Embedded Workshop will not escape from in-place-edit mode even when you press the [ESC] key.

1.9.3 Data Trace

- Split-bar behavior when double-clicking

If you double-click the split-bar, which divides view up and down, the horizontal scroll-bar, vertical scroll-bar, and tabs in the upper view will vanish. Drag the split-bar to display them again.

1.9.4 Trace

- Specifying function in SRC mode

In the SRC mode, when you specify a function to display it, if the current displayed source file includes the function, the top of the source file will be displayed.

- Saving of tracing result in text

When you save a tracing result in text with only "BUS" and "DATA" buttons ON, the vertical position of some headers will shift from the corresponding data. Check "Tab Separated Format" and open it with spreadsheet applications to display them correctly.

- Saving of tracing result in text

When you save a tracing result that includes BUS and DATA access information in text, some headers can not be correct. When you check "Tab Separated Format", the headers will be correct.

- Time concerned data

Displayed time concerned data is not measured, though time concerned buttons and items in pop-up menu are active. (Time measurement is not supported.)

1.9.5 RAM Monitor

- Proportional Fonts

When a proportional font is selected, a part of the characters in the view may be hidden. Fixed fonts are recommended.

1.9.6 Memory

- 8 bytes data operations

To set, fill, and copy 8 bytes data are not supported.

1.9.7 Script

- Result of interactive command

When you invoke an interactive command, for example, Assemble and setMemoryByte, the running dialog box will appear and may hide the view of the results.

- SCOPE Command

When you refer current scope name with SCOPE command after program execution, the scope of the start-up module will be returned even if scope has been changed to the other.

1.9.8 M32C Emulator Debugger (Common)

1.9.8.1 About using cast operators for the member variable

When you use cast operators for the member variable to refer to it as the pointer of the structure, you would not refer to it correctly.

1.9.8.2 About the download module dialog box

This debugger does not support the setting of "Offset", "Memory verify on download", and "Access Size" in the download module setting dialog box. These are always treated as "Offset: 0", "Memory verify: off", and "Access Size: 1".

1.9.9 M32C Emulator Debugger (for Compact Emulator)

1.9.9.1 Connection to the compact emulator

After setting of MCU by MCU Setting dialog, it takes 10-30 seconds to start up debugger. After setting of MCU, please wait for the moment.

1.12 Note on Windows and Dialog Boxes

1.12.1 Scrolling

Up-scrolling may not be available with an intelligent mouse. In this case, use a scrolling button on the window.

1.12.2 Saving the location of windows

The location of windows displayed may be changed by saving or loading of a session or switching of the virtual desktop.

1.13 Note on Help

When the help is used in Windows® English version, the following message box may be displayed: Click the [Download] button to download 'Japanese Text Display Support', or check the [Never download any of these components.] check box and click the [Cancel] button. Even if 'Japanese Text Display Support' is not downloaded, the help is normally displayed.

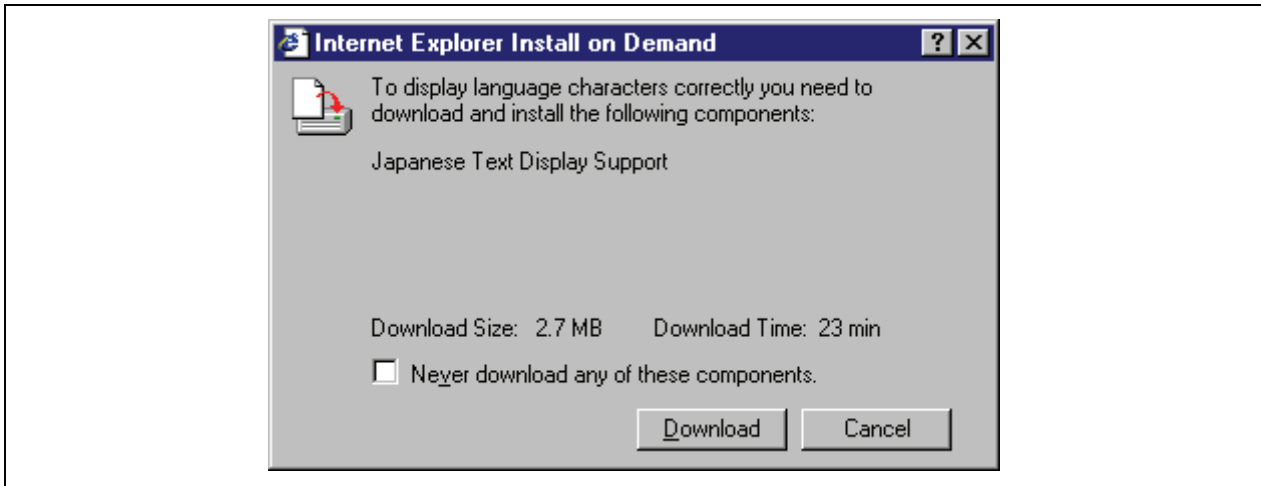


Figure 1.4: Internet Explorer Install on Demand message box

1.14 Note on Commands

1.14.1 MEMORY_EDIT command

Even if characters are enclosed with quotation marks ('), the ASCII character strings cannot be input as data. When the character strings are input as data, enter the corresponding numerical values.

