

User's Manual

CS+

Integrated Development Environment

User's Manual: CC-RL Build Tool Operation

Target Device RL78 Family

Target Version V3.00.00 or higher

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How to Use This Manual

This manual describes the role of the CS+ integrated development environment for developing applications and systems for RL78 family, and provides an outline of its features.

CS+ is an integrated development environment (IDE) for RL78 family, integrating the necessary tools for the development phase of software (e.g. design, implementation, and debugging) into a single platform.

By providing an integrated environment, it is possible to perform all development using just this product, without the need to use many different tools separately.

Readers	This manual is intended for users who wish to understand the functions of the CS+ and design software and hardware application systems.		
Purpose	This manual is intended to give users an understanding of the functions of the CS+ to use for reference in developing the hardware or software of systems using these devices.		
Organization	This manual can be broadly divided into the following units.		
	1.GENERAL 2.FUNCTIONS A.WINDOW REFERENCE		
How to Read This Manual	It is assumed that the readers of this manual have general knowledge of electricity, log circuits, and microcontrollers.		
Conventions	Data significance: Active low representation: Note: Caution: Remarks: Numeric representation:	<u>High</u> er digits on the left and lower digits on the right XXX (overscore over pin or signal name) Footnote for item marked with Note in the text Information requiring particular attention Supplementary information Decimal XXXX Hexadecimal 0xXXXX	

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1. GENERAL

This chapter explains the overview of the build tool plug-in of CC-RL.

1.1 Overview

The build tool plug-in can be used to set build options for creating load modules or user libraries.

1.2 Features

The features of the build tool plug-in are shown below.

- Build option setting Most build options can be set via the graphical user interface (GUI).
- Project conversion
 A project for the CA78K0R compiler created by using CS+ or CubeSuite+ can be converted into a project for the CC-RL compiler.
- Speeding-up of build

Two types of facilities are provided to speed up build: simultaneous build and parallel build. The build time can be shortened in simultaneous build by simultaneously compiling or assembling the files with a single call of the build command and in parallel build by executing multiple build commands in parallel.



2. FUNCTIONS

This chapter describes the build procedure using CS+ and about the main build functions.

2.1 Overview

This section describes how to create a load module and user library.

2.1.1 Create a load module

The procedure for creating a load module is shown below.

- Remark See "CS+ Integrated Development Environment User's Manual: Project Operation" for details about (1), (2), (3), (8), and (9).
- Create or load a project Create a new project, or load an existing one.

Remark When converting a CA78K0R project into a CC-RL project, see "2.2 Convert a CA78K0R project into a CC-RL project".

- (2) Set a build target project Set a build target project.
- (3) Set build target files Add or remove build target files and update the dependencies.
- (4) Set speeding-up of build Set a build speed-up facility as required (see "2.3 Speeding-up of Build").
- (5) Set the type of the output file Select the type of the load module to be generated (see "2.4 Set the Type of the Output File").
- (6) Set build options Set the options for the compiler, assembler, linker, and the like (see "2.5 Set Compile Options", "2.6 Set Assemble Options", "2.7 Set Link Options", and the like).
- (7) Set the update method of the I/O header file Update the I/O header file in accordance with the update of the device file (see "2.12 Automatically Update the I/ O Header File").
- (8) Run a build Run a build.

Remark If there are any commands you wish to run before or after the build process, on the Property panel, from the [Common Options] tab, in the [Others] category, set the [Commands executed before build processing] and [Commands executed after build processing] properties. If there are any commands you wish to run before or after the build process at the file level, you can set them from the [Individual Compile Options] tab (for a C source file) and [Individual Assemble Options] tab (for an assembly source file).

(9) Save the project

Save the setting contents of the project to the project file.



2.1.2 Create a user library

The procedure for creating a user library is shown below.

- Remark See "CS+ Integrated Development Environment User's Manual: Project Operation" for details about (1), (2), (3), (6), and (7).
- Create or load a project
 Create a new project, or load an existing one.
 When you create a new project, set a library project.
 - Remark When converting a CA78K0R project into a CC-RL project, see "2.2 Convert a CA78K0R project into a CC-RL project".
- (2) Set a build target project Set a build target project.
- (3) Set build target files Add or remove build target files and update the dependencies.
- (4) Set speeding-up of build Set a build speed-up facility as required (see "2.3 Speeding-up of Build").
- (5) Set build options Set the options for the compiler, assembler, librarian, and the like (see "2.5 Set Compile Options", "2.6 Set Assemble Options", "2.9 Set Create Library Options").
- (6) Run a build
 - Run a build.
 - Remark If there are any commands you wish to run before or after the build process, on the Property panel, from the [Common Options] tab, in the [Others] category, set the [Commands executed before build processing] and [Commands executed after build processing] properties. If there are any commands you wish to run before or after the build process at the file level, you can set them from the [Individual Compile Options] tab (for a C source file) and [Individual Assemble Options] tab (for an assembly source file).

(7) Save the project

Save the setting contents of the project to the project file.



2.2 Convert a CA78K0R project into a CC-RL project

A project for the CA78K0R compiler created by using CS+ or CubeSuite+ can be converted into a project for the CC-RL compiler. Make use of the existing file configuration to create a new project for the CC-RL compiler. The properties of the build tool are also maintained, and converted for use with the CC-RL.

- Remark When newly creating a project, see "CS+ Integrated Development Environment User's Manual: Project Operation".
- **Caution 1.** Since the source files are not converted, a build error may occur in some source files immediately after conversion.
- **Caution 2.** If you wish to reuse an existing PM+ project, open the project in CS+, then save it as a CS+ project (for the method of converting a PM+ project into a CS+ project, see "CS+ Integrated Development Environment User's Manual: Project Operation").

First, from the [Project] menu, select [Create New Project...], the Create Project dialog box will open.

Figure 2.1 Create Project Dialog Box

Create Project					
Microcontroller:	RL78				
Using microcontroller:					
(Search microcontroller)		Update			
RL78/G13 (ROM:128K RL78/G13 (ROM:128K RL78/G13 (ROM:192K R5F100EH(40pin) R5F101EH(40pin) R5F100FH(44pin) R5F101FH(44pin) R5F100GH(48pin) R5F101GH(48pin)	B) ^	Product Name:R5F100E Internal ROM size[KByte Internal RAM size[Bytes]	EH 19]:192 1:16384	~	
	· · · · ·				
Kind of project:	Empty Application	(CC-RL)		•	
Project name:	sample_CC-RL				
Place:	C:\work\sample			Browse	
	Make the project folder				
C:\work\sample\sample_CC-R	L\sample_CC-RL.m	tpj			
Pags the file composition 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.					
<u>C</u> reate Cancel <u>H</u> elp					



Set the items in the order below and click the [Create] button.

- (1) Select the microcontroller type Select "RL78" on [Microcontroller].
- Select the microcontroller Select the microcontroller to use in the project on [Using microcontroller].
- (3) Select the project type Under [Kind of project], select "Empty Application(CC-RL)" or "Library(CC-RL)", in accordance with the source project.
- (4) Specify the project name and location to create the project file Specify the name of the project and the location to create the project file in [Project name] and [Place]. If you don't create a folder with the project name under the specified location, clear the [Make the project folder] check box.
 - Remark It is recommended to specify the same folder as the diverted project for the location to create the project file. If a folder different from the diverted project is specified, there is a possibility that path determination fails and a build error is occurred.
- (5) Specify the reuse of a CA78K0R project Check [Pass the file composition of an existing project to the new project] and specify the location of the project filename to reuse in [Project to be passed].
- Remark The result that a CC-RL project is created by reusing a CA78K0R project (the versions of the IDE and compiler package, and conversion information of options) is output to a file as project divert information.
 - The project divert information file name is "ProjectDivertInformation n.txt" (n = 2 to 100). n is not added normally. It is added if the file to be created already exist.
 - The project divert information file is output for each created project (subproject).
 - The project divert information file is output to the project folder of the project (subproject).
 - The project divert information file is added to the File node of the project (subproject) on the Project Tree panel.

The output format of the project divert information file is shown below.

```
(1)Time and date on which a project was created
(2) <CS+ IDE(Integrated Development Environment Framework) version>
CS+ IDE: Version of IDE of CA78KOR project -> Version of IDE of CC-RL
project
(3) <Compiler package version>
CA78KOR: Version -> CC-RL: Version
(4) <Options not to use(Build mode)>
Command name(Tab name of build tool property)
Option
:
(5) <Options to change(Build mode)>
Command name(Tab name of build tool property)
Option of CA78KOR project -> Option of CC-RL project
:
```

Number	Description
(1)	Time and date on which a project was created The time and date on which a CC-RL project was created by reusing a CA78K0R project is output using format " <i>dddd, mmmm dd, yyyy hh:mm:ss AM/PM</i> ".



Number	Description
(2)	CS+ IDE(Integrated Development Environment Framework) version The version of IDE of a CA78K0R project and the version of IDE of a CC-RL project are output.
(3)	Compiler package version The compiler package used in a CA78K0R project and the version, and the compiler package used in a CC-RL project and the version are output. The version of CC-RL is the latest version in the compiler packages which are installed in the CS+ environment.
(4)	Options not to use(<i>Build mode</i>) If an option that has been set in a CA78K0R project and is not used in a CC-RL project exists, the information is output for each build mode in the format shown below.
	Command name(Tab name of build tool property) Option :
	- This item is output only when the corresponding option exists.
	 CA78K0R options are converted into CC-RL options which have the same function. The option that has the same function and different name is not output.
	 Build modes are output in the following order: "DefaultBuild", user-created build mode ("DefaultBuild" is the build mode that CS+ provides by default). See "CS+ Integrated Development Environment User's Manual: Project Operation" for detail about a build mode.
(5)	Options to change(<i>Build mode</i>) If an option that has been set in a CA78K0R project and has been changed to use in a CC-RL project exists (in the case that the function is same as CA78K0R, but the param- eter does not exist in CC-RL, so it is changed to other one, and the like), the information is output for each build mode in the format shown below.
	Command name(Tab name of build tool property) Option of CA78KOR project -> Option of CC-RL project :
	- This item is output only when the corresponding option exists.
	- CA78K0R options are converted into CC-RL options which have the same function. The option that has the same function and different name is not output.
	 Build modes are output in the following order: "DefaultBuild", user-created build mode ("DefaultBuild" is the build mode that CS+ provides by default). See "CS+ Integrated Development Environment User's Manual: Project Operation" for detail about a build mode.



2.3 Speeding-up of Build

The build speed-up facilities of this build tool are described here.

There are the following types of build speed-up facilities.

Simultaneous build	Multiple files are simultaneously passed by a single call of the build command. See "2.3.1 Running simultaneous build" for details about simultaneous build.		
Parallel build	Multiple build commands are executed in parallel. See "2.3.2 Running parallel build" for details about parallel build.		

2.3.1 Running simultaneous build

Simultaneous build is a facility to simultaneously compile or assemble the files with a single call of the ccrl command when there are multiple files to be built.

An image of calling the ccrl command is shown below.

Example When build target files are aaa.c, bbb.c, and ccc.c

- When a build is run simultaneously

>ccrl aaa.c bbb.c ccc.c	<-	"aaa.obj", "bbb.obj", and "ccc.obj" are
		generated.
>rlink aaa.obj bbb.obj ccc.obj	<-	"aaa.abs" is generated.

- When a build is not run simultaneously

>ccrl aaa.c	<- "aaa.obj" is generated.
<pre>>ccrl bbb.c</pre>	<- "bbb.obj" is generated.
>ccrl ccc.c	<- "ccc.obj" is generated.
>rlink aaa.obj bbb.obj ccc.obj	<- "aaa.abs" is generated.

Whether to run a build simultaneously is made with the property.

Select the build tool node on the project tree and select the [Common Options] tab on the Property panel. Select [Yes] in the [Build simultaneously] property in the [Build Method] category.

Figure 2.2	[Build simultaneously]	Property
------------	------------------------	----------

4	Build Method				
(Build simultaneously	Yes 💌	$\left \right\rangle$		
	Build in parallel	No			
	Handing the source file includes non-existing file	Re-compile/assemble the source file			

Remark 1. The files with the individual build options and files to be executed prior to the build are excluded from running build simultaneously.

A build of the file that is not targeted for a simultaneous build is run separately.

Remark 2. If the source file is older than the generated object module file or related properties and project or the like, the object module file will be used for the build instead of the source file.

Another facility to speed up build is parallel build. See "2.3.2 Running parallel build" for details about parallel build.



2.3.2 Running parallel build

Parallel build is a facility to build multiple source files in parallel at build in order to reduce the build time. In parallel build, since build is performed simultaneously for the number of logical CPUs in the host machine, the effect is greater in a machine with a large number of CPU cores.

There are two types of parallel build facilities. Each processing and its setting method are given below.

(1) Parallel build between source files

When running parallel build between multiple source files registered in a project, make the setting in the [Build in parallel] property in the [Common Options] tab on the Property panel.

Figure 2.3 [Build in parallel] Property

Build Method

-	b uliu metriou			
	Build simultaneously	Yes		
(Build in parallel	Yes	-	
~	Handing the source file includes non-existing file	Re-compile/assemble the source file		~

Remark Another facility to speed up build is simultaneous build.

Simultaneous build is a facility to process the build command for multiple source files at once, and specifying it simultaneously with parallel build has no effect due to its nature. Generally, the more CPU cores there are in the host machine in use or the more source files there are registered in a project, parallel build is faster than simultaneous build.

However, as there are properties that need to be used together with simultaneous build, such as inter-module optimization, use the suitable facility for the situation.

See "2.3.1 Running simultaneous build" for details about simultaneous build.

(2) Parallel build between projects

When running parallel build between the main project and subprojects, make the setting in [Enable parallel build among projects] of the [General - Build] category of the Option dialog box.

Option		
General Startup and Exit	General - Build	
Display User Information	Enable Bapid Build General Frapid build is selected the build is started when result the build is selected in parallel with editiv recommend saving a file with Ctrl+S after the file Show degendency files in project tree Output guality report file when build is successful Stop build ghen the number of error exceed the limit Skip build when the gependent projects has build error	re registered files changing the edited source file is saved. As a g. When repid build is selected we edit is completed. it Upper limit: 100 2 mors
	Enable parallel guild among projects	At the first build
Initialize All Cattions		and facts the
Treater in com da		

Figure 2.4 Option Dialog Box ([General - Build] Category)

In addition, select [Yes] in the [Build in parallel] property in the [Common Options] tab on the Property panel.

Remark When there are dependencies between projects, set the dependencies between the projects correctly before using the parallel build facility. If a parallel build is performed for the main project and subprojects without the dependencies being set, build is performed in parallel regardless of the build order of the projects.

For details on setting the dependencies between projects, see "CS+ Integrated Development Environment User's Manual: Project Operation".



2.4 Set the Type of the Output File

Set the type of the file to be output as the product of the build. Select the build tool node on the project tree and select the [Common Options] tab on the Property panel. Select the file type in the [Output file type] property in the [Output File Type and Path] category.

Figure 2.5 [Output file type] Property

4	Output File Type and Path		4
(Output file type	Execute Module(Load Module File)	-
	Output cross reference information	No	1
	Intermediate file output folder	%BuildModeName%	

 When [Execute Module(Load Module File)] is selected (Default) The load module file will be the debug target.

(2) When [Execute Module(Hex File)] is selected The hex file will be the debug target.

Caution For the library project, this property is always [Library] and cannot be changed.

2.4.1 Change the output file name

The names of the load module file, hex file, and library file output by the build tool are set as follows by default.

Load module file name: %ProjectName%.abs Hex file name: %ProjectName%.mot Library file name: lib%ProjectName%.lib

Remark "%ProjectName%" is a placeholder. It is replaced with the project name.

The method to change these file names is shown below.

(1) When changing the load module file name and non-ROMized load module file name Select the build tool node on the project tree and select the [Link Options] tab on the Property panel. Enter the file name to be changed to in the [Output file name] property in the [Output File] category.

Figure 2.6 [Output file name] Property

4	Output File		
	Output folder	%BuildModeName%	
(Output file name	test.abs)

This property supports the following placeholders.

%ActiveProjectName%: Replaces with the active project name. %MainProjectName%: Replaces with the main project name. %ProjectName%: Replaces with the project name.

Remark You can also change the option in the same way with the [Output file name] property in the [Frequently Used Options(for Link)] category on the [Common Options] tab.

(2) When changing the hex file name

Select the build tool node on the project tree and select the [Hex Output Options] tab on the Property panel. Enter the hex file name to be changed to in the [Output file name] property in the [Output File] category.

Figure 2.7	[Output file	name] Property
------------	--------------	----------------

4	Output File	
	Output hex file	Yes
	Output folder	%BuildModeName%
(Output file name	test.mot
₽	Division output file	Division output file[0]

This property supports the following placeholders.

%ActiveProjectName%: Replaces with the active project name.



%MainProjectName%: Replaces with the main project name. %ProjectName%: Replaces with the project name.

Remark You can also change the option in the same way with the [Output file name] property in the [Frequently Used Options(for Hex Output)] category on the [Common Options] tab.

If the [Hex file format] property in the [Hex Format] category is changed, the following message dialog box will open.

Figure 2.8 Message Dialog Box

Question(Q	0291001) 83
0	Do you change a file extension?
	Yes No Help

When [Yes] is selected in the dialog box, the extension of the output file name is changed according to the format selected in the [Hex file format] property.

Figure 2.9 [Output file name] and [Hex file format] Property

4	Output File		
	Output hex file	Yes	
	Output folder	%BuildModeName%	
(Output file name	test.bin)
Þ	Division output file	Division output file[0]	
4	Hex Format		
(Hex file format	Binary file(-FOrm=Binary))

(3) When changing the library file name

Select the build tool node on the project tree and select the [Create Library Options] tab on the Property panel. Enter the library file name to be changed to on the [Output file name] property in the [Output File] category.

Figure 2.10 [Output file name] Property

4	Output File	
	Output file format	User libraries(-FOrm=Library=U)
_	Output folder	%BuildModeName%
(Output file name	test.lib

This property supports the following placeholders.

%ActiveProjectName%: Replaces with the active project name. %MainProjectName%: Replaces with the main project name. %ProjectName%: Replaces with the project name.

Remark You can also change the option in the same way with the [Output file name] property in the [Frequently Used Options(for Create Library)] category on the [Common Options] tab.

If the [Output file format] property is changed, the following message dialog box will open.



Figure 2.11 Message Dialog Box

Question(Q	0291001) 23
0	Do you change a file extension?
	Yes No Help

When [Yes] is selected in the dialog box, the extension of the output file name is changed according to the format selected in the [Output file format] property.

Figure 2.12 [Output file format] and [Output file name] Property

A	Output File	
(Output file format	Relocatable file(-FOrm=Relocate)
	Output folder	%BuildModeName%
	Output file name	test.rei

2.4.2 Output an assemble list

The assemble list (the code of the assemble result) is output to the assemble list file.

Select the build tool node on the project tree and select the [Compile Options] tab on the Property panel.

To output the assemble list file, select [Yes(-asm_option=-prn_path)] in the [Output assemble list file] property in the [Assemble List] category.

Figure 2.13 [Output assemble list file] Property

4	Assemble List		
(Output assemble list file	Yes(-asmopt=-pm_path)	-
	Output folder for assemble list file	%BuildModeName%	

When outputting the assemble list file, you can set the output folder and output file name.

(1) Set the output folder

.

Setting the output folder is made with the [Output folder for assemble list file] property by directly entering in the text box or by the [...] button.

This property supports the following placeholder.

%BuildModeName%: Replaces with the build mode name. "%BuildModeName%" is set by default.

The file name will be the source file name with the extension replaced by ".prn".

Remark See "CC-RL Compiler User's Manual" for details about the assemble list file.

2.4.3 Output map information

The map information (the information of the link result) is output to the link map file. Select the build tool node on the project tree and select the [Link Options] tab on the Property panel. To output the link map file, set the [Output link map file] property in the [List] category.

 Output information according to the output format Select [Yes(List contents=not specify)(-LISt -SHow)] or [Yes(List contents=ALL)(-LISt -SHow=ALL)] in the [Output link map file] property.

Figure 2.14 [Output link map file] Property (When Information According To Output Format Is Output)

4 List		
Output link map file	Yes(List contents=not specify)(-LISt -SHow)	-



Remark See "CC-RL Compiler User's Manual" for differences between the -SHow and -SHow=ALL options.

- (2) Specify information to be output Select [Yes(List contents=specify)(-LISt)] in the [Output link map file] property. The following property will be displayed.
 - [Output symbol information] property
 - [Output number of symbol reference] property
 - [Output cross reference information] property
 - [Output total sizes of sections] property
 - [Output vector information] property

Select [Yes] for each output information property.

Figure 2.15 [Output link map file] Property (When Information To Be Output Is Specified)

4	List		
(Output link map file	Yes(List contents=specify)(-LISt)	-
	Output symbol information	No	
	Output number of symbol reference	No	
	Output cross reference information	No	
	Output total sizes of sections	No	
	Output vector information	No	

The link map file is output to the project folder.

It is also shown on the project tree, under the Build tool generated files node.

The file name will be the project file name with the extension replaced by ".map".

Remark See "CC-RL Compiler User's Manual" for details about the link map file.

2.4.4 Output library information

The library information (information from the library creation result) is output to the library list file. Select the build tool node on the project tree and select the [Create Library Options] tab on the Property panel. To output the library list file, set the [Output link map file] property in the [List] category.

 Output information according to the output format Select [Yes(List contents=not specify)(-LISt -SHow)] or [Yes(List contents=ALL)(-LISt -SHow=ALL)] in the [Output link map file] property.

Figure 2.16 [Output link map file] Property (When Information According To Output Format Is Output)

4	liet		
$\left(\right)$	Output link map file	Yes(List contents=not specify)(-LISt -SHow)	F

Remark See "CC-RL Compiler User's Manual" for differences between the -SHow and -SHow=ALL options.

(2) Specify information to be output

Select [Yes(List contents=specify)(-LISt)] in the [Output link map file] property. The following property will be displayed.

- [Output symbol information] property
- [Output section list in a module] property^{Note 1}
- [Output cross reference information] property^{Note 2}
- [Output total sizes of sections] property^{Note 2}
- Note 1. This property is displayed only when [User libraries(-FOrm=Library=U)] or [System libraries(-FOrm=Library=S)] in the [Output file format] property in the [Output File] category is selected.
- Note 2. This property is displayed only when [Relocate file(-FOrm=Relocate)] in the [Output file format] property in the [Output File] category is selected.

RENESAS

Select [Yes] for each output information property.

Figure 2.17 [Output link map file] Property (When Information To Be Output Is Specified)

4	List		
(Output link map file	Yes(List contents=specify)(-LISt)	
~	Output symbol information	No	
	Output section list in a module	No	

The library list file is output to the project folder.

It is also shown on the project tree, under the Build tool generated files node.

The file name will be the project file name with the extension replaced by ".lbp".

Remark See "CC-RL Compiler User's Manual" for details about the library list file.



2.5 Set Compile Options

To set options for the compile phase, select the Build tool node on the project tree and select the [Compile Options] tab on the Property panel.

You can set the various compile options by setting the necessary properties in this tab.



Pro	Property			
\mathbf{A}	CC-RL Property	a p -+		
4	Debug Information			
	Add debug information	Yes(-g)		
	Enhance debug information with optimization	Yes(-g_line)		
4	Optimization			
	Level of optimization	Perform the default optimization(None)		
4	Optimization(Details)			
	Maximum number of loop expansions			
	Remove unused static functions	Yes(To adjust the level of optimization)(None)		
	Perform inline expansion	Yes(To adjust the level of optimization)(None)		
	Use br instruction to call a function at the end of the function	Yes(To adjust the level of optimization)(None)		
	Perform inter-module optimization	No		
	Perform optimization considering type of data indicated by pointer	No		
	Outputs additional information for inter-module optimization	No		
	Create subroutine for same instruction sequence	No		
4	Preprocess			
Þ	Additional include paths	Additional include paths[0]		
Þ	System include paths	System include paths[0]		
⊳	Include files at head of compiling units	Include files at head of compiling units[0]		
⊳	Macro definition	Macro definition[0]		
⊳	Macro undefinition	Macro undefinition[0]		
4	Quality Improvement			
	Detect stack overflow	No(None)		
₽	Memory Model			
₽	C Language			
₽	Character Encoding			
₽	Output Code			
⊳	Output File			
Þ	Assemble List			
⊳	MISRA-C Rule Check			
₽	Others			
Ad	d debug information			
Spe	Specifies whether to generate the debug information. Such information is generated when debugging a program, just like the case of wishing to perform source debugging with debugger. This option corresponds to t			
Co	Common Opt Compile Op Assemble Opt Link Options Hex Output O 1/O Header Fi / 🖛			

Remark

rk Often used options have been gathered under the [Frequently Used Options(for Compile)] category on the [Common Options] tab.

2.5.1 Perform optimization with the code size precedence

Select the build tool node on the project tree and select the [Compile Options] tab on the Property panel. To perform optimization with the code size precedence, select [Code size precedence(-Osize)] in the [Optimization Level] property in the [Optimization] category. Figure 2.19 [Level of optimization] Property (Code Size Precedence)

4 Optimiza	tion		
Level of o	ptimization	Code size precedence(-Osize)	
Remark	You can also set the option in the same way with	the [Optimization Level] property in the	he [Frequently

2.5.2 Perform optimization with the execution speed precedence

Used Options(for Compile)] category on the [Common Options] tab.

Select the build tool node on the project tree and select the [Compile Options] tab on the Property panel. To perform optimization with the execution speed precedence, select [Speed precedence(-Ospeed)] in the [Optimization Level] property in the [Optimization] category.

Figure 2.20	[Level of optimization] Property (Execution Speed Precedence)
-------------	---

▲ Optimization	
Level of optimization	Speed precedence(-Ospeed)

Remark You can also set the option in the same way with the [Optimization Level] property in the [Frequently Used Options(for Compile)] category on the [Common Options] tab.

2.5.3 Add an include path

Select the build tool node on the project tree and select the [Compile Options] tab on the Property panel. The include path setting is made with the [Additional include paths] property in the [Preprocess] category.

Figure 2.21 [Additional include paths] Property

4	Preprocess		
(⊳	Additional include paths	Additional include paths[0]	D)
₽	System include paths	System include paths[0]	1
⊳	Include files at head of compiling units	Include files at head of compiling units[0]	
⊳	Macro definition	Macro definition[0]	
Þ	Macro undefinition	Macro undefinition[0]	

If you click the [...] button, the Path Edit dialog box will open.



_/inc %ProjectDir%			1
Browne			
Placeholder			
Placeholder	Value	Description	1
Placeholder ActiveProjectDir ActiveProjectMcomName ActiveProjectName BuildModeName MainProjectDir	Value D'work'sample RSF100LE sample DefautBuild D'work'sample	Description Absolute path of the active Active project microcontrolle Active project name Build mode name Absolute path of the main p	C. Law D.
Placeholder ActiveProjectDir ActiveProjectMcomName ActiveProjectName BuildModeName MainProjectDir K	Value D.\work\sample RSF100LE sample DefautBuild D.\work\sample #	Description Absolute path of the active Active project microcontroli Active project name Build mode name Absolute path of the main p	S. Law 12

Figure 2.22 Path Edit Dialog Box

Enter the include path per line in [Path(One path per one line)]. You can specify up to 247 characters per line, up to 256 lines.

- Remark 1. This property supports placeholders. If a line is double clicked in [Placeholder], the placeholder will be reflected in [Path(One path per one line)].
- Remark 2. You can also specify the include path by one of the following procedures.
 - Drag and drop the folder using such as Explorer.
 - Click the [Browse...] button, and then select the folder in the Browse For Folder dialog box.
 - Double click a row in [Placeholder].
- Remark 3. Select the [Include subfolders automatically] check box before clicking the [Browse...] button to add all paths under the specified one (down to 5 levels) to [Path(One path per one line)].

If you click the [OK] button, the entered include paths are displayed as subproperties.

Figure 2.23 [Additional include paths] Property (After Adding Include Paths)

4	Preprocess	
4	Additional include paths	Additional include paths[2]
	[0]	\inc
	[1]	%ProjectDir%
⊳	System include paths	System include paths[0]
⊳	Include files at head of compiling units	Include files at head of compiling units[0]
⊳	Macro definition	Macro definition[0]
⊳	Macro undefinition	Macro undefinition[0]

To change the include paths, you can use the [...] button or enter the path directly in the text box of the subproperty. When the include path is added to the project tree, the path is added to the top of the subproperties automatically.

Remark You can also set the option in the same way with the [Additional include paths] property in the [Frequently Used Options(for Compile)] category on the [Common Options] tab.

2.5.4 Set a macro definition

Select the build tool node on the project tree and select the [Compile Options] tab on the Property panel. The macro definition setting is made with the [Macro definition] property in the [Preprocess] category.

Figure 2.24 [Macro definition] Property

4	Preprocess		L
⊳	Additional include paths	Additional include paths[0]	
⊳	System include paths	System include paths[0]	
Þ	Include files at head of compiling units	Include files at head of compiling units[0]	
⊳	Macro definition	Macro definition[0]	D
Þ	Macro undefinition	Macro undefinition[0]	1

If you click the [...] button, the Text Edit dialog box will open.

	Figure 2.25	Text Edit Dialog Box
--	-------------	----------------------

Text Edit	- 1	x
Text		
TEST-1 TIME=10		4
4		
	OK Cancel Help	

Enter the macro definition in [Text] in the format of "*macro name=defined value*", with one macro name per line. You can specify up to 256 characters per line, up to 256 lines.

The "*=defined value*" part can be omitted, and in this case, "1" is used as the defined value. If you click the [OK] button, the entered macro definitions are displayed as subproperties.

Figure 2.26 [Macro definition] Property (After Setting Macros)

Preprocess	
Additional include paths	Additional include paths[0]
System include paths	System include paths[0]
Include files at head of compiling units	Include files at head of compiling units[0]
Macro definition	Macro definition[2]
[0]	TEST=1
[1]	TIME=10
Macro undefinition	Macro undefinition[0]
	Additional include paths System include paths Include files at head of compiling units Macro definition [0] [1] Macro undefinition

To change the macro definitions, you can use the [...] button or enter the path directly in the text box of the subproperty.

Remark You can also set the option in the same way with the [Macro definition] property in the [Frequently Used Options(for Compile)] category on the [Common Options] tab.



2.6 Set Assemble Options

To set options for the assemble phase, select the Build tool node on the project tree and select the [Assemble Options] tab on the Property panel.

You can set the various assemble options by setting the necessary properties in this tab.



Property			
✓ CC-RL Property	a 🖉 -+		
Debug Information			
Add debug information	Yes(-g)		
 Optimization 			
Outputs additional information for inter-module optimization	No		
✓ Preprocess			
Additional include paths	Additional include paths[0]		
System include paths	System include paths[0]		
Macro definition	Macro definition[0]		
Macro undefinition	Macro undefinition[0]		
Character Encoding			
Assemble List	Assemble List		
Others			
Add debug information Specifies whether to generate the debug information. Such information is generated when debugging a program, just like the case of wishing to perform source debugging with debugger. This option corresponds to Common Opt Compile Opti Assemble O Link Options Hex Output O / I/O Header Fi / =			

- Remark Often used options have been gathered under the [Frequently Used Options(for Assemble)] category on the [Common Options] tab.
- **Caution** This tab is displayed only when [No] in the [Build simultaneously] property in the [Build Method] category from the [Common Options] tab is selected.

2.6.1 Add an include path

Select the build tool node on the project tree and select the [Assemble Options] tab on the Property panel. The include path setting is made with the [Additional include paths] property in the [Preprocess] category.

	igure 2.28	[Additional	include	paths]	Propert
--	------------	-------------	---------	--------	---------

4	Preprocess	
(⊳	Additional include paths	Additional include paths[0]
₽	System include paths	System include paths[0]
⊳	Macro definition	Macro definition[0]
⊳	Macro undefinition	Macro undefinition[0]

If you click the [...] button, the Path Edit dialog box will open.



ath(One path per one line	0: 🗔		
/inc (ProjectDir ¹)			
Browse Permit gon-existent pa Include gubfolders auto	th omatically		
Browse Permit gon-existent pa Include gubfolders auto Paceholder Placeholder	th omatically Value	Description	
Browse Permit gon-existent pa Include gubfolders auto Jaceholder Placeholder ActiveProjectDir ActiveProjectMicomName ActiveProjectName BuidModeName MainProjectDir	th omatically Value D.'work'sample R5F100LE sample DefautBuild D.'work'sample	Description Absolute path of the active Active project microcontrol Active project name Build mode name Absolute path of the main p	and

Figure 2.29 Path Edit Dialog Box

Enter the include path per line in [Path(One path per one line)]. You can specify up to 247 characters per line, up to 256 lines.

- Remark 1. This property supports placeholders. If a line is double clicked in [Placeholder], the placeholder will be reflected in [Path(One path per one line)].
- Remark 2. You can also specify the include path by one of the following procedures.
 - Drag and drop the folder using such as Explorer.
 - Click the [Browse...] button, and then select the folder in the Browse For Folder dialog box.
 - Double click a row in [Placeholder].
- Remark 3. Select the [Include subfolders automatically] check box before clicking the [Browse...] button to add all paths under the specified one (down to 5 levels) to [Path(One path per one line)].

If you click the [OK] button, the entered include paths are displayed as subproperties.

Figure 2.30 [Additional include paths] Property (After Adding Include Paths)

4	Preprocess		
4	Additional include paths	Additional include paths[2]	
	[0]	\inc	
\backslash	[1]	%ProjectDir%	
⊳	System include paths	System include paths[0]	
⊳	Macro definition	Macro definition[0]	
⊳	Macro undefinition	Macro undefinition[0]	

To change the include paths, you can use the [...] button or enter the path directly in the text box of the subproperty. When the include path is added to the project tree, the path is added to the top of the subproperties automatically.

Remark You can also set the option in the same way with the [Additional include paths] property in the [Frequently Used Options(for Assemble)] category on the [Common Options] tab.

2.6.2 Set a macro definition

Select the build tool node on the project tree and select the [Assemble Options] tab on the Property panel. The macro definition setting is made with the [Macro definition] property in the [Preprocess] category.

Figure 2.31 [Macro definition] Property

4	Preprocess	
⊳	Additional include paths	Additional include paths[0]
Þ	System include paths	System include paths[0]
⊳	Macro definition	Macro definition[0]
⊳	Macro undefinition	Macro undefinition[0]

If you click the [...] button, the Text Edit dialog box will open.

Figure 2.32	Text Edit Dialog Box
-------------	----------------------

Text Edit	
Text	
TEST-1 TIME=10	*
4	
	OK Cancel Help

Enter the macro definition in [Text] in the format of "*macro name=defined value*", with one macro name per line. You can specify up to 256 characters per line, up to 256 lines.

The "*=defined value*" part can be omitted, and in this case, "1" is used as the defined value. If you click the [OK] button, the entered macro definitions are displayed as subproperties.

Figure 2.33 [Macro definition] Property (After Setting Macros)

4	Preprocess	
⊳	Additional include paths	Additional include paths[0]
⊳	System include paths	System include paths[0]
4	Macro definition	Macro definition[2]
	[0]	TEST=1
	[1]	TIME=10
⊳	Macro undefinition	Macro undefinition[0]

To change the macro definitions, you can use the [...] button or enter the path directly in the text box of the subproperty.

Remark You can also set the option in the same way with the [Macro definition] property in the [Frequently Used Options(for Assemble)] category on the [Common Options] tab.



2.7 Set Link Options

To set options for the link phase, select the Build tool node on the project tree and select the [Link Options] tab on the Property panel.

You can set the various link options by setting the necessary properties in this tab.

Caution This tab is not displayed for the library project.

Figure 2.34 Property Panel: [Link Options] Tab

Property 🛛				
CC-RL Property	à 🖉 🗕 +			
Debug Information				
Output debug information	Yes(Output to the output file)(-DEBug)			
Compress debug information	No(-NOCOmpress)			
Delete local symbol name information	No			
 Optimization 				
Optimization type	No optimize(-NOOPtimize)			
✓ Input File				
> Object file	Object file[0]			
Binary file	Binary file[0]			
Symbol definition	Symbol definition[0]			
Output File				
Output folder	%BuildModeName%			
Output file name	%ProjectName% abs			
✓ Library				
Using libraries	Using libraries[0]			
System libraries	System libraries[0]			
Use standard/mathematical libraries	Yes			
Use runtime libraries	Yes			
Device				
Output Code				
Specify execution start address	No			
Fill with padding data at the end of a section	No			
Address setting for specified area of vector table	Address setting for specified area of vector table[0]			
Address setting for unused vector area				
▷ List				
Variables/functions information				
Section	> Section			
Verify	> Verify			
Message				
Others	Others			
Output debug information Specify whether to output debug information. This option corresponds to the NODEBug and -DEBug option of the rlink command.				
Common Opt / Compile Opti / Assemble Op / Link Options / Hex Output / 1/O Header F / 🖛				

Remark Often used options have been gathered under the [Frequently Used Options(for Link)] category on the [Common Options] tab.



2.7.1 Add a user library

Adding a user library is made with the property or on the project tree.

(1) Addition using the property

Select the build tool node on the project tree and select the [Link Options] tab on the Property panel. Adding a user library is made with the [Using libraries] property in the [Library] category.

Figure 2.35 [Using libraries] Property

4 Library				
⊳	Using libraries	Using libraries[0])
₽	System libraries	System libraries[0]		1
	Use standard/mathematical libraries	Yes		
	Use runtime libraries	Yes		

If you click the [...] button, the Path Edit dialog box will open.

Figure 2.36 Path Edit Dialog Box

Diff Lon			*
Path(One path per one line): 😱		
%MainProjectDir%user.lb			4
4			
Browse Permit gon-existent pat Placeholder:	h		
Browse Permit gon-existent pat Placeholder Placeholder	h Value	Description	*

Enter the library file (including the path) per line in [Path(One path per one line)]. You can specify up to 259 characters per line, up to 65536 lines.

Remark 1. This property supports placeholders.

If a line is double clicked in [Placeholder], the placeholder will be reflected in [Path(One path per one line)].

Remark 2. You can also specify the library file by one of the following procedures.

- Drag and drop the folder using such as Explorer.
- Click the [Browse...] button, and then select the folder in the Specify Using Library File dialog box.
- Double click a row in [Placeholder].

If you click the [OK] button, the entered library files are displayed as subproperties.



Figure 2.37 [Using libraries] Property (After Setting Library Files)

4	Library		
4	Using libraries	Using libraries[1]	
	[0]	%MainProjectDir%\user.lib	
⊳	System libraries	System libraries[0]	
	Use standard/mathematical libraries	Yes	
	Use runtime libraries	Yes	

To change the library files, you can use the [...] button or enter the path directly in the text box of the subproperty.

Remark You can also set the option in the same way with the [Using libraries] property in the [Frequently Used Options(for Link)] category on the [Common Options] tab.

(2) Addition from the project tree

Adding a library file to the project tree is performed from the Add Existing File dialog box.

Dropping a library file in the project tree is also possible.

When a library file is added from the project tree, it is subject to timestamp comparison with the load module at build, and the link processing is executed when the added library file is updated.

2.7.2 Prepare for using the overlaid section selection function

The optimizing linker (rlink) used by CC-RL can allocate multiple sections defined in a program to the same address. The sections allocated in this way are called "overlaid sections".

The debug tool provides a function to select the debug target section from the overlaid sections (priority sections) allocated to the same address. The function is called "overlaid section selection function".

A load module using overlaid sections can be debugged with switching of the priority section before program execution. The method for generating a load module to use the overlaid section selection function is shown below.

- Copy the ROM area contents to RAM Copy the ROM area contents to the RAM area to expand the code and data in the RAM.
- (2) Set build options

Set the ROM-to-RAM mapped sections and overlaid sections to use the overlaid section selection function. Select the build tool node on the project tree and select the [Link Options] tab on the Property panel.

(a) Set ROM-to-RAM mapped sections

Setting the ROM-to-RAM mapped sections is made with the [ROM to RAM mapped section] property in the [Section] category.

This reserves the RAM section with the same size as that of the ROM section and relocates the symbols defined in the ROM section to addresses in the RAM section.

Figure 2.38 [ROM to RAM mapped section] Property

4	Section	
	Section start address	.const_text_data_sdata_textf_constf/02000,dataR,bss_t
⊳	Section that outputs external defined symbols to the file	Section that outputs external defined symbols to the file[0]
4	ROM to RAM mapped section	ROM to RAM mapped section[2]
	[0]	.data=.dataR
	[1]	.sdata=.sdataR

If you click the [...] button, the Text Edit dialog box will open.





Text Edit		×
Text		
data= dataR sdata= sdataR text_user01= text_user01R text_user02= text_user02R text_user03= text_user03R data_user01= data_user01R data_user01= data_user01R data_user03= data_user03R		*
•		* •
	OK Cancel H	elp

Enter the section name in [Text] in the format of "*ROM section name*=*RAM section name*", with one section name per line.

You can specify up to 32767 characters per line, up to 65535 lines.

If you click the [OK] button, the entered section names are displayed as subproperties.

Figure 2.40 [ROM to RAM mapped section] Property (After Setting Sections)

4	Section	
	Section start address	.const_text_data_sdata_textf_constf/02000_dataR_bss_stac
Þ	Section that outputs external defined symbols to the file	Section that outputs external defined symbols to the file[0]
1	ROM to RAM mapped section	ROM to RAM mapped section[8]
	[0]	.data=.dataR
	[1]	.sdata=.sdataR
	[2]	.text_user01=.text_user01R
	[3]	.text_user02=.text_user02R
	[4]	.text_user03=.text_user03R
	[5]	.data_user01=.data_user01R
	[6]	.data_user02=.data_user02R
	[7]	.data_user03=.data_user03R

To change the section names, you can use the [...] button or enter them directly in the text box of the subproperty.

(b) Set ROM sections and RAM sections (overlaid sections)

Setting the sections is made with the [Section start address] property in the [Section] category.

Figure 2.41	[Section	start address]	Property
-------------	----------	----------------	----------

I	4	Section				
	(Section start address	.const,text,data,sdata,textf,constf/02000,dataR,bss,s)		
	2	Section that outputs external defined symbols to the file	Section that outputs external defined symbols to the file(0)	′		
	Þ	ROM to RAM mapped section	ROM to RAM mapped section[8]			



<1> Set ROM sections

If you click the [...] button, the Section Settings dialog box will open.

