

Programmable Controller

MELSEG Q series

C Controller Module User's Manual (Utility Operation, Programming)

-Q12DCCPU-V (Basic mode) -Q06CCPU-V -Q06CCPU-V-B -SW3PVC-CCPU-E





(Read these precautions before using this product.)

Before using this product, please read this manual and the relevant manuals carefully and pay full attention to safety to handle the product correctly.

The instructions given in this manual are concerned with this product only. For the safety instructions of the programmable controller system, please read the CPU module user's manual.

In this manual, the safety precautions are classified into two levels: "/N WARNING" and "/N CAUTION".



Under some circumstances, failure to observe the precautions given under "ACAUTION" may lead to serious consequences.

Observe the precautions of both levels because they are important for personal and system safety.

Make sure that the end users read this manual and then keep the manual in a safe place for future reference.

[Design Precautions]

- Configure safety circuits external to the C Controller module to ensure that the entire system operates safely even when a fault occurs in the external power supply or the C Controller module. For the following controls, configure an interlock circuit in the user program to ensure that the entire system will always operate safely.
 - (1) Changing data of the running C Controller module from the development environment (personal computer) connected
 - (2) Changing the operating status
 - (3) Operating from the development environment (personal computer)

Especially, in the case of control from an external device to a remote C Controller module, immediate action cannot be taken for a problem on the C Controller module due to a communication failure. To prevent this, configure an interlock circuit in the user program, and determine corrective actions to be taken between the external device and C Controller module in case of a communication failure.

[Security Precautions]

To maintain the security (confidentiality, integrity, and availability) of the C Controller module and the system against unauthorized access, denial-of-service (DoS) attacks, computer viruses, and other cyberattacks from external devices via the network, take appropriate measures such as firewalls, virtual private networks (VPNs), and antivirus solutions.

[Setup and Maintenance Precautions]

- Configure safety circuits external to the C Controller module to ensure that the entire system operates safely even when a fault occurs in the external power supply or the C Controller module. For the following controls, configure an interlock circuit in the user program to ensure that the entire system will always operate safely.
 - (1) Changing data of the running C Controller module from the development environment (personal computer) connected
 - (2) Changing the operating status
 - (3) Operating from the development environment (personal computer)

Especially, in the case of control from an external device to a remote C Controller module, immediate action cannot be taken for a problem on the C Controller module due to a failure of data communication.

To prevent this, configure an interlock circuit in the user program, and determine corrective actions to be taken between the external device and C Controller module in case of a failure of data communication.

Before performing online operations (especially, program modification, forced output, and operation status change) for the running C Controller module from the peripheral connected, read relevant manuals carefully and ensure the safety.

Improper operation may damage machines or cause accidents.

CONDITIONS OF USE FOR THE PRODUCT

(1) MELSEC programmable controller ("the PRODUCT") shall be used in conditions;

i) where any problem, fault or failure occurring in the PRODUCT, if any, shall not lead to any major or serious accident; and

ii) where the backup and fail-safe function are systematically or automatically provided outside of the PRODUCT for the case of any problem, fault or failure occurring in the PRODUCT.

(2) The PRODUCT has been designed and manufactured for the purpose of being used in general industries. MITSUBISHI ELECTRIC SHALL HAVE NO RESPONSIBILITY OR LIABILITY (INCLUDING, BUT NOT LIMITED TO ANY AND ALL RESPONSIBILITY OR LIABILITY BASED ON CONTRACT, WARRANTY, TORT, PRODUCT LIABILITY) FOR ANY INJURY OR DEATH TO PERSONS OR LOSS OR DAMAGE TO PROPERTY CAUSED BY the PRODUCT THAT ARE OPERATED OR USED IN APPLICATION NOT INTENDED OR EXCLUDED BY INSTRUCTIONS, PRECAUTIONS, OR WARNING CONTAINED IN MITSUBISHI ELECTRIC USER'S, INSTRUCTION AND/OR SAFETY MANUALS, TECHNICAL BULLETINS AND GUIDELINES FOR the PRODUCT. ("Prohibited Application")

Prohibited Applications include, but not limited to, the use of the PRODUCT in;

- Nuclear Power Plants and any other power plants operated by Power companies, and/or any other cases in which the public could be affected if any problem or fault occurs in the PRODUCT.
- Railway companies or Public service purposes, and/or any other cases in which establishment of a special quality assurance system is required by the Purchaser or End User.
- Aircraft or Aerospace, Medical applications, Train equipment, transport equipment such as Elevator and Escalator, Incineration and Fuel devices, Vehicles, Manned transportation, Equipment for Recreation and Amusement, and Safety devices, handling of Nuclear or Hazardous Materials or Chemicals, Mining and Drilling, and/or other applications where there is a significant risk of injury to the public or property.

Notwithstanding the above restrictions, Mitsubishi Electric may in its sole discretion, authorize use of the PRODUCT in one or more of the Prohibited Applications, provided that the usage of the PRODUCT is limited only for the specific applications agreed to by Mitsubishi Electric and provided further that no special quality assurance or fail-safe, redundant or other safety features which exceed the general specifications of the PRODUCTs are required. For details, please contact the Mitsubishi Electric representative in your region.

(3) Mitsubishi Electric shall have no responsibility or liability for any problems involving programmable controller trouble and system trouble caused by DoS attacks, unauthorized access, computer viruses, and other cyberattacks.

*The manual number is given on the bottom left of the back cover.

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Japanese manual version SH-080765-Q

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PRECAUTIONS

The following precautions are given in this section.

Precautions	Reference page
For installation, uninstallation	Page A-6
For each utility	Page A-6
For programming	Page A-7
For debugging a program	Page A-11
For using FTP	Page A-16
For the Wind River Systems product	Page A-16

(1) Precautions for installation and uninstallation

- (a) Installation by overwriting
 - When installing utility by overwriting, the same folder where the existing one is installed must be used.
 - Any other folders cannot be used.
 - Installation by overwriting is available only onto the same version of SW3PVC-CCPU.

To install another version of utility, uninstall existing one before installation.

(b) Uninstallation

Do not terminate uninstallation during processing.

If terminated, redo the uninstallation all over again.

If the uninstallation fails after terminating the uninstallation, reinstall the software and then uninstall it again.

(2) Precautions for utility

(a) Communication error of utility

When the line is congested, communication errors (time out errors) are more likely to occur (monitoring stops if running) in each utility. If a utility communication error has occurred, set the connection target again in Connection setting.

- (b) Connection during script file processing
 Connection from utility to a C Controller module may not be available during processing a script file (while the RUN LED is flashing).
 Finish the script file processing before connecting utility to a C Controller module.
 If the RUN LED remains flashing, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation) and troubleshoot the problem.
- (c) Terminating Microsoft[®] Windows[®]

Do not terminate Microsoft[®] Windows[®] while utility other than Device monitoring utility is running.

Terminate all the running utility (other than Device monitoring utility) first and then Microsoft[®] Windows[®].

(d) Parameters

Parameters written from utility other than Device monitoring utility to a C Controller module will take effect when the C Controller module is powered off and then on or is reset.

Written parameters will not take effect by changing the C Controller module status from STOP to RUN by remote operation or by a switch.

(3) Precautions for programming

- (a) Restrictions on the bus interface functions and MELSEC data link functions
 - 1) Endian format (memory layout)

There are two models of the Q06CCPU-V(-B), which are in little endian format (memory layout) and in big endian format. Create user programs in either little or big endian that is appropriate to the model used. (Set the compiler by selecting "A toolchain" when creating a project on Tornado. (

2) User program execution

Execute a user program by starting a task from the script file.

(Page 9-51, Section 9.9)

The system may malfunction if the user program is executed without a task being started.

3) Execution type priority

Set the priority of a task for executing the FTP user program as described below.

[When access is not made via FTP during user program execution] Set the priority of the user program task to 100 or more (100 to 255). If the priority is set within 0 to 99, the system may not operate properly.

[When access is made via FTP during user program execution] The actual FTP processing (task) of the C Controller module is performed at the priority of 200.

When accessing via FTP during executing a user program, perform programming as described below.

- Set the priority of the user program task within 201 to 255.
- When setting the priority of the user program task within 100 to 200, insert a wait processing (such as taskDalay) in the user program to let the actual FTP processing operate.

4) To communicate with a target device by Ethernet communication (excluding utility communications)
Check the port number being used in the C Controller module by using the VxWorks- standard "inetstatShow" command.
Do not use any port number that has already been used. Normal communication may not be available if used.

Execute the "inetstatShow" command as follows: [For the Q12DCCPU-V] Use the Telnet tool. [For the Q06CCPU-V(-B)] Execute from the Tornado Shell.

Example) When using the Telnet tool on the Q12DCCPU-V



Figure A.1 When using Telnet tool on the Q12DCCPU-V

5) When writing a file from a user program in the Q06CCPU-V(-B) Do not write a file to the standard ROM. Write it to a CompactFlash card, network device (such as FTP/NFS/netDrv driver) file, or RAM disk. For details of network devices and RAM disks, refer to the manual for VxWorks.
6) When the operation status is changed from RUN to STOP/PAUSE When the operation status of the C Controller module is changed from RUN to

STOP/PAUSE, the user program task does not stop. Use the QBF_Read StatusEx function when splitting the user program processing according to the operation status of the C Controller module. 7) Relation between system tasks and the system watchdog timer, user watchdog timer, and link device refresh cycles

When using any of the following functions, set a sufficiently long time for each of the system watchdog timer, user watchdog timer, and link device refresh cycles.

- Shell command
- Workbench/Tornado connection
- File access
- Mount/unmount of CompactFlash card
- Ethernet communications
- NFS server communication

If any of the above is used, CPU utilization for a system task with high priority may increase and a system watchdog timer error, a user watchdog timer error, and link refresh timeout may occur more frequently.

For the link refresh timeout, the rate of occurrence may also increase when bus interface driver processing (connections with peripheral devices or communication with an intelligent function module, etc.) is used.

8) Common restrictions

For restrictions common to the bus interface functions and MELSEC data link functions, refer to the following.

Page 9-26, "9.6 Precautions for Functions"

- (b) Restrictions on the bus interface function
 - 1) Clock setting

Do not set the clock of the C Controller module while the QBF_WaitEvent function or the QBF_WaitUnitEvent function is in process.

- Execution results of remote STOP/PAUSE and the bus interface function When the operation status of the C Controller module is either the remote STOP or remote PAUSE, the following execution results will be an error during STOP/PAUSE.
 - Output (Y) (QBF_Y_OutBitEx function, QBF_Y_OutWordEx function)
 - Writing to buffer memory (QBF_ToBuf function)

The Y output and writing to buffer memory can be executed from the <<Module monitoring>> tab of the C Controller setting utility.

3) Restrictions on the bus interface function

Refer to the following.

Page 9-23, "9.5 Programming Flow for Bus Interface Functions"

(c) Precautions on MELSEC data link functions

Opening and closing of a communication line (mdOpen and mdClose functions) is allowed only once each at the start (task start) and the end (task end) of each user program.

Repeating opening/closing in every communication degrades communication performance.

For the Q06CCPU-V-B, the MELSEC data link functions cannot be used. For restrictions on MELSEC data link functions, refer to the following.

Page 10-5, "10.5 MELSEC Data Link Function Programming Flow"

- (d) Login user
 - 1) Default account

To prevent illegal access, delete the default account (User name and password) using the loginUserDelete function.

2) Retaining login user setting

The login user settings are cleared and return to default when the C Controller module is powered off or is reset.

To retain the login user settings, describe a registration (adding/deleting) of the settings in a script file.

Describe either of the following in the script file.

- Directly describe the login user operation commands (loginUserAdd function or loginUserDelete function).
- Provide a description that starts the user program task for login user operation.

