Microcomputer Technical Information

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ID850QB Integrated Debugger for V850 Microcontrollers Usage Restrictions	Document No.	ZBG-CD-06-0079	1/1
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	Issued by	Development Tool Group Multipurpose Microcomputer Systems Division 4th Systems Operations Unit NEC Electronics Corporation	
Related documents ID850QB Ver. 3.20 Operation: U17964EJ1V0UM00 Integrated Debugger ID850QB Ver. 3.20 Operating Precautions: ZUD-CD-06-0031	Notification classification	√	Usage restriction
			Upgrade
			Document modification
			Other notification

1. Affected product

Affected Product	General Name	Outline	Affected Version
ID703000-QB	ID850QB	V850 microcontroller GUI C source debugger	V3.20 or earlier

2. New restrictions

Restrictions No. 34 to No. 38 have been added. See the attachment for details.

- No. 34 Restriction on using XO850
- No. 35 Restriction on conflict between software break and hardware break
- No. 36 Restriction whereby the DWARF2 load module cannot be downloaded
- No. 37 Restriction on array variables displayed in Watch window
- No. 38 Restriction on a static variable displayed in Watch window

3. Workarounds

See the attachment for details.

4. Modification schedule

Restrictions No. 34 and No. 36 will be corrected in the next revision of the ID850QB (planned for release in September 21, 2006).

* For the detailed release schedule of modified products, contact an NEC Electronics sales representative.

5. List of restrictions

A list of usage restrictions in the ID850QB, including the revision history and detailed information, is described on the attachment.

List of Usage Restrictions in ID850QB

The following table lists the restrictions on the ID850QB, tracing back from two older versions.
The restriction numbers are not in sequence because the restriction items that were corrected in the previous versions are omitted.

No.	Description	Version		
		3.11	3.20	3.21
1	Restriction on target memory I/O protect setting	×	×	×
2	Restriction on access size when setting I/O protect area	×	×	×
4	Restriction on Source window in mixed display mode	×	×	×
5	Restriction on radix display in Watch window	×	×	×
6	Restriction on data values displayed in the Local Variable window	×	×	×
7	Restriction on memory search area	×	×	×
8	Restriction on ASCII display area of Memory window	×	×	×
10	Restriction when a breakpoint is set to an instruction that sets standby mode	×	×	×
12	Restriction when one line contains too many instructions	×	×	×
13	Restriction on compiler's external flash memory/flash memory relink function	×	×	×
14	Restriction on debugging of program codes being passed through a ROMization processor	×	×	×
16	Restriction on setting access breaks in Watch window	×	×	×
22	Restriction on timer overflow when using timer function	×	×	×
23	Restriction on project file when using different emulators	×	×	×
24	Restriction on standby and suspend functions of Windows	×	×	×
28	Trace pickup function	×	×	×
29	Restriction whereby RRM function monitor result display becomes invalid	×	×	×
30	Restriction whereby complement frames displayed in Trace window become invalid	×	○	○
31	Restrictions on using pseudo real-time RAM monitor (pseudo RRM) or DMM	×	△	△
32	Restriction whereby symbol conversion or breakpoint setting becomes invalid	×	×	×
33	Restriction on project files for IECUBE and MINICUBE	–	×	×
34	Restriction on using XO850	○	×	○
35	Restriction on conflict between software break and hardware break	×	×	×
36	Restriction whereby the DWARF2 load module cannot be downloaded	×	×	○
37	Restriction on array variables displayed in Watch window	×	×	×
38	Restriction on a static variable displayed in Watch window	×	×	×

○: Restriction does not apply, △: Restriction partially corrected, ×: Restriction applies, –: Not relevant

ID850QB Restriction Details

No. 1 Restriction on target memory I/O protect setting

[Description]

An error message is not displayed even if an area that is not the target memory is set to I/O protected.

[Workaround]

There is no workaround.

No. 2 Restriction on access size when setting I/O protect area

[Description]

The protect function does not take effect if an area is set that is not aligned with the access size when setting an I/O protected area.

[Workaround]

Set an area whose size is aligned with the access size.

No. 4 Restriction on Source window in mixed display mode

[Description]

When the Source window is in mixed display mode, if the cursor is moved in the downward direction, it may inadvertently jump. Also, in mixed display mode, the end of the source line cannot be displayed without using the scroll.