Address	Section	<u>A</u> dd
0x02000	.const	Madike
	text	Modey
	.data	New Qverlay
	.sdata	Remove
	textf	
	.constf	<u>Up</u> <u>D</u> own
0xFEF00	.dataR	
	bss	
	.stack_bss	
0xFFE20	sdataR	mport
	.sbss	Export

Figure 2.42 Section Settings Dialog Box

If you click the [Add...] button, the Section Address dialog box will open.

Figure 2.43 Section Address Dialog Box

Section Address	
<u>A</u> ddress:	3000
ок	Cancel <u>H</u> elp

Enter in [Address] the address of the ROM section to be added and click the [OK] button to add the entered address to [Address] in the Section Settings dialog box.



Address	Section	<u>A</u> dd
0x02000	.const	Madži
	text	Modely
	.data	New Qverlay
	.sdata	Bemove
	textf	
	.constf	Up Down
0x03000		Click here, and then click
0xFEF00	.dataR	the [Add] button.
	bss	
	.stack_bss	
0xFFE20	.sdataR	mport
	sbss	Export

Figure 2.44 Section Settings Dialog Box (After ROM Section Addresses Are Added)

Click the Section column on the added address row and click the [Add...] button to open the Add Section dialog box.

Figure 2.45 Add Section Dialog Box

Add Section		-*-
Section name:		
.text_user01	>	-
	OK Cancel He	alp

Enter in [Section name] the name of the ROM section to be added and click the [OK] button to add the entered section to [Section] in the Section Settings dialog box.



Address	Section	<u>A</u> dd
0x02000	.const	11-12-
	text	Modely
	.data	New Qverlay
	.sdata	Remove
	textf	
	.constf	<u>Up</u> <u>D</u> own
0x03000	text_user01	
0xFEF00	.dataR	
	bss	
	.stack_bss	
0xFFE20	.sdataR	jmport
	.sbss	Export

Figure 2.46 Section Settings Dialog Box (After ROM Sections Are Added)

For other ROM sections, set addresses and section names in the same way.

Remark Click the Address column and click the [Add...] button to open the Section Address dialog box, allowing you to add a new address.







<2> Set RAM sections (overlaid sections)

Click an added address and click the [Add...] button to open the Section Address dialog box.

Figure 2.48 Section Address Dialog Box

Section Address	
<u>A</u> ddress:	FF800
ок	Cancel Help

Enter in [Address] the address of the RAM section to be added and click the [OK] button to add the entered address to [Address] in the Section Settings dialog box.

Section Setti	ngs			×
Address	Section		*	<u>A</u> dd
0x03100	text_user02			Madži
0x03200	.text_user03			moury
0x03600	.data_user01			New Qverlay
0x03700	.data_user02			Remove
0x03800	.data_user03	Click here, and then		
0xFEF00	.dataR	click the [New Over-		Up Down
	bss	lay] button.		
	.stack_bss		=	
0xFF800				
0xFFE20	.sdataR			mport
	.sbss		-	Export
		OK Cancel		Help

Figure 2.49 Section Settings Dialog Box (After RAM Section Addresses Are Added)

Click the added address row (Address column or Section column) and click the [New Overlay...] button to open the Add Overlay dialog box.

Figure 2.50 Add Overlay Dialog Box

Add Overlay			.
Section name:			
.text_user01R	>		•
	ОК	Cancel	Help

Enter in [Section name] the name of the RAM section to be added and click the [OK] button to add the entered section to [Section] in the Section Settings dialog box.

Address	Section		*	<u>A</u> dd
0x03100	.text_user02			Modify
0x03200	.text_user03			moury
0x03600	.data_user01			New Qverlay
0x03700	.data_user02]		Remove
0x03800	.data_user03	o u		
0xFEF00	.dataR	Click here, and then click the INew Over-		Up Down
	bss	lay] button.		
	.stack_bss		=	
0xFF800	text_user0			
0xFFE20	.sdataR]		import
	.sbss]	-	Export

Figure 2.51 Section Settings Dialog Box (After RAM Sections Are Added)

Add the sections to be allocated to the same address by using the [New Overlay...] button in the same way. The added sections are displayed under [Overlay *n*] (*n*: number starting with "1").



Address	Section	Overlay1	Overlay2	Add
0x02000	.const			Madda
	.text			Modey
	.data			New Qverlay
	.sdata			Bemove
	.textf			
	.constf			Up Down
0x03000	.text_user01			
0x03100	.text_user02			
0x03200	.text_user03			
0x03600	.data_user01			
0x03700	.data_user02			
0x03800	.data_user03			
DxFEF00	.dataR			
	.bss			
	.stack_bss			
0xFF800	.text_user01R	text_user02R	.text_user03R	
DxFFE20	.sdataR			mport
	.sbss			Export

Figure 2.52 Section Settings Dialog Box (After Overlaid Sections Are Added)

For other RAM sections, set addresses and section names in the same way.

Remark Click the Address column and click the [Add...] button to open the Section Address dialog box, allowing you to add a new address.



Section Settings				
Address	Section	Overlay1	Overlay2	Add
0x02000	.const	\backslash		Made.
	.text			Modry
	.data			New <u>O</u> verlay
	.sdata	ROM s	ections	Remove
	.textf			
	.constf			Up Down
0x03000	.text_user01			
0x03100	.text_user02			
0x03200	.text_user03			
0x03600	.data_user01			
0x03700	.data_user02	RA /	M sections	
0x03800	.data_user03			
0xFEF00	.dataR			
	.bss			
	.stack_bss			
0xFF800	.text_user01R	text_user02R	.text_user03R	
0xFF900	.data_user01R	.data_user02R	.data_user03R	
0xFFE20	.sdataR			import
	.sdes			Export
		ОК	Cancel	Help

Figure 2.53 Section Settings Dialog Box (After Multiple RAM Sections Are Added)

Click the [OK] button. The specified ROM sections and RAM sections (overlaid sections) will be displayed in the text boxes.

Figure 2.54 [Section start address] Property (After Setting Sections)

4	Section	
(Section start address	.const,.text,.data,.sdata,.textf,.constf/02000,.te
₽	Section that outputs external defined symbols to the file	Section that outputs external defined symbols to the file[0]
Þ	ROM to RAM mapped section	ROM to RAM mapped section[8]

(3) Run a build of the project

Run a build of the project.

A load module file to use the overlaid section selection function is generated.


2.8 Set Hex Output Options

To set options for the hex output phase, select the Build tool node on the project tree and select the [Hex Output Options] tab on the Property panel.

You can set the various hex output options by setting the necessary properties in this tab.

Caution This tab is not displayed for the library project.

Figure 2.55 Property Panel: [Hex Output Options] Tab

Property 🔯		
✓ CC-RL Property	CC-RL Property	
Output File		
Output hex file	Yes	
Output folder	%BuildModeName%	
Output file name	%ProjectName%.mot	
 Division output file 	Division output file[0]	
▲ Hex Format		
Hex file format	Motorola S-record file(-FOrm=Stype)	
Unify record size	No	
Output S9 record at the end No		
CRC Operation	CRC Operation	
Message	b Message	
Others	Others	
Output hex file Selects whether to output a hex file. This option corresponds to the -FOrm option of the rlink command.		
Common / Compile / Assembl.	/ Link Opti / Hex Out / I/O Head / 🔻	

Remark Often used options have been gathered under the [Frequently Used Options(for Hex Output)] category on the [Common Options] tab.

2.8.1 Set the output of a hex file

Select the build tool node on the project tree and select the [Hex Output Options] tab on the Property panel.

(1) Set the output of a hex file

The setting to output a hex file is made with the [Output hex file] property in the [Output File] category. To output a hex file, select [Yes], to not output a hex file, select [No].

Figure 2.56 [Output hex file] Property

▲ Output File		
Output hex file	Yes	
Output folder	%BuildModeName%	
Output file name	%ProjectName%.mot	
Division output file	Division output file[0]	

When outputting a hex file, you can set the output folder and output file name.

(a) Set the output folder

Setting the output folder is made with the [Output folder] property by directly entering to the text box or by the [...] button.

Up to 247 characters can be specified in the text box.

This property supports the following placeholder.

%ActiveProjectDir%: Replaces with the absolute path of the active project folder.

%ActiveProjectName%: Replaces with the active project name.

%BuildModeName%: Replaces with the build mode name.

%MainProjectDir%: Replaces with the absolute path of the main project folder.



%MainProjectName%: Replaces with the main project name.
%MicomToolPath%: Replaces with the absolute path of the install folder of this product.
%ProjectDir%: Replaces with the absolute path of the project folder.
%ProjectName%: Replaces with the project name.
%TempDir%: Replaces with the absolute path of the temporary folder.
%WinDir%: Replaces with the absolute path of the Windows system folder.

"%BuildModeName%" is set by default.

(b) Set the output file name

Setting the output file is made with the [Output file name] property by directly entering to the text box. Up to 259 characters can be specified in the text box. This property supports the following placeholders.

%ActiveProjectName%: Replaces with the active project name. %MainProjectName%: Replaces with the main project name. %ProjectName%: Replaces with the project name.

"%ProjectName%.mot" is set by default.

(2) Set the hex file format

Select the format in the [Hex file format] property in the [Hex Format] category.

Figure 2.57 [Hex file format] Property

4 Hex Format		Hex Format		1
(Hex file format	Motorola S-record file(-FOrm=Stype)	D
		Unify record size	No	1
		Output S9 record at the end	No	

You can select any of the formats below.

Format	Configuration
Intel HEX file(-FOrm=Hexadecimal)	Outputs an Intel HEX file.
Motorola S-record file(-FOrm=Stype)	Outputs a Motorola S-record file.
Binary file(-FOrm=Binary)	Outputs a binary file.

Remark See "CC-RL Compiler User's Manual" for details about the Intel Hex file and Motorola S-record file.

2.8.2 Fill the vacant area

Select the build tool node on the project tree and select the [Hex Output Options] tab on the Property panel.

(1) Set the hex file output range

The setting of the hex file output range is made with the [Division output file] property in the [Output File] category.

Figure 2.58 [Division output file] Property

4	Output File	
	Output hex file	Yes
	Output folder	%BuildModeName%
	Output file name	%ProjectName% mot
(⊳	Division output file	Division output file[0]

If you click the [...] button, the Text Edit dialog box will open.



Text: file1.abs=sec1:sec2 file2.abs=10000-1ffff Image: Constraint of the section of the	Text Edit			×
file1.abs=sec1.sec2 file2.abs=10000-1ffff < Placeholder: Placeholder: Placeholder: Placeholder: Placeholder: Placeholder: D:work'sample Absolute path of the active project fol ActiveProjectDir D:work'sample Absolute path of the active project fol ActiveProjectMcomName R5F100LE Active project microcontroller name ActiveProjectName Sample Active project name BuildModeName DefaultBuild Build mode name	Text			
	file1.abs=sec1:sec2 file2.abs=10000-1##			*
Placeholder: Description ActiveProjectDir D:\work\sample Absolute path of the active project fol ActiveProjectMicomName R5F100LE Active project microcontroller name ActiveProjectName sample Active project name BuildModeName DefaultBuild Build mode name	4		Þ	÷
Placeholder Value Description ActiveProjectDir D:/work/sample Absolute path of the active project fol ActiveProjectMicomName R5F100LE Active project microcontroller name ActiveProjectName sample Active project name BuildModeName DefaultBuild Build mode name	Placeholder:			
ActiveProjectDir D:\work\sample Absolute path of the active project fol ActiveProjectMicomName R5F100LE Active project microcontroller name ActiveProjectName sample Active project name BuildModeName DefaultBuild Build mode name	Placeholder	Value	Description	٠
MainPreientDir Drhundchsample Absolute nath of the main preient fold	ActiveProjectDir ActiveProjectMcomName ActiveProjectName BuildModeName MaioPmiectDir K	D:/work/sample R5F100LE sample DefaultBuild D:/work/sample III	Absolute path of the active project fol Active project microcontroller name Active project name Build mode name Absolute nath of the main project fold	-

Specify the division output file name in [Text] in the format of "file name=start address-end address" (start address, end address: The start address and end address of the output range) or "file name=section name" (section name: The name of the output section), with one file name per line.

If multiple section names are specified, delimit them with a colon as in "*file name=section name*: section name". Specify the start address and end address in hexadecimal.

You can specify up to 259 characters per line, up to 65535 lines.

If you click the [OK] button, the entered division output file names are displayed as subproperties.

Figure 2.60 [Division output file] Property (After Setting Division Output File Names)

4	Output File	
	Output hex file	Yes
	Output folder	%BuildModeName%
	Output file name	%ProjectName% mot
	Division output file	Division output file[2]
	[0]	file1.abs=sec1:sec2
	[1]	file2.abs=10000-1ffff

To change the division output file names, you can use the [...] button or enter them directly in the text box of the subproperty.

- (2) Set the method for filling the vacant area Set the method for filling the vacant area in the output range.
 - (a) Fill the vacant area with random numbers Select [Yes(Random)(-SPace=Random)] in the [Fill unused areas in the output ranges with the value] property in the [Hex Format] category.

Figure 2.61 [Fill unused areas in the output ranges with the value] Property

4	Hex Format		
	Hex file format	Motorola S-record file(-FOrm=Stype)	
	Unify record size	No	
	Fill unused areas in the output ranges with the value	Yes(Random)(-SPace=Random)	D
	Output S9 record at the end	No	1

(b) Specify data to fill the vacant area

Select [Yes(Specification value)(-SPace=<Numerical value>)] in the [Fill unused areas in the output ranges with the value] property in the [Hex Format] category. The [Output padding data] property will be displayed.



Figure 2.59 Text Edit Dialog Box

Figure 2.62	[Fill unused areas in	the output ranges with th	he value] and [Output	t padding data] Property
-------------	-----------------------	---------------------------	-----------------------	--------------------------

4	Hex Format		
	Hex file format	Motorola S-record file(-FOrm=Stype)	
	Unify record size	No	
(Fill unused areas in the output ranges with the value	Yes(Specification value)(-SPace= <numerical value="">)</numerical>	Ν
	Output padding data	HX 00	IJ
	Output S9 record at the end	No	ſ

Enter the fill value for the vacant area directly in the text box. The range that can be specified for the value is 00 to FFFFFFFF (hexadecimal number). "FF" is set by default.



2.9 Set Create Library Options

To set options for the librarian, select the Build tool node on the project tree and select the [Create Library Options] tab on the Property panel.

You can set the various create library options by setting the necessary properties in this tab.

Caution This tab is displayed for the library project.

Figure 2.63 Property Panel: [Create Library Options] Tab



Remark Often used options have been gathered under the [Frequently Used Options(for Create Library)] category on the [Common Options] tab.

2.9.1 Set the output of a library file

Select the build tool node on the project tree and select the [Create Library Options] tab on the Property panel. The setting to output a library file is made with the [Output File] category.

Figure 2.64 [Output File] Category

4	Output File		
1	Output file format	User libraries(-FOrm=Library=U)	-
	Output folder	%BuildModeName%	
	Output file name	%ProjectName%.lb	

(1) Set the output format

Select the format in the [Output file format] property. You can select any of the formats below.

Format	Configuration
User libraries(-FOrm=Library=U)	Outputs a user library file.



Format	Configuration
System libraries(-FOrm=Library=S)	Outputs a system library file. The system library file is linked after the user library file. Select this item to create a library that is to be linked after the user library file.
Relocatable file(-FOrm=Relocate)	Outputs a relocatable file.

(2) Set the output folder

Setting the output folder is made with the [Output folder] property by directly entering to the text box or by the [...] button.

Up to 247 characters can be specified in the text box.

This property supports the following placeholder.

%ActiveProjectDir%: Replaces with the absolute path of the active project folder.
%ActiveProjectName%: Replaces with the active project name.
%BuildModeName%: Replaces with the build mode name.
%MainProjectDir%: Replaces with the absolute path of the main project folder.
%MainProjectName%: Replaces with the absolute path of the install folder of this product.
%ProjectDir%: Replaces with the absolute path of the project folder.
%ProjectDir%: Replaces with the absolute path of the project folder.
%ProjectDir%: Replaces with the absolute path of the project folder.
%ProjectName%: Replaces with the absolute path of the project folder.
%ProjectName%: Replaces with the absolute path of the project folder.
%ProjectName%: Replaces with the absolute path of the project folder.
%ProjectName%: Replaces with the absolute path of the temporary folder.
%WinDir%: Replaces with the absolute path of the Windows system folder.

"%BuildModeName%" is set by default.

(3) Set the output file name

Setting the output file is made with the [Output file name] property by directly entering to the text box. If the extension is omitted, it is automatically added according to the selection in the [Output file format] property.

When [User libraries(-FOrm=Library=U)] is selected: .lib When [System libraries(-FOrm=Library=S)] is selected: .lib When [Relocatable file(-FOrm=Relocate)] is selected: .rel

Up to 259 characters can be specified in the text box. This property supports the following placeholders.

%ActiveProjectName%: Replaces with the active project name. %MainProjectName%: Replaces with the main project name. %ProjectName%: Replaces with the project name.

"%ProjectName%.lib" is set by default.



2.10 Set Build Options Separately

Build options are set at the project or file level.

Project level: See "2.10.1 Set build options at the project level" File level: See "2.10.2 Set build options at the file level"

2.10.1 Set build options at the project level

To set options for build options for the project (main project or subproject), select the Build tool node on the project tree to display the Property panel.

Select the phase tab and set build options by setting the necessary properties.

Compile phase: [Compile Options] tab Assemble phase: [Assemble Options] tab Link phase: [Link Options] tab Hex output phase: [Hex Output Options] tab Create library phase: [Create Library Options] tab I/O header file generation tool: [I/O Header File Generation Options] tab

2.10.2 Set build options at the file level

You can individually set compile and assemble options for each source file added to the project.

(1) When setting compile options for a C source file Select the C source file on the project tree and select the [Build Settings] tab on the Property panel. Select [Yes] in the [Set individual compile option] property in the [Build] category. The Message Dialog Box will open.

Figure 2.65 [Set individual compile option] Property

4	Build		l
	Set as build-target	Yes	
(Set individual compile option	Yes	D
	File type	C source file	L

Figure 2.66 Message Dialog Box

Question(Q	0203001)
0	Are you sure you want to set the current compile options to the individual compile options for all build modes? If [No] is selected, copy the current build mode options only.
	Yes No Cancel Help

Click [Yes] in the dialog box. The [Individual Compile Options] tab will be displayed.



Property						
C_	main.c Property	a p -+				
4	Debug Information					
	Add debug information	Yes(-g)				
	Enhance debug information with optimization	Yes(-g_line)				
4	Optimization					
	Level of optimization	Perform the default optimization(None)				
4	Optimization(Details)					
	Maximum number of loop expansions					
	Remove unused static functions	Yes(To adjust the level of optimization)(None)				
	Perform inline expansion	Yes(To adjust the level of optimization)(None)				
	Use br instruction to call a function at the end of the function	Yes(To adjust the level of optimization)(None)				
	Perform inter-module optimization	No				
	Perform optimization considering type of data indicated by pointer	No				
	Outputs additional information for inter-module optimization	No				
	Create subroutine for same instruction sequence	No				
4	Preprocess					
Þ	Additional include paths	Additional include paths[0]				
	Use whole include paths specified for build tool	Yes				
Þ	Include files at head of compiling units	Include files at head of compiling units[0]				
Þ	Macro definition	Macro definition[0]				
Þ	Macro undefinition	Macro undefinition[0]				
4	Quality Improvement					
	Detect stack overflow	No(None)				
₽	C Language					
Þ	Character Encoding					
₽	Output Code					
Þ	Output File					
Þ	Assemble List					
Þ	MISRA-C Rule Check					
Þ	Error Output					
Þ	Warning Message					
Þ	▷ Others					
Add debug information Specifies whether to generate the debug information. Such information is generated when debugging a program, just like the case of wishing to perform source debugging with debugger. This option corresponds to t						
Build Settings Individual Compile Options File Information						

Figure 2.67 Property Panel: [Individual Compile Options] Tab

You can set compile options for the C source file by setting the necessary properties in this tab.

Note that this tab takes over the settings of the [Common Options] tab and [Compile Options] tab by default except the properties shown below.

- [Additional include paths] and [Use whole include paths specified for build tool] in the [Preprocess] category
- [Object module file name] in the [Output File] category
- (2) When setting assemble options for an assembly source file Select the assembly source file on the project tree and select the [Build Settings] tab on the Property panel. Select [Yes] in the [Set individual assemble option] property in the [Build] category. The Message Dialog Box will open.



Figure 2.68 [Set individual assemble option] Property

	4 Build		
	Set as build-target	Yes	
(Set individual assemble option	Yes	
	File type	Assembly source file	

Figure 2.69 Message Dialog Box

Question(Q	0203002)
	Are you sure you want to set the current assemble options to the individual assemble options for all build modes?
U	If [No] is selected, copy the current build mode options only.
	Yes No Cancel Help

Click [Yes] in the dialog box. The [Individual Assemble Options] tab will be displayed.

Figure 2.70 Property Panel: [Individual Assemble Options] Tab

Property				
833	system.asm Property	a p -+		
4	Debug Information			
	Add debug information	Yes(-g)		
4	Optimization			
	Outputs additional information for inter-module optimization	No		
4	Preprocess			
⊳	Additional include paths	Additional include paths[0]		
	Use whole include paths specified for build tool	Yes		
⊳	Macro definition	Macro definition[0]		
⊳	Macro undefinition	Macro undefinition[0]		
Þ	Character Encoding			
⊳	Output File			
⊳	Assemble List			
⊳	Error Output			
⊳	Warning Message			
⊳	Others			
Add debug information Specifies whether to generate the debug information. Such information is generated when debugging a program, just like the case of wishing to perform source debugging with debugger. This option corresponds to Build Settings Individual Assemble Options File Information				

You can set assemble options for the assembly source file by setting the necessary properties in this tab.

Note that this tab takes over the settings of the [Common Options] tab and [Compile Options] tab/[Assemble Options] tab by default except the properties shown below.

- [Additional include paths] and [Use whole include paths specified for build tool] in the [Preprocess] category
- [Object module file name] in the [Output File] category



2.11 Efficiently Allocate Variables and Functions

Generate and use the variables/functions information header file to efficiently allocate variables and functions. A variables/functions information header file (header file used to efficiently assign the saddr area and callt area based on the number of times and order in which the variables and functions are referenced) is generated by setting the [Output variables/functions information header file] property from the [Link Options] tab on the Property panel. Variables will be allocated to the saddr area, and functions to the callt area by performing compilation using that file.

The procedures for performing this operation are described below.

- Generating a variables/functions information header file automatically and allocating variables and functions
- Editing and using an auto-generated variables/functions information header file

Make sure to confirm that build has completed successfully and a load module file has been generated before using this function.

- (1) Generating a variables/functions information header file automatically and allocating variables and functions Below is the procedure for generating a variables/functions information header file automatically and using that file to allocate variables and functions, via one build.
- (a) Set the generation of the variables/functions information header file Select the build tool node on the project tree and select the [Link Options] tab on the Property panel.

Set the [Output variables/functions information header file] property to [Yes] to generate an empty variables/ functions information header file, and add it to the project (it will also appear in the File node of the project tree). The output destination is the file set in the [Output folder for variables/functions information header file] property and the [Variables/functions information header file name] property.

Figure 2.71 [Output variables/functions information header file] Property

4	Variables/functions information		
(Output variables/functions information header file	Yes(-VFINFO)	
	Output folder for variables/functions information header file	%BuildModeName%	
	Variables/functions information header file name	%ProjectName%_vfi.h	

The settings of the output folder and file of the variables/functions information header file are can be changed.

<1> Set the output folder

Setting the output folder is made with the [Output folder for variables/functions information header file] property by directly entering to the text box or by the [...] button.

Up to 247 characters can be specified in the text box.

This property supports the following placeholders.

%ActiveProjectDir%: Replaces with the absolute path of the active project folder.
%ActiveProjectName%: Replaces with the active project name.
%BuildModeName%: Replaces with the build mode name.
%MainProjectDir%: Replaces with the absolute path of the main project folder.
%MainProjectName%: Replaces with the main project name.
%MicomToolPath%: Replaces with the absolute path of the install folder of this product.
%ProjectDir%: Replaces with the absolute path of the project folder.
%ProjectName%: Replaces with the project name.
%TempDir%: Replaces with the absolute path of the temporary folder.
%WinDir%: Replaces with the absolute path of the Windows system folder.

"%BuildModeName%" is set by default. If this property is changed, an empty variables/functions information header file is generated and added to the project (it will also appear in the File node of the project tree).

<2> Set the output file name

Setting the output file is made with the [Variables/functions information header file name] property by directly entering to the text box.

Up to 259 characters can be specified in the text box. This property supports the following placeholders.

This property supports the following placeholders.

%ActiveProjectName%: Replaces with the active project name. %MainProjectName%: Replaces with the main project name. %ProjectName%: Replaces with the project name. "%ProjectName%_vfi.h" is set by default.



If this property is changed, an empty variables/functions information header file is generated and added to the project (it will also appear in the File node of the project tree).

(b) Run a build of the project

Run a build of the project. A variables/functions information header file is generated. It will be included in the C source automatically and a rebuild will be executed again.

Remark The variables/functions information header file in "(a) Set the generation of the variables/functions information header file" is overwritten by running a build.

If the build completes successfully, a load module file is generated with the variables and functions allocated.

(2) Editing and using an auto-generated variables/functions information header file Users can edit a variables/functions information header file. Below is the procedure for editing the generated variables/functions information header file in "(1) Generating a variables/functions information header file automatically and allocating variables and functions" by the user and using that file to allocate variables and functions.

(a) Edit the variables/functions information header file Edit the variables/functions information header file generated automatically in "(1) Generating a variables/functions information header file automatically and allocating variables and functions".

Remark See "CC-RL Compiler User's Manual" for details about the format of the auto-generated variables/functions information header file.

(b) Set the generation of the variables/functions information header file Select the build tool node on the project tree and select the [Link Options] tab on the Property panel. Select [No] on the [Output variables/functions information header file] property.

Figure 2.72 [Output variables/functions information header file] Property

Variables/functions information		
Output variables/functions information header file	No	
Output folder for variables/functions information header file	%BuildModeName%	
Variables/functions information header file name	%ProjectName%_vfi.h	

Next, select the [Compile Options] tab.

Specify the edited variables/functions information header file on the [Include files at head of compiling units] property.

Figure 2.73 [Include files at head of compiling units] Property

Additional include paths	Additional include paths[0]	
System include paths	System include paths[0]	
Include files at head of compiling units	Include files at head of compiling units[0]	
Macro definition	Macro definition[0]	
Macro undefinition	Macro undefinition[0]	

(c) Run a build of the project

Run a build of the project.

A load module file is generated with the variables and functions allocated as specified in the variables/functions information header file.



2.12 Automatically Update the I/O Header File

When an application project is newly created, an I/O header file corresponding to the selected device is automatically generated.

If the I/O header file needs to be automatically updated in response to the update of the device file, use the following update method.

The I/O header file is automatically generated as "iodefine.h" when an application project is newly created and it is registered in the project tree.

Figure 2.74 I/O Header File (iodefine.h)



Remark The I/O header file is generated in the same folder containing the project file. If a file with the same name already exists, the existing file is renamed as "iodefine.bak" as a backup.

The timing to update the I/O header file and the update method are shown below.

- At opening of the project

CS+ checks the version of the device file when a project is opened.

If the device file has been updated and there is a possibility that the I/O header file needs to be updated, a message is displayed on the Output panel. Update the I/O header file with the method below as required.

- On the Project Tree panel, select the Build tool node, and then select [Generate I/O Header File] from the context menu



Build Project F7
Rebuild Project Shift+F7
Clean Project
Set to Default Build Option for Project
Import Build Options
Set Link Order
Generate I/O Header File
Property



- At build

The I/O header file can be updated automatically when the build process is performed and immediately before build. Set the [Update I/O header file on build] property of the [I/O Header File Generation Options] tab in the Property panel. The update conditions can also be changed in the property of the same category.

Figure 2.76 [Update I/O header file on build] Property

4	1/0 Header File		
(Update I/O header file on build	No	
\sim	Output Ibit access	Yes	
	Enable MISRA-C option	No	



2.13 Estimate the Stack Capacity

To estimate the stack capacity, use Call Walker.

Call Walker performs a static analysis, and displays the symbols and their callers in a tree format, as well as stack information for each symbol (symbol name, attribute, address, size, stack size, and file name) in list format.

To start Call Walker, select [Tool] menu >> [Startup Stack Usage Tracer].

To exit from Call Walker, select Call Walker [File] menu >> [Exit].

See Call Walker [Help] menu >> [Help Topics] for Call Walker operations.



A. WINDOW REFERENCE

This appendix explains panels/dialog boxes used in the build tool.

A.1 Description

The following lists the panels/dialog boxes used in the build tool.

Table A.1List of Panels/Dialog Boxes

Panel/Dialog Box Name	Function Description
Property panel	This panel is used to display the detailed information on the Build tool node or file that is selected on the Project Tree panel and change the settings of the information.
System Include Path Order dialog box	This dialog box is used to refer the system include paths specified for the compiler and set their specified sequence.
Specify Rule Number dialog box	This dialog box is used to select the number of the MISRA-C rule and set it to the area that this dialog box is called from.
Section Settings dialog box	This dialog box is used to add, modify, or delete sections.
Add Section dialog box Modify Section dialog box Add Overlay dialog box	These dialog boxes are used to set a section name when adding, modifying, or overlaying a section, respectively.
Section Address dialog box	This dialog box is used to set an address when adding or modifying a section.
Unassigned Section dialog box	This dialog box is used to delete sections.



Property panel

This panel is used to display the detailed information on the Build tool node or file that is selected on the Project Tree panel by every category and change the settings of the information.

Figure A.1 Property Panel

	Pro	perty	×			
	🔨 CC-RL Property 🔒 🔎 -+					
П	4	Build Mode				
		Build mode	DefaultBuild			
		Change property value for all build modes at once	No			
	4	CPU				
		Specify CPU core	RL78-S3 core(-cpu=S3)			
	4	Output File Type and Path				
		Output file type	Execute Module(Load Module File)			
		Output cross reference information	No			
		Intermediate file output folder	%BuildModeName%			
	4	Frequently Used Options(for Compile)				
		Level of optimization	Perform the default optimization(None)			
	Þ	Additional include paths	Additional include paths[0]			
	Þ	System include paths	System include paths[0]			
	Þ	Macro definition	Macro definition[0]			
	4	Frequently Used Options(for Assemble)				
	Þ	Additional include paths	Additional include paths [0]			
	Þ	System include paths	System include paths [0]			
	Þ	Macro definition	Macro definition [0]			
(1) —	4	Frequently Used Options(for Link)				
	Þ	Using libraries	Using libraries[0]			
		Output folder	%BuildModeName%			
		Output file name	%ProjectName%.abs			
		Use standard/mathematical libraries	Yes			
		Use runtime libraries	Yes			
	4	Frequently Used Options(for Hex Output)				
		Output hex file	Yes			
		Hex file format	Motorola S-record file(-FOrm=Stype)			
		Output folder	%BuildModeName%			
		Output file name	%ProjectName%.mot			
	Þ	Division output file	Division output file[0]			
	Þ	Error Output				
	Þ	Warning Message				
	Þ	Device				
	Þ	Build Method				
	Þ	Version Select				
	Þ	Notes				
	Þ	Others				
	Bui	ild mode				
	Sel	ects the build mode name to be used during build.				
(2) —		ommon	ptions / Hex Output / I/O Header / Ŧ			



The following items are explained here.

- [How to open]
- [Description of each area]
- [[Edit] menu (only available for the Property panel)]
- [Context menu]

[How to open]

- On the Project Tree panel, select the Build tool node or file and then select [Property] from the [View] menu or [Property] from the context menu.
- Remark When either one of the Build tool node or file on the Project Tree panel is selected while the Property panel has been opened, the detailed information of the selected item is displayed.

[Description of each area]

(1) Detailed information display/change area

In this area, the detailed information on the Build tool node or file that is selected on the Project Tree panel is displayed by every category in the list. And the settings of the information can be changed directly. Mark *i* indicates that all the items in the category are expanded. Mark *i* indicates that all the items are collapsed. You can expand/collapse the items by clicking these marks or double clicking the category name. Mark *i* indicates that only a hexadecimal number is allowed to input in the text box. See the section on each tab for the details of the display/setting in the category and its contents.

(2) Tab selection area

Categories for the display of the detailed information are changed by selecting a tab. In this panel, the following tabs are contained (see the section on each tab for the details of the display/setting on the tab).

Remark When multiple components are selected on the Project Tree panel, only the tab that is common to all the components is displayed. If the value of the property is modified, that is taken effect to the selected components all of which are common to all.

- (a) When the Build tool node is selected on the Project Tree panel
 - [Common Options] tab
 - [Compile Options] tab
 - [Assemble Options] tab
 - [Link Options] tab
 - [Hex Output Options] tab
 - [Create Library Options] tab
 - [I/O Header File Generation Options] tab
- (b) When a file is selected on the Project Tree panel
 - [Build Settings] tab (for C source file, assembly source file, object file, and library file)
 - [Individual Compile Options] tab (for C source file)
 - [Individual Assemble Options] tab (for assembly source file)
 - [File Information] tab^{Note}
 - Note See "CS+ Integrated Development Environment User's Manual: Project Operation" for details about the [File Information] tab.



Undo	Cancels the previous edit operation of the value of the property.
Cut	While editing the value of the property, cuts the selected characters and copies them to the clipboard.
Сору	Copies the selected characters of the property to the clipboard.
Paste	While editing the value of the property, inserts the contents of the clipboard.
Delete	While editing the value of the property, deletes the selected characters.
Select All	While editing the value of the property, selects all the characters of the selected property.

[[Edit] menu (only available for the Property panel)]

[Context menu]

Undo	Cancels the previous edit operation of the value of the property.
Cut	While editing the value of the property, cuts the selected characters and copies them to the clipboard.
Сору	Copies the selected characters of the property to the clipboard.
Paste	While editing the value of the property, inserts the contents of the clipboard.
Delete	While editing the value of the property, deletes the selected characters.
Select All	While editing the value of the property, selects all the characters of the selected property.
Reset to Default	Restores the configuration of the selected item to the default configuration of the project. For the [Individual Compile Options] tab and [Individual Assemble Options] tab, restores to the configuration of the general option.
Reset All to Default	Restores all the configuration of the current tab to the default configuration of the project. For the [Individual Compile Options] tab and [Individual Assemble Options] tab, restores to the configuration of the general option.



[Common Options] tab

This tab shows the detailed information on the build tool categorized by the following and the configuration can be changed.

- (1) [Build Mode]
- (2) [CPU]
- (3) [Output File Type and Path]
- (4) [Frequently Used Options(for Compile)]
- (5) [Frequently Used Options(for Assemble)]
- (6) [Frequently Used Options(for Link)]
- (7) [Frequently Used Options(for Hex Output)]
- (8) [Frequently Used Options(for Create Library)]
- (9) [Error Output]
- (10) [Warning Message]
- (11) [Device]
- (12) [Build Method]
- (13) [Version Select]
- (14) [Notes]
- (15) [Others]
- Remark

If the property in the [Frequently Used Options] category is changed, the value of the property having the same name contained in the corresponding tab will be changed accordingly.

Category from [Common Options] Tab	Corresponding Tab
[Frequently Used Options(for Compile)] category	[Compile Options] tab
[Frequently Used Options(for Assemble)] category	[Assemble Options] tab
[Frequently Used Options(for Link)] category	[Link Options] tab
[Frequently Used Options(for Hex Output)] category	[Hex Output Options] tab
[Frequently Used Options(for Create Library)] category	[Create Library Options] tab



Figure A 2	Property Panel Common	Ontions] Tab
i igui c /		

Prop	Property 🛛				
く	CC-RL Property	a p -+			
4	Build Mode				
	Build mode	DefaultBuild			
	Change property value for all build modes at once	No			
4	CPU				
	Specify CPU core	RL78-S3 core(-cpu=S3)			
4	Output File Type and Path				
	Output file type	Execute Module(Load Module File)			
	Output cross reference information	No			
	Intermediate file output folder	%BuildModeName%			
4	Frequently Used Options(for Compile)				
	Level of optimization	Perform the default optimization(None)			
Þ	Additional include paths	Additional include paths[0]			
Þ	System include paths	System include paths[0]			
Þ	Macro definition	Macro definition[0]			
4	Frequently Used Options(for Assemble)				
Þ	Additional include paths	Additional include paths [0]			
Þ	System include paths	System include paths [0]			
Þ	Macro definition	Macro definition [0]			
4	Frequently Used Options(for Link)				
Þ	Using libraries	Using libraries[0]			
	Output folder	%BuildModeName%			
	Output file name	%ProjectName%.abs			
	Use standard/mathematical libraries	Yes			
	Use runtime libraries	Yes			
4	Frequently Used Options(for Hex Output)				
	Output hex file	Yes			
	Hex file format	Motorola S-record file(-FOrm=Stype)			
	Output folder	%BuildModeName%			
	Output file name	%ProjectName%.mot			
P	Division output file	Division output file[0]			
P	Error Output				
2	Warning Message				
2	Device				
2	Bulla Method Version Select				
2	Version Select				
1	Othern				
V	Ulido				
Build mode Selects the build mode name to be used during build.					
Common					

[Description of each category]

(1) [Build Mode]

The detailed information on the build mode is displayed and the configuration can be changed.

Build mode	Select the build Note that this p	d mode to be used during a build. property is not applied to [Reset All to Default] from the context menu.		
	Default	DefaultBuild		
	How to change	Select from the drop-down list.		
	Restriction	DefaultBuild Build mode that is added to the project		Runs a build with the default build mode that is set when a new project is created.
				Runs a build with the build mode that is added to the project (other than Default-Build).
Change property value for all build modes at once	Select whether this property. Be careful since	er to reflect the value newly set to all build modes when a value is set in the value set may not be an appropriate value for other build modes.		
	Default	No		
	How to change	Select from the drop-down list. Yes Reflects the value newly set to all build mode a value is set in this property.		wn list.
	Restriction			s the value newly set to all build modes when is set in this property.
		No	Does no modes	ot reflect the value newly set to all build when a value is set in this property.

(2) [CPU]

The detailed information on CPU is displayed and the configuration can be changed.

Specify CPU core	The core of the device selected in the project is displayed. This corresponds to the -cpu option of the ccrl command.			
	Default	Core of the device selected in the project		
How to Changes not change			nanges not allowed	
Use arithmetic unit	Specify whethe This correspon This property is core] property	er to use the arithmetic unit. nds to the -use_mda option of the ccrl command. s displayed only when [RL78-S2 core(-cpu=S2)] in the [Specify CPU is selected.		
	Default	Mul/div/accumulator(None) Select from the drop-down list.		
	How to change			
	Restriction	Not use(- use_mda=not_use)	Generates a code that does not use the arithmetic unit.	
		Mul/div/accumula- tor(None)	Generates a code that uses the arithmetic unit.	

(3) [Output File Type and Path]

The detailed information on output file types and paths is displayed and the configuration can be changed.



Output file type	The file type se For other than Module(Hex Fi For the library	e set here will be the debug target for other than the library project. Ian library projects, only [Execute Module(Load Module File)] and [Execute x File)] are displayed. ary project, only [Library] is displayed. - For other than the library project Execute Module(Load Module File) - For the library project Library		
	Default			
	How to change	Select from the drop-down list.		
	Restriction	Execute Mod- ule(Load Modu	ıle File)	Generates a load module file during a build. The load module file will be the debug target.
		Execute Modul File)	le(Hex	Generates a hex file during a build. The hex file will be the debug target. This item is displayed only when [Yes] in the [Output hex file] property in the [Output File] category from the [Hex Output Options] tab is selected.
		Library		Generates a library file during a build.
Output cross reference information	Select whether to output the cross reference information to a file. The file is output to the folder specified in the [Output folder] property in the [Output File] category from the [Link Options] tab. The file is output under the file name specified in the [Output file name] property wit the extension replaced by ".cref". However, if the [Object file name] property in the [Output File] category from the [Ind vidual Compile Options] tab is specified, the file is output under the file name specifie in the property with the extension replaced by ".cref". This property is changed to [Yes(-cref)] when [Yes] in the [Compulsorily output cross reference file] property of the analyze tool is selected. If this property is changed to [No] when [Yes] in the [Compulsorily output cross reference file] property will be changed to [Yes(-cref)] during a build. This corresponds to the -cref option of the ccrl command.			
	Default	No		
	How to change	Select from the drop-down list.		
	Restriction	Yes(-cref)	Output The bu function	s the cross reference information. ild processing speed slows down, but "jump to n" can be used.
		No	Does n	ot output the cross reference information.



	1		
Intermediate file output folder	Specify the fold If a relative pat project folder. If an absolute µ subproject fold The following µ %BuildMode If this is blank, This correspon	he folder which the intermediate file is output. ve path is specified, the reference point of the path is the main project or sub- older. olute path is specified, the reference point of the path is the main project or ct folder (unless the drives are different). wing placeholder is supported. dModeName%: Replaces with the build mode name. blank, it is assumed that the project folder has been specified. responds to the -obj_path option or -o option of the ccrl command.	
	Default %BuildModeName%		
	How to Directly enter in the text box or edit by the Browse For Folder dialo box which appears when clicking the [] button.		
	Restriction Up to 247 characters		

(4)

[Frequently Used Options(for Compile)] The detailed information on frequently used options during compilation is displayed and the configuration can be changed.

Level of optimization	Select the level of the optimization for compiling. This corresponds to the -O option of the ccrl command.			
	Default	Perform the default optimization(None)		
	How to change	Select from the drop-down list.		
	Restriction	Perform the default optimization(None)	Performs optimization that debugging is not affected (optimization of expressions and reg- ister allocation, and the like).	
		Code size prece- dence(-Osize)	Performs optimization with the object size pre- cedence. Regards reducing the ROM/RAM usage as important and performs the maximum optimi- zation that is effective for general programs.	
		Speed precedence(- Ospeed)	Performs optimization with the execution speed precedence. Regards shortening the execution speed as important and performs the maximum optimi- zation that is effective for general programs.	
		Debug precedence(- Onothing)	Performs optimization with the debug prece- dence. Regards debugging as important and sup- presses all optimization including default opti- mization.	