For login user settings, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

(e) Power off and reset during writing a user file

Data corruption or a file system error may occur if the C Controller system is powered off or is reset (including remote RESET) during writing data to a user file in the standard RAM, standard ROM, or CompactFlash card. To power off or reset the C Controller system during writing data to a user file in the standard RAM, standard ROM, or CompactFlash card, perform the following first.

- When writing data to a file in the standard RAM or standard ROM Close the file where data are being written. (Program example Page 12-1, CHAPTER 12)
- When writing data to a file in a CompactFlash card
 Close the file where data are being written, and unmount the CompactFlash card. (Program example 27 Page 12-1, CHAPTER 12)

For the stop processing of the CompactFlash card, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

(f) Watchdog timer

A user watchdog timer error occurs when the user watchdog timer cannot be reset due to some reasons such as user program runaway.

When a user watchdog timer occurs, perform the following.

- Increase the WDT time set by the QBF_StartWDT function.
- Lower the CPU utilization of tasks that require high utilization. Or set them not to operate.
- Review user programs.

After the above operations, reset the C Controller system. For resetting, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

(g) IP address

The IP address of the C Controller module cannot be set from a user program. Set in the <<Online operation>> tab of C Controller setting utility. (h) Script file "STARTUP.CMD"

In the script file, describe commands for setting a login user (adding/deleting) and user program startups as necessary.

· Setting a login user

C Controller Module User's Manual (Hardware Design, Function Explanation)

Creating a script file

Page 9-51, "9.9 Creating a Script File "STARTUP.CMD""

(i) Task activation

Always specify the VX_FP_TASK option for the third argument of taskSpawn when activating a task that:

- Performs floating-point operations.
- Calls a function that returns a floating-point value.
- · Calls a function that takes a floating-point value as an argument.

If the above task is activated without the VX_FP_TASK option specified, the operating system may run away.

When specifying the VX_FP_TASK option in a script file, refer to the following.

For details on the VX_FP_TASK option, refer to the following.

(4) Precautions for program debugging

(a) VxWorks image file

When debugging a user program, specify the VxWorks image file same as the one in the C Controller module to Workbench or to Tornado. The serial No. and function version of the file to be specified must be identical with those of the C Controller module. (Example for Q12DCCPU-V: Q12DCCPU-V: Q12DCCPU-V: 40101 P)

V_10121-B) (Page 9-31, Section 9.7)

- When VxWorks image files are not identical When the VxWorks image file in the development environment (personal computer) and in the C Controller module are not identical, copy the image file in the C Controller module into the development environment (personal computer). ([] Page 9-46, Section 9.8) The image file of the C Controller is stored in the system drive (/SYSTEMROM/ OS_IMAGEFILE).
- 2) When connected with the different VxWorks image file specified When the VxWorks image file in the C Controller module and in Workbench or Tornado are not identical, a system watchdog timer error may occur in the C Controller module.

In addition, debugging cannot be performed normally. ([Page 9-31, Section 9.7)

(b) Precautions for Telnet connection

If the line is disconnected during use of Telnet, it cannot be reconnected until TCP connection including the Telnet on the C Controller module side is timed out. If this occurs, reconnect it after timeout.

The timeout time for the C Controller module side Telnet (TCP) connection can be changed by setting the values in the calculation formula by the following setting methods.

[Calculation formula for the Q12DCCPU-V] The timeout time is determined by the following calculation formula.

Timeout time = ne	t.inet.tcp.keepidle		
+ (net.inet.tcp.keepintvl × 8 (number of retries) ^{*1}) [ms]			
In	itial value for C Controller module: 30000 (30 seconds)		
Ir	itial value for VxWorks: 7800000 (2 hours and 10 minutes)		
net.inet.tcp.keepidle:	Time from line disconnection to the first retry (ms)		
	Initial value for C Controller module: 22000		
	Initial value for VxWorks: 7200000		
net.inet.tcp.keepintvl:	Retry interval (ms)		
	Initial value for C Controller module: 1000		
	Initial value of VxWorks: 75000		
* 1 The number of retrie	* 1 The number of retries cannot be changed.		

[Setting method for the Q12DCCPU-V]

The following explains how to set the initial value to 30 seconds.

- Setting while the C Controller module is in operation
 - 1) Connect the line to the C Controller module with the Telnet tool.
 - 2) Execute the following two Sysct1() commands with the Telnet tool to set the timeout time to the initial value.
 Sysctl("net.inet.tcp.keepidle = 22000")

-	•	-	-	
Svso	ctl("net.ir	net.tcp.k	eepintvl	= 1000")

3) Close the Telnet connection.

· Setting at the timing of starting C Controller module

1) Describe the following two Sysct1() commands on the script file, "STARTUP.CMD".

Sysctl("net.inet.tcp.keepidle = 22000")	
Sysctl("net inet tcp keepintyl = 1000")	

- 2) Write the above script file, "STARTUP.CMD" to a CompactFlash card, and insert it into the C Controller module.
- 3) Upon start of the C Controller module, the timeout time is set to the initial value.

[Calculation for the Q06CCPU-V(-B)]

The timeout time is determined by the following calculation formula.

Timeout time = $tcp_keepidle + (tcp_keepintvl \div 2 \times tcp_keepcnt) [s]$			
	Initial value: 15000 (4 hours and 10 minutes)		
tcp_keepidle:	Time from line disconnection to the first retry (s)		
	Initial value: 14400		
tcp_keepintvl:	Retry interval (in 0.5s units)		
	Initial value: 150		
tcp_keepcnt:	Number of retries		
	Initial value: 8		

[Settings methods for the Q06CCPU-V(-B)]

The following explains how to set the initial value to 4 hours and 10 minutes.

- Setting while the C Controller module is in operation
 - 1) Connect the line to the C Controller module with the Telnet tool.
 - 2) Set the following three external variables with the Telnet tool to change the timeout time to the initial value.

tcp_keepidle = 14400	
tcp_keepintvl = 150	
tcp_keepcnt = 8	

- 3) Close the Telnet connection.
- Setting at the timing of starting the C Controller module
 - 1) Describe the following three external variable settings on the script file, "STARTUP.CMD".

tcp_keepidle = 14400	
tcp_keepintvl = 150	
tcp_keepcnt = 8	
	· .

- 2) Write the above script file, "STARTUP.CMD" to a CompactFlash card, and insert it into the C Controller module.
- 3) Upon start of the C Controller module, the timeout time is set to the initial value.

- (c) Precautions for executing the Shell command from Workbench Shell or Tornado Shell, or the Telnet tool
 - 1) When executing the Shell command from Workbench Shell or Tornado Shell Pay attention to the following since the entered Shell commands operate on the task of priority 1 in the C Controller module.
 - Only alphanumeric characters and special characters can be used.
 - Some commands, such as those exclusively using the CPU module and those including characters other than alphanumeric characters and special characters, may be regarded as a command causing a watchdog timeout error, a control code (such as "CTRL + X"), or being garbled. As a result, a system error, such as a system watchdog timer error, or stop may occur in the C Controller module. Pay full attention to the command when entering it.
 - Some commands (example: the status-indicating Show command) may disable an interrupt for a long time.

During the time, processing called from an interrupt routine (interrupt program) (example: bus interface function for ISR) is not executed. Interrupts that are expected to occur at fixed intervals, such as multiple CPU synchronous interrupt, may delay. When executing a command, pay attention to the above.

A VxWorks message may appear on Shell during connecting from Shell to the C Controller module.

For messages of VxWorks, refer to the manual for VxWorks, Workbench, or Tornado.

2) When executing the Shell command from the Telnet tool
When executing a Shell command from the Telnet tool, make one-to-one connection between the Telnet tool and the C Controller module.
Connection cannot be made from multiple Telnet tools to the same C Controller module.
When exchanging the Telnet tool with another, first close the connection with

the currently used Telnet tool, and then connect the line to the C Controller module from another Telnet tool.

For Telnet functions, refer to C Controller Module User's Manual (Hardware Design, Function Explanation).

The Shell commands entered by the Telnet tool of the development environment (personal computer) operate on the task of the following priorities in the C Controller module.

C Controller module	Priority
Q12DCCPU-V	1
Q06CCPU-V(-B)	2

When using Shell commands, pay attention to the following:

- Only alphanumeric characters and special characters can be used.
- Some commands, such as those exclusively using the CPU module and those including characters other than alphanumeric characters and special characters, may be regarded as a command causing a watchdog timeout error, a control code (such as "CTRL + X"), or being garbled. As a result, a system error, such as a system watchdog timer error, or stop may occur in the C Controller module. Pay full attention to the command when entering it.
- Some commands (example: the status-indicating Show command) may disable an interrupt for a long time.

During the time, processing called from an interrupt routine (interrupt program) (example: bus interface function for ISR) is not executed. Interrupts that are expected to occur at fixed intervals, such as multiple CPU synchronous interrupt, may delay. When executing a command, pay attention to the above.

A VxWorks message may appear on the Telnet tool screen during a Telnet connection to the C Controller module.

For messages of VxWorks, refer to the manual for VxWorks, Workbench, or Tornado.

- 3) When executing the Shell command from Workbench Shell or Tornado Shell, or the Telnet tool
 - Execution of VxWorks reboot command

Do not reboot VxWorks by executing the reboot function or pressing the CTRL + X keys.^{*1}

If VxWorks is rebooted, the C Controller module does not start properly. Reset it in the C Controller module.

For resetting, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

- * 1 Do not enter characters other than alphanumeric characters or special characters in Shell either since they may be regarded as a control code.
 - Execution of command without argument specified

If a command that requires an argument is executed without an argument specified, 0 is substituted for the argument. Some commands causes a system error or stop (such as a system watchdog timer error) in the C Controller module.

Before executing a command, confirm the specifications and specified argument of the command.

Example)

Do not execute the "close" command without an argument. If executed, the resource reserved in the VxWorks system will be closed.

(5) Precautions for use of FTP

FTP.

 (a) When reading out files from the C Controller module A 426 (Data connection error) occurs if many files are read (downloaded) by using

In that case, take following actions and read files again.

- Decrease the number of files to read
- Read the files in several batches.

(6) Precautions for the Wind River Systems product

The C Controller module has an embedded real-time operating system, VxWorks, made and sold by Wind River Systems, Inc. in the United States.

We, Mitsubishi, make no warranty for the Wind River Systems product and will not be liable for any problems and damages caused by the Wind River Systems product during use of the C Controller module.

For the problems or specifications of the Wind River Systems product, refer to the corresponding manual or consult Wind River Systems, Inc.

Contact information is available on the following website.

www.windriver.com

INTRODUCTION

Thank you for purchasing the C Controller module.

Before using this product, please read this manual carefully and develop familiarity with the functions and performance of the C Controller module to handle the product correctly.

Note that the menu names and operating procedures may differ depending on an operating system in use and its version. When reading this manual, replace the names and procedures with the applicable ones as necessary.

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ABOUT MANUALS

The following manuals are relevant to this product. Order each manual as needed, referring to the table below.

