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M3T-KD38

User's Manual

Emulator Debugger for 740 Family Starter-Kit

User's Manual

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Renesas Technology
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\SUPPORT\KD38\SUPPORT.TXT

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In this User's Manual, the emulator debuggers "M3T-KD38" is represented as "KD38".
Please replace it with the corresponding one, when you read it.

Preface

KD38 is an emulator debugger for Starter-Kit of 740 Family. It controls emulator from Windows on a PC, and it helps debugging of application programs and target system.
The basic information is written in User's Manual, that is necessary to understand how to use KD38. For details, please refer to the online help included in product package.

Rights to the Program

The right to use the program is granted according to provisions under a software license agreement.
The program can only be used for the purpose of product development by the user, and cannot be used for any other purpose.
Note also that the information in this manual does not convey any guarantee or license for the use of software.

[MEMO]

Contents

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[MEMO]

Setup

1. Starting the Debugger

1.1 Features of KD38

The KD38 have the following functions.

1.1.1 RAM Monitor Function

Refer to 1-Kbyte RAM monitor area for KD38. (which cannot be divided into smaller areas).
When change of the contents of a memory is referred to, the real-time nature of target program execution is spoiled.

1.1.2 Break Functions

- Software Break
  This function causes the target program to stop immediately before executing the instruction at a specified address. Up to 2 breakpoints can be set. If multiple breakpoints are set, the program breaks at one of the breakpoints that is reached.

1.1.3 GUI Input/Output Function

This function simulates the user target system's key input panel (buttons) and output panel on a window. Buttons can be used for the input panel, and labels (strings) and LEDs can be used for the output panel.

1.2 Before starting the Debugger

Before you can start the Debugger, the following tasks must be completed.

1.2.1 Communication method by emulator

The supported communication methods vary with the type of emulator used.

1.2.1.1 USB Interface

KD38 support only USB Interface.

- The supported Operating System is Windows Me/98/2000/XP. The USB communication cannot be used in any other OS.
- Compliant with USB Standard 1.1.
- Connections via USB hub are not supported.
- By connecting the host computer and the emulator with USB cable, it is possible to install the supported device drivers using a wizard (The KD38 that supports USB connections must be installed before this installation can be performed). See “1.2.3.1 USB communication” for details.
- The necessary cable is included with the emulator.

1.2.2 Download of Firmware

When the firmware program, that is corresponding to the mcu that is specified by the mcu file, is different from the one that is downloaded in the target, KDxx notices you to download it.
If the mcu file you specified is correct, download it by pressing OK button.

1.2.3 Setting before emulator starts

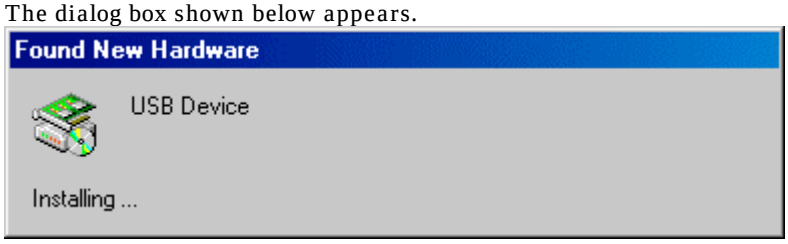
1.2.3.1 USB communication

Windows' Plug & Play function detects the connection of USB devices. The device driver needed for the connected USB device is automatically installed.

<<Install of USB device driver>>

Windows' Plug & Play function detects the connection of USB devices. The installation wizard for USB device drivers start after the device had been detected. The following shows the procedure for installing the USB device drivers.

1. Connect the host computer and the emulator with USB cable.
2. The dialog box shown below appears.



Go on following the wizard and a dialog box for specifying the setup information file (INF file) is displayed. Specify the usbmon.inf file stored in a location below the directory where the KD38 is installed (e.g., c:¥mtool¥kd38¥drivers).

ATTENTION

- Before the USB device drivers can be installed, the KD38 you use must already be installed. Install the KD38 first.
- USB communication can be used only in Windows Me/98/2000/XP, and cannot be used in any other OS.
- When using Windows 2000/XP, a user who installs the USB device driver needs administrator rights.
- During installation, a message may be output indicating that the device driver proper usbmon.sys cannot be found. In this case, specify the usbmon.sys, which is stored in the same directory, as is the usbmon.inf file.

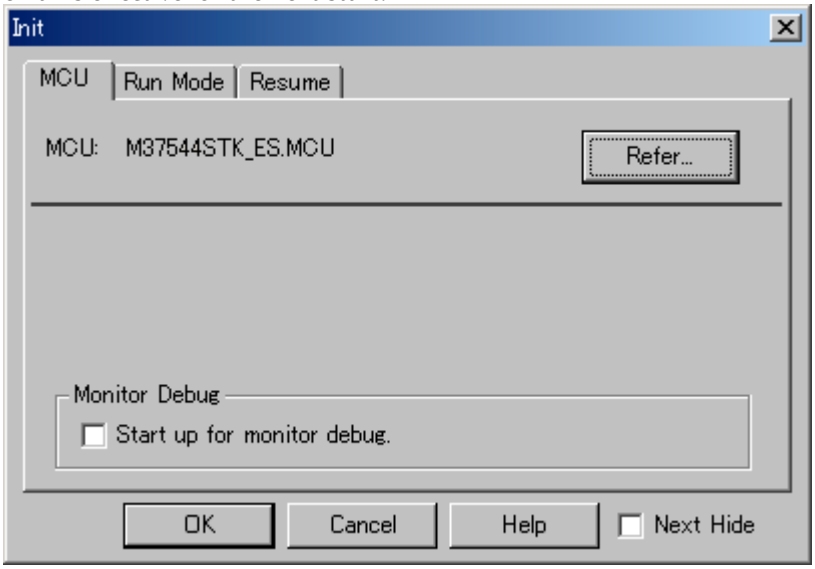
1.3 Starting the Debugger

Click the Windows start button, and then select menu:

Program (P) -> [RENESAS-TOOL] -> [KD38 V.x.xx Release x] -> [KD38]

2. Setup Debugger

The Init dialog box is provided for setting the items that need to be set when the debugger starts up. The contents set from this dialog box are also effective the next time the debugger starts. The data set in this dialog remains effective for the next start.



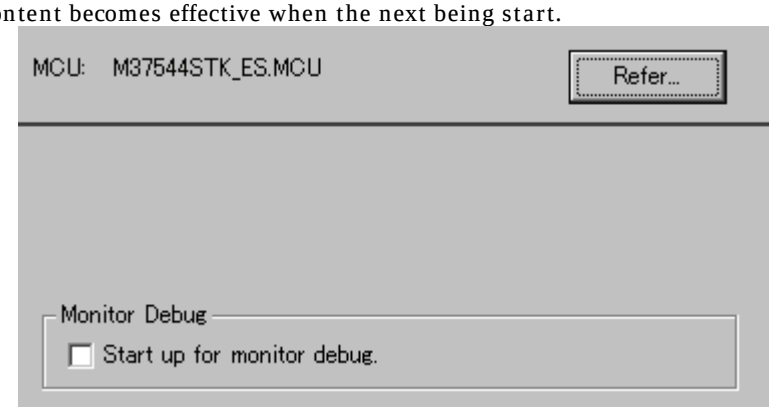
To keep the Init dialog closed next time the debugger is started, check "Next Hide" at the bottom of the Init dialog.

You can open the Init dialog using either one of the following methods:

- After the debugger gets started, select Menu - [Environment] -> [Init...].
- Start KD38 while holding down the Ctrl key.

2.1 MCU Tab

Set the MCU file here.
The specified content becomes effective when the next being start.



2.1.1 Specifying the MCU file

Click the "Refer" button, the File Selection dialog is opened. Specify the corresponding MCU file.
An MCU file is saved under the directory in which KD38 is installed (For example: C:¥mtool¥kd38¥mcufiles).

- An MCU file contains the information specific to the target MCU.
- The specified MCU file is displayed in the MCU area of the MCU tab.

If the corresponding MCU file is not contained in the debugger, you must create a new MCU file.
To do this, see the following:

- Method of making MCU file (KD38) -> 2.4 Method of making MCU file

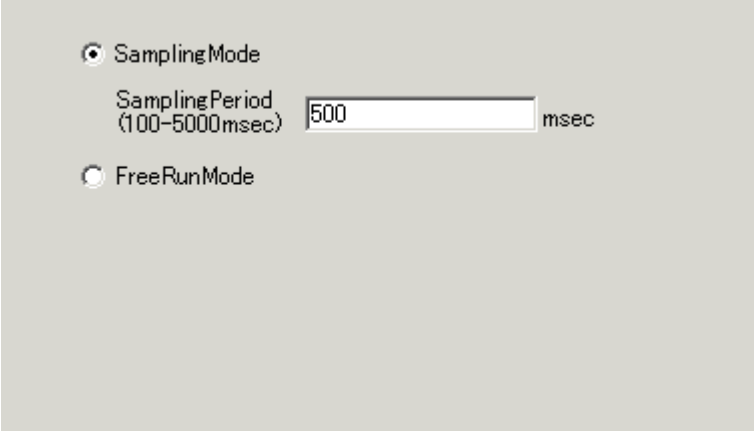
2.1.2 Setting of the communications interface

2.1.2.1 Setting of USB interface (PC4701U only)

Before USB communication can be performed, the computer must have a dedicated device driver installed in it. For details on how to install USB device drivers, see "1.2.3.1 USB communication".

2.2 Run Mode Tab

Set the mode in which you want the user program to be run when executing Go or Come.
The specified content becomes effective when the next being start.



2.2.1 Setting Rum Mode

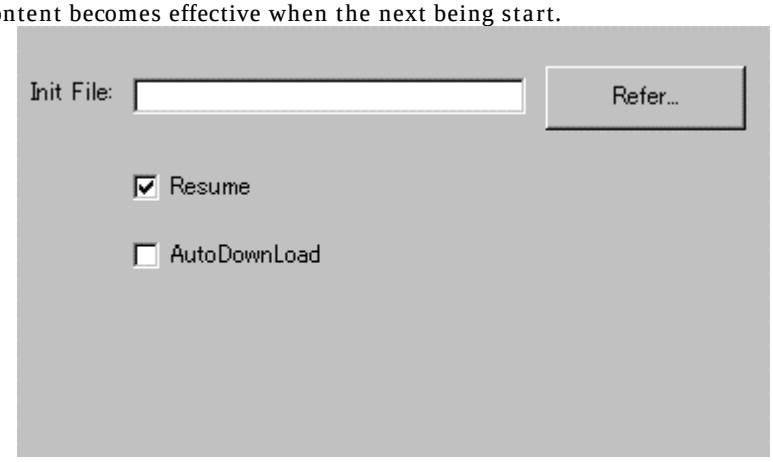
With KD38, the monitor program periodically monitors the user program's execution status to check whether the user program is halted by a break, etc. This means that the monitor program interrupts the CPU when executing the user program and, hence, the user program's real-time capability is lost. To solve this problem, KD38 provides two execution modes:

- Sampling Mode:
  the user program's execution status is periodically monitored when executing Go or Come. Therefore, it is possible to check whether the user program is halted by a break, etc. The monitoring interval time is determined by the value you set in the Sampling period field. Set an appropriate interval time that will not affect execution of the user program.

- Free Run Mode:
  the user program's execution status is not monitored when executing Go or Come. Therefore, although the user program's real-time execution capability is maintained, it is impossible to check whether the user program is halted by a break, etc. Consequently, KD38 shows executing Go or Come status while the user program has been halted. To show the stop status, press the STOP button.

2.3 Resume Tab

The operation when the debugger starts is specified.
The specified content becomes effective when the next being start.



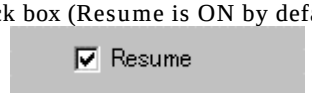
2.3.1 Automatically Execute the Script Commands

To automatically execute the script command at start of Debugger, click the "Refer" button to specify the script file to be executed.

By clicking the "Refer" button, the File Selection dialog is opened.
The specified script file is displayed in the "Init File:" field.
To disable auto-execution of the script command, erase a character string displayed in the "Init File:" field.

2.3.2 Restore the Window Status

To restore the window status (window position, window size) after the previous debugger program is terminated, check the "Resume" check box (Resume is ON by default).



2.3.3 Re-download a Load Module

To re-download a load module (target program), check the "AutoDownLoad" check box (Re-download is OFF by default).

2.4 Method of making MCU file

2.4.1 KD38

The following content is sequentially described in the MCU file.
Please describe information on 1-4 referring to the data book on MCU used.

1. **Number of stack page selection bit**
2. **Address of CPU mode register**
3. **End address of stack** *1
4. **Address of reset vector**
5. **POD number** *2
6. **Firmware name (for PD38)** *3
7. **MCU Information No.** *4

   [Monitor]
   Name= **Firmware name (for KD38)** *5

*1 End address of stack
Specify the last address of the area to be used as the stack. Consider the initial value of the stack page selection bit in the CPU mode register. (The initial value of the stack page selection bit depends on the microcomputer.) For a microcomputer which sets the stack page selection bit initial value to "0", the allowable designation range is a 0 page address range (0h to FFh). For a microcomputer which sets the stack page selection bit initial value to "1", the allowable designation range is a 1 page address range (100h to 1FFh).

*2 POD number
In Starter-Kit, please set up "0".

*3 Firmware name (for PD38)
This item is not used.
In Starter-Kit, please set up arbitrary character sequences.

*4 MCU Information No.
In Starter-Kit, please set up "01".

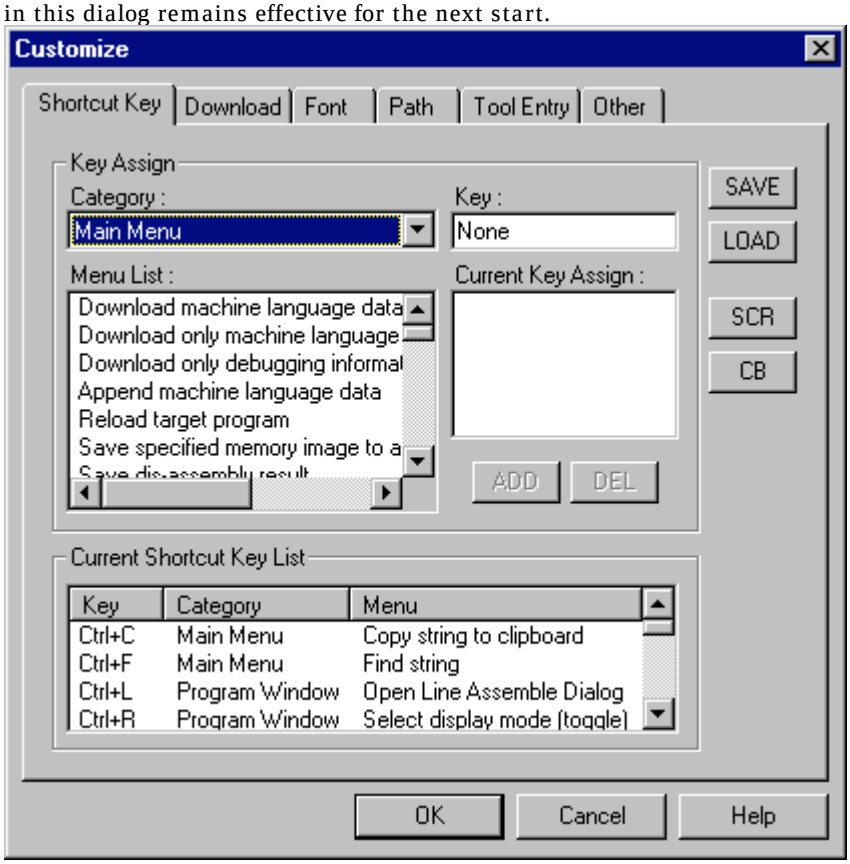
*5 Firmware name (for KD38)
Specify the firmware file name, and don't add the extension ".s".

2.4.1.1 Example

```
2
3B
FF
FFFC
0
M37544STK_ES
01
[Monitor]
Name=M37544STK_ES
```

3. Environmental Setting of Debugger

Specify debugger environment setting in the Customize dialog.
You can open this dialog by selecting menu - [Environment] -> [Customize...].
The data set in this dialog remains effective for the next start.

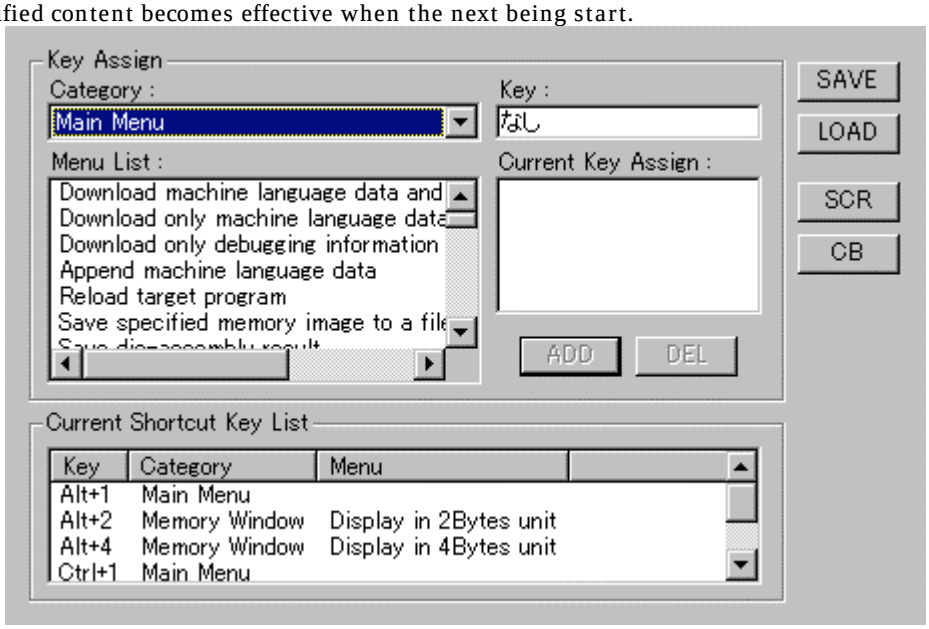


Tab	Description
ShortcutKey	- Register the menus to the shortcut keys
Download	- Setting the automatically Down-load of the Load Module - Setting the number of load module download histories
Font	- Specify the font - Specify the default font for the characters displayed by KD38.
Path	- Specify the Search Path of Source Files - Specify the Saving Directory of Information File
Tool Entry	- Setting the Make File - Specify the Editor
Other	- Setting the display of the Termination Confirmation Dialog - Setting the debugger Forced Ending when Error Occurs - Setting the target Continuance Execution when Debugger Ends - Setting the display of the Absolute Path of Source File - Control the Display Mode Switching of Program Window - Specify the number of execution history of script command

You can also customize the buttons in the tool bar.

3.1 ShortcutKey Tab

The specified content becomes effective when the next being start.

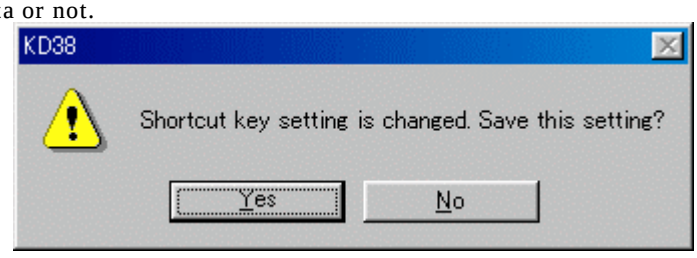


3.1.1 Register the menus to the shortcut keys

You can register the menus to the shortcut keys.
You can also register execution of the script file and opening of the Custom window to the shortcut keys.

- Assignable shortcut keys are any one key*, or combination of Shift/Ctrl/Alt keys + any one key*.
  *Any one key covers the following:
  - Alphabet key
  - Numeric Key
  - Function key
  - Symbol key (",", "@", ":" etc.)

- When the shortcut key information is changed, the following dialog appears when exiting from the Customize dialog (when clicking the "OK" button) asking you whether you want to save the changed data or not.



When you save the changed data, the data is automatically loaded at the next start of KD38.

<<Specification of Shortcut Key Tab>>

Key Assign Group

Category combo box

Displays the menu category. The enabled menus in the selected category are displayed in the Menu List list box.