Additional include paths	Specify the add The following p %ActiveProje %ActiveProje %BuildMode %MainProjed %MicomTool product. %ProjectDir %ProjectDir %ProjectNar %ProjectNar %TempDir% %WinDir%: I The specified in file folder of CO The reference When this prop This correspon The specified in When the inclu subproperties. Uppercase chap paths.	 Specify the additional include paths during compiling. The following placeholders are supported. %ActiveProjectDir%: Replaces with the absolute path of the active project folder. %ActiveProjectName%: Replaces with the active project name. %BuildModeName%: Replaces with the build mode name. %MainProjectDir%: Replaces with the absolute path of the main project folder. %MainProjectName%: Replaces with the absolute path of the main project folder. %MainProjectName%: Replaces with the absolute path of the install folder of this product. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectName%: Replaces with the absolute path of the project folder. %ProjectName%: Replaces with the absolute path of the temporary folder. %VinDir%: Replaces with the absolute path of the temporary folder. %WinDir%: Replaces with the absolute path of the Windows system folder. The specified include path is searched with higher priority than the standard include file folder of CC-RL. The reference point of the path is the project folder. When this property is omitted, only the standard folder of CC-RL is searched. This corresponds to the -I option of the ccrl command. The specified include path is displayed as the subproperty. When the include path is added to the project tree, the path is added to the top of the subproperties. Uppercase characters and lowercase characters are not distinguished for the include paths. 		
	Default	Additional include paths[number of defined items]		
	How to change Edit by the Path Edit dialog box which appears when clicking button. For the subproperty, you can enter directly in the text box.			
	Restriction	Up to 259 characters Up to 256 items can be specified.		
System include paths	Change the sp ing. The following p %ActiveProje %BuildMode %MainProjec %MicomTool product. %ProjectDir %ProjectDir %ProjectNar %TempDir% %WinDir%: I The system inc path. The reference This correspon The include pa	 decified order of the include paths which the system set during compil- blaceholders are supported. ectDir%: Replaces with the absolute path of the active project folder. ectName%: Replaces with the build mode name. etDir%: Replaces with the absolute path of the main project folder. ctDir%: Replaces with the absolute path of the main project folder. ctName%: Replaces with the absolute path of the install folder of this %: Replaces with the absolute path of the project folder. me%: Replaces with the project name. : Replaces with the absolute path of the temporary folder. ctude path is searched with lower priority than the additional include point of the path is the project folder. ids to the -I option of the ccrl command. th is displayed as the subproperty. 		
	Default System include paths[number of defined items] How to change Edit by the System Include Path Order dialog box which appears when clicking the [] button.			
	Restriction	Changes not allowed (Only the specified order of the include paths can be changed.)		



Macro definition	Specify the name of the macro to be defined. Specify in the format of " <i>macro name=defined value</i> ", with one macro name per line. The " <i>=defined value</i> " part can be omitted, and in this case, "1" is used as the defined value. This corresponds to the -D option of the ccrl command. The specified macro is displayed as the subproperty.		
	Default	Macro definition[number of defined items]	
	How to change	Edit by the Text Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.	
	Restriction	Up to 256 characters Up to 256 items can be specified.	

(5)

[Frequently Used Options(for Assemble)] The detailed information on frequently used options during assembling is displayed and the configuration can be changed.

Additional include paths	Specify the add The following p %ActiveProje %ActiveProje %BuildMode %MainProje %MicomToo product. %ProjectDir %ProjectDir %ProjectDir %ProjectNar %TempDir% %WinDir%: I The specified i file folder of CC The reference When this prop This correspon The specified i When the inclu subproperties. Uppercase cha paths.	ditional include paths during assembling. blaceholders are supported. ectDir%: Replaces with the absolute path of the active project folder. ectName%: Replaces with the build mode name. ctDir%: Replaces with the absolute path of the main project folder. ctName%: Replaces with the absolute path of the main project folder. ctName%: Replaces with the absolute path of the install folder of this IPath%: Replaces with the absolute path of the project folder. me%: Replaces with the absolute path of the project folder. me%: Replaces with the absolute path of the temporary folder. Replaces with the absolute path of the temporary folder. Replaces with the absolute path of the Windows system folder. nclude path is searched with higher priority than the standard include C-RL. point of the path is the project folder. berty is omitted, only the standard folder of CC-RL is searched. Include path is displayed as the subproperty. Ide path is added to the project tree, the path is added to the top of the aracters and lowercase characters are not distinguished for the include		
	Default	Additional include paths[number of defined items]		
	How to change	Edit by the Path Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.		
	RestrictionUp to 259 charactersUp to 256 items can be specified.			



System include paths	Change the specified order of the include paths which the system set during as bling. The following placeholders are supported. %ActiveProjectDir%: Replaces with the absolute path of the active project for %ActiveProjectName%: Replaces with the active project name. %BuildModeName%: Replaces with the build mode name. %MainProjectDir%: Replaces with the absolute path of the main project folder %MainProjectName%: Replaces with the absolute path of the install folder of the product. %ProjectDir%: Replaces with the absolute path of the install folder of the product. %ProjectName%: Replaces with the absolute path of the project folder. %ProjectName%: Replaces with the project name. %TempDir%: Replaces with the absolute path of the temporary folder. %WinDir%: Replaces with the absolute path of the temporary folder. The system include path is searched with lower priority than the additional inclu- path. The reference point of the path is the project folder. This corresponds to the -l option of the ccrl command.			
	Default System include paths[number of defined items]			
	How to change	Edit by the System Include Path Order dialog box which appears when clicking the [] button.		
	Restriction	Changes not allowed (Only the specified order of the include paths can be changed.)		
Macro definition	Specify the nan Specify in the f The " <i>=defined</i> value. This correspon The specified r	me of the macro to be defined. format of " <i>macro name=defined value</i> ", with one macro name per line. <i>value</i> " part can be omitted, and in this case, "1" is used as the defined ads to the -asmopt=-define option of the ccrl command. macro is displayed as the subproperty.		
	Default	Macro definition[number of defined items]		
	How to change	Edit by the Text Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.		
	Restriction	Up to 256 characters Up to 256 items can be specified.		

(6) [Frequently Used Options(for Link)]

The detailed information on frequently used options during linking is displayed and the configuration can be changed.

This category is not displayed for the library project.



Using libraries	Specify the libr The following p %ActiveProje %BuildMode %MainProjee %MicomTool product. %ProjectDir %ProjectDir %ProjectNar %TempDir% %WinDir%: I This correspon The library file	ary files to be used. blaceholders are supported. ectDir%: Replaces with the absolute path of the active project folder. ectName%: Replaces with the active project name. Name%: Replaces with the build mode name. ctDir%: Replaces with the absolute path of the main project folder. ctName%: Replaces with the absolute path of the install folder of this IPath%: Replaces with the absolute path of the install folder of this %: Replaces with the absolute path of the project folder. me%: Replaces with the project name. : Replaces with the absolute path of the temporary folder. Replaces with the absolute path of the temporary folder. Replaces with the absolute path of the Vindows system folder. ds to the -LIBrary option of the rlink command. name is displayed as the subproperty.		
	Default	Using libraries[number of defined items]		
	How to change	Edit by the Path Edit dialog box which appears when clicking the [] button. -> Edit by the Specify Using Library File dialog box which appears when clicking the [Browse] button. For the subproperty, you can enter directly in the text box.		
	Restriction	Up to 259 characters Up to 65536 items can be specified.		
Output folder	Specify the out The following p %ActiveProje %BuildMode %MainProjec %MicomTool product. %ProjectDir %ProjectNar %TempDir% %WinDir%: I If this is blank, This correspon	Specify the output folder. The following placeholders are supported. %ActiveProjectDir%: Replaces with the absolute path of the active project folder. %ActiveProjectName%: Replaces with the active project name. %BuildModeName%: Replaces with the build mode name. %MainProjectDir%: Replaces with the absolute path of the main project folder. %MainProjectName%: Replaces with the absolute path of the install folder of this product. %ProjectDir%: Replaces with the absolute path of the install folder of this product. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectName%: Replaces with the project name. %TempDir%: Replaces with the absolute path of the temporary folder. %WinDir%: Replaces with the absolute path of the temporary folder. If this is blank, it is assumed that the project folder has been specified. This corresponds to the -OI thut ontion of the rlink command		
	Default	%BuildModeName%		
	How to change	Directly enter in the text box or edit by the Browse For Folder dialog box which appears when clicking the [] button.		
	Restriction	Up to 247 characters		
Output file name	Specify the out If the extension The following p %ActiveProje %MainProject %ProjectNar This correspon	put file name. n is omitted, ".abs" is automatically added. blaceholders are supported. ectName%: Replaces with the active project name. ctName%: Replaces with the main project name. ne%: Replaces with the project name. ds to the -OUtput option of the rlink command.		
	Default	%ProjectName%.abs		
	How to change	Directly enter in the text box.		
	Restriction	Up to 259 characters		



Use standard/mathe- matical libraries	Select whether This correspon	hether to use the standard/mathematical libraries provided by the compiler. responds to the -LIBrary option of the rlink command.		
	Default	Yes		
	How to change	Select from the drop-down list.		
	Restriction	Yes	Uses the standard/mathematical libraries.	
		No	Does not use the standard/mathematical libraries.	
Use runtime libraries	Select whether to use the runtime libraries provided by the compiler. This corresponds to the -LIBrary option of the rlink command.			
	Default	Yes		
	How to change	Select from the drop-down list.		
	Restriction	Yes	Uses the runtime libraries.	
		No	Does not use the runtime libraries.	

(7) [Frequently Used Options(for Hex Output)]

The detailed information on frequently used options during hex outputting is displayed and the configuration can be changed.

This category is not displayed for the library project.

Output hex file	Select whether This correspon	nether to output the hex file. esponds to the -FOrm option of the rlink command. Yes		
	Default			
	How to change	Select from the drop-down list.		
	Restriction	Yes	Outputs the he	ex file.
	Default	No	Does not outp	ut the hex file.
Hex file format	Select the format of the hex file to be output. This corresponds to the -FOrm option of the rlink command. This property is displayed only when [Yes] in the [Output hex file] property is se			nk command. ne [Output hex file] property is selected.
	Default	Motorola S-record file(-FOrm=Stype)		
	How to change	Select from the drop-down list.		
	Restriction	Intel HEX file(-FOrm=Hexa- decimal) Outputs an Intel HEX file.		Outputs an Intel HEX file.
		Motorola S-rec FOrm=Stype)	cord file(-	Outputs a Motorola S-record file.
		Binary file(-FOrm=Binary) Outputs a b		Outputs a binary file.



Output folder	Specify the folder which the hex file is output. If a relative path is specified, the reference point of the path is the main project or sub project folder. If an absolute path is specified, the reference point of the path is the main project or subproject folder (unless the drives are different). The following placeholders are supported. %ActiveProjectDir%: Replaces with the absolute path of the active project folder. %ActiveProjectName%: Replaces with the absolute path of the main project folder. %BuildModeName%: Replaces with the build mode name. %BuildModeName%: Replaces with the absolute path of the main project folder. %MainProjectDir%: Replaces with the absolute path of the install folder of this product. %ProjectDir%: Replaces with the absolute path of the install folder of this product. %ProjectDir%: Replaces with the absolute path of the project folder. %WincomToolPath%: Replaces with the absolute path of the install folder of this product. %ProjectName%: Replaces with the project name. %TempDir%: Replaces with the absolute path of the temporary folder. %WinDir%: Replaces with the absolute path of the temporary folder. %WinDir%: Replaces with the absolute path of the temporary folder. %WinDir%: Replaces with the absolute path of the Vindows system folder. If this is blank, it is assumed that the project folder has been specified. This corresponds to the -OUtput option of the rlink command. This property is displayed only when [Yes] in the [Output hex file] property is selected		
	Default	%BuildModeName%	
	How to Directly enter in the text box or edit by the Browse For Folder box which appears when clicking the [] button.		
	Restriction	Up to 247 characters	
Output file name	 Specify the hex file name. If the extension is omitted, it is automatically added according to the selection [Hex file format] property. When [Intel HEX file(-FOrm=Hexadecimal)] is selected: .hex When [Motorola S-record file(-FOrm=Stype)] is selected: .mot When [Binary file(-FOrm=Binary)] is selected: .bin The following placeholders are supported. %ActiveProjectName%: Replaces with the active project name. %MainProjectName%: Replaces with the main project name. %ProjectName%: Replaces with the project name. This corresponds to the -OUtput option of the rlink command. This property is displayed only when [Yes] in the [Output hex file] property is selected: .mot 		
	Default	%ProjectName%.mot	
	How to change	Directly enter in the text box.	
	Restriction Up to 259 characters		



Division output file	Specify the division out Specify in the finame", with on If multiple secti- tion name: sect Specify the add If the extension [Hex file format When [Intel H When [Motor When [Binar] The following p %ActiveProje %BuildMode %MainProjed %MainProjed %MicomTool product. %ProjectDir? %ProjectDir? %ProjectDir? %WinDir%: F This correspon The division out This property is	ision output files. ormat of " <i>file name=start address-end address</i> " or " <i>file name=section</i> e entry per line. on names are specified, delimit them with a colon as in " <i>file name=sec- tion name</i> " (example: file1.mot=sec1:sec2). dress in hexadecimal (example: file2.mot=400-4ff). is somitted, it is automatically added according to the selection in the t] property. HEX file(-FOrm=Hexadecimal)] is selected: .hex rola S-record file(-FOrm=Stype)] is selected: .mot y file(-FOrm=Binary)] is selected: .bin blaceholders are supported. ectDir%: Replaces with the absolute path of the active project folder. ectName%: Replaces with the absolute path of the main project folder. ctName%: Replaces with the absolute path of the main project folder. ctName%: Replaces with the absolute path of the install folder of this %: Replaces with the absolute path of the install folder of this %: Replaces with the absolute path of the install folder. me%: Replaces with the project name. : Replaces with the absolute path of the install folder. me%: Replaces with the project name. : Replaces with the absolute path of the install folder. me%: Replaces with the absolute path of the install folder. me%: Replaces with the absolute path of the project folder. me%: Replaces with the absolute path of the temporary folder. Replaces with the absolute path of the temporary folder. Replaces with the absolute path of the Windows system folder. ds to the -OUtput option of the rlink command. utput file name is displayed as the subproperty. s displayed only when [Yes] in the [Output hex file] property is selected.
	Default	Division output file[number of defined items]
	How to change Edit by the Text Edit dialog box which appears when clicking button. For the subproperty, you can enter directly in the text box.	
	Restriction	Up to 259 characters Up to 65535 items can be specified.

(8) [Frequently Used Options(for Create Library)]

The detailed information on frequently used options during library generation is displayed and the configuration can be changed.

This category is displayed only for the library project.

Output file format	Select the format of the output file. This corresponds to the -FOrm option of the rlink command.			
	Default	User libraries(-FOrm=Library=U)		
	How to change	Select from the drop-down list.		
	Restriction	User libraries(-FOrm=Library=U)	Outputs a user library file.	
		System libraries(-FOrm=Library=S)	Outputs a system library file.	
		Relocatable file(-FOrm=Relocate)	Outputs a relocatable file.	

Output folder	Specify the out The following p %ActiveProje %BuildMode %MainProje %MicomToo product. %ProjectDirf %ProjectDirf %ProjectNar %TempDir% %WinDir%: I If this is blank, This correspon	 Itput folder. placeholders are supported. jectDir%: Replaces with the absolute path of the active project folder. jectName%: Replaces with the build mode name. actDir%: Replaces with the absolute path of the main project folder. actName%: Replaces with the absolute path of the install folder of this actPath%: Replaces with the absolute path of the install folder of this ar%: Replaces with the project name. b) Path%: Replaces with the project name. b) Path%: Replaces with the absolute path of the install folder of this are%: Replaces with the project name. b) Replaces with the absolute path of the project folder. are%: Replaces with the absolute path of the project folder. b) Replaces with the absolute path of the temporary folder. c) Replaces with the absolute path of the Vindows system folder. c) Replaces with the project folder has been specified. c) the cOUtput option of the tlink command 		
	Default	%BuildModeNa	ame%	
	How to change	Directly enter in box which app	n the text box or edit by the Browse For Folder dialog ears when clicking the [] button.	
	Restriction	Up to 247 char	acters	
Output file name	Specify the out If the extension [Hex file forma When [User When [Syste When [Reloc The following p %ActiveProje %MainProjec %ProjectNar This correspon	utput file name. on is omitted, it is automatically added according to the selection in the at] property. er libraries(-FOrm=Library=U)] is selected: .lib tem libraries(-FOrm=Library=S)] is selected: .lib occatable file(-FOrm=Relocate)] is selected: .rel placeholders are supported. ojectName%: Replaces with the active project name. ame%: Replaces with the main project name. onds to the -OUtput option of the rlink command. %ProjectName%.lib Directly enter in the text box.		
	Default			
	How to change			
	Restriction	Up to 259 char	acters	
Use standard/mathe- matical libraries	Select whether This correspon	to use the stand ds to the -LIBrai	dard/mathematical libraries provided by the compiler. y option of the rlink command.	
	Default	No		
	How to change	Select from the drop-down list.		
	Restriction	Yes	Uses the standard/mathematical libraries.	
		No Does not use the standard/mathematical libra		
Use runtime libraries	Select whether This correspon	ar to use the runtime libraries provided by the compiler. Inds to the -LIBrary option of the rlink command.		
	Default	No		
	How to change	Select from the drop-down list.		
	Restriction	Yes Uses the runtime libraries.		
		No	Does not use the runtime libraries.	



(9) [Error Output]

The detailed information on the error output is displayed and the configuration can be changed.

Output error message file	Select whether This correspon Error message This property is	to output the error message file. ds to the -error_file option of the ccrl command. s are displayed on the Output panel regardless of this property's . s displayed only when [No] in the [Build in parallel] property is selected.		
	Default	No		
	How to change	Select from the drop-down list.		
	Restriction	Yes(-error_file)	Outputs the error message file.	
		No	Does not output the error message file.	
Error message file out- put folder	 It- Specify the folder which the error message file is output. If a relative path is specified, the reference point of the path is the main proj project folder. If an absolute path is specified, the reference point of the path is the main proj subproject folder (unless the drives are different). The following placeholder is supported. %BuildModeName%: Replaces with the build mode name. If this is blank, it is assumed that the project folder has been specified. This corresponds to the -error_file option of the ccrl command. This property is displayed only when [Yes(-error_file)] in the [Output error n file] property is selected. 		reference point of the path is the main project or sub- reference point of the path is the main project or are different). rted. vith the build mode name. e project folder has been specified. option of the ccrl command. m [Yes(-error_file)] in the [Output error message	
	Default	%BuildModeName	%	
	How to change	Directly enter in the box which appears	ext box or edit by the Browse For Folder dialog when clicking the [] button.	
	Restriction	Up to 247 characte	irs	
Error message file name	 File Specify the error message file name. The extension can be freely specified. The following placeholders are supported. %ActiveProjectName%: Replaces with the active project name. %MainProjectName%: Replaces with the main project name. %ProjectName%: Replaces with the project name. If this is blank, it is assumed that "%ProjectName%.err" has been spect This corresponds to the -error_file option of the ccrl command. This property is displayed only when [Yes(-error_file)] in the [Output er file] property is selected. 		e. ed. ported. s with the active project name. with the main project name. the project name. %ProjectName%.err" has been specified. option of the ccrl command. en [Yes(-error_file)] in the [Output error message	
	Default	%ProjectName%.e	rr	
	How to change	Directly enter in the	ext box.	
	Restriction Up to 259 characters			

(10) [Warning Message]
 The detailed information on warning messages is displayed and the configuration can be changed.



Undisplayed warning message	Specify the number of the warning message not to be displayed. If multiple message numbers are specified, delimit them with "," (comma) (example: 20009,20011). Also, the range can be set using "-" (hyphen) (example: 20000-20100,20300-20500). This corresponds to the -no_warning option of the ccrl command.		
	Default	Blank	
	How to change	Directly enter in the text box or edit by the Character String Input dialog box which appears when clicking the [] button.	
	Restriction	Up to 2048 characters	

(11) [Device]

The detailed information on device is displayed and the configuration can be changed.

Specify mirror area	Select the area to allocate the segment that is mirrored in the RAM space. This corresponds to the -asmopt=-mirror_source option of the ccrl command.			
	Default	MAA=0(None)		
	How to change	Select from the drop-down list.		
	Restriction	MAA=0(None)	Specifies the mirror source section to be allo- cated at address 0x0xxxx.	
		MAA=1(-asmopt=- mirror_source=1)	Specifies the mirror source section to be allo- cated at address 0x1xxxx. This item is displayed only when [RL78-S2 core(-cpu=S2)] or [RL78-S3 core(-cpu=S3)] in the [Specify CPU core] property in the [CPU] cat- egory is selected.	
		Common(- asmopt=- mirror_source=co mmon)	Does not support reference to symbols allocated to the mirror source area and does not perform mirror conversion of the mirror source address.	
Security ID	Specify the security ID of an on-chip flash memory device. Enter a 20-digit (10-byte) value in hexadecimal. This corresponds to the -SECURITY_ID option of the rlink command.			
	Default	0		
	How to change	Directly enter in the text box.		
	Restriction	00000000000000000000000000000000000000		

(12) [Build Method]

The detailed information on the build method is displayed and the configuration can be changed.



Build simultaneously	Select whether to generate the load module file by compiling/assembling/linking multiple files simultaneously. The files with the individual build options and files to be executed prior to the build are excluded from running a build simultaneously. See "2.3.1 Running simultaneous build" for details about running a build simultaneously.			
	Default	Yes		
	How to change	Select from the drop-down list.		
	Restriction	Yes	Compiles, assem neously. The assembly so individual options the [Compile Opt	nbles, and links multiple files simulta- purce file (except the file with the s) is assembled using the settings of tions] tab.
		No	Compiles, assem	nbles, and links for each file.
Build in parallel	Select whether The parallel bu parallel using a assemble. In addition, par [Option] and th log box. See "2.3.2 Ru	r to enable the pa nild facility enable all processors mo rallel build betwe nen making a set	arallel build facility. es CS+ to compile/ bunted on the com en projects can be ting in the [Genera ild" for details abo	(assemble multiple source files in puter. This speeds up compilation/ e set by selecting [Tool] menu >> I - Build] category of the Option dia- ut parallel build.
	Default	No		
	How to change	Select from the drop-down list.		
	Restriction	Yes	Enables the parallel build facility.	
		No	Disables the parallel build facility.	
Handling the source file includes unfound	Select whether to recompile/assemble the source file if it includes a file that is not found in the standard and additional include paths.			
file	Default	Re-compile/assemble the source file		
	How to change	Select from the drop-down list.		
	Restriction	Re-compile/assemble the source file		Recompiles/assembles the source file if it includes a file that is not found.
		Ignore re-compiling/assembling the source file		Does not recompile/assemble the source file even if it includes a file that is not found.

(13) [Version Select]

The detailed information on the build tool version is displayed and the configuration can be changed.

Using compiler pack- age install folder	The folder in which the compiler package to be used is installed is displayed.		
	Default	Install folder name	
	How to change	Changes not allowed	



Using compiler pack- age version	Select the version of the compiler package to be used. This setting is common to all the build modes.			
	Default	Always latest version which was installed		
	How to change	Select from the drop-down list.		
	Restriction	Always latest version which was installed	Uses the latest version in the installed compiler packages.	
		Versions of the installed compiler packages	Uses the selected version in the compiler package.	
Latest compiler pack- age version which was installed	The version of the compiler package to be used when [Always latest version which was installed] is selected in the [Using compiler package version] property is dis- played. This setting is common to all the build modes. This property is displayed only when [Always latest version which was installed] in the [Using compiler package version] property is selected.			
	Default	Latest version of the installed compiler packages		
	How to change	Changes not allowed		

(14) [Notes]

The detailed information on notes is displayed and the configuration can be changed.

Memo	Add memos to the build tool. Add one item in one line. This setting is common to all the build modes. The specified memo is displayed as the subproperty.		
	Default	Memo[number-of-items]	
	How to change	Edit by the Text Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.	
	Restriction	Up to 256 characters Up to 256 items can be specified.	

(15) [Others]

Other detailed information on the build tool is displayed and the configuration can be changed.



Output message for- mat	Specify the form This applies to added by plugi It does not app executed befor property. The following p %Options%: %Program% %TargetFiles link. If this is blank,	rmat of the message under build execution. o the messages output by the build tool to be used, and commands gins. ply to the output messages of commands specified in the [Commands ore build processing] or [Commands executed after build processing] placeholders are supported. 5: Replaces with the command line option under build execution. 6: Replaces with the program name under execution. 8: Replaces with the file name being compile/assemble or making s, "%Program% %Options%" will be set automatically.		
	Default	%TargetFiles%		
	How to change	Directly enter in the text box (up to 256 characters) or select from the drop-down list.		
	Restriction	%TargetFiles%	Displays the file name in the output mes- sage.	
		%TargetFiles%: %Options%	Displays the file name and command line options in the output message.	
		%Program% %Options%	Displays the program name and com- mand line options in the output message.	
Format of build option list	Specify the display format of the build option list. This applies to the options of the build tool to be used, and commands added by plugins. It does not apply to the options of commands specified in the [Commands executed before build processing] or [Commands executed after build processing] property. The following placeholders are supported. %Options%: Replaces with the command line option under build execution. %Program%: Replaces with the program name under execution. %TargetFiles%: Replaces with the file name being compile/assemble or making link. If this is blank, "%TargetFiles% : %Program% %Options%" will be set automatically.			
	Default	%TargetFiles% : %Program% %Options%		
	How to change	Directly enter in the text box or edit by the Character String Input dia- log box which appears when clicking the [] button.		
	Restriction	Up to 256 characters		


Commands executed before build process- ing	Specify the cor Use the call ins The following p %ActiveProj %BuildMode %MainProje %MicomToo product. %OutputDir %OutputDir %ProjectDir %ProjectDir %ProjectDir %ProjectNar %TempDir% %WinDir%: When "#!pytho last line are reg build processir The placeholde The specified of	 mmand to be executed before build processing. struction to specify a batch file (example: call a.bat). blaceholders are supported. ectDir%: Replaces with the absolute path of the active project folder. ectName%: Replaces with the active project name. eName%: Replaces with the build mode name. ctDir%: Replaces with the absolute path of the main project folder. ctName%: Replaces with the absolute path of the main project folder. ctName%: Replaces with the absolute path of the install folder of this %: Replaces with the absolute path of the output folder. %: Replaces with the absolute path of the project folder. me%: Replaces with the absolute path of the project folder. %: Replaces with the absolute path of the project folder. me%: Replaces with the absolute path of the project folder. me%: Replaces with the absolute path of the project folder. me%: Replaces with the absolute path of the project folder. me%: Replaces with the absolute path of the project folder. me%: Replaces with the absolute path of the project folder. me%: Replaces with the absolute path of the temporary folder. Replaces with the absolute path of the temporary folder. mi is described in the first line, the contents from the second line to the garded as the script of the Python console, and then executed before the project can be described in the script. command is displayed as the subproperty.
	Default	Commands executed before build processing[number of defined items]
	How to change	Edit by the Text Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.
	Restriction	Up to 1023 characters Up to 64 items can be specified.
Commands executed after build processing	Specify the cor Use the call ins The following p %ActiveProj %BuildMode %MainProje %MicomToo product. %OutputDir %OutputDir %ProjectDir %ProjectDir %ProjectDir %ProjectDir %ProjectDir %ProjectDir %ProjectNar %TempDir% %WinDir%: When "#!pytho last line are reg build processir The placeholde The specified of	 mmand to be executed after build processing. struction to specify a batch file (example: call a.bat). blaceholders are supported. ectDir%: Replaces with the absolute path of the active project folder. ectName%: Replaces with the active project name. eName%: Replaces with the build mode name. ctDir%: Replaces with the absolute path of the main project folder. ctName%: Replaces with the absolute path of the main project folder. ctName%: Replaces with the absolute path of the main project folder. ctName%: Replaces with the absolute path of the install folder of this %: Replaces with the absolute path of the output folder. %: Replaces with the absolute path of the project folder. me%: Replaces with the absolute path of the project folder. %: Replaces with the absolute path of the project folder. me%: Replaces with the absolute path of the project folder. me%: Replaces with the absolute path of the project folder. me%: Replaces with the absolute path of the project folder. me%: Replaces with the absolute path of the project folder. me%: Replaces with the absolute path of the temporary folder. Replaces with the absolute path of the temporary folder. me%: Replaces with the absolute path of the temporary folder. me%: Replaces with the absolute path of the Windows system folder. mi is described in the first line, the contents from the second line to the garded as the script of the Python console, and then executed after the script. command is displayed as the subproperty.
	Default	Commands executed after build processing[number of defined items]
	How to change	Edit by the Text Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.
	Restriction	Up to 1023 characters Up to 64 items can be specified.



Other additional options	Input the option to be added additionally. The options set here are added at the end of the ccrl options group.		
	Default	Blank	
	How to change	Directly enter in the text box or edit by the Character String Input dialog box which appears when clicking the [] button.	
	Restriction	Up to 259 characters	



[Compile Options] tab

This tab shows the detailed information on the compile phase categorized by the following and the configuration can be changed.

- (1) [Debug Information]
- (2) [Optimization]
- (3) [Optimization(Details)]
- (4) [Preprocess]
- (5) [Quality Improvement]
- (6) [Memory Model]
- (7) [C Language]
- (8) [Character Encoding]
- (9) [Output Code]
- (10) [Output File]
- (11) [Assemble List]
- (12) [MISRA-C Rule Check]
- (13) [Others]

Figure A.3 Property Panel: [Compile Options] Tab

Pro	perty	×	
\mathbf{A}	CC-RL Property	a p -+	
4	Debug Information		
	Add debug information	Yes(-g)	
	Enhance debug information with optimization	Yes(-g_line)	
4	Optimization		
	Level of optimization	Perform the default optimization(None)	
4	Optimization(Details)		
	Maximum number of loop expansions		
	Remove unused static functions	Yes(To adjust the level of optimization)(None)	
	Perform inline expansion	Yes(To adjust the level of optimization)(None)	
	Use br instruction to call a function at the end of the function	Yes(To adjust the level of optimization)(None)	
	Perform inter-module optimization	No	
	Perform optimization considering type of data indicated by pointer	No	
	Outputs additional information for inter-module optimization	No	
	Create subroutine for same instruction sequence	No	
4	Preprocess		
⊳	Additional include paths	Additional include paths[0]	
⊳	System include paths	System include paths[0]	
⊳	Include files at head of compiling units	Include files at head of compiling units[0]	
Þ	Macro definition	Macro definition[0]	
Þ	Macro undefinition	Macro undefinition[0]	
4	Quality Improvement		
	Detect stack overflow	No(None)	
⊳	Memory Model		
⊳	C Language		
⊳	Character Encoding		
⊳	Output Code		
⊳	Output File		
⊳	Assemble List		
⊳	MISRA-C Rule Check		
₽	Others		
Add debug information Specifies whether to generate the debug information. Such information is generated when debugging a program, just like the case of wishing to perform source debugging with debugger. This option corresponds to t			
10	ommon Opt Accomplie Op Assemble Opt Link Option	s _ Hex Output 0 / I/O Header H / ♥	

RENESAS

[Description of each category]

(1) [Debug Information]

The detailed information on debug information is displayed and the configuration can be changed.

Add debug information	Select whether It is possible to for source deb This correspon	to generate the debug information. perform source debugging with the debugger by outputting information ugging to the output file. ds to the -g option of the ccrl command.			
	Default	Yes(-g)	Yes(-g)		
	How to change	Select from the drop-down list.			
	Restriction	Yes(-g)	Generates the debug information.		
		No Does not generate the debug information.			
Enhance debug infor- mation with optimiza- tion	 Select whether to enhance debug information at optimization. This corresponds to the -g_line option of the ccrl command. This property is displayed in the following cases. When [Always latest version which was installed] in the [Using compiler package version] property in the [Version Select] category from the [Common Options] tab is selected and the latest version is V1.02.00 or higher or when V1.02.00 or higher is selected in the [Using compiler package version] property 				
	- When [Yes(-	- When [Yes(-g)] in the [Add debug information] property is selected			
	Default	No			
	How to change	How to Select from the drop-down list.			
	Restriction	Yes(-g_line)	Enhances debug information at optimization.		
		No Does not enhance debug information at optimiza			

(2)

[Optimization] The detailed information on the optimization is displayed and the configuration can be changed.



Level of optimization	Select the level of the optimization for compiling. This corresponds to the -O option of the ccrl command.		
	Default	Perform the default optimization(None)	
	How to change	Select from the drop-down list.	
	Restriction	Perform the default optimization(None)	Performs optimization that debugging is not affected (optimization of expressions and register allocation, and the like).
		Code size prece- dence(-Osize)	Performs optimization with the object size precedence. Regards reducing the ROM/RAM usage as important and performs the maximum optimi- zation that is effective for general programs.
		Speed precedence(- Ospeed)	Performs optimization with the execution speed precedence. Regards shortening the execution speed as important and performs the maximum optimi- zation that is effective for general programs.
		Debug precedence(- Onothing)	Performs optimization with the debug prece- dence. Regards debugging as important and sup- presses all optimization including default optimization.

(3)

[Optimization(Details)] The detailed information on the optimization is displayed and the configuration can be changed.

Maximum number of loop expansions	Specify the maximum number of times to expand the loops such as "for" and "while". If 0 or 1 is specified, expansion is suppressed. If this is blank, it is assumed that "2" has been specified. This corresponds to the -Ounroll option of the ccrl command. This property is displayed only when [Perform the default optimization(None)], [Code size precedence(-Osize)] or [Speed precedence(-Ospeed)] in the [Level of optimiza- tion] property is selected.			
	Default	Blank		
	How to change	Directly enter in the text box.		
	Restriction	0 to 999 (decimal number) or blank		
Remove unused static functions	Select whether This correspon	whether to remove the static functions which are not called. presponds to the -Odelete_static_func option of the ccrl command.		
	Default	Yes(To adjust the level of optimization)(None)		
	How to change	Select from the drop-down list.		
	Restriction	Yes(To adjust the level of optimization)(None)	Performs optimization according to the [Level of optimization] property.	
		Yes(- Odelete_static_func)	Removes the unused static functions which are not called.	
		No(- Odelete_static_func=off)	Does not remove the unused static func- tions which are not called.	



Perform inline expan- sion	Specify whether to perform inline expansion at the location calling functions. This corresponds to the -Oinline_level option of the ccrl command. This property is displayed only when [Perform the default optimization(None)], [Code size precedence(-Osize)] or [Speed precedence(-Ospeed)] in the [Level of optimiza- tion] property is selected.			
	Default	Yes(To adjust the level of optimization)(None)		
	How to change	Select from the drop-down list.		
	Restriction	Yes(To adjust the level of optimization)(None)	Performs optimization according to the [Level of optimization] property.	
		Yes(Only specified func- tions)(-Oinline_level=1)	Performs inline expansion at the location calling the function for which #pragma inline is specified.	
		Yes(Auto-detect)(- Oinline_level=2)	Distinguishes the function that is the tar- get of inline expansion automatically and expands it.	
		Yes(Auto-detect without code size increase)(- Oinline_level=3)	Distinguishes the function that is the tar- get of inline expansion automatically and expands it, while minimizing the increase in code size.	
		No(-Oinline_level=0)	Suppresses all inline expansion including the function for which "#pragma inline" is specified.	
Maximum increasing rate of inline expan- sion size	Specify the maximum increasing rate (%) of the code size up to which inline sion is performed. (Example: When "100" is specified, inline expansion will b until the code size increases by 100% (becomes twice the initial size).) This corresponds to the -Oinline_size option of the ccrl command. This property is displayed only when [Yes(Auto-detect)(-Oinline=2)] in the [F inline expansion] property is selected, or when [Yes(To adjust the level of op tion)] in the [Perform inline expansion] property and [Speed precedence(-Os the [Optimization Level] property are selected.		of the code size up to which inline expan- s specified, inline expansion will be applied comes twice the initial size).) on of the ccrl command. Auto-detect)(-Oinline=2)] in the [Perform then [Yes(To adjust the level of optimiza- berty and [Speed precedence(-Ospeed)] in ted.	
	Default	100		
	How to change	Directly enter in the text bo	ox.	
	Restriction	iction 0 to 65535 (decimal number)		



Use br instruction to call a function at the end of the function	Select whether to give precedence to using br instructions in the place of call instruc- tions when the function ends with a function call. This corresponds to the -Otail_call option of the ccrl command.			
	Default	Yes(To adjust the level of	optimization)(None)	
	How to change	Select from the drop-dowr	n list.	
	Restriction	Yes(To adjust the level of optimization)(None)	Performs optimization according to the [Level of optimization] property.	
		Yes(-Otail_call)	Gives precedence to using br instructions in the place of call instructions when the function ends with a function call. The code size can be reduced by remov- ing the ret instruction. However, some debug functions cannot be used.	
		No(-Otail_call=off)	Uses call instructions when the function ends with a function call.	
Perform inter-module optimization	Specify the level of inter-module optimization (such as function merging). Only [Yes(Level 1)(Perform)(-Xintermodule)] and [No] are displayed when [No] in the [Build simultaneously] property in the [Build Method] category from the [Common Options] tab is selected. This corresponds to the -Owhole_program, -Omerge_files, and -Ointermodule options of the ccrl command.			
	Default	No		
	How to change	Select from the drop-down list.		
	Restriction	Yes(Level 3)(Perform with assuming it the whole program)(- Owhole_program)	Performs inter-module optimization assuming that the source files comprise the entire program. However, operation is not guaranteed if the preconditions are not met. See "CC-RL Compiler User's Manual" for details about the preconditions.	
		Yes(Level 2)(Perform with merging files)(- Omerge_files, -Ointer- module)	Merges two or more C source files and performs inter-module optimization. This item is displayed only when two or more source files are added to the proj- ect.	
		Yes(Level 1)(Perform)(- Ointermodule)	Performs inter-module optimization for each file.	
		No	Does not perform inter-module optimiza- tion.	



Perform optimization considering type of data indicated by	Select whethe cated by the p This correspor	vhether to perform optimization with consideration for the type of the data indi- y the pointer, based on the ANSI standard. rresponds to the -Oalias option of the ccrl command.			
pointer	Default No				
	How to change	Select from the	Select from the drop-down list.		
	Restriction	Yes(- Oalias=ansi) Performs optimization with consideration of the data indicated by the pointer. In general, this option improves the obju- mance, but the execution result may difficult case when [No] is selected.		optimization with consideration for the type a indicated by the pointer. I, this option improves the object perfor- ut the execution result may differ from the n [No] is selected.	
		No	Does not the type o	perform optimization with consideration for f the data indicated by the pointer.	
Create subroutine for same instruction sequence	Select whethe This correspor This property i	t whether to create a subroutine for the same instruction sequence. corresponds to the -Osame_code option of the ccrl command. property is displayed in the following cases.			
	- When [Alwa version] pro selected and selected in t	- When [Always latest version which was installed] in the [Using compiler package version] property in the [Version Select] category from the [Common Options] tab i selected and the latest version is V1.02.00 or higher or when V1.02.00 or higher is selected in the [Using compiler package version] property			
	 When [Perform the default optimization(None)], [Code size precedence(-Osiz [Speed precedence(-Ospeed)] in the [Level of optimization] property is select 			None)], [Code size precedence(-Osize)] or evel of optimization] property is selected	
	Default No				
	How to change	Select from the drop-down list.			
	Restriction	Yes(-Osame_c	code)	Creates a subroutine for the same instruction sequence.	
		No		Does not create a subroutine for the same instruction sequence.	
Outputs additional information for inter- module optimization	Select whethe At linkage, inte specified. This correspor	ether to output additional information for inter-module optimization. inter-module optimization is applied to files for which this option h sponds to the -goptimize option of the ccrl command.		ation for inter-module optimization. olied to files for which this option has been of the ccrl command.	
	Default	No	No		
	How to change	Select from the	e drop-dowr	n list.	
	Restriction	Yes(-gopti- mize)	Outputs additional information for inter-module op mization.		
		No	Does not ule optimi	outputs additional information for inter-mod- zation.	

(4) [Preprocess]

The detailed information on preprocessing is displayed and the configuration can be changed.



Additional include paths	 Specify the additional include paths during compiling. The following placeholders are supported. %ActiveProjectDir%: Replaces with the absolute path of the active project folder. %ActiveProjectName%: Replaces with the active project name. %BuildModeName%: Replaces with the build mode name. %MainProjectDir%: Replaces with the absolute path of the main project folder. %MainProjectDir%: Replaces with the absolute path of the main project folder. %MainProjectName%: Replaces with the absolute path of the install folder of this product. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectName%: Replaces with the absolute path of the project folder. %ProjectName%: Replaces with the absolute path of the project folder. %ProjectName%: Replaces with the absolute path of the temporary folder. %VernpDir%: Replaces with the absolute path of the temporary folder. %WinDir%: Replaces with the absolute path of the Windows system folder. The specified include path is searched with higher priority than the standard include file folder of CC-RL. The reference point of the path is the project folder. When this property is omitted, only the standard folder of CC-RL is searched. This corresponds to the -1 option of the ccrl command. The specified include path is displayed as the subproperty. When the include path is added to the project tree, the path is added to the top of the subproperties. Uppercase characters and lowercase characters are not distinguished for the include paths. 		
	Default	Additional include paths[number of defined items]	
	How to change	Edit by the Path Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.	
	Restriction	Up to 247 characters Up to 256 items can be specified.	
System include paths	 Change the specified order of the include paths which the system set during. The following placeholders are supported. %ActiveProjectDir%: Replaces with the absolute path of the active proged ActiveProjectName%: Replaces with the active project name. %BuildModeName%: Replaces with the build mode name. %MainProjectDir%: Replaces with the absolute path of the main project %MainProjectName%: Replaces with the absolute path of the main project %MainProjectName%: Replaces with the absolute path of the install folder product. %ProjectDir%: Replaces with the absolute path of the install folder. %ProjectName%: Replaces with the absolute path of the project folder. %ProjectName%: Replaces with the absolute path of the temporary folder. %TempDir%: Replaces with the absolute path of the temporary folder. %WinDir%: Replaces with the absolute path of the temporary folder. The system include path is searched with lower priority than the additionarpath. The reference point of the path is the project folder. The include path is displayed as the subproperty. 		
	Default	System include paths[number of defined items]	
	How to change	Edit by the System Include Path Order dialog box which appears when clicking the [] button.	
	Restriction Changes not allowed (Only the specified order of the includ can be changed.)		