Relevant manuals

Manual name	Manual number (code)
C Controller Module User's Manual (Utility Operation, Programming) Describes the installation and uninstallation of VxWorks-based setting and monitoring tool for C Controller module (SW3PVC-CCPU), utility operations, and functions and programming. (This manual) (Sold separately)	SH-080767ENG (13JZ18)
C Controller Module User's Manual (Hardware Design, Function Explanation) Describes the system configuration, specifications, functions, handling instructions, wiring, and troubleshooting of the C Controller module (Q12DCCPU-V (Basic mode), Q06CCPU-V, Q06CCPU-V- B). (Sold separately)	SH-080766ENG (13JZ17)
MELSEC-Q C Controller Module User's Manual Describes the system configuration, specifications, functions, handling instructions, wiring, troubleshooting, and programming and function of C Controller module (Q24DHCCPU-V, Q24DHCCPU-VG, Q24DHCCPU-LS, Q26DHCCPU-LS, and Q12DCCPU-V (Extended mode)). (Sold separately)	SH-081130ENG (13JZ75)
Setting/Monitoring Tools for the C Controller Module Version 4 Operating Manual Describes the system configuration and operation method of Setting/Monitoring Tools for the C Controller Module (SW4PVC-CCPU). (Sold separately)	SH-081131ENG (13JU76)
CW Workbench Operating Manual Describes the system configuration, installation/uninstallation, specifications, functions, and troubleshooting of the product. (Sold separately)	SH-080982ENG (13JU71)
CW-Sim Operating Manual Describes the system configuration, specifications, functions, and troubleshooting of CW-Sim. (Sold separately)	SH-081159ENG (13JU77)

MANUAL PAGE ORGANIZATION



The above page illustration is for explanation purpose only, and is different from the actual page.

Icon			Description	
Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B	Description	
Q12DCCPU-V O	Q06CCPU-V O	Q06CCPU-V-B O	All or part of the description applies each model.	
Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B	The description applies to each model with some restrictions.	
Q12DCCPU-V X	Q06CCPU-V X	Q06CCPU-V-B	The description does not apply to each model.	

HOW TO USE THIS MANUAL

This manual is used to develop familiarity with parameter settings, monitoring, and programming required for using the C Controller module. Refer to the following list when using this manual.

Chapter	Description
CHAPTER 1	Features of SW3PVC-CCPU
CHAPTER 2	Operating environment, installing, uninstalling of SW3PVC-CCPU
CHAPTER 3 to	Parameter settings and monitoring using utility
CHAPTER 8	
CHAPTER 9 to	Brogramming of the C Controller module
CHAPTER 12	
CHAPTER 13	Event numbers of the C Controller module



Remark

This manual does not explain the features, system configurations, specifications, handling instructions, wiring, or troubleshooting of the C Controller module. For details of the above, refer to C Controller Module User's Manual (Hardware Design, Function Explanation).

.

GENERIC TERMS AND ABBREVIATIONS

Unless otherwise specified, this manual uses the following generic terms and abbreviations to explain the C Controller module.

(1) C Controller module and SW3PVC-CCPU

Generic term/abbreviation	Description		
Q12DCCPU-V	Abbreviation for the Q12DCCPU-V C Controller module		
	In principle, 'Q12DCCPU-V' indicates Q12DCCPU-V (Basic mode).		
	When the classification is needed for such as comparison with other modes,		
	'Q12DCCPU-V (Basic mode)' and 'Q12DCCPU-V (Extended mode)' are mentioned.		
Q12DCCPU-V	Status that 012DCCDLLV is initialized with the basis mode		
(Basic mode)			
	Status that Q12DCCPU-V is initialized with the extended mode		
Q12DCCPU-V	For Q12DCCPU-V (Extended mode), refer to the following manual.		
(Extended mode)	MELSEC-Q C Controller Module User's Manual		
Q06CCPU-V	Abbreviation for the Q06CCPU-V C Controller module		
Q06CCPU-V-B	Abbreviation for the Q06CCPU-V-B C Controller module		
Q06CCPU-V(-B)	Generic term for the Q06CCPU-V and Q06CCPU-V-B		
Q24DHCCPU-V	Abbreviation for the Q24DHCCPU-V C Controller module		
	For Q24DHCCPU-V, refer to the following manual.		
	MELSEC-Q C Controller Module User's Manual		
	Abbreviation for the Q24DHCCPU-VG C Controller module		
Q24DHCCPU-VG	For Q24DHCCPU-VG, refer to the following manual.		
	MELSEC-Q C Controller Module User's Manual		
	Abbreviation for the Q24DHCCPU-LS C Controller module		
Q24DHCCPU-LS	For Q24DHCCPU-LS, refer to the following manual.		
	MELSEC-Q C Controller Module User's Manual		
	Abbreviation for the Q26DHCCPU-LS C Controller module		
Q26DHCCPU-LS	For Q26DHCCPU-LS, refer to the following manual.		
	MELSEC-Q C Controller Module User's Manual		
	Generic term for the Q12DCCPU-V, Q06CCPU-V, Q06CCPU-V-B, Q24DHCCPU-V,		
	Q24DHCCPU-VG, Q24DHCCPU-LS, and Q26DHCCPU-LS		
SW3PVC-CCPU	Abbreviation for Setting/Monitoring Tools for the C Controller Module (SW3PVC-CCPU-		
	Ε)		
	Abbreviation for Setting/Monitoring Tools for the C Controller Module (SW4PVC-CCPU-E)		
SW4PVC-CCPU	For SW4PVC-CCPU, refer to the following manual.		
	Setting/Monitoring Tools for the C Controller Module Operating Manual		

(2) CPU modules

Generic term/abbreviation	Description		
ACPU	Generic term for the A1NCPU, A0J2HCPU, A1SCPU, A1SHCPU, A1SJCPU,		
	A1SJHCPU, A2CCPU, A2CJCPU, A2NCPU, A2NCPU-S1, A2SCPU, A2SHCPU,		
	A2ACPU, A2ACPU-S1, A2UCPU, A2UCPU-S1, A2USCPU, A2USCPU-S1,		
	A2USHCPU-S1, A3NCPU, A3ACPU, A3UCPU, and A4UCPU		
	Generic term for the Q2ACPU, Q2ACPU-S1, Q2ASCPU, Q2ASCPU-S1, Q2ASHCPU,		
QNACPU	Q2ASHCPU-S1, Q3ACPU, Q4ACPU, and Q4ARCPU		
QCPU (A mode)	Generic term for the Q02CPU-A, Q02HCPU-A, and Q06HCPU-A		
Basic model QCPU	Generic term for the Q00CPU and Q01CPU		
High Performance model QCPU	Generic term for the Q02CPU, Q02HCPU, Q06HCPU, Q12HCPU, and Q25HCPU		
Process CPU	Generic term for the Q02PHCPU, Q06PHCPU, Q12PHCPU, and Q25PHCPU		
Redundant CPU	Generic term for the Q12PRHCPU and Q25PRHCPU		
	Generic term for the Q00UJCPU, Q00UCPU, Q01UCPU, Q02UCPU, Q03UDCPU,		
	Q04UDHCPU, Q06UDHCPU, Q10UDHCPU, Q13UDHCPU, Q20UDHCPU,		
Universal model QCPU	Q26UDHCPU, Q03UDECPU, Q04UDEHCPU, Q06UDEHCPU, Q10UDEHCPU,		
	Q13UDEHCPU, Q20UDEHCPU, Q26UDEHCPU, Q50UDEHCPU, Q100UDEHCPU,		
	Q03UDVCPU, Q04UDVCPU, Q06UDVCPU, Q13UDVCPU, and Q26UDVCPU		
	Generic term for the Basic model QCPU, High Performance model QCPU, Process		
QCPU (Q mode)	CPU, Redundant CPU, and Universal model QCPU		
LCPU	Generic term for the L02CPU and L26CPU-BT		
	Generic term for the Q172CPUN, Q172CPUN-T, Q172HCPU, Q172HCPU-T,		
Motion CPU	Q173CPUN, Q173CPUN-T, Q173HCPU, Q173HCPU-T, Q172DCPU and Q173DCPU		
CPU module	Generic term for the C Controller module, QCPU(Q mode), and Motion CPU		
Single CPU system	Control system where the C Controller module is mounted in the CPU slot		
Multiple CPU system	Control system where multiple CPU modules are mounted on a main base unit		
	CPU module that controls I/O modules and intelligent function modules mounted on the		
Control CDU	main base unit and extension base units.		
Control CPU	Example: When CPU No. 2 controls a module mounted in Slot 3, CPU No.2 is the		
	control CPU of the module in Slot 3.		
	I/O module and intelligent function module controlled by a control CPU.		
Controlled module	Example: When CPU No.2 controls a module mounted in Slot 3, the module in Slot 3 is		
	the controlled module of CPU No.2.		
	I/O module and intelligent function module other than controlled modules.		
Non-controlled module	Example: When CPU No. 2 controls a module mounted in Slot 3, the module in the Slot		
(Non-group module)	3 is the non-controlled module of CPU No.1 and 3.		
	CPU module that is not a control CPU.		
Non-control CPU	Example: When CPU No. 2 controls the module mounted in Slot 3, the module in Slot 3		
	is a non-control CPU of CPUs No.1 and No.3.		
Battery	Generic term for the Q6BAT and Q7BAT batteries for CPU module		
	Abbreviation for the MELSEC-Q series PC CPU module manufactured by CONTEC		
PC CPU module	Co., Ltd		

Generic term/abbreviation	Description		
CC-Link module	Generic term for the QJ61BT11 and QJ61BT11N		
CC-Link/LT module	Generic term for the QJ61CL12		
	Generic term for the Q81BD-J61BT11 and Q80BD-J61BT11N CC-Link system master/		
CC-Link board	local interface boards, A80BD-J61BT11 CC-Link system master/local interface board,		
	and A80BD-J61BT13 CC-Link interface board		
CC-Link IE Controller Network	Generic term for the QJ71GP21-SX and QJ71GP21S-SX		
module			
CC-Link IE Controller Network	Generic term for the Q80BD-J71GP21-SX and Q80BD-J71GP21S-SX CC-Link IE		
interface board	Controller Network interface boards		
CC-Link IE Field Network master/	Abbreviation for the O 171GE11-T2 CC Link IE Field Network master/local module		
local module			
MELSECNET/H module	Generic term for the QJ71LP21-25, QJ71LP21S-25, QJ71LP21G, QJ71LP21GE,		
	QJ72LP25-25, QJ72LP25G, QJ72LP25GE, QJ71BR11, QJ72BR15, and QJ71NT11B		
MELSECNET/H interface board	Generic term for the Q81BD-J71LP21-25, Q80BD-J71LP21-25, Q80BD-J71LP21G,		
	Q80BD-J71LP21S-25, and Q80BD-J71BR11 MELSECNET/H interface boards		

(3) Network modules and PC boards

(4) Power supply modules and base units

Generic term/abbreviation	Description
	Generic term for the Q33B, Q35B, Q38B, and Q312B main base units on which the CPU
Q3□B	modules, Q series power supply module, Q series I/O modules, and intelligent function
	modules can be mounted
	Generic term for the Q32SB, Q33SB, and Q35SB slim type main base units on which
02000	the C Controller module, Basic model QCPU, High Performance model QCPU,
Q3LISB	Universal model QCPU, slim type power supply module, Q series I/O modules, and
	intelligent function modules can be mounted
	Generic term for the Q38RB main base unit for redundant power supply system on
Q3□RB	which the CPU modules, redundant power supply module, Q series I/O modules, and
	intelligent function modules can be mounted
	Generic term for the Q35DB, Q38DB, and Q312DB multiple CPU high speed main base
Q3□DB	unit on which the CPU modules, Q series power supply module, Q series I/O modules,
	and intelligent function modules can be mounted
0.5-7-7	Generic term for the Q52B and Q55B extension base units on which the Q series I/O
Q5LIB	modules and intelligent function modules can be mounted
	Generic term for the Q63B, Q65B, Q68B, and Q612B extension base units on which the
Q6⊡B	Q series power supply modules, Q series I/O modules, and intelligent function modules
	can be mounted
	Generic term for the Q68RB extension base unit for redundant power supply system on
Q6⊡RB	which the redundant power supply modules, Q series I/O modules, and intelligent
	function modules can be mounted
	Generic term for the QA1S65B and QA1S68B extension base units on which the AnS
QA1S6□B	series power supply modules, AnS series I/O modules, and special function modules
	can be mounted
Main base unit	Generic term for the Q3□B, Q3□SB, Q3□RB, and Q3□DB
Extension base unit	Generic term for the Q5⊡B, Q6⊡B, Q6⊡RB, and QA1S6⊡B
Slim type main base unit	Generic term for the Q3⊟SB
Redundant power main base unit	Generic term for the Q3□RB
Redundant power extension base	
unit	Generic term for the Q6□RB
Multiple CPU high speed main	
base unit	Generic term for the Q3□DB
	Generic term for the main base unit, extension base unit, slim type main base unit,
Base unit	redundant power main base unit, redundant power extension base unit, and multiple
	CPU high speed main base unit
Redundant power supply base	Generic term for the redundant power main base unit and redundant power extension
unit	base unit
	Generic term for the Q61P-A1, Q61P-A2, Q61P, Q61P-D, Q62P, Q63P, Q64P, and
Q series power supply module	Q64PN power supply modules
Slim type power supply module	Generic term for the Q61SP slim type power supply module
	Generic term for the Q63RP, Q64RP power supply module for redundant power supply
Redundant power supply module	system
	Generic term for the Q series power supply module, slim type power supply module, and
Power supply module	redundant power supply module
	Generic term for the QC05B, QC06B, QC12B, QC30B, QC50B, and QC100B extension
Extension cable	cables
CPU slot	The slot on the right side of the power supply module on the main base unit
CPU slot	The slot on the right side of the power supply module on the main base unit

