# RH850 Development Environment Migration Guide

Migration from SuperH Family Compiler to RH850 Family Compiler (Building Guide)

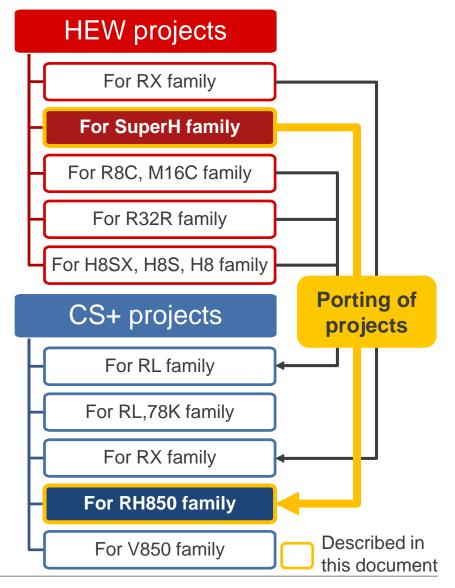
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Software Product Marketing Department, Software Business Division Renesas System Design Co., Ltd.



#### Preface

- This document describes the procedure for processing of CS+ projects and method of building in CS+ when porting a project from a SuperH family C/C++ compiler (hereinafter SHC) to an RH850 family compiler (hereinafter CC-RH).
- The contents of this document apply to the CS+ and Highperformance Embedded Workshop (hereinafter HEW) IDEs, CC-RH, and SHC. The applicable versions are as follows.
  - CS+ for CC V4.00.00
  - CC-RH V1.03.00
  - HEW V.4.09.01.007
  - SHC V.9.04 Release 03



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# Porting a Project



#### **Procedures for Porting a Project**

There are two ways to port an existing HEW project for SHC to the CS+ environment for CC-RH. Of the two procedures below, this document mainly describes **procedure 1**.

1. Diversion of an existing project

Creating a new CS+ project for CC-RH by diverting the HEW project for SHC.

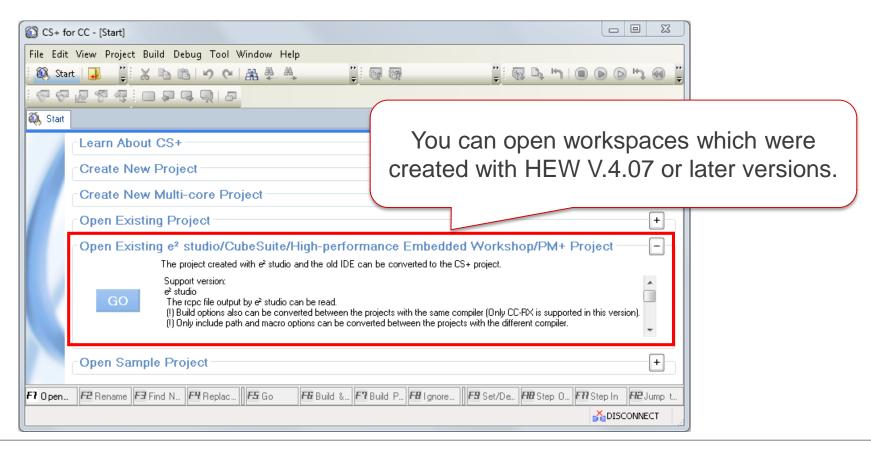
2. Newly creating a project in CS+

Using the source files which you have already created in creating and registering a project in CS+ for CC-RH.

Contents	Procedure 1	Procedure 2
Registering source files	Automatic	Manual
Option settings	Automatic (only partly)	Manual
Contention between the names of original source files and automatically generated files	Names need to be modified after the project is generated	Manual (consider this at the time of registration)

# Opening a HEW Project in CS+ (1)

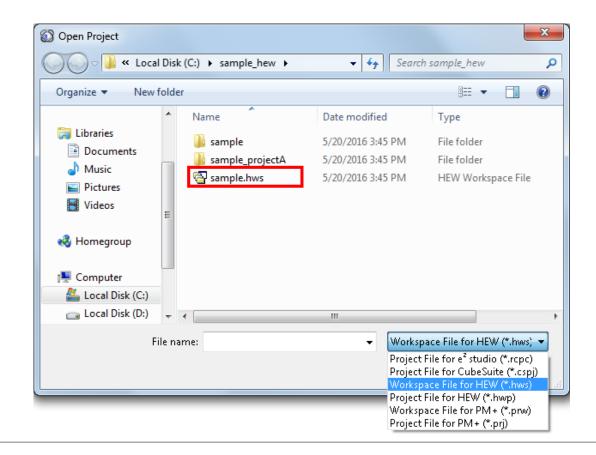
Select [Open Existing e<sup>2</sup> studio/CubeSuite/High-performance Embedded Workshop/PM+ Project].





# Opening a HEW Project in CS+ (2)

Select "Workspace File for HEW(\*.hws)" or "Project File for HEW(\*.hwp)".