Include files at head of compiling units	Specify the file The following p %ActiveProj %ActiveProj %BuildMode %MainProje %MicomToo product. %ProjectDir %ProjectNa %TempDir% %WinDir%: The reference This correspon The specified i	that is included at the top of the compilation unit. olaceholders are supported. ectDir%: Replaces with the absolute path of the active project folder. ectName%: Replaces with the active project name. eName%: Replaces with the build mode name. ctDir%: Replaces with the absolute path of the main project folder. ctName%: Replaces with the absolute path of the install folder of this IPath%: Replaces with the absolute path of the install folder of this %: Replaces with the absolute path of the project folder. me%: Replaces with the absolute path of the project folder. me%: Replaces with the absolute path of the temporary folder. Replaces with the absolute path of the temporary folder. Replaces with the absolute path of the Windows system folder. point of the path is the project folder. nds to the -preinclude option of the ccrl command. include file name is displayed as the subproperty.	
	Default	Include files at head of compiling units[number of defined items]	
	How to change	Edit by the Text Edit dialog box which appears when clicking the [button. For the subproperty, you can enter directly in the text box.	
	Restriction	Up to 247 characters Up to 256 items can be specified.	
Macro definition	Specify the nat Specify in the f The "= <i>defined</i> value. This correspor The specified i	me of the macro to be defined. format of " <i>macro name=defined value</i> ", with one macro name per line. <i>value</i> " part can be omitted, and in this case, "1" is used as the defined nds to the -D option of the ccrl command. macro is displayed as the subproperty.	
	Default	Macro definition[number of defined items]	
	How to change	Edit by the Text Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.	
	Restriction	Up to 256 characters Up to 256 items can be specified.	
Macro undefinition	Specify the ma Specify in the f This correspor The specified i	acro name to be undefined. format of " <i>macro name</i> ", with one macro name per line. nds to the -U option of the ccrl command. macro is displayed as the subproperty.	
	Default	Macro undefinition[number of defined items]	
	How to change	Edit by the Text Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.	
	Restriction	Up to 256 characters Up to 256 items can be specified.	



Output C source com- ments to preprocessed file	Select whether This correspon This property is property in the	whether to output the comments of the C source to the preprocessed file. responds to the -preprocess option of the ccrl command. perty is displayed only when [Yes(-P)] in the [Output preprocessed source file] in the [Output File] category is selected.		
	Default			
	How to change	Select from the drop-down list.		
	Restriction	Yes(-preprocess=com- ment)	Outputs the comments of the C source to the preprocessed file.	
		No	Does not output the comments of the C source to the preprocessed file.	
Output line number information to prepro- cessed file	Select whether to output the line number information of the C source to the prepro- cessed file. This corresponds to the -preprocess option of the ccrl command. This property is displayed only when [Yes(-P)] in the [Output preprocessed source file property in the [Output File] category is selected.			
	Default	No		
	How to change	Select from the drop-down list.		
	Restriction	Yes(-preprocess=line)	Outputs the line number information of the C source to the preprocessed file.	
		No	Does not output the line number information of the C source to the preprocessed file.	

(5) [Quality Improvement] The detailed information on the quality improvement is displayed and the configuration can be changed.

Detect stack overflow	Select whether to detect the stack overflow. This property is usable only in the Professional Edition. Detection of stack overflow is a feature for writing a value outside the valid stack area before entering a function and checking whether that value is rewritten before exiting the function. Upon detection, the user-definedstack_chk_fail() function is called. See "CC-RL Compiler User's Manual" about the difference between [Yes(- stack_protector)] and [Yes(All)(-stack_protector_all)]. This corresponds to the -stack_protector and -stack_protector_all options of the ccrl command. This property is displayed when [Always latest version which was installed] in the [Using compiler package version] property in the [Version Select] category from the [Common Options] tab is selected and the latest version is V1.02.00 or higher or when V1.02.00 or higher is selected in the [Using compiler package version] property			
	Default No(None)			
	How to change Select from the drop-down list. Restriction Yes(- stack_protector) Detects the stack overflow.			
	Yes(All)(- Detects the stack overflow for all function stack_protector_all)			
	No(None) Does not detect the stack overflow.			



Value to be embed- ded for detecting stack overflow	Specify the value to be embedded for detecting the stack overflow. This property is usable only in the Professional Edition. This corresponds to the -stack_protector and -stack_protector_all options of the ccrl command. This property is displayed in the following cases.		
	- When [Always latest version which was installed] in the [Using compiler package version] property in the [Version Select] category from the [Common Options] tab is selected and the latest version is V1.02.00 or higher or when V1.02.00 or higher is selected in the [Using compiler package version] property		
	- When other than [No(None)] in the [Detect stack overflow] property is selected		
	Default Blank		
	How to change	Directly enter in the text box.	
	Restriction	0 to 65535 (decimal number)	

(6) [Memory Model]

The detailed information on the memory model is displayed and the configuration can be changed.

Memory model	Specify the typ This correspon	e of memory model. nds to the -memory_model option of the ccrl command.			
	Default	Auto(None)			
	How to change	Select from the	e drop-down	list.	
	Restriction	Auto(None) Small model(- memory_model=small) Medium model(- memory_model=medium)		Automatically interprets the value of the [Specify CPU core] property in the [CPU] category in the [Common Options] tab (small when -cpu=S1 is selected, medium when -cpu=S2 or -cpu=S3 is selected).	
				Specifies the small model(Code 64 K bytes/Data 64 K bytes) as the memory model.	
				Specifies the medium model(Code 1 M bytes/Data 64 K bytes) as the memory model.	
Locate ROM data to far area	Specify the allo This correspon	ocation destination destination destination destination destination destination destination destination destina Ids to the -far_ro	on of ROM d m option of t	ata. the ccrl command.	
	Default	No			
	How to change	Select from the drop-down No Allocates R [Memory M Yes(- far_rom) Allocates R		list.	
	Restriction			ROM data depending on the value of the lodel] property.	
				ROM data to the far area.	

(7)

[C Language] The detailed information on C language is displayed and the configuration can be changed.



Compile strictly according to ANSI standards	Select whether standard and of This correspor	whether to process as making C source program comply strictly with the ANSI and output an error or warning for a specification that violates the standard. Dresponds to the -ansi option of the ccrl command.			
	Default	No			
	How to change	Select from the drop-down list.			
	Restriction	Yes(-ansi) Processes as making C source program co strictly with the ANSI standard and outputs or warning for a specification that violates t dard.		as making C source program comply the ANSI standard and outputs an error for a specification that violates the stan-	
		No	Compatibil ifications is warning is	ity with the conventional C language spec- s conferred and processing continues after output.	
Check function with- out prototype declara- tion	Select whether tion was not m This correspor	ar to generate an error when using a function whose prototype declara- nade in advance or a function without a prototype declaration. nds to the -refs_without_declaration option of the ccrl command.			
	Default	No			
	How to change	Select from the	e drop-down	list.	
	Restriction Yes(- refs_without_de		leclaration)	Checks functions without prototype dec- larations.	
		No		Does not check functions without proto- type declarations.	
Set 0xffff bytes to max- imum variable size	Select whethe This correspor	er to increase the maximum variable size from 0x7fff to 0xffff. onds to the -large_variable option of the ccrl command.			
	Default	No			
	How to change	Select from the	e drop-down	list.	
	Restriction	Yes(-large_var	iable)	Increases the maximum variable size.	
		No Does not increase the size.		Does not increase the maximum variable size.	
Allow nested com- ments	Select whethe This correspor	r to allow the need nds to the -nest_	st use of con comment op	nments ("/* */"). tion of the ccrl command.	
	Default	No Select from the drop-down list.			
	How to change				
	Restriction	Yes(-nest_com	nment)	Allows the nest use of comments.	
		No		Does not allow the nest use of com- ments.	

(8) [Character Encoding] The detailed information on character encoding is displayed and the configuration can be changed.



Character encoding	Select the character code to be used for Japanese/Chinese comments and chara strings in the source file. This corresponds to the -character_set option of the ccrl command.					
	Default	Auto(None)				
	How to change	Select from the drop-down lis	st.			
	Restriction	Auto(None)	Interprets the Japanese character code in the source file as SJIS on Japanese OS. On other than Japanese OS, does not interpret the character code in the source file.			
		SJIS(-character_set=sjis)	Interprets the Japanese character code in the source file as SJIS.			
		EUC(- character_set=euc_jp)	Interprets the Japanese character code in the source file as EUC.			
		UTF-8(-character_set=utf8)	Interprets the Japanese character code in the source file as UTF-8.			
		Big5(-character_set=big5)	Interprets the Chinese character code in the source file as Traditional Chi- nese.			
		GBK(-character_set=gbk)	Interprets the Chinese character code in the source file as Simplified Chinese.			
		No-process(- character_set=none)	Does not interpret the Japanese/Chinese character code in the source file.			

(9)

[Output Code] The detailed information on output codes is displayed and the configuration can be changed.

Process double type / long double type as	Select whether to handle the double or long double type as the float type. This corresponds to the -dbl_size option of the ccrl command.			
float type	Default	Yes		
	How to change	Select from the drop-down list.		
	Restriction	Yes Processes the double or long double t the float type.		
		No(-dbl_size=8)	Does not process the double or long double type as the float type.	
Sign of the char type	Select sign of t This correspon	he char type with no sig	n specification. option of the ccrl command.	
	Default	Handles as unsigned char(None)		
	How to change	Select from the drop-down list.		
	Restriction	Handles as signed char(-signed_char)	Handles the char type as signed char.	
		Handles as unsigned char(None)	Handles the char type as unsigned char.	



Sign of the bit-field type	Select sign of t This correspor	Select sign of the bit-field type with no sign specification. This corresponds to the -signed_bitfield option of the ccrl command.			
	Default	Handles as un	signed(I	None)	
	How to change	Select from the	∍ drop-d	own list.	
	Restriction	Handles as sig signed_bitfield)	ned(-)	Handles the bit-field type as signed.	
		Handles as unsigned(None	э)	Handles the bit-field type as unsigned.	
Structure packing	Select whether This correspon This property is [Using compile [Common Opti V1.01.00 or hig	er to perform structure packing. nds to the -pack option of the ccrl command. is displayed when [Always latest version which was installed] in the er package version] property in the [Version Select] category from the tions] tab is selected and the latest version is V1.01.00 or higher or wher igher is selected in the [Using compiler package version] property.			
	Default	No			
	How to change	Select from the	∍ drop-d	own list.	
	Restriction	Yes(-pack) Perform byte un to the		ms alignment of members in a structure in 1- nits instead of performing alignment according member type.	
		No	Perfor accord	ms alignment of members in a structure Jing to the member type.	
Handle external vari- ables as if they are volatile qualified	Select whether address as if the This correspor	er to handle all external variables and variables specified with #pragma they are volatile qualified. ands to the -volatile option of the ccrl command.			
	Default	No			
	How to change	Select from the drop-down list.			
	Restriction	Yes(-volatile)	Handle with #	es all external variables and variables specified pragma address as if they are volatile qualified.	
		No	Optimi qualifi	izes external variables that are not volatile ed.	



Output code of switch statement	Select the code This correspon	code output mode for switch statements in programs. sponds to the -switch option of the ccrl command.			
	Default	Auto(None)			
	How to change	Select from the drop-down list.			
	Restriction	Auto(None)	The ccrl selects the optimum output format.		
		if-else(-switch=ifelse)	Outputs the switch statements in the same format as the if-else statement along a string of case statements in programs. Select this item if the case statements are written in the order of frequency or if only a few labels are used. Because the case statements are compared starting from the top, unnecessary compari- son can be reduced and the execution speed can be increased if the case statement that most often matches is written first.		
		Binary search(- switch=binary)	Outputs the code in the binary search format for switch statements in programs. Searches for a matching case statement by using a binary search algorithm. If this item is selected when many labels are used, any case statement can be found at almost the same speed.		
		Table jump(abso- lute)(- switch=abs_table)	Outputs the code in the table jump format (absolute branch) for switch statements in programs. References a table indexed on the values in the case statements, and selects and pro- cesses case labels from the switch statement values. The code will branch to all the case state- ments with about the same speed. However, if case values are not used in suc- cession, an unnecessary area will be cre- ated.		
		Table jump(relative)(- switch=rel_table)	Outputs the code in the table jump format (relative branch) for switch statements in pro- grams. References a table indexed on the values in the case statements, and selects and pro- cesses case labels from the switch statement values. The code will branch to all the case state- ments with about the same speed. However, if case values are not used in suc- cession, an unnecessary area will be cre- ated.		



Output comment to assembly source file	Select whether file to be output This correspont This property is file] property in prn_path)] in the selected.	nether to output a C source program as a comment to the assembly source output. esponds to the -pass_source option of the ccrl command. herty is displayed only when [Yes(-asm_path)] in the [Output assembly source erty in the [Output File] category is selected or when [Yes(-asmopt=-)] in the [Output assemble list file] property in the [Assemble List] category is			
	Default	No			
	How to change	Select from the drop-down list.			
	Restriction	Yes(-pass_source) Outputs a C source program as a com the assembly source file.			
		No	Does not output a C source program as a comment to the assembly source file.		
Merge string literals	When the sam and allocate to This correspor	ne string literals exist in the source file, specify whether to merge them o the one area. onds to the -merge_string option of the ccrl command.			
	Default	No			
	How to change	Select from the drop-down list.			
	Restriction	Yes(-merge_string)	Merges the same string literals exist in the source file and allocates to the one area.		
		No	Each allocates the same string literals exist in the source file to separate areas.		

(10) [Output File] The detailed information on output files is displayed and the configuration can be changed.

Output assembly source file	Select whether source. This correspon	er to output the assembly source file of the compile result for the C onds to the -asm_path option of the ccrl command.		
	Default	No		
	How to change	Select from the drop-down list.		
	Restriction	Yes(-asm_path) Outputs the assembly source file of t result for the C source.		
		No	Does not output the assembly source file of the compile result for the C source.	



Output folder for assembly source file	Specify the folder which the assembly source file is output. If a relative path is specified, the reference point of the path is the main project or sub- project folder. If an absolute path is specified, the reference point of the path is the main project or subproject folder (unless the drives are different). The following placeholder is supported. %BuildModeName%: Replaces with the build mode name. The assembly source file is saved under the C source file name with the extension replaced by ".asm". If this is blank, it is assumed that the project folder has been specified. This corresponds to the -asm_path option of the ccrl command. This property is displayed only when [Yes(-asm_path)] in the [Output assembly source file] property is selected.			
	Default	%BuildModeN	ame%	
	How to change	Directly enter i box which app	in the text box or edit by the Browse For Folder dialog ears when clicking the [] button.	
	Restriction	Up to 247 char	racters	
Output preprocessed source file	Select whether file. This correspor	er to output the execution result of preprocessing for the source file to a onds to the -P option of the ccrl command.		
	Default	No Select from the drop-down list. Yes(-P) Outputs the execution result of preprocessing for the source file to a file.		
	How to change			
	Restriction			
		No	Does not output the execution result of preprocess- ing for the source file to a file.	
Output folder for pre- processed source file	Specify the fold The file is outp If a relative pat project folder. If an absolute p subproject fold The following p %BuildMode If this is blank, This correspon This property is property is sele	 folder which the preprocessed source file is output. output under the source file name with the extension replaced by ".i". path is specified, the reference point of the path is the main project or subder. ute path is specified, the reference point of the path is the main project or folder (unless the drives are different). ing placeholder is supported. ModeName%: Replaces with the build mode name. ank, it is assumed that the project folder has been specified. sponds to the -prep_path option of the ccrl command. erty is displayed only when [Yes(-P)] in the [Output preprocessed source file a selected. 		
	Default	%BuildModeN	ame%	
	How to change	Directly enter in the text box or edit by the Browse For Folder dialog box which appears when clicking the [] button.Up to 247 characters		
	Restriction			

(11) [Assemble List]

The detailed information on the assemble list is displayed and the configuration can be changed.

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Output assemble list file	Select whether to output the assemble list file. This corresponds to the -asmopt=-prn_path option of the ccrl command.				
	Default	No			
	How to change	Select from the drop-down list. Yes(-asmopt=-prn_path) Outputs the assemble list file.			
	Restriction				
		No	Does not output the assemble list file.		
Output folder for assemble list file	Specify the folder which the assemble list file is output. The assemble list file is output under the source file name with the extension replaced by ".prn". If a relative path is specified, the reference point of the path is the main project or sub- project folder. If an absolute path is specified, the reference point of the path is the main project or subproject folder (unless the drives are different). The following placeholder is supported. %BuildModeName%: Replaces with the build mode name. If this is blank, it is assumed that the project folder has been specified. This corresponds to the -asmopt=-prn_path option of the ccrl command. This property is displayed only when [Yes(-asmopt=-prn_path)] in the [Output assem- ble list file] property is selected.				
	Default	Default %BuildModeName%			
	How to change	to Directly enter in the text box or edit by the Browse For Folder dialog box which appears when clicking the [] button.			
	Restriction	Up to 247 characters			

(12) [MISRA-C Rule Check]

The detailed information on the MISRA-C rule check are displayed and the configuration can be changed. 20*XX* in the following table corresponds to 2012 or 2004 in particular.

MISRA-C specification	Select the MISRA-C specification. This property is usable only in the Professional Edition. This property is displayed when [Always latest version which was installed] in the [Using compiler package version] property in the [Version Select] category from the [Common Options] tab is selected and the latest version is V1.02.00 or higher or when V1.02.00 or higher is selected in the [Using compiler package version] property.		
	Default	MISRA-C 2012	
	How to change	Select from the drop-down list.	
	Restriction	MISRA-C 2012	Settings for MISRA-C 2012 are made in the subsequent properties.
		MISRA-C 2004	Settings for MISRA-C 2004 are made in the subsequent properties.



Apply rule	Select the MISRA-C rules to be applied. This property is usable only in the Professional Edition. This corresponds to the -misra20 <i>XX</i> option of the ccrl command.			
	Default	Not apply rule(None)		
	How to change	Select from the drop-down lis	t.	
	Restriction	Apply all rules(- misra20 <i>XX</i> =all)	Checks the source code against all of the rules which are supported.	
		Apply specified rule num- ber(-misra20 <i>XX</i> =apply)	Checks the source code against the rules with the specified numbers among the rules which are supported.	
		Ignore specified rule num- ber(-misra20 <i>XX</i> =ignore)	Checks the source code against the rules that do not match the specified numbers among the rules which are supported.	
		Apply rules that are classi- fied as "required"(- misra20 <i>XX</i> =required)	Checks the source code against the rules of the "required" type.	
		Apply rules that are classi- fied as "required" and speci- fied rule number(- misra20 <i>XX</i> =required_add)	Checks the source code against the rules of the "required" type and the rules with the specified numbers among the rules which are supported.	
		Ignore specified rule num- ber from rules that are clas- sified as "required"(- misra20 <i>XX</i> =required_remov e)	Checks the source code against the rules of the "required" type except for the rules with the specified numbers among the rules which are supported.	
		Apply rules that are described in the specified file(-misra20 <i>XX</i> = <file name>)</file 	Checks the source code against the rules with the numbers described in specified file among the rules which are supported.	
		Not apply rule(None)	Does not apply the MISRA-C rules.	
Rule number descrip- tion file	Specify the rule This property is The following p %BuildMode %MicomToo product. %ProjectNar This correspon This property is file(-misra20X)	e number description file (MISRA-C rule file). s usable only in the Professional Edition. placeholders are supported. eName%: Replaces with the build mode name. IPath%: Replaces with the absolute path of the install folder of this me%: Replaces with the project name. nds to the -misra20 <i>XX</i> option of the ccrl command. s displayed only when [Apply rules that are described in the specified X= <file name="">)] in the [Apply rule] property is selected.</file>		
	Default	Blank		
	How to change	Directly enter in the text box or edit by the Specify MISRA-C Rule File dialog box which appears when clicking the [] button.		
	Restriction Up to 259 characters			



Rule number	Specify the rule number to be checked. This property is usable only in the Professional Edition. Specify at least one rule number in decimal. This corresponds to the -misra20XX option of the ccrl command. This property is displayed only when [Apply specified rule number(- misra20XX=apply)] in the [Apply rule] property is selected.		
	Default	Blank	
	How to change	Directly enter in the text box or edit by the Specify Rule Number dia- log box which appears when clicking the [] button.	
	Restriction	Up to 259 characters	
Exclusion rule number	Specify the rule This property is Specify at leas This correspon This property is misra20 <i>XX</i> =igr	e number to be excluded from the check. s usable only in the Professional Edition. t one rule number in decimal. ids to the -misra20 <i>XX</i> option of the ccrl command. s displayed only when [Ignore specified rule number(- nore)] in the [Apply rule] property is selected.	
	Default	Blank	
	How to change	Directly enter in the text box or edit by the Specify Rule Number dia- log box which appears when clicking the [] button.	
	Restriction	Up to 259 characters	
Check rule number besides required rule	Specify the rule This property is Specify at leas This correspon This property is specified rule r selected.	e number to be checked besides the required rules. s usable only in the Professional Edition. t one rule number in decimal. ids to the -misra20 <i>XX</i> option of the ccrl command. s displayed only when [Apply rules that are classified as "required" and number(-misra20 <i>XX</i> =required_add)] in the [Apply rule] property is	
	Default	Blank	
	How to change	Directly enter in the text box or edit by the Specify Rule Number dia- log box which appears when clicking the [] button.	
	Restriction	Up to 259 characters	
Exclusion rule number from required rule	Specify the rec This property is Specify at leas This correspon This property is classified as "re selected.	uired rule number to be excluded from the check. s usable only in the Professional Edition. t one rule number in decimal. nds to the -misra20 <i>XX</i> option of the ccrl command. s displayed only when [Ignore specified rule number from rules that are equired"(-misra20 <i>XX</i> =required_remove)] in the [Apply rule] property is	
	Default	Blank	
	How to change	Directly enter in the text box or edit by the Specify Rule Number dia- log box which appears when clicking the [] button.	
	Restriction	Up to 259 characters	



Rule check exclusion file	Specify files the This property is The following p %BuildMode %MicomTool product. %ProjectNar This correspon This property is	at will not be checked against the MISRA-C rules. s usable only in the Professional Edition. blaceholders are supported. Name%: Replaces with the build mode name. IPath%: Replaces with the absolute path of the install folder of this me%: Replaces with the project name. Ids to the -ignore_files_misra option of the ccrl command. s displayed only in the following cases.		
	- When [Apply	all rules] is selected in the [Apply rule] property		
	 When [Apply rules that are classified as "required"] is selected in the [Apply rule] property 			
	- When [Apply specified rule number] is selected in the [Apply rule] property and a rule number is specified in the [Rule number] property			
	- When [Ignore specified rule number] is selected in the [Apply rule] property and a rule number is specified in the [Rule number] property			
	 When [Apply rules that are classified as "required" and specified rule number] is selected in the [Apply rule] property and a rule number is specified in the [Check rule number besides required rule] property 			
	- When [Ignore specified rule number from rules that are classified as "required"] is selected in the [Apply rule] property and a rule number is specified in the [Exclusion rule number from required rule] property			
	 When [Apply rules that are described in the specified file] is selected in the [Ap rule] property and a rule number description file is specified in the [Rule number description file] property 			
	Default	Rule check exclusion file[number of defined items]		
	How to change	Edit by the Path Edit dialog box which appears when clicking the [] button. -> Edit by the Add Excluding File dialog box which appears when clicking the [Browse] button.		

Up to 259 characters

Restriction

For the subproperty, you can enter directly in the text box.



Output message of the enhanced key word and extended specifi- cations	Select whether to output the message of the enhanced key word and extended speci- fications. This property is usable only in the Professional Edition. This corresponds to the -check_language_extention option of the ccrl command. This property is displayed only in the following cases.		
	- When [Apply	all rules] is selected in the [Ap	ply rule] property
	- When [Apply property	rules that are classified as "re	quired"] is selected in the [Apply rule]
	- When [Apply rule number	r specified rule number] is select is specified in the [Rule numbe	cted in the [Apply rule] property and a r] property
	- When [Ignor rule number	e specified rule number] is sele is specified in the [Rule numbe	cted in the [Apply rule] property and a r] property
	- When [Apply rules that are classified as "required" and specified rule number] is selected in the [Apply rule] property and a rule number is specified in the [Check rule number besides required rule] property		
	- When [Ignore specified rule number from rules that are classified as "required"] is selected in the [Apply rule] property and a rule number is specified in the [Exclusion rule number from required rule] property		
	- When [Apply rule] propert description f	r rules that are described in the y and a rule number descriptior ile] property	specified file] is selected in the [Apply file is specified in the [Rule number
	Default	No	
	How to change	Select from the drop-down lis	t.
	Restriction	Yes(- check_language_extension)	Enables MISRA-C rule check and out- puts messages when the rule check is partially suppressed by the unique lan- guage specifications extended from the C language standard.
		No	Disables MISRA-C rule check is dis- abled, which are partially suppressed by the extended language specifica- tions.

(13) [Others]

Other detailed information on compilation is displayed and the configuration can be changed.



Use support for porting from other compiler	Select whether to use support for porting from other compilers. This corresponds to the -convert_cc option of the ccrl command. This property is displayed when [Always latest version which was installed] in the [Using compiler package version] property in the [Version Select] category from the [Common Options] tab is selected and the latest version is V1.01.00 or higher or when V1.01.00 or higher is selected in the [Using compiler package version] property.		
	Default	No(None)	
	How to change	Select from the drop-d	own list.
	Restriction	Yes(CA78K0R)(- convert_cc=ca78k0r)	Uses support for porting from the CA78K0R compiler.
		Yes(NC30)(- convert_cc=nc30)	Uses support for porting from the NC30 compiler.
		Yes(IAR)(- convert_cc=iar)	Uses support for porting from the IAR compiler.
		No(None)	Uses support for porting from other compiler.
Commands executed before compile pro- cessing	No(None) Uses support for porting from other of the specify the command to be executed before compile processing. J Specify the command to be executed before compile processing. Use the call instruction to specify a batch file (example: call a.bat). The following placeholders are supported. %ActiveProjectDir%: Replaces with the absolute path of the active project %ActiveProjectName%: Replaces with the active project name. %BuildModeName%: Replaces with the build mode name. %CompiledFile%: Replaces with the absolute path of the output file under ing. %InputFile%: Replaces with the absolute path of the file to be compiled. %MainProjectDir%: Replaces with the absolute path of the main project for %MainProjectName%: Replaces with the absolute path of the install folder or product. %Options%: Replaces with the command line option under build execution %OutputDir%: Replaces with the absolute path of the output file. %Program%: Replaces with the absolute path of the output file. %ProjectDir%: Replaces with the absolute path of the project folder. %OutputFile%: Replaces with the absolute path of the project folder. %OutputFile%: Replaces with the absolute path of the project folder. %Options%: Replaces with the absolute path of the project folder. %OutputFile%: Replaces with the absolute path of the project folder. %ProjectName%: Replaces with the absolute path o		before compile processing. ch file (example: call a.bat). ted. the absolute path of the active project folder. ith the active project name. the build mode name. absolute path of the output file under compil- olute path of the file to be compiled. the absolute path of the main project folder. th the main project name. the absolute path of the install folder of this mand line option under build execution. solute path of the output file. gram name under execution. solute path of the project folder. project name. but path of the project folder. project name. but path of the temporary folder. ute path of the Windows system folder. st line, the contents from the second line to the the script. s the subproperty.
	Default	Commands executed l items]	pefore compile processing[number of defined
	How to change	Edit by the Text Edit di button. For the subproperty, ye	alog box which appears when clicking the []
	RestrictionUp to 1023 charactersUp to 64 items can be specified.		



Commands executed after compile process- ing	Use the call instruction to specify a batch file (example: call a.bat). The following placeholders are supported. %ActiveProjectDir%: Replaces with the absolute path of the active project %ActiveProjectName%: Replaces with the active project name. %BuildModeName%: Replaces with the build mode name. %CompiledFile%: Replaces with the absolute path of the output file under ing. %InputFile%: Replaces with the absolute path of the file to be compiled. %MainProjectDir%: Replaces with the absolute path of the main project to %MainProjectName%: Replaces with the absolute path of the install folder product. %Options%: Replaces with the command line option under build execution %OutputFile%: Replaces with the absolute path of the output folder. %OutputFile%: Replaces with the absolute path of the output folder. %OutputFile%: Replaces with the absolute path of the output folder. %OutputFile%: Replaces with the absolute path of the output folder. %OutputFile%: Replaces with the absolute path of the output folder. %OutputFile%: Replaces with the absolute path of the output folder. %OutputFile%: Replaces with the program name under execution. %ProjectDir%: Replaces with the absolute path of the project folder. %VernojectDir%: Replaces with the absolute path of the project folder. %VernojectName%: Replaces with the absolute path of the temporary folder. %VinDir%: Replaces with the absolute path of the temporary folder. %WinDir%: Replaces with the absolute path of the temporary folder. %WinDir%: Replaces with the absolute path of the temporary folder. %WinDir%: Replaces with the absolute path of the temporary folder. %WinDir%: Replaces with the absolute path of the temporary folder. %WinDir%: Replaces with the absolute path of the temporary folder. %WinDir%: Replaces with the absolute path of the temporary folder. %WinDir%: Replaces with the absolute path of the temporary folder. %WinDir%: Replaces with the absolute path of the temporary folder. %WinDir%: Replaces the script of the Python console	
	Default	Commands executed after compile processing[number of defined items]
	How to change	Edit by the Text Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.
	Restriction	Up to 1023 characters Up to 64 items can be specified.
Other additional options	Input the compile option to be added additionally. The options set here are added at the end of the compile options group.	
	Default	Blank
	How to change	Directly enter in the text box or edit by the Character String Input dialog box which appears when clicking the [] button.
	Restriction	Up to 259 characters



[Assemble Options] tab

This tab shows the detailed information on the assemble phase categorized by the following and the configuration can be changed.

- (1) [Debug Information]
- (2) [Optimization]
- (3) [Preprocess]
- (4) [Character Encoding]
- (5) [Assemble List]
- (6) [Others]



Property	×			
✓ CC-RL Property	a 🖉 — +			
A Debug Information				
Add debug information	Yes(-g)			
 Optimization 				
Outputs additional information for inter-module optimization	No			
Additional include paths	Additional include paths[0]			
System include paths	System include paths[0]			
Macro definition	Macro definition[0]			
Macro undefinition	Macro undefinition[0]			
Character Encoding				
Assemble List				
Others				
Add debug information Specifies whether to generate the debug information. Such information is generated when debugging a program, just like the case of wishing to perform source debugging with debugger. This option corresponds to				
Common Opt Compile Opt Assemble O	tions / Hex Output 0 / I/O Header Fi / 루			

[Description of each category]

(1) [Debug Information]

The detailed information on debug information is displayed and the configuration can be changed.

Add debug information	Select whether It is possible to for source debut This correspon	other to generate the debug information. le to perform source debugging with the debugger by outputting information debugging to the output file. sponds to the -g option of the ccrl command.		
	Default	Yes(-g)		
	How to change	Select from the	e drop-down list.	
	Restriction	Yes(-g) Generates the debug information.		
		No	Does not generate the debug information.	

(2) [Optimization]

The detailed information on the optimization is displayed and the configuration can be changed.



Outputs additional information for inter- module optimization	Select whether to output additional information for inter-module optimization. At linkage, inter-module optimization is applied to files for which this option has been specified. This corresponds to the -goptimize option of the ccrl command.		
	Default	No	
	How to change	Select from the dro	p-down list.
	Restriction	Yes(-goptimize)	Outputs additional information for inter-module optimization.
		No	Does not outputs additional information for inter- module optimization.

(3) [Preprocess]

The detailed information on preprocessing is displayed and the configuration can be changed.

Additional include paths	Specify the add The following p %ActiveProj %ActiveProj %BuildMode %MainProje %MicomToo product. %ProjectDir %ProjectDir %ProjectDir %ProjectNar %TempDir% %WinDir%: I The specified i file folder of CC The reference When this prop This correspon The specified i When the inclu subproperties. Uppercase cha paths.	 e following placeholders are supported. %ActiveProjectDir%: Replaces with the absolute path of the active project folder. %ActiveProjectName%: Replaces with the active project name. %BuildModeName%: Replaces with the absolute path of the main project folder. %MainProjectDir%: Replaces with the absolute path of the main project folder. %MainProjectName%: Replaces with the absolute path of the install folder of this product. %ProjectDir%: Replaces with the absolute path of the install folder of this product. %ProjectName%: Replaces with the absolute path of the project folder. %ProjectName%: Replaces with the absolute path of the project folder. %ProjectName%: Replaces with the absolute path of the project folder. %ProjectName%: Replaces with the absolute path of the temporary folder. %VinDir%: Replaces with the absolute path of the temporary folder. %WinDir%: Replaces with the absolute path of the Vindows system folder. e specified include path is searched with higher priority than the standard include folder of CC-RL. e reference point of the path is the project folder. nen this property is omitted, only the standard folder of CC-RL is searched. is corresponds to the -I option of the ccrl command. e specified include path is displayed as the subproperty. nen the include path is added to the project tree, the path is added to the top of the bproperties. 	
	Default	Additional include paths[number of defined items]	
	How to change	Edit by the Path Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.	
	RestrictionUp to 247 charactersUp to 256 items can be specified.		



System include paths	Change the sp bling. The following p %ActiveProj %BuildMode %MainProje %MicomToo product. %ProjectDir %ProjectDir %ProjectNau %TempDir% %WinDir%: The system ind path. The reference This correspon The include pa	Pecified order of the include paths which the system set during assem- placeholders are supported. ectDir%: Replaces with the absolute path of the active project folder. ectName%: Replaces with the active project name. eName%: Replaces with the build mode name. ctDir%: Replaces with the absolute path of the main project folder. ctName%: Replaces with the absolute path of the install folder of this IPath%: Replaces with the absolute path of the install folder of this %: Replaces with the absolute path of the project folder. me%: Replaces with the project name. : Replaces with the absolute path of the temporary folder. Replaces with the absolute path of the temporary folder. Replaces with the absolute path of the Windows system folder. clude path is searched with lower priority than the additional include point of the path is the project folder. nds to the -I option of the ccrI command. th is displayed as the subproperty.		
	Default	System include paths[number of defined items]		
	How to change	Edit by the System Include Path Order dialog box which appears when clicking the [] button.		
	Restriction	Changes not allowed (Only the specified order of the include paths can be changed.)		
Macro definition	Specify the name of the specify in the formation of the specified of the s	me of the macro to be defined. format of " <i>macro name=defined value</i> ", with one macro name per line. <i>value</i> " part can be omitted, and in this case, "1" is used as the defined ands to the -asmopt=-define option of the ccrl command. macro is displayed as the subproperty.		
	Default	Macro definition[number of defined items]		
	How to change	Edit by the Text Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.		
	Restriction	Up to 256 characters Up to 256 items can be specified.		
Macro undefinition	Specify the ma Specify in the f This correspor The specified r	cro name to be undefined. format of " <i>macro name</i> ", with one macro name per line. ads to the -asmopt=-undefine option of the ccrl command. macro is displayed as the subproperty.		
	Default	Macro undefinition[number of defined items]		
	How to change	Edit by the Text Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.		
	Restriction	Up to 256 characters Up to 256 items can be specified.		

(4)

[Character Encoding] The detailed information on character encoding is displayed and the configuration can be changed.



Character encoding	Select the character code to be used for comments and character strings in the source file. This corresponds to the -character_set option of the ccrl command.			
	Default	Auto(None)		
	How to change	Select from the drop-down list.		
	Restriction	Auto(None)	Interprets the Japanese character code in the source file as SJIS on Japanese OS. On other than Japanese OS, does not interpret the character code in the source file.	
		SJIS(-character_set=sjis)	Interprets the Japanese character code in the source file as SJIS.	
		EUC(- character_set=euc_jp)	Interprets the Japanese character code in the source file as EUC.	
		UTF-8(-character_set=utf8)	Interprets the Japanese character code in the source file as UTF-8.	
		Big5(-character_set=big5)	Interprets the Chinese character code in the source file as Traditional Chi- nese.	
		GB2312(- character_set=gbk)	Interprets the Chinese character code in the source file as Simplified Chinese.	
		No-process(- character_set=none)	Does not interpret the Japanese/Chinese character code in the source file.	
Format of numerical constant	Specify the representation format of the base number of numerical constants. example) Prefix format: 0xFFFF, Suffix format: FFFFH This corresponds to the -asmopt=-base_number option of the ccrl command.			
	Default	Prefix format(None)		
	How to change	Select from the drop-down lis	st.	
	Restriction	Prefix format(None)	Handles numerical constants in the Prefix format.	
		Suffix format(-asmopt=- base_number=suffix)	Handles numerical constants in the Suffix format.	

(5) [Assemble List] The detailed information on the assemble list is displayed and the configuration can be changed.

Output assemble list file	Select whether to output the assemble list file. This corresponds to the -asmopt=-prn_path option of the ccrl command.		
Default No		No	
	How to change	Select from the drop-down lis	st.
	Restriction	Yes(-asmopt=-prn_path)	Outputs the assemble list file.
		No	Does not output the assemble list file.



<u> </u>	0 11 11				
Output folder for	Specify the f	older which the assemble list file is output.			
assemble list file	The assemb	le list file is output under the source file name with the extension replaced			
	by ".prn".				
	If a relative path is specified, the reference point of the path is the main project or sub- project folder.				
	If an absolute path is specified, the reference point of the path is the main project or				
	subproject folder (unless the drives are different).				
	The following placeholder is supported.				
	%BuildModeName%: Replaces with the build mode name.				
	If this is blank, it is assumed that the project folder has been specified.				
	This corresponds to the -asmopt=-prn_path option of the ccrl command.				
	This property is displayed only when [Yes(-asmopt=-prn_path)] in the [Output assem-				
	ble list file] p	roperty is selected.			
	Default	%BuildModeName%			
	How to	Directly enter in the text box or edit by the Browse For Folder dialog			

Up to 247 characters

(6) [Others]

Other detailed information on assembly is displayed and the configuration can be changed.

change

Restriction

Use support for porting from assembler of CA78K0R	Select whether to use support for porting from the CA78K0R assembler. This corresponds to the -asmopt=-convert_asm option of the ccrl command.			
	Default	No		
	How to change	Select from the drop-down list.		
	Restriction	Yes(-asmopt=-convert_asm)	Uses support for porting from the CA78K0R assembler.	
		No	Does not use support for porting from the CA78K0R assembler.	

box which appears when clicking the [...] button.



	Commands executed before assemble pro- cessing	Specify the con Use the call ins The following p %ActiveProj %Assembled bling. %BuildMode %InputFile% %MainProje %MicomToo product. %Options%: %OutputDirf %OutputDirf %OutputFile %ProjectDirf %ProjectDirf %ProjectNat %TempDir% %WinDir%: When "#!pytho last line are rea assemble proc The placehold The specified of	 mmand to be executed before assemble processing. struction to specify a batch file (example: call a.bat). blaceholders are supported. ectDir%: Replaces with the absolute path of the active project folder. ectName%: Replaces with the absolute path of the output file under assementation of the absolute path of the output file under assementation. eName%: Replaces with the build mode name. eName%: Replaces with the absolute path of the file to be assembled. ctDir%: Replaces with the absolute path of the main project folder. ctName%: Replaces with the absolute path of the main project folder. ctName%: Replaces with the absolute path of the install folder of this eReplaces with the command line option under build execution. %: Replaces with the absolute path of the output file. 6: Replaces with the absolute path of the output file. 6: Replaces with the absolute path of the output file. f. Replaces with the absolute path of the project folder. me%: Replaces with the absolute path of the project folder. me%: Replaces with the project name. f. Replaces with the absolute path of the project folder. me%: Replaces with the project name. f. Replaces with the absolute path of the temporary folder. me%: Replaces with the absolute path of the temporary folder. me%: Replaces with the absolute path of the temporary folder. me%: Replaces with the absolute path of the temporary folder. me%: Replaces with the absolute path of the temporary folder. me%: Replaces with the absolute path of the temporary folder. me%: Replaces with the absolute path of the temporary folder. me%: Replaces with the absolute path of the temporary folder. me%: Replaces with the absolute path of the temporary folder. me%: Replaces with the absolute path of the temporary folder. me%: Replaces
		Default	Commands executed before assemble processing[number of defined items]
		How to change	Edit by the Text Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.
		Restriction	Up to 1023 characters Up to 64 items can be specified.



	Commands executed after assemble pro- cessing	Specify the corr Use the call ins The following p %ActiveProje %Assembled bling. %BuildMode %InputFile% %MainProje %MicomToo product. %Options%: %OutputDir% %OutputDir% %OutputFile %Program% %ProjectDir% %ProjectNar %TempDir% %WinDir%: I When "#!pytho last line are reg assemble proc The placeholde The specified of	 mmand to be executed after assemble processing. istruction to specify a batch file (example: call a.bat). placeholders are supported. ijectDir%: Replaces with the absolute path of the active project folder. ijectName%: Replaces with the absolute path of the output file under assembled. edFile%: Replaces with the absolute path of the file to be assembled. ectDir%: Replaces with the absolute path of the main project folder. ectDir%: Replaces with the absolute path of the main project folder. ectDir%: Replaces with the absolute path of the main project folder. ectDir%: Replaces with the absolute path of the install folder of this 6: Replaces with the absolute path of the output file. 6: Replaces with the absolute path of the output folder. e%: Replaces with the absolute path of the output folder. e%: Replaces with the absolute path of the project folder. actioname%: Replaces with the absolute path of the output folder. e%: Replaces with the absolute path of the output folder. e%: Replaces with the absolute path of the output folder. e%: Replaces with the program name under execution. r%: Replaces with the absolute path of the project folder. ame%: Replaces with the absolute path of the project folder. ame%: Replaces with the absolute path of the project folder. ame%: Replaces with the absolute path of the temporary folder. cheplaces with the absolute path of the temporary folder. command is displayed as the supproperty. 	
		Default	Commands executed after assemble processing[number of defined items]	
		How to change	Edit by the Text Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.	
Restriction			Up to 1023 characters Up to 64 items can be specified.	
Other additional options		Input the asser The assembler The options se	mble option to be added additionally. r is executed via ccrl.exe. Add -asmopt= as required. et here are added at the end of the assemble options group.	
		Default	Blank	
		How to change	Directly enter in the text box or edit by the Character String Input dia- log box which appears when clicking the [] button.	
		Restriction	Up to 259 characters	



[Link Options] tab

This tab shows the detailed information on the link phase categorized by the following and the configuration can be changed.

- (1) [Debug Information]
- (2) [Optimization]
- (3) [Input File]
- (4) [Output File]
- (5) [Library]
- (6) [Device]
- (7) [Output Code]
- (8) [List]
- (9) [Variables/functions information]
- (10) [Section]
- (11) [Verify]
- (12) [Message]
- (13) [Others]

Caution This tab is not displayed for the library project.