(5) Others

Generic term/abbreviation	Description		
Q series	Abbreviation for the programmable controllers, MELSEC-Q series		
AnS series	Abbreviation for the programmable controllers, compact MELSEC-A series		
Ethernet	Generic term for the 100BASE-TX and 10BASE-T network systems		
MELSECNET/H	Generic term for the Q series MELSECNET/H network system		
GOT	Abbreviation for the Mitsubishi Graphic Operation Terminal		
GX Works2	Product name of the software package for the MELSEC programmable controllers		
GX Developer			
CW Workbench	The abbreviation for the engineering tool for C Controller, CW Workbench		
	Abbreviation for Workbench 2.6.1 Update manufactured by Wind River Systems, Inc.		
Wind River Workbench	For specifications and inquiries of Wind River Workbench, visit the website of Wind		
	River Systems, Inc.: www.windriver.com		
Workbench	Generic term for the CW Workbench and Wind River Workbench		
	Abbreviation for Tornado 2.1.0 for Hitachi SuperH Cumulative patch 1 manufactured by		
Tornado	Wind River Systems, Inc.		
	For specifications and inquiries of Tornado, visit the website of Wind River Systems,		
	Inc.: www.windriver.com		
	Product name of the real-time operating system manufactured by Wind River Systems,		
VXVVOIKS	Inc.		

<u>GLOSSARY</u>

Definitions of the terms used in this manual are explained below.

Term	Description
FTP	FTP is an abbreviation for File Transfer Protocol, which is used to transfer data files.
Telnet	Network protocol, or virtual terminal software, that enables remote login in TCP/IP networks.
CompactFlash card	A storage card regulated by the 'CF+ and CompactFlash Specification' issued by the
(CF card)	CompactFlash Association.
	Functions offered by SW3PVC-CCPU
Bus interface functions	The functions allow input to and output from the I/O modules that are controlled by C Controller
	modules, access to intelligent function module's buffer memories, and the status reading or
	control of the C Controller module.
	Functions offered by SW3PVC-CCPU
	Communication-protocol-independent and standardized communication library.
	When creating programs for communication with programmable controller CPUs and C
	Controller modules, there is no need to consider the hardware or communication protocol of the
MELOEO data link	communication target.
MELSEC data link functions	The MELSEC data link functions support the following.
	Q series bus interface communication
	CC-Link communication
	MELSECNET/H communication
	CC-Link IE Controller Network communication
	For the Q06CCPU-V-B, The MELSEC data link functions cannot be used.

PRODUCT ORGANIZATION

Supported software	C Controller			
		Q06CCPU-V		
		Q06CCPU-V-B		
	Earlier than			
	"15102" or later '		"15102" ^{*1}	-
	Extended mode	Basic mode ^{*2}		-
SW4PVC-CCPU	0	×	×	×
SW3PVC-CCPU	×	0	0	0
	Supported software SW4PVC-CCPU SW3PVC-CCPU	Supported software "15102" c Extended mode SW4PVC-CCPU O SW3PVC-CCPU X	Supported software C C Corr Supported note Q12DCCPU-V Extended mode Basic SW4PVC-CCPU × SW3PVC-CCPU ×	C Controller Q12DCCPU-V Earlier than "15102" or later*1 Earlier than "15102"*1 Extended mode Basic mode*2 SW4PVC-CCPU SW3PVC-CCPU

The following shows the C Controller-compatible software.

* 1 First five digits of serial number

 \bigcirc : Available, \times : Not available

* 2 For Q12DCCPU-V earlier than "15102", the mode cannot be changed. Q12DCCPU-V earlier than "15102" is regarded as the basic mode in this manual.

PACKING LIST

The following is the product line of the C Controller module.

Model name	Product name	Quantity	
Q12DCCPU-V	Q12DCCPU-V C Controller module (Endian format (memory layout): Little	ittle	
	endian)	I	
	Battery (Q6BAT)	1	
Q06CCPU-V	Q06CCPU-V C Controller module (Endian format (memory layout): Big endian)	1	
	Battery (Q6BAT)	1	
Q06CCPU-V-B	Q06CCPU-V-B C Controller module (Endian format (memory layout): Big endian)	1	
	Battery (Q6BAT)	1	
	Setting/Monitoring Tools for the C Controller Module		
	(Volume license product)	1	
SW3PVC-CCPU-E	(CD-ROM)		
	Software License Agreement	1	
	Software Registration Form	1	
	License Agreement	1	
	Industrial development tool purchasing form (Wind River Workbench)	1	
	Industrial development tool purchasing form (Tornado)	I	

DISCONTINUED MODELS

The following models are described in this manual, but have no longer been produced. For the onerous repair term after discontinuation of production, refer to "WARRANTY" in this manual.

Model name	Production discontinuation
Q06CCPU-V-B	November 2015
Q06CCPU-V	March 2022

CHAPTER 1 OVERVIEW

This manual explains the parameter setting, monitoring, and programming required for operation of the C Controller module.

For the features, system configuration, specifications, handling, wiring, and troubleshooting of the C Controller module, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

(1) Manuals relevant to the C Controller module

The following list shows the manuals relevant to the C Controller module. For details such as a manual No, refer to "ABOUT MANUALS" section in this manual. (CF Page A-21)

	Hardware 	Hardware Design	Utility Operation	Maintenance and Inspection	Multiple CPU System
Purpose	C Controller Module User's Manual (Hardware)	C Controller Module User's Manual (Hardware Design, Function Explanation)	C Controller Module User's Manual (Utility Operation, Programming)	QCPU User's Manual (Hardware Design, Maintenance and Inspection)	QCPU User's Manual (Multiple CPU System)
Checking the part names and specifications of the C Controller module	Outline	Details *1			
Checking the specifications and method of selecting, mounting, and installing the power supply module and base units				Details	
Checking the connecting methods of the power supply module, base units, and I/O module	Outline	Details *1			
Checking the functions of the C Controller module		Details *1			
Configuring a single CPU system (Start-up procedure and I/O No. assignment)		Details *1			
Configuring a multiple CPU system (Start-up procedure and I/O No. assignment)		Outline *1			Details

Table	1.1	Manuals	relevant t	o the (C Controller	module
Tuble		manaalo	i cic vanit t	0 1110 1	0 00111101101	modulo

(To the next page)

* 1 For Q24DHCCPU-V, Q24DHCCPU-VG, Q24DHCCPU-LS, Q26DHCCPU-LS, or Q12DCCPU-V (Extended mode), refer to the following manual.

ST MELSEC-Q C Controller Module User's Manual

	(Packed)	Hardware Design	Utility Operation	Maintenance and Inspection	Multiple CPU System	OVERVIEW
Purpose	C Controller Module User's Manual (Hardware)	C Controller Module User's Manual (Hardware Design, Function Explanation)	C Controller Module User's Manual (Utility Operation, Programming)	QCPU User's Manual (Hardware Design, Maintenance and Inspection)	QCPU User's Manual (Multiple CPU System)	LATION AND TALLATION OF WARE PACKAGE
Parameter settings and monitoring			Details *2			INSTAL UNINS SOFTV
Programming			Details *1			ON UTILITY ATIONS
Troubleshooting and checking error codes		Details *1				COMM OPER/
Checking Event No.	1 For Q24DHCCPU	I-V. Q24DHCCPU-V	Details •1	. Q26DHCCPU-LS.	or Q12DCCPU-V	DNTROLLER TING UTILITY
(Extended mode), refer to the following manual.						
*.	MELSEC-C For Q24DHCCPU (Extended mode)	Q C Controller Modul I-V, Q24DHCCPU-V , refer to the followin	e User's Manual G, Q24DHCCPU-LS g manual.	, Q26DHCCPU-LS,	or Q12DCCPU-V	5

Setting/Monitoring Tools for the C Controller Module Operating Manual

Table 1.1 Manuals relevant to the C Controller module (continued)

MELSEG **Q** series

1

CC-LINK UTILITY

MELSECNET/H UTILITY

CC IE CONTROL UTILITY

1.1 Features

(1) Easy setting with utilities

Various settings, such as parameter setting for the C Controller module and multiple CPU setting, can be easily configured by using C Controller setting utility. Also, parameters for the following modules can be set, and device monitoring of an access target can be configured and executed.

- CC-Link modules
- MELSECNET/H modules
- CC-Link IE Controller Network modules

The setting items and functionalities vary depending on the model of the C Controller module.

For the functions of each utility, refer to the following.



🖙 Page 3-1, "3.1 Utility List"

Figure 1.1 Utility screens
(2) Efficient development of user programs with integrated development environment

(a) For the Q12DCCPU-V

Workbench (CW Workbench or Wind River Workbench), an integrated development environment, provides efficient development of user programs with C or C++ language.

Providing a development group that covers all the developing processes from "software development", "system diagnostics", "testing", to "manufacturing", Workbench allows users to shorten development period and improve the quality. ICE is not required since debugging is available from a development environment (personal computer) by connecting it to the C Controller module by Ethernet. CW Workbench is an OEM product of Wind River Systems, Inc. The product has only basic functions required for user program development, such as coding, building, and debugging, as a subset product of Wind River Workbench3.2.



Development environment (personal computer)

Figure 1.2 Development with Workbench

(b) For the Q06CCPU-V(-B)

Tornado, an integrated development environment, provides efficient development of user programs by using C or C++ language.

ICE is not required since debugging is available from a development environment (personal computer) by connecting it to the C Controller module by Ethernet.

