To our customers,

Old Company Name in Catalogs and Other Documents

On April 1st, 2010, NEC Electronics Corporation merged with Renesas Technology Corporation, and Renesas Electronics Corporation took over all the business of both companies. Therefore, although the old company name remains in this document, it is a valid Renesas Electronics document. We appreciate your understanding.

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HITACHI SEMICONDUCTOR TECHNICAL UPDATE

Classification of Production	Development Environment			No	TN-CSX-042A/E	Rev	1
THEME	H8S,H8/300 Series C/C++ compiler Package Updates		Classification of Information	① Spec change 2. Supplement of Documents 3. Limitation of Use 4. Change of Mask 5. Change of Production Line			
PRODUCT NAME	PS008CAS5-MWR PS008CAS4-MWR PS008CAS4-SLR PS008CAS4-H7R	Lot No. All	Reference Documents	H8S,H8/300 Series C/C++ Compiler, Assembler, Optimizing Linkage Editor User's Manual ADE-702-247 Rev.1.0		Effective Date Eternity	

H8S,H8/300 series C/C++ compiler Package is updated to Ver.5.0.02 for Windows and Ver.4.0.06 for UNIX.

Refer to the attached document, PS008CAS4-020725E, for details.

A user who has the following product should be informed.

For Windows : H8S,H8/300 series C/C++ compiler PackageVer.5.0, or Ver.5.0.01 (PS008CAS5-MWR).
H8S,H8/300 series C/C++ compiler Package Ver.4.0, Ver.4.0r1, Ver.4.0A, Ver.4.0Ar1 or Ver.4.0Ar2 (PS008CAS4-MWR).

For SPARC : H8S,H8/300 series C/C++ compiler Package Ver.4.0, Ver.4.0A, Ver.4.0AR1, Ver.4.0B or Ver.4.0.05.

For HP9000 : H8S,H8/300 series C/C++ compiler Package Ver4.0, Ver.4.0A, Ver.4.0AR1, Ver.4.0B, Ver.4.0BR1 or Ver.4.0.05.

Attached:

"H8S,H8/300 Series C/C++ compiler Package Ver.5.0.02 and Ver.4.0.06 Updates"
(PS008CAS4-020725E) , 4 pages

H8S,H8/300 Series C/C++ compiler Package Ver. 5.0.02 and Ver.4.0.06 Updates

1 Compiler (Ver.4.0B -> Ver.4.0.03)

1.1 Illegal output of C++ pre-processing/post-processing data area (C$INIT) and C++ Virtual-function table area(C$VTBL)

Fixed the problem in which the C$INIT or C$VTBL section isn't generated and the object which should allocate in that section is allocated in the $ABS16C section when the abs16 option is specified in C++ compilation.

1.2 Illegal section by using the abs option

Fixed the problem in which switching the section name specified by #pragma abs8 section or #pragma abs16 section is invalid when the abs8 or abs16 option is specified in C++ compilation.

1.3 Illegal member-type information

Fixed the problem in which debugging information is illegal when member of a structure is a pointer to a function and that pointer is declared in a function prototype format.

Example:

```
struct sample {
  void (*fp)(int);
} ;
```

1.4 Illegal termination of the compiler

Fixed the problem in which the compiler is illegally terminated when the function that has already been declared and has the same name as a member function is declared again in the member function in C++ compilation.

Example:

```
void func();
struct S {
  void func() {
    extern void func();
  }
};
```

1.5 Illegal object when using the section operator

Fixed the problem in which the object is illegal when the result of the section address operator is used as an absolute value for the purpose of other than data.

Example:

```
void sub(void){
  (*((void (*)(void))__sectop("P")))();
}
```

1.6 Illegal read of the array information in class
Fixed the problem in which an internal error occurs when class or structure has the array member with static declaration and that member or that class or structure is used as a parameter or local variable when the debug option is specified in C++ compilation.
Example:

```
class B {
  static char EMPTY[];
  char *m;
};
class B a;
void func(class B b) {
  a=b;
}
```

1.7 Change in interpretation of the define option
Fixed the problem in which the operation is the same as for -define=macro=1 when -define=macro is specified as the option.