- The category name [Main Menu] indicates all the menus except the option menus of each window.
- When the category of the window name is selected, the menu options available in that window become enabled.
- When the category name [Custom Window] is selected, the registered Custom windows become enabled.
- When the category name [Script Command] is selected, the registered script commands become enabled.

Menu List list box

Lists the menus enabled in the menu category selected in the Category combo box. The listed menus are sorted in the alphabet order.

Key edit box

Specifies the shortcut key to be assigned to the menu selected in the Menu List list box.

Current Key Assign list box

Displays the shortcut key to be assigned to the menu selected in the Menu List list box.

ADD button

Enables the shortcut key specified in the Key Edit box.

DEL button

Disables the shortcut key selected from the Current Key Assign list box.

Current Shortcut Key List Group

Lists the preset shortcut keys.

SAVE button

Saves the shortcut key information displayed in the Current Shortcut Key List group in a file.

LOAD button

Reads the shortcut key information from a file.

SCR button

Registers a script to be assigned to the shortcut key.

CB button

Registers the Custom window to be assigned to the shortcut key.

<<Registering the shortcut key>>

1. Select the category of the menu to be registered in the Category combo box in the Key Assign group.
   The menus available for the category are displayed in the Menu List list box
2. Select the menu to be registered from the Menu List list box and click the Key exit box.
   KD38 is now waiting for the entry of shortcut key.
3. Press the shortcut key to be assigned. The content of the shortcut key is displayed in the Key edit box.
4. Click the ADD button below the Current Key Assign list box.

<<Deleting the shortcut key>>

1. Select the shortcut key to be deleted using one of the following methods:
   - Select the shortcut key from the list in the Current Shortcut Key List group.

- Select the Menu List list box in the Key Assign group.

2. Click the DEL button in the Current Shortcut Key List group.

<<Saving/reading the shortcut key>>

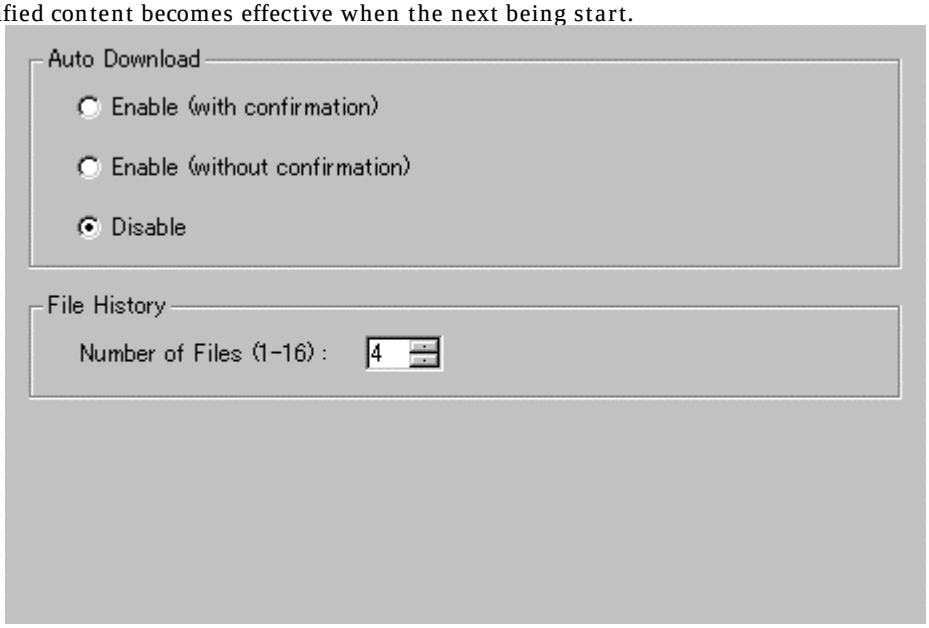
To use (save/read) the assigned shortcut key information separately, you need to specify the file.
Click the SAVE button and specify the file name.
To read the shortcut key information, click the LOAD button and specify the file name.
All of the registered shortcut key information is deleted.

ATTENTION

- You cannot assign the same shortcut key to multiple menus. If you register the assigned key, the information on the previously assigned shortcut key is overwritten.
- The shortcut key is enabled only for the active window. If two or more same windows are opened, the shortcut key is not reflected to all of them.
- The shortcut key is enabled only for the active window. If two or more same windows are opened, the shortcut key is not reflected to all of them.

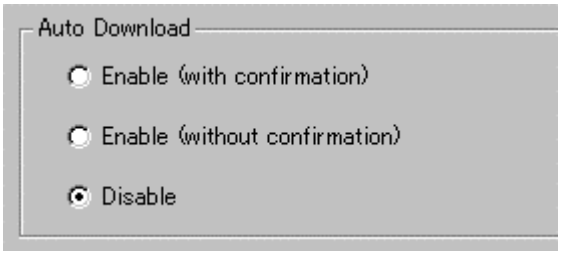
3.2 Download Tab

The specified content becomes effective when the next being start.



3.2.1 Automatically Down-load of the Load Module

When the downloaded load module is updated by re-compile assemble, the file can be auto-downloaded.
The load module is updated at timing when it is operated by a command of execution group (Go, Step, etc).

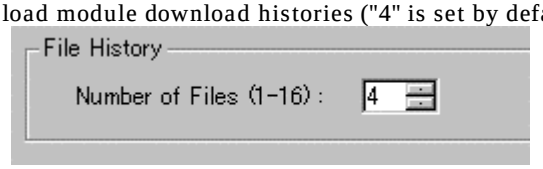


In the Auto Download group, select any one of the following ("Disable" is selected by default).

Enable (with confirmation)	Asks for confirmation at auto-download.
Enable (without confirmation)	Does not ask for confirmation at auto-download.
Disable	Does not auto-download the load module file.

3.2.2 Setting the number of load module download histories

You can set the number of load module download histories ("4" is set by default).



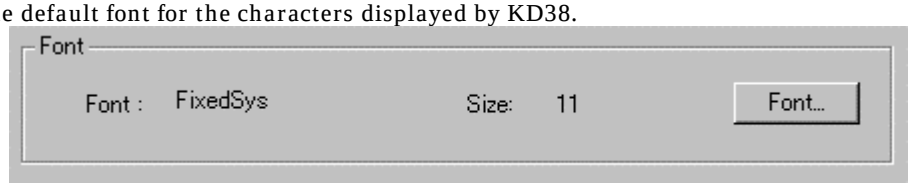
Specify the number of histories in the File History Number field in the File History group. You can specify the number from 1 to 16.

3.3 Font Tab

The specified content becomes effective when the next being start.

3.3.1 Specify the font

Specify the default font for the characters displayed by KD38.



Click the "Font..." button. The Font selection dialog opens. Enter the font and font size.

Note

You can set the font independently in each window. With the target window active, select [Option]->[Font...] from the menu in the KD38 Window to open the font selection dialog.

3.3.2 Specify the Displaying Tab Width

In a window, which displays the source files (Program Window, Coverage source window, etc.), you can specify the display tab width.

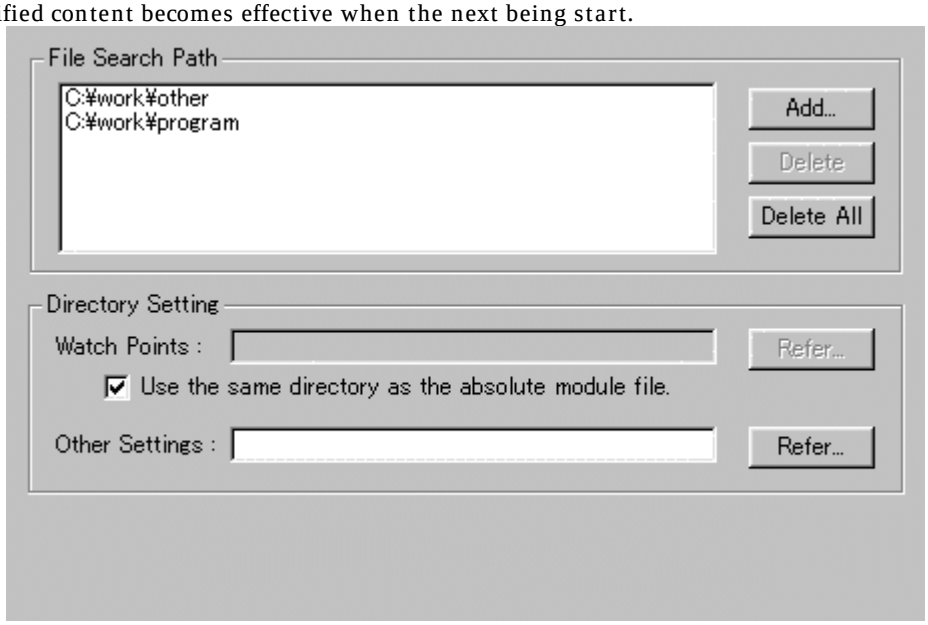
Specify the default tab values for the Program Window, Source Window. You can specify TAB values between 1 and 32.

Note

You can set the tab width by window.
Select the KD38 window Menu - [Option] -> [TAB] while the target window is active.
The TAB designation dialog is opened.

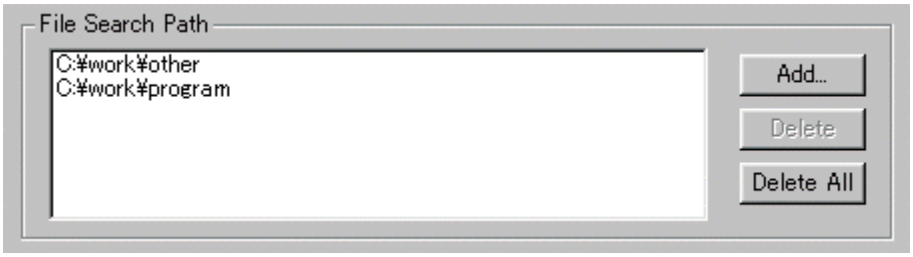
3.4 Path Tab

The specified content becomes effective when the next being start.



3.4.1 Specify the Search Path of Source Files

You can specify the directory position (search path) of the source file to be displayed in a window such as the Program Window.
This method is useful when the source file does not exist in the current directory or divided into multiple directories.



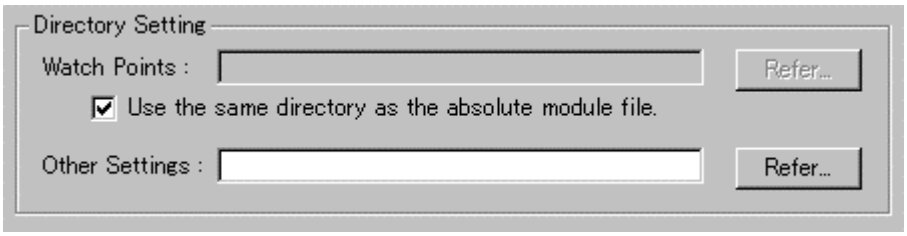
To register the search path, click the Add... button in the File Search Path group.
The folder selection dialog is opened.
Specify the directory in which the source file exists.
To delete a certain search path, click the target search path and click the Delete button.
To delete all search paths, click the Delete All button.

3.4.2 Specify the Saving Directory of Information File

You can specify the directory in which the ASM/C watch point information file and other information file are saved.
Other files cover the following:

- Script command execution history file
- Break information file

The default saving destination directory of the ASM/C watch point information file is a directory in which the load module exists.
The default saving destination directory of other information file is a directory in which KD38 has been installed (example: c:¥mtool¥kd38).



To change the directory in which the ASM/C watch point information file is saved, reset a check mark from the "Use the same directory as the absolute module file" check box in the Directory Setting group. Then, the "Watch Points:" field is enabled.
Click the Refer... button on the right of the "Watch Points:" field and specify the saving destination directory from the Directory Selection dialog.

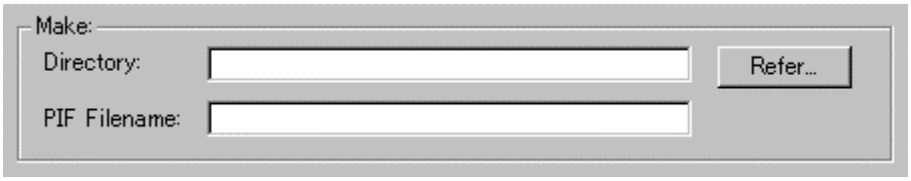
To change to directory, in which other information file is saved, click the Refer... button on the right of the "Other Settings:" field and specify the saving destination directory from the Directory Selection dialog.

3.5 Tool Entry Tab

The specified content becomes effective when the next being start.

3.5.1 Execute the Make File

Prepare a PIF file to start the Make file.

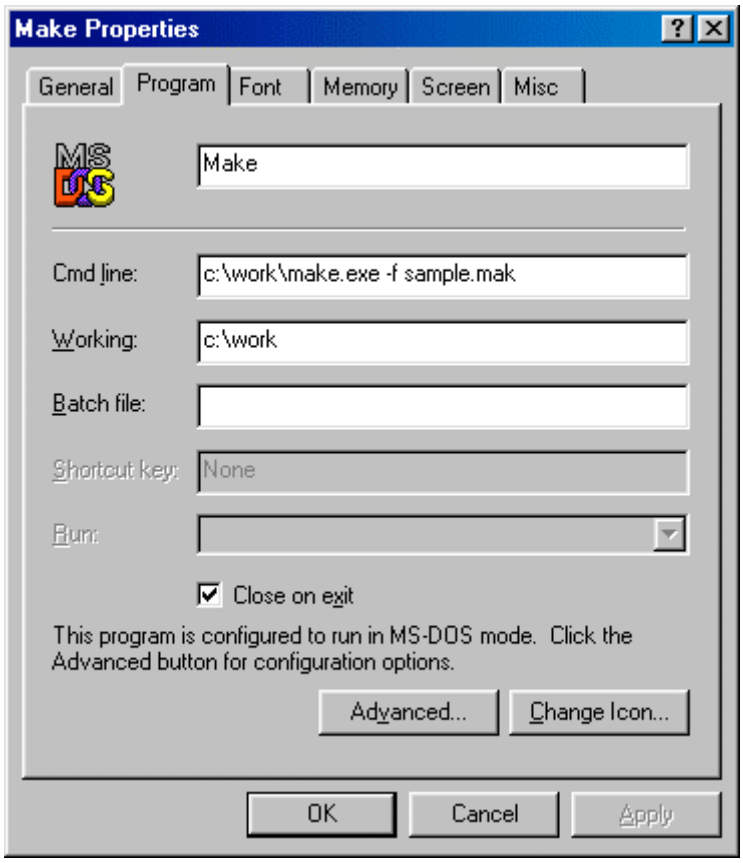


Click the Refer button in the Make group. The Directory Selection dialog is opened.
Specify the directory in which the Make file exists.

Name the PIF file to be registered in the PIF Filename field.

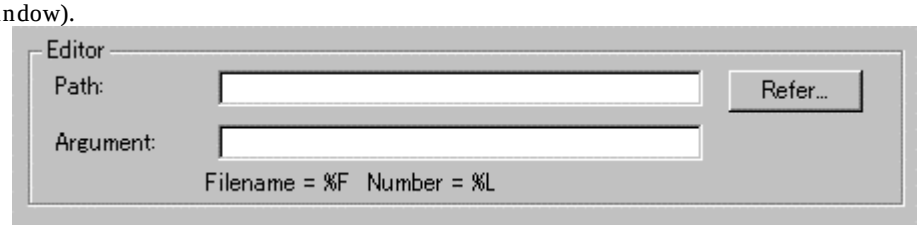
3.5.1.1 Creating a PIF file

1. Create a keyboard shortcut for command.com located in the Windows directory.
   Command.com is in the Windows directory in Windows 98/Me. It is in the system32 directory (The example: ¥winnt¥system32) under the Windows directory in Windows 2000/XP.
2. For the keyboard shortcut thus created, assign a file name xxxxx.pif (xxxxx denotes a name specified by the user) and moves the file into the directory that contains makefile.
3. Open the property dialog box for this file and input the same command in the command line of this dialog box that was input on the DOS window.
4. Open the property dialog box for this file and input the same command in the command line of this dialog box that was input from the DOS window.



3.5.2 Specify the Editor

You can start the Editor in a window, which displays the source file (Program window, Coverage source window).

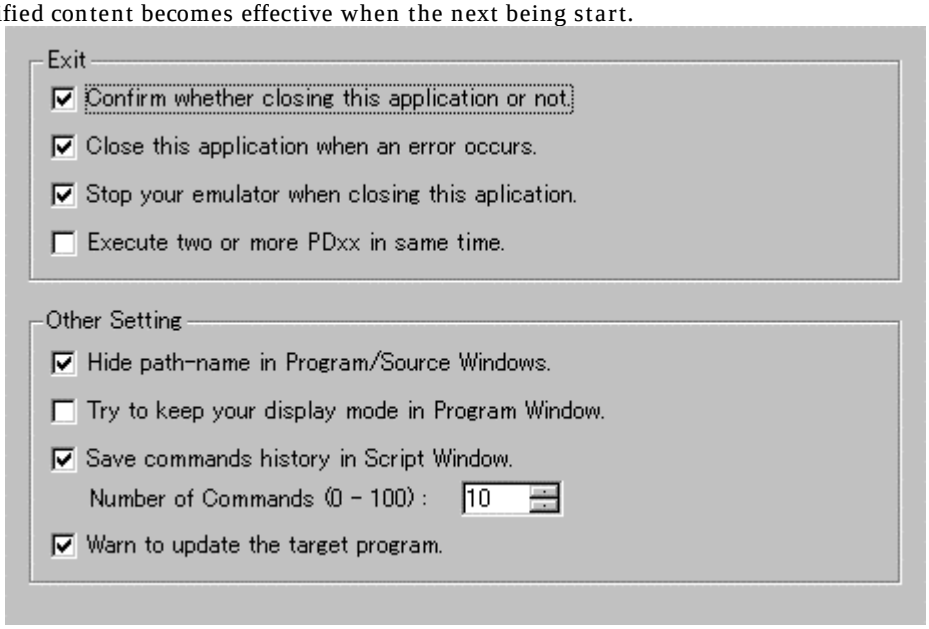


Click the Refer button in the Editor group. The File Selection dialog is opened.
Specify the item file of the editor to be used.

Specify the editor parameter in the Argument field.
File names are stored in "%F", and line numbers are stored in "%L".
To specify the editor options, see the Editor Manual/Help.

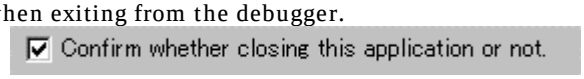
3.6 Other Tab

The specified content becomes effective when the next being start.



3.6.1 Display the Termination Confirmation Dialog

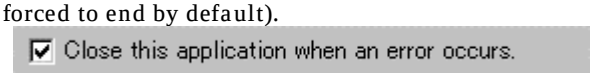
You can set a parameter so that the termination confirmation dialog will not be opened, which is supposed to be opened when exiting from the debugger.



To keep the dialog closed, remove a check mark from the above check box in the Exit group.

3.6.2 Debugger Forced Ending when Error Occurs

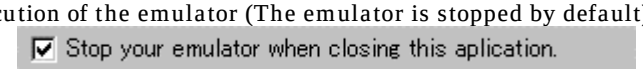
You can set a parameter so that the debugger will not be forced to end when a communication error occurs (The debugger is forced to end by default).



To do this, remove a check mark from the above check box in the Exit group.

3.6.3 Target Continuance Execution when Debugger Ends

When exiting from the debugger during execution of the target program, you can select to continue execution or stop execution of the emulator (The emulator is stopped by default).



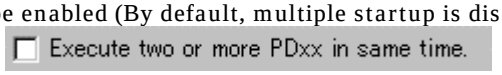
To continue execution, remove a check mark from the above check box in the Exit group.

ATTENTION

The target program, which is executed continuously, cannot be re-controlled next time the debugger gets started.
To start the debugger, press the system reset switch on the emulator to reset the target program.

3.6.4 Enabling multiple startup

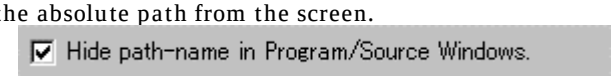
Multiple KD38 startup can be enabled (By default, multiple startup is disabled.).



To enable multiple startup, check the above check box included in the Exit group.