1.14.2 Command batch file load timing (Debug Settings Dialog Box)

- (1) When the [INITIALIZE] command is specified in the command file that [At target connection] has been selected for [Command batch file load timing] on the [Options] tab, do not execute the [INITIALIZE] command in the [Command Line] window.
For initialization, select [Debug->Initialize].
- (2) Do not specify the following commands in the command file that [At target connection] has been selected for [Command batch file load timing] on the [Options] tab.
 - (a) [OPEN_WORKSPACE] command
 - (b) [CHANGE_PROJECT] command
 - (c) [CHANGE_CONFIGURATION] command
- (3) Do not specify the following commands in the command file that [Before download of modules] or [After download of modules] has been selected for [Command batch file load timing] on the [Options] tab.
 - (a) [OPEN_WORKSPACE] command
 - (b) [CHANGE_PROJECT] command
 - (c) [CHANGE_CONFIGURATION] command
 - (d) [GO] command
 - (e) [GO_RESET] command
 - (f) [GO_TILL] command
 - (g) [STEP] command
 - (h) [STEP_OUT] command
 - (i) [STEP_OVER] command

1.14.3 Command line batch processing (Debug Settings Dialog Box)

[File directory] cannot be used in the placeholder of [Command Line Batch Processing] on the [Options] tab. If a command file is specified with the relative path format, the file may not be correctly accessed. Specify the absolute path format to the command file that cannot apply a placeholder.

1.14.4 File Specification of Command Line

To specify a file in the command line, use a placeholder (excluding TCL). If you wish to specify a directory not included in the placeholder, specify an absolute path. After specifying the absolute path, this file will not be correctly found when it is in another host computer or environment where the path content is different. In such cases, specify the file again.

Example: `FILE_LOAD ELF/DWARF2 $(CONFIGDIR)\\demo.abs`

1.14.5 CACHE Command

Do not specify the CACHE command unless it is defined in the user's manual of the emulator or debugger. The unit of an access to the cache memory is a fixed value such as 0x3FF. Thus the range of the cache memory being accessed may be larger than the access range specified by the user.

1.14.6 Abbreviation of a Command

- REMOVE_FILE

In High-performance Embedded Workshop 3.01 or later version, the abbreviation has been changed from "RF" to "REM".

1.15 Note on the Tcl/Tk Command Input

(1) Canceling the interactive mode

To return from the interactive mode to the command input mode while using the [TCL Toolkit], enter "/.". It is possible to know the current mode by entering "/.".

1.16 Notes on Commands in [TCL Toolkit] and [Command Line]

(1) "trace" command

- To execute the "trace" command for Tcl in [TCL Toolkit], the command name must be specified in lowercase letters.
- To execute the "TRACE" command for High-performance Embedded Workshop in [TCL Toolkit], the command name must be specified in uppercase letters.
- To execute the "trace" command for Tcl in the [Command Line] window, the command name must be replaced with "tcl_trace".

(2) "clock" command

- To execute the "clock" command for Tcl in [TCL Toolkit], the command name must be specified in lowercase letters.
- To execute the "CLOCK" command for the emulator in [TCL Toolkit], the command name must be specified in uppercase letters.

(c) To execute the “clock” command for Tcl in the [Command Line] window, the command name must be replaced with “tcl_clock”.

(3) “event” command

(a) To execute the “event” command for Tk in [TCL Toolkit], the command name must be specified in lowercase letters.

(b) To execute the “EVENT” command for the emulator in [TCL Toolkit], the command name must be specified in uppercase letters.

Note that some emulators do not support commands “CLOCK” and “EVENT”.

Section 2 System Requirements

2.1 M32C Compact Emulator Debugger

| | |
|--------------------|---|
| Target host PC | |
| PC | IBM PC/AT compatible with Pentium III 600MHz or higher |
| OS | Windows XP Windows 2000 Windows Me Windows 98 Second Edition |
| Memory | 128MB (ten times the size of the target load module file recommended) |
| HDD | Hard disk available capacity for installation: 100MB or more. Prepare an area at least double the memory capacity (four-times or more recommended) as the swap area. |
| Display Resolution | 1024 x 768 or higher recommended |

| | |
|------------------|-----------------------------|
| Compact Emulator | MCU file |
| M30850T-CPE | M30850.MCU |
| M30870T-CPE | M30870.MCU M30870_AD.MCU |