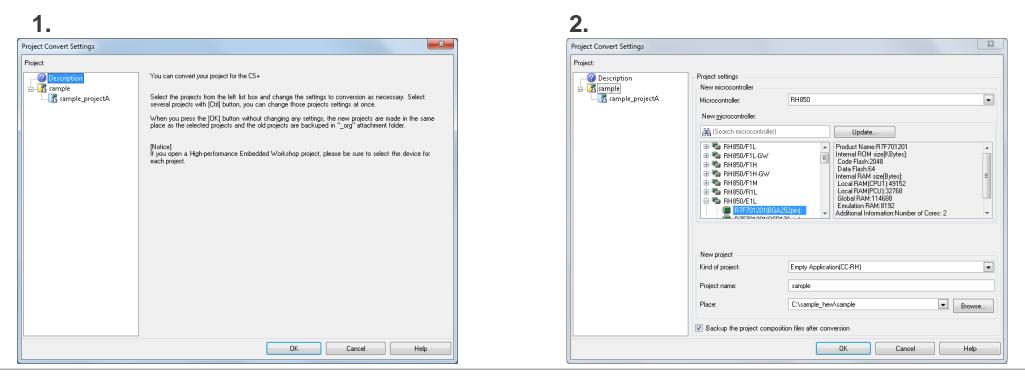




### Opening a HEW Project in CS+ (3)

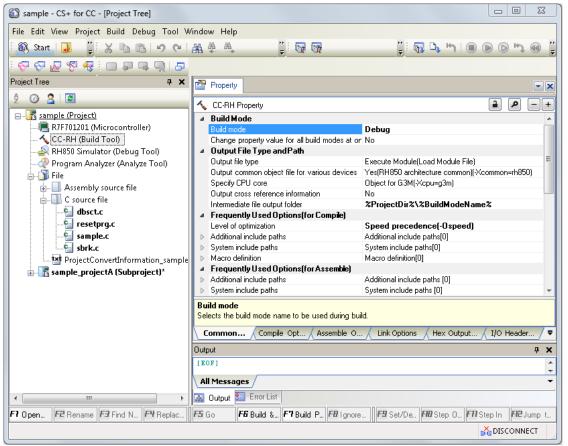
1. Select the project to be set for conversion from the [Project Convert Setting] dialog box.

2. Make the settings for the microcontroller, session, kind of project, project name, and place of storage which are to be used with the ported project.



# Opening a HEW Project in CS+ (4)

A screenshot of the CS+ window right after a HEW project has been read.





#### For Reference: Creating a New CS+ Project (1)

#### Select [Create New Project].

(i) CS+ for CC - [Start]
File Edit View Project Build Debug Tool Window Help
🔯 Start 🛃 🧊 🔏 🖻 🖻 🕫 ୯୧୮ 📇 🐥 🍟 🖓 🖓 🖓 🐂 👘 🗐 🕞 🗠 🐂 🌍
· ? ? · · · ? · · · · · · · · · · · · ·
🔍 Start
Learn About CS+
Create New Project A new project can be created. A new project can also be created by reusing the file configuration registered to an existing project.
Create New Multi-core Project +
Open Existing Project +
Open Existing e <sup>2</sup> studio/CubeSuite/High-performance Embedded Workshop/PM+ Project +
Open Sample Project +
F7 Open F2 Rena F3 Find F4 Repla F5 Go F6 Build F7 Build F8 Ignore F9 Set/D F18 Step F11 Step In F12 Jump to



#### For Reference: Creating a New CS+ Project (2)

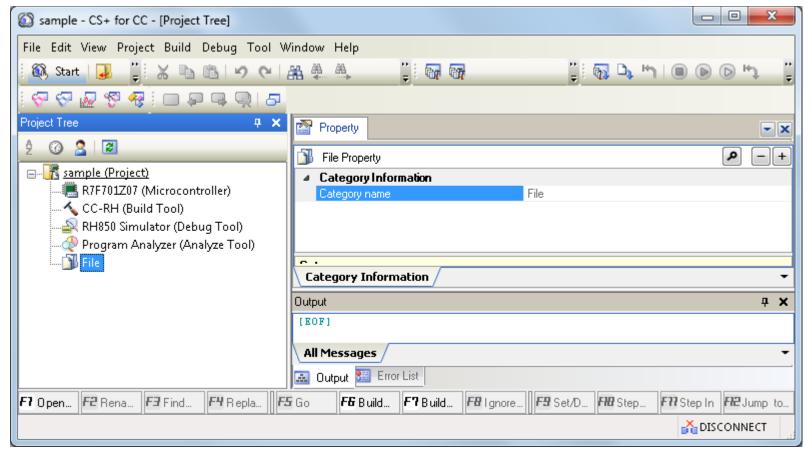
Select the type of microcontroller in [Microcontroller] and the particular device in [Using microcontroller], labelled (1) and (2) at right, set a name for the project in [Project name] and the place where it is to be stored in [Place], both labelled (3), and then click on the [Create] button.

Create Project		×						
Microcontroller:	(1) RH850	-						
Using <u>m</u> icrocontroller:								
📇 (Search microcontrol	ler) Update							
RH850/E1M-S       Product Name:R7F701207         RH850/E1x-FCC1       Internal ROM size[KBytes]:         Code Flash: 4096       Data Flash: 64         R7F701207(0FP176pin)       Internal RAM size[Bytes]:         Local RAM(CPU1):65536       Local RAM(CPU1):65536         Local RAM(PCU1):32768       Global RAM:261244         R7F701206(0FP176pin)       Fmultion RAM:786432         Additional Information:Number of Cores: 2       Fmultion								
Kind of project:	Empty Application(CC-RH)	-						
Project name:	(3) [Input the name of the project here.]							
Place:	D:\sample_project  Browse							
	Make the project folder							
(It is shown absolute pat	h of a project file to create.)							
Pass the file composit	tion of an existing project to the new project							
Project to be passed: (Input project file to be diverted.)								
Copy composition files in the diverted project folder to a new project folder.								
-	Create Cancel Help							



#### For Reference: Creating a New CS+ Project (3)

A screenshot of the CS+ window right after creating a new project.