2 INSTALLATION AND UNINSTALLATION OF SOFTWARE PACKAGE

CHAPTER 2 INSTALLATION AND UNINSTALLATION OF SOFTWARE PACKAGE

2.1 Development Environment

	Item	Description
		PC-AT compatible machine running the following operating systems
Pe	rsonal computer	For writing user programs into a CompactFlash card, a personal computer supporting CompactFlash card is
		required.
	CPU	
	Memory	□ 2 ³ Page 2-2, "Table 2.2 Requirements for operating system and personal computer"
Op	erating system	•Windows 11 (Home, Pro, Enterprise, Education)
(English version)		•Windows 10 (Home, Pro, Enterprise, Education)
Development tool		—
		CW Workbench
		For product requirements for CW Workbench, refer to the CW Workbench Operating Manual.
	Q12DCCPU-V	Wind River Workbench 2.6.1 Update
		For product requirements for Wind River Workbench, refer to the manual of Wind River Workbench.
	Q06CCPU-V,	Tornado 2.1.0 for Hitachi SuperH Cumulative patch 1
	Q06CCPU-V-B	For product requirements for Tornado, refer to the manual of Tornado.
Display		Resolution 1024 × 768 dots or more
Disk space		250MB or more
Disk drive		CD-ROM disk drive
Ethernet card, board		10BASE-T, 100BASE-TX

Table 2.1 Product requirements for SW3PVC-CCPU



Table 2.2 Requirements for operating system and personal computer

Operating system	Personal computer		
	CPU	Memory	
	2 or more cores on a		
Windows 11 (Home, Pro, Enterprise, Education)	compatible 64-bit processor or	4 GB or more	
	System on a Chip (SoC)		
Windows 10 (Home Dra Enterprise Education)	Intel [®] Core TM 2 Duo	1 CP or more	
windows to (nome, Fio, Enterprise, Education)	1GHz or more	I GB OI IIIOIE	

MELSECNET/H UTILITY



- 1. When installing or uninstalling SW3PVC-CCPU and when operating utility, logon as a user with Administrator attribute.
- 2. When the following functions are used, this product may not run properly.
 - Application start-up in Windows compatibility mode
 - Fast user switching
 - Remote desktop
 - Sleep mode
 - Touch function
 - Virtual environment such as Client Hyper-V
 - Tablet mode
 - Virtual Desktops
 - Unified Write Filter
 - Text cursor indicator
- 3. In the following cases, the screen of this product may not work properly.
 - The size of the text and other items on the screen is other than 100% (96 DPI, 9 pt etc.).
 - The resolution of the screen is changed in operation.
 - Windows theme is changed in operation.
 - The multi-display is set.
- 4. Use the product as a standard user or an administrator for Windows 11 and Windows 10.

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MELSECNET/H UTILITY

2.2 Installation

(1) Preparation for installation

Before installation, perform the following.

- 1) Logon as a user with Administrator attribute.
- 2) Remove all the applications in the start up, restart Windows[®], and logon again as a user with Administrator attribute.
- 3) Change settings not to allow any update program of OS, such as Windows[®] Update, or other manufacturer's software, such as Java, to start automatically. The installer may not operate normally if an update program is activated.

POINT

 Installation of SW3PVC-CCPU by overwriting is available only onto the same version.
 When installing any other version, uninstall the existing one before

When installing any other version, uninstall the existing one before installation.

- When installing SW3PVC-CCPU by overwriting, file backups are not necessary for the files stored by utility including a parameter setting file. Files stored in the "C:\MELSEC\CCPU\Param" folder will not be removed when installing SW3PVC-CCPU by overwriting.
- 3. If the installation failed, uninstall the SW3PVC-CCPU, restart Windows[®], and reinstall it.
- 4. Do not execute more than one "Setup.exe" in the CD-ROM at the same time. Doing so may cause the installation not to complete normally.

To reinstall the SW3PVC-CCPU, uninstall it and restart Windows[®].



(2) Installation procedure

- 1) Insert a CD-ROM, this product, to the CD-ROM drive.
- 2) Double-click "Setup.exe" in the Disk1 folder on the CD-ROM to start the installer of SW3PVC-CCPU.
- Proceed the installation following the instructions provided by the installer. For the setting selection, refer to the following instruction.
 - Page 2-5, "2.2 (2) (a) Selection operation during installation"
- 4) If the Windows[®] Firewall was not turned on during the installation, turn it on, referring to the following.

Page 2-7, "2.2 (3) Operation after installation"

(a) Selection operation during installation

	User Account Control
Image: Ser Account Control Im	Click the YES button.
Se	ecting installation destination
SW3PVC-CCPU Setup Choose Destination Location Select folder where Setup will instal files. Setup will instal SW3PVC-CCPU in the following folder: To install to this folder, click Next. To install to a different folder, click. Browse and select another folder. Destination Folder C:\MELSEC Bigowne InstallShield < Back	Specify the folder of installation destination. •When installation destination is "C:\MELSEC", click the <u>Next></u> button. •When installation destination is other than "C:\MELSEC", click the <u>Browse</u> button and specify the folder of installation destination.
	(To the next page

Windows [®] Firewall setting			
	To connect the development environment (personal computer) to the C	_	
	Controller module, turn on the Windows [®] Firewall.	VIEW	
SW3PVC-CCPU Setup To use this application, the application must be registered in the Windows frewall exceptions list. Do you want to continue? Yes No	 For a quick setup, click the YES button. The connection will be automatically enabled. However, if the Windows[®] Firewall is set up not to allow exceptional connections, manually set the Windows[®] Firewall, referring to the following. I Page 2-7, "2.2 (3) Operation after installation" To set it after installation, click the NO button. Be sure to refer to the 	ATION AND LLATION OF RE PACKAGE	
	following before manually setting the Windows [®] Firewall.	INSTALL/ UNINSTA SOFTWA	
End	d of InstallShield Wizard	3	
SW3PVC-CCPU Setup InstallShield Wizard Complete The InstallShield Wizard Complete The InstallShield Wizard Complete West Investor you can use the program, you must restart your computer (* No. I will restart my computer now) (* No. I will restart my computer later. Choose one of the options above and click Finish to complete setup. (* Beck Finish Complete	 Restart Windows[®] at the end of the installation. (1) Eject the CD-ROM from the CD-ROM drive. (2) Select "Yes, I want to restart my computer now." and click the Finish button. Windows[®] is restarted and now SW3PVC-CCPU is operable. 	CONTROLLER COMMON UTILITY	

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CC-LINK UTILITY



(3) Operation after installation

If the Windows Firewall was not turned on during the installation, turn it on, referring to the following.

Open the Control Panel of Windows[®], and click "System and Security".



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Add a Program Select the program you want to add, or click Browse to find one that is not listed, and then click OK. Program: If Control lister, and then click VI. CCTE Control utility CCTE Control utility CCTE.Control utility Path: CritMELSECNET_H utility Path: CritMELSECNCCPUTOOLIUTL/CCpuUtil.e: Drowse which network location types to add this program to. Metwork location types Add	 If no utility is displayed or any one is missing, click the Allow another program button to display the left dialog box. Select a utility of SW3PVC-CCPU, and click the Add button. Repeat this operation until all utilities of SW3PVC-CCPU are added.
Image: A version firment i . A version d longer attempt i	6 Select the "Name" and "Public" checkboxes for all utilities of SW3PVC-CCPU, and click the OK button.
Cancel Part I System ad Sactify Cancel Part I	Click "Check firewall status".
(To the next page)	

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Composition of the security and	Click "Turn Windows Firewall on or off".
Centrel Pand Home Windows firewall can be prevent hackes or malicious software from gaining access to your Allow a program or feature How does a firewall help protect my computer?	
Change notification settings For your security, some settings are managed by your system administrator.	
Windows Firewall on Ar off We Retore defaults Windows Firewalls in ot using the recommended settings Troublehoot my network What are the recommended settings?	
Domain networks Connected 🔿	
Networks at a workplace that are attached to a domain	
Windows Firewall state: Off Incoming connections: Block all connections to programs that are not	
on the list of allowed programs Active domain networks: una ad_melco.co.jp	
Notification state: Notify me when Windows Firewall blocks a new program	
See also	
Action Center Network and Sharing Center Vetworks Not Connected	
· · · · · ·	
Werk Account Control Image: Do you want to allow the following program to make changes to this computer? Image: Do you want to allow the following program to make change to this computer? Image: Do you want to allow the following program to make want to allow the following program to allow want to allow the following program to allow want to allow the following program to allow want to allow the following program to allow to allow want to allow the following program to allow to allow want to allow the following program to allow to allow want to allow the following program to allow to allow want to allow the following program to allow to allow want to allow the following program to allow to allow want to allow the following program to allow to all	If the left dialog box appears, click the Yes button.
Compared a Windows Freevall > Customize Settings - 4 Stratch Control Panel	Check that the "Block all incoming connections, including
Customize settings for each time of natural	those in the list of allowed programs" checkbox is not
You can modify the firewall settings for each type of network location that you use.	
The network isotherman (1) For your security, some settings are managed by your system administrator.	selected, and click the OK button.
Domain network location settings	If it is selected, clear the checkbox and click the OK button
Block all incoming connections, including those in the list of allowed programs On Notify me when Windows Firewall blocks a new program	
W Turn off Windows Firewall (not recommended) O	
Home or work (private) network location settings	
■ block at incoming connections, including mose in the list of allowed programs ♥ Notify me when Windows Firewall blocks a new program	
O Turn off Windows Firewall (not recommended) Public network location settings	
Turn on Windows Firewall Block all incoming connections, including those in the list of allowed programs	
Notify me when Windows Firewall blocks a new program Turn off Windows Firewall (not recommended)	
• • • • • • • • • • • • • • • • • • •	
OK Cancel	
Ļ	
(Completed)	

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CC-LINK UTILITY

MELSECNET/H UTILITY

CC IE CONTROL UTILITY

2.3 Uninstallation

	Q12DCCPU-V Q06CCPU-V Q06CCPU-V-B O O
(1) Prep Perfo	paration for uninstallation form the following before uninstallation.
1) Logon as a user with Administrator attribute.
2	?) Terminate all the running utilities.
⊠POI	NT
1 2 3	 If uninstallation cannot be performed, check if the following file names are displayed as image names in the process of task manager. If displayed as image names, terminate the process before uninstalling again. CCIECUtI.exe CCInkUtI.exe CCpuUtI.exe MnethUtI.exe RtDvmonUtI.exe RtDvmonUtI.exe To reinstall SW□PVC-CCPU, uninstall it, restart Windows[®], and then reinstall.
4	 Do not terminate uninstallation during processing. If terminated, redo the uninstallation all over again. If the uninstallation fails after terminating the uninstallation, reinstall the software and then uninstall it again.

(2) Uninstallation procedure

Uninstall the software from Control Panel of Windows.

CHAPTER 3 COMMON UTILITY OPERATIONS

3.1 Utility List

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B

		Availability			Deference
Utility	Description	Q12DCCPU	Q06CCPU	Q06CCPU	nage
		-V	-V	-V-B	page
	Functions of C Controller setting utility are as follows.				
	•Displays the module information (LED status, switch status,				
	and error information and others) of a C Controller module				
C Controller setting	•Displays event history	0	\circ	^	Page 4-1
utility	•Monitors states (input, output, and buffer memories) of each	0	0	Δ	
	module mounted with the C Controller module				
	•Sets parameters				
	•Operates the C Controller module online				
CC-Link utility	Performs parameter setting, network monitoring, etc. of the	0	0	^	Page 5-1
	CC-Link module controlled by the C Controller module.	0	0	Δ	Tage 0-1
	Performs parameter setting, network monitoring, etc. of the				
MELSECNET/H utility	MELSECNET/H module controlled by the C Controller	0	0	Δ	Page 6-1
	module.				
	Performs parameter setting, network monitoring, etc. of the				
CC IE Control utility	CC-Link IE Controller Network module controlled by the C	0	0	×	Page 7-1
	Controller module.				
Device monitoring	Monitors and tests device data of the programmable controller	0	0	×	Page 8-1
utility	CPU.	0	0	*	i aye 0-1

Table 3.1 Utilities in SW3PVC-CCPU

O: Available, △: Available but partially restricted, ×: N/A

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For functions added to the C Controller module and SW3PVC-CCPU and function versions and serial No.s of the CPU module that support the added functions, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

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C CONTROLLER SETTING UTILITY

CC-LINK UTILITY

3.2 Activating Utility



Figure 3.1 Items added to the Start menu

3.3 Exiting Utility

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B
		<u> </u>

(1) Utility other than Device monitoring utility

To exit utility other than Device monitoring utility, click the Exit button at the bottom right of the screen.