Figure A.5 Property Panel: [Link Options] Tab

Property	S		
CC-RL Property	≥ ₽ -+		
Debug Information			
Output debug information	Yes(Output to the output file)(-DEBug)		
Compress debug information	No(-NOCOmpress)		
Delete local symbol name information	No		
 Optimization 			
Optimization type	No optimize(-NOOPtimize)		
✓ Input File			
> Object file	Object file[0]		
Binary file	Binary file[0]		
Symbol definition	Symbol definition[0]		
 Output File 			
Output folder	%BuildModeName%		
Output file name	%ProjectName%.abs		
✓ Library			
Using libraries	Using lbraries[0]		
System libraries	System libraries[0]		
Use standard/mathematical libraries	Yes		
Use runtime libraries	Yes		
Device			
 Output Code 			
Specify execution start address	No		
Fill with padding data at the end of a section	No		
Address setting for specified area of vector table	Address setting for specified area of vector table[0]		
Address setting for unused vector area			
⊳ List			
Variables/functions information			
Section			
Verify			
Message			
Others			
Output debug information			
Specify whether to output debug information.			
This option corresponds to the NUDEBug and -DEBug option of the rlink command.			
Common Opt / Compile Opti / Assemble Op	Link Options / Hex Output / 1/0 Header F / =		



[Description of each category]

(1) [Debug Information]

The detailed information on debug information is displayed and the configuration can be changed.

Output debug informa- tion	Select whether This correspon	er to output debug information. nds to the -DEBug and -NODEBug options of the rlink command.		
	Default	Yes(Output to the output file)(-DEBug)		out file)(-DEBug)
	How to change	Select from the drop-down list. Yes(Output to the output file)(-DEBug) Outputs debug information.		down list.
	Restriction			Outputs debug information.
		No(-NODEBug)	Does not output debug information.
Compress debug infor- mation	Select whether This correspon This property is [Output debug	ver to compress debug information. conds to the -COmpress and -NOCOmpress options of the rlink command vis displayed only when [Yes(Output to the output file)(-DEBug)] in the lig information] property is selected. No(-NOCOmpress) Select from the drop-down list. Yes(-COmpress) Compresses debug information. The loading speed of the debugger will be improved. No(-NOCOmpress) Does not compress the debug information. The link time will be shortened.		ormation. nd -NOCOmpress options of the rlink command. Yes(Output to the output file)(-DEBug)] in the selected.
	Default			
	How to change			down list.
	Restriction			Compresses debug information. The loading speed of the debugger will be improved.
				Does not compress the debug information. The link time will be shortened.
Delete local symbol name information	Select whether This correspon	her to delete local symbol name information. ponds to the -Hide option of the rlink command. No Select from the drop-down list. Yes(-Hide) Deletes information of the local symbol name. No Does not delete information of the local symbol name.		name information. of the rlink command.
	Default			
	How to change			down list.
	Restriction			es information of the local symbol name.
				not delete information of the local symbol

(2) [Optimization]

The detailed information on the optimization is displayed and the configuration can be changed.



Optimization type	Select optimization type. Inter-module optimization is performed for modules to which -goptimize was added at compilation or assemble. This corresponds to the -NOOPtimize and -OPtimize option of the rlink command. [Speed-oriented optimization(-OPtimize=SPeed)] and [Safe optimization(-OPti- mize=SAFe)] are displayed when [Always latest version which was installed] in the [Using compiler package version] property in the [Version Select] category from the [Common Options] tab is selected and the latest version is V1.02.00 or higher or when V1.02.00 or higher is selected in the [Using compiler package version] property.					
	Default	No optimize(-NOOPtimize)				
	How to change	Select from the drop-down list.				
	Restriction	No optimize(-NOOPtimize)	Does not execute optimization for a module.			
		All(-OPtimize)	Provides all optimizations.			
		Speed-oriented optimization(- OPtimize=SPeed)	Performs optimization with empha- sis on execution speed.			
		Safe optimization(-OPti- mize=SAFe)	Performs safe optimization.			
		Custom	Performs optimization for the speci- fied options.			
Deletes variables/ functions that are not referenced	Select whether to delete symbols that are not referenced. This corresponds to the -OPtimize=SYmbol_delete option of the rlink command. This property is displayed in the following cases.					
	- When [Always latest version which was installed] in the [Using compiler package version] property in the [Version Select] category from the [Common Options] tab is selected and the latest version is V1.02.00 or higher or when V1.02.00 or higher is selected in the [Using compiler package version] property					
- When [Custom] in the [Optimization type] p		om] in the [Optimization type] pro	perty is selected			
	Default	Uerault No				
	How to change	Select from the drop-down list.				
	Restriction	Yes(-OPti- mize=SYmbol_delete)	Deletes symbols that are not referenced.			
		No	Does not delete symbols that are not referenced.			
Optimizes branch instruction size	Select whether to optimize the branch instruction size based on the progration size based on the program size based on the progra		n size based on the program alloca- on of the rlink command. n the [Optimization type] property is			
	Default	No				
	How to change	Select from the drop-down list.				
	Restriction	Yes(-OPtimize=Branch)	Optimizes the branch instruction size.			
		No	Does not optimize the branch instruction size.			



Unreferenced symbol that disables deletion by optimization	Specify unreferenced symbols that you do not wish to be deleted by optimization. Specify in the format of " <i>symbol name</i> ", with one specification on one line. This option corresponds to the -Symbol_forbid option of the linker. This property is displayed in the following cases.		
	- When [Always latest version which was installed] in the [Using compiler package version] property in the [Version Select] category from the [Common Options] tab is selected and the latest version is V1.02.00 or higher or when V1.02.00 or higher is selected in the [Using compiler package version] property		
	- When other than [No optimize(-NOOPtimize)] in the [Optimization type] property i selected		
	Default	Unreferenced symbol that disables deletion by optimization[number of defined items]	
	How to change	Edit by the Text Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.	
	Restriction	Up to 32767 characters Up to 65536 items can be specified.	
Section to disable opti- mization	ti- Specify sections that you do not wish to be optimized in the format of " <i>file name</i> <i>ule name</i>](<i>section name</i> [,])", with one specification on one line. The following placeholders are supported. %ActiveProjectDir%: Replaces with the absolute path of the active project fo %ActiveProjectName%: Replaces with the active project name. %BuildModeName%: Replaces with the build mode name. %MainProjectDir%: Replaces with the absolute path of the main project folder %MainProjectName%: Replaces with the absolute path of the install folder of the product. %ProjectDir%: Replaces with the absolute path of the install folder of the product. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectName%: Replaces with the absolute path of the project folder. %ProjectName%: Replaces with the absolute path of the project folder. %DirmpDir%: Replaces with the absolute path of the temporary folder. %WinDir%: Replaces with the absolute path of the temporary folder. This corresponds to the -SEction_forbid option of the rlink command. This property is not displayed when [No optimize (-NOOPtimize)] in the [Optimit type] property is selected.		
	Default	Section to disable optimization[number of defined items]	
	How to change	Edit by the Text Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.	
	Restriction	Up to 32767 characters Up to 65535 items can be specified.	
Address range to dis- able optimization	Specify the address range in which to suppress optimization in the format of "address[+ size]", with one specification on one line. This corresponds to the -Absolute_forbid option of the rlink command. This property is not displayed when [No optimize (-NOOPtimize)] in the [Optimization type] property is selected.		
	Default	Address range to disable optimization[number of defined items]	
	How to change	Edit by the Text Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.	
	Restriction	Up to 32767 characters Up to 65535 items can be specified.	


(3) [Input File]

The detailed information on input files is displayed and the configuration can be changed.

Object file	 Specify the object files. Specify in the format of "<i>library(module</i>)", with one entry name per line. The following placeholders are supported. %ActiveProjectDir%: Replaces with the absolute path of the active project folder. %BuildModeName%: Replaces with the build mode name. %BuildModeName%: Replaces with the absolute path of the main project folder. %MainProjectDir%: Replaces with the absolute path of the install folder of this product. %ProjectDir%: Replaces with the absolute path of the install folder of this product. %ProjectName%: Replaces with the absolute path of the project folder. %MicomToolPath%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectName%: Replaces with the absolute path of the project folder. %ProjectName%: Replaces with the absolute path of the project folder. %ProjectName%: Replaces with the absolute path of the project folder. %ProjectName%: Replaces with the absolute path of the project folder. %TempDir%: Replaces with the absolute path of the temporary folder. %WinDir%: Replaces with the absolute path of the Windows system folder. This corresponds to the -Input option of the rlink command. The object file name is displayed as the subproperty. 			
	Default	Object file[number of defined items]		
	How to change	Edit by the Text Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.		
	Restriction	Up to 1024 characters Up to 256 items can be specified.		
Binary file	Specify the binary files. Specify in the format of " <i>file name</i> (section name[:number of alignment][/sect bute][,symbol name])", with one entry per line. [:number of alignment], [/section attribute], and [,symbol name] can be omitt The value that can be specified for number of alignment is 1, 2, 4, 8, 16, or 3 If the specification is omitted, it is assumed that 1 has been specified. "CODE" or "DATA" can be specified as section attribute. If the specification is omitted, all attributes such as the ability to write, read, of cute, will be all valid. The following placeholders are supported. %ActiveProjectDir%: Replaces with the absolute path of the active project %ActiveProjectName%: Replaces with the absolute path of the main project for %MainProjectDir%: Replaces with the absolute path of the main project for %MainProjectDir%: Replaces with the absolute path of the install folder of product. %ProjectDir%: Replaces with the absolute path of the install folder of product. %ProjectDir%: Replaces with the absolute path of the install folder. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the temporary folder. %WinDir%: Replaces with the absolute path of the temporary folder. %WinDir%: Replaces with the absolute path of the temporary folder. %WinDir%: Replaces with the absolute path of the temporary folder. %WinDir%: Replaces with the absolute path of the temporary folder. The binary file name is displayed as the subproperty.			
	Default	Binary file[number of defined items]		
	How to change	Edit by the Text Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.		
	Restriction	Up to 1024 characters Up to 256 items can be specified.		



Symbol definition	Define the sym Specify in the f <i>value</i> ", with on Specify the nur This correspon The symbol na	bols. format of "symbol name=symbol name" or "symbol name=numerical e entry name per line. merical value in hexadecimal without 0x. nds to the -DEFine option of the rlink command. me is displayed as the subproperty.		
	Default Symbol definition[number of defined items]			
	How to change	Edit by the Text Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.		
	Restriction	Up to 256 characters Up to 256 items can be specified.		

(4) [Output File]

The detailed information on output files is displayed and the configuration can be changed.

Output folder	Specify the output folder. The following placeholders are supported. %ActiveProjectDir%: Replaces with the absolute path of the active project folder. %ActiveProjectName%: Replaces with the active project name. %BuildModeName%: Replaces with the build mode name. %MainProjectDir%: Replaces with the absolute path of the main project folder. %MainProjectName%: Replaces with the absolute path of the install folder of this product. %ProjectDir%: Replaces with the absolute path of the install folder of this product. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the project folder. %TempDir%: Replaces with the absolute path of the temporary folder. %WinDir%: Replaces with the absolute path of the Windows system folder. If this is blank, it is assumed that the project folder has been specified. This corresponds to the -OUtput option of the rlink command.			
	Default	%BuildModeName%		
	How to change	Directly enter in the text box or edit by the Browse For Folder dialog box which appears when clicking the [] button.		
	Restriction	Up to 247 characters		
Output file name	Specify the output file name. If the extension is omitted, ".abs" is automatically added. The following placeholders are supported. %ActiveProjectName%: Replaces with the active project name. %BuildModeName%: Replaces with the build mode name. %MainProjectName%: Replaces with the main project name. %ProjectName%: Replaces with the project name. This corresponds to the -OUtput option of the rlink command.			
	Default	%ProjectName%.abs		
	How to change	Directly enter in the text box.		
	Restriction	Up to 259 characters		

(5) [Library]

The detailed information on the library is displayed and the configuration can be changed.



Using libraries	Specify the libr If a relative pat ect or subproje The following p %ActiveProj %BuildMode %MainProje %MicomToo product. %ProjectDir %ProjectNar %TempDir% %WinDir%: This correspon The library file	 Specify the library files to be used. f a relative path is specified, it is converted into an absolute path using the main project or subproject folder as the reference point of the path. The following placeholders are supported. %ActiveProjectDir%: Replaces with the absolute path of the active project folder. %ActiveProjectName%: Replaces with the active project name. %BuildModeName%: Replaces with the absolute path of the main project folder. %MainProjectDir%: Replaces with the absolute path of the main project folder. %MainProjectName%: Replaces with the absolute path of the install folder of this product. %ProjectDir%: Replaces with the absolute path of the install folder of this product. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the project folder. %FrojectDir%: Replaces with the absolute path of the project folder. %FrojectDir%: Replaces with the absolute path of the project folder. %TempDir%: Replaces with the absolute path of the temporary folder. This corresponds to the -LIBrary option of the rlink command. The library file name is displayed as the subproperty. 		
	Default How to change	Using libraries[<i>number of defined items</i>] Edit by the Path Edit dialog box which appears when clicking the [] button. -> Edit by the Specify Using Library File dialog box which appears when clicking the [Browse] button. For the subproperty, you can enter directly in the text box.		
	Restriction	Up to 259 char Up to 65536 ite	acters ems can be specified.	
System libraries	The system library files are displayed. If a relative path is specified, it is converted into an absolute path usir ect or subproject folder as the reference point of the path. This corresponds to the -LIBrary option of the rlink command. The system library file name is displayed as the subproperty			
	Default	System librarie	es[number of defined items]	
	How to change	Changes not allowed		
Use standard/mathe- matical libraries	Select whether This correspon	er to use the standard/mathematical libraries provided by the compiler. onds to the -LIBrary option of the rlink command.		
	Default	No		
	How to change	Select from the drop-down list.		
	Restriction	Yes	Uses the standard/mathematical libraries.	
		No	Does not use the standard/mathematical libraries.	
Use runtime libraries	Select whether This correspon	r to use the runtin nds to the -LIBrai	me libraries provided by the compiler. ry option of the rlink command.	
	Default	Yes		
	How to Select from the drop-down list. change		e drop-down list.	
	Restriction	Yes	Uses the runtime libraries.	
		No	Does not use the runtime libraries.	



(6) [Device]

The detailed information on the device is displayed and the configuration can be changed.

Set enable/disable on- chip debug by link option	Select whether This correspor Be sure to set To set it, select the [Option byt Or, set the con source file. The control va See the user's This property is tion.	Select whether to set enabling/disabling the on-chip debug by the link option. This corresponds to the -OCDBG option of the rlink command. Be sure to set the control value of the on-chip debug option byte. To set it, select [Yes] and specify the control value of the on-chip debug option byte on the [Option byte values for OCD] property. Or, set the control value of the on-chip debug option byte by using an assembler source file. The control value for the on-chip debug option byte depends on the device in use. See the user's manual of the device for the value to be specified. This property is not displayed when the device does not have an on-chip debug func- tion.		
	Default	Yes(-OCDBG)		
	How to change	Select from the	e drop-d	own list.
	Restriction	Yes(- OCDBG)	Sets th	ne control value of the on-chip debug.
		No	Does	not set the control value of the on-chip debug.
Option byte values for OCD	 Specify the control value of the on-chip debug option byte in hexadecimal without 0x This corresponds to the -OCDBG option of the rlink command. Be sure to set the control value for the on-chip debug option byte by using this prop- erty or an assembler source file. The control value for the on-chip debug option byte depends on the device in use. See the user's manual of the device for the value to be specified. This property is not displayed when the device does not have an on-chip debug func- tion and when [No] in the [Set enable/disable on-chip debug by link option] property is selected. 			
	Default	Blank		
	How to change	Directly enter in the text box.		
	Restriction	0 to FF (hexade	ecimal r	number without 0x)
Set debug monitor area	Select whether to set the debug monitor area. This corresponds to the -DEBUG_MONITOR option of the rlink command. This property is displayed when [Always latest version which was installed] in the [Using compiler package version] property in the [Version Select] category from [Common Options] tab is selected and the latest version is V1.01.00 or higher or V1.01.00 or higher is selected in the [Using compiler package version] property.		or area. NITOR option of the rlink command. Is latest version which was installed] in the erty in the [Version Select] category from the the latest version is V1.01.00 or higher or when sing compiler package version] property.	
	Default	No		
	How to Select from the drop-down list. change			
	Restriction	Yes(- DEBUG_MONI	ITOR)	Specifies the debug monitor area within the default range.
		Yes(Specify ad range)(- DEBUG_MONI <address range<="" td=""><td>dress ITOR= e>)</td><td>Specifies the address range of the debug monitor area.</td></address>	dress ITOR= e>)	Specifies the address range of the debug monitor area.
		No		Does not set the debug monitor area.



Range of debug moni-	Specify the ran	ige of the debug monitor	r area in the format of "start address-end	
	This corresponds to the -DEBUG_MONITOR option of the rlink command. See "CC-RL Compiler User's Manual" for details about the option. This property is displayed only in the following cases.			
	- When [Always latest version which was installed] in the [Using compiler package version] property in the [Version Select] category from the [Common Options] tab is selected and the latest version is V1.01.00 or higher or when V1.01.00 or higher is selected in the [Using compiler package version] property			
	 When [Yes(Specify address range)(-DEBUG_MONITOR=<address range="">)] in the [Set debug monitor area] property is selected</address> 			
	Default	Default The peculiar value for the target device		
	How to change	Directly enter in the tex	xt box.	
	Restriction	0 to FFFFF (hexadecir	mal number without 0x)	
Set user option byte	Select whether to set the user option byte. This corresponds to the -USER_OPT_BYTE option of the rlink command. Be sure to set the user option byte value. To set it, select [Yes] and specify the user option byte value on the [User option b value] property. Or, set the user option byte value by using an assembler source file. The user option byte value depends on the device in use. See the user's manual of the device for the value to be specified.			
	Default	Yes(-USER_OPT_BY	FE)	
	How to change	Select from the drop-d	own list.	
	Restriction	Yes(- USER_OPT_BYTE)	Sets a value to the user option byte. However, if the [User option byte value] prop- erty is blank, the user option byte is not set.	
		No	Does not set a value to the user option byte.	
User option byte value	value Specify the user option byte value in This corresponds to the -USER_OP Be sure to set the user option byte v source file. The user option byte value depends See the user's manual of the device This property is not displayed when selected.		exadecimal without 0x. BYTE option of the rlink command. Je by using this property or an assembler In the device in use. In the value to be specified. In the [Set user option byte] property is	
	Default	Blank		
	How to change	Directly enter in the tex	xt box.	
	Restriction	Hexadecimal number depends on the select	without 0x (The range that can be specified ed device)	



Control allocation to self RAM area	Select whether to control the allocation to the self RAM area. This corresponds to the -SELF/-SELFW option of the rlink command. This property is displayed only in the following cases.			
	- When [Always latest version which was installed] in the [Using compiler package version] property in the [Version Select] category from the [Common Options] tab selected and the latest version is V1.01.00 or higher or when V1.01.00 or higher i selected in the [Using compiler package version] property			
	- For a device in which allocation to the self RAM area is controllable			
	Default	No		
	How to change	Select from the drop-c	Jown list.	
	Restriction	Yes(Error mes- sage)(-SELF)	Prohibits the allocation to the self RAM area and displays an error.	
		Yes(Warning mes- sage)(-SELFW)	Outputs a warning when allocating to the self RAM area.	
		No	Uses the self RAM area as the internal RAM area. An error or warning is not displayed.	
Control allocation to trace RAM area	to Select whether to control the allocation to the trace RAM area. This corresponds to the -OCDTR/-OCDTRW option of the rlink corr specifying this option makes the -SELF/-SELFW option assumed to This property is displayed only in the following cases		n to the trace RAM area. DTRW option of the rlink command. Note that F/-SELFW option assumed to be specified. ollowing cases.	
	- When [Always latest version which was installed] in the [Using compiler parversion] property in the [Version Select] category from the [Common Option selected and the latest version is V1.01.00 or higher or when V1.01.00 or higher the [Using compiler package version] property			
	Default			
	How to change	Select from the drop-down list.		
	Restriction	Yes(Error mes- sage)(-OCDTR)	Prohibits the allocation to the trace RAM area and displays an error.	
		Yes(Warning mes- sage)(-OCDTRW)	Outputs a warning when allocating to the trace RAM area.	
		No	Uses the trace RAM area as the internal RAM area. An error or warning is not displayed.	



Control allocation to hot plug-in RAM area	 Select whether to control the allocation to the hot plug-in RAM area. This corresponds to the -OCDHPI/-OCDHPIW option of the rlink command. Note that specifying this option makes the -SELF/-SELFW and -OCDTR/-OCDTRW options assumed to be specified. This property is displayed only in the following cases. When [Always latest version which was installed] in the [Using compiler package version] property in the [Version Select] category from the [Common Options] tab is selected and the latest version is V1.01.00 or higher or when V1.01.00 or higher is selected in the [Using compiler package version] property For a device in which allocation to the hot plug-in RAM area is controllable 				
	Default	Default No			
	How to change	Select from the	ə drop-d	own list.	
	Restriction	Yes(Error mes- sage)(-OCDHF	- >I)	Prohibits the allocation to the hot plug-in RAM area and displays an error.	
		Yes(Warning m sage)(-OCDHF	nes- PIW)	Outputs a warning when allocating to the hot plug-in RAM area.	
		No		Uses the hot plug-in RAM area as the internal RAM area. An error or warning is not displayed.	
Reserve working memory for RRM/ DMM function	 Select whether to reserve a 4-byte memory as the work area for the RRM/DMM function. This corresponds to the -RRM option of the rlink command. This property is displayed only in the following cases. When [Always latest version which was installed] in the [Using compiler package version] property in the [Version Select] category from the [Common Options] tab selected and the latest version is V1.01.00 or higher or when V1.01.00 or higher is selected in the [Using compiler package version] property 			mory as the work area for the RRM/DMM func- of the rlink command. ollowing cases.	
				vas installed] in the [Using compiler package act] category from the [Common Options] tab is .01.00 or higher or when V1.01.00 or higher is age version] property	
	- When the de	evice is the 8-bit	bus wid	th type	
	- When [Yes(-DEBUG_MONITOR)] in the [Set debug monitor area] property is selected			the [Set debug monitor area] property is	
	- When a valu	ie is specified in	the [Ra	nge of debug monitor area] property	
	Default	No	_		
	How to Select from the drop-down list. change			own list.	
	Restriction	Yes(-RRM)	Reser RRM/	ves a 4-byte memory as the work area for the DMM function.	
		No	Does functio	not reserve the work area for the RRM/DMM on.	



Start address of work- ing memory for RRM/ DMM function	 Specify the start address of the work area for the RRM/DMM function in hexadecimal without 0x. Four bytes starting from the specified address in the internal RAM area are reserved as the work area for the RRM/DMM function. This corresponds to the -RRM option of the rlink command. This property is displayed only in the following cases. When [Always latest version which was installed] in the [Using compiler package version] property in the [Version Select] category from the [Common Options] tab is selected and the latest version is V1.01.00 or higher or when V1.01.00 or higher is 			
	selected in the [Using compiler package version] property			
	 When [Yes(-RRM)] in the [Reserve working memory for RRM/DMM function] property is selected 			
	Default	Blank		
	How to Directly enter in the text box. change			
	Restriction	Even address from the lowest address up to the highest address minus 3 in the internal RAM area (in hexadecimal)		

(7) [Output Code]

The detailed information on output codes is displayed and the configuration can be changed.

Specify execution start address	Select whether to specify the execution start address with the external defined symbol or address. This corresponds to the -ENTry option of the rlink command.			
	Default	No		
	How to change	Select from the drop-down list.		
	Restriction	Yes(-ENTry)	Specifies the execution start address with the exter- nal defined symbol or address.	
		No	Does not specify the execution start address with the external defined symbol or address.	
Execution start address	Specify the exe Specify in the for Specify the add This correspon The execution This property is address] prope	Specify the execution start address. Specify in the format of "symbol name" or "address". Specify the address in hexadecimal without 0x. This corresponds to the -ENTry option of the rlink command. The execution start address is displayed as the subproperty. This property is displayed only when [Yes(-ENTry)] in the [Specify execution start address] property is selected.		
	Default	Blank		
	How to change	Directly enter in the text box or edit by the Character String Input dia- log box which appears when clicking the [] button.		
	Restriction	Up to 32767 characters		



Fill with padding data at the end of a section	Select whether to fill with padding data at the end of a section. This corresponds to the -PADDING option of the rlink command.				
	Default	No			
	How to change	Select from the dro	p-down list.		
	Restriction	Yes(-PADDING)	Fills in data at the end of a section so that the section size is a multiple of the alignment of the section.		
		No	Does not fill with padding data at the end of a section.		
Address setting for specified area of vec- tor table	Specify an address value to be set for a specific address in the vector table in the mat of " <i>vector table address={symbol address}</i> ", with one specification on one lin Specify the vector table address as a hexadecimal value within the range betwee and 7E. Specify <i>symbol</i> using an external name of the target function. Specify the address in hexadecimal without 0x. This corresponds to the -VECTN option of the rlink command.		for a specific address in the vector table in the for- ool[address]", with one specification on one line. a hexadecimal value within the range between 0 ame of the target function. without 0x. otion of the rlink command.		
	Default	Address setting for specified area of vector table[number of defined items]			
	How to change	Edit by the Text Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.			
	Restriction	Up to 32767 characters Up to 65535 items can be specified.			
Address setting for unused vector area	Specify the add bol[address]". Specify the add This correspor	acify the address of the empty area in the vector table in the format of "{sym- address}". acify the address in hexadecimal without 0x. s corresponds to the -VECT option of the rlink command.			
	Default	Blank			
	How to change	Directly enter in the log box which appe	e text box or edit by the Character String Input dia- ears when clicking the [] button.		
	Restriction Up to 32767 characters		cters		

(8)

[List] The detailed information on the list is displayed and the configuration can be changed.

Output link map file	Select whether to output the link map file. This corresponds to the -LISt and -SHow options of the rlink command.			
	Default	Yes(List contents=specify)	(-LISt)	
	How to change	Select from the drop-down list.		
	Restriction	Yes(List contents=not specify)(-LISt -SHow)	Outputs information according to the out- put format to the link map file.	
		Yes(List contents=ALL)(- LISt -SHow=ALL)	Outputs all information according to the output format to the link map file.	
		Yes(List contents=spec- ify)(-LISt)	Outputs the specified information to the link map file.	
		No	Does not output the link map file.	



Output symbol infor- mation	Select whether to output the symbol information (symbol address, size, type, and opti- mization contents). This corresponds to the -SHow=SYmbol option of the rlink command. This property is displayed only when [Yes(List contents=specify)(-LISt)] in the [Output link map file] property is selected.			
	Default	No		
	How to change	Select from the drop-down list.		
	Restriction	Yes(-SHow=SYmbol)	Outputs the symbol information.	
		No	Does not output the symbol information.	
Output number of symbol reference	Select whether to output the number of symbol references. This corresponds to the -SHow=Reference option of the rlink command. This property is displayed only when [Yes(List contents=specify)(-LISt)] in link map file] property is selected.			
	Default	No		
	How to change	Select from the drop-down	n list.	
	Restriction	Yes(-SHow=Reference)	Outputs the number of symbol references.	
		No	Does not output the number of symbol references.	
Output cross reference information	Select whether to output the cross reference information. This corresponds to the -SHow=XReference option of the rlink command. This property is displayed only when [Yes(List contents=specify)(-LISt)] in the link map file] property is selected.			
	Default	No		
	How to change	Select from the drop-down	ı list.	
	Restriction	Yes(-SHow=Xreference)	Outputs the cross reference information.	
		No	Does not output the cross reference infor- mation.	
Output total sizes of sections	Dutput total sizes of sections Select whether to output the total size of sections. Sections This corresponds to the -SHow=Total_size option of the rlink comman This property is displayed only when [Yes(List contents=specify)(-LISt] link map file] property is selected.			
	Default	No		
	How to change	Select from the drop-down list.		
	Restriction	Yes(-SHow=Total_size)	Outputs the total sizes of sections sepa- rately for ROM-allocated sections and RAM-allocated sections	



Output vector informa- tion	Select whether to output the vector information. This corresponds to the -SHow=VECTOR option of the rlink command. This property is displayed only when [Yes(List contents=specify)(-LISt)] in the [Output link map file] property is selected.				
	Default	No			
	How to change	Select from the drop-down list.			
	Restriction	Yes(-SHow=VECTOR)	Outputs vector information to the linkage list file.		
		No	Does not output vector information to the linkage list file.		
Output information of members of struct or union	 In of Select whether to output the member information of the structure or union. To output it, specify the -g option when compiling. This corresponds to the -SHow=STRUCT option of the rlink command. This property is displayed in the following cases. When [Always latest version which was installed] in the [Using compiler 				
	version] property in the [Version Select] category from the [Common Options] ta selected and the latest version is V1.02.00 or higher or when V1.02.00 or highe selected in the [Using compiler package version] property				
	- When [Yes(L selected	_ist contents=specify)(-LISt)] in the [Output link map file] property is		
	Default	No			
	How to change	Select from the drop-down list.			
	Restriction	Yes(-SHow=STRUCT)	Outputs the member information of the structure or union.		
		No	Does not output the member information of the structure or union.		

(9) [Variables/functions information] The detailed information on variables/functions is displayed and the configuration can be changed.



Output variables/func- tions information header file	Select whether If [Yes(-VFINF(and assembler 1. Compiler (2. Assemble 3. Optimizing 4. Compiler (5. Assemble 6. Optimizing To edit the vari using it, chang head of compil The variables/f project tree und header file nan registered, this The variables/f -preinclude opt the file specified be specified. This correspon This property is [Using compile [Common Optic V1.01.00 or hig	FO)] is selected, commands are called in the following order. Compiler er commands will be called twice in a single build processing. r (CC-RL) ler (CC-RL) ng linker (rlink) -VFINFO r (CC-RL) -preinclude= <i>variables/functions information header file</i> ler (CC-RL) ng linker (rlink) ariables/functions information header file which has been output when the property to [No] and specify the edited file in the [Include files at biling units] property of the [Compile Options] tab. s/functions information header file is registered in the File node of the inder the file name specified in the [Variables/functions information ame] property. However, if a file with the same name has already been the file is not registered. s/functions information header file of the project tree is not affected by the ption of the [Include files at head of compiling units] property at build, and ied by the [Variables/functions information header file of the project tree is not affected by the ption of the [Include files at head of compiling units] property at build, and ied by the [Variables/functions information header file name] property will onds to the -VFINFO option of the rlink command. r is displayed when [Always latest version which was installed] in the iller package version] property in the [Version Select] category from the options] tab is selected and the latest version is V1.01.00 or higher or wher			
	Default	No			
	How to change	Select from the drop-down list.			
	Restriction	Yes(-VFINFO)	Outputs the variables/functions information header file.		
		No	Does not output the variables/functions informa- tion header file.		



Output folder for vari- ables/functions infor- mation header file	 Specify the folder for saving the variables/functions information header file. If a relative path is specified, the reference point of the path is the main project or subproject folder. If an absolute path is specified, the reference point of the path is the main project or subproject folder (unless the drives are different). The following placeholders are supported. %ActiveProjectDir%: Replaces with the absolute path of the active project folder. %BuildModeName%: Replaces with the active project name. %BuildModeName%: Replaces with the absolute path of the main project folder. %MainProjectDir%: Replaces with the absolute path of the main project folder. %MainProjectName%: Replaces with the absolute path of the install folder of this product. %ProjectDir%: Replaces with the absolute path of the project folder. %MicomToolPath%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the project folder. %MicomToolPath%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectName%: Replaces with the absolute path of the project folder. %ProjectName%: Replaces with the absolute path of the temporary folder. %WinDir%: Replaces with the absolute path of the temporary folder. If this is blank, it is assumed that the project folder has been specified. This corresponds to the -VFINFO option of the rlink command. This property is displayed only in the following cases. 			
	- When [Always latest version which was installed] in the [Using compiler package version] property in the [Version Select] category from the [Common Options] tab is selected and the latest version is V1.01.00 or higher or when V1.01.00 or higher is selected in the [Using compiler package version] property			
	 When [Yes(- property is set 	VFINFO)] in the [Output variables/functions information header file] elected		
	Default	%BuildModeName%		
	How to change	Directly enter in the text box or edit by the Browse For Folder dialog box which appears when clicking the [] button.		
	Restriction	Up to 247 characters		
Variables/functions information header file name	Specify the variables/functions information header file name. If the extension is omitted, ".h" is automatically added. The following placeholders are supported. %ActiveProjectName%: Replaces with the active project name. %MainProjectName%: Replaces with the main project name. %ProjectName%: Replaces with the project name. This corresponds to the -VFINFO option of the rlink command. This property is displayed only in the following cases.			
	- When [Always latest version which was installed] in the [Using compiler pack version] property in the [Version Select] category from the [Common Options] selected and the latest version is V1.01.00 or higher or when V1.01.00 or hig selected in the [Using compiler package version] property			
	- When [Yes(- property is se	VFINFO)] in the [Output variables/functions information header file] elected		
	Default	%ProjectName%_vfi.h		
	How to change	Directly enter in the text box.		
	Restriction	Up to 259 characters		

(10) [Section] The detailed information on the section is displayed and the configuration can be changed.



Layout sections auto- matically	Select whether to allocate sections automatically. This corresponds to the -AUTO_SECTION_LAYOUT option of the rlink command. This property is displayed when [Always latest version which was installed] in the [Using compiler package version] property in the [Version Select] category from the [Common Options] tab is selected and the latest version is V1.01.00 or higher or when V1.01.00 or higher is selected in the [Using compiler package version] property.				
	Default	No			
	How to change	Select from the drop-down list.			
	Restriction	Yes(- AUTO_SECTION_LAYOUT)	Allocates sections automatically.		
	Default	No	Does not allocate sections automati- cally.		
Section start address	Specify the sta This correspor	irt address of the section. Ids to the -STARt option of the rl	link command.		
	Default	- When [Yes(-AUTO_SECTIO automatically] property is se Blank	N_LAYOUT)] in the [Layout sections lected		
		- Other than above The peculiar value for the target device			
	How to change	Directly enter in the text box or edit by the Section Settings dialog box which appears when clicking the [] button.			
	Restriction	Up to 32767 characters			
Section that outputs external defined sym- bols to the file	Specify the sec Specify one se This correspor The section na	ction whose external defined symbols are output to a file. action name per line. ads to the -FSymbol option of the rlink command. ame is displayed as the subproperty.			
	Default	Section that outputs external defined symbols to the file[<i>number of defined items</i>]			
	How to change	Edit by the Text Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.			
	Restriction	Up to 32767 characters Up to 65535 items can be specified.			
ROM to RAM mapped section	Specify the sec Specify in the f name per line. This correspor The section na	ction that maps symbols from ROM to RAM. format of " <i>ROM section name=RAM section name</i> ", with one section ands to the -ROm option of the rlink command. The is displayed as the subproperty.			
	Default	ROM to RAM mapped section ".data=.data.R" and ".sdata=.s erty.	[number of defined items] data.R" are specified in the subprop-		
	How to change	Edit by the Text Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.			
	Restriction	Up to 32767 characters Up to 65535 items can be specified.			



(11) [Verify]

The detailed information on verification is displayed and the configuration can be changed.

Check section larger than specified range of address	Select whether to check the consistency of the address to which the section is allo- cated. This corresponds to the -CPu option of the rlink command.					
	Default	No				
	How to change	Select from the	Select from the drop-down list.			
	Restriction	Yes(-CPu)	Checks section	the consistency of the address to which the is allocated.		
	Default	No	Does no which th	ot check the consistency of the address to ne section is allocated.		
Address range of memory type	Specify the address range of the memory type. Specify in the format of " <i>memory type=start address-end address</i> ", with one entry line. Any of "ROm", "RAm", or "FIX" can be specified as <i>memory type</i> . Specify <i>start address</i> and <i>end address</i> in hexadecimal without 0x. This corresponds to the -CPu option of the rlink command. The address range of the memory type is displayed as the subproperty. This property is displayed only when [Yes(-CPu)] in the [Check section larger tha specified range of address] property is selected.			y type. <i>tart address-end address</i> ", with one entry per pecified as <i>memory type</i> . In hexadecimal without 0x. he rlink command. is displayed as the subproperty. es(-CPu)] in the [Check section larger than selected.		
	Default	Address range	Address range of memory type[number of defined items]			
	How to change	Edit by the Text Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.				
	Restriction	triction Up to 32767 characters Up to 65535 items can be specified.				
Check specifications of device	Select whether to check the specification of the device file. This corresponds to the -CHECK_DEVICE option of the rlink command. This property is displayed when [Always latest version which was installed] in the [Using compiler package version] property in the [Version Select] category from t [Common Options] tab is selected and the latest version is V1.01.00 or higher or v V1.01.00 or higher is selected in the [Using compiler package version] property.					
	Default	No				
	How to change	Select from the drop-down list.				
	Restriction	Yes(- CHECK_DEVI	CE)	Checks whether the device file is the same using the device file when an input file was generated and the option for specifying the device file.		
		No		Does not check the specification of the device file.		

Suppress checking section allocation that crosses (64KB-1) boundary	Select whether 1) boundary. Section allocat bits of the addr This correspon This property is [Using compile [Common Option V1.01.00 or high	ct whether to suppress checking section allocation that crosses the (64 Kbytes - undary. on allocation that crosses the (64 Kbytes - 1) boundary means that the lower 16 of the address of the section exceeds 0xFFFE and continues to 0xFFFF. corresponds to the -CHECK_64K_ONLY option of the rlink command. property is displayed when [Always latest version which was installed] in the ig compiler package version] property in the [Version Select] category from the mon Options] tab is selected and the latest version is V1.01.00 or higher or when 1.00 or higher is selected in the [Using compiler package version] property.			
	Default	No			
	How to change	Select from the drop-down list.			
	Restriction	Yes(- CHECK_64K_ONLY)	Suppresses checking section allocation that crosses the (64 Kbytes - 1) boundary.		
		No	Does not suppress checking section alloca- tion that crosses the (64 Kbytes - 1) bound- ary.		
Do not check memory allocation of sections	Select whether to link without checking memory allocation of sections. This corresponds to the -NO_CHECK_SECTION_LAYOUT option of the rlink com- mand. This property is displayed when [Always latest version which was installed] in the [Using compiler package version] property in the [Version Select] category from the [Common Options] tab is selected and the latest version is V1.01.00 or higher or wher V1.01.00 or higher is selected in the [Using compiler package version] property.				
	Default	No			
	How to change	How to change Select from the drop-down list.			
	Restriction	Yes(- NO_CHECK_SECTIO N_LAYOUT)	Does not check memory allocation of sec- tions.		
		No	Checks memory allocation of sections.		

(12) [Message]

The detailed information on messages is displayed and the configuration can be changed.

Enable information message output	Select whether to enable the output of information messages. This corresponds to the -Message and -NOMessage options of the rlink command.			
	Default	No(-NOMessage)		
	How to change	Select from the drop-down list.		
	Restriction Yes(-Message)		Outputs information messages.	
		No(-NOMessage)	Suppresses the output of informa- tion messages.	



Suppress number of information message	Specify the nur If multiple mess 4,200). Also, a range c ple:4,200-203, This correspon This property is sage output] pr	Specify the number of the information message of which output is to be suppressed. If multiple message numbers are specified, delimit them with "," (comma) (example: 4,200). Also, a range of message numbers can be specified using "-" (hyphen) (exam- ple:4,200-203,1300). This corresponds to the -NOMessage option of the rlink command. This property is displayed when [No(-NOMessage)] in the [Enable information mes- sage output] property is selected.				
	Default	Blank				
	How to change	Directly enter in the text box or edit by the Character String Input of log box which appears when clicking the [] button.				
	Restriction	Up to 2048 characters				
Notify unused symbol	Select whether This correspon This property is sage output] pr property is spe	r to notify the defined symbol that is not referenced. nds to the -MSg_unused option of the rlink command. is displayed only when [Yes(-Message)] in the [Enable information mes- roperty is selected or the [Suppress number of information message] ecified.				
	Default	No				
	How to change	Select from the drop-down list.				
	Restriction	Yes(-MSg_unused)	Notifies the defined symbol that is not referenced.			
		No Does not notify the defined bol that is not referenced.				
Change warning mes- sage to information	Select whether This correspon	whether to change the type of warning messages to information. rresponds to the -CHange_message option of the rlink command.				
message	Default	No				
	How to change	Select from the drop-down list.				
	Restriction	Yes(All)(- CHange_message=Information)	Changes the type of all warning messages to information.			
		Yes(Specify message number)(- CHange_message=Informa- tion= <message number="">)</message>	Specifies the number of warning message of which type is to be changed to information.			
		No	Does not change the type of warning messages.			
Number of warning message	Specify the nur If multiple mess 4,200). Also, a range of ple:4,200-203, This correspon This property is CHange_mess sage to information	ne number of the warning message. > message numbers are specified, delimit them with "," (comma) (exa ange of message numbers can be specified using "-" (hyphen) (exam-)-203,1300). esponds to the -CHange_message option of the rlink command. berty is displayed only when [Yes(Specify message number)(- _message=Information= <message number="">)] in the [Change warning nformation message] property is selected.</message>				
	Default	Blank				
	How to change	Directly enter in the text box or ed log box which appears when clicki	it by the Character String Input dia- ing the [] button.			
	Restriction	Up to 2048 characters				



Change information message to warning	Select whether This correspor	r to change the type of information r nds to the -CHange_message optior	nessages to warning. n of the rlink command.			
message	Default	No				
	How to change	Select from the drop-down list.				
	Restriction	Yes(All)(- CHange_message=Warning)	Changes the type of all informa- tion messages to warning.			
		Yes(Specify message number)(- CHange_message=Warn- ing= <message number="">)</message>	Specifies the number of informa- tion message of which type is to be changed to warning.			
		No	Does not change the type of infor- mation messages.			
Number of information message	Specify the number of the information message. If multiple message numbers are specified, delimit them with "," (comma) (example: 4,200). Also, a range of message numbers can be specified using "-" (hyphen) (exam- ple:4,200-203,1300). This corresponds to the -CHange_message option of the rlink command. This property is displayed only when [Yes(Specify message number)(- CHange_message=Information= <message number="">)] in the [Change warning mes- sage to information message] property is selected.</message>					
	Default	Blank				
	How to change	Directly enter in the text box or edit by the Character String Input dia- log box which appears when clicking the [] button.				
	Restriction	Up to 2048 characters				
Change information and warning message	Select whether to change the type of information and warning messages to error. This corresponds to the -CHange_message option of the rlink command.					
to error message	Default	No				
	How to change	Select from the drop-down list.				
	Restriction	Yes(All)(- CHange_message=Error)	Changes the type of all informa- tion and warning messages to error.			
		Yes(Specify message number)(- CHange_message=Error= <mes- sage number>)</mes- 	Specifies the number of informa- tion or warning message of which type is to be changed to error.			
		No	Does not change the type of infor- mation and warning messages.			