#### For Reference: Creating a New CS+ Project (4)

Add the existing source files to the <u>file</u> branch of the [Project Tree].

New files can also be added.

(1) Add File or Add New File...

Sample - CS+ for CC - [Project Tree]		
File Edit View Project Build Debug Tool	Window Help	
🍇 Start 🛃 🍟 🔏 🖻 🖄 🕫	# # # · · · · · · · · · · · · · · · · ·	ji 🚯 🗅 🐂 i 🖲 🕞 🗠 🍹
i 💎 🖓 🖉 🧐 🥵 🗆 🗭 🗣 🔍 🎜		
Project Tree 🛛 🕂 🗙	Property	- ×
2 @ 2 2	J File Property	
sample (Project)	Category Information	
R7F701Z07 (Microcontroller)	Category name	File
CC-RH (Build Tool)		
Figram Analyzer (Analyze 100)	C .	
Add	Add File	<del>_</del>
Open Folder with Explorer	🎦 🛛 Add New File	÷ ×
🗉 Windows Explorer Menu	🔠 Add New Category	
Remove from Project Shift	+Del essages	•
	trl+C Error List	
Fi Open Paste C	trl+V F6 Build F7 Build F8	gnore
🦣 Rename	F2	
Property		

(2) You can also add files by dragging and dropping on the file category in the project tree.

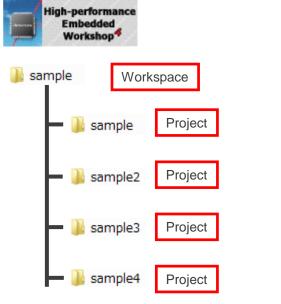
gamze +	- open	• "		· 💷								
	🔯 sample	- CS+ for C	C - [Project	Tree]								
main.c	File Edit	View Proj	ect Build	Debug Tool	Window	Help						
main.c	🔍 🔍 Start	: 🛃 🗒	X h	B 9 0	品 🍭	A.	<u> </u>	ħ		67 D M		D H
	i 💎 💎	🖉 😵 🍕	; 🗆 🖓	998	5							
	Project Tree			<b>₽</b>	× 🕋 Pro	operty						- 3
		2 2			🔄 🛐 Fi	e Property						P -+
		nple (Projec R7F701Z07	<u>:t)</u> (Microconti	roller)		itegory Info tegory name	rmation		File			
		CC-RH (Bu	ild Tool)			leguly hame			Tile			
			ulator (Debu .nalyzer (Ana									
	·				Cate	gory Inforn	nation /					
						yory miori						
					Output							<b>д &gt;</b>
					[EOF]							
					All M	essages /						•
					🖂 Ou	put 📧 Erro	or List					
	F1 Open	F2 Rena	F3 Find	F4 Repla	<b>F5</b> Go	FB Build	F7 Build	F8 Ignore	F9 Set/D	FHD Step	F77 Step In	FR2 Jump to.
											👬 DIS	CONNECT



# **Project Configurations**

The HEW environment and CS+ environment have different project configurations.

CS+ holds multiple sub-projects in one project.



🛞 C5-	F		
] sample	Main	Project	
🗕 퉬 sar	nple2	Sub Pr	oject
— 鷆 sar	nple3	Sub Pr	oject
— 🕌 sar	nple4	Sub Pr	oject

You can freely create projects in HEW.

For example, \*.abs and \*.lib files can be generated for each project and parent and child relationships between projects can be set up.

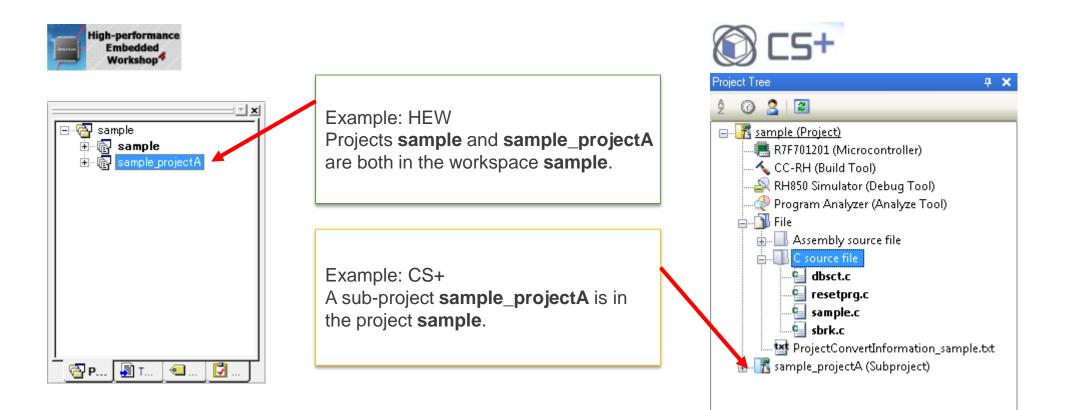
You cannot create more than one project.

Projects other than this main project should be created as sub-projects which depend on the main project.



#### **Example of Project Configurations**

If a HEW workspace is opened with CS+, the project configuration is altered as follows.