Device settings I/O assignment settings	Multiple CPU settings	Communication diagnostics
Module information Event history SRAM monitor Module information ELD information RUN MODE CF CARD CRR. CH3 SD/RD USER Toggle switch information MODE RUN RESET SELECT	ng Module monitoring Error rocde Error information System WDT err. User WDT err. Module verily err. Fuse blown err. Control bue err. Mutiple CPU bus err.	Online operation System settings Stop monitoring Main CPU err. Intelli. module as: Intelli. module as: Intelli. module parameter err. Link parameter err. Link parameter err.
CPU operating status RUN Parameter boot drive Standard RAM	 Battery err. Momentary stop 	Multiple CPU err. Others Refer to the Event history tab for details.
Drive information Standard RAM information Standard RAM information Used space 204 KB CF card information Empty Used space 0 KB	Free space 2868 KB	Libqate
Connection settings	Load File Save	e File Help Exit

Figure 3.2 Exiting C Controller setting utility

(2) Device monitoring utility

To exit Device monitoring utility, select [Menu] \rightarrow [Exit] on the menu bar.

As a dialog box appears, click the Yes button.



Figure 3.3 Exiting Device monitoring utility

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MELSECNET/H UTILITY

3.4 Specifying CPU Type



Select the C Controller module for parameter setting and monitoring in utility other than Device monitoring utility.

Specify CPU type		×
CPU type 012DCCPU-V □ CPU type fixed	¥	OK <u>C</u> ancel

Figure 3.4 Specify CPU type screen

Table 3.2 Description of the Specify CPU type screen

	ltem	Description
CPU type		Specifies a C Controller module to which parameters are set or to be monitored.
		(Default: "Q12DCCPU-V")
		The specified CPU type is fixed and this screen will not be displayed on and after next
		utility operation.
	CPU type fixed	To set back to the default (CPU type not fixed), select [Specify CPU type] in the system
		menu to open this screen and deselect the check box.
		(Default: Deselected (CPU type not fixed))
Ok	button	Sets the selected C Controller module as the CPU type and closes this screen.
Cancel button		Closes this screen without changing the CPU type.

Remark

1. Changing CPU type

Select [Specify CPU type] from the system menu and change the CPU type. ([] Page 4-46, Section 4.12, Page 5-21, Section 5.8, Page 6-42, Section 6.8, Page 7-37, Section 7.7)

2. When writing parameters or performing communication processing such as monitoring to any other CPU type, change the CPU type on this screen in advance.

For the following communication processing, CPU type change is available in the processing.

- · Connection target settings
- Parameter read

3 - 4

3.5 Setting Connection Target



Remark

1. To read parameters from the C Controller module online, use the following drive.

Table 3.3 Drives used for reading parameters

Model	Drive	
012DCCDLL V with parial No. (first 5 digita)	The drive in which parameters of the operating C	
U12DCCPU-V with serial No. (Ill'st 5 digits)	Controller module are stored	
	(Standard RAM or CompactFlash card)	
Q12DCCPU-V with serial No. (first 5 digits)	Standard BAM	
"12041" or earlier		
Q06CCPU-V(-B)	Standard ROM	

2. If a utility communication error occurred after connecting, restart monitoring by clicking the <u>Start monitoring</u> button or set the connection target again in Connection settings.

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(2) Connection settings screen

Connection setti	ngs	D
Target module	192.168.3.3(Default)	<u>I</u> est
User name	target	Detailed setting:
Password	RENERRE	
	Connect	E <u>x</u> it

Figure 3.5 Connection settings screen

	Table 3.4 Description of the Connection settings screen		
Item	Description		
	Enter the IP address or host name of the C Controller module to be connected.		
	Click 🗾 to allow selection from the following.		
	•Connection target history (Up to 8 data, common to all utilities)		
Target module	•"192.168.3.3 (Default)"		
	•"Offline" (other than Device monitoring utility)		
	When entering a host name, do not set multiple IP addresses under the same host name. (If set, a		
	communication is performed with the host whose IP address is last acquired.)		
	Select the checkbox when writing parameters to the C Controller module.		
Write authority	For "User name" and "password", enter the user name and password set to the account of the C		
	Controller.		
	Parameters cannot be written to the C Controller module if these are not set.		
User name	These items cannot be set when:		
	•"Offline" is selected for "Target module" or		
	 This screen has been opened from Device monitoring utility. 		
Password	For restrictions on accessing to a login user, refer to the C Controller Module User's Manual		
	(Hardware Design, Function Explanation).		
Test button	Checks the connectivity with the C Controller module specified in "Target module".		
Clear history button	Clears the connection target log of "Target module".		
Detailed settings button	Opens the Detailed settings screen. (
	Establishes a connection with the C Controller module specified in "Target module".		
	When "Write authority" is selected, the C Controller module authenticates the account.		
Exit button	Closes the Connection settings screen without changing the connection target.		

(a) Detailed settings screen

Enter values in "Communication check time" and "Retry count" used in Ethernet communication between a development environment (personal computer) and the C Controller module.

10	sec.	OK
2	time(s)	Cancel
		Defaul <u>t</u>
	10 2	10 sec. 2 time(s)

Figure 3.6 Detailed settings screen

Item	Description		
	Set a communication check time in Ethernet communication between		
Communication check	the development environment (personal computer) and C Controller		
time	module. (Unit: seconds)		
	(Default: 10, Setting range: 1 to 360)		
	Set the number of retries in Ethernet communication between the		
Potry count	development environment (personal computer) and C Controller		
Relly count	module.		
	(Default: 2, Setting range: 0 to 9)		
OK button	Enables the current settings and closes the Detailed settings screen.		
Cancel button	Closes the Detailed settings screen without enabling the settings.		
Default hutter	Sets the values entered in "Communication check time" and "Retry		
	count" back to default.		

Communication errors may occur in Ethernet communication between the development environment (personal computer) and the C Controller module depending on the line status. When a communication error has occurred, increase the setting value for "Communication check time" and/or "Retry count".

C CONTROLLER SETTING UTILITY

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Remark

- Offline operation
 Parameters can be written to each utility offline.
 When writing parameters, a connection must be established with the C Controller module.
- Changing connection target To connect with other target, open the "Connection settings" screen with the following operations and change the IP address or host name.
 - For other than Device monitoring utility
 - Click the Connection settings button at the bottom left of the screen.
 - For Device monitoring utility Select [Setting]→[Connection settings] from the menu bar.
- 3. The connection target when other utility is started from the system menu. Connection is established with the same C Controller module.
- How to check the connection target and user name Check on the title bar and status bar. (Page 3-16, Section 3.9)
- 5. When the C Controller module specified in the CPU type on utility (other than Device monitoring utility) and the connection target C Controller module are not the same type.

Change the setting to the C Controller module that is to be connected as the CPU type, and then set it in Connection settings.

For changing the CPU type, refer to the following.

Page 3-4, "3.4 Specifying CPU Type"

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C CONTROLLER SETTING UTILITY

3.6 Displaying the Help Screen



(1) Utilities other than Device monitoring utility

To display the Help screen of utilities other than Device monitoring utility, click the [Help] button at the bottom right of the screen.

Alternatively, press the F1 key while the utility is active.

<u>C</u> onnection settings	Load File Save File	Help	Exit
C:\MELSEC\CCPU\Param\sample.cst	CPU type:Q12DCCPU-V	User name: target	
		Click	

Figure 3.7 Starting Help of C Controller setting utility

(2) Device monitoring utility

To display the Help screen of Device monitoring utility, select [Help]→[Help] from the menu bar.

Alternatively, press the F1 key while the utility is active.



Figure 3.8 Starting Help of Device monitoring utility

(3) Help screen does not appear

The screen below may appear instead of the Help screen. Install the required software following the corrective action



Figure 3.9 Help screen does not appear

- (a) When a development environment (personal computer) is connectable to the internet:
 - Click the link shown on the screen above to display Microsoft[®] Help and Support article ID No.917607 on the web browser.
 - Install WinHlp32.exe according to the instruction provided in the article ID No. 917607.
- (b) When a development environment (personal computer) is not connectable to the internet:
 - Use another personal computer connectable to the internet and go to the address below on the web browser to display Microsoft[®] Help and Support article ID No.917607. support.microsoft.com/kb/917607
 - 2) Install WinHlp32.exe according to the instruction in the article ID No. 917607.
 - 3) Transfer WinHlp32.exe to the development environment (personal computer) and install it.

Remark

- The Help screens in SW3PVC-CCPU cannot be displayed simultaneously. Display one screen at a time.
 If another Help screen is started while a Help screen is being displayed, the first one is closed to display the one last opened.
- If an error occurs in the C Controller module (host CPU), the Help screen can be displayed from the System information screen of the C Controller setting utility. (CP Page 4-17, Section 4.5 (3))

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3.7 Checking Version

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B
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(1) Utilities other than Device monitoring utility

To check the version of utilities other than Device monitoring utility, select [Version information] in the system menu.

C Controller setting utility 🖵 Page 4-46, Section 4.12

CC-Link utility Page 5-21, Section 5.8

MELSECNET/H utility...... F Page 6-42, Section 6.8

CC IE Control utility Page 7-37, Section 7.7

(2) Device monitoring utility

To check the version of Device monitoring utility

(a) Operation

Click [Help]→[Version] from the menu bar to open the Version information screen.



Figure 3.10 Checking version

(b) Version information screen



Figure 3.11 Version information screen

Table 3.6 Version information

ltem	Description
Device monitoring utility	Displays the update date of Device monitoring utility.
OK button	Closes the version information screen.

Parameter Setting File 3.8



Table 3.7	Description	of the	Open and S	ave As screen
-----------	--------------------	--------	------------	---------------

Item	Description
Look in	Specify the location where the parameter setting file is to be loaded (or
(Save in)	saved).
File name	Enter the file name to be loaded (or saved).
Open button	Loads (or saves) the file specified in "File name"
(Save button)	
Cancel button	Closes the screen without loading (or saving).

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Remark

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- 1. The name of the parameter setting file currently used is displayed on the status bar in utilities other than Device monitoring utility.
- 2. The following table lists the extensions for parameter setting files.

Table 3.8 Extensions for parameter setting file

Utility	Extension for parameter setting file
C Controller setting utility	cst
CC-Link utility	ccl
MELSECNET/H utility	mnh
CC IE Control utility	mng

- 3. The standard folder, where utilities other than Device monitoring utility save parameter setting files, is "C:\MELSEC\CCPU\Param". (When SW3PVC-CCPU has been installed in "C:\MELSEC")
- 4. Double-clicking any saved parameter setting file (*.cst, *.ccl, *.mnh, or *.mng) starts the corresponding utility with the saved parameter setting loaded.
- 5. When a parameter setting file is loaded, utility will be in the following status. Table 3.9 Utility status

Item Status			
CDU type	Changed back to the one set when the parameter setting file was		
СРО туре	saved.		
	Disconnected and monitoring is stopped.		
Connection	To restart monitoring, click the <u>Start monitoring</u> button or set data again in Connection settings.		

(2) Utilizing existing parameter settings in the parameter setting file

Multiple modules can be used under the same parameter setting by loading a existing parameter file into multiple development environments (personal computers).



Parameter settings can be utilized without a parameter setting file with the following procedure.

- 1. Set parameters in utility other than Device monitoring utility.
- 2. Open the Connection settings screen and connect to the module where the parameters are written.
- 3. Write the parameters to the C Controller module by clicking the Write button in the <<Online operation>> tab of each utility.
- 4. By repeating steps 2 and 3, the same parameter setting can be set to multiple modules.