Number of information and warning message	Specify the number of the information and warning message. If multiple message numbers are specified, delimit them with "," (comma) (example: 4,200). Also, a range of message numbers can be specified using "-" (hyphen) (example: 4,200-203,1300). This corresponds to the -CHange_message option of the rlink command. This property is displayed only when [Yes(Specify message number)(- CHange_message=Error= <message number="">)] in the [Change warning message to information message] property is selected. Default Blank</message>		
	How to change	Directly enter in the text box or edit by the Character String Input dialog box which appears when clicking the [] button.	
	Restriction	Up to 2048 characters	

(13) [Others]
 Other detailed information on linking is displayed and the configuration can be changed.

Output stack informa- tion file	Select whether to output the stack information file. This corresponds to the -STACk option of the rlink command.			mation file. of the rlink command.
	Default	No		
	How to change	Select from the	own list.	
	Restriction	Yes(-STACk)	Output	s the stack information file.
		No	Does r	ot output the stack information file.
Reduce memory occupancy of linker	Select whether This correspon This property is - When [No(-1	ect whether to reduce the memory usage of the linker. s corresponds to the -MEMory option of the rlink command. s property is displayed only in the following cases. Vhen [No(-NODEBug)] in the [Output debug information] property or [No(-		
	 NOCOmpress)] in the [Compress debug information] property in the [Debug I mation] category is selected When any one of the conditions below is met. When [No] in the [Output link map file] property in the [List] category is sele When [Yes(List contents=not specify)(-LISt -SHow)] in the [Output link map property in the [List] category is selected When [Yes(List contents=specify)(-LISt)] in the [Output link map file] proper [No] in the [Output number of symbol reference] property, and [No] in the [Output number of symbol reference] property, are selected 			
	- When [No] ir	n the [Output sta	ck inform	nation file] property is selected
	Default	No(-MEMory=	High)	
	How to change	Select from the	e drop-do	own list.
	Restriction	Yes(-MEMory=	Elow)	Reduces the memory usage of the linker. Select this item if processing is slow because a large project is linked and the memory size occupied by the linker exceeds the available memory in the PC used.
		No(-MEMory=I	High)	Executes the same processing as usual.



Display total size of sections	Select whether This correspon	r to display the total size of sections after the linking. nds to the -Total_size option of the rlink command.		
	Default	No		
	How to change	Select from the drop-down list.		
	Restriction	Yes(-Total_size)	Displays the total size of sections after the linking.	
		No	Does not display the total size of sections after the linking.	
Display copyright infor- mation	Select whether This correspon	r to display copyright information. nds to the -LOgo and -NOLOgo options of the rlink command.		
	Default	No(-NOLOgo)		
	How to change	Select from the drop-do	own list.	
	Restriction	Yes	Displays copyright information.	
		No(-NOLOgo)	Suppresses the output of copyright informa- tion.	
	The following p %ActiveProj %ActiveProj %ActiveProj %BuildMode %LinkedFile cessing. %MainProje %MicomToo product. %Options%: %OutputDir %OutputDir %OutputFile %Program %ProjectDir %ProjectDir %ProjectDir %ProjectNar %ProjectDir %ProjectNar %TempDir% %WinDir%: I When "#!pytho last line are reg link processing The placeholde The specified of The specified of The specified of The specified of The	tion.cify the command to be executed before link processing. the call instruction to specify a batch file (example: call a.bat). following placeholders are supported.ActiveProjectDir%: Replaces with the absolute path of the active project folded ActiveProjectName%: Replaces with the build mode name. LinkedFile%: Replaces with the absolute path of the output file under link pro- ssing.MainProjectDir%: Replaces with the absolute path of the main project folder. MainProjectName%: Replaces with the absolute path of the install folder of this oduct.OptionToolPath%: Replaces with the absolute path of the install folder of this oduct.Options%: Replaces with the absolute path of the output file. Program%: Replaces with the absolute path of the output file. Program%: Replaces with the absolute path of the project folder. OutputFile%: Replaces with the absolute path of the project folder. ProjectDir%: Replaces with the absolute path of the project folder. ProjectDir%: Replaces with the absolute path of the output file. Program%: Replaces with the absolute path of the project folder. ProjectName%: Replaces with the absolute path of the project folder. ProjectName%: Replaces with the absolute path of the project folder. ProjectName%: Replaces with the absolute path of the temporary folder. WinDir%: Replaces with the absolute path of the temporary folder. WinDir%: Replaces with the absolute path of the temporary folder. WinDir%: Replaces with the absolute path of the temporary folder. WinDir%: Replaces with the absolute path of the temporary folder. WinDir%: Replaces with the absolute path of the temporary folder. WinDir%: Replaces with the absolute path of the temporary folder. WinDir%: Replaces with the absolute path of the Windows system folder. WinDir%: Replaces with the absolute path of the Windows system folder. 		



Commands executed after link processing	Specify the cor Use the call in: The following p %ActiveProj %ActiveProj %BuildMode %LinkedFile cessing. %MainProje %MicomToo product. %Options%: %OutputDir% %OutputDir% %ProjectDir %ProjectDir %ProjectNat %ProjectNat %ProjectNat %TempDir% %WinDir%: When "#!pytho last line are reg processing. The placehold The specified of	 mmand to be executed after link processing. struction to specify a batch file (example: call a.bat). blaceholders are supported. ectDir%: Replaces with the absolute path of the active project folder. ectName%: Replaces with the build mode name. eName%: Replaces with the absolute path of the output file under link pro- ctDir%: Replaces with the absolute path of the main project folder. ctName%: Replaces with the absolute path of the main project folder. ctName%: Replaces with the absolute path of the main project folder. ctName%: Replaces with the absolute path of the install folder of this Replaces with the absolute path of the output file. Replaces with the absolute path of the output folder. e%: Replaces with the absolute path of the output file. ctReplaces with the absolute path of the output file. ctReplaces with the absolute path of the project folder. me%: Replaces with the absolute path of the project folder. me%: Replaces with the absolute path of the project folder. me%: Replaces with the absolute path of the project folder. me%: Replaces with the absolute path of the project folder. me%: Replaces with the absolute path of the project folder. me%: Replaces with the absolute path of the project folder. me%: Replaces with the absolute path of the project folder. me%: Replaces with the absolute path of the temporary folder. Replaces with the absolute path of the temporary folder. mi is described in the first line, the contents from the second line to the garded as the script of the Python console, and then executed after link ers can be described in the script. command is displayed as the subproperty. s displayed only when [No] in the [Build simultaneously] property in the
	Default	Commands executed after link processing[number of defined items]
	How to change	Edit by the Text Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.
	Restriction	Up to 1023 characters Up to 64 items can be specified.
Other additional options	Input the link option to be added additionally. The options set here are added at the end of the link options group.	
	Default	Blank
	How to change	Directly enter in the text box or edit by the Character String Input dia- log box which appears when clicking the [] button.
	Restriction	Up to 259 characters



[Hex Output Options] tab

This tab shows the detailed information on the Hex output phase categorized by the following and the configuration can be changed.

- (1) [Output File]
- (2) [Hex Format]
- (3) [CRC Operation]
- (4) [Message]
- (5) [Others]

Caution This tab is not displayed for the library project.

Figure A.6 Property Panel: [Hex Output Options] Tab

Property 🛛					
🔨 CC-RL Property	à 🖉 -+				
✓ Output File					
Output hex file	Yes				
Output folder	%BuildModeName%				
Output file name	%ProjectName%.mot				
Division output file	Division output file[0]				
✓ Hex Format					
Hex file format	Motorola S-record file(-FOrm=Stype)				
Unify record size	No				
Output S9 record at the end	Output S9 record at the end No				
CRC Operation	CRC Operation				
Message	Message				
Others					
Output hex file Selects whether to output a hex file. This option corresponds to the -FOrm option of the rlink. command.					
Common Compile Assemble	/ Link Opti / Hex Out / I/O Head / 🔻				

[Description of each category]

(1) [Output File]

The detailed information on output files is displayed and the configuration can be changed.

Output hex file	Select whether to output the hex file. This corresponds to the -FOrm option of the rlink command.		
	Default	Yes	
	How to change	Select from the drop-down list.	
	Restriction	Yes	Outputs the hex file.
	Default	No	Does not output the hex file.



Output folder	Specify the folder which the hex file is output. If a relative path is specified, the reference point of the path is the main project or sub- project folder. If an absolute path is specified, the reference point of the path is the main project or subproject folder (unless the drives are different). The following placeholders are supported. %ActiveProjectDir%: Replaces with the absolute path of the active project folder. %ActiveProjectName%: Replaces with the active project name. %BuildModeName%: Replaces with the build mode name. %MainProjectDir%: Replaces with the absolute path of the main project folder. %MainProjectName%: Replaces with the absolute path of the install folder of this product. %ProjectDir%: Replaces with the absolute path of the install folder of this product. %ProjectName%: Replaces with the absolute path of the project folder. %ProjectName%: Replaces with the absolute path of the project folder. %ProjectName%: Replaces with the absolute path of the project folder. %ProjectName%: Replaces with the absolute path of the project folder. %ProjectName%: Replaces with the absolute path of the project folder. %ProjectName%: Replaces with the absolute path of the project folder. %ProjectName%: Replaces with the absolute path of the temporary folder. %WinDir%: Replaces with the absolute path of the temporary folder. %WinDir%: Replaces with the absolute path of the Windows system folder. If this is blank, it is assumed that the project folder has been specified. This corresponds to the -OUtput option of the rlink command. This property is displayed only when [Yes] in the [Output hex file] property is selected.			
	Default	%BuildModeName%		
	How to change	Directly enter in the text box or edit by the Browse For Folder dialog box which appears when clicking the [] button.		
	Restriction	Up to 247 characters		
Output file name	Specify the hex Be sure to specify the extension [Hex file format When [Intel H When [Motor When [Binar The following p %ActiveProje %BuildMode %MainProject %ProjectNar This correspon This property is	Specify the hex file name. Specify the hex file name. Se sure to specify this property. If the extension is omitted, it is automatically added according to the selection in the Hex file format] property in the [Hex Format] category. When [Intel HEX file(-FOrm=Hexadecimal)] is selected: .hex When [Motorola S-record file(-FOrm=Stype)] is selected: .hex When [Binary file(-FOrm=Binary)] is selected: .bin The following placeholders are supported. %ActiveProjectName%: Replaces with the active project name. %BuildModeName%: Replaces with the build mode name. %MainProjectName%: Replaces with the main project name. %ProjectName%: Replaces with the project name.		
	Default	%ProjectName%.mot		
	How to change	Directly enter in the text box.		
	Restriction	Up to 259 characters		



Division output file	Specify the divi Specify in the fi address: The s tion name" (see If multiple secti- tion name: sect Specify the add If the extension [Hex file format When [Intel H When [Intel H When [Motor When [Binar, The following p %ActiveProje %BuildMode %MainProjec %MainProjec %MicomTool product. %ProjectDir? %ProjectDir? %ProjectDir? %VinDir%: F This correspon The division ou This property is Default	ision output files. ormat of " <i>file name=start address-end address</i> " (<i>start address, end</i> start address and end address of the output range) or " <i>file name=sec-</i> <i>ction name</i> : The name of the output section), with one entry per line. Ion names are specified, delimit them with a colon as in " <i>file name=sec-</i> <i>tion name</i> " (example: file1.mot=sec1:sec2). dress in hexadecimal without 0x (example: file2.mot=400-4ff). In is omitted, it is automatically added according to the selection in the t] property in the [Hex Format] category. HEX file(-FOrm=Hexadecimal)] is selected: .hex rola S-record file(-FOrm=Stype)] is selected: .mot y file(-FOrm=Binary)] is selected: .bin olaceholders are supported. ectDir%: Replaces with the absolute path of the active project folder. ectName%: Replaces with the absolute path of the main project folder. etName%: Replaces with the absolute path of the main project folder. etName%: Replaces with the absolute path of the install folder of this W: Replaces with the absolute path of the install folder of this W: Replaces with the absolute path of the install folder of this W: Replaces with the absolute path of the project folder. etName%: Replaces with the absolute path of the install folder. etName%: Replaces with the absolute path of the install folder. etName%: Replaces with the absolute path of the install folder. etName%: Replaces with the absolute path of the project folder. etName%: Replaces with the absolute path of the project folder. etSis to the -OUtput option of the rlink command. etput file name is displayed as the subproperty. et displayed only when [Yes] in the [Output hex file] property is selected. Division output file[<i>number of defined items</i>]
	Dolault	
	How to change	Edit by the Text Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.
	Restriction	Up to 259 characters Up to 65535 items can be specified.

(2) [Hex Format]

The detailed information on the hex format is displayed and the configuration can be changed. This category is displayed only when [Yes] in the [Output hex file] property in the [Output File] category is selected.

Hex file format	Select the format of the hex file to be output. This corresponds to the -FOrm option of the rlink command.			
	Default	Motorola S-record file(-FOrm=Stype)		
	How to change	Select from the drop-down list.		
	Restriction	Intel HEX file(-FOrm=Hexa- decimal)	Outputs an Intel HEX file.	
		Motorola S-record file(- FOrm=Stype)	Outputs a Motorola S-record file.	
		Binary file(-FOrm=Binary)	Outputs a binary file.	



Unify record size [Intel HEX file]	Select whether This correspon This property is file format] pro	whether to output a specified data record regardless of the address range. orresponds to the -RECord option of the rlink command. roperty is displayed only when [Intel HEX file(-FOrm=Hexadecimal)] in the [Hex mat] property is selected.				
	Default	No				
	How to change	Select from the drop-down list.				
	Restriction	Yes(Intel hex record)(- REcord=H16)	Outputs the Intel hex record.			
		Yes(Intel expanded hex record)(-REcord=H20)	Outputs the Intel expanded hex record.			
		Yes(Intel 32-bit hex record)(- REcord=H32)	Outputs the Intel 32-bit hex record.			
		No	Outputs various data records according to each address.			
Unify record size [Motorola S-record file]	Select whether This correspon This property is [Hex file forma	ther to output a specified data record regardless of the address range. ponds to the -RECord option of the rlink command. rty is displayed only when [Motorola S-record file(-FOrm=Stype)] in the rmat] property is selected.				
	Default	No				
	How to change	Select from the drop-down list.				
	Restriction	Yes(S1 record)(-REcord=S1)	Outputs the S1 record.			
		Yes(S2 record)(-REcord=S2)	Outputs the S2 record.			
		Yes(S3 record)(-REcord=S3)	Outputs the S3 record.			
		No	Outputs various data records according to each address.			
Fill unused areas in the output ranges with the value	Select whether This correspon This property is erty in the [Out	r to fill the vacant area of the out ids to the -SPace option of the rli s displayed only when a file is sp tput File] category.	put range with data. ink command. ecified in the [Division output file] prop-			
	Default	No				
	How to change	Select from the drop-down list.				
	Restriction Yes(Random)(-SPace=Ran- dom)		Fills the vacant area with random numbers.			
		Yes(Specification value)(- SPace= <numerical value="">)</numerical>	Fills the vacant area with the speci- fied hexadecimal value.			
		No	Does not fill the vacant area.			



Output padding data	Specify the hey This correspon This property is value>)] in the selected.	xadecimal value ids to the -SPace s displayed only [Fill unused area	to fill the vacant area. e option of the rlink command. when [Yes(Specification value)(-SPace= <numerical as in the output ranges with the value] property is</numerical 		
	Default	FF	FF		
	How to change	Directly enter in the text box.			
	Restriction	0 to FFFFFFF (hexadecimal number)			
Specify byte count for data record	Select whether This correspon This property is file format] pro	r to specify the maximum byte count for a data record. nds to the -BYte_count option of the rlink command. is displayed only when [Intel HEX file(-FOrm=Hexadecimal)] in the [H operty is selected.			
	Default	No			
	How to change	Select from the	e drop-down list.		
	Restriction	Yes(- BYte_count)	Specifies the maximum byte count for a data record.		
		No	Specifies 0xFF as the maximum byte count for a data record.		
Maximum byte count for data record	Specify the ma This correspon This property is data record] pr	haximum byte count for a data record. onds to the -BYte_count option of the rlink command. v is displayed only when [Yes(-BYte_count)] in the [Specify byte count property is selected.			
	Default	FF			
	How to change	Directly enter to the text box.			
	Restriction	1 to FF (hexad	ecimal number)		
Output S9 record at the end	Select whether This correspon This property is [Hex file formation	ier to output the S9 record at the end. onds to the -S9 option of the rlink command. y is displayed only when [Motorola S-record file(-FOrm=Stype)] in the nat] property is selected.			
	Default	No			
	How to change	Select from the drop-down list.			
	Restriction	Yes(-S9)	Outputs the S9 record at the end.		
		No	Does not output the S9 record at the end.		

(3) [CRC Operation]

The detailed information on CRC operation is displayed and the configuration can be changed.



Outputs the calculation result of CRC	Select whether This correspon	ect whether to perform the CRC (Cyclic Redundancy Check) operation. s corresponds to the -CRc option of the rlink command.			Select whether to perform the CRC (Cyclic Redundancy Check) operation. This corresponds to the -CRc option of the rlink command.	
	Default	No				
	How to change	Select from the drop-down list.				
	Restriction	Yes(-CRc)	The CRC operation is performed on the hex-format objects in the specified range, from low address to high address, and the results of the operation are output to the specified address.			
		No	The CRC operation and outputting the result are not performed.			
Output address	Specify the add out 0x (exampl Be sure to spe This correspon This property is of CRC] prope	Idress that the result of the CRC operation is output in hexadecimal with- ble: FFF00). ecify this property. nds to the -CRc option of the rlink command. is displayed only when [Yes(-CRc)] in the [Outputs the calculation result erty is selected.				
	Default	0				
	How to change	Directly enter in the text box.				
	Restriction	0 to FFFFF (he	exadecimal number)			
Target range	Specify the CRC calculation range in the format of " <i>start address - end address</i> " or " <i>section name</i> ". However, " <i>section name</i> " can be specified in only CC-RL V1.02.00 of higher version. Specify the address in hexadecimal without 0x. The range of specifiable address values is 0 to FFFF. This corresponds to the -CRc option of the rlink command. This property is displayed only when [Yes(-CRc)] in the [Outputs the calculation result of CRC] property is selected.		nge in the format of " <i>start address - end address</i> " or <i>ction name</i> " can be specified in only CC-RL V1.02.00 or cimal without 0x. ess values is 0 to FFFFF. option of the rlink command. when [Yes(-CRc)] in the [Outputs the calculation result			
	Default	Blank				
	How to change	Edit by the Tex button. For the subpro	t Edit dialog box which appears when clicking the []			
	Restriction	Up to 32767 characters Up to 65535 items can be specified.				



Type of CRC	Select the method of CRC operation. See "CC-RL Compiler User's Manual" for details about each operation. [CRC-CCITT(MSB,LITTLE,4 bytes) type] corresponds to [CRC-CCITT(MSB) type] CS+ V3.01.00. This corresponds to the -CRc option of the rlink command. See [Remark] for the correspondence with the [Type of CRC] property of CA78K0 This property is displayed only when [Yes(-CRc)] in the [Outputs the calculation re of CRC] property is selected.		
	Default	CRC-CCITT(MSB,L	ITTLE,4 bytes) type
	How to change	Select from the drop-down list.	
	Restriction	CCITT type	Outputs the calculation result of CRC-16-CCITT- MSB first operation with an initial value of 0xffff and inverse of XOR.
		CRC- CCITT(MSB) type	Outputs the calculation result of CRC-16-CCITT- MSB first operation.
		CRC- CCITT(MSB,LIT- TLE,4 bytes) type	Outputs the calculation result of CRC-16-CCITT- MSB first operation with the input specified as 4- byte units in little-endian mode.
		CRC- CCITT(MSB,LIT- TLE,2 bytes) type	Outputs the calculation result of CRC-16-CCITT- MSB first operation with the input specified as 2- byte units in little-endian mode.
		16	Outputs the calculation result of CRC-16-LSB first operation.
		SENT(MSB) type	Outputs the calculation result of operation con- forming to SENT.
		CRC-CCITT(LSB) type	Outputs the calculation result of CRC-16-CCITT- LSB first operation.
		32-ETHERNET type	Outputs the calculation result of CRC-32- ETHERNET operation.
Initial value	Specify the init This correspon This property is of CRC] prope	ial value for the CRC ids to the -CRc option s displayed only when rty is selected.	code in the format of " <i>initial value</i> ". n of the rlink command. n [Yes(-CRc)] in the [Outputs the calculation result
	Default	Blank	
	How to change	Directly enter to the text box.	
	Restriction	 When other than [32-ETHERNET type] is selected in the [Type of CRC] property 0 to FFFF (hexadecimal number) 	
	- When [32-ETHERNET type] is se erty 0 to FFFFFFF (hexadecimal nu		RNET type] is selected in the [Type of CRC] prop- hexadecimal number)

Endian	Select the end This correspon This property is of CRC] prope	e endian for CRC output. esponds to the -CRc option of the rlink command. erty is displayed only when [Yes(-CRc)] in the [Outputs the calculation result property is selected.		
	Default			
	How to change	Select from the	e drop-down list.	
	Restriction	Little endian	Outputs the value in little-endian mode.	
		Big endian	Outputs the value in big-endian mode.	
Output size	Specify the out This correspon This property is of CRC] prope	pecify the output size for the CRC code. his corresponds to the -CRc option of the rlink command. his property is displayed only when [Yes(-CRc)] in the [Outputs the calculation rest CRC] property is selected.		
Default		Blank		
	How to change	Directly enter to the text box.		
	Restriction 2, 4, or blank			

Remark The correspondence between the [Type of CRC] property of CA78K0R and the [Type of CRC] property of CC-RL is as follows.

CA78K0R	CC-RL
High-speed CRC(CRC-16-CCITT)	CRC-CCITT(MSB) type
High-speed CRC(SENT)	SENT(LSB) type
General-purpose CRC	CRC-CCITT(LSB) type

(4) [Message]

The detailed information on messages is displayed and the configuration can be changed. This category is displayed only when [Yes] in the [Output hex file] property in the [Output File] category is selected.

Use same message- related settings as Link Options tab	Select whether Options] tab.	to make the me	ssage-related settings the same as those of the [Link
	Default	Yes	
	How to change	Select from the drop-down list.	
	Restriction	Yes	Makes the message-related settings the same as those of the [Link Options] tab.
		No	Makes the message-related settings in the property of the [Hex Output Options].



Enable information message output	Select whether to enable the output of information messages. This corresponds to the -Message and -NOMessage options of the rlink command. This property is displayed only when [No] in the [Use same message-related settings as Link Options tab] property is selected.			
	Default	No(-NOMessage)		
	How to change	Select from the drop-down list.		
	Restriction	Yes(-Message)	Outputs information messages.	
		No(-NOMessage)	Suppresses the output of informa- tion messages.	
Suppress number of information message	Specify the number of the information message of which output is to be suppressed. If multiple message numbers are specified, delimit them with "," (comma) (example: 4,200). Also, a range of message numbers can be specified using "-" (hyphen) (exam- ple:4,200-203,1300). This corresponds to the -NOMessage option of the rlink command. This property is displayed only when [No] in the [Use same message-related settings as Link Options tab] property is selected and when [No(-NOMessage)] in the [Enable information message output] property is selected.			
	Default	Blank		
	How to change	Directly enter in the text box or ed log box which appears when click	it by the Character String Input dia- ing the [] button.	
	Restriction	Up to 2048 characters		
Change warning mes- sage to information message	Select whether to change the type of warning messages to information. This corresponds to the -CHange_message option of the rlink command. This property is displayed only when [No] in the [Use same message-related settings as Link Options tab] property is selected.			
	Default	No		
	How to change	Select from the drop-down list.		
	Restriction	Yes(All)(- CHange_message=Information)	Changes the type of all warning messages to information.	
		Yes(Specify message number)(- CHange_message=Informa- tion= <message number="">)</message>	Specifies the number of warning message of which type is to be changed to information.	
		No	Does not change the type of warning messages.	



Number of warning message	Specify the number of the warning message. If multiple message numbers are specified, delimit them with "," (comma) (example: 4,200). Also, a range of message numbers can be specified using "-" (hyphen) (exam- ple:4,200-203,1300). This corresponds to the -CHange_message option of the rlink command. This property is displayed only when [No] in the [Use same message-related settings as Link Options tab] property is selected and when [Yes(Specify message number)(- CHange_message=Information= <message number="">)] in the [Change warning mes- sage to information message] property is selected.</message>		
	Default	Blank	
	How to change	Directly enter in the text box or ed log box which appears when click	it by the Character String Input dia- ing the [] button.
	Restriction	Up to 2048 characters	
Change information message to warning message	Select whether to change the type of information messages to warning. This corresponds to the -CHange_message option of the rlink command. This property is displayed only when [No] in the [Use same message-related settings as Link Options tab] property is selected.		
	Default No		
	How to change	Select from the drop-down list.	
	Restriction	Yes(All)(- CHange_message=Warning)	Changes the type of all informa- tion messages to warning.
		Yes(Specify message number)(- CHange_message=Warn- ing= <message number="">)</message>	Specifies the number of informa- tion message of which type is to be changed to warning.
		No	Does not change the type of infor- mation messages.
Number of information message	 Specify the number of the information message. If multiple message numbers are specified, delimit them with "," (comma) (example 4,200). Also, a range of message numbers can be specified using "-" (hyphen) (example:4,200-203,1300). This corresponds to the -CHange_message option of the rlink command. This property is displayed only when [No] in the [Use same message-related setting as Link Options tab] property is selected and when [Yes(Specify message number) CHange_message=Warning=<message number="">)] in the [Change information message to warning message] property is selected.</message> 		t them with "," (comma) (example: ed using "-" (hyphen) (exam- n of the rlink command. lse same message-related settings n [Yes(Specify message number)(-)] in the [Change information mes-
	Default	Blank	
	How to change	Directly enter in the text box or ed log box which appears when click	it by the Character String Input dia- ing the [] button.
	Restriction Up to 2048 characters		

Change information and warning message to error message	Select whether to change the type of information and warning messages to error. This corresponds to the -CHange_message option of the rlink command. This property is displayed only when [No] in the [Use same message-related settings as Link Options tab] property is selected.		
	Default	No	
	How to change	Select from the drop-down list.	
	Restriction	Yes(All)(- CHange_message=Error)	Changes the type of all informa- tion and warning messages to error.
		Yes(Specify message number)(- CHange_message=Error= <mes- sage number>)</mes- 	Specifies the number of informa- tion or warning message of which type is to be changed to error.
		No	Does not change the type of infor- mation and warning messages.
Number of information and warning message	Specify the number of the information and warning message. If multiple message numbers are specified, delimit them with "," (comma) (example: 4,200). Also, a range of message numbers can be specified using "-" (hyphen) (exam- ple:4,200-203,1300). This corresponds to the -CHange_message option of the rlink command. This property is displayed only when [No] in the [Use same message-related setting as Link Options tab] property is selected and when [Yes(Specify message number)(CHange_message=Error= <message number="">)] in the [Change information and war ing message to error message] property is selected.</message>		y message. them with "," (comma) (example: ed using "-" (hyphen) (exam- n of the rlink command. Jse same message-related settings n [Yes(Specify message number)(- n the [Change information and warn- ed.
	Default	Blank	
	How to change	Directly enter in the text box or ed log box which appears when clicki	it by the Character String Input dia- ing the [] button.
	Restriction	Up to 2048 characters	

(5) [Others]

Other detailed information on the hex output is displayed and the configuration can be changed. This category is displayed only when [Yes] in the [Output hex file] property in the [Output File] category is selected.

Other additional options	Input the hex output options to be added additionally. The options set here are added at the end of the hex output options group.	
	Default	Blank
	How to change	Directly enter in the text box or edit by the Character String Input dia- log box which appears when clicking the [] button.
	Restriction	Up to 259 characters



[Create Library Options] tab

This tab shows the detailed information on the create library phase categorized by the following and the configuration can be changed.

- (1) [Debug Information]
- (2) [Input File]
- (3) [Output File]
- (4) [Library]
- (5) [List]
- (6) [Message]
- (7) [Others]

Caution This tab is displayed for the library project.

Figure A.7 Property Panel: [Create Library Options] Tab



[Description of each category]

(1) [Debug Information]

The detailed information on debug information is displayed and the configuration can be changed.

Output debug informa- tion	Select whether to output debug information. This corresponds to the -DEBug and -NODEBug options of the rlink command. This property is displayed only when [Relocatable file(-FOrm=Relocate)] in the [Output file format] property in the [Output File] category.		
	Default	Yes(Output to the output file)(-DEBug)	
	How to change	Select from the drop-down list.	
	Restriction	Yes(Output to the output file)(-DEBug)	Outputs debug information.
		No	Does not output debug information.



	1			
Delete local symbol name information	Select whether to delete local symbol name information. This corresponds to the -Hide option of the rlink command.			
	Default	No	No	
	How to change	Select from the drop-down list.		
	Restriction	Yes(-Hide)	Deletes information of the local symbol name.	
		No	Does not delete information of the local symbol name.	

(2)

[Input File] The detailed information on input files is displayed and the configuration can be changed.

Object file	 Specify in the format of "<i>library(module</i>)", with one entry name per line. The following placeholders are supported. %ActiveProjectDir%: Replaces with the absolute path of the active project folder. %ActiveProjectName%: Replaces with the active project name. %BuildModeName%: Replaces with the build mode name. %MainProjectDir%: Replaces with the absolute path of the main project folder. %MainProjectName%: Replaces with the absolute path of the main project folder. %MainProjectName%: Replaces with the absolute path of the install folder of this product. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectName%: Replaces with the absolute path of the temporary folder. %WinDir%: Replaces with the absolute path of the Windows system folder. This corresponds to the -Input option of the rlink command. The object file name is displayed as the subproperty. 	
	Default	Object file[number of defined items]
	How to change	Edit by the Text Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.
Restriction		Up to 1024 characters Up to 256 items can be specified.



Binary file	Specify the bin Specify in the f bute][,symbol I [:number of ali The value that If the specifica "CODE" or "DA If the specifica cute, will be all The following p %ActiveProj %ActiveProj %ActiveProj %BuildMode %MainProje %MainProje %MicomToo product. %ProjectDirf %ProjectDirf %ProjectNau %TempDir% %WinDir%: This correspor The binary file This property is put file format]	ary files. format of " <i>file name</i> (section name[:number of alignment][/section attri- name])", with one entry per line. gnment], [/section attribute], and [,symbol name] can be omitted. can be specified for number of alignment is 1, 2, 4, 8, 16, or 32. tion is omitted, it is assumed that 1 has been specified. ATA" can be specified as section attribute. tion is omitted, all attributes such as the ability to write, read, and exe- valid. olaceholders are supported. ectDir%: Replaces with the absolute path of the active project folder. ectName%: Replaces with the build mode name. ctDir%: Replaces with the absolute path of the main project folder. ctName%: Replaces with the absolute path of the install folder of this %: Replaces with the absolute path of the install folder of this %: Replaces with the absolute path of the project folder. me%: Replaces with the absolute path of the install folder of this %: Replaces with the absolute path of the project folder. me%: Replaces with the absolute path of the install folder of this %: Replaces with the absolute path of the project folder. me%: Replaces with the absolute path of the project folder. me%: Replaces with the absolute path of the temporary folder. Replaces with the absolute path of the temporary folder. Replaces with the absolute path of the Vindows system folder. aname is displayed as the subproperty. s displayed only when [Relocatable file(-FOrm=Relocate)] in the [Out- property in the [Output File] category.
	Default	Binary file[number of defined items]
	How to change	Edit by the Text Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.
	Restriction	Up to 1024 characters Up to 256 items can be specified.

(3)

[Output File] The detailed information on output files is displayed and the configuration can be changed.

Output file format	Select the form This correspon	nat of the output file. nds to the -FOrm option of the rlink	command.
	Default	User libraries(-FOrm=Library=U)	
	How to change	Select from the drop-down list.	
	Restriction	User libraries(- FOrm=Library=U)	Outputs a user library file.
		System libraries(- FOrm=Library=S)	Outputs a system library file.
		Relocatable file(-FOrm=Relo- cate)	Outputs a relocatable file.

	%ActiveProje %ActiveProje %BuildMode %MainProje %MicomToo product. %ProjectDir %ProjectNar %ProjectNar %TempDir% %WinDir%: I If this is blank, This correspon	 ectDir%: Replaces with the absolute path of the active project folder. ectName%: Replaces with the build mode name. ectDir%: Replaces with the absolute path of the main project folder. ctName%: Replaces with the absolute path of the main project folder. ctName%: Replaces with the absolute path of the install folder of this Wath the absolute path of the project folder. Wath the absolute path of the project folder. Replaces with the absolute path of the project folder. Replaces with the absolute path of the project folder. Replaces with the absolute path of the project folder. Replaces with the absolute path of the temporary folder. Replaces with the absolute path of the Windows system folder. it is assumed that the project folder has been specified. ads to the -OUtput option of the rlink command.
	Default	%BuildModeName%
	How to change	Directly enter in the text box or edit by the Browse For Folder dialog box which appears when clicking the [] button.
	Restriction	Up to 247 characters
Output file name	Specify the output file name. If the extension is omitted, it is automatically added according to the selection in [Output file format] property. When [User libraries(-FOrm=Library=U)] is selected: .lib When [System libraries(-FOrm=Library=S)] is selected: .lib When [Relocatable file(-FOrm=Relocate)] is selected: .rel The following placeholders are supported. %ActiveProjectName%: Replaces with the active project name. %BuildModeName%: Replaces with the build mode name. %MainProjectName%: Replaces with the main project name. %ProjectName%: Replaces with the project name. This corresponds to the -OUtput option of the rlink command.	
	Default	%ProjectName%.lib
	How to change	Directly enter in the text box.
	Restriction	Up to 259 characters

(4) [Library]

The detailed information on the library is displayed and the configuration can be changed.


Using libraries	Specify the libr If a relative pat project folder. The following p %ActiveProje %BuildMode %MainProjee %MicomToo product. %ProjectDir %ProjectDir %ProjectNar %TempDir% %WinDir%: I This correspon The library file	library files to be used. path is specified, the reference point of the path is the main project or sub- er. ng placeholders are supported. ² rojectDir%: Replaces with the absolute path of the active project folder. ³ rojectName%: Replaces with the build mode name. ³ ojectDir%: Replaces with the build mode name. ³ ojectDir%: Replaces with the absolute path of the main project folder. ³ ojectName%: Replaces with the absolute path of the install folder of this ⁴ Dir%: Replaces with the absolute path of the install folder of this ⁴ Dir%: Replaces with the absolute path of the project folder. ⁴ Name%: Replaces with the absolute path of the temporary folder. ⁴ Name%: Replaces with the absolute path of the temporary folder. ⁴ Name%: Replaces with the absolute path of the temporary folder. ⁴ Name%: Replaces with the absolute path of the temporary folder. ⁴ Name%: Replaces with the absolute path of the temporary folder. ⁴ Name%: Replaces with the absolute path of the temporary folder. ⁴ Name%: Replaces with the absolute path of the Windows system folder. ⁴ Name%: Replaces with the absolute path of the Windows system folder. ⁴ Name%: Replaces with the absolute path of the Windows system folder. ⁴ Name%: Replaces with the absolute path of the Windows system folder.		
	Default	Using libraries	number of defined items]	
	How to change	Edit by the Path Edit dialog box which appears when clicking the button. -> Edit by the Specify Using Library File dialog box which appears when clicking the [Browse] button. For the subproperty, you can enter directly in the text box. Up to 259 characters Up to 65536 items can be specified.		
	Restriction			
System libraries	The system lib For the relative folder. This correspon The system lib	system library files are displayed. the relative path, the reference point of the path is the main project or subproje er. corresponds to the -LIBrary option of the rlink command. system library file name is displayed as the subproperty. ault System libraries[<i>number of defined items</i>]		
	Default			
	How to change	Changes not allowed		
Use standard/mathe- matical libraries	Select whether This correspon	to use the stand ds to the -LIBrar	dard/mathematical libraries provided by the compiler. y option of the rlink command.	
	Default	No		
	How to change	Select from the	e drop-down list.	
	Restriction	Yes	Uses the standard/mathematical libraries.	
		No	Does not use the standard/mathematical libraries.	
Use runtime libraries	Select whether This correspon	to use the runtinds to the -LIBrar	me libraries provided by the compiler. Ty option of the rlink command.	
	Default	No		
	How to change	Select from the drop-down list.		
	Restriction	Yes	Uses the runtime libraries.	
		No	Does not use the runtime libraries.	



(5) [List]

The detailed information on the list is displayed and the configuration can be changed.

Output link map file	Select whether to output the library list file. This corresponds to the -LISt and -SHow options of the rlink command.			
	Default	No		
	How to change	Select from the drop-down list.		
	Restriction	Yes(List contents=not specify)(-LISt -SHow)	Outputs information according to the out- put format to the library list file.	
		Yes(List contents=ALL)(- LISt -SHow=ALL)	Outputs all information according to the output format to the library list file.	
		Yes(List contents=spec- ify)(-LISt)	Outputs the specified information to the library list file.	
		No	Does not output the library list file.	
Output symbol infor- mation	t symbol infor- h Select whether to output the symbol information (symbol names within This corresponds to the -SHow=SYmbol option of the rlink command. This property is displayed only when [Yes(List contents=specify)(-LISt)] link map file] property is selected.		nation (symbol names within a module). ption of the rlink command. List contents=specify)(-LISt)] in the [Output	
	Default	No		
	How to change	Select from the drop-dowr	n list.	
	Restriction	Yes(-SHow=SYmbol)	Outputs the symbol information.	
		No	Does not output the symbol information.	
Output section list in a module	Select whether to output the list of the section names within the module. This corresponds to the -SHow=SEction option of the rlink command. This property is displayed only when [Yes(List contents=specify)(-LISt)] in the [Output link map file] property is selected and [User libraries(-FOrm=Library=U)] or [System libraries(-FOrm=Library=S)] in the [Output file format] property in the [Output File] cat- egory is selected.			
	Default	No		
	How to change	Select from the drop-down list.		
	Restriction	Yes(-SHow=SEction)	Outputs the list of the section names within the module.	
		No	Does not output the list of the section names within the module.	
Output cross reference information	Select whether to output the cross reference information. This corresponds to the -SHow=XReference option of the rlink command. This property is displayed only when [Yes(List contents=specify)(-LISt)] in the [Output link map file] property and [Relocatable file(-FOrm=Relocate)] in the [Output file for- mat] property in the [Output File] category are selected.			
	Default	No		
	How to change	Select from the drop-dowr	ı list.	
	Restriction	Yes(-SHow=Xreference)	Outputs the cross reference information.	
		No	Does not output the cross reference infor- mation.	



Output total sizes of sections	Select whether This correspon This property is link map file] p mat] property i	er to output the total size of sections. onds to the -SHow=Total_size option of the rlink command. is displayed only when [Yes(List contents=specify)(-LISt)] in the [Output property and [Relocatable file(-FOrm=Relocate)] in the [Output file for- in the [Output File] category are selected.		
	Default			
	How to change	Select from the drop-down list.		
	Restriction	Yes(-SHow=Total_size)	Outputs the total sizes of sections sepa- rately for ROM-allocated sections and RAM-allocated sections.	
		No	Does not output the total size of sections.	

(6)

[Message] The detailed information on messages is displayed and the configuration can be changed.

Enable information message output	Select whether to enable the output of information messages. This corresponds to the -Message and -NOMessage options of the rlink commar			messages. ge options of the rlink command.		
	Default	No(-NOMessa	ge)			
	How to change	Select from the drop-down list.				
	Restriction	Yes(-Mes- sage)	Outputs information messages.			
		No(-NOMes- sage)	Suppresses the o	utput of information messages.		
Suppress number of information message	Specify the number of the information message of which output is to be suppressed. If multiple message numbers are specified, delimit them with "," (comma) (example: 4,200). Also, a range of message numbers can be specified using "-" (hyphen) (exam- ple:4,200-203,1300). This corresponds to the -NOMessage option of the rlink command. This property is displayed when [No(-NOMessage)] in the [Enable information mes- sage output] property is selected.					
	Default	Blank				
	How to change	Directly enter in the text box or edit by the Character String Input dialog box which appears when clicking the [] button.				
	Restriction	Up to 2048 characters				
Change warning mes- sage to information	Select whether to change the type of warning messages to information. This corresponds to the -CHange_message option of the rlink command.					
message	Default	No				
	How to change	Select from the drop-down list.				
	Restriction	Yes(All)(- CHange_mess	age=Information)	Changes the type of all warning messages to information.		
) C	Yes(Specify me CHange_mess tion= <message< td=""><td>essage number)(- sage=Informa- e number>)</td><td>Specifies the number of warning message of which type is to be changed to information.</td></message<>	essage number)(- sage=Informa- e number>)	Specifies the number of warning message of which type is to be changed to information.		
		No		Does not change the type of warning messages.		



Number of warning	Specify the number of the warning message.			
message	If multiple me	ssage numbers are specified, delimi	t them with "," (comma) (example:	
	4,200). Also a range	of message numbers can be specifi	ed using "-" (hyphen) (exam-	
	ple:4.200-203.1300).			
	This correspo	onds to the -CHange_message option	n of the rlink command.	
	This property	is displayed only when [Yes(Specify	message number)(-	
	CHange_message=Information= <message number="">)] in the [Change warning mes- sage to information message] property is selected.</message>			
	Default	Blank		
	How to	Directly enter in the text box or edit by the Character String Input dia-		
	change	log box which appears when clicking the [] button.		
	Restriction	Up to 2048 characters		
Change information message to warning	Select whether This correspond	er to change the type of information r onds to the -CHange_message option	n of the rlink command.	
message	Default	No		
	How to change	Select from the drop-down list.		
	Restriction	Yes(All)(- CHange_message=Warning)	Changes the type of all informa- tion messages to warning.	
		Yes(Specify message number)(- CHange_message=Warn- ing= <message number="">)</message>	Specifies the number of informa- tion message of which type is to be changed to warning.	
		No	Does not change the type of infor- mation messages.	
Number of information	Specify the nu	umber of the information message.	t them with " " (comma) (avample:	
message	4,200).			
	Also, a range of message numbers can be specified using "-" (hyphen) (exam-			
	ple:4,200-203,1300).			
	This corresponds to the -CHange_message option of the rlink command.			