[Workaround]

There is no workaround.

No. 5 Restriction on radix display in Watch window

[Description]

The setting of the radix display of the item in the nest of a variable with nest cannot be correctly downloaded from a file on the Watch window.

[Workaround]

There is no workaround.

No. 6 Restriction on data values displayed in the Local Variable window

[Description]

If the data values in the Local Variable window are moved by the cursor while emulation is being executed, the display changes to “**”.

[Workaround]

There is no workaround.

No. 7 Restriction on memory search area

[Description]

Non-map area and IOR area cannot be avoided in memory search.

[Workaround]

Specify a search range avoiding these areas.

No. 8 Restriction on ASCII display area of Memory window

[Description]

If the cursor is placed in the ASCII display area of the Memory window and then control is shifted to another window, the cursor will inadvertently return to the data display area.

[Workaround]

There is no workaround.

No. 10 Restriction when a breakpoint is set to an instruction that sets standby mode

[Description]

When a hardware or software breakpoint has been set to an instruction that sets standby mode (such as HALT or STOP), if the program is executed from that instruction, the standby mode will be entered briefly but soon released, and execution will resume from the next instruction.

[Workaround]

There is no workaround.

No. 12 Restriction when one line contains too many instructions

[Description]

If one line contains too many instructions (more than 1,000 assembler instructions) in source line step, the processing may be aborted even in the middle of step-wise execution.

[Workaround]

There is no workaround.

No. 13 Restriction on compiler's external flash memory/flash memory relink function

[Description]

With the external flash memory/flash memory relink function supported by the compiler, it is not possible to perform step-in to a function on the flash memory side from the boot side.

[Workaround]

Cause a break in the function on the flash memory side by setting a breakpoint in that function.

No. 14 Restriction on debugging of program codes being passed through a ROMization processor

[Description]

Debugging of programs that use program code copied to the internal RAM after being passed through a ROMization processor is not supported.

[Workaround]

Do not pass programs through a ROMization processor when compiling.

No. 16 Restriction on setting access breaks in Watch window

[Description]

A variable other than *global* cannot be specified for an access break in the Watch window.

[Workaround]

There is no workaround.

No. 22 Restriction on timer overflow when using timer function

[Description]

The time measurement counter is cleared to 0 when it overflows. The accumulated time counter is cleared to 0 before the count value becomes 0x1FFFFFFFF or higher, so indication of an overflow is not output. Consequently, the average value is undefined (the undefined value is displayed in red).

[Workaround]

Lower the division ratio in the Extended Option dialog box before performing time measurement.

No. 23 Restriction on project file when using different emulators

[Description]

If a project file for IECUBE is opened in MINICUBE or the N-Wire CARD, or a project file for MINICUBE or the N-Wire CARD is opened in IECUBE, some information is lost when the project file is saved.

[Workaround]

There is no workaround.

No. 24 Restriction on standby and suspend functions of Windows

[Description]

The standby and suspend functions of Windows and the Switch User function in Windows XP are not supported.

[Workaround]

There is no workaround.

No. 28 Trace pickup function

[Description]

The trace pickup function has not been supported.

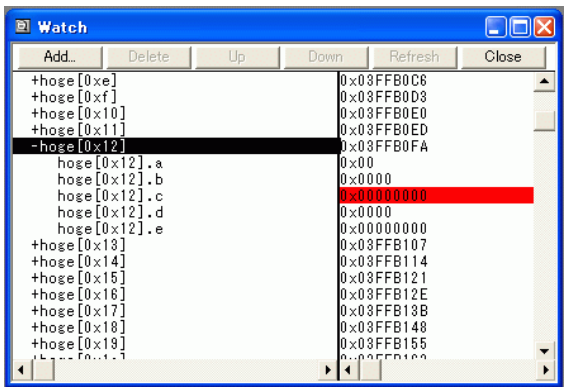
[Workaround]

There is no workaround.

No. 29 Restriction whereby RRM function monitor result display becomes invalid

[Description]

With the RRM function, if the block areas to be monitored are set in succession and the access data extends over the boundary of the blocks, the invalid values are displayed in the Memory or Watch window. Therefore, the specification has been modified so that variables that extend over the boundary of the blocks are highlighted in red.



[Workaround]

There is no workaround.