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3.9 Displays on the Title Bar and Status Bar



CC IE CONTROL UTILITY

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DEVICE MONITORING UTILITY

CHAPTER 4 C CONTROLLER SETTING UTILITY

4.1 C Controller Setting Utility Function List

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B
<u> </u>		

			Availability			
Name	Description	Q12DCCPU	Q06CCPU	Q06CCPU	nago	
		-V	-V	-V-B	paye	
Specify CPU type	Specifies a C Controller module to which parameters are set	0	0	0	Page 3-4	
	or to be monitored.		Ŭ	Ŭ		
Connection settings	Sets parameters to a C Controller module which is to be		0	0	Page 3-5	
g.	connected with this utility.		0	0		
Parameter setting file	Saves parameters set in C Controller setting utility into a file,	0	0	0	Page 3-14	
saving/loading	or loads the file.	Ŭ		Ű		
Module information	Displays the LED and switch states, error information, and	0	Δ	Δ	Page 4-2	
	drive information of the C Controller module.	Ŭ	-	_	3	
Event history	Displays and saves the event history of a C Controller module.	0	0	0	Page 4-4	
SRAM monitoring	Monitors the battery-backed-up RAM, changes and saves	0	0	0	Page 4-8	
	data.	Ŭ	0	0	. age . e	
	Performs the following operations to the modules installed on					
	slots.					
	•Monitors inputs (X), outputs(Y), buffer memories, and CPU					
	shared memory.					
Module monitoring	•Executes forced output of outputs (Y) and forced write to	0	0	0	Page 4-13	
	buffer memories and CPU shared memory.					
	•Displays an error code of the latest error occurred in an					
	intelligent function module.					
	•Displays the information of the C Controller system.					
	Performs the following operations to the C Controller module.					
	•Reads, writes, and verifies parameters or remotely operates					
Online operation	the module.	0	Δ	Δ	Page 4-21	
	•Sets IP address, clock, the MD function, and Option settings.	Ũ		_	0	
	For the Q06CCPU-V-B, the MD function setting is not					
	available.					
System settings	Sets parameters (System settings) of a C Controller module.	0	Δ	Δ	Page 4-30	
Device setting	Sets parameters (Device settings) of a C Controller module.	0	×	×	Page 4-35	
I/O assignment	Sets parameters (I/O assignment settings) of a C Controller	0	0	0	Page 4-37	
	module.	0	0	0	. age i ei	
Multiple CPU settings	Sets parameters (Multiple CPU settings) of a C Controller	0	0	0	Page 4-41	
	module.	0	0	0	r ugo r rr	
Communication	Diagnoses whether communication with another CPU is					
diagnostics	available when the C Controller module is in a multiple CPU	0	0	×	× Page 4-45	
	configuration.					

Table 4.1 C Controller setting utility function list

O: Available, ∆: Available but partially restricted, ×: N/A

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4.2 Module Information Tab



The Module information tab displays the LED status, switch status, error information, and drive information of the C Controller module.

(1) Precautions for the Module information tab

- (a) Switching a tab during monitoring Monitoring stops when a tab is switched to another during monitoring. Monitoring resumes when the <<Module monitoring>> tab is opened next time.
- (b) When a utility communication error has occurred When a utility communication error has occurred during connection, click the

Start monitoring button or set the connection target again in the Connection settings so that the communication can be restarted.

(c) During reset

(2) Module information tab

Communications are not available while the C Controller module is being reset. Start communications after the reset is complete.

Q12DCCPU-V Q06CCPU-V Q06CCPU-V-B 🛯 C Controller sett ng utility(192.168.3.3(Default) C Controller setting utility(192 C Controller setting utility(192 I/O assignment se Module information Multiple CPU settings Module monitoring I/D assignm Event history 1/O assign Module information Device settings Module information ent settings SRAM moniti ent settings Event h Online operation System settin Module inform - LED informa Module information LED information Module information - LED information -Error code BUN 📻 🧰 M Stop monitoring CF CARD 💳 💳 ERR. CH3 SD/RD 💳 📼 USER CF CARD C EF STS - EF Error inform Sustem WDT er Main CPU en User WDT err 🔲 Intelli, module en nt LED in Toggle Toggle switch Module verify er Intelli. module assignment er MODE BUN MODE TOP RUN MODE BUN Fuse blown err. Control bus err. Multiple CPU bu Param RESET SELECT RESET . SELECT Intelli. RESET . SELECT module pa Multiple CPU bus en Link parameter err Multiple CPU err. Battery er CPU on ating status Momentary stop C Other CPU operating status CPU operating status RUN RUN Standard RAM ster boot drive er to the Event history tab for detail dard ROM info 205 KB 3MB Free space 2867 KB Update 6MB Used s 6MB Used sp CF card infor CF card inform CF card inform Empty 0 KB 0 KB Empty Empty Used space Free space Used sp Used spa Load File Egit Connection settings Help Connection settings Connection settings MELSEC\CCPU\Param\s CPU by SEC\CCPU\Para :Q12DCCPU-V C\CCPU\Paran

Figure 4.1 Module information tab

Table 4.2 Description of the Module information tab

Module information Event history SRAM monitoring Module monitoring Online operation System settings					
	Item Description				
Module information		Displays the information of the C Controller module.	—		
Displays the LED states of the C Controller module.		Displays the LED states of the C Controller module.			
	LED information	Note that the CH3 SD/RD indication for the Q12DCCPU-V and the CH2 SD/RD	*1		
	indication for the Q06CCPU-V(-B) are disabled.				
* 1 For part names and functions of the C Controller module, refer to the C Controller M Manual (Hardware Design, Function Explanation)		Module User's			

(To the next page)

Table 4.2 Description of the Module information tab (continued)

Module information Event history SRAM monitoring Module monitoring Online operation System settings

	Item	Description	Reference page
Мо	dule information	—	_
	Toggle switch information	Displays the RUN/STOP/MODE switch and RESET/SELECT switch states of the C Controller module.	*1
	7-segment LED information	Displays the 7-segment LED status of the C Controller module. For the Q06CCPU-V(-B), this indication is disabled.	*1
	CPU operating status	Displays the operating status ("RUN", "STOP", "PAUSE") of the C Controller module, including remote operation.	*1
	Parameter boot drive	Displays the drive in which the parameters of the operating C Controller module are stored.	_
	Error code	Displays the latest error code among stop/continue errors currently occurring.	Help in this utility
	Start monitoring or	Starts or stops monitoring the C Controller module. "*" flashes in the upper right of the button during monitoring.	_
	Stop monitoring button	These buttons are disabled in the offline status.	
	Error information	When a stop or continue error has occurred in the C Controller module, corresponding error item for stop or continue error changes from (white) to (red).	*2
	Error clear button	Clears a continuation error detected in a C Controller module when appropriate actions were taken for the cause of the error and the problem was resolved. This button cannot be clicked when: •A stop error has occurred. •The Q12DCCPU-V with serial number (first 5 digits) "12041" or earlier is used. •The Q06CCPU-V(-B) is used.	_
Dri	ve information	Displays drive information of the C Controller module.	_
	Standard RAM information	Displays its size, used space, and free space of a standard ROM. ^{*3} For the Q06CCPU-V(-B), this information is not displayed.	*4
	Standard ROM information	Displays its size, used space, and free space of a standard ROM. ^{*3} For the Q12DCCPU-V, this information is not displayed.	*4
	CF card information	 When a CompactFlash card is installed, entire space, used space, and free space of the CompactFlash card are displayed.^{*3} "Empty" is displayed for the following cases. •A CompactFlash card is not installed when the Q12DCCPU-V or Q06CCPU-V is used. •When the Q06CCPU-V-B is used. 	*4
	Update button	Updates either of the "Standard RAM information" or "Standard ROM information", and "CF card information".	_

* 1 For part names and functions of the C Controller module, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

* 2 For corrective actions for errors, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

* 3 "Used space" indication of the "Standard RAM information", "Standard ROM information", and "CF card information" includes the space used by the file system.

* 4 For data and size that can be stored, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

4.3 Event History Tab

		Q12DCCPU-V O O O O
(1)	Pre	ecautions for the Event history tab
	(a)	Event history update timing Event history is updated by acquiring the data from the C Controller module when a connection is established to the C Controller module in Connection settings or when the Update button is clicked.
	(b)	Event history displays the data registered by QBF_RegistEventLog function The event history displays the data registered by QBF_RegistEventLog function. ([Page 9-3, Section 9.2)
	(c)	When a utility communication error has occurred When a utility communication error has occurred during connection, set the connection target again in the Connection settings so that the communication can be restarted.
	(d)	During reset Communications are not available while the C Controller module is being reset. Start communications after the reset is complete.
	(e)	Precautions for using QBF_RegistEventLog function If the same data as in "source flag" (Page 4-7, "Table 4.5 Source flag") is specified into the argument SrcStr[] of the QBF_RegistEventLog function, it will be difficult to differentiate the data in the < <event history="">> tab. Do not specify the same character string as in "source flag".</event>
		The event occurrence can be located in the following ways. Checking "Event type" of the Detailed event information screen

- Page 4-6, "4.3 (3) Detailed event information screen"
- Checking the event history file
 - $\fbox{3}$ Page 4-7, "4.3 (4) Specifications of the Event history file"

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(2) Event history tab

The events occurred in the C Controller module are displayed or saved in this tab.

Controller se	tting utilit	y(192.168.3.	3(Default))	
Device settir	ngs	1/0 assi	gnment setting:	ngs Multiple CPU settings Communication diagnostics
Module information	on	Event history	SRAM n	f monitoring Module monitoring Online operation System settings
Date	Time	Source	Event No.	Event information
2010/06/24	14:59:36	MQbfDrv	C0000201	AC/DC DOWN occurred. [Error code: 1500 Error information: 0 Time of Update
2010/06/24	14:58:38	MQbfDrv	C000020B	An error occurred during module initialization. [Error code: 3010 Error info
2010/06/24	14:58:19	MQbfDrv	C000020B	An error occurred during module initialization. [Error code: 3010 Error info
2010/06/24	14:57:49	MXwdkDrv	40000000	J The clock data of the C Controller module have been set. Clear
↓				Sage event history
ection settings				Load File Save File Egit
EC\CCPU\Para	n'isample.cst			CPU type:012DCCPU-V User name: target

Figure 4.2 Event history tab

Table 4.3 Desc	ription of th	e Event histe	orv tab
14010 110 0000		0 _ 10110 111000	July cas

Module information	Event history	SRAM monitoring	Module monitoring	Online operation	System settings
	· · · · · · · · · · · · · · · · · · ·				

ltem		Description	Reference	
	Kom		page	
		Displays the history up to 512 events occurred in the C Controller module.		
		If 513 or more events have occurred, a new event is inserted by deleting the oldest	Page 4.6	
Ev	ent history	one.		
		The event history is displayed in reverse chronological order.	Fage 13-1	
		Double-clicking an event opens the Detailed event information screen.		
	Date	Displays the date of event occurrence.	Page 13-1	
	Time	Displays the time of event occurrence.	Page 13-1	
	Source	Displays the source of event occurrence. (Example "MQbfDrv" is displayed when a	Dogo 12 1	
	Source	event occurred in the bus interface drive (bus part).)	Page 13-1	
	Event No.	Displays the No. of event occurred.		
	Event information ^{*1}	Displays event information of the event occurred.	Page 13-1	
U	odate button	Acquires and displays the latest event history in the C Controller module.	—	
Clear button		Deletes the event history in the C Controller module.	_	
Save event history button		Saves the displayed event history into a CSV format file.	Page 4-7	

* 1 Displaying all event information at once may not be available when too many events occurred. To check all data of the event information, double-click the event to display the Detailed event information screen and confirm the information.

(3) Detailed event information screen

The detailed information of the event that is double-clicked on the Event history tab is displayed. (\square Page 4-5).