### Automatic Conversion of Options (Compiler: 1)

SHC options which are specified in HEW will be converted automatically in cases where CC-RH supports corresponding options.

Functions	High-performance Embedded Workshop <sup>4</sup> HEW (SHC)					CS+ (CC-RH)				
Functions			Place to be set	Name of			Place to be set			
	Tab	Categ ory	Property	option	Tab	Category	Property	Name of option		
Paths to additional included file directories	C/C++	Source	[Show entries for : Include file directories]	-include	Comp		[Additional include paths]	-1		
Files to be included at the top of each compilation unit	·	(D	[Show entries for : Preinclude files]	-preinclude	Compile Options	Preprocess	[Include files at head of compiling units]	-Xpreinclude		
Definition of macros			[Show entries for : Defines]	-define	suc		[Macro definition]	-D		
		Object	[Output file type	-preprocessor		Output File	[Output preprocessed source file : Yes]	-P		
Expansion by the			: Preprocessed source file (*.p/*.pp)]			Preprocess	[Output line number information to preprocessed file : Yes]	-Xpreprocess=line		
preprocessor			[Output file type : Suppress #line in preprocessed	-preprocessor -noline		Output File	[Output preprocessed source file : Yes]	-P		
			source file]			Preprocess	[Output line number information to preprocessed file : No]	-۲		



#### Automatic Conversion of Options (Compiler: 2)

Functions		Emb	HEW (SHC)		() ()	S+	<b>5+</b> CS+ (CC-RH)			
			Place to be set	Name of option		Pla	ce to be set	Name of option		
	Tab	Category	Property	Name of option	Tab	Category	Property	Name of option		
Specifying a directory for the output of object files	C/C++		[Output directory]	-objectfile	Common Options	Output File Type and Path	[Intermediate file output folder]	-Xobj_path		
Form of object code		Object	[Output file type : Assembly source code(*.src)]	-code= asmcode		Output File	[Output assembly source file : Yes]	-Xasm_option= -Xprn_path		
Output of debugging information		¥	[Generate debug informations]	-debug	Compile Options	Debug Information	[Add debug information : Yes]	-g		
momation				-nodebug		Information	[Add debug information : No]	Not explicitly specified		
Output of listing files		5	[Generate list file]	-listfile	Assemble	Assemble List	[Output assemble list file ; Yes]	Xasm_option= -Xprn_path		
		List		-NOListfile	Options		[Output assemble list file ; No]	Not explicitly specified		

#### Automatic Conversion of Options (Compiler: 3)

Functions	ļ	Hi	gh-performance Embedded Workshop <sup>4</sup>	HEW (SHC)		CS+ (CC-RH)							
FUNCTIONS	Place to be set				Name of			Place to be set	Name of				
	Tab	Cate gory		Property	option	Tab	Category	Property	option				
	Prince       Prince       [Optimize : for debug only]       -optimize= debug_only       -optimize= debug_only         Speed or size :       [Optimize for speed]       -speed       -size       -size       -nospeed       -size       -nospeed       -size       -optimize=0       -speed       -size       -speed       -size       -nospeed       -size       -nospeed       -size       -nospeed       -size       -nospeed       -size       -nospeed       -size       -nospeed       -size       -size       -nospeed       -size       -nospeed       -size       -nospeed       -size       -nospeed       -size       -nospeed       -size       -size       -nospeed       -nospeed       -size       -nospeed       -size       -nospeed       -size       -nospeed       -size       -nospeed       -size       -nospeed       -nospeed	Compi	Optimization	[Level of optimizations : Debug precedence]	-Onothing								
		ize	Speed or size :	[Optimize for size]	-size	ile Options	ization						
		[Optimize : off]		-optimize=0	07		[Level of optimizations : Preform the default	-Odefault					
Optimization			Speed or size :	[Optimize for size]	-size			optimization]					
Optimization								[Optimize : on] Speed or size :	[Optimize for speed]	-optimize=1 -speed			[Level of optimizations : Speed precedence]
				[Optimize for size]	-optimize=1 -size			[Level of optimizations : Code size precedence]	-Osize				
				[Optimize for both speed and size]	-optimize=1 -nospeed			[Level of optimizations : Preform the default optimization]	-Ospeed				
							Optimization (Details)	[Maximum number of loop expansions : 1] [Perform inline expansion : Yes(Only specified functions)]	-Ounroll=1 -Oinline=1				

#### Automatic Conversion of Options (Compiler: 4)

Functions	ŗ	Embe	formance edded cshop <sup>4</sup>	HEW (SHC)		CS+ (CC-RH)				
			Place	to be set	Name of option			Name of option		
	Tab	Category		Property	Name of option	Tab	Category	Property	Name of option	
Optimization for access to external variables (inter- module)	C/C++	Optimize		ization for access to al variables : Inter-module]	-map	Compile	Optimization (Details)	[Optimize accesses to external variables : Yes(Optimizes the inter-module)]	-Omap	
Optimization for access to external variables (intra- module)				nization for access to al variables : Inner- e]	-smap	Options		[Optimize accesses to external variables : Yes(Optimizes the inner-module)]	-Osmap	
System for unrolling switch				[Switch	statement : If then]	-case=lfthen		Output Code	[Output code of switch statement : if-else]	-Xswitch=ifelse
statements			[Switch	statement : Table]	-case=Table		put.	[Output code of switch statement : Table jump]	-Xswitch=table	
Controlling automatic inline expansion			<details> Tab : [Inline]</details>	[Automatic inline expansion : Default]	-inline		Optimization	[Preform inline expansion : Yes(Auto-detect)] [Maximum increasing rate of inline expansion size : 100]	-Oinline=2 -Oinline_size=100	
			_	[Automatic inline expansion : Custom] [Maximum : number]	-inline= <number></number>		ר (Details)	[Preform inline expansion : Yes(Auto-detect)] [Maximum increasing rate of inline expansion size : number]	-Oinline=2 -Oinline_size= <number></number>	