No. 30 Restriction whereby complement frames displayed in Trace window become invalid

[Description]

If the Trace area settings in the Extended Option dialog box satisfy both of the following conditions (1) and (2), complement frames between a frame in which a part of data is missed[Note] and a frame with the next branch instruction (BRM1 status) are not displayed normally in the Trace window.

<Setting conditions>

(1) Either of the following settings is selected from the Trace Data drop-down list

- ALL PC + Access Data
- Branch PC + Access Data + Access PC

(2) Complement Data check box is selected

Note A frame in which a part of data is missed is marked with <Lost Data> in the Trace window.

[Workaround]

There is no workaround. This restriction has been corrected in V3.20.

No. 31 Restrictions on using pseudo real-time RAM monitor (pseudo RRM) or DMM

[Description]

There are following restrictions when using pseudo real-time RAM monitor (pseudo RRM)[Note] or DMM.

(1) If the STOP or IDLE mode is entered during program running while the I/O Register window or Memory window is open, error A0C03 is output and the speed of window update processing is degraded. This restriction does not apply when the target device is a core other than the V850E2 core and the Memory window is open.

(2) The STOP, IDLE, or HALT mode is released if the I/O Register windows or Memory window is open.

(3) If a conflict occurs between the timing of a software break and the timing at which the CPU is temporarily stopped by pseudo RRM, the instruction to which a software break is set will not be executed. If the software break is set to a 4- or 6-byte instruction, the instruction different from the original one will be executed.

Note Pseudo RRM is a function used to read the values of I/O registers or the memory by generating a temporary break for the CPU during program running. This restriction applies when an item other than “Off” is selected for “Break When Readout” in the Extended Option dialog box.

[Workaround]

There is no workaround. This restriction will be corrected (specification will be modified) in V3.20, as shown below.

(1) If the STOP, IDLE or HALT mode is entered during program running, the data in the I/O Register window or Memory window will be displayed as "*".

(2) Modification will be made so as to minimize the possibility whereby the STOP, IDLE or HALT mode that is entered during program running while the I/O Register window or Memory window is open is released.

(3) Pseudo RRM and DMM can no longer be used with software breaks. An error will be output if an attempt is made to use them together.

No. 32 Restriction whereby symbol conversion or breakpoint setting becomes invalid

[Description]

If function names or variable names are distinguished with a prefixed underscore, the debugger may recognize them incorrectly. As a result, symbol conversion or breakpoint setting may become invalid.

Example When two function names _reset and __reset are used

[Workaround]

Do not distinguish similar function names or variable names only with a prefixed underscore.

No. 33 Restriction on project files for IECUBE and MINICUBE

[Description]

A project file for IECUBE cannot be used with MINICUBE2 as is, because communication interface information is lacking.

[Workaround]

Create a project file using MINICUBE2, and then use it for IECUBE.

No. 34 Restriction on using XO850

[Description]

Specifications for the RRM and DMM functions have been changed in ID850QB V3.20 so as not to read or write the memory contents, the operation of automatic verify system XO850 may become invalid when the CPU is in HALT mode.

[Workaround]

There is no workaround. This restriction has been corrected in V3.21.

No. 35 Restriction on conflict between software break and hardware break

[Description]

If a software break and hardware break conflict, an illegal instruction may be executed when execution is resumed.

[Workaround]

Do not set a software break near a fetch system hardware break. If an access system hardware break is set, do not set software breaks.

ID850QB V3.30 will be corrected so that a warning is output upon a conflict.

No. 36 Restriction whereby the DWARF2 load module cannot be downloaded

[Description]

The debugger is forcibly terminated if an attempt is made to download a load module for a program created with a GHS C compiler and includes *void* function pointer variables.

[Workaround]

Change the void function pointer to *int* function pointer.

This restriction has been corrected in V3.21.

No. 37 Restriction on array variables displayed in Watch window

[Description]

If an underscore is prefixed to the name of an array variable, the expanded array variables are displayed as “?”.

[Workaround]

Do not prefix underscore to the name of an array variable. Underscores automatically prefixed by the compiler will cause no problem. This restriction will be corrected in V3.30.

No. 38 Restriction on a static variable displayed in Watch window

[Description]

If a static variable registered in the Watch window goes out of the scope, the variable is recognized as a label and an invalid result may be displayed.

[Workaround]

Register static variables to the Watch window in the format *file-name#variable-name#*.