This property is displayed only when [Yes(Specify message number)(-

sage to information message] property is selected.

Up to 2048 characters

Blank

Default

How to change

Restriction

CHange_message=Information=<Message number>)] in the [Change warning mes-

log box which appears when clicking the [...] button.

Directly enter in the text box or edit by the Character String Input dia-

Change information and warning message to error message Number of information and warning message	Select whether This correspon	Select whether to change the type of information and warning messages to error. This corresponds to the -CHange_message option of the rlink command.		
	Default	No		
	How to change	Select from the drop-down list.		
	Restriction	Yes(All)(- CHange_message=Error)	Changes the type of all informa- tion and warning messages to error.	
		Yes(Specify message number)(- CHange_message=Error= <mes- sage number>)</mes- 	Specifies the number of informa- tion or warning message of which type is to be changed to error.	
		No	Does not change the type of infor- mation and warning messages.	
	Specify the num If multiple mess 4,200). Also, a range of ple:4,200-203, This correspon This property is CHange_mess information me	the number of the information and warning message. The message numbers are specified, delimit them with "," (comma) (example: ange of message numbers can be specified using "-" (hyphen) (exam- 0-203,1300). responds to the -CHange_message option of the rlink command. perty is displayed only when [Yes(Specify message number)(- e_message=Error= <message number="">)] in the [Change warning message to ion message] property is selected.</message>		
	Default	Blank		
	How to Directly enter in the text box or edit by the Character String Input dia- change log box which appears when clicking the [] button.			
	Restriction	Up to 2048 characters		

(7) [Others] Other detailed information on creating a library is displayed and the configuration can be changed.

Reduce memory occupancy	Select whether This correspon This property is - When [No] ir Information] - When [User	 Select whether to reduce the memory usage. This corresponds to the -MEMory option of the rlink command. This property is displayed only in the following cases. When [No] in the [Delete local symbol name information] property in the [Debug Information] category is selected When [User libraries(-FOrm=Library=U)] or [System libraries(-FOrm=Library=S)] in 	
	the [Output file format] property in the [Output File] category is selected Default No(-MEMory=High)		
	How to change	Select from the drop-o	down list.
	Restriction	Yes(-MEMory=Low)	Reduces the memory usage. Select this item if processing is slow because a large project is linked and the memory size occupied by the linker exceeds the available memory in the machine used.
		No(-MEMory=High)	Executes the same processing as usual.



Display total size of sections	Select whether This correspor This property is put file format]	whether to display the total size of sections after the linking. orresponds to the -Total_size option of the rlink command. roperty is displayed only when [Relocatable file(-FOrm=Relocate)] in the [Out- e format] property in the [Output File] category.		
	Default	No		
	How to change	Select from the drop-down list.		
	Restriction	Yes(-Total_size)	Displays the total size of sections after the linking.	
		No	Does not display the total size of sections after the linki4ng.	
Display copyright infor- mation	Select whether This correspor	er to display copyright information. ands to the -LOgo and -NOLOgo options of the rlink command.		
	Default	No(-NOLOgo)		
	How to change	Select from the drop-	down list.	
	Restriction	Yes	Displays copyright information.	
		No(-NOLOgo)	Suppresses the output of copyright informa- tion.	
Commands executed before create library processing	Specify the cor Use the call ins The following p %ActiveProj %ActiveProj %BuildMode %LibraryFile generation p %MainProje %MainProje %MicomToo product. %Options%: %OutputDir %OutputDir %OutputFile %Program% %ProjectDir %ProjectNar %Pro	No(-NOLOgo) Suppresses the output of copyright info tion. Specify the command to be executed before library generation processing. Use the call instruction to specify a batch file (example: call a.bat). The following placeholders are supported. %ActiveProjectDir%: Replaces with the absolute path of the active project fo %ActiveProjectName%: Replaces with the absolute project name. %BuildModeName%: Replaces with the absolute path of the output file under the li- generation processing. %MainProjectDir%: Replaces with the absolute path of the main project folde %MainProjectName%: Replaces with the absolute path of the install folder of the product. %Options%: Replaces with the command line option under build execution. %OutputFile%: Replaces with the absolute path of the output file. %Program%: Replaces with the absolute path of the output file. %Program%: Replaces with the absolute path of the output file. %Program%: Replaces with the absolute path of the output file. %Program%: Replaces with the absolute path of the output file. %ProjectDir%: Replaces with the absolute path of the temporary folder. %WinDir%: Replaces with the absolute path of the temporary folder. %ProjectName%: Replaces with the absolute path of the temporary folder. %ProjectName%: Replaces with the absolute path of the temporary folder. %ProjectName%: Replaces with the absolute path of the temporary fold		
	Default	Commands executed defined items]	t before library generate processing[number of	
	How to change	Edit by the Text Edit of button. For the subproperty,	dialog box which appears when clicking the [] you can enter directly in the text box.	
	Restriction	Up to 1023 character Up to 64 items can be	s e specified.	



E		
Commands executed after create library pro- cessing	Specify the con Use the call in: The following p %ActiveProj %BuildMode %LibraryFile generation p %MainProje %MainProje %MicomToo product. %Options%: %OutputDir% %OutputDir% %OutputFile %Program% %ProjectDir %ProjectNar %ProjectNar %ProjectNar %ProjectNar %ProjectNar %ProjectNar %TempDir% %WinDir%: When "#!pytho last line are reg library generat The placehold The specified of This property is [Build Method]	 mmand to be executed after library generation processing. struction to specify a batch file (example: call a.bat). blaceholders are supported. ectDir%: Replaces with the absolute path of the active project folder. ectName%: Replaces with the build mode name. e%: Replaces with the absolute path of the output file under the library processing. ctDir%: Replaces with the absolute path of the main project folder. ctName%: Replaces with the absolute path of the main project folder. ctName%: Replaces with the absolute path of the install folder of this replaces with the command line option under build execution. %: Replaces with the absolute path of the output file. replaces with the absolute path of the output file. replaces with the absolute path of the project folder. me%: Replaces with the absolute path of the project folder. me%: Replaces with the absolute path of the project folder. me%: Replaces with the absolute path of the project folder. me%: Replaces with the program name under execution. %: Replaces with the project name. w: Replaces with the absolute path of the temporary folder. me%: Replaces with the absolute path of the temporary folder. me%: Replaces with the absolute path of the temporary folder. me%: Replaces with the absolute path of the temporary folder. me%: Replaces with the absolute path of the temporary folder. me%: Replaces with the absolute path of the temporary folder. me%: a stepsized in the first line, the contents from the second line to the garded as the script of the Python console, and then executed after ion processing. ers can be described in the script. command is displayed as the subproperty. s displayed only when [No] in the [Build simultaneously] property in the category from the [Common Options] tab is selected.
	Default	Commands executed after library generate processing[number of defined items]
	How to change	Edit by the Text Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.
	Restriction	Up to 1023 characters Up to 64 items can be specified.
Other additional options	Input the creat The options se	e library options to be added additionally. It here are added at the end of the create library options group.
	Default	Blank
	How to change	Directly enter in the text box or edit by the Character String Input dia- log box which appears when clicking the [] button.
	Restriction	Up to 259 characters



[I/O Header File Generation Options] tab

This tab shows the detailed information on the I/O header file generation tool categorized by the following and the configuration can be changed.

(1) [I/O Header File](2) [Others]

Figure A.8 Property Panel: [I/O Header File Generation Options] Tab

Property	X		
🔨 CC-RL Property	a p -+		
▲ I/O Header File			
Update I/O header file on build	No		
Output 1bit access	Yes		
Enable MISRA-C option	No		
Others			
Update I/O header file on build Selects whether to update the I/O header file on build. Updates the I/O header file if the device file is never than the device file when the I/O he			
Common Compile Assembl	Link Opti Hex Out I/O Hea / =		

[Description of each category]

(1) [I/O Header File]

The detailed information on the I/O header file is displayed and the configuration can be changed.

Update I/O header file on build	Select whether The I/O header the I/O header updated. Upda extension is cru This contents a	r to update the I/O header file at build. r file is updated when the device file is newer than that at generation of file or properties related to generation of the I/O header file have been ate is performed by automatic overwriting and a backup file with the bak reated. are common to all the build modes.		
	Default	No		
	How to change	Select from the drop-down list.		
	Restriction	Yes(Checking the device file)	Updates the I/O header file when the device file has been updated at build.	
		Yes(Checking the property)	Updates the I/O header file when the properties have been updated at build.	
		Yes(Checking the device file and the property)	Updates the I/O header file when the device file or proper- ties have been updated at build.	
		No	Does not update the I/O header file at build.	



Device file on generat- ing I/O header file	The file name and version of the device file when the I/O header file was generated are displayed. Note that this property is displayed only when a choice other than [No] was made in the [Update I/O header file on build] property.				
	Default	The file name and version of the device file when the I/O header file was generated			
	How to change	Changes not allowe	Changes not allowed		
Current device file	The file name a ronment are di Note that this p the [Update I/C	ame and version of the device file which is installed in the running CS+ en ire displayed. this property is displayed only when a choice other than [No] was made ir te I/O header file on build] property.			
	Default	Current device file			
	How to change	Changes not allowe	Changes not allowed		
Output 1bit access	ss Select whether to output the 1-bit macro definition for IOF file. This contents are common to all the build modes.		acro definition for IOR access in the I/O header		
	Default	Yes			
	How to change	Select from the drop-down list.			
	Restriction	Yes	Outputs 1-bit access.		
		No	Does not output 1-bit access.		
Enable MISRA-C option	Select whether to output an I/O header file compatible with the MISRA-C rules. This contents are common to all the build modes.				
	Default	No			
	How to change	Select from the drop-down list.			
	Restriction	Yes(-misra_c=on)	Outputs an I/O header file compatible with the MISRA-C rules.		
		No	The MISRA-C rules are not considered.		

(2) [Others]

Other detailed information on the I/O header file is displayed and the configuration can be changed.

Other additional options	Input the I/O header file options to be added additionally. The options set here are added at the end of the I/O header file generation options group.		
	Default	Blank	
	How to change	Directly enter in the text box or edit by the Character String Input dia- log box which appears when clicking the [] button.	
	Restriction	Up to 259 characters	



[Build Settings] tab

This tab shows the detailed information on each C source file, assembly source file, object file, and library file categorized by the following and the configuration can be changed.

(1) [Build]

Figure A.9 Property Panel: [Build Settings] Tab (When Selecting C Source File)

Pro	operty		×		
C_	main.c Property		a p -+		
4	Build				
	Set as build-target	Yes			
	Set individual compile option	No			
	File type	C source file			
Se Se	Set as build-target Selects whether to build this file.				
B	uild Settings File Information		-		

Figure A.10 Property Panel: [Build Settings] Tab (When Selecting Assembly Source File)

Pro	perty		×
857	system.asm Property		a 👂 — +
4	Build		
	Set as build-target	Yes	
	Set individual assemble option	No	
	File type	Assembly source file	
Sel	t as build-target lects whether to build this file.		
\ <u>B</u>	uild Settings File Information		-

Figure A.11 Property Panel: [Build Settings] Tab (When Selecting Object File)

Pro	operty		×
ob	object.obj Property		a p -+
4	Build		
	Set as build-target	Yes	
	File type	Object file	
Se Se	et as build-target lects whether to build this file. uild Settings File Information		-



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Property Panel	· IRLING Setting	isi ian iwvner	Selecting Linrar	
				y I IIC/
			9	

Property		
user.lib Property		a p -+
⊿ Build		
Set as build-target	Yes	
File type	Library file	
Set as build-target Selects whether to build this file.		
Build Settings File Information		-

[Description of each category]

(1) [Build]

The detailed information on the build is displayed and the configuration can be changed.

Set as build-target	Select whether to run a build of the selected file.			
	Default	Yes		
	How to change	Select from the drop-down list.		
	Restriction	Yes	Runs a build of the selected file.	
		No	Does not run a build of the selected file.	
Set individual compile option	Select whether selected C sou If [Yes(Level 3) selected in the tion(Details)] c and changed to This property is [Yes] in the [Se	Select whether to set the compile option that differs from the project settings to the selected C source file. [Yes(Level 3)(Perform with assuming it the whole program)(-Owhole_program)] is selected in the [Perform inter-module optimization] property in the [Optimiza- ion(Details)] category from the [Compile Options] tab, this property will be grayed out and changed to [No]. This property is displayed only when a C source file is selected on the project tree and Yes] in the [Set as build-target] property is selected.		
	Default	No		
	How to Select from the c change		e drop-down list.	
	Restriction	Yes	Sets the option that differs from the project settings to the selected C source file.	
		No	Does not set the option that differs from the project settings to the selected C source file.	



Set individual assem- ble option	Select whether selected asser If [Yes(Level 3 selected in the tion(Details)] c and changed t This property i ect tree and [Y	t whether to set the assemble option that differs from the project settings to the ed assembly source file. :(Level 3)(Perform with assuming it the whole program)(-Owhole_program)] is ed in the [Perform inter-module optimization] property in the [Optimiza- etails)] category from the [Compile Options] tab, this property will be grayed out hanged to [No]. property is displayed only when the assembly source file is selected on the proj- be and [Yes] in the [Set as build-target] property tab is selected.		
	Default			
	How to change	Select from the drop-down list.		
	Restriction	Yes	Sets the option that differs from the project settings to the selected assembly source file.	
		No	Does not set the option that differs from the project settings to the selected assembly source file.	
File type	The type of the	e selected file is	displayed.	
	Default	efaultC source file (when the C source file is selected) Assembly source file (when the assembly source file is selected) Object file (when the object file is selected) Library file (when the library file is selected)ow to nangeChanges not allowed		
	How to change			



[Individual Compile Options] tab

This tab shows the detailed information on a C source file categorized by the following and the configuration can be changed.

Note that this tab takes over the settings of the [Common Options] tab and [Compile Options] tab. When the settings are changed from these tabs, the properties are displayed in boldface.

(1) [Debug Information]

- (2) [Optimization]
- (3) [Optimization(Details)]
- (4) [Preprocess]
- (5) [Quality Improvement]
- (6) [C Language]
- (7) [Character Encoding]
- (8) [Output Code]
- (9) [Output File]
- (10) [Assemble List]
- (11) [MISRA-C Rule Check]
- (12) [Error Output]
- (13) [Warning Message]
- (14) [Others]
- Remark This tab is displayed only when [Yes] in the [Set individual compile option] property in the [Build] category from the [Build Settings] tab is selected.



Pror	sertv	R	
	main o Procesty		
	name ropery		
1	Debug Information	M-1-1	
	Add debug information	Tes(g)	
	Enhance debug information with optimization	Tes(g_ine)	
4	Optimization		
	Level of optimization	Perform the default optimization(None)	
4	Optimization(Details)		
	Maximum number of loop expansions		
	Remove unused static functions	Yes(To adjust the level of optimization)(None)	
	Perform inline expansion	Yes(To adjust the level of optimization)(None)	
	Use br instruction to call a function at the end of the function	Yes(To adjust the level of optimization)(None)	
	Perform inter-module optimization	No	
	Perform optimization considering type of data indicated by pointer	No	
	Outputs additional information for inter-module optimization	No	
	Create subroutine for same instruction sequence	No	
4	Preprocess		
Þ	Additional include paths	Additional include paths[0]	
	Use whole include paths specified for build tool	Yes	
⊳	Include files at head of compiling units	Include files at head of compiling units[0]	
⊳	Macro definition	Macro definition[0]	
⊳	Macro undefinition	Macro undefinition[0]	
4	Quality Improvement		
	Detect stack overflow	No(None)	
Þ	C Language		
Þ	Character Encoding		
Þ	Output Code		
Þ	Output File		
Þ	Assemble List		
⊳	MISRA-C Rule Check		
⊳	Error Output		
⊳	Warning Message		
₽	Others		
Add	debug information		
Specifies whether to generate the debug information. Such information is generated when debugging a program, just like the case of wishing to perform source debugging with debugger. This option corresponds to t			
B	ild Settings Individual Compile Options File Informat	ion /	

Figure A.13 Property Panel: [Individual Compile Options] Tab

[Description of each category]

(1) [Debug Information]

The detailed information on debug information is displayed and the configuration can be changed.

Add debug information	Select whether to generate the debug information. It is possible to perform source debugging with the debugger by outputting informat for source debugging to the output file. This corresponds to the -g option of the ccrl command.		If to generate the debug information. o perform source debugging with the debugger by outputting information ougging to the output file. Inds to the -g option of the ccrl command.	
	Default	Configuration of the compile option		
	How to change	Select from the drop-down list.		
	Restriction	Yes(-g)	Generates the debug information.	
		No	Does not generate the debug information.	



Enhance debug infor- mation with optimiza- tion	Select whether to enhance debug information at optimization. This corresponds to the -g_line option of the ccrl command. This property is displayed in the following cases.			
	- When [Always latest version which was installed] in the [Using compiler package version] property in the [Version Select] category from the [Common Options] tab is selected and the latest version is V1.02.00 or higher or when V1.02.00 or higher is selected in the [Using compiler package version] property			
	- When [Yes(-g)] in the [Add debug information] property is selected Default Configuration of the compile option			
	How to change	w to Select from the drop-down list.		
	Restriction	Yes(-g_line) Enhances debug information at optimization		
		No	Does not enhance debug information at optimization.	

(2) [Optimization]

The detailed information on the optimization is displayed and the configuration can be changed.

Level of optimization	Select the level of the optimization for compiling. This corresponds to the -O option of the ccrl command.			
	Default	Configuration of the compile option		
	How to change	Select from the drop-down list.		
	Restriction	Perform the default optimization(None)	Performs optimization that debugging is not affected (optimization of expressions and reg- ister allocation, and the like).	
		Code size prece- dence(-Osize)	Performs optimization with the object size pre- cedence. Regards reducing the ROM/RAM usage as important and performs the maximum optimi- zation that is effective for general programs.	
		Speed precedence(- Ospeed)	Performs optimization with the execution speed precedence. Regards shortening the execution speed as important and performs the maximum optimi- zation that is effective for general programs.	
		Debug precedence(- Onothing)	Performs optimization with the debug prece- dence. Regards debugging as important and sup- presses all optimization including default opti- mization.	

(3) [Optimization(Details)]

The detailed information on the optimization is displayed and the configuration can be changed.



Maximum number of loop expansions	Specify the ma If 0 or 1 is spec If this is blank, This correspon This property is size precedence tion] property is	the maximum number of times to expand the loops such as "for" and "while". is specified, expansion is suppressed. blank, it is assumed that "2" has been specified. rresponds to the -Ounroll option of the ccrl command. operty is displayed only when [Perform the default optimization(None)], [Code ecedence(-Osize)] or [Speed precedence(-Ospeed)] in the [Level of optimiza- operty is selected.			
	Default	Configuration of the compile option			
	How to change	Directly enter in the text box.			
	Restriction	0 to 999 (decimal number) or blank			
Remove unused static functions	Select whether This correspon	r to remove the static functions which are not called. Ids to the -Odelete_static_func option of the ccrl command.			
	Default	Configuration of the comp	ile option		
	How to change	Select from the drop-dowr	n list.		
	Restriction	Yes(To adjust the level of optimization)(None)	Performs optimization according to the [Level of optimization] property.		
		Yes(- Odelete_static_func)	Removes the unused static functions which are not called.		
		No(- Odelete_static_func=off)	Does not remove the unused static func- tions which are not called.		
Perform inline expan- sion	 Specify whether to perform inline expansion at the location calling functions. This corresponds to the -Oinline_level option of the ccrl command. This property is displayed only when [Perform the default optimization(None)] size precedence(-Osize)] or [Speed precedence(-Ospeed)] in the [Level of op tion] property is selected. 				
	Default	Configuration of the comp	ile option		
	How to change	Select from the drop-down list.			
	Restriction	Yes(To adjust the level of optimization)(None)	Performs optimization according to the [Level of optimization] property.		
		Yes(Only specified func- tions)(-Oinline_level=1)	Performs inline expansion at the location calling the function for which #pragma inline is specified.		
		Yes(Auto-detect)(- Oinline_level=2)	Distinguishes the function that is the tar- get of inline expansion automatically and expands it.		
		Yes(Auto-detect without code size increase)(- Oinline_level=3)	Distinguishes the function that is the tar- get of inline expansion automatically and expands it, while minimizing the increase in code size.		
		No(-Oinline_level=0)	Suppresses all inline expansion including the function for which "#pragma inline" is specified.		



Maximum increasing rate of inline expan- sion size	Specify the ma sion is perform until the code s This correspon This property is inline expansio tion)] in the [Pe the [Optimization	pecify the maximum increasing rate (%) of the code size up to which inline expan- ion is performed. (Example: When "100" is specified, inline expansion will be applied ntil the code size increases by 100% (becomes twice the initial size).) his corresponds to the -Oinline_size option of the ccrl command. his property is displayed only when [Yes(Auto-detect)(-Oinline=2)] in the [Perform iline expansion] property is selected, or when [Yes(To adjust the level of optimiza- on)] in the [Perform inline expansion] property and [Speed precedence(-Ospeed)] in the [Optimization Level] property are selected.		
	Default	Configuration of the compile option		
	How to change	Directly enter in the text box.		
	Restriction	0 to 65535 (decimal number)		
Use br instruction to call a function at the end of the function	Select whether tions when the This correspon	whether to give precedence to using br instructions in the place of call instruc- /hen the function ends with a function call. prresponds to the -Otail_call option of the ccrl command.		
	Default	Configuration of the compile option		
	How to change	Select from the drop-down list.		
	Restriction	Yes(To adjust the level of optimization)(None)	Performs optimization according to the [Level of optimization] property.	
		Yes(-Otail_call=on)	Gives precedence to using br instructions in the place of call instructions when the function ends with a function call. The code size can be reduced by remov- ing the ret instruction. However, some debug functions cannot be used.	
		No(-Otail_call=off)	Uses call instructions when the function ends with a function call.	
Perform inter-module optimization	Specify the level of inter-module optimization (such as function merging). This corresponds to the -Ointermodule option of the ccrl command.			
	Default	Configuration of the compile option		
	How to change	Select from the drop-down list.		
	Restriction	Yes(Level 1)(Perform)(- Ointermodule)	Performs inter-module optimization for each file.	
		No	Does not perform inter-module optimiza- tion.	



Perform optimization considering type of data indicated by	Select whether to perform optimization with consideration for the type of the data indi- cated by the pointer, based on the ANSI standard. This corresponds to the -Oalias option of the ccrl command.			
pointer	Default	Configuration	of the comp	ile option
	How to change	Select from the drop-down list.		
	Restriction	Yes(- Oalias=ansi) Performs optimization with consideration of the data indicated by the pointer. In general, this option improves the ob- mance, but the execution result may do case when [No] is selected.		optimization with consideration for the type a indicated by the pointer. I, this option improves the object perfor- ut the execution result may differ from the n [No] is selected.
		No	Does not the type o	perform optimization with consideration for f the data indicated by the pointer.
Create subroutine for same instruction sequence	outine for ctionSelect whether to create a subroutine for the same instruction sequ This corresponds to the -Osame_code option of the ccrl command. This property is displayed in the following cases.			he same instruction sequence. ion of the ccrl command. cases.
	- When [Always latest version which was installed] in the [Using compiler package version] property in the [Version Select] category from the [Common Options] tab is selected and the latest version is V1.02.00 or higher or when V1.02.00 or higher is selected in the [Using compiler package version] property			
	- When [Perform the default optimization(None)], [Code size precedence(-Osize)] or [Speed precedence(-Ospeed)] in the [Level of optimization] property is selected			
	Default	Configuration of the compile option		
	How to change	Select from the drop-down list.		
	Restriction	Yes(-Osame_c	code)	Creates a subroutine for the same instruction sequence.
		No		Does not create a subroutine for the same instruction sequence.
Outputs additional information for inter- module optimization	Select whether to output additional information for inter-module optimization. At linkage, inter-module optimization is applied to files for which this option has bee specified. This corresponds to the -goptimize option of the ccrl command.			ation for inter-module optimization. plied to files for which this option has been of the ccrl command.
	Default	Configuration	of the comp	ile option
	How to change	Select from the	e drop-dowr	n list.
	Restriction	Yes(-goptimize	2)	Outputs additional information for inter- module optimization.
		No		Does not outputs additional information for inter-module optimization.

(4) [Preprocess]

The detailed information on preprocessing is displayed and the configuration can be changed.



Additional include paths	Specify the add The following p %ActiveProje %ActiveProje %BuildMode %MainProje %MicomToo product. %ProjectDir %ProjectDir %ProjectNar %ProjectNar %TempDir% %WinDir%: I The specified i file folder of CO The reference When this prop This correspon The specified i Uppercase cha paths.	ditional include paths during compiling. placeholders are supported. ectDir%: Replaces with the absolute path of the active project folder. ectName%: Replaces with the build mode name. etDir%: Replaces with the build mode name. ctDir%: Replaces with the absolute path of the main project folder. ctName%: Replaces with the absolute path of the install folder of this %: Replaces with the absolute path of the project folder. me%: Replaces with the absolute path of the project folder. me%: Replaces with the project name. :: Replaces with the absolute path of the temporary folder. Replaces with the absolute path of the temporary folder. Replaces with the absolute path of the Windows system folder. nclude path is searched with higher priority than the standard include C-RL. point of the path is the project folder. berty is omitted, only the standard folder of CC-RL is searched. include path is displayed as the subproperty. aracters and lowercase characters are not distinguished for the include		
	Default	Additional inclu	ude paths[number of defined items]	
	How to change	Edit by the Path Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.		
	Restriction	Up to 247 characters Up to 256 items can be specified.		
Use whole include paths specified for build tool	Select whether paths] property build tool to be The include pa	ner to compile using the include path specified in the [Additional include erty in the [Preprocess] category from the [Compile Options] tab of the be used. paths are added by the following procedure.		
	- Paths specif	ied in the [Additi	onal include paths] property from this tab	
	 Paths specifi tab 	ied in the [Addition of the second	onal include paths] property from the [Compile Options]	
	 Paths displayed in the [System include paths] property from the [Compilitab This corresponds to the -l option of the corl command 			
	Default	Yes		
	How to	Onland form the dame down list		
	change	Select from the drop-down list.		
	Restriction	Yes	Compiles using the include path specified in the property of the build tool to be used.	
		No	Does not use the include path specified in the prop- erty of the build tool to be used.	



Include files at head of compiling units	 Specify the file that is included at the top of the compilation unit. The following placeholders are supported. %ActiveProjectDir%: Replaces with the absolute path of the active project folder. %ActiveProjectName%: Replaces with the active project name. %BuildModeName%: Replaces with the build mode name. %MainProjectDir%: Replaces with the absolute path of the main project folder. %MainProjectName%: Replaces with the absolute path of the install folder of this product. %ProjectDir%: Replaces with the absolute path of the install folder of this product. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectName%: Replaces with the absolute path of the project folder. %ProjectName%: Replaces with the absolute path of the project folder. %ProjectName%: Replaces with the absolute path of the project folder. %Inopir%: Replaces with the absolute path of the temporary folder. %WinDir%: Replaces with the absolute path of the Windows system folder. The reference point of the path is the project folder. This corresponds to the -preinclude option of the ccrl command. The specified include file name is displayed as the subproperty. 			
	Default	Configuration of the compile option		
	How to change	Edit by the Text Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.		
	Restriction	Up to 259 characters Up to 256 items can be specified.		
Macro definition	Specify the nan Specify in the f The "= <i>defined</i> value. This correspon The specified r	me of the macro to be defined. format of " <i>macro name=defined value</i> ", with one macro name per line. <i>value</i> " part can be omitted, and in this case, "1" is used as the defined nds to the -D option of the ccrl command. macro is displayed as the subproperty.		
	Default	Configuration of the compile option		
	How to change	Edit by the Text Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.		
	Restriction	Up to 256 characters Up to 256 items can be specified.		
Macro undefinition	Specify the ma Specify in the f This correspon The specified r	icro name to be undefined. format of " <i>macro name</i> ", with one macro name per line. nds to the -U option of the ccrl command. macro is displayed as the subproperty.		
	Default	Configuration of the compile option		
	How to change	Edit by the Text Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.		
	Restriction	Up to 256 characters Up to 256 items can be specified.		



Output C source com- ments to preprocessed file	Select whether This correspon This property is property in the	r to output the comments of the C source to the preprocessed file. nds to the -preprocess option of the ccrl command. is displayed only when [Yes(-P)] in the [Output preprocessed source file] e [Output File] category is selected.		
	Default	Configuration of the compile option		
	How to change	Select from the drop-down list.		
	Restriction	Yes(-preprocess=com- ment)	Outputs the comments of the C source to the preprocessed file.	
		No	Does not output the comments of the C source to the preprocessed file.	
Output line number information to prepro- cessed file	Select whether cessed file. This correspon This property is property in the	to output the line number ds to the -preprocess opt s displayed only when [Yes [Output File] category is s	r information of the C source to the prepro- ion of the ccrl command. s(-P)] in the [Output preprocessed source file] selected.	
	Default	Configuration of the con	npile option	
	How to change	Select from the drop-down list.		
	Restriction	Yes(-preprocess=line)	Outputs the line number information of the C source to the preprocessed file.	
		No	Does not output the line number information of the C source to the preprocessed file.	

(5) [Quality Improvement] The detailed information on the quality improvement is displayed and the configuration can be changed.

Detect stack overflow	Select whether to detect the stack overflow. This property is usable only in the Professional Edition. Detection of stack overflow is a feature for writing a value outside the valid stack area before entering a function and checking whether that value is rewritten before exiting the function. Upon detection, the user-definedstack_chk_fail() function is called. See "CC-RL Compiler User's Manual" about the difference between [Yes(- stack_protector)] and [Yes(All)(-stack_protector_all)]. This corresponds to the -stack_protector and -stack_protector_all options of the ccrl command. This property is displayed when [Always latest version which was installed] in the [Using compiler package version] property in the [Version Select] category from the [Common Options] tab is selected and the latest version is V1.02.00 or higher or when V1.02.00 or higher is selected in the [Using compiler package version] property.		
	Default	Configuration of the compile option	
	How to change	Select from the drop-down list.	
	Restriction	Yes(- stack_protector)	Detects the stack overflow.
		Yes(All)(- stack_protector_all)	Detects the stack overflow for all functions.
		No(None)	Does not detect the stack overflow.



Value to be embed- ded for detecting stack overflow	Specify the val This property is This correspon command. This property is	ue to be embedded for detecting the stack overflow. s usable only in the Professional Edition. ids to the -stack_protector and -stack_protector_all options of the ccrl s displayed in the following cases.	
	 When [Always latest version which was installed] in the [Using compiler package version] property in the [Version Select] category from the [Common Options] to selected and the latest version is V1.02.00 or higher or when V1.02.00 or higher selected in the [Using compiler package version] property When other than [No(None)] in the [Detect stack overflow] property is selected 		
	Default	Configuration of the compile option	
	How to change	Directly enter in the text box.	
	Restriction	striction 0 to 65535 (decimal number)	

(6)

[C Language] The detailed information on C language is displayed and the configuration can be changed.

Compile strictly according to ANSI standards	Select whether to process as making C source program comply strictly with the standard and output an error or warning for a specification that violates the stand This corresponds to the -ansi option of the ccrl command.			ce program comply strictly with the ANSI a specification that violates the standard. crl command.
	Default	Configuration of the compile option		
	How to change	Select from the drop-down list.		
	Restriction	Yes(-ansi) Processes as making C source program of strictly with the ANSI standard and output or warning for a specification that violates dard.		is making C source program comply he ANSI standard and outputs an error or a specification that violates the stan-
		No	Compatibility ifications is o warning is o	y with the conventional C language spec- conferred and processing continues after utput.
Check function with- out prototype declara- tion	Select whether tion was not m This correspor	her to generate an error when using a function whose prototype decla t made in advance or a function without a prototype declaration. ponds to the -refs_without_declaration option of the ccrl command.		
	Default	Configuration of the compile option		
	How to change	Select from the drop-down list.		
	Restriction	Yes(- refs_without_d	leclaration)	Checks functions without prototype declarations.
		No		Does not check functions without pro- totype declarations.
Set 0xffff bytes to max- imum variable size	Select whether This correspon	r to increase the ods to the -large_	maximum var _variable optio	iable size from 0x7fff to 0xffff. n of the ccrl command.
	Default	Configuration of	Configuration of the compile option	
	How to change	Select from the	e drop-down li	st.
	Restriction	Yes(-large_var	iable)	Increases the maximum variable size.
		No		Does not increase the maximum vari- able size.

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Allow nested com- ments	Select whethe This correspo	er to allow the nest use of comr nds to the -nest_comment opti	nents ("/**/"). on of the ccrl command.	
	Default	Configuration of the compile option		
	How to change	Select from the drop-down list.		
	Restriction	Yes(-nest_comment)	Allows the nest use of comments.	
		No	Does not allow the nest use of com- ments.	

(7)

[Character Encoding] The detailed information on character encoding is displayed and the configuration can be changed.

Character encoding	Select the character code to be used for Japanese/Chinese comments and character strings in the source file. This corresponds to the -character_set option of the ccrl command.			
	Default	Configuration of the compile option		
	How to change	Select from the drop-down list.		
	Restriction	Auto(None)	Interprets the Japanese character code in the source file as SJIS on Japanese OS. On other than Japanese OS, does not interpret the character code in the source file.	
		SJIS(-character_set=sjis)	Interprets the Japanese character code in the source file as SJIS.	
		EUC(- character_set=euc_jp)	Interprets the Japanese character code in the source file as EUC.	
		UTF-8(- character_set=utf8)	Interprets the Japanese character code in the source file as UTF-8.	
		Big5(-character_set=big5)	Interprets the Chinese character code in the source file as Traditional Chinese.	
		GBK(-character_set=gbk)	Interprets the Chinese character code in the source file as Simplified Chinese.	
		No-process(- character_set=none)	Does not interpret the Japanese/Chi- nese character code in the source file.	

(8) [Output Code]

The detailed information on output codes is displayed and the configuration can be changed.

Handle external vari- ables as if they are volatile qualified	Select whether address as if th This correspon	to handle all ext bey are volatile q ds to the -volatile	ternal variables and variables specified with #pragma ualified. e option of the ccrl command.
	Default	Configuration of the compile option	
	How to change	Select from the	e drop-down list.
	Restriction	Yes(-volatile)	Handles all external variables and variables specified with #pragma address as if they are volatile qualified.
	No	No	Optimizes external variables that are not volatile qualified.



Output code of switch statement	Select the code output mode for switch statements in programs. This corresponds to the -switch option of the ccrl command.		
	Default	Configuration of the compile option	
	How to change	Select from the drop-down list.	
	Restriction	Auto(None)	The ccrl selects the optimum output format.
		if-else(-switch=ife- lse)	Outputs the switch statements in the same for- mat as the if-else statement along a string of case statements in programs. Select this item if the case statements are written in the order of frequency or if only a few labels are used. Because the case statements are compared starting from the top, unnecessary compari- son can be reduced and the execution speed can be increased if the case statement that most often matches is written first.
		Binary search(- switch=binary)	Outputs the code in the binary search format for switch statements in programs. Searches for a matching case statement by using a binary search algorithm. If this item is selected when many labels are used, any case statement can be found at almost the same speed.
		Table jump(abso- lute)(- switch=abs_table)	Outputs the code in the table jump format (absolute branch) for switch statements in pro- grams. References a table indexed on the values in the case statements, and selects and pro- cesses case labels from the switch statement values. The code will branch to all the case state- ments with about the same speed. However, if case values are not used in suc- cession, an unnecessary area will be created.
		Table jump(rela- tive)(- switch=rel_table)	Outputs the code in the table jump format (rel- ative branch) for switch statements in pro- grams. References a table indexed on the values in the case statements, and selects and pro- cesses case labels from the switch statement values. The code will branch to all the case state- ments with about the same speed. However, if case values are not used in suc- cession, an unnecessary area will be created.



Output comment to assembly source file	Select whether to output a C source program as a comment to the assembly source file to be output. This corresponds to the -pass_source option of the ccrl command. This property is displayed only when [Yes(-asm_path)] in the [Output assembly source file] property in the [Output File] category is selected or when [Yes(-asmopt=- prn_path)] in the [Output assemble list file] property in the [Assemble List] category is selected.		
	Default	Configuration of the c	ompile option
	How to change	Select from the drop-down list.	
	Restriction	Yes(-pass_source)	Outputs a C source program as a comment to the assembly source file.
		No	Does not output a C source program as a comment to the assembly source file.
Merge string literals	When the sam and allocate to This correspor	ame string literals exist in the source file, specify whether to merge the e to the one area. ponds to the -merge_string option of the ccrl command.	
	Default	Configuration of the compile option	
	How to change	Select from the drop-down list.	
	Restriction	Yes(-merge_string)	Merges the same string literals exist in the source file and allocates to the one area.
		No	Each allocates the same string literals exist in the source file to separate areas.

(9) [Output File] The detailed information on output files is displayed and the configuration can be changed.

Object file name	Specify the name of the object file generated after compilation. The extension other than ".obj" cannot be specified. If the extension is omitted, ".obj" is automatically added. If this is blank, the file name will be the source file name with the extension replaced by ".obj". This corresponds to the -o option of the ccrl command.			
	Default	Blank		
	How to change	Directly enter in the text box.		
Restriction Up to 259 c		Up to 259 characte	to 259 characters	
Output assembly source file	Select whether source. This correspon	lect whether to output the assembly source file of the compile result for the C urce. is corresponds to the -asm_path option of the ccrl command.		
	Default	Configuration of the compile option		
	How to change	Select from the drop-down list.		
	Restriction	Yes(-asm_path)	Outputs the assembly source file of the compile result for the C source.	
		No	Does not output the assembly source file of the compile result for the C source.	



Output folder for assembly source file	Specify the folder which the assembly source file is output. If a relative path is specified, the reference point of the path is the main project or sub- project folder. If an absolute path is specified, the reference point of the path is the main project or subproject folder (unless the drives are different). The following placeholder is supported. %BuildModeName%: Replaces with the build mode name. The assembly source file is saved under the C source file name with the extension replaced by ".asm". If this is blank, it is assumed that the project folder has been specified. This corresponds to the -asm_path option of the ccrl command. This property is displayed only when [Yes(-asm_path)] in the [Output assembly source file] property is selected.			
	Default	Configuration	of the compile option	
	How to change	Directly enter i box which app	n the text box or edit by the Browse For Folder dialog ears when clicking the [] button.	
	Restriction	Up to 247 chai	racters	
Output preprocessed source file	preprocessed Select whether to output the execution result of file. This corresponds to the -P option of the ccrl co		Recution result of preprocessing for the source file to a non-	
	Default	Configuration of the compile option		
	How to change	Select from the drop-down list.		
	Restriction	Yes(-P)	Outputs the execution result of preprocessing for the source file to a file.	
		No	Does not output the execution result of preprocess- ing for the source file to a file.	
Output folder for pre- processed source file Specify the folder which the preprocessed source The file is output under the source file name with If a relative path is specified, the reference point or project folder. If an absolute path is specified, the reference point subproject folder (unless the drives are different) The following placeholder is supported. %BuildModeName%: Replaces with the build re If this is blank, it is assumed that the project folder This property is displayed only when [Yes(-P)] in the property is selected.		eprocessed source file is output. arce file name with the extension replaced by ".i". the reference point of the path is the main project or sub- trives are different). apported. ces with the build mode name. at the project folder has been specified. path option of the ccrl command. when [Yes(-P)] in the [Output preprocessed source file]		
	Default	Configuration	of the compile option	
	How to change	Directly enter i box which app	n the text box or edit by the Browse For Folder dialog ears when clicking the [] button.	
	Restriction	Up to 247 characters		

(10) [Assemble List]

The detailed information on the assemble list is displayed and the configuration can be changed.



Output assemble list file	Select whether to output the assemble list file. This corresponds to the -asmopt=-prn_path option of the ccrl command.			
	Default	t Configuration of the compile option Select from the drop-down list.		
	How to change			
	Restriction	Yes(-asmopt=-prn_path)	Outputs the assemble list file.	
		No	Does not output the assemble list file.	
Output folder for assemble list file	 Specify the folder which the assemble list file is output. The assemble list file is output under the source file name with the extension rep by ".prn". If a relative path is specified, the reference point of the path is the main project oproject folder. If an absolute path is specified, the reference point of the path is the main project subproject folder (unless the drives are different). The following placeholder is supported. %BuildModeName%: Replaces with the build mode name. If this is blank, it is assumed that the project folder has been specified. This corresponds to the -asmopt=-prn_path option of the ccrl command. This property is displayed only when [Yes(-asmopt=-prn_path)] in the [Output a ble list file] property is selected. 		is output. rce file name with the extension replaced bint of the path is the main project or sub- a point of the path is the main project or ent). uild mode name. folder has been specified. option of the ccrl command. smopt=-prn_path)] in the [Output assem-	
	Default	Configuration of the compile	option	
	How to changeDirectly enter in the text box or edit by the Browse For Folder dialog Box which appears when clicking the [] button.			
	Restriction	Up to 247 characters		

(11) [MISRA-C Rule Check]

The detailed information on the MISRA-C rule check are displayed and the configuration can be changed. 20*XX* in the following table corresponds to 2012 or 2004 in particular.

MISRA-C specification	Select the MISRA-C specification. This property is usable only in the Professional Edition. This property is displayed when [Always latest version which was installed] in the [Using compiler package version] property in the [Version Select] category from the [Common Options] tab is selected and the latest version is V1.02.00 or higher or when V1.02.00 or higher is selected in the [Using compiler package version] property.		
Default Configuration of the compile option		ption	
	How to change	Select from the drop-down list.	
	Restriction	MISRA-C 2012	Settings for MISRA-C 2012 are made in the subsequent properties.
		MISRA-C 2004	Settings for MISRA-C 2004 are made in the subsequent properties.