### Automatic Conversion of Options (Compiler: 5)

Functions	ļ	Emb	rformanc edded kshop <sup>4</sup>	• HEW (SHC)		CS+ (CC-RH)					
		Place to be set			Name of option			Place to be set	Name of		
	Tab	Category		Property	Name of option	Tab	Category	Property	option		
Treating external variables as volatile	C/C++	Optimize	<details> Tab : [Global variables]</details>	[Treat global variables as volatile qualified]	-GLOBAL_Volatile= 0 -GLOBAL_Volatile= 1	Compile Options	C Language	[Handle external variables as if they are volatile qualified : No] [Handle external variables as if they are volatile qualified : Yes]	Not explicitly specified -Xvolatile		
Sorting instructions			Tab ables	[Schedule instructions : Disable]	-SChedule=0	tions	Opt	[Preform pipeline expansion : No]	-Opipeline=off		
				[Schedule instructions : Enable]	-SChedule=1	0,	Optimization	[Preform pipeline expansion : Yes]	-Opipeline		
Unrolling loops			۲ Mis	[Loop unrolling : Enable]	-loop		ation	[Maximum number of loop expansions : 4]	-Ounroll=4		
			Cella [Loop uni	[Loop unrolling : Disable]	-noloop		(Details)	[Maximum number of loop expansions : 0]	-Ounroll=0		
Specifying a maximum unrolling factor for unrolling loops						<details> Tab : [Miscellaneous]</details>	[Specify maximum unroll factor : Custom <number>]</number>	-max_unroll= number		tails)	[Maximum number of loop expansions: number]
Optimization considering the types of items indicated by pointers				[Optimization considering type of object indicated by pointer]	-ALIAS=ANSI		C Language	[Compile strictly according to ANSI standards : Yes]	-Xalias=ansi		
Auto-selection of enum size		Other		Miscellaneous options : [enum size id made the smallest]	-auto_enum		U	[Enumeration type]	-Xenum_type= auto		



#### Automatic Conversion of Options (Compiler: 6, CPU)

Functions		Em	erformance bedded orkshop <sup>4</sup> HEW (SHC)		Ø	) C	<b>S+</b> CS+ (CC-RH)	
Functions			Place to be set	Nome of oution			Place to be set	Nome of ontion
	Tab	Category	Property	Name of option	Tab	Category	Property	Name of option
Character coding for character strings	C/C++	Other	User defined options : -euc -sjis	-euc -sjis	Compile Options	Character Encoding	[Character Encoding : EUC] [Character Encoding : SJIS]	-Xcharacter_set=euc_jp -Xcharacter_set=sjis
Specifying the order of bit fields	CPU	[Bit field bit]	's members are allocated from the lower	-Blt_order=Left -Blt_order=Right		Output Code	[Order of bit-field members : Allocates from left] [Order of bit-field members : Allocates from right]	-Xbit_order=left -Xbit_order=right
Alignment number for members of structures, unions, and class instances		[Pack st	ruct, union and class]	-PACK=1 -PACK=4			[Structure packing : 1 byte] [Structure packing : 4 byte]	-Xpack=1 -Xpack=4



#### Automatic Conversion of Options (Assembler)

Functions	1	Emb	HEW (SHC)		C	C		
			Place to be set	Name of			Place to be set	Name of option
	Tab	Category	Property	option	Tab	Category	Property	Nume of option
Specifying include file path names	Assembly	Source	Show entries for : [Include file directories]	-include	Assem	Preprocess	Additional include paths	-I
Defining symbol replacement	bly	Ū	Show entries for : [Defines]	-define	Assemble Options	Cess	Macro definition	-D
Debugging information		Object	Debug information : [With debug information] Debug information : [Without debug information]	-debug -nodebug	ons	Debug Information	[Add debug information : Yes] [Add debug information : No]	-g Not explicitly specified
Output of listing files		List	[Generate list file]	-list -nolist		Assemble List	[Output assemble list file ; Yes] [Output assemble list file ; No]	-Xprn_path Not explicitly specified
Character coding in source files		Other	User defined options : -euc -sjis	-euc -sjis		Character Encoding	[Character Encoding : EUC] [Character Encoding : SJIS]	-Xcharacter_set=euc_jp -Xcharacter_set=sjis



## Automatic Conversion of Options (Linker: 1)

Functions	Functions					C		<b>5+</b> CS+ (CC-RH)		
				Place to be set	Name of		Place to be set			
	Tab	Category		Property	option	Tab	Category	Property	Name of option	
Specifying input files	Link		Show	Library files	-LIBrary	Link	Library	System libraries	-LIBrary	
	Link/Library			Relocatable files and object files	-Input	Options		Object file	-Input	
	ary	Input	entries f	Binary files	-Binary		Input	Binary file	-Binary	
Defining undefined symbols		input	for :	Defines	-DEFine		File	Symbol definition	-DEFine	
Specifying the address where execution starts		[Use entry point]		-ENTry		Output Code	[Specify execution start address : Yes]	-ENTry		