3.6.5 Display the Absolute Path of Source File

When the file name is displayed with the absolute path in the title bar in the Program (Source) window, you can hide the absolute path from the screen.



To hide the file path, check the above check box in the Other Setting group.

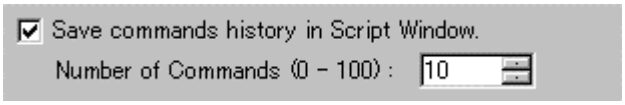
3.6.6 Control the Display Mode Switching of Program Window

You can set switching of the display mode at stop of the target program to "Suppress" (keep the current display mode) in the Program window (However, the display mode may be switched depending on where the target program is stopped).

To control the display mode switching, check the above check box in the Other Setting group.

3.6.7 Execution History of Script Command

You can save the execution history of the script command (Ten sets of history data are saved by default).

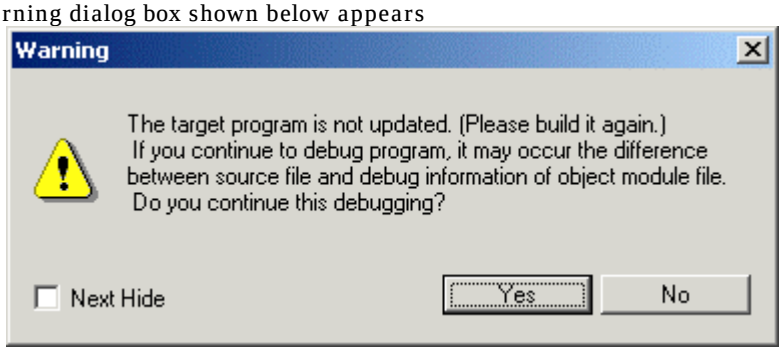


To change the history of script commands, specify the number of history in the Number of Commands field. (0 to 100) To clear history of script commands, remove a check mark from the above check box in the Other Setting group.

3.6.8 Source file update warning

If any source file exists that has been updated after creating the target program, an warning dialog box can be displayed when issuing the commands associated with target execution. (Warned, by default)

If source file update warnings are unnecessary, uncheck the above check box. If the check box is checked, the warning dialog box shown below appears

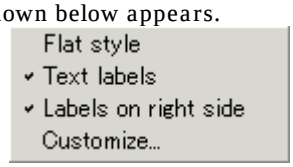


Choosing "No" in this warning dialog box cancels the target execution command that was going to be issued. Build and download the target program.
Choosing "Yes" accepts the target execution command that was going to be issued, so that the

command is processed normally. From the next time on (until the next time downloading is processed), no warnings will be displayed even when using target execution commands.
If the warning dialog box is closed by checking the Next Hide check box, no source file update warnings are displayed from the next time on (This is the same as when the Warn to update the target program check box is unchecked.).

3.7 Customizing of Toolbar

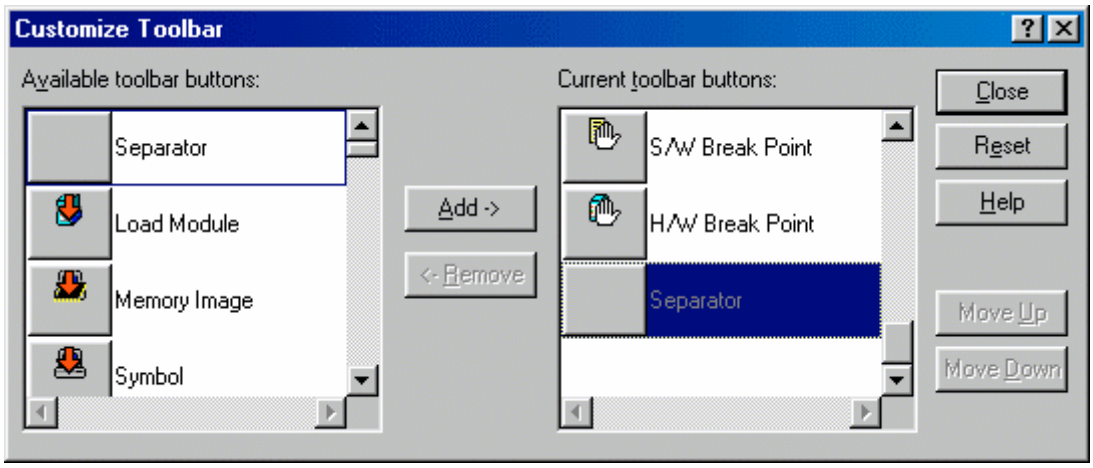
The toolbar buttons on each window can be customized. To customize any button, right-click on the window's toolbar. The popup menu shown below appears.



Flat style	Flattens the button when checked.
Text labels	Shows text below the button when checked.
Labels on right side	Shows text to the right of the button when checked.
Customize...	Opens a toolbar customize dialog box.

3.7.1 Assigning Buttons to the Toolbar

To do this, select the menu “Customize...” or double-click an area in which no button is placed in the tool bar in the window. The Customize Tool Bar dialog opened.



- The buttons corresponding to the option menus in the window are provided.
- You can only add the buttons, which are enabled in each window. You cannot add the buttons for other windows.

3.7.1.1 Adding a button

Click the buttons to be added in the "Available Button" list box at right of the Customize Tool Bar dialog. Then, click the "Add" button in the center of the dialog.

3.7.1.2 Deleting a button

Click the button to be deleted in "Tool Bar Button" list box at left of the Customize Tool Bar dialog. Then, click the "Delete" button in the center of the dialog.

3.7.1.3 Changing the button display order

Use the "Up" button or "Down" button at right of the dialog to change the display order. Click the button for which the display order is to be changed in the "Tool Bar Button" list box at left of the

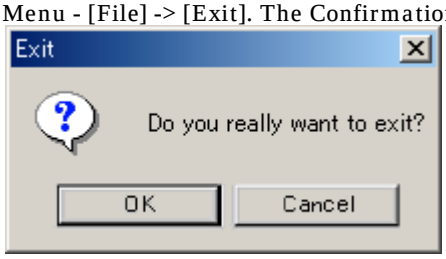
Customize Tool Bar dialog. Then, click the "Up" or "Down" button to change the display position.

3.7.1.4 Resetting the display buttons

Click the "Help" button at right of the dialog. The display buttons are reset to the default settings.

4. Ending the Debugger

To ending the debugger, select Menu - [File] -> [Exit]. The Confirmation dialog opens.



When ending the KD38, click the "OK" button.

"Other Tab of Customize Dialog"
To keep the dialog closed, refer to “3.6.1 Display the Termination Confirmation Dialog”.

[MEMO]

Reference

1. Windows / Dialogs

- Windows

The window of this debugger is shown below.

Window Name
KD38 Window
Program Window
Source Window
Register Window
Memory Window
Dump Window
RAM Monitor Window
ASM Watch Window
C Watch Window
Local Window
File Local Window
Global Window
Script Window
GUI Input Window
GUI Output Window

- Dialogs

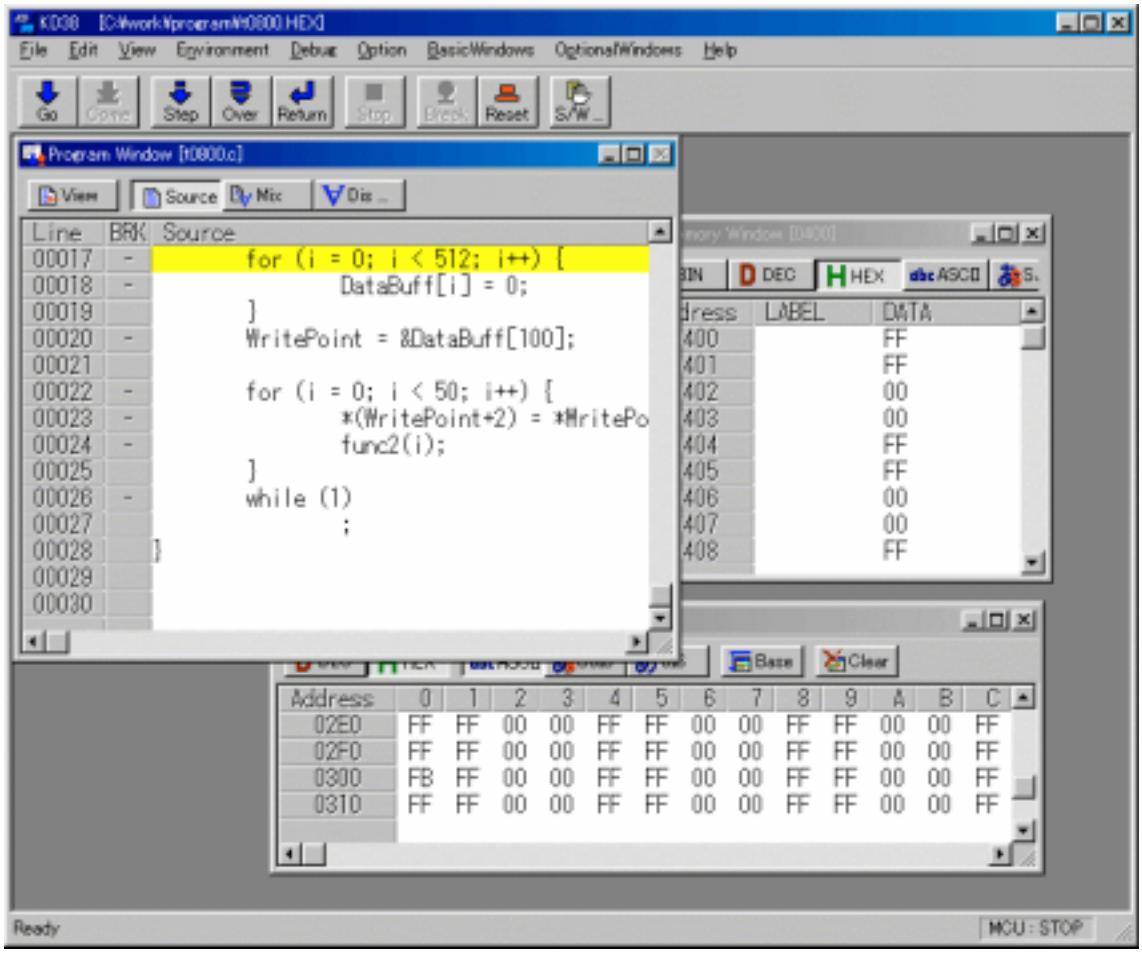
The dialog of this debugger is shown below.

Dialog
S/W Break Point Setting Dialog Box

1.1 KD38 Window

The KD38 Window is the main window for KD38. This window displays the main commands on a toolbar. You can click on the buttons on this toolbar to run the target program in normal or one-step mode. The main display area accommodates windows such as the Target Program Window.

1.1.1 Configuration of KD38 Window



- The main commands, such as execution/stop of the target program and step execution, are located to the tool bar.
- The Option menu is dependent on the active window.
  When the active window is changed, the Option menu is automatically changed.
- The status bar at the bottom of the KD38 window shows the following information:
  - Explanation/display of menus and buttons
  - Execution state of the target program (during execution or execution stopped)

1.1.2 Tool Bar

A basic operation is allocated to the toolbar.

Button	Name	Contents
	Go	Execute target Program.
	Come	Execute the target program from the value in the program counter to the position of the cursor.
	Step	One-step execution of target program.
	Over	Step over function/subroutine call.
	Return	Run the program up to the higher routine.
	Stop	Stop execution of the target program.
	Break	Set S/W breakpoint.
	Reset	Set H/W breakpoint.
	SW	Set S/W breakpoint.

1.1.3 Option

In the KD38 window, the following menus are prepared.

File Operation

Menu	Menu Options	Function
File	Download	Download target program
	Load Module...	Download machine language data and debugging information
	Memory Image...	Download only machine language data
	Symbol...	Download only debugging information
	Rom Data...	Additional download machine language data
	Reload...	Reload target program
	Upload...	Upload target program
	Save Disasm...	Save disassembly result
	(Download File)	List the file name of target program downloaded
	Exit	Terminate KD38

Editing

Menu	Menu Options	Function
Edit	Copy	Copy character strings specified to clipboard.
	Paste	Paste character strings of clipboard.
	Cut	Cut character strings specified to clipboard.
	Delete	Cut character strings specified.
	Undo	Undo of edit.
	Find…	Find character strings

Display

Menu	Menu Options	Function
View	Tool Bar	Switch display or non-display of toolbar
	Status Bar	Switch display or non-display of status bar
	Tool Bar(Child)	Switch display or non-display of toolbar (child window)

Setup

Menu	Menu Options	Function
Environment	Init…	Environment setup(open the Init dialog box)
	Start Up…	Startup function settings
	Customize…	Open Customize dialog box

Debugging (Basic)

Menu	Menu Options	Function
Debug	Go Go Go Option...	Start target program Run from current program counter Run from specified address
	GoFree	Free-run target program
	Come	Run to cursor position
	Step Step Step Option...	Step execution Execute one step Execute specified No. of steps
	Over Over Over Option…	Over-step execution Execute one over-step Execute specified No. of over-steps
	Return	Execute until return from current subroutine
	Reset	Reset target program
	Stop	Stop target program
	Break Point S/W Break Point... Break	Set break point Open S/W Break Point Setting dialog box Set/cancel software break at cursor
	Scope...	Open Scope Setting dialog box
	Make	Make target program

Debugging (Option)

Menu	Menu Options	Function
Option	The content of option menu depends on the active window. The content of the menu changes automatically when an active window changes. Please refer to the reference of each window for the content of the menu of each window.	

Window Operations (Basic Window)

Menu	Menu Options	Function
Basic Windows	Cascade	Cascade windows
	Title	Tile windows
	Arrange Icon	Arrange icons
	Program Window	Make Program Window active
	Source Window	Open Source Window
	Register Window	Open Register Window
	Memory Window	Open Memory Window
	Dump Window	Open Dump Window
	RAM Monitor Window	Open RAM Monitor Window
	ASM Watch Window	Open ASM Watch Window
	C Watch Windows	Open C (language-level) Watch Window
	C Watch Window	Open C Watch Window
	Local Window	Open Local Window
	File Local Window	Open File Local Window
	Global Window	Open Global Window
	Script Window	Open Script Window

Window Operations (Optional Window)

Menu	Menu Options	Function
	GUI Windows	GUI Widows
	GUI Input Window	Open GUI Input Window
	GUI Output Window	Open GUI Output Window

Help

Menu	Menu Options	Function
Help	Contents	Display Help
	Active Window	Display Help of Active Window
	About...	Display version information

1.2 Program Window

The Program window always displays the source file corresponding to the current program counter position.
This window is opened automatically at start. The background of the program counter position is displayed in yellow.
This window allows you to execute the source program up to the cursor position, set/reset the software breakpoint, and perform line assemble.
The Program window provides the three display modes as below:

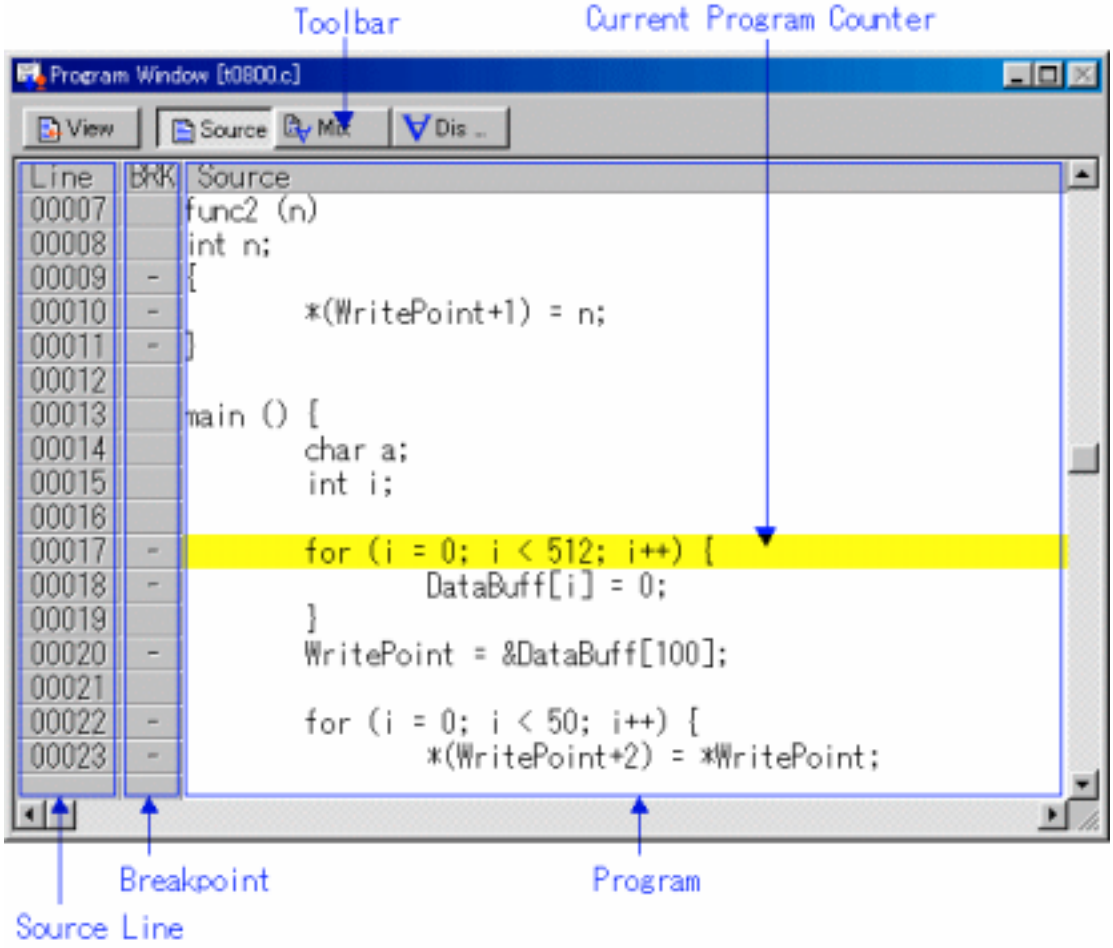
- Source display mode
  Displays the source file of the target program.Can also be used to edit the source file.
- Disassemble Mode
  Displays the disassemble result of the target program.
- MIX display mode
  Displays the source file of the target program and its disassemble result in a mixed style.

1.2.1 Configuration of Source Display Mode

The program window has the following two source display modes. These display modes can be changed from menus on the program window.

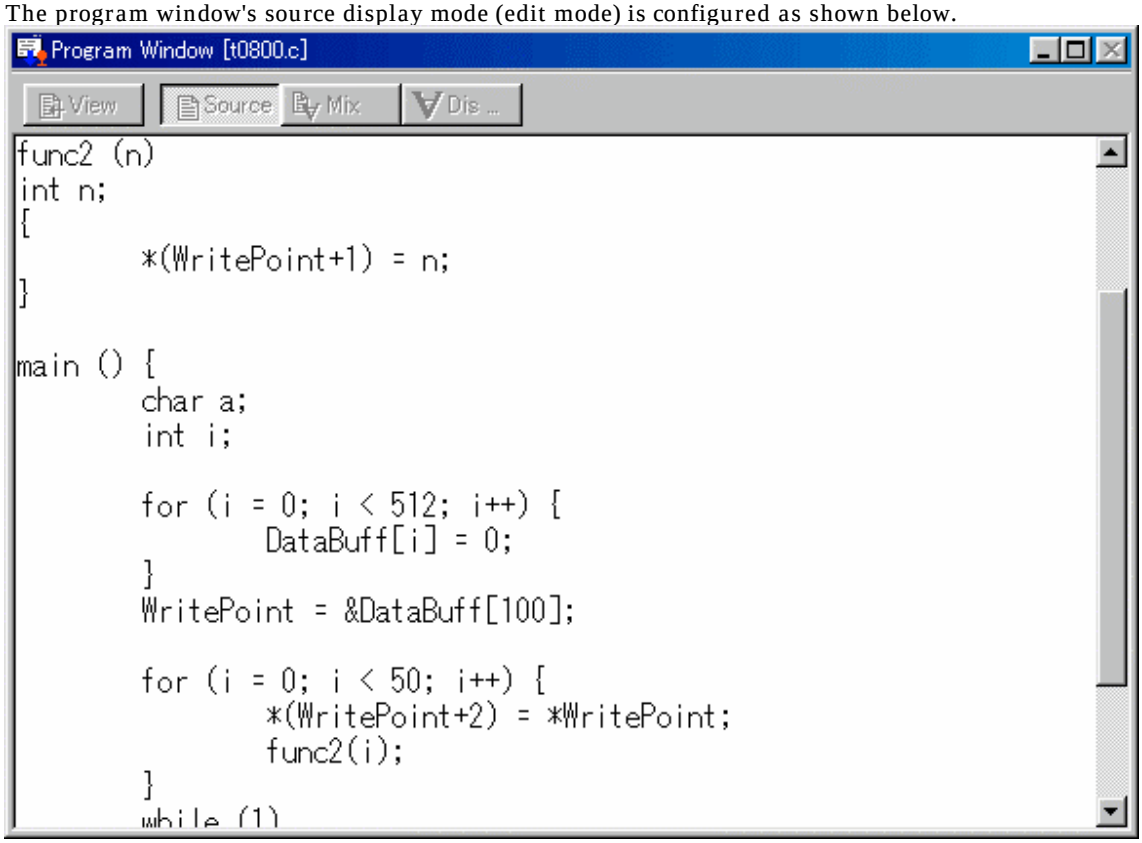
- Debug mode
  This mode is used to debug (e.g., run or stop) the target program.
- Edit mode
  This mode is used to edit the source file.