Apply rule	Select the MISRA-C rules to be applied. This property is usable only in the Professional Edition. This corresponds to the -misra20 <i>XX</i> option of the ccrl command.			
	Default	Configuration of the compile of	pption	
	How to change	Select from the drop-down list.		
	Restriction	Apply all rules(- misra20 <i>XX</i> =all)	Checks the source code against all of the rules which are supported.	
		Apply specified rule num- ber(-misra20 <i>XX</i> =apply)	Checks the source code against the rules with the specified numbers among the rules which are supported.	
		Ignore specified rule num- ber(-misra20XX=ignore)	Checks the source code against the rules that do not match the specified numbers among the rules which are supported.	
		Apply rules that are classi- fied as "required"(- misra20 <i>XX</i> =required)	Checks the source code against the rules of the "required" type.	
		Apply rules that are classi- fied as "required" and speci- fied rule number(- misra20 <i>XX</i> =required_add)	Checks the source code against the rules of the "required" type and the rules with the specified numbers among the rules which are supported.	
		Ignore specified rule number from rules that are classified as "required"(- misra20 <i>XX</i> =required_remov e)	Checks the source code against the rules of the "required" type except for the rules with the specified numbers among the rules which are supported.	
		Apply rules that are described in the specified file(-misra20XX= <file name>)</file 	Checks the source code against the rules with the numbers described in specified file among the rules which are supported.	
		Not apply rule(None)	Does not apply the MISRA-C rules.	
Rule number descrip- tion file	Specify the rule This property is The following p %BuildMode %MicomTool product. %ProjectNar This correspon This property is file(-misra20X)	le number description file (MISRA-C rule file). is usable only in the Professional Edition. placeholders are supported. eName%: Replaces with the build mode name. blPath%: Replaces with the absolute path of the install folder of this ume%: Replaces with the project name. nds to the -misra20 <i>XX</i> option of the ccrl command. is displayed only when [Apply rules that are described in the specified <i>X</i> = <file name="">)] in the [Apply rule] property is selected.</file>		
	Default	Configuration of the compile of	pption	
	How to change	Directly enter in the text box of dialog box which appears whe	r edit by the Specify MISRA-C Rule File on clicking the [] button.	
	Restriction	Up to 259 characters		



Rule number	Specify the rule This property is Specify at leas This correspor This property is misra20 <i>XX</i> =ap	e number to be checked. s usable only in the Professional Edition. t one rule number in decimal. nds to the -misra20 <i>XX</i> option of the ccrl command. s displayed only when [Apply specified rule number(- oply)] in the [Apply rule] property is selected.		
	Default	Configuration of the compile option		
	How to change	Directly enter in the text box or edit by the Specify Rule Number dia log box which appears when clicking the [] button.		
	Restriction	Up to 259 characters		
Exclusion rule number	Specify the rul This property is Specify at leas This correspor This property is misra20 <i>XX</i> =ign	e number to be excluded from the check. s usable only in the Professional Edition. t one rule number in decimal. nds to the -misra20 <i>XX</i> option of the ccrl command. s displayed only when [Ignore specified rule number(- nore)] in the [Apply rule] property is selected.		
	Default	Configuration of the compile option		
	How to change	Directly enter in the text box or edit by the Specify Rule Number dia- log box which appears when clicking the [] button.		
	Restriction	Up to 259 characters		
Check rule number besides required rule	Specify the rule This property is Specify at leas This correspon This property is specified rule r selected.	e number to be checked besides the required rules. s usable only in the Professional Edition. t one rule number in decimal. nds to the -misra20 <i>XX</i> option of the ccrl command. s displayed only when [Apply rules that are classified as "required" and number(-misra20 <i>XX</i> =required_add)] in the [Apply rule] property is		
	Default	Configuration of the compile option		
	How to change	Directly enter in the text box or edit by the Specify Rule Number dia- log box which appears when clicking the [] button.		
	Restriction	Up to 259 characters		
Exclusion rule number from required rule	Specify the rec This property is Specify at leas This correspon This property is classified as "r selected.	quired rule number to be excluded from the check. s usable only in the Professional Edition. t one rule number in decimal. nds to the -misra20 <i>XX</i> option of the ccrl command. s displayed only when [Ignore specified rule number from rules that are equired"(-misra20 <i>XX</i> =required_remove)] in the [Apply rule] property is		
	Default	Configuration of the compile option		
	How to change	Directly enter in the text box or edit by the Specify Rule Number dia- log box which appears when clicking the [] button.		
	Restriction	Up to 259 characters		



Rule check exclusion file	Specify files tha This property is The following p %BuildMode %MicomTool product. %ProjectNar This correspon This property is	at will not be checked against the MISRA-C rules. s usable only in the Professional Edition. blaceholders are supported. Name%: Replaces with the build mode name. IPath%: Replaces with the absolute path of the install folder of this me%: Replaces with the project name. Ids to the -ignore_files_misra option of the ccrl command. s displayed only in the following cases.	
	- When [Apply all rules] is selected in the [Apply rule] property		
	 When [Apply rules that are classified as "required"] is selected in the [Apply rule] property 		
	- When [Apply specified rule number] is selected in the [Apply rule] property and a rule number is specified in the [Rule number] property		
	- When [Ignore specified rule number] is selected in the [Apply rule] property and a rule number is specified in the [Rule number] property		
	 When [Apply rules that are classified as "required" and specified rule number] is selected in the [Apply rule] property and a rule number is specified in the [Check rule number besides required rule] property 		
	 When [Ignore specified rule number from rules that are classified as "required"] is selected in the [Apply rule] property and a rule number is specified in the [Exclusion rule number from required rule] property 		
	- When [Apply rule] property description fi	rules that are described in the specified file] is selected in the [Apply y and a rule number description file is specified in the [Rule number ile] property	
	Default	Configuration of the compile option	
	How to change	Edit by the Path Edit dialog box which appears when clicking the [] button.	





	Output message of the enhanced key word and extended specifi- cations	Select whether to output the message of the enhanced key word and extended speci- fications. This property is usable only in the Professional Edition. This corresponds to the -check_language_extention option of the ccrl command. This property is displayed only in the following cases.			
		- When [Apply all rules] is selected in the [Apply rule] property			
		- When [Apply rules that are classified as "required"] is selected in the [Apply rule] property			
		- When [Apply specified rule number] is selected in the [Apply rule] property and a rule number is specified in the [Rule number] property			
		- When [Ignore specified rule number] is selected in the [Apply rule] property and a rule number is specified in the [Rule number] property			
		 When [Apply rules that are classified as "required" and specified rule number] is selected in the [Apply rule] property and a rule number is specified in the [Check rule number besides required rule] property 			
		- When [Ignore specified rule number from rules that are classified as "required"] is selected in the [Apply rule] property and a rule number is specified in the [Exclusion rule number from required rule] property			
		- When [Apply rule] property description fi	 rules that are described in the y and a rule number description ile] property 	specified file] is selected in the [Apply file is specified in the [Rule number	
		Default	Configuration of the compile option		
		How to change	Select from the drop-down list		
		Restriction	Yes(- check_language_extension)	Enables MISRA-C rule check and outputs messages when the rule check is partially suppressed by the unique language specifications extended from the C language stan- dard.	
			No	Disables MISRA-C rule check is dis- abled, which are partially suppressed by the extended language specifica- tions.	

(12) [Error Output]

The detailed information on the error output is displayed and the configuration can be changed.

Output error message file	Select whether This correspon Error message This property is Method] catego	ether to output the error message file. sponds to the -error_file option of the ccrl command. sages are displayed on the Output panel regardless of this property's . erty is displayed only when [No] in the [Build in parallel] property in the [Build ategory from the [Common Options] tab is selected		
	Default	It Configuration of the common option		
	How to change	Select from the drop-down list.		
	Restriction	Yes(-error_file)	Outputs the error message file.	
		No	Does not output the error message file.	



put folder	If a relative path is specified, the reference point of the path is the main project or sub- project folder. If an absolute path is specified, the reference point of the path is the main project or subproject folder (unless the drives are different). The following placeholder is supported. %BuildModeName%: Replaces with the build mode name. If this is blank, it is assumed that the project folder has been specified. This corresponds to the -error_file option of the ccrl command. This property is displayed only when [Yes(-error_file)] in the [Output error message file] property is selected.		
	Default Configuration of the common option		
How to Directly enter in the tex change box which appears whe		Directly enter in the text box or edit by the Browse For Folder dialog box which appears when clicking the [] button.	
	Restriction	Up to 247 characters	
Error message file name	Specify the error The extension The following p %ActiveProject %ProjectNar If this is blank, This correspon This property is file] property is	or message file name. can be freely specified. blaceholders are supported. ectName%: Replaces with the active project name. ctName%: Replaces with the main project name. me%: Replaces with the project name. it is assumed that "%ProjectName%.err" has been specified. ds to the -error_file option of the ccrl command. s displayed only when [Yes(-error_file)] in the [Output error message selected.	
	Default	Configuration of the common option	
	How to change	Directly enter in the text box.	
	Restriction	Up to 259 characters	

(13) [Warning Message]

The detailed information on warning messages is displayed and the configuration can be changed.

Undisplayed warning message	Specify the number of the warning message not to be displayed. If multiple message numbers are specified, delimit them with "," (comma) (example: 20009,20011). Also, the range can be set using "-" (hyphen) (example: 20000-20100,20300-20500). This corresponds to the -no_warning option of the ccrl command.		
	Default Configuration of the common option		
	How to change	Directly enter in the text box or edit by the Character String Input dia- log box which appears when clicking the [] button.	
	Restriction	Up to 2048 characters	

(14) [Others]

Other detailed information on compilation is displayed and the configuration can be changed.

	The specified command is displayed as the subproperty.		
Default		Configuration of the compile option	
	How to change	Edit by the Text Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.	
	Restriction	Up to 1023 characters Up to 64 items can be specified.	

Specify the command to be executed before compile processing.

The following placeholders are supported.

Use the call instruction to specify a batch file (example: call a.bat).

%ActiveProjectName%: Replaces with the active project name.

%ActiveProjectDir%: Replaces with the absolute path of the active project folder.

Commands executed

before compile pro-

cessing



Commands executed after compile process- ing	Use the call instruction to specify a batch file (example: call a.bat). The following placeholders are supported. %ActiveProjectDir%: Replaces with the absolute path of the active project folder. %ActiveProjectName%: Replaces with the absolute path of the output file under compil- ing. %BuildModeName%: Replaces with the absolute path of the output file under compil- ing. %InputFile%: Replaces with the absolute path of the file to be compiled. %MainProjectDir%: Replaces with the absolute path of the main project folder. %MainProjectDir%: Replaces with the absolute path of the main project folder. %MainProjectName%: Replaces with the absolute path of the install folder of this product. %Options%: Replaces with the command line option under build execution. %OutputDir%: Replaces with the absolute path of the output folder. %OutputDir%: Replaces with the absolute path of the output folder. %OutputFile%: Replaces with the absolute path of the output folder. %OutputDir%: Replaces with the absolute path of the output folder. %OutputFile%: Replaces with the absolute path of the output folder. %OutputFile%: Replaces with the absolute path of the output folder. %Program%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectName%: Replaces with the absolute path of the project folder. %ProjectName%: Replaces with the absolute path of the temporary folder. %WinDir%: Replaces with the absolute path of the Windows system folder. When "#lpython" is described in the first line, the contents from the second line to the last line are regarded as the script of the Python console, and then executed after compile processing. The placeholders can be described in the script.		
	Default	Configuration of the compile option	
	How to change	Edit by the Text Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.	
	Restriction	Up to 1023 characters Up to 64 items can be specified.	
Other additional options	Input the compile option to be added additionally. The options set here are added at the end of the compile options group.		
	Default	Configuration of the compile option	
	How to change	Directly enter in the text box or edit by the Character String Input dialog box which appears when clicking the [] button.	
	Restriction	Up to 259 characters	



[Individual Assemble Options] tab

This tab shows the detailed information on an assemble source file categorized by the following and the configuration can be changed.

Note that this tab takes over the settings of the [Common Options] tab, [Compile Options] tab, and [Assemble Options] tab.

When the settings are changed from these tabs, the properties are displayed in boldface.

(1) [Debug Information]

- (2) [Optimization]
- (3) [Preprocess]
- (4) [Character Encoding]
- (5) [Output File]
- (6) [Assemble List]
- (7) [Error Output]
- (8) [Warning Message]
- (9) [Others]

備考 This tab is displayed only when [Yes] in the [Set individual assemble option] property in the [Build] category from the [Build Settings] tab is selected.

Image: Second system Property Panel: [Individual Assemble Options] Tab

Pro	perty	×	
837	system.asm Property	a p -+	
4	Debug Information		
	Add debug information	Yes(-g)	
4	Optimization		
	Outputs additional information for inter-module optimization	No	
4	Preprocess		
⊳	Additional include paths	Additional include paths[0]	
	Use whole include paths specified for build tool	Yes	
⊳	Macro definition	Macro definition[0]	
⊳	Macro undefinition	Macro undefinition[0]	
⊳	Character Encoding		
⊳	Output File		
₽	Assemble List		
⊳	Error Output		
₽	Warning Message		
Þ	Others		
Add debug information Specifies whether to generate the debug information. Such information is generated when debugging a			
program, just like the case or wishing to perform source debugging with debugger. This option corresponds to			
L B	Build Settings A Individual Assemble Options: File Information		



[Description of each category]

(1) [Debug Information]

The detailed information on debug information is displayed and the configuration can be changed.

Add debug information	Select whether It is possible to for source debut This correspon	r to generate the debug information. p perform source debugging with the debugger by outputting information ugging to the output file. hds to the -g option of the ccrl command. <i>Configuration of the assemble option</i>		
	Default			
	How to change	Select from the drop-down list.		
	Restriction	Yes(-g)	Generates the debug information.	
		No	Does not generate the debug information.	

(2) [Optimization]

The detailed information on the optimization is displayed and the configuration can be changed.

Outputs additional information for inter- module optimization	Select whether to output additional information for inter-module optimization. At linkage, inter-module optimization is applied to files for which this option has been specified. This corresponds to the -goptimize option of the ccrl command.			
	Default	Configuration of the assemble option		
	How to change	Select from the drop-down list.		
	Restriction	Yes(-goptimize)	Outputs additional information for inter-module optimization.	
		No	Does not outputs additional information for inter- module optimization.	

(3) [Preprocess]

The detailed information on preprocessing is displayed and the configuration can be changed.


Additional include paths	Specify the add The following p %ActiveProje %ActiveProje %BuildMode %MainProje %MicomToo product. %ProjectDir %ProjectDir %ProjectDir %ProjectNar %TempDir% %WinDir%: I The specified i file folder of CC The reference When this prop This correspon The specified i Uppercase cha paths.	 any the additional include paths during assembling. following placeholders are supported. ActiveProjectDir%: Replaces with the absolute path of the active project folder. ActiveProjectName%: Replaces with the build mode name. MainProjectDir%: Replaces with the build mode name. MainProjectName%: Replaces with the absolute path of the main project folder. MainProjectName%: Replaces with the absolute path of the main project folder. MainProjectName%: Replaces with the absolute path of the main project folder. MainProjectName%: Replaces with the absolute path of the install folder of this oduct. ProjectDir%: Replaces with the absolute path of the project folder. ProjectName%: Replaces with the absolute path of the project folder. ProjectName%: Replaces with the absolute path of the temporary folder. VinDir%: Replaces with the absolute path of the temporary folder. WinDir%: Replaces with the absolute path of the Windows system folder. specified include path is searched with higher priority than the standard include older of CC-RL. reference point of the path is the project folder. n this property is omitted, only the standard folder of CC-RL is searched. corresponds to the -I option of the ccrl command. specified include path is displayed as the subproperty. arcase characters and lowercase characters are not distinguished for the include standard. 		
	Default	Additional inclu	ude paths[number of defined items]	
	How to change	Edit by the Path Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.		
	Restriction	Up to 247 characters Up to 256 items can be specified.		
Use whole include paths specified for build tool	Select whether paths] property build tool to be The setting of t simultaneously tab is selected. This correspon - Paths specif Options] tab - Paths display	ty in the [Preprocess] category from the [Assemble Options] tab of the e used. if the [Compile Options] tab is used when [Yes] in the [Build [y] property in the [Build Method] category from the [Common Options] d. onds to the -I option of the ccrl command. ified in the [Additional include paths] property from this tab ified in the [Additional include paths] property from the [Assemble b		
	tab			
	Default	Yes		
	How to change	Select from the drop-down list.		
	Restriction	Yes	Assembles using the include path specified in the property of the build tool to be used.	
		No	Does not use the include path specified in the property of the build tool to be used.	



Macro definition	Specify the name of the specify in the formation of the specified of the s	me of the macro to be defined. format of " <i>macro name=defined value</i> ", with one macro name per line. <i>value</i> " part can be omitted, and in this case, "1" is used as the defined nds to the -asmopt=-define option of the ccrl command. macro is displayed as the subproperty.	
	Default	Configuration of the assemble option	
	How to change	Edit by the Text Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.	
	Restriction	Up to 256 characters Up to 256 items can be specified.	
Macro undefinition	Specify the ma Specify in the f This correspor The specified r	acro name to be undefined. format of " <i>macro name</i> ", with one macro name per line. nds to the -asmopt=-undefine option of the ccrl command. macro is displayed as the subproperty.	
	Default	Configuration of the assemble option	
	How to change	Edit by the Text Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.	
	Restriction	Up to 256 characters Up to 256 items can be specified.	

(4) [Character Encoding]

The detailed information on character encoding is displayed and the configuration can be changed.

Format of numerical constant	Specify the representation format of the base number of numerical constants. Example) Prefix format: 0xFFFF, Suffix format: FFFFH This corresponds to the -asmopt=-base_number option of the ccrl command.		
	Default	Configuration of the assemble option	
	How to change	Select from the drop-down list.	
	Restriction	Prefix format(None)	Handles numerical constants in the Prefix format.
		Suffix format(-asmopt=- base_number=suffix)	Handles numerical constants in the Suffix format.



Character encoding	Select the character code to be used for Japanese comments and character strings in the source file. This corresponds to the -character_set option of the ccrl command.		
	Default	Configuration of the assemble option	
	How to change	Select from the drop-down list.	
	Restriction	Auto(None)	Interprets the Japanese character code in the source file as SJIS on Japanese OS. On other than Japanese OS, does not interpret the character code in the source file.
		SJIS(-character_set=sjis)	Interprets the Japanese character code in the source file as SJIS.
		EUC(- character_set=euc_jp)	Interprets the Japanese character code in the source file as EUC.
		UTF-8(-character_set=utf8)	Interprets the Japanese character code in the source file as UTF-8.
		Big5(-character_set=big5)	Interprets the Chinese character code in the source file as Traditional Chinese.
		GB2312(- character_set=gb2312)	Interprets the Chinese character code in the source file as Simplified Chinese.
		No-process(- character_set=none)	Does not interpret the Japanese/ Chinese character code in the source file.

(5)

[Output File] The detailed information on output files is displayed and the configuration can be changed.

Object file name	Specify the name of the object file generated after assembling. The extension other than ".obj" cannot be specified. If the extension is omitted, ".obj" is automatically added. If this is blank, the file name will be the source file name with the extensio by ".obj". This corresponds to the -o option of the ccrl command.	
	Default	Blank
	How to change	Directly enter in the text box.
	Restriction	Up to 259 characters

[Assemble List] (6)

The detailed information on the assemble list is displayed and the configuration can be changed.

Output assemble list file	Select whether to output the assemble list file. This corresponds to the -asmopt=-prn_path option of the ccrl command.		
	Default	Configuration of the assemble option	
	How to change	Select from the drop-down list.	
	Restriction	Yes(-asmopt=-prn_path)	Outputs the assemble list file.
		No	Does not output the assemble list file.



Output folder for assemble list file	Specify the fold The assemble by ".prn". If a relative pat subproject fold If an absolute p subproject fold The following p %BuildMode If this is blank, This correspon This property is assemble list fi	der which the assemble list file is output. list file is output under the source file name with the extension replaced th is specified, the reference point of the path is the main project or er. bath is specified, the reference point of the path is the main project or er (unless the drives are different). blaceholder is supported. Name%: Replaces with the build mode name. it is assumed that the project folder has been specified. ids to the -asmopt=-prn_path option of the ccrl command. s displayed only when [Yes(-asmopt=-prn_path)] in the [Output ile] property is selected.
	Default	Configuration of the assemble option
	How to change	Directly enter in the text box or edit by the Browse For Folder dialog box which appears when clicking the [] button.
	Restriction	Up to 247 characters

(7) [Error Output]

The detailed information on the error output is displayed and the configuration can be changed.

Output error message file	Select whether to output the error message file. This corresponds to the -error_file option of the ccrl command. Error messages are displayed on the Output panel regardless of this property's. This property is displayed only when [No] in the [Build in parallel] property in the [Build Method] category from the [Common Options] tab is selected			
	Default	Configuration of the	common option	
	How to change	Select from the drop-down list.		
	Restriction	Yes(-error_file)	Outputs the error message file.	
		No	Does not output the error message file.	
Error message file output folder	Specify the folder which the error message file is output. If a relative path is specified, the reference point of the path is the main project or subproject folder. If an absolute path is specified, the reference point of the path is the main project or subproject folder (unless the drives are different). The following placeholder is supported. %BuildModeName%: Replaces with the build mode name. If this is blank, it is assumed that the project folder has been specified. This corresponds to the -error_file option of the ccrl command. This property is displayed only when [Yes(-error_file)] in the [Output error message file] property is selected.			
	Default	Configuration of the	ecommon option	
	How to change	How to changeDirectly enter in the text box or edit by the Browse For Folder dialog box which appears when clicking the [] button.		
	Restriction	Up to 247 characters		



Error message file name	Specify the erro The extension The following p %ActiveProje %ProjectNar If this is blank, This correspon This property is file] property is	or message file name. can be freely specified. blaceholders are supported. ectName%: Replaces with the active project name. ctName%: Replaces with the main project name. me%: Replaces with the project name. it is assumed that "%ProjectName%.err" has been specified. ids to the -error_file option of the ccrl command. s displayed only when [Yes(-error_file)] in the [Output error message selected.
	Default	Configuration of the common option
	How to change	Directly enter in the text box.
	Restriction	Up to 259 characters

(8) [Warning Message]

The detailed information on warning messages is displayed and the configuration can be changed.

Undisplayed warning message	Specify the number of the warning message not to be displayed. If multiple message numbers are specified, delimit them with "," (comma) (example: 20009,20011). Also, the range can be set using "-" (hyphen) (example: 20000-20100,20300-20500). This corresponds to the -no_warning option of the ccrl command.		
	Default	Configuration of the common option	
	How to change	Directly enter in the text box or edit by the Character String Input dialog box which appears when clicking the [] button.	
	Restriction	Up to 2048 characters	

(9) [Others]

Other detailed information on assembly is displayed and the configuration can be changed.



processing	 %ActiveProjectDir%: Replaces with the absolute path of the active project folder. %ActiveProjectName%: Replaces with the active project name. %AssembledFile%: Replaces with the absolute path of the output file under assembling. 			
	 %BuildModeName%: Replaces with the build mode name. %InputFile%: Replaces with the absolute path of the file to be assembled. %MainProjectDir%: Replaces with the absolute path of the main project folder. %MainProjectName%: Replaces with the absolute path of the install folder of this product. %Options%: Replaces with the command line option under build execution. %OutputDir%: Replaces with the absolute path of the output folder. %OutputFile%: Replaces with the absolute path of the output folder. %OutputFile%: Replaces with the absolute path of the output file. %Program%: Replaces with the program name under execution. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the temporary folder. %WinDir%: Replaces with the absolute path of the temporary folder. WinDir%: Replaces with the absolute path of the temporary folder. WinDir%: Replaces with the absolute path of the Windows system folder. 			
	Default	Configuration of the assemble option		
	How to change	Edit by the Text Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.		
	Restriction	Up to 1023 characters Up to 64 items can be specified.		



Commands executed after assemble processing	Specify the cor Use the call ins The following p %ActiveProj %Assembled assembling. %BuildMode %InputFile% %MainProje %MicomToo product. %Options%: %OutputDir% %OutputFile %Program% %ProjectDir %ProjectDir %ProjectDir %ProjectNar %TempDir% %WinDir%: When "#!pytho last line are reg assemble proc The placeholde The specified of	Use the call instruction to specify a batch file (example: call a.bat). The following placeholders are supported. %ActiveProjectDir%: Replaces with the absolute path of the active project folder. %AssembledFile%: Replaces with the absolute path of the output file under assembling. %BuildModeName%: Replaces with the build mode name. %InputFile%: Replaces with the absolute path of the file to be assembled. %MainProjectDir%: Replaces with the absolute path of the main project folder. %MainProjectDir%: Replaces with the absolute path of the main project folder. %MainProjectName%: Replaces with the absolute path of the install folder of this product. %Options%: Replaces with the command line option under build execution. %OutputDir%: Replaces with the absolute path of the output folder. %OutputDir%: Replaces with the absolute path of the output folder. %OutputDir%: Replaces with the absolute path of the output folder. %OutputDir%: Replaces with the absolute path of the output folder. %OutputDir%: Replaces with the absolute path of the output file. %Program%: Replaces with the program name under execution. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectDir%: Replaces with the absolute path of the project folder. %ProjectName%: Replaces with the absolute path of the temporary folder. %WinDir%: Replaces with the absolute path of the temporary folder. %WinDir%: Replaces with the absolute path of the temporary folder. %WinDir%: Replaces with the absolute path of the Windows system folder. When "#lpython" is described in the first line, the contents from the second line to the last line are regarded as the script of the Python console, and then executed after assemble processing. The placeholders can be described in the script.		
	Default	Configuration of the assemble option		
	How to change	Edit by the Text Edit dialog box which appears when clicking the [] button. For the subproperty, you can enter directly in the text box.		
	Restriction	Up to 1023 characters Up to 64 items can be specified.		
Other additional options	Input the asser The options se	mble option to be added additionally. It here are added at the end of the assemble options group.		
	Default	Configuration of the assemble option		
	How to change	Directly enter in the text box or edit by the Character String Input dialog box which appears when clicking the [] button.		
	Restriction	Up to 259 characters		



System Include Path Order dialog box

This dialog box is used to refer the system include paths specified for the compiler and set their specified sequence.

Figure A.15 System Include Path Order Dialog Box



The following items are explained here.

- [How to open]
- [Description of each area]
- [Function buttons]

[How to open]

- On the Property panel, select the following properties, and then click the [...] button.
 - From the [Common Options] tab, [System include paths] in the [Frequently Used Options(for Compile)] category, and [System include paths] in the [Frequently Used Options(for Assemble)] category
 - From the [Compile Options] tab, [System include paths] in the [Preprocess] category
 - From the [Assemble Options] tab, [System include paths] in the [Preprocess] category

[Description of each area]

(1) Path list display area

This area displays the list of the system include paths specified for the compiler.

(a) [Path]

This area displays the list of the system include paths in the specified sequence for the compiler. The default order is the order that the files are registered to the project. By changing the display order of the paths, you can set the specified order of the paths to the compiler. To change the display order, use the [Up] and [Down] buttons, or drag and drop the path names.

- Remark 1. Move the mouse cursor over a file name to display a tooltip with the absolute path of that file.
- Remark 2. Newly added system include paths are added next to the last path of the list.
- Remark 3. When the path names are dragged and dropped, the multiple path names which are next to each other can be selected together.
- (b) Button

Up	Moves the selected path to up.
Down	Moves the selected path to down.

Remark Note that above buttons are disabled when any path is not selected.



Button	Function
ОК	Sets the specified order of the paths to the compiler as the display order in the Path list display area and closes this dialog box.
Cancel	Cancels the specified order of the paths and closes the dialog box.
Help	Displays the help of this dialog box.



Specify Rule Number dialog box

This dialog box is used to select the number of the MISRA-C rule and set it to the area that this dialog box is called from.

[Specify the Rule Number	×
(1) —	Select items:	Cancel Cancel Enable All Disable All Help
		[Function buttons]

Figure A.16 Specify Rule Number Dialog Box

The following items are explained here.

- [How to open]
- [Description of each area]
- [Function buttons]

[How to open]

- On the Property panel, select the following properties, and then click the [...] button.
 - From the [Compile Options] tab, [Rule number], [Exclusion rule number], [Check rule number besides required rule], [Exclusion rule number from required rule] in the [MISRA-C Rule Check] category
 - From the [Individual Compile Options] tab, [Rule number], [Exclusion rule number], [Check rule number besides required rule] [Exclusion rule number from required rule] in the [MISRA-C Rule Check] category

[Description of each area]

(1) [Select items]

The list of the MISRA-C rule numbers which can be specified for the area that this dialog box is called from is displayed (ascending order).

Select the check boxes to set the rule number.

Remark In the area that this dialog box is called from, if a rule number is already set, the check box for that rule number will be selected by default.



Button	Function
ОК	Closes this dialog box and sets the selected rule number to the area that this dialog box is called from.
Cancel	Cancels the rule number selecting and closes the dialog box.
Enable All	Selects all the check boxes in [Select items].
Disable All	Clears all the check boxes in [Select items].
Help	Displays the help of this dialog box.



Section Settings dialog box

This dialog box is used to add, modify, or delete sections.

Figure A.17	Section Settings Dialog Box
-------------	-----------------------------

	Section Set	tings			
	Address	Section	Overlay1	Overlay2	<u>A</u> dd
	0x03000	.text_user01			Madži
		.text_user02			<u>m</u> ousy
		text_user03			New Qverlay
	0xFEF00	.text_user01R	.text_user02R	.text_user03R	Remove
(1) —					Up Down
					mport
					Export
[Function buttons]			ок	Cancel	Нер

The following items are explained here.

- [How to open]
- [Description of each area]
- [Function buttons]

[How to open]

- On the Property panel, select the following property, and then click the [...] button.
 - From the [Link Options] tab, [Section start address] in the [Section] category

[Description of each area]

(1) Address-section area

This area displays the list of currently configured section allocations.

- (a) [Address] This area displays the start addresses of the sections.
- (b) [Section] This area displays the names of the sections.
- (c) [Overlayn]
 This area displays the names of the sections to be overlaid (*n*: number starting with "1").



(d)

Button	
Add	 When selecting an address in this area Opens the Section Address dialog box. Adds the address specified in the dialog box to this area so that the addresses are listed in the ascending order (the section column remains empty).
	 When selecting a section in this area Opens the Add Section dialog box. Adds the section specified in the dialog box to this area. When there is no empty column in the section group (an address and the sections allocated to the address) where the specified section is to be included, a new section row is added to the bottom of the section group. When there is an empty column, the section is added there.
Modify	 When selecting an address in this area Opens the Section Address dialog box. Moves the section group according to the address specified in the dialog box so that the addresses are listed in the ascending order in this area.
	 When selecting a section in this area Opens the Modify Section dialog box. Replaces the section name selected in this area with the one specified in the dialog box. Note that this button is disabled when the selected sell is blank.
New Overlay	Opens the Add Overlay dialog box. Adds the [Overlay <i>n</i>] column in this area and sets the section specified in the dialog box in the column that corresponds to the selected section group.
Remove	 When selecting an address in this area Opens the Unassigned Section dialog box. Deletes the section selected in the dialog box from this area. If no sections are left in the section group, the section group itself is deleted.
	 When selecting a section in this area Deletes the selected section from this area. If no sections are left in the section group, the section group itself is deleted. If no section names are left in the [Overlayn] column, the column itself is deleted. Note that this button is disabled when the selected sell is blank.
Up	Moves up the selected section. However, if the column above the selected section is blank, no move can be made. Input in advance a section name to the above column. Note that this button is disabled when an address is selected or a blank section col- umn is selected.
Down	Moves down the selected section. However, if the column below the selected section is blank, no move can be made. Input in advance a section name to the column below. Note that this button is disabled when an address is selected or a blank section col- umn is selected.
Import	Opens the Select Import File dialog box. Acquires the section settings from the file specified in the dialog box and updates this area to reflect the acquired settings.
Export	Opens the Select Export File dialog box. Outputs the contents of this area to the file specified in the dialog box.



Button	Function
ОК	Reflects the specified section to the text box that opened this dialog box and closes this dialog box.
Cancel	Cancels the settings and closes this dialog box.
Help	Displays the help of this dialog box.



Add Section dialog box Modify Section dialog box Add Overlay dialog box

These dialog boxes are used to set a section name when adding, modifying, or overlaying a section, respectively.

Figure A.18 Add Sec	tion Dialog Box	
	Add Section	
(1) —	Section name:	
[Function buttons]	ОК	Cancel Help

Figure A.19 Modify Section Dialog Box

(Modify Sec	tion		X
(1) —	Section na	me:		•
[Function buttons]—		ОК	Cancel	Help

Figure A.20 Add Overlay Dialog Box

	Add Overla	sy		
(1) —	Section n	ame:		+
[Function buttons]—		ОК	Cancel	Help

The following items are explained here.

- [How to open]
- [Description of each area]
- [Function buttons]

[How to open]

- Add Section dialog box
 - On the Section Settings dialog box, select a section in the address-section area, and then click the [Add...] button.
- Modify Section dialog box
 - On the Section Settings dialog box, select a section in the address-section area, and then click the [Modify...] button.
- Add Overlay dialog box
 - On the Section Settings dialog box, click the [New Overlay...] button.

[Description of each area]

(1) [Section name] Specify the section name. Directly enter the section name in the text box or select from the drop-down list. The following characters can be used only: A-Z, a-z, 0-9, @, _, *, dot(.). Wildcard characters (*) can also be used. Note that numeric characters (0 to 9) and dot(.) cannot be used at the beginning of a section name. The following reserved sections are set in the drop-down list. .bss, .const, .data, .text

Button	Function
ОК	 Add Section dialog box Closes this dialog box and adds the specified section to the address-section area in the Section Settings dialog box. When there is no empty column in the section group (an address and the sections allocated to the address) where the specified section is to be included, a new section row is added to the bottom of the section group. When there is an empty column, the section is added there.
	 Modify Section dialog box Closes this dialog box and replaces the section name selected in the address- section area in the Section Settings dialog box with the one specified.
	 Add Overlay dialog box Closes this dialog box and adds the [Overlay<i>n</i>] column (<i>n</i>: number starting with "1") to the address-section area in the Section Settings dialog box. Sets the specified section in the column that corresponds to the selected section group.
Cancel	Cancels the settings and closes this dialog box.
Help	Displays the help of this dialog box.



Section Address dialog box

This dialog box is used to set an address when adding or modifying a section.

Figure A.21 Section Address Dialog Box



The following items are explained here.

- [How to open]
- [Description of each area]
- [Function buttons]

[How to open]

- On the Section Settings dialog box, select an address in the address-section area, and then click the [Add...] or [Modify...] button.

[Description of each area]

 (1) [Address] Specify the start address of the section.
 Directly enter the address in the text box or select from the button.
 The range that can be specified for the value is 0 to FFFFF (hexadecimal number) (default: 0).

Button	Function
ОК	- When opening from the [Add] button in the Section Settings dialog box Closes this dialog box and adds the specified address to an appropriate location in the address-section area in the Section Settings dialog box (the section column remains empty).
	- When opening from the [Modify] button in the Section Settings dialog box Closes this dialog box and moves the section group (an address and the sections allocated to the address) to an appropriate location in the address-section area in the Section Settings dialog box.
Cancel	Cancels the settings and closes this dialog box.
Help	Displays the help of this dialog box.



Unassigned Section dialog box

This dialog box is used to delete sections.

Figure A.22 Unassigned Section Dialog Box

	Unassigned Section	×
	Select section:	
(1) —	text_user01 text_user02 text_user03	OK Cancel
		Unassign <u>A</u> ll <u>H</u> elp
		[Function buttons]

The following items are explained here.

- [How to open]
- [Description of each area]
- [Function buttons]

[How to open]

- On the Section Settings dialog box, select an address in the address-section area, and then click the [Remove] button.

[Description of each area]

(1) [Select sections]

This area displays the name of all sections allocated to the address selected in the Section Settings dialog box. Select sections to be deleted by clicking their names.

You can select multiple sections by left clicking while holding down the [Ctrl] or [Shift] key.

Button	Function
ОК	Closes this dialog box and deletes the selected section from the address-section area in the Section Settings dialog box. Deletes the section group when the section group (an address and the sections allocated to the address) includes no section. If no sections are left in the [Overlay <i>n</i>] column in the address-section area, the column itself is deleted.
Cancel	Cancels the settings and closes this dialog box.
Unassign All	Closes this dialog box and deletes all the sections (the section group selected in the address-section area in the Section Settings dialog box).
Help	Displays the help of this dialog box.



Revision Record

Rev.	Date		Description		
		Page	Summary		
1.00	Feb 01, 2015	-	First Edition issued		
1.01	Aug 01, 2015	13	"Figure 2.4 Option Dialog Box ([General - Build] Category)" is replaced.		
		17	The description of the link map file name in "2.4.3 Output map information" is amended.		
		18	The description of the link map file name in "2.4.4 Output library information" is amended.		
		19	"Figure 2.18 Property Panel: [Compile Options] Tab" is replaced.		
		20	"Figure 2.19 [Level of optimization] Property (Code Size Precedence)" is replaced.		
		20	"Figure 2.20 [Level of optimization] Property (Execution Speed Precedence)" is replaced.		
		44	"Figure 2.67 Property Panel: [Individual Compile Options] Tab" is replaced.		
		49	"Figure 2.76 [Update I/O header file on build] Property" is replaced.		
		51	The description of "Specify Rule Number dialog box" in table A.1 is amended.		
		52	"Figure A.1 Property Panel" is replaced.		
		56	"Figure A.2 Property Panel: [Common Options] Tab" is replaced.		
		57	The following property is added to "(1) [Build Mode]". Change property value for all build modes at once		
		58	The description of the [Output file type] property in "(3) [Output File Type and Path]" is amended.		
		59	The Restriction values of the [Level of optimization] property in "(3) [Frequently Used Options(for Compile)]" are amended. Default Optimization(None) -> Perform the default optimization(None) Code Size Precedence(-Osize) -> Code size precedence(-Osize) Speed Precedence(-Ospeed) -> Speed precedence(-Ospeed) Debug Precedence(-Onothing) -> Debug precedence(-Onothing)		
		63	The display condition is deleted from the description of the [Output folder] property in "(6) [Frequently Used Options(for Link)]".		
63 75		63	The display condition is deleted from the description of the [Output file name] property in "(6) [Frequently Used Options(for Link)]".		
		75	The list of category names on the [Compile Options] tab is amended.		
		75	"Figure A.3 Property Panel: [Compile Options] Tab" is replaced.		
		76	The following property is added to "(1) [Debug Information]". Enhance debug information with optimization		
		77	The Restriction values of the [Level of optimization] property in "(3) [Frequently Used Options(for Compile)]" are amended. Default Optimization(None) -> Perform the default optimization(None) Code Size Precedence(-Osize) -> Code size precedence(-Osize) Speed Precedence(-Ospeed) -> Speed precedence(-Ospeed) Debug Precedence(-Onothing) -> Debug precedence(-Onothing)		
		80	The following property is added to "(3) [Optimization(Details)]". Create subroutine for same instruction sequence		

Rev.	Date	Description		
		Page Summary		
		83-84	The following category is added to the [Compile Options] tab. (5) [Quality Improvement]	
		87	The Restriction value of the [Structure packing] property in "(9) [Output Code]" is amended. No(None) -> No	
		91	The category name of (12) is amended as shown below. [MISRA-C:2004 Rule Check] → [MISRA-C Rule Check] A sentence at the beginning is amended.	
		91	The following property is added to "(12) [MISRA-C Rule Check]". MISRA-C specification	
		92-95	The fact that properties are usable only in the Professional Edition is added to the description of all properties in "(12) [MISRA-C Rule Check]". The following amendments are made in the description and Restriction. -Xmisra2004 -> -Xmisra20XX MISRA-C:2004 -> MISRA-C	
	102	The Restriction value of the [Use support for porting from assembler of CA78K0R] property in "(6) [Others]" is amended. No(None) -> No		
	107	The display condition for Restriction is added to the description of the [Optimization type] property in "(2) [Optimization]". The followings are added to Restriction. Speed-oriented optimization(-OPtimize=SPeed) Safe optimization(-OPtimize=SAFe)		
	107, 108	The following properties are added to "(2) [Optimization]". Deletes variables/functions that are not referenced Unreferenced symbol that disables deletion by optimization		
		108	The default of the [Section to disable optimization] property in "(2) [Optimization]" is amended.	
		108	The default of the [Address range to disable optimization] property in "(2) [Optimiza- tion]" is amended.	
	121	In the description of the [Variables/functions information header file name] property in "(9) [Variables/functions information]", the description on the case where the extension was omitted is amended.		
		124	The name of the [Check allocation that crosses 64KB boundary] property in "(11) [Verify]" is amended. Check allocation that crosses 64KB boundary -> Suppress checking section allocation that crosses (64KB-1) boundary In accordance with the above change, the description of the property and the description of the Restriction values are amended.	
		135	The description of the [Target range] property in "(3) [CRC Operation]" is amended.	
		136	The description of the [Type of CRC] property in "(3) [CRC Operation]" is amended. The followings are added to Restriction. CCITT type CRC-CCITT(MSB,LITTLE,4 bytes) type CRC-CCITT(MSB,LITTLE,2 bytes) type 16 32-ETHERNET type	
		136	The Restriction values of the [Initial value] property in "(3) [CRC Operation]" are amended.	

Rev.	Date	Description	
		Page Summary	
		152	"Figure A.8 Property Panel: [I/O Header File Generation Options] Tab" is replaced.
		152	The description of the following Restriction values of the [Update I/O header file on build] property in "(1) [I/O Header File]" is amended. Yes(Checking the device file) Yes(Checking the property) Yes(Checking the device file and the property)
		153	The display condition is deleted from the description of the [Output 1bit access] property in "(1) [I/O Header File]".
		153	The following property is added to "(1) [I/O Header File]". Enable MISRA-C option
		157	The list of category names on the [Individual Compile Options] tab is amended.
		158	"Figure A.13 Property Panel: [Individual Compile Options] Tab" is replaced.
		159	The following property is added to "(1) [Debug Information]". Enhance debug information with optimization
		159	The Restriction values of the [Level of optimization] property in "(2) [Optimization]" are amended. Default Optimization(None) -> Perform the default optimization(None) Code Size Precedence(-Osize) -> Code size precedence(-Osize) Speed Precedence(-Ospeed) -> Speed precedence(-Ospeed) Debug Precedence(-Onothing) -> Debug precedence(-Onothing)
		162	The following property is added to "(3) [Optimization(Details)]". Create subroutine for same instruction sequence
		165- 166	The following category is added to the [Individual Compile Options] tab. (5) [Quality Improvement]
		171	The category name of (11) is amended as shown below. [MISRA-C:2004 Rule Check] -> [MISRA-C Rule Check] A sentence at the beginning is amended.
		171	The following property is added to "(11) [MISRA-C Rule Check]". MISRA-C specification
		172- 175	The fact that properties are usable only in the Professional Edition is added to the description of all properties in "(11) [MISRA-C Rule Check]". The following amendments are made in the description and Restriction. -Xmisra2004 -> -Xmisra20XX MISRA-C:2004 -> MISRA-C
		190	The following amendment is made throughout the description of the Specify Rule Number dialog box. MISRA-C:2004 -> MISRA-C

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