### Automatic Conversion of Options (Linker: 2)

Functions	High-performance Embedded Workshop <sup>4</sup> HEW (SHC)			C	) CS	CS+ (CC-RH)			
			Plac	ce to be set	Name of option			Place to be set	Name of option
	Tab	Category		Property	Name of option	Tab	Category	Property	Name of option
Specifying forms of output	Link	Output	Туре	Absolute(ELF/DWARF)	-Form=Absolute	No pla	ace to supp	ort (default)	-Form=Absolute
	Link/Library		<u>o</u> f	Relocatable	-Form=Relocate	Create L Options	Output File	[Output file format : Relocatable file]	-Form=Relocate
	V		output file	System library	-Form=Library=S	e Library ns		[Output file format : System libraries]	-Form=Library=S
				User library	-Form=Library=U	ary		[Output file format : User libraries]	-Form=Library=U
				HEX via absolute	-Form=Hexadecimal	Hex Ou		[Hex file format : Intel HEX file]	-Form=Hexadecimal
				Stype via absolute	-Form=Stype	Hex Output Options	Hex Format	[Hex file format : Motorola S-record file]	-Form=Stype
				Binary via absolute	-Form=Binary	ions		[Hex file format : Binary file]	-Form=Binary



### Automatic Conversion of Options (Linker: 3)

Functions	1		forman dded shop <sup>4</sup>	e HEW (SHC)		CS+ (CC-RH)					
			Pla	ce to be set	Name of		Name of				
	Tab	Category		Property	option	Tab	Category	Property	option		
Debugging information	Link/Library	Output	debu	bug information : In separate ug file (*.dbg)] bug information : None]	-DEBug -NODEBug	Link Options	Debug Information	[Output debug information : Yes(Output to the output file)] [Output debug information : No]	-DEBug -NODEBug		
Unifying record size			[Dat	e record header]	-Record	He) Opt	Hex	[Unify record size]	-RECord		
Specifying the number of bytes in data records			[Len	gth of data record]	-BYte_count	Hex Output Options	Format	[Specify byte count for data record: Yes]	-BYte_count		
Specifying a value for output to empty areas			Show	Specify value filled in unused area	-Space			[Fill unused areas in the output ranges with the value : Yes]	-SPace		
Specifying output files				entries for	Output file path	-Output	Link Output Options	Output File	[Output folder] [Output file name]	-Output	
Information file on allocation of external symbols				Output file path [Generate external symbol- allocation information file]	-Мар	SUC	Optimization (Details)	[Output external symbol allocation information file]	-МАр		



## Automatic Conversion of Options (Linker: 4)

Functions	ļ	High-performance Embedded Workshop <sup>4</sup> HEW (SHC)				CS+ (CC-RH)												
			Plac	e to be set	Name of option			Place to be set	Name of option									
	Tab	Category		Property	Name of option	Tab	Category	Property	Name of option									
Informational messages	Link/Library	Output	entries	Show er	Output message [Repressed information level messages]	-Message -NOMessage	Link Options	Message	[Enable information message output : Yes] [Enable information message output : No]	-Message -NOMessage								
Notification of defined symbols with no reference	ary							5	ary	ary	ary	ary		tries for	Output message [Notify unused symbol]	-MSg_unused	ons	
Padding at the ends of sections			 Padding		-PADDING		Output Code	[Fill with padding data at the end of a section : Yes]	-PADDING									
Specifying the output of listing files		List	Ger	erate list file	-LISt		List	[Output link map file : Yes]	-LISt									
Specifying the information to be output to listing files								tput method : All] tput method : Custom]	-Show=ALL			[Output link map file : Yes(List contents=ALL)] [Output link map file : Yes(List	-Show=ALL					
			[Sh [Sh [Sh [Sh	ow symbol] ow reference] ow section] ow cross reference] ow total section size]	-Show=Symbol -Show=Reference -Show=Section -Show=Xreference -Show=Total_size			contents=specify)] [Output symbol information : Yes] [Output number of symbol reference : Yes] [Output section information : Yes] [Output cross reference information : Yes] [output total sizes of sections : Yes]	-Show=Symbol -Show=Reference -Show=Section -Show=Xreference -Show=Total_size									

## Automatic Conversion of Options (Linker: 5)

Functions	1		forma edded kshop <sup>4</sup>	HFW (SHC)		C	CS	+ CS+ (CC-RH)	
				Place to be set	Name of			Place to be set	Name of option
	Tab	Category		Property	option	Tab	Category	Property	Name of option
Checking the consistency of addresses	Link/Library	Verify	CPL	J information check	-Cpu	Link O	Verify	[Check section larger than specified range of address : Yes]	-Cpu
Stack information file	ibrar	Other	Mis	Stack information output	-STACk	Options	Others	[Output stack information file : Yes]	-STACk
Specifying reduction of memory usage	V		Miscellaneous	Low memory use during linkage	-MEMory	SL		[Reduce memory occupancy]	-MEMory
Compression of debugging information			ous options	Compress debug information	-Compress -NOCOmpress		Debug Information	[Output debug information : Yes(Output to the output file] [Output debug information : No]	-Compress -NOCOmpress
S9 records always to be output				Always output S9 record at the end	-S9	Hex Output Options	Hex Format	[Output S9 record at the end : Yes]	-S9