The program window's source display mode (debug mode) is configured as shown below.



- You can switch "Display/Hide" for the line number display area / address display area.
- You can change the source file to be displayed by double-clicking the line number display area.
- You can change the display start address/display start line by double-clicking the address display area.
- You can set/reset the breakpoint by clicking (or double-clicking) the breakpoint display area.
- By staying the mouse cursor on a C language variable for a given period of time (about 0.5 second), the variable data is popped up.
- You can drag the function name and then click the mouse right button to display the source file corresponding to the function.
- You can drag the C language variable and then click the mouse right button to register the variable as the C watch point.
- You can drag the assembler symbol and then click the mouse right button to register the symbol as the ASM watch point.
- You can open the displayed source file on the editor (You must have registered the editor name).
- The source file being displayed can be edited on the window.
- You can line-assemble the clicked position.

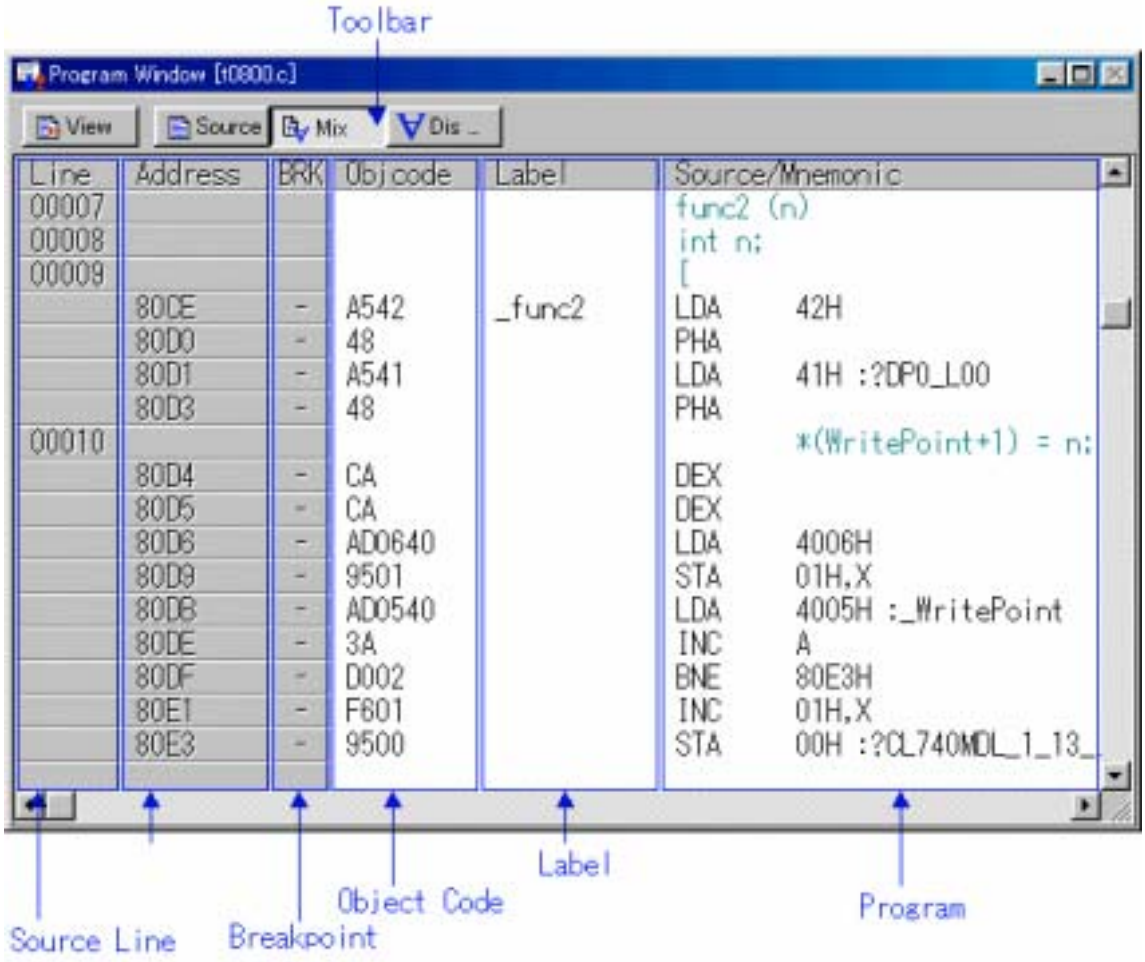
The program window's source display mode (edit mode) is configured as shown below.



- The line number display, address display, and breakpoint display areas are not shown.
- The right-click menu changes for exclusive use in edit mode.
- The status bar on the KD38 window shows the line and column numbers of the cursor position.

1.2.2 Configuration of MIX Display Mode

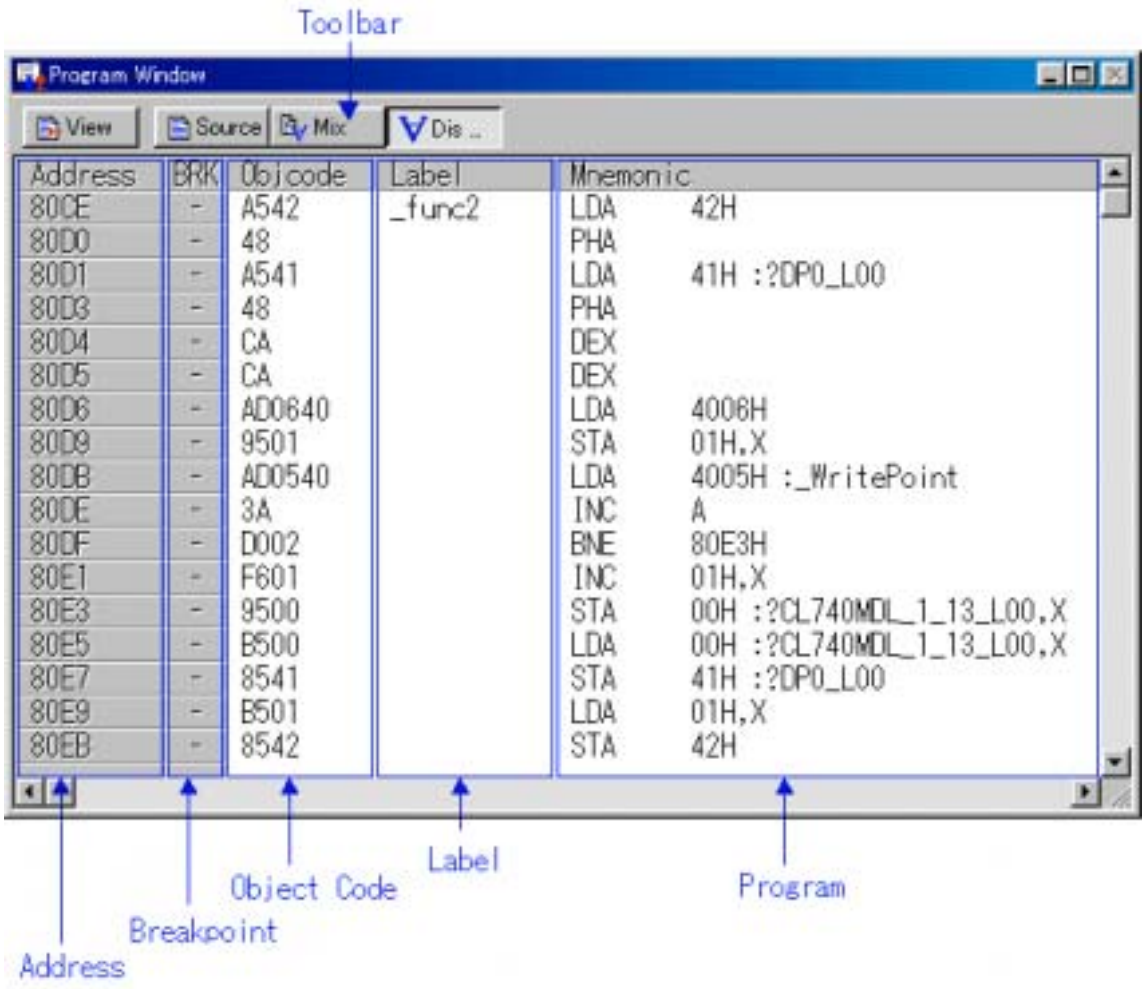
The mix display mode of the window is the following configurations.



- You can switch "Display / Hide" for the line number display area / address display area / object code display area.
- You can change the source file to be displayed by double-clicking the line number display area.
- You can change the display start address / display start line by double-clicking the address display area.
- You can set / reset the breakpoint by clicking (or double clicking) the breakpoint display area.
- You can change the display ratio between the object code display area and the label display area, and between the label display area and the program display area, using the mouse.
- You can open the displayed source file on the editor (You must have registered the editor name).
- The MIX display result can be saved as a text file.
- You can line-assemble the clicked position.
- You can scroll the display up/down in units of source line.

1.2.3 Configuration of Disassemble Display Mode

The disassemble display mode of the window is the following configurations.



- You can switch "Display / Hide" for the address display area/object code display area.
- You can change the display start address by double-clicking the address display area.
- You can set / reset the breakpoint by clicking (or double clicking) the breakpoint display area.
- You can change the display ratio between the object code display area and the label display area, and between the label display area and the program display area, using the mouse.
- You can line-assemble the clicked position.

1.2.4 Extended Menus

The Program window provides the following menu when being active (This menu is called Program window option).

Menu	Menu Options	Function
Option	Font...	Change font
	TAB...	Set source file display tabs
	Color...	Change display color
	View	Change contents of display
	Source...	Display from specified source file or function
	Address...	Display from specified address or line No
	Program Counter	Display from current program counter
	Mode	Switch display mode
	Source Mode	Switch to source display mode
	Mix Mode	Switch to MIX display mode
	Disasm Mode	Switch to disassemble display mode
	Layout	Set layout
	Line Area	Turn on / off line No. area
	Address Area	Turn on / off address area
	Code Area	Turn on / off object code area
	Line Assemble...	Open Line Assemble dialog
	Save Mix…	Saves MIX display result
	Edit	Edit functions
	On	Turns editing on or off
	Save	Saves the edited contents by overwriting
	Save As…	Saves the edited contents with another name
	Save All	Saves all of the edited contents by overwriting

1.2.5 Shortcut Menu

The Program window provides the shortcut menu by clicking the mouse right button within the window (This menu is called Program window right-click menu).
The menu content varies depending on the clicked position.

- When right-clicking the line number display area or address display area:
  The shortcut menu same as the option menu appears.
- When right-clicking the breakpoint display area:
  The shortcut menu does not appear.
- When right-clicking other area:
  The following shortcut menu appears.

(Debug Mode)

Menu	Menu Options	Function
Right-Click	Jump to function	Display the selected function
	Open Source Window	Display the selected function(by Source Window)
	Add C Watch...	Register the C watch point on selected variable
	Add C Watch Pointer…	Register the C watch point on selected pointer variable
	Add ASM Watch…	Register the ASM watch point on selected symbol
	BitAdd ASM Watch…	Register the ASM watch point on selected bit symbol
	Open Editor	Open the source file by the editor
	Line Assemble...	Open the Line Assemble dialog
	Save Mix…	Saves MIX display result
	Edit	Edit functions
	On	Turns editing on or off

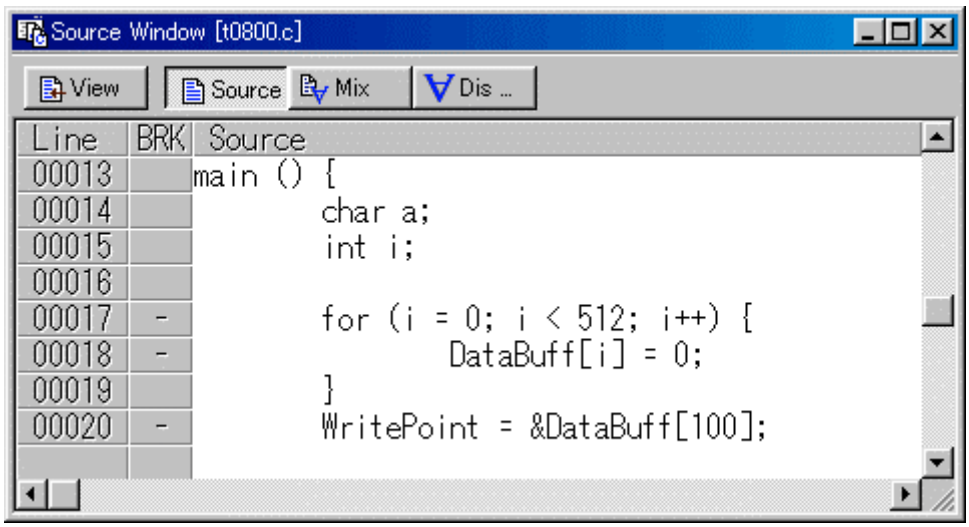
(Edit Mode)

Menu	Menu Options	Function
Right-Click	Copy	Copy character strings specified to clipboard.
	Paste	Paste character strings of clipboard.
	Cut	Cut character strings specified to clipboard.
	Delete	Cut character strings specified.
	Undo	Undo of edit.
	Find	Find character strings.
	Font	Change font.
	Tab	Set source file display tabs.
	Edit	Edit functions
	On	Turns editing on or off
	Save	Saves the edited contents by overwriting
	Save As…	Saves the edited contents with another name
	Save All	Saves all of the edited contents by overwriting

1.3 Source Window

The Source window continuously displays any position of the source file. (The Program window always displays the source file corresponding to the current program counter position.)
When the program counter points the displayed source file position, its background is displayed in yellow.
Like the Program window, the Source window allows you to execute the source program up to the cursor position, set/reset the software breakpoint and perform line-assemble.
You can open up to 30 Source windows.

1.3.1 Configuration of Source Window

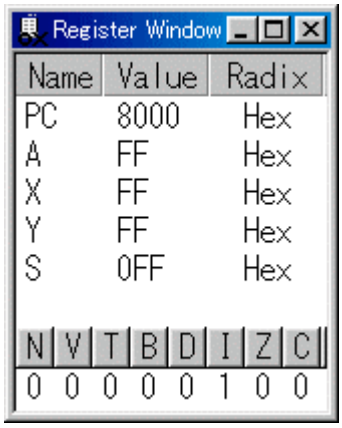


The Source Window configuration, toolbar and option menu is the same as that in the Program Window.

1.4 Register Window

The Register window displays the register data and flag data. You can change a register/flag value from the window.

1.4.1 Configuration of Register Window



- If a register/flag value is changed, the value is displayed in red.
- Double-clicking the register display line opens a dialog, which allows you to change a register value.
- You can change a flag value by clicking the button corresponding to the flag.
- You can change the display ratio between the register name display area and the register value display area, and between the register value display area and the radix point display area, using the mouse.

1.4.2 Extended Menus

The Register window provides the following menu when being active (This menu is called Register window option).

Menu	Menu Options	Function
	Layout	Set layout
	Hide Radix	Turn on/off radix
	Hide FLAGs	Turn on/off flags display area
	Font...	Change font

1.4.3 Shortcut Menu

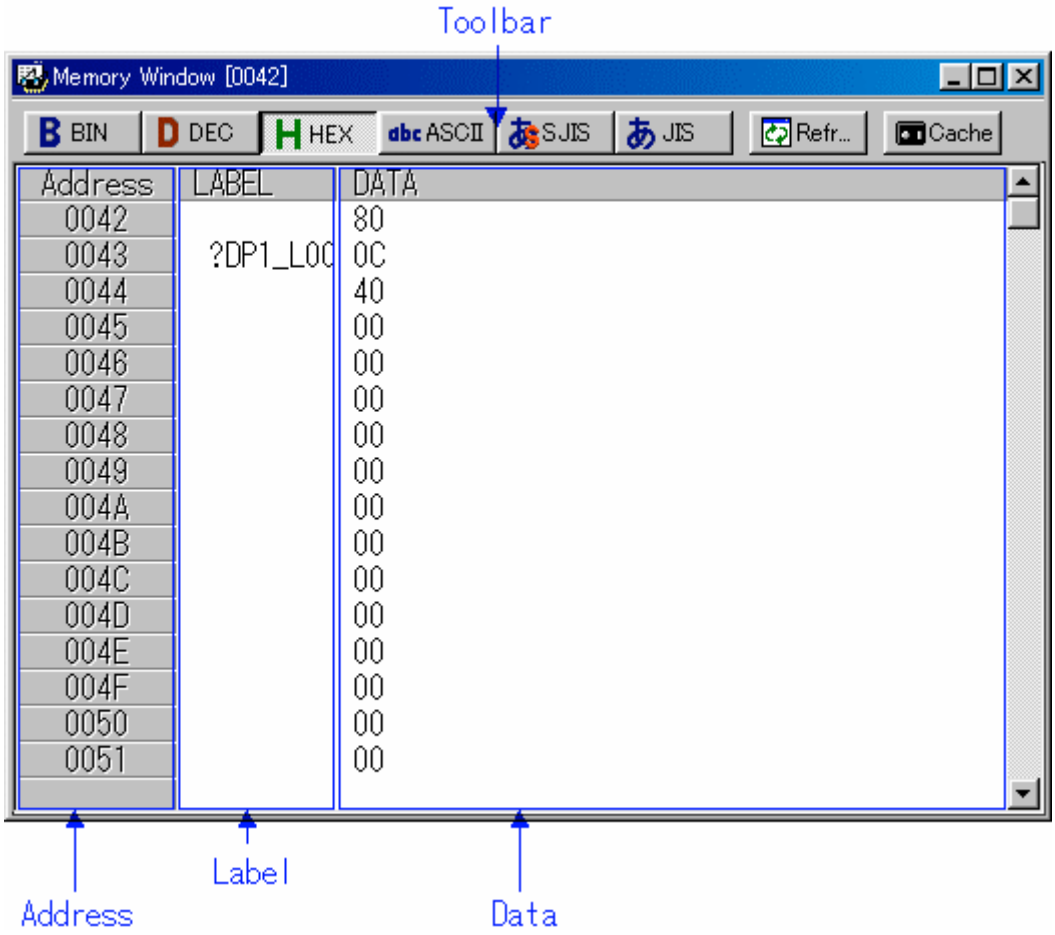
Press the right button on the register display area in Register Window to display shortcut menu.

Menu	Menu Options	Function
Right Click	Hex	Display in hexadecimal
	Dec	Display in decimal
	Bin	Display in binary
	Layout	Set layout
	Hide Radix	Turn on/off radix
	Hide FLAGs	Turn on/off flags display area
	Font...	Change font

1.5 Memory Window

The Memory Window displays the contents of contiguous memory in "address", "label", and "data (contents of memory)" formats.
The display is updated after each command is executed. Data can be displayed in binary, decimal, hexadecimal, and ASCII. You can open up to 30 Memory Windows.
You can use the Memory Windows to modify the contents of memory, and also to fill and move specified blocks of memory.