1.8 Illegal code in 1-bit operation
Fixed the problem in which the illegal code may be output when the size of the specifier that specifies the bit-field type differs among variables for the 1-bit bit-field and when the bit operation(&, |, ^, &=, |=, or ^=) is performed.
Example:

```
struct {
  char  char1 :1;
  int   int1  :1;
} x1,x2,x3;
void sub(){
  x1.int1 |= x2.char1 | x3.char1;
}
```

<Assembly code>

```
_sub:
  BLD.B   #7,@_x2:32
  BOR.B   #7,@_x3:32
  BST.B   #0,R0L
  BLD.B   #7,@_x1+2:32       <Correct code>
  BOR.B   #0,R1H         <---BOR.B   #0,R0L
  BST.B   #7,@_x1+2:32
  RTS
```

1.9 Internal error caused by debug option (only on Solaris)
Fixed the problem in which an internal error may occur depending on the memory allocation of the compiler itself on the Solaris operating system when the debug option is specified to the compiler on the operating system.

2 Format Converter (Ver.1.0C -> Ver.1.0.04)

2.1 Unrecognized input files
Fixed is the problem in which the format converter can not recognize input files when input files exist in the folder with compress attribute.

3 Optimizing Linkage Editor (Ver.7.1.02 -> Ver7.1.05)

3.1 Incorrect debug information caused by the -compress option
Fixed is the problem in which compressed debug information specified with the compress option is incorrect.

3.2 Incorrect section attribute when a binary file is input
Fixed is the problem in which section attribute is illegal when the following conditions are satisfied at the same time.

[Conditions]
(1) Input both an object file and a binary file.
(2) A section whose size is zero is defined in the input object file.
(3) The section whose size is zero is specified in the -binary option.
(4) The object file of (2) is input earlier than the binary file of (3).

3.3 Internal error caused by the -form=relocate option
Fixed is the problem that occurs when all of the condition (1) to (4) are satisfied.

[Conditions]
(1) The first input object file is compiled with the -goptimize option.
The second or later input file is either compiled without the -goptimize option or just assembled.
(2) The -form=relocate option is specified.
(3) The -profile option is specified.
(4) The -optimize option is specified.

3.4 Internal error(8899,8876,8921) with -profile option specified
Fixed is the problem in which an internal error(8899,8876,8921) occurs when the following conditions are satisfied at the same time.

[Condition]
(1) The input file is compiled with the -goptimize option.
(2) The -nooptimize option is not specified.
(3) The -profile option is specified.

3.5 Internal error(3081) in linking relocatable files with different CPU modes
Fixed is the problem in which internal error(3081) occurs when the following conditions are satisfied at the same time.

[Condition]
(1) The -debug option is specified in compilation.
(2) Relocatable files with different CPU modes of 2600a and 2600n are input.
(3) The -compress, -rename or -delete option, or optimization is specified.

3.6 Internal error(7041) with the -output option specified
Fixed is the problem in which an internal error(7041) occurs when the following conditions are satisfied at the same time.

[Conditions]
(1) The input file is compiled with the -goptimize option.
(2) The -output option is specified with range specification.
(3) The -nooptimize option is not specified.

3.7 Incorrect optimization with partial suppression of the optimization

Fixed is the problem in which the partial suppression of the optimization does not work. The problem occurs when the following conditions are satisfied at the same time.

[Condition]

(1) The input file is compiled with the -goptimize option.
(2) The -nooptimize option is not specified.
(3) The -absolute_forbid option is specified.
(4) More than one address ranges are specified to -abusolute_forbid option.
(All but the first becomes ineffective)

3.8 Incorrect object code in generating a relocatable file

Fixed is the problem in which an incorrect object code is generated when the following conditions are satisfied at the same time.

[Condition]

(1) The input file is relocatable file.
(2) The -form=rel option is specified.
(3) The -delete or -rename option is specified.