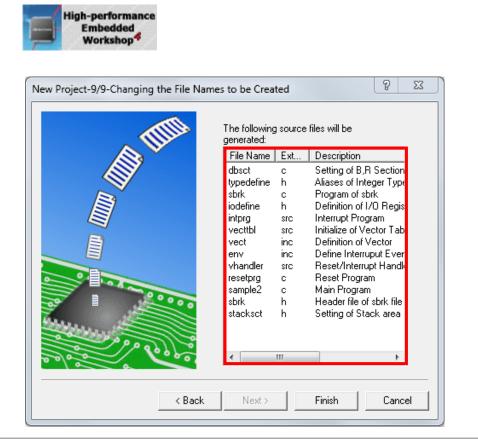


## Automatic Conversion of Options (Linker: 6)

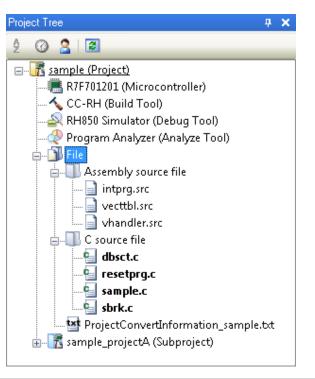
Functions			rforma edded kshop	HFW (SHC)		CS+ (CC-RH)				
			Plac	ce to be set				Place to be set	Nome of option	
	Tab	Category	ory Property		Name of option	Tab	Tab Category Property		Name of option	
Changing the level of messages	Link/Library	Other	User definec	-CHange_message	-CHange_message	Link Options	Message	[Change warning message to information message : Yes]	-CHange_message	
Specifying concealment of local symbol names			defined options	-Hide	-Hide		Debug Information	[Delete local symbol name information : Yes]	-Hide	
Displaying total size of sections				-Total_size	-Total_size		Others	[Display total size of sections : Yes]	-Total_size	

#### Caution

Delete startup files which are automatically generated by HEW, since they are unusable.







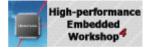







#### Managing the Build Environment

The setting of options is managed differently in the HEW and CS+ environments.



The build options are saved in units called configurations. They can be added as desired.



The options are saved in units called build modes.

	Build Configurations	? <mark>×</mark>
Debug           Debug           Debug           Release	Build configurations: Debug Release	OK Cancel
* * * * * * * * * * * * * * * * * * * *		Add
		Remove
	Current configuration:	
	Current configuration:	[

Buil	d Debug Tool Window Help	
67	Build Project F7	
67	Rebuild Project Shift+F7	Ruild Mode Settings
æ,	Clean Project	Build Mode Settings
TON	Rapid Build	Selected build mode:
-4	Update Dependencies	Apply to All
T)	Build sample	Build mode list: DefaultBuild Duplicate
T)	Rebuild sample	DefaultBuild Duplicate
	Clean sample	Delete
-2	Update Dependencies of sample	Rename
	Set Link Order of sample	
×.	Stop Build Ctrl+F7	Close Help
Τę	Build Mode Settings	
Ē.	Batch Build	
Tę	Build Option List	



## **Setting Build Options**

#### For CS+, the build options can be specified by property settings.



The build options are specified in order of [Tab]->[Category]->etc..., and the place they are to be set is then displayed.

ormance Embedded Workshop
roject Build Debug Setup Tools Test Window Help
SuperH RISC engine Standard Toolchain         SuperH RISC engine Standard Toolchain         Configuration:         Debug         Al Loaded Projects         Sample         C C++ source file         C Linkage symbol file         Sample projectA         C Source file         C +- Linkage symbol file         Move gown
Options C/C++ :           -cpu=sh4 -object="\$(CONFIGDIR)\\$(FILELEAF).obj" - debug -speed -gbr=auto -chgincpath -errorpath - global_volatile=0 -opt_range=all -infinite_loop=0 -
OK Cancel



All settings are displayed by specifying a tab.

Project Tree			д	×		
2 🕜 🙎 🛙	2					
	Pr	oject) <u>*</u>				
		201 (Microcontroller)				
CC-R	۱H	(Build Tool)				
RH85	in (	Simulator (Debuq Tool)				
		Property				×
E File	k	CC-RH Property			- 9	+
· · · · · · · · · · · · · · · · · · ·	4	Build Mode				
71 B		Build mode			Debug	
A		Change property value for all build modes at onc	е		No	Ξ
; U Up	⊿	Output File Type and Path				
		Output file type			Execute Module(Load Module File)	
		Output common object file for various devices			Yes(RH850 architecture common)(-Xcommon=rh850)	
		Specify CPU core			Object for G3M(-Xcpu=g3m)	
		Output cross reference information			No	
		Intermediate file output folder			%ProjectDir%\%BuildModeName%	
		Frequently Used Options(for Compile)				
		Level of optimization			Speed precedence(-Ospeed)	
	⊳	Additional include paths			Additional include paths[0]	- 1
	⊳	System include paths			System include paths[0]	Ŧ
	Se	uild mode elects the build mode name to be used during build		ole Opti	ions 🖌 Link Options 🖌 Hex Output Options 🖌 I/O Header File G	/=
	1	A				/ ·
	L	Descriptions of option	12	alt	5 aisu shuwh.	



#### Setting the Order of Linkage

Note: This setting influences the result of building.