1.5.1 Configuration of Memory Window



- You can select the display data from 1 byte, 2 bytes, binary, decimal, hexadecimal, ASCII, SJIS and JIS (The display data is set to the 1 byte hexadecimal format by default).
- You can select the window open menu while holding down the Ctrl key to specify the display start address.
- Double-clicking the address display area opens a dialog, which allows you to change the display start address.
- A dialog, which allows you to change the memory data at the clicked address by double-clicking the label display area/memory data, display area.
- A memory cache is provided to speed up display (By default, cache is set to "Disable").
- You can change the display ratio between the label display area and the memory data display area using the mouse.
- Can keep track of the stack pointer position. (Not tracked by default.)

1.5.2 Option Menu

The Memory window provides the following menu when being active (This menu is called Memory window option).

Menu	Menu Options	Functions
Option	Font	Change font
	View	Change contents of display
	Scroll Area...	Specify scroll range
	Address...	Specify display starting address
	S	Starting address to value of Stack Pointer.
	Followed Stack Pointer…	Keep tracking of the stack pointer position.
	Data Length	Specify data length
	Byte	Display in 1-byte units
	Word	Display in 2-byte units
	Radix	Specify data radix
	Bin	Display in binary
	Dec	Display in decimal
	Hex	Display in hexadecimal
	ASCII	Display as ASCII characters
	SJIS	Display as SJIS characters
	JIS	Display as JIS characters
	Refresh	Refresh display
	Debug	Set memory contents
	Set...	Set data at specified address
	Fill...	Fill specified memory block with data
	Move...	Move specified memory block to specified Address
	Cache On	Use the cache of memory

1.5.3 Shortcut Menu

The Memory window provides the shortcut menu by clicking the mouse right button in the window.

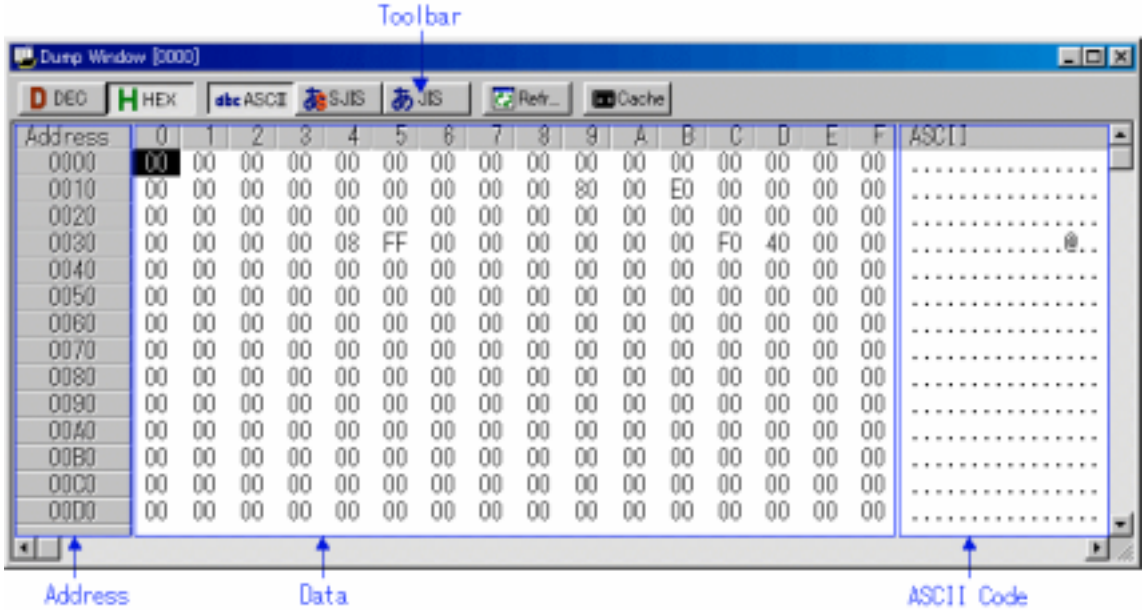
Menu	Menu Options	Functions
Right-Click	Set…	Set data at specified address.
	Fill…	Fill specified memory block with data.
	Move	Move specified memory block to specified Address.
	Byte	Display in 1-byte units
	Word	Display in 2-byte units
	Radix	Specify data radix
	Bin	Display in binary
	Dec	Display in decimal
	Hex	Display in hexadecimal
	ASCII	Display as ASCII characters
	SJIS	Display as SJIS characters
	JIS	Display as JIS characters
	Register	Display the specified register.
	S	Starting address to value of Stack Pointer.
	Followed Stack Pointer	Keep tracking of the stack pointer position.
	Refresh	Refresh display.
	Scroll Area...	Specify scroll range.
	Font...	Change font.

1.6 Dump Window

The Dump Window displays the contents of contiguous memory in dump format.
The display is updated after each command is executed. You can open up to 30 Dump Windows.
You can use the Dump Windows to modify the contents of memory, and also to fill and move specified blocks of memory.

1.6.1 Configuration of Register Window

The display is updated after each command is executed. You can open up to 30 Dump Windows.
You can use the Dump Windows to modify the contents of memory, and also to fill and move specified blocks of memory.



- You can select the display data from 1 byte, 2 bytes, decimal, hexadecimal, ASCII, SJIS and JIS (The display data is set to the 1 byte hexadecimal format by default).
- You can select the window open menu while holding down the Ctrl key to specify the display start address.
- Double-click the address display area to change the display starting address.
- Double-click a label or the memory display area to change the contents of memory.
- A memory cache is provided to speed up display (By default, cache is set to "Disable").

1.6.2 Extended Menus

The Dump window provides the following menu when being active (This menu is called Dump window option).

Menu	Menu Options	Function
Option	Font	Change font
	View	Change contents of display
	Scroll Area...	Specify scroll range
	Address...	Specify display starting address
	Data Length	Specify data length
	Byte	Display in 1-byte units
	Word	Display in 2-byte units
	Radix	Specify radix
	Dec	Display in decimal
	Hex	Display in hexadecimal
	ASCII	Display as ASCII characters
	SJIS	Display as SJIS characters
	JIS	Display as JIS characters
	Refresh	Refresh display
	Debug	Set memory contents
	Set...	Set data at specified address
	Fill...	Fill specified memory block with data
	Move...	Move specified memory block to specified Address
	Cache On	Use the cache of memory

1.6.3 Shortcut Menu

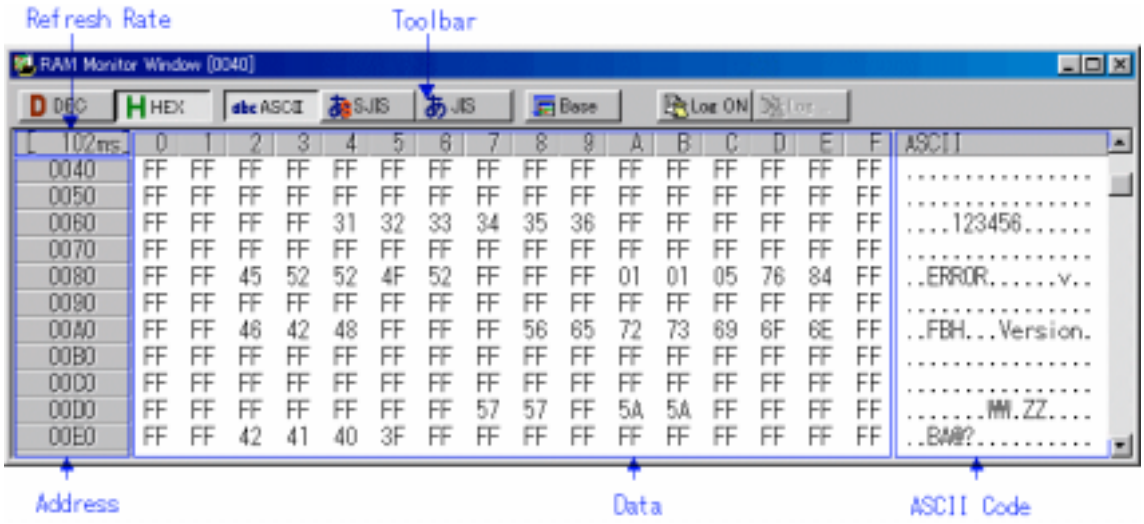
The Dump window provides the shortcut menu by clicking the mouse right button in the window.

Menu	Menu Options	Functions
Right-Click	Set...	Set data at specified address.
	Fill...	Fill specified memory block with data.
	Move	Move specified memory block to specified Address.
	Byte	Display in 1-byte units
	Word	Display in 2-byte units
	Radix	Specify data radix
	Bin	Display in binary
	Dec	Display in decimal
	Hex	Display in hexadecimal
	ASCII	Display as ASCII characters
	SJIS	Display as SJIS characters
	JIS	Display as JIS characters
	Refresh	Refresh display.
	Scroll Area...	Specify scroll range.
	Font...	Change font.

1.7 RAM Monitor Window

The RAM Monitor Window displays the contents of memory in the RAM monitor area in dump format. Up to 10 RAM monitor windows can be opened. The display is updated at constant intervals (default = 1000ms) during execute ion of the target program. You can set any contiguous address area as the RAM monitor area.

1.7.1 Configuration of RAM Monitor Window



- The default RAM monitor area is from 0h to 3FFh. By clicking the Area button, a dialog is opened, which allows you to change the RAM monitor area.
- By double-clicking the address display area, a dialog is opened, which allows you to change the display start address. If the specified address is outside the RAM monitor area, the RAM monitor area is also changed.
- The update interval during execution of the target program is displayed in the update interval display field. (When the target is stopped, a character string "Address" is displayed.)
- The update interval may be delayed from the specified update interval depending on the operational factors (listed below).
  - Host machine performance
  - Window size (memory display capacity)
  - Number of memories in which the values have been changed
- You can select the display data from 1 byte, 2 bytes, decimal, hexadecimal, ASCII, SJIS and JIS (The display data is set to the 1 byte hexadecimal format by default).

ATTENTION

- In order that the RAM monitor of KD38 may stop program execution and may acquire data, real-time nature is not guaranteed.

1.7.2 Extended Menus

The RAM Monitor window provides the following menu when being active (This menu is called RAM Monitor window option).

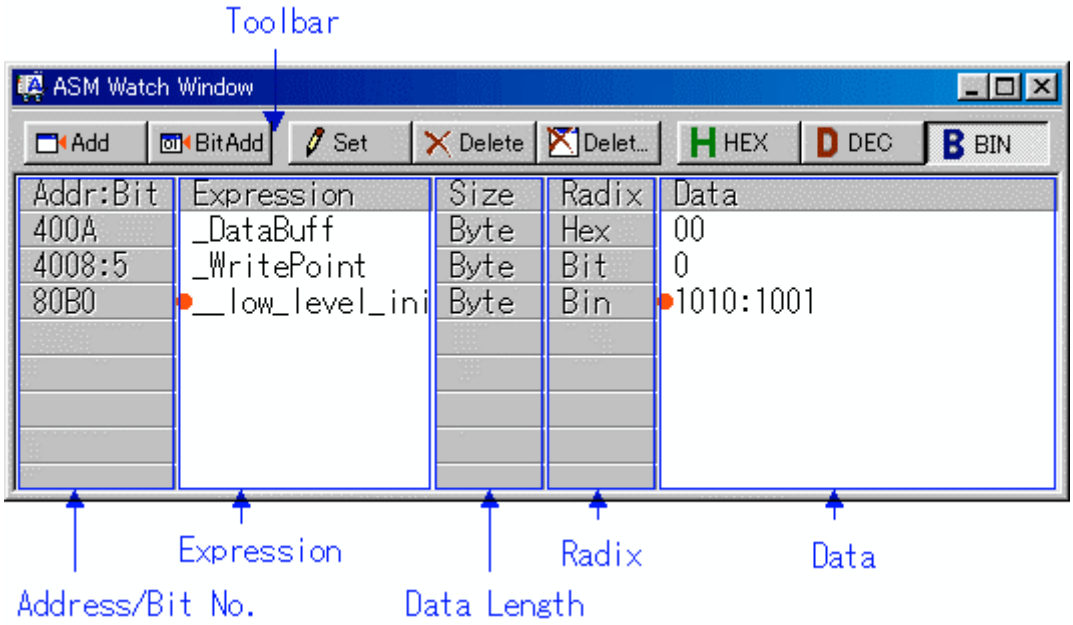
Menu	Menu Options	Functions
Option	Font	Change font
	View	Change contents of display
	Address...	Display from specified address
	Data Length	Specify data length
	Byte	Display in 1-byte units
	Word	Display in 2-byte units
	Radix	Specify radix
	Dec	Display in decimal
	Hex	Display in hexadecimal
	ASCII	Display as ASCII characters
	SJIS	Display as SJIS characters
	JIS	Display as JIS characters
	Layout	Set layout
	Ascii	Turn on/off ASCII strings
	RAM Monitor Area...	Set RAM monitor area
	Sampling period...	Set sampling period for RAM monitor

These menus can be selected even by the short cut menu by a right click in the window.

1.8 ASM Watch Window

The ASM Watch Window allows you to check the values at any specified address.
You can specify the point to watch as an address (symbol or global variable), as an address and bit No., or as a bit symbols.
The display is updated after each command is executed.

1.8.1 Configuration of ASM Watch Window



- An address to be referenced is called watch point. You can register one of the following as the watch point:
  - Address (can be specified with symbol)
  - Address + Bit number
  - Bit symbol
- By double-clicking the radix point display area, the radix display changes (Hex -> Dec -> Bin).
- The registered watch point information is saved in the environment setting file when closing the ASM Watch window. When re-opening the file, the information is automatically registered.
- When you specify a symbol/bit symbol as the watch point, the debugger re-calculates the address expression when downloading the target program and displays the memory data using new addresses.
- A disabled watch point is displayed as "--<not active>--".

1.8.2 Extended Menus

The ASM Watch window provides the following menu when being active. (This menu is called ASM Watch window option.)

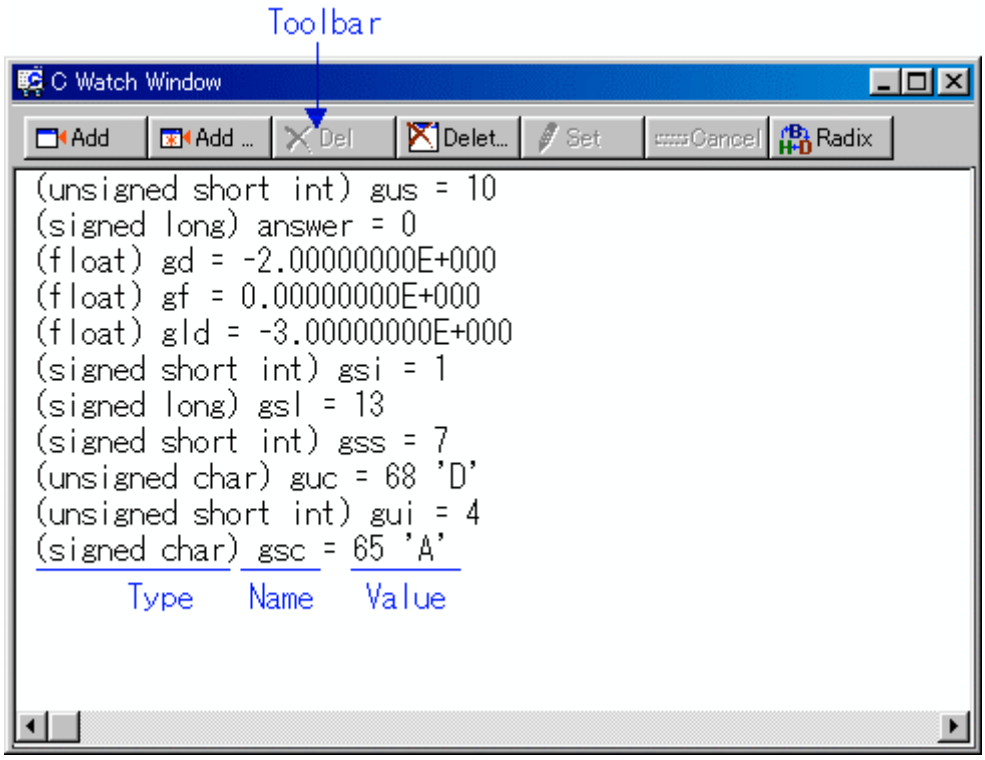
Menu	Menu Options	Functions
Option	Font	Change font.
	Watch	Register / delete watch point.
	Add...	Register watch point.
	Bitadd...	Register bit-level watch point.
	Set...	Set new data to be written to selected watch point.
	Del	Delete selected watch point.
	Del All...	Delete all watch points.
	Refresh	Refresh display.
	Radix	Change display radix.
	Bin	Display value at selected watch point in binary.
	Dec	Display value at selected watch point in decimal.
	Hex	Display value at selected watch point in hexadecimal.
	Layout	Set layout.
	Address Area	Turn on/off address/bit area.
	Size Area	Set color of access attribute display.
	RAM Monitor	Display RAM monitor.
	Sampling period...	Set sampling period for RAM monitor.
	File	Save/Load the watch points.
	Save...	Save the watch points.
	Load...	Load the watch points.

These menus can be selected even by the short cut menu by a right click in the window.

1.9 C Watch Window

The C Watch Window displays C expressions and their values (results of calculations).
The C expressions displayed in the C Watch Window are known as C watchpoints. The displays of the results of calculating the C watchpoints are updated each time a command is executed.
When RAM monitor function is effective and the C watch points are within the RAM monitor area, the displayed values are updated during execution of the target program.

1.9.1 Configuration of C Watch Window



- A C language expression to be referenced is called C watch point. You can register one of the following as the C watch point:
  - C symbol
    Variable name and function name defined by the C language source program
  - C language expression
    C symbols combined with expressions.
- If a C language expression cannot be calculated correctly (for example, when a C symbol has not been defined), it is registered as invalid C watch point.
  It is displayed as "--<not active>--". If that C language expression can be calculated correctly at the second time, it becomes an effective C watch point.
- You can change the display radix by C language expression (Hex -> Dec -> Bin).
- The address display of pointers is fixed to hexadecimal regardless of the display radix.
- You cannot change the values of the C watch points listed below:
  - Floating-point variables
  - Bit field variables
  - Register variables
  - C watch point which does not indicate an address(invalid C watch point)
- The registered C watch point information is saved in the C watch point information file when closing the C Watch window. When re-opening the file, the information is automatically registered.

A C watch point information file is created for each object file that is loaded. (The file includes the object file name information.)

- The order of arrangement can be altered (using the Drag & Drop function).

1.9.2 Extended Menus

The C Watch window provides the following menu when being active. (This menu is called C Watch window option.)

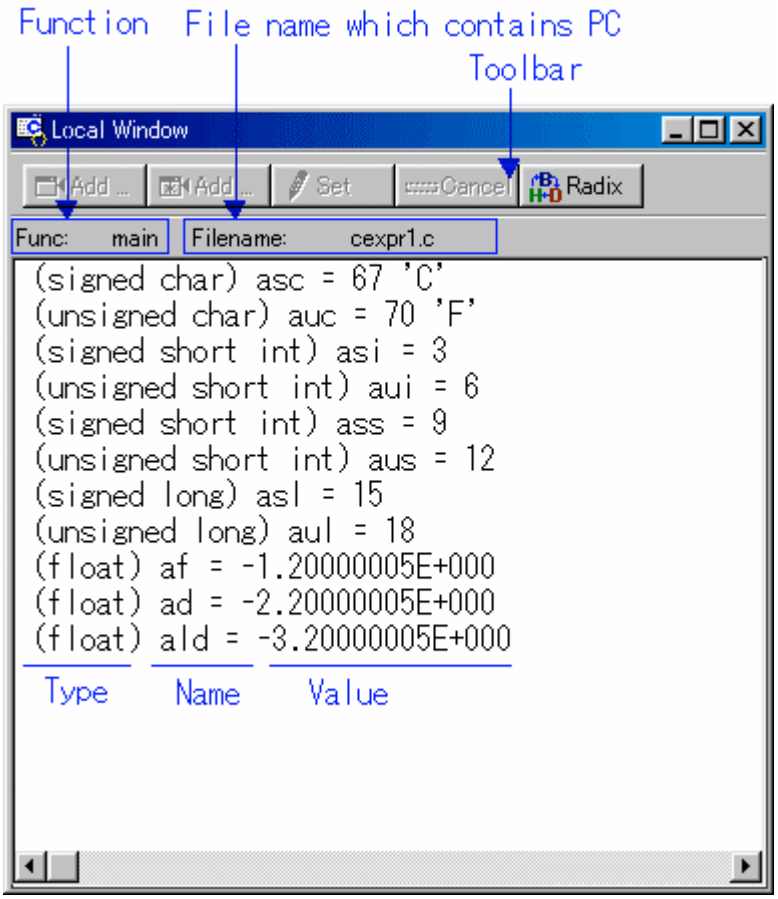
Menu	Menu Options	Functions
Option	Font	Change font.
	Watch	Register/delete C watch point.
	Add	Register C watch point.
	Add Pointer	Register C watch point (pointer).
	Del	Delete selected C watch point.
	Set...	Set new value for selected C watch point.
	Cancel	Cancel selection of C watch point.
	Del All…	Delete all C watch points.
	View	Change contents of display.
	Radix	Change radix.
	Layout	Turn on/off type name.
	Sort	Sort.
	Display String	Display the string / Display character.
	RAM Monitor	Display RAM monitor.
	Enable	Turn on/off RAM monitor area.
	Sampling period...	Set sampling period for RAM monitor.