The HEW and CS+ environments have different orders of linkage. By default, the HEW environment handles the files in ASCII order of their names, while CS+ has an internal order of management.

High-performance Embedded		Linkage Order	? X
Workshop <sup>4</sup>		Use custom linkage order	ОК
		Object order:	Cancel
ce Embedded Workshop		intprg.obj intprg.obj interg.obj	
Build Debug Setup Tools Tes	t Window Help	sample.lib	Move to top
SuperH RISC engine Standard Too	olchain	Order of ASCII by de	fault 🚽
🏶 Build <u>F</u> ile	Ctrl+F7		?
🛗 <u>B</u> uild	F7	Linkage Order	
🛗 Build <u>A</u> ll		Use custom linkage order Object order:	ОК
Build <u>M</u> ultiple			Cancel
Clean Current Project		intprg.obj	Move to top
👪 Clean All Projects		sample.lib	Move up
Update All Dependencies		sample.obj	
K Chan Taul Franking	Ctrl + Break	vecttbl.obj	Move down
Kop Tool Execution	Utri +Break		Move to bottom
Include/Exclude Build			
Build <u>P</u> hases		Able to customize	
Build <u>C</u> onfigurations			Import
Lin <u>k</u> age Order		Current configuration:	Export
Generate Makefile		Debug	Copy to



Since CS+ has an internal order of management by default, the order will require rearrangement to have the order in CS+ conform to that in the HEW environment.

#### Build Menu



Build Debug Setup Tools	Test	Window	Help
SuperH RISC engine Standard	Toolc	hain	
🆃 Build <u>F</u> ile		Ctrl +	F7
🏙 <u>B</u> uild			F7
🛗 Build <u>A</u> ll			
Build <u>M</u> ultiple			
C <u>l</u> ean Current Project			
🏭 Cl <u>e</u> an All Projects			
<u>U</u> pdate All Dependencies			
🅌 Stop Tool Execution		Ctrl+Bre	ak
Include/Exclude Build			
Include/Exclude Build Build <u>P</u> hases			
-			

	[Project
Help Comparison of build functions	
	B
- Build - Build Project	R R
- Build All - Rebuild Project	🔂 C
- Build Multiple Batch Build	Tân R
	1 1 U
	🔁 В
- Clean Current Project - Clean Project	10 R
- Clean All Project	🛃 c
	e <u>f</u> U
ak	S S
- Update All - Update Depende	
Dependencies	T <sub>7</sub> B
	🔁 B
Build Configurations Build Mode Setting	ngs 🏼 Tr 🛛 B
	Output



[Proj	ect Tree]		
Buil	d Debug Tool Window Help		
67	Build Project F7		
đ	Rebuild Project Shift+F7		
6	Clean Project		
Ton	Rapid Build		
•2	Update Dependencies		
Ð	Build sample		
ŧ,	Rebuild sample		
	Clean sample		
•	Update Dependencies of sample		
inkļ	Set Link Order of sample		
*	Stop Build Ctrl+F7		
Ty	Build Mode Settings		
Ð	Batch Build		
Tę	Build Option List		

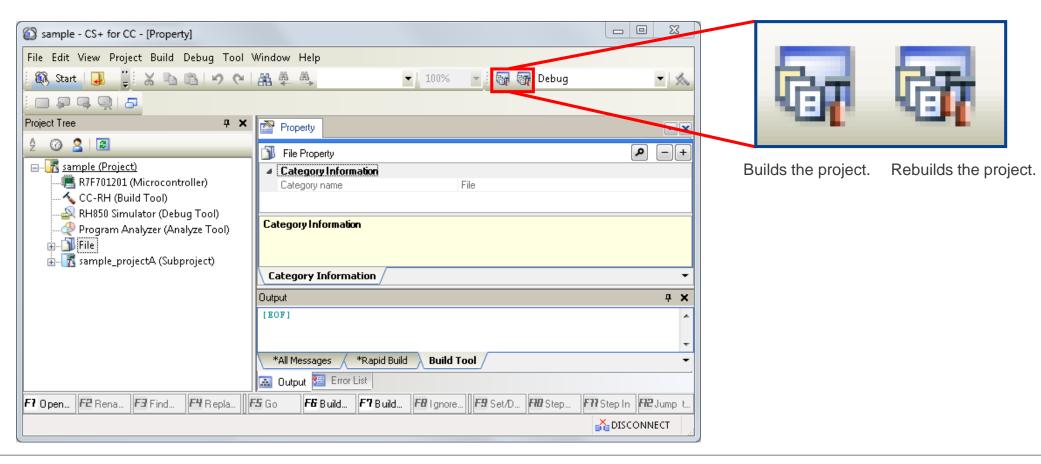
A list of option settings can be displayed.

Cutput +	· ~
======================================	
Start build option list(sample_projectA, DefaultBuild)	
[Setting state of common options]	
\dbsct.c\intprg.c\resetprg.c\sample_projectA.c\sbrk.c\vecttbl.c : C:\Program Files\	
Renesas Electronics\CS+\CC\CC-RH\V1.03.00\Bin\ccrh.exe\dbsct.c\intprg.c\resetprg.c\sampl	
e_projectA.c\sbrk.c\vecttbl.c -Xobj_path=C:\sample_hew\sample_projectA\sample_projectA\Default	



# **Building and Rebuilding**

Building and rebuilding can be executed from the [Build] menu, or by clicking on the buttons shown below.





#### Renesas System Design Co., Ltd.