These menus can be selected even by the short cut menu by a right click in the window.

1.10 Local Window

The Local Window lists local variables in the C function with their values. The display is updated after each command is executed.

1.10.1 Configuration of Local Window



- The window displays a local variable of the function corresponding to the program counter position.
  If the corresponding function is changed by step execution or other operation, the local variable after changing the function is automatically displayed.
- You can register the selected C language variable to the C Watch window as a C watch point.
- The address display such as a pointer is fixed to hexadecimal regardless of the display radix.
- You can change the display radix for each C language variable. (Hex -> Dec -> Bin).

1.10.2 Extended Menus

The Local window provides the following menu when being active. (This menu is called Local window option.)

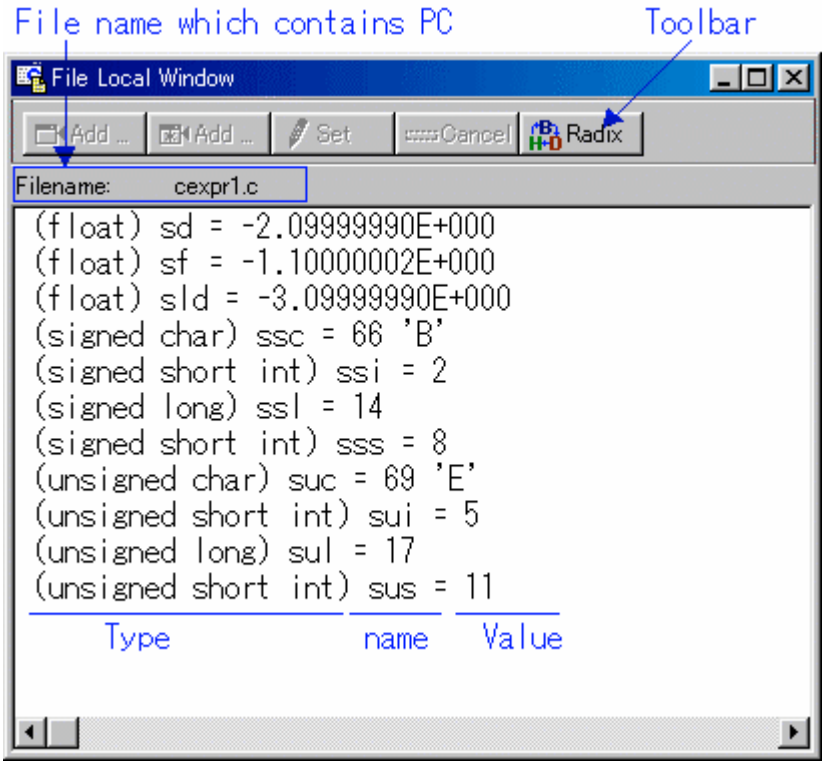
Menu	Menu Options	Functions
Option	Font	Change font.
	Watch	Operations related to C-function.
	Cwatch	Register selected C variable as C watch point.
	Cwatch Pointer	Register pointer of selected C variable as C watchpoint.
	Set...	Set new value for selected C variable.
	Cancel	Cancel selection of C variable.
	View	Change contents of display.
	Radix	Change radix.
	Layout	Turn on/off type name.
	Sort	Sort.
	Display String	Display the string / Display character.

These menus can be selected even by the short cut menu by a right click in the window.

1.11 File Local Window

The File Local Window lists local variables in the C file with their values. The display is updated after each command is executed.
When RAM monitor function is effective and the C watch points are within the RAM monitor area, the displayed values are updated during execution of the target program.

1.11.1 Configuration of File Local Window



- The window displays a file local variable of the function corresponding to the program counter position.
  If the corresponding function is changed by step execution or other operation, the local variable after changing the function is automatically displayed.
- You can register the selected C language variable to the C Watch window as a C watch point.
- The address display such as a pointer is fixed to hexadecimal regardless of the display radix.
- You can change the display radix for each C language variable. (Hex -> Dec -> Bin).

1.11.2 Extended Menus

The File Local window provides the following menu when being active. (This menu is called File Local window option.)

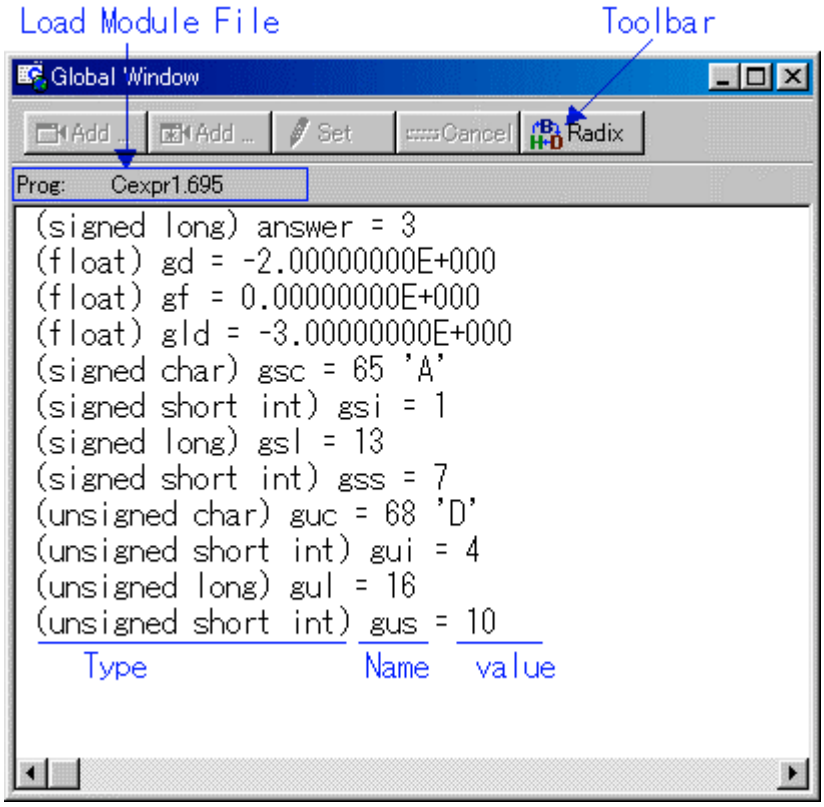
Menu	Menu Options	Functions
Option	Font	Change Fonts.
	Watch	Operations related to C-function.
	Cwatch	Register selected C variable as C watch point.
	Cwatch Pointer	Register pointer of selected C variable as C watchpoint.
	Set...	Set new value for selected C variable.
	Cancel	Cancel selection of C variable.
	View	Change contents of display.
	Radix	Change radix.
	Layout	Turn on/off type name.
	Sort	Sort.
	Display String	Display the string / Display character.
	RAM Monitor	Display RAM monitor.
	Enable	Turn on/off RAM monitor area.
	Sampling period...	Set sampling period for RAM monitor.

These menus can be selected even by the short cut menu by a right click in the window.

1.12 Global Window

The Global Window lists C global variables and their values. The display is updated after each command is executed.
When RAM monitor function is effective and the C watch points are within the RAM monitor area, the displayed values are updated during execution of the target program.

1.12.1 Configuration of Global Window



- You can register the selected C language variable to the C Watch window as a C watch point.
- The address display such as a pointer is fixed to hexadecimal regardless of the display radix.
- You can change the display radix for each C language variable. (Hex -> Dec -> Bin).

1.12.2 Extended Menus

The Global window provides the following menu when being active. (This menu is called Global window option.)

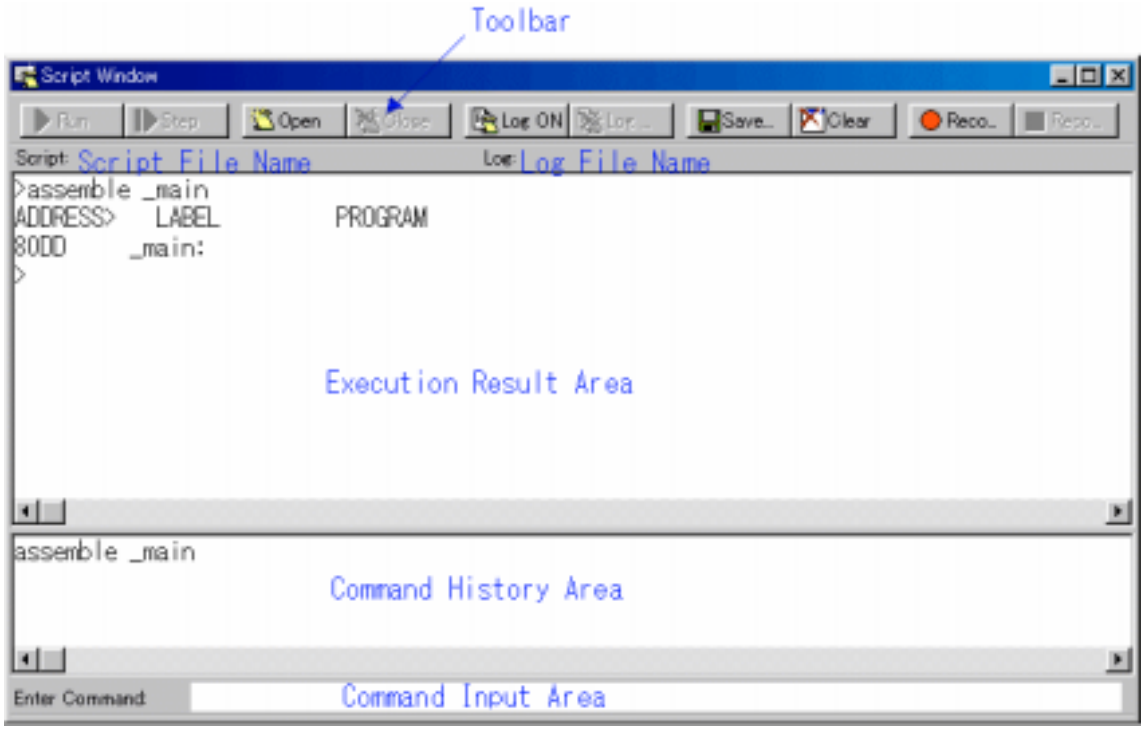
Menu	Menu Options	Functions
Option	Font	Change Font.
	Watch	Operations related to C-function.
	Cwatch	Register selected C variable as C watch point.
	Catch Pointer	Register pointer of selected C variable as C watchpoint.
	Set...	Set new value for selected C variable.
	Cancel	Cancel selection of C variable.
	View	Change contents of display.
	Radix	Change radix.
	Layout	Turn on/off type name.
	Sort	Sort.
	Display String	Display the string / Display character.
	RAM Monitor	Display RAM monitor.
	Enable	Turn on/off RAM monitor area.
	Sampling period...	Set sampling period for RAM monitor.

These menus can be selected even by the short cut menu by a right click in the window.

1.13 Script Window

The Script Window displays the execution of text -format script commands and the results of that execution.
Script commands can be executed using a script file or interactively. You can also write script commands in the script file so that they are automatically executed. The results of script command execution can also be stored in a previously specified log file.

1.13.1 Configuration of Script Window



- The Script Window has a view buffer that stores the results of executing the last 1000 lines. The results of execution can therefore be stored in a file (view file) without specifying a log file.
- When a script file is opened, the command history area changes to become the script file display area and displays the contents of the script file. When script files are nested, the contents of the last opened script file are displayed. The script file display area shows the line currently being executed in inverse vide.
- When a script file is open, you can invoke script commands from the command input area provided the script file is not being executed.
- The Script Window can record the history of the executed commands to a file. This function is not the same as the log function. This function records not the result but only the executed commands, so the saved files can be used as the script files.

1.13.2 Extended Menus

The Script window provides the following menu when being active. (This menu is called Script window option.)

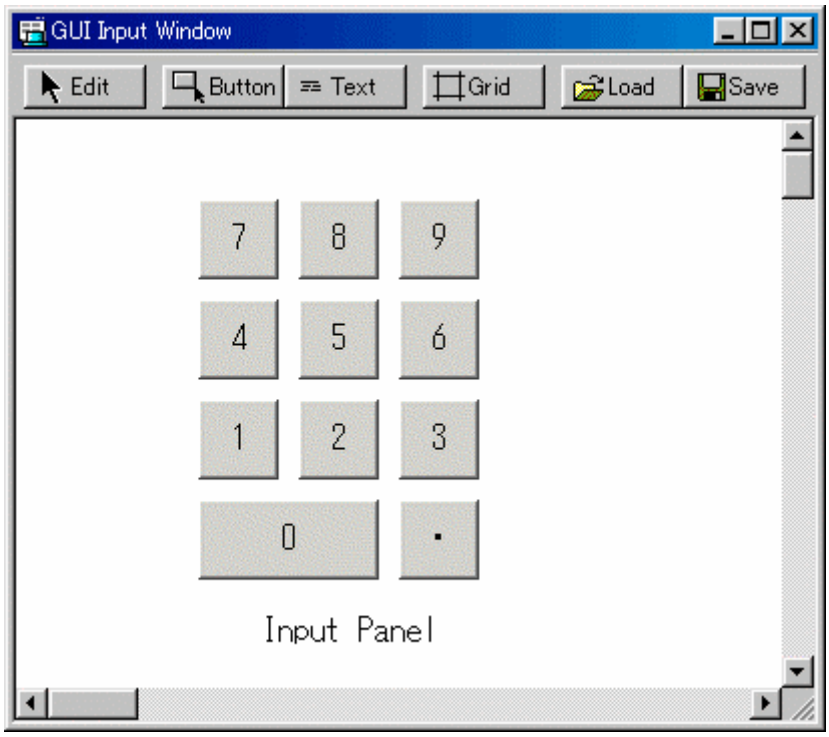
Menu	Menu Options	Functions
Option	Font...	Change font.
	Script	Script file operations.
	Open...	Open script file.
	Run	Run script file.
	Step	One-step execution of script file.
	Close	Close script file.
	View	View buffer operations.
	Save...	Save view buffer file.
	Clear	Clear view buffer.
	Log	Log file operations.
	On...	Open log file (start output to file).
	Off	Close log file (stop output to file).
	Record	Record the executed commands
	On...	Record the executed commands to a file.
	Off	Stop Recording the executed commands.

These menus can be selected even by the short cut menu by a right click in the window.

1.14 GUI Input Window

The GUI Input window allows you for port input by creating a user target system key input panel (button) in the window and clicking the created button.

1.14.1 Configuration of GUI Input Window



You can label (name) the created button.
You can also save the created input panel in a file and reload it.

1.14.2 Extended Menus

The GUI Input window provides the following menu when being active (This menu is called GUI Input window option).

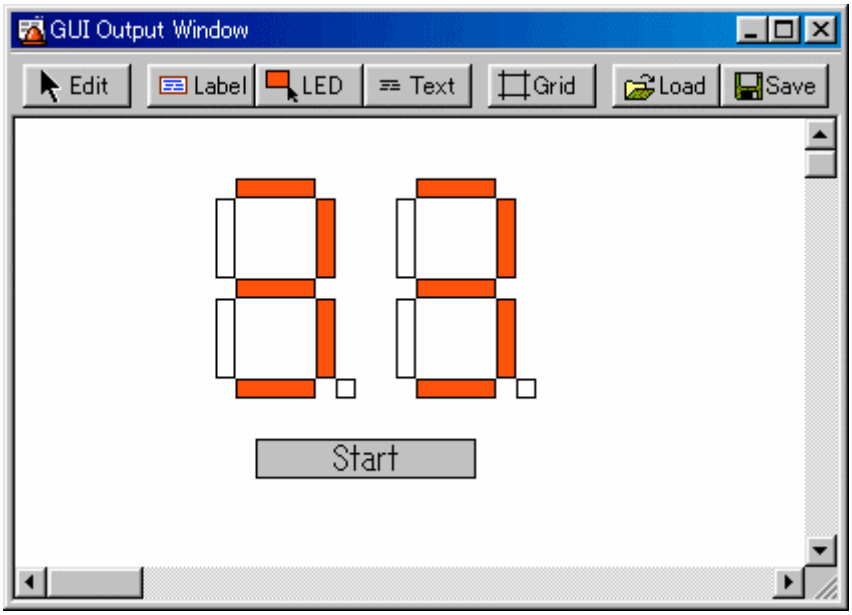
Menu	Menu Options	Function
Option	Set	Edits or moves button
	Del	Deletes button
	Copy	Copies button
	Paste	Pastes button
	Make Button	Creates button
	Make Text	Creates text label
	Display Grid Line	Shows/hides grid line
	Load...	Loads GUI input file
	Save...	Saves GUI input file

These menus can be selected even by the short cut menu by a right click in the window.

1.15 GUI Output Window

The GUI Output window allows you to implement the user target system output panel in the window.

1.15.1 Configuration of GUI Output Window



You can arrange the following parts on the output panel.

- Label (character string)
  Displays/erases a character string specified by the user when any value is written to the specified address (bit).
- LED
  Changes the display color of any area when any value is written to the specified address (bit). (Substitution for LED ON)
- Text
  The text labels.

You can label (name) the created button.
You can also save the created output panel in a file and reload it.

You can set up to 200 address points to the created part.
If different addresses are set to the each parts, you can arrange up to 200 parts.

1.15.2 Extended Menus

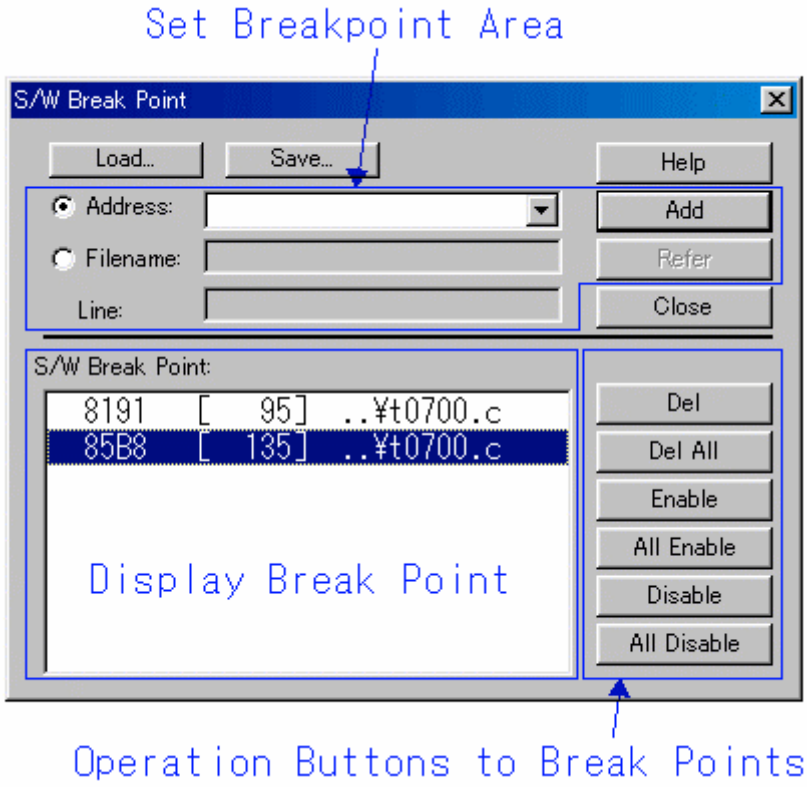
The GUI Output window provides the following menu when being active (This menu is called GUI Output window option).

Menu	Menu Options	Function
Option	Set	Edits or moves parts
	Del	Deletes parts
	Copy	Copies parts
	Paste	Pastes parts
	Make Label	Creates label
	Make LED	Creates LED
	Make Text	Create text label
	Display Grid Line	Shows/hides grid line
	Load...	Loads GUI output file
	Save...	Saves GUI output file
	RAM Monitor	Display RAM monitor
	RAM Monitor Area…	Set RAM monitor area
	Sampling period...	Set sampling period for RAM monitor

These menus can be selected even by the short cut menu by a right click in the window

1.16 S/W Break Point Setting Dialog Box

The S/W Break Point Setting dialog box allows you to set software break points.
Software breaks stop the execution of instructions immediately before the specified break point.
You can also enable and disable each of those break points.



- You can set up to 2 software break points.
- If you have set multiple software breakpoint s, program execution stops when any one soft ware break address is encountered (OR conditions).
- You can continue to set software breakpoints until you click the "Close" button to close the S/W Break Point Setting Dialog Box.
- You can clear, enable or disable software breakpoints selected by clicking in the software breakpoint display area. You can also enable and disable software breakpoints by double clicking on them.
- Click on the "Save" button to save the software break points in the file. To reload software break point settings from the saved file, click the "Load" button. If you load software break points from a file, they are added to any existing break points.

2. Table of Script Commands

The following script commands are prepared.

The commands with yellow color displaying can be executed at run time.

2.1 Table of Script Commands

2.1.1 Execution Commands

Command Name	Short Name	Contents
Go	G	Program execution with breakpoints
GoFree	GF	Free run program execution
Stop	-	Stops program execution
Status	-	Checks the operating status of the MCU
Step	S	Halts for user input until the specified time has elapsed
StepInstruction	SI	Step execution of instructions
OverStep	O	Overstep execution of source lines
OverStepInstruaction	OI	Overstep execution of instructions
Return	RET	Executes a source line return
ReturnInstruction	RETI	Executes an instruction return
Reset	-	Resets the target MCU

2.1.2 File Operation Commands

Command Name	Short Name	Contents
Load	L	Downloads the target program
LoadHex	LH	Downloads an Intel HEX-format file
LoadSymbol	LS	Loads source line/ASM symbol information
LoadIeee	LI	Downloads IEEE-695 absolute-format files
Reload	-	Re-downloads the target program
UploadHex	UH	Outputs data to an Intel HEX-format file

2.1.3 Register Operation Commands

Command Name	Short Name	Contents
Register	R	Checks and sets a register value

2.1.4 Memory Operation Commands

Commnad Name	Short Name	Contents
DumpByte	DB	Displays the contents of memory (in 1-byte units)

DumpWord	DW	Displays the contents of memory (in 2-byte units)
SetMemoryByte	MB	Checks and changes memory contents (in 1-byte units)
SetMemoryWord	MW	Checks and changes memory contents (in 2-byte units)
FillByte	FB	Fills a memory block with the specified data (in 1-byte units)
FillWord	FW	Fills a memory block with the specified data (in 2-byte units)
Move	-	Moves memory blocks

2.1.5 Assemble/Disassemble Commands

Command Name	Short Name	Contents
Assemble	A	Line-by-line assembly
DisAssemble	DA	Disassembles memory contents line by line
Module	MOD	Displays modules names
Scope	-	Sets and checks the effective local symbol scope
Section	SEC	Checks section information
Bit	-	Checks and sets bit symbols
Symbol	SYM	Checks assembler symbols
Label	-	Checks assembler labels
Express	EXP	Displays an assembler expression

2.1.6 Software Break Setting Commands

Command Name	Short Name	Contents
SoftwareBreak	SB	Sets and checks software breaks
SoftwareBreakClear	SBC	Clears software breaks
SoftwareBreakClearAll	SBCA	Clears all software breaks
SoftwareBreakDisable	SBD	Disables software breakpoints
SoftwareBreakDisableAll	SBDA	Disables all software breaks
SoftwareBreakEnable	SBE	Enables software breakpoints
SoftwareBreakEnableAll	SBEA	Enables all software breaks
BreakAt	-	Sets a software breakpoint by specifying a line No.
BreakIn	-	Sets a software breakpoint by specifying a function

2.1.7 Script/Log File Commands

Command Name	Short Name	Contents
Script	-	Opens and executes a script file
Exit	-	Exits the script file
Wait	-	Waits for an event to occur before command input
Pause	-	Waits for user input
Sleep	-	Halts for user input until the specified time has elapsed
Logon	-	Outputs the screen display to a log file
Logoff	-	Stops the output of the screen display to a log file

2.1.8 Program Window Control Commands

Command Name	Short Name	Contents
Func	-	Checks function names and displays the contents of functions

Path	-	Sets and checks the search path
File	-	Checks a filename and displays the contents of that file

2.1.9 C Language Debugging Commands

Command Name	Short Name	Contents
Print	-	Check value of specified C variable expression
Set	-	Set specified data in specified C variable expression

2.1.10 Utility Commands

Command Name	Short Name	Contents
Radix	-	Sets and checks the radix for numerical input
Alias	-	Specifies and checks command alias definitions
UnAlias	-	Cancels the alias defined for a command
UnAliasAll	-	Cancels all aliases defined for commands
Help	H	Displays the help of script commands
Version	VER	Displays the version No.
Date	-	Displays the date
Echo	-	Displays messages
Quit	-	Quits Debugger
CD	-	Specifies and checks the current directory

2.2 Table of Script Commands (alphabetical order)

Command Name	Short Name	Contents
Alias	-	Specifies and checks command alias definitions
Assemble	A	Line-by-line assembly
Bit	-	Checks and sets bit symbols
BreakAt	-	Sets a software breakpoint by specifying a line No.
BreakIn	-	Sets a software breakpoint by specifying a function
CD	-	Specifies and checks the current directory
Date	-	Displays the date
DisAssemble	DA	Disassembles memory contents line by line
DumpByte	DB	Displays the contents of memory (in 1-byte units)
DumpWord	DW	Displays the contents of memory (in 2-byte units)
Echo	-	Displays messages
Exit	-	Exits the script file
Express	EXP	Displays an assembler expression
File	-	Checks a filename and displays the contents of that file
FillByte	FB	Fills a memory block with the specified data (in 1-byte units)
FillWord	FW	Fills a memory block with the specified data (in 2-byte units)
Func	-	Checks function names and displays the contents of functions
Go	G	Program execution with breakpoints
GoFree	GF	Free run program execution
Help	H	Displays the help of script commands
Label	-	Checks assembler labels
Load	L	Downloads the target program
LoadHex	LH	Downloads an Intel HEX-format file
LoadIeee	LI	Downloads IEEE-695 absolute-format files
LoadSymbol	LS	Loads source line/ASM symbol information
Logoff	-	Stops the output of the screen display to a log file
Logon	-	Outputs the screen display to a log file
Module	MOD	Displays modules names
Move	-	Moves memory blocks
OverStep	O	Overstep execution of source lines
OverStepInstruaction	OI	Overstep execution of instructions
Path	-	Sets and checks the search path
Pause	-	Waits for user input
Print	-	Check value of specified C variable expression.
Quit	-	Quits Debugger
Radix	-	Sets and checks the radix for numerical input
Register	R	Checks and sets a register value
Reload	-	Re-downloads the target program
Reset	-	Resets the target MCU
Return	RET	Executes a source line return
ReturnInstruction	RETI	Executes an instruction return
Scope	-	Sets and checks the effective local symbol scope
Script	-	Opens and executes a script file
Section	SEC	Checks section information

Set	-	Set specified data in specified C variable expression
SetMemoryByte	MB	Checks and changes memory contents (in 1-byte units)
SetMemoryWord	MW	Checks and changes memory contents (in 2-byte units)
Sleep	-	Halts for user input until the specified time has elapsed
SoftwareBreak	SB	Sets and checks software breaks
SoftwareBreakClear	SBC	Clears software breaks
SoftwareBreakClearAll	SBCA	Clears software breaks
SoftwareBreakDisable	SBD	Disables software breakpoints
SoftwareBreakDisableAll	SBDA	Disables all software breaks
SoftwareBreakEnable	SBE	Enables software breakpoints
SoftwareBreakEnableAll	SBEA	Enables all software breaks
Status	-	Checks the operating status of the MCU
Step	S	Step execution of source line
StepInstruction	SI	Step execution of instructions
Stop	-	Stops program execution
Symbol	SYM	Checks assembler symbols
UnAlias	-	Cancels the alias defined for a command
UnAliasAll	-	Cancels all aliases defined for commands
UploadHex	UH	Outputs data to an Intel HEX-format file
Version	VER	Displays the version No.
Wait	-	Waits for an event to occur before command input

3. Error Messages

Please click an error number.

No.	Error Message	Notes and Action
0	INTERNAL ERROR:Unset err number	Contact your nearest distributor.

No.	Error Message	Notes and Action
200	Can't open more xxxxx window.	The maximum number of the specified window is already open.
201	Can't Create xxxxx window.	
202	KD38 is already exist.	
203	Project file (xxxxx) is broken.	
204	File not found (xxxxx).	
205	Path not found (xxxxx).	
206	Not enough memory.	
207	Can't execute.	
209	Failed to read/write data to the archive xxxxx (CODE: n).	
210	Failed to read/write data to the file xxxxx (CODE: n).	

No.	Error Message	Notes and Action
400	Can't change view mode.	The display starting address does not match the first line of the source file, or the specified source file cannot be found.
401	Can't find source file (xxxxx).	Specified source file was not found. Use the PATH command, or the [Environment] -> [Customize] menu items to specify the directory containing the source file.
402	Can't find search string (xxxxx).	The specified search string was not found between the starting position and end.
403	Line number of Source File (xxxxx) is over 2.	Because the source file has more lines than can be displayed, the file cannot be displayed in the Source Window. Switch to disassemble display mode.

No.	Error Message	Notes and Action
600	The address value is out of range.	
601	Can not open file(xxxxx).	
602	Can't find file (xxxxx).	
603	Can not save because the line number is over xxxxx.	
604	Can not save as the file (xxxxx). [system error: xxxxx]	
605	Can not edit this file (xxxxx) because it is being	

	used by another process.	

No.	Error Message	Notes and Action
800	Value is out of range.	
801	Can't find the register information file.	
802	There's incorrect line in register information file.	Contact your nearest distributor.
803	Not enough memory.	
804	Description of expression is illegal.	

No.	Error Message	Notes and Action
1000	Address value is out range for scroll area.	
1001	The length of the set data is different from the length of the displayed data.	

No.	Error Message	Notes and Action
1200	Address value is out range for scroll area.	
1201	The length of the set data is different from the length of the displayed data.	

No.	Error Message	Notes and Action
1400	Sampling period value is out of range.	
1401	Address value is out of range.	

No.	Error Message	Notes and Action
1600	Can't add new watch point because it exceeds limit of watch point number. Max number is (num).	
1601	Address value is out of range.	
1602	Data value is out of range.	
1603	Bit value is out of range.	
1604	Can't save watch points.	

No.	Error Message	Notes and Action
1800	There are no symbol information.	
1801	The expression is too long.	
1802	Can't save c watch points.	

No.	Error Message	Notes and Action
2000	Can't open Script File (xxxxx).	
2001	Script File is not open.	
2002	Can't open Log File (xxxxx).	
2003	Can't open more Log File.	
2004	Can't open Log File.	
2005	File (xxxxx) is already log on.	
2006	Can't open View File (xxxxx) for new/add.	
2007	Can't save command history.	

No.	Error Message	Notes and Action
2200	Address value is out of range.	

2201	Data value is out of range.	
2202	Start address is larger than end address.	
2203	Value is under (1).	
2204	Data value is out of range.	
2205	Data is not set.	

No.	Error Message	Notes and Action
2400	Illegal endi. (xxxxx line)	
2401	Illegal endw. (xxxxx line)	
2402	INTERNAL ERROR:ER_BAT_EOF	
2403	Can't find endi. (xxxxx line)	
2404	Line length is overflow. (xxxxx line)	
2405	Nest level is overflow. (xxxxx line)	
2406	Can't find Script File (xxxxx).	
2407	Can't read Script File (xxxxx).	
2408	Description is illegal. (xxxxx line)	
2409	Can't find endw. (xxxxx line)	
2410	The nest level exceeds the limit (num).	
2411	INTERNAL ERROR:ER_BAT_NONE	Contact your nearest distributor
2412	Illegal break. (xxxxx line)	

No.	Error Message	Notes and Action
2600	Syntax error.	
2601	Command name is wrong.	
2602	Too many aliases.	
2603	You can register the only command name for alias.	
2604	Can't use the command now.	
2605	Can't up more.	
2606	Can't down more.	
2607	Can't set break point in this function.	
2608	The start address larger than the end address.	
2609	Can't register that token for alias.	
2610	Can't register that token for alias.	
2611	Can't find File (xxxxx).	
2612	Data value is out of range.	

No.	Error Message	Notes and Action
6000	INTERNAL ERROR:ER_ENV_END	Contact your nearest distributor.

No.	Error Message	Notes and Action
6200	SYMBOL file is illegal.	
6201	Loading is canceled.	
6202	Can't find SYMBOL file (xxxxx).	
6203	Can't get enough memory.	
6204	Cannot open temporary file.	

No.	Error Message	Notes and Action

6402	Can't find symbol.	
6403	Description of expression is illegal.	
6404	Description is illegal.	
6405	Can't find scope.	
6406	Can't find symbol.	
6407	Can't find function.	
6408	Right hand side of the expression is illegal.	
6409	The Type of structure (union) are not same.	
6410	Can't assign.	
6411	Can't find type.	
6412	Not supported float (double) operation.	
6413	The operation does not be allowed to pointers.	
6414	The operation does not be allowed to the pointer.	
6415	Can't decrease by pointer.	
6416	Divided by 0.	
6417	The operator is not supported.	
6418	Type information is broken.	
6419	Left value must be the pointer.	
6420	Left value must be a structure or an union.	
6421	Can't find member.	
6422	Left value must be reference of a structure or an union.	
6423	Left value is illegal.	
6424	The operand must be a value.	
6425	The operand is able to be opposite sign.	
6426	Can't get address value.	
6427	The array variable is illegal.	
6428	The essential number of array is illegal.	
6429	The operand must be an address value.	
6430	Type casting for register variable is not be supported.	
6431	The type of type casting is illegal.	
6432	Type casting for that type is not be supported.	
6433	This expression can not be exchanged for some address value.	

No.	Error Message	Notes and Action
6601	Address value is out of range.	
6602	Target program is already stopped.	
6603	The number of break point is over the limit (num).	
6604	The break point isn't defined at that address.	
6605	Data value is out of range.	
6606	INTERNAL ERROR: ER_IN1_ILLEGAL_MODE has happen. (in xxxxx)	Contact your nearest distributor.
6607	Can't read/write, because there are no memory at that area.	
6608	Register value is out of range.	
6609	Can't execute that command, when the target	

	program is running.	
6610	Start address is larger than end address.	
6611	STOP execution.	
6612	Can't search more on the stack.	
6613	Specified times of number is over than 65535.	
6614	INTERNAL ERROR: The memory of the odd number byte cannot be dumped by the Word access.	Contact your nearest distributor.
6615	Memory alignment error.	
6616	Illegal register is specified.	

No.	Error Message	Notes and Action
6800	The process is canceled.	
6801	Can't execute this command while some source windows are in editor mode.	

No.	Error Message	Notes and Action
10000	Cannot find source file (xxxxx).	
10001	The number of lines of source file (xxxxx) is over the limit (num).	
10002	The address value is out of range.	
10003	Cannot open file (xxxxx).	
10004	Illegal file format.	
10005	Cannot read the file saved by simulator debugger.	
10006	Cannot read the file saved by emulator debugger.	
10007	Not enough memory for display all function.	

No.	Error Message	Notes and Action
10200	Operation code (code) not found.	
10201	File (xxxxx) not found.	
10202	Duplicate event set in xxxxx.	
10203	File format error (xxxxx).	

No.	Error Message	Notes and Action
10400	Can't execute more come instruction.	
10401	Can't execute more step instruction.	
10402	Cycle value is out of range.	
10403	Can't find that address.	
10404	Can not open file (xxxxx).	
10405	Can not read file (xxxxx).	
10406	The display mode is not able to change except the BUS mode. Trace data is not enough or is abnormal.	

No.	Error Message	Notes and Action
10600	Can't open BUTTON file (xxxxx).	
10601	BUTTON file is illegal.	

No.	Error Message	Notes and Action
10800	Illegal file format.	
10801	Address value is out of range.	
10802	Data value is out of range.	

No.	Error Message	Notes and Action
11000	File format error (xxxxx).	
11001	File (xxxxx) not found.	
11002	Can't file (xxxxx) open.	
11003	Failed to read/write data to the file %s (CODE: %d).	
11004	Failed to read/write data to the archive %s (CODE: %d).	
11005	Data value is out of range.	
11006	Function not found.	
11007	Bit Symbol not found.	
11008	Can not set trace points while program is running.	
11009	Specify BYTE access for ODD address.	

No.	Error Message	Notes and Action
11200	Combination of bus width and access condition.	
11201	The start cycle larger than the end cycle.	
11202	HardwareBreak command cannot be used while H/W Break Point Setting Window opens.	
11203	TracePoint command cannot be used while Trace Point Setting Window, Time Measurement Window, MR Trace/Analyze Window or Task Trace/Analyze Window opens.	
11204	These trace data can't disassemble.	
11205	Can't execute this command with PC4700L.	
11206	Already set hard ware break.	
11207	Cycle value is out of range.	

No.	Error Message	Notes and Action
11400	Can't open temporary file.	
11401	Can't delete temporary file.	
11$02	Can't open I/O data file(filename).	
11403	The I/O data not set.	
11404	The Output file of the same already set.	

11405	Data not found.	
11406	The start cycle larger than the end cycle.	
11407	The Output port already set.	
11408	There is no data in the Input file.	
11409	Illegal file format.	
11410	Can't open file.	
11411	Can't open (filename).	
11412	Address value is out of range.	

No.	Error Message	Notes and Action
11600	Can't execute this command.	
11601	Already set hard ware break.	
11602	Combination of bus width and access condition.	
11603	The start cycle larger than the end cycle.	
11604	HardwareBreak command cannot be used while state transition break window opens.	
11605	TracePoint command cannot be used while State Transition Trace Window, Time Measurement Window, MR Trace/Analyze Window or Task Trace/Analyze Window opens.	
11606	These trace data can't disassemble.	
11607	Cycle value is out of range.	

No.	Error Message	Notes and Action
11800	The I/O data not set.	
11801	Can't open (filename).	
11802	Can't open temporary file.	
11803	Address value is out of range.	

No.	Error Message	Notes and Action
16000	INTERNAL ERROR: Already connected with the target.	Contact your nearest distributor.
16001	INTERNAL ERROR: Fork error has happen.	Contact your nearest distributor.
16002	Can't find Host Name (xxxxx).	
16003	INTERNAL ERROR: The Baud rate is illegal.	Contact your nearest distributor.
16004	The connection with the target isn't created.	
16005	Can't connect with the target.	
16006	INTERNAL ERROR: The Time of time out is out of range.	Contact your nearest distributor.
16007	Time Out ERROR.	Contact your nearest distributor.
16008	INTERNAL ERROR: Can’t disconnect with the target.	
16009	INTERNAL ERROR: Can’t send given size data.	Contact your nearest distributor.
16010	INTERNAL ERROR: Parameter is illegal.	Contact your nearest distributor.
16011	Illegal Host Name.	

16012	Communication ERROR. The connection with the target is closed.	
16013	Communication ERROR. Can't send data.	
16014	Communication ERROR. Can't accept data.	
16015	Target is already used.	
16016	Specified communications interface doesn't support.	
16017	LAN I/F can't be used on Windows3.1.	
16018	Parallel connection doesn't support on Windows NT.	
16019	Setting of the communications interface is illegal.	
16020	OverRun ERROR with serial communications.	

No.	Error Message	Notes and Action
16200	Address value is out of range.	
16201	That baud rate has not yet supported.	
16202	Bit number is out of range.	
16203	STOP execution.	
16204	Data value is out of range.	
16205	Monitor File (xxxxx) is broken.	
16206	Can't find File (xxxxx).	
16207	Target system is not constructed properly.	
16208	INTERNAL ERROR: ER_IN2_ILLEGAL_MODE has happen. (in xxxxx)	Contact your nearest distributor.
16209	Mask value is out of range.	
16210	Counter of measurement time is overflow.	
16211	The version of string1 and the firmware on the target are not same.	
16212	Pass count value is out of range.	
16213	Can't execute that command, when the target program is running.	
16214	Target MCU is reset state. Please reset target systems.	
16215	Target MCU is unable to reset. Please reset target systems.	
16216	Target MCU is HOLD state. Please reset target systems.	
16217	Target MCU is not given clock. Please reset target systems.	
16218	Target MCU is not given power. Please reset target systems.	
16219	INTERNAL ERROR: Break point number is illegal.	Contact your nearest distributor.
16220	Please download the firmware to target.	
16221	Can't download firmware.	

16222	Can't find trace data which is able to refer.	
16223	Cycle value is out of range.	
16224	Target MCU is not under control. Please reset target systems.	
16225	First data is larger than second data.	
16226	First address is larger than second address.	
16227	No event set on the state transition path.	
16228	Time out value is out of range.	
16229	Process ID value is out of range.	
16230	Communication protocol error. (Argument error)	Contact your nearest distributor.
16231	There was sent undefined data from PC4700.	
16232	Check sum error of the received data occurred.	
16233	The specified data do not exist.	
16234	The target program is running.	
16235	The target program is not running.	
16236	The measurement has already been stopping.	
16237	The measurement has already been being executed.	
16238	The measurement is not completed.	
16239	There is no trace data of the specified cycle.	
16240	There is no trace data.	
16241	The measurement counter of time overflowed.	
16242	POF state was released by compulsory reset.	
16243	A number of setting points exceeds the range.	
16244	The program break is not set.	
16245	Source line information is not loaded.	
16246	The trigger mode is not a software output mode.	
16247	The exception processing was detected while executing the step.	
16248	Function range error.	
16249	The writing error to EEPROM occurred.	
16252	Unexecutable command code was specified.	
16253	The processor mode and the target system are the disagreements. xxxxx mode is used.	
16254	The specified bank isn't defined in the expansion memory.	
16255	The bank set up is duplicated.	
16256	The specified area includes the debugging monitor memory area.	
16257	The specified area includes the debugging monitor work area.	
16258	Flash ROM deletion error occurred. Flash ROM deletion error occurred.	
16259	Flash ROM verify error occurred.	
16260	Specification area includes the internal (flash)	

	ROM area.	
16261	When Word is specified for a size, the odd number address cannot be specified.	
16262	Can not spesify the larger total bank size than the total emulation memory size.	
16263	The bank specified is defined as EXTERNAL.	
16264	The setting value is invalid in this processor mode.	
16265	RDY signal of MCU is Low.	
16266	HOLD signal of MCU is Low.	
16267	All program break points in the spesified bank is cleared.	
16268	Please specify the address in the emulation memory area.	
16269	The mistake is found in setting the emulation memory area.	
16270	The specified area has already been used in the debugging monitor bank address.	
16271	Too many emulation memory area specification.	
16272	The bank from 0 to 3 cannot be specified.	
16273	The mistake is found in the specification of the debugging monitor bank address.	
16274	The mistake is found in the specification of the debugging monitor work address.	
16275	2Cannot specifiy to extend more than two banks.	
16276	Please specify the address in the emulation memory area.	
16277	Too many ROM area specification.	
16278	Start address is larger than end address.	
16279	Too many DMA area specification.	
16281	The mistake is found in the specification of the DMA area.	
16282	When Word is specified for a size, the odd number address cannot be specified.	
16283	Too many memory mapping specification.	
16284	The mistake is found in the specification of the memory mapping.	
16285	Please specify the address in the emulation memory area.	
16286	The mistake is found in setting the emulation memory area.	
16287	The specified area has already been used in the debugging monitor bank address.	
16288	Too many emulation memory area specification.	
16289	The bank from 0 to 3 cannot be specified.	
16290	The mistake is found in the specification of the debugging monitor bank address.	

16291	The mistake is found in the specification of the debugging monitor work address.	
16292	Cannot specifiy to extend more than two banks.	
16293	Please specify the address in the emulation memory area.	
16294	Too many ROM area specification.	
16295	Start address is larger than end address.	
16296	Too many DMA area specification.	
16298	The mistake is found in the specification of the DMA area.	
16299	Too many 8 bits bus mode area specification.	
16300	The mistake is found in the specification of the 8-bit bus mode area.	
16301	When Word is specified for a size, the odd number address cannot be specified.	
16302	The S/W breakpoint cannot be set in the SFR area and the RAM area.	
16303	The S/W breakpoint cannot be set in the flash ROM area.	
16304	The S/W breakpoint cannot be set.	
16305	The H/W breakpoint cannot be set in the SFR area and the RAM area.	
16306	The H/W breakpoint cannot be set in the flash ROM area.	
16307	The H/W breakpoint cannot be set.	
16308	Too many memory mapping specification.	
16309	The mistake is found in the specification of the memory mapping.	
16314	Work Address value is out of range.	
16315	The specified zone number does not exist.	
16316	Flash ROM verify error occurred.	
16317	The sent command cannot be executed in this H/W environment.	
16318	The specified event is used in an another mode.	
16319	The chip break 0 is used in an another mode.	
16320	An uninitialized interrupt vector was detected.	
16321	This break function can't be set up in the ROM territory or the memory territory which doesn't exist.	
16322	This break function can't be set up in the odd number address.	
16323	This break function can't be set up in the middle of 32bit instruction.	
16324	A memory territory which doesn't exist was manipulated. Or, A memory territory was manipulated on the condition which wasn't forgiven.(address=H'xxxxx)	
16325	A specified reference section number is outside	

	the range.	
16326	Tracing data file can't be open.	
16327	Tracing data can't be read from the file.	
16328	The specified break condition does not correspond to the trace output mode.	
16329	This break function can't be set up in the LSB side parallel instruction.	
16330	Can't execute from the LSB side parallel instruction.	
16331	The received data is illegal. The received data must be 'xxxxx'. But 'yyyyy' is received.	
16332	INIT code is received.	
16347	Specification area includes not only the internal (flash) ROM area but also other area.	
16348	Specification area includes the SFR area and the internal RAM area.	

No.	Error Message	Notes and Action
16400	INTERNAL ERROR:Already connected with the target.	Contact your nearest distributor.
16401	INTERNAL ERROR:Fork error has happen.	Contact your nearest distributor.
16402	Can't find Host Name (hostname).	
16403	INTERNAL ERROR:The Baud rate is illegal.	Contact your nearest distributor.
16404	The connection with the target isn't created.	
16405	Can't connect with the target.	
16406	INTERNAL ERROR:The Time of time out is out of range.	Contact your nearest distributor.
16407	Time Out ERROR.	
16408	INTERNAL ERROR:Can't disconnect with the target.	Contact your nearest distributor.
16409	INTERNAL ERROR:Can't send given size data.	Contact your nearest distributor.
16410	INTERNAL ERROR: Parameter is illegal.	Contact your nearest distributor.
16411	Illegal Host Name.	
16412	Communication ERROR. The connection with the target is closed.	
16413	Communication ERROR.Can't send data.	
16414	Communication ERROR. Can't send data.	
16415	Target is already used.	
16416	Parallel connection doesn't support on Windows NT.	
16417	Can't find Simulator Engine.	

No.	Error Message	Notes and Action
16600	Address value is out of range. Address value is out of range.	

16601	That baud rate has not yet supported.	
16602	Bit number is out of range.	
16603	STOP execution.	
16604	Data value is out of range.	
16605	Monitor File (filename) is broken.	
16606	Can't find File (filename).	
16607	Target system is not constructed properly.	
16608	INTERNAL ERROR:ER_IN2_ILLEGAL_MODE has happen(in string1).	Contact your nearest distributor.
16609	Mask value is out of range.	
16610	Counter of measurement time is overflow.	
16611	The version of KD38 and the firmware on the target are not same.	
16612	Pass count value is out of range.	
16613	Can't execute that command, when the target program is running.	
16614	Target MCU is reset state. Please reset target systems.	
16615	Target MCU is unable to reset. Please reset target systems.	
16616	Target MCU is HOLD state.	
16617	Target MCU is not given power.	
16618	INTERNAL ERROR:Break point number is illegal.	Contact your nearest distributor.
16619	Please download the firmware to target	
16620	Can't download firmware.	
16621	Download firmware is finished. Please restart KD38.	
16622	Can't find trace data which is able to refer.	
16623	Cycle value is out of range.	
16624	Target MCU is not under control. Please reset target systems.	
16625	First data is larger than second data.	
16626	First address is larger than second address.	
16627	First address is larger than second address.	
16628	No event set on the state transition path.	
16629	Process ID value is out of range.	
16630	Communication protocol error.(Argument error)	Contact your nearest distributor.
16631	Check sum error of the received data occurred.	Contact your nearest distributor.
16632	The specified data do not exist.	
16633	The target program is running.	
16634	The target program is not running.	
16635	The measurement has already been stopping.	
16636	The measurement has already been being executed.	

16637	The measurement is not completed.	
16638	There is no trace data of the specified cycle.	
16649	There is no trace data.	
16640	The measurement counter of time overflowed.	
16641	POF state was released by compulsory reset.	
16642	A number of setting points exceeds the range.	
16643	The program break is not set.	
16644	Source line information is not loaded.	
16645	Source line information is not loaded.	
1664&	The exception processing was detected while executing the step.	
16647	Function range error.	
16648	The writing error to EEPROM occurred.	
1665)	There was sent undefined data from simulator.	Contact your nearest distributor.
16650	The received data is illegal. The received data must be (data). But (data) is received.	Contact your nearest distributor.
16651	INIT code is received.	Contact your nearest distributor.
16652	Can't read/write, because there are no memory at that area.	
16653	Number of points exceeds the limit (num).	
16654	Point already set.	
16655	Breakpoint of other type already set.	
16656	No hardware breakpoint set at specified address.	
16657	Can't get enough memory.	
16658	Can't set more I/O script file.	
16659	Can't set more virtual output.	
16660	Specified vector No. out of range.	
16661	Specified level of priority out of range.	
16662	Stack trace mode is not enabled.	
16663	The simulator engine execution error occurred.	
16664	Undefined instruction was executed.	
16665	Software break point can't be set up in the address.	
16666	Software break point can't be set up in the odd number address.	
16667	Software break point can't be set up in the middle of 32bit instruction.	
16668	Software break point can't be set up in the LSB side parallel instruction.	
16669	A memory territory which doesn't exist was manipulated. Or, A memory territory was manipulated on the condition which wasn't forgiven.	
16670	Can't execute from the LSB side parallel	

	instruction.	

No.	Error Message	Notes and Action
16800	. Can't find '{'.(line: num)	
16801	Can't find '}'. (line: num)	
16802	Can't find '('.(line: num)	
16803	Symbol isn't defined. (line: num , token: string)	
16804	Can't find ')'.(line: num)	
16805	Description of expression is illegal. (line: num , token: string)	
16806	Nest level of the if statement is overflow. (line: num)	
16807	Nest level of the while statement is overflow. (line: num)	
16808	Too many the break statement. (line: num)	
16809	There is no if statement corresponding to the else statement. (line: num)	
16810	Unknown token. (line: num , token: string)	
16811	Can't open the (filename) file	
16812	The (filename) file is not a file made in the I/O window.	
16813	The description of the memory variable is illegal. (line: num)	

No.	Error Message	Notes and Action
17000	INTERNAL ERROR:External frash memory rewrite module parameter is wrong.	
17001	Can't find FTD file.	
17002	The FTD file is broken.	
17003	The number of External flash rom is over.	
17004	INTERNAL ERROR:The device number is illegal.	
17005	An Error was detected in work ram area activate commands.	
17006	An Error was detected in work ram area activate commands.	
17007	An Error was detected in external flash rom area activate commands.	

No.	Error Message	Notes and Action
20000	Task with specified task No. not found.	
20001	Context of specified task No. not found.	
20002	Corrupted MR data.	
20003	Can't get enough memory.	

No.	Error Message	Notes and Action

20200	History of the system call issue that conforms to the search condition cannot be found.	

No.	Error Message	Notes and Action
20400	Can't use Task Pause function.	
20401	Task Pause function (xxxxx) was failed.	

No.	Error Message	Notes and Action
20600	Can't use Task Trace Window without setting real-time OS information.	

No.	Error Message	Notes and Action
20800	The save file name (xxxxx) is wrong.	
20801	Can't find symbol (xxxxx) of MR.	
20802	Initialization routine of MR is not executed.	
20803	Can't find the task of the specified task number.	
20804	Priority out of range.	
20805	Task ID out of range.	
20806	Flag ID out of range.	
20807	Semaphore ID out of range.	
20808	Mailbox ID out of range.	
20809	Memory pool ID out of range.	
20810	Cyclic handler ID out of range.	
20811	Address out of range.	
20812	Cannot invoke system call.	
20813	System call not invoked.	
20814	System call not completed.	
20815	Address value is out of range.	
20816	File Name is illegal.	
20817	Corrupted MR data.	
20818	Can't get enough memory.	

No.	Error Message	Notes and Action
26000	Address value is out of range.	
26001	Description of Assembly language is illegal.	
26002	Address value for JUMP is out of range.	
26003	Operand value is out of range.	
26004	Description of expression is illegal.	
26005	Addressing mode specified is not appropriate.	
26006	INTERNAL ERROR: 'ALIGN' is multiple specified in '.SECTION'.	Contact your nearest distributor.
26007	Operand value is undefined.	
26008	Bit-symbol is in expression.	
26009	Invalid bit-symbol exist.	

26010	Symbol value is not constant.	
26011	Same items are multiple specified.	
26012	Same kind items are multiple specified.	
26013	Characters exist in expression.	
26014	Format specified is not appropriate.	
26015	Invalid symbol definition.	
26016	Invalid reserved word exist in operand.	
26017	INTERNAL ERROR: 'JMP.S' operand label is not in the same section.	Contact your nearest distributor.
26018	Reserved word is missing.	
26019	No space after mnemonic or directive.	
26020	INTERNAL ERROR: No '.FB' statement.	Contact your nearest distributor.
26021	INTERNAL ERROR: No '.SB' statement.	Contact your nearest distributor.
26022	INTERNAL ERROR: No '.SECTION' statement.	Contact your nearest distributor.
26023	Operand value is not defined.	
26024	Operand size is not appropriate.	
26025	Operand type is not appropriate.	
26026	INTERNAL ERROR:Section attribute is not defined.	Contact your nearest distributor.
26027	INTERNAL ERROR: Section has already determined as attribute.	Contact your nearest distributor.
26028	INTERNAL ERROR: Section name is missing.	Contact your nearest distributor.
26029	INTERNAL ERROR: Section type is not appropriate.	Contact your nearest distributor.
26030	INTERNAL ERROR: Section type is multiple specified.	Contact your nearest distributor.
26031	Size or format specified is not appropriate.	
26032	Size specified is missing.	
26033	String value exist in expression.	
26034	Symbol is missing.	
26035	Symbol is multiple defined.	
26036	Symbol is missing.	
26037	Symbol is multiple defined.	
26038	Invalid operand exist in instruction.	
26039	Syntax error in expression	
26040	Invalid operand exist in instruction.	
26041	Operand expression is not completed.	
26042	Too many operand.	
26043	Too many operand data.	
26044	Undefined symbol exist.	
26045	Value is out of range.	
26046	Division by zero.	
26047	INTERNAL ERROR:'.VER' is duplicated.	Contact your nearest distributor
26048	'#' is missing.	
26049	',' is missing.	

26050	']' is missing.	
26051	')' is missing.	
26052	INTERNAL ERROR: Symbol defined by external reference data is defined as global symbol.	Contact your nearest distributor.
26053	Invalid operand exist in instruction.	
26054	Quote is missing.	
26055	Right quote is missing.	
26056	Can't get enough memory.	
26057	Invalid chip mode.	
26058	':' is missing.	
26059	Absolute addressing is not avail.	
26060	Direct addressing is not avail.	
26061	Invalid addressing mode declaration included.	
26062	Syntax error in indexed addressing expression.	
26063	'(' is missing.	
26064	Internal error.	
26065	Operand value of direct addressing is out of range.	
26066	Operand value of absolute addressing is out of range.	
26067	Operand value of absolute long addressing is out of range.	
26068	Operand value of stack relative addressing is out of range.	
26069	Operand value is illegal.	
26071	An odd number address can't be specified.	

No.	Error Message	Notes and Action
26200	Line number is illegal.	
26201	Can't find right bracket ')'.	
26202	The Number of Macro constant is over the limit (num).	
26203	Immediate value is out of range.	
26204	Prefix which gives radix of the constant is illegal.	
26205	Description of indirect reference is illegal.	
26206	Can't find end of strings (xxxxx).	
26207	Description of expression is illegal.	
26208	Macro constant (xxxxx) isn't defined.	
26209	Symbol (xxxxx) isn't defined.	
26210	Immediate value is illegal.	
26211	Divide by 0.	
26212	The value is over the maximum value of which can be treated by MCU.	
26213	Register name is using for macro variable name.	

No.	Error Message	Notes and Action
26400	Address value is out of range.	
26401	Bit number is out of range.	
26402	File (xxxxx) is broken.	
26403	Can't find File (xxxxx).	
26404	Can't find sub routine information.	
26405	Illegal character in the strings.	
26406	INTERNAL ERROR: ER_IN2_ILLEGAL_MODE has happen. (in xxxxx)	Contact your nearest distributor
26407	Can't find that line number.	
26408	Multiple definition of symbol/label.	
26409	There are no code at that line.	
26410	Can't get enough memory.	
26411	Can't find scopes.	
26412	Can't find section information.	
26413	Can't find source lines which correspond to that address.	
26414	Can't find symbol (xxxxx).	
26415	Can't find the scopes which include that address.	
26416	Loading is canceled.	
26417	INTERNAL ERROR: The end of section information.	Contact your nearest distributor.
26418	INTERNAL ERROR: The end of section information.	Contact your nearest distributor.
26419	The register name is wrong.	
26420	Can't find Source File (xxxxx).	
26421	Unable to read Load Module File (xxxxx).	
26422	The PATH name is incorrect.	
26423	Cannot open the save file (xxxxx).	
26424	Can't open SYSROF file.	
26425	Can't read SYSROF file.	
26426	Illegal file format. (no absolute format file)	
26427	Illegal file format.	
26428	Can't get enough memory.	
26429	Can't find file.	
26430	There are no address at that line.	
26431	Can't find the function which correspond to that source line.	
26432	Can't find the scopes which include that address.	
26433	Can't find symbol.	
26434	Can't find the function which correspond to that source line.	

26435	Loading is canceled.	
26436	INTERNAL ERROR: ER_LOAD_SYMSCOPE has happen.	Contact your nearest distributor.
26437	File Name is illegal.	
26438	Display source codes.	
26439	The path name is too long.	

No.	Error Message	Notes and Action
26600	Can't open file (xxxxx).	
26601	Can't create file (xxxxx).	
26602	Can't close file (xxxxx).	
26603	File seek error (in xxxxx).	
26604	Out of disk space.	
26605	Illegal file format (xxxxx --> xxxxx). (xxxxx)	
26606	Out of heap space.	
26607	Not yet implemented (xxxxx).	

No.	Error Message	Notes and Action
30200	Comfirm the processor mode and the CNVss terminal level.	
30201	Comfirm the emulation memory allocation, or the mapping.	

No.	Error Message	Notes and Action
30400	MCU file is old format.	
30401	MCU file is illegal format.	

No.	Error Message	Notes and Action
30600	The target clock is external fixation.	

No.	Error Message	Notes and Action
38000	The value of Bank is wrong.	

[MEMO]

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M3T-KD38 User's Manual

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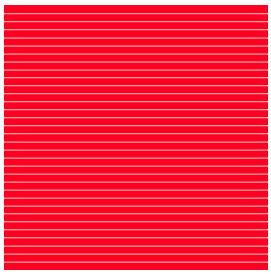
User's Manual



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