Figure 4.3 Detailed information screen

 Table 4.4 Description of the Detailed information screen

ltem		Reference	
Rem		page	
Date, Time, Source, Event No., Event	Displays the Detailed event information		Page 4-5
info		Displays the Detailed Event information.	
	Displays the type of the	e event.	
	Indication	Description	l
	System (Err.)	The event is a C Controller system error.	
Event type	System (Warning)	The event is a C Controller system warning.	Page 13-1
	System (Info.)	The event is a C Controller system information.	l
	Application	The event is registered from a user program	l
	Αμμισαιίοι	(QBF_RegistEventLog function).	
OK button	Displays the Detailed e	Displays the Detailed event information screen.	
	Displays the next lates	t detailed event information than the currently displayed one.	
Provious button	Clicking the Previous	button while the latest detailed event information is	
	displayed, a message	splayed, a message appears and the oldest detailed event information is	
	displayed.		l
	Displays the next oldest detailed event information than the currently displayed		
	one.		l
Next button	Clicking the Next button while the oldest detailed event information is displayed,		—
	a message appears and the latest detailed event information is displayed.		l
Help button	Starts a Help of C Controller setting utility and displays the information of the event.		

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(4) Specifications of the Event history file

A file format can be selected in "Files of type" on the following screen.



Figure 4.4 Save As screen

To use the text data of the Event history file in a user program etc., select "EventLog File(*.csv)" when saving.

To use them on $Microsoft^{\ensuremath{\mathbb{R}}}$ Excel etc., select "EventLog File[Form2](*.csv)" when saving.

When "EventLog File(*.csv)" is selected

When "EventLog File[Form2](*.csv)" is selected

Event history,192.168.3.3(Default) 4 Date,Time,Source flag,Source,Event No.,Event information 2009/04/21,14:45:45,0001,MObForv,C0000201,AC/DC DOWN occurred. [Error code: 2009/04/21,14:45:00,0001,MObForv,C000020B,An error occurred during module i 2009/04/21,14:44:28,0001,MObForv,C000020B,An error occurred during module i 2009/04/21,14:43:59,0002,MXwdkDrv,40000000,The clock data of the C controll	[Event histor] [192.168.3.3(Default)] [4] [Date] [Date] [Time] [Source flag] [Source] [Event No.] [Event information] [20990/02/11] [44.56.56] [10011] [MOhtTiny]
	[2009/04/21] [14:45:02] [0001] [MOb/Drv] [C000020B] [An error occurred during module initial [2009/04/21] [14:44:28] [0001] [MOb/Drv] [C000020B] [An error occurred during module initial [2009/04/21] [14:43:59] [0002] [MXwdkDrv] [40000000] The clock data of the C controller moc

Figure 4.5 Example of Event history files

(a) Source flag

The source file (the third column) of the event history file indicates the following information.

1
art)

Table 4.5 Source flag

* 1 Corresponding to "Source" in the Event history tab.

Remark

The folder to save the event history file is "C:\MELSEC\CCPU\Param" by default (when SW3PVC-CCPU has been installed in "C:\MELSEC").

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4.4 SRAM Monitoring Tab

WARNING	 For the following controls, configure an interlock circuit in the user program to ensure that the entire system will always operate safely. (1) Changing data of the running C Controller module by connecting a development environment (personal computer) to the C
	 Controller module, configure an interlock circuit in the user program to ensure that the entire system will always operate safely. (2) Changing the operating status (3) Operating from the development environment (personal
	computer) Especially, in the case of a control from an external device to a remote C Controller module, immediate action cannot be taken for a problem on the C Controller due to a communication failure. To prevent this, configure an interlock circuit in the user program, and determine corrective actions to be taken between the external
	device and C Controller module in case of a communication failure.

(1) Precaution for SRAM monitoring tab

The SRAM monitoring tab is updated when the <u>Start monitoring</u> button is clicked by acquiring data only in the display area from the battery-backed-up RAM of the C Controller module.

(2) SRAM monitoring tab

Monitoring of battery-backed-up RAM and changing/saving data can be performed on this screen.



Figure 4.6 SRAM monitoring tab

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 Remark

 The battery-backed-up RAM data, which were entered, cleared, or restored from the SRAM monitoring screen, can be accessed by the following functions. ([]]

 Page 9-3, Section 9.2)

 • QBF_ReadSRAM function

 • QBF_WriteSRAM function

Table 4.6 Description of the SRAM monitoring tab

Module information Event history SRAM monitoring Module monitoring Online operation System settings

Item	Description	Reference
SRAM monitoring	Monitors battery-backed-up RAM data. Double-click one of the data being monitored, or select one and then press the [Enter] key to enter data. (
Offset	Set the start address of the data to be monitored. (In increments of 0x10) When a value is set other than in increments of 0x10, the fraction is dropped at the start of monitoring. When a value outside the setting range is set, it will automatically be corrected to a value within the range, at the start of monitoring. (Default: 0, Setting range: 0 to 1FFFF)	_
Start monitoring or Stop monitoring button	Starts or stops monitoring the C Controller module. "*" flashes in the upper right of the button during monitoring. These buttons are disabled in the offline status.	_
Clear button	Changes all battery-backed-up RAM data to 0.	_
Numeric format	Select a value format to display in the SRAM monitoring. (Default: "HEX.")	_
Display format	Select a display format of SRAM monitoring.*1(Default: "8 bits")	_
Data restoration button	Restores the buttery-backed-up RAM data, which were saved by the <u>Save data</u> button, to the C Controller module. Monitoring is stopped from the time the <u>Data restoration</u> button is pressed until restoration is completed.	Page 4-11
Save data button	Saves all battery-backed-up RAM data. Monitoring stops from when the <u>Save data</u> button is clicked until all data are saved.	Page 4-12
* 1 Endian format (memory layout) of the C Controller module is applied when "16 bits" or "32 bits" is selected.		

Example) Display format when "32 bits" is selected



Figure 4.7 Display example when "32 bits" is selected
(3) Data settings screen

Data can be entered into the battery-backed-up RAM from this screen.



Figure 4.8 Data settings screen

Table 4.7 Description of the Data settings screen

Item	Description	Reference page
Input format	Select a format of the value to be entered in "Input data".	
Input Iomat	(Default: "Numeric format" of the screen which opened this screen.)	
Target address	Displays the address of the battery-backed-up RAM where the data are to be	
larger address	entered.	
Input data	Enter data to be entered into the battery-backed-up RAM.	—
OK button	Writes data entered in "Input data" to the battery-backed-up RAM.	_
	Closes the Data settings screen without writing the input data to the battery-	
	backed-up RAM.	



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(4) Restoration of battery-backed-up RAM data

Binary battery-backed-up RAM data, which were saved in the personal computer, are restored to the C Controller module.

Restore date	1	? 🛛	3
Look in: 🔎	Param	💌 🗧 🖻 🚔 💷 -	
			1
File <u>n</u> ame:		<u>O</u> pen	
Files of <u>type</u> :	Binary Data File(*.bin)	Cancel	

Figure 4.9 Restore data dialog box

(a) Restorable file specification

Table 4.8 Restorable file specification

Item	Description
Extension	bin
Capacity	The capacity of the destination battery-backed-up RAM in the C Controller module, or less

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(5) Specifications of the battery-backed-up RAM data save file

Battery-backed-up RAM data can be saved either in the CSV or binary format. A file format can be selected in "Files of type" on the following screen.

Save As					? 🛛
Save in: 🗀	Param	•	÷	£	r 🖬 📩
File name:				-	Save
- Inter <u>n</u> ame.]			_	2010
Save as <u>t</u> ype:	SRAM Data File(*.csv)				Lancel
	SRAM Data File[Form2](*.csv) Binary Data File(*.bin)				

Figure 4.10 Save As screen

(a) Specifications of the CSV format

To use the text data of the Battery-backed-up RAM data save file in a user program, select "SRAM Data File(*.csv)" when saving.

To use them on $Microsoft^{\mbox{\scriptsize B}}$ Excel etc., select "SRAM Data File[Form2](*.csv)" when saving.

When "SRAM Data File(*.csv)" is selected	When "SRAM Data File[Form2](*.csv)" is selected
------------------------------------------	-------------------------------------------------

Battery backup RAM data, 192.168.3.3 (Default)	[Battery backup RAM data]	[192.168	3.3.3(Default)]				
Offset, [+0], [+1], [+2], [+3], [+4], [+5], [+6], [+7], [+8], [+9], [+A], [+B]	[Offset]	[+0]	[+1]	[+2]	[+3]	[+4]	[+5]
0x00000010.00.00.00.00.00.00.00.00.00.00.0	[0x0000000]	[00]	[00]	[00]	[00]	[00]	[00]
0×00000020,00,00,00,00,00,00,00,00,00,00,0	[0x00000010]	[00]	[00]	[00]	[00]	[00]	[00]
0x00000030,00,00,00,00,00,00,00,00,00,00,0	[0×0000020]	[00]	[00]	j00j	[00]	[00]	[00]
	[0×0000030]	[00]	[00]	[00]	[00]	[00]	[00]
0x00000060,00,00,00,00,00,00,00,00,00,00,0	[0x0000040]	[00]	[00]	[00]	[00]	[00]	[00]
0×00000070,00,00,00,00,00,00,00,00,00,00,0	[0x0000050]	1001	[00]	[00]	1001	[00]	1001
	[0x0000060]	1001	[00]	1001	1001	1001	1001
0X000000A0.00.00.00.00.00.00.00.00.00.00.0	[0x0000070]	1001	1001	1001	1001	1001	1001
	· · · ·						

Figure 4.11 Example of save files

- (b) Specifications of the binary format
 - The extension is "bin".
 - When data are saved in the binary format, the battery-backed-up RAM data are saved as is.

Remark The standard folder to store the battery-backed-up RAM data is "C:\MELSEC\CCPU\Param" by default (when SW3PVC-CCPU has been installed in "C:\MELSEC").

4.5 Module Monitoring Tab

ullet For the following controls, configure an interlock circuit in the user
program to ensure that the entire system will always operate safely.
(1) Changing data of the running C Controller module by connecting
a development environment (personal computer) to the C
Controller module, configure an interlock circuit in the user
program to ensure that the entire system will always operate safely.
(2) Changing the operating status
(3) Operating from the development environment (personal computer)
Especially, in the case of a control from an external device to a
remote C Controller module, immediate action cannot be taken for a problem on the C Controller due to a communication failure.
To prevent this, configure an interlock circuit in the user program, and determine corrective actions to be taken between the external device and C Controller module in case of a communication failure

(1) Precautions for Module monitoring tab

- (a) Switching a tab during monitoring Monitoring stops when the tab is switched to another during monitoring. Monitoring resumes when the <<Module monitoring>> tab is opened next time.
- (b) When a utility communication error has occurred When a utility communication error has occurred during connection, click the

Start monitoring button or set the connection target again in the Connection settings so that the communication can be restarted.

(c) During reset

Communications are not available while the C Controller module is being reset. Start communications after the reset is complete.

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(d) Monitored or tested module

The monitoring from this screen and the following tests are performed for the module selected by "Slot No.".

- Forced output of Output (Y)
- · Forced write to buffer memory
- · Forced write to CPU shared memory

The setting in the "Type" field of Parameter settings (I/O assignment settings) does not affect the target.

Note that tests can be performed for only the modules that are controlled by the C Controller module.

(e) Monitoring of CC-Link module

When monitoring or forced write to buffer memory has been performed to the CC-Link module where the block data assurance per station function is enabled, cyclic data will be automatically refreshed.

However, data are automatically refreshed only when monitoring or forced write to buffer memory has been performed within the range set in "Station information settings" for the master station.

The range set in "Station information settings" can be confirmed by "Slave station offset, size information" (buffer memory address: 3E0H to 5DFH) of the CC-Link module.

For details of the block data assurance per station function, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

The following area will not be refreshed when monitoring or forced write to buffer memory has been performed.

- The write (send) area of link refresh devices (buffer memory) will not be refreshed when monitoring has been performed.
- The read (receive) area of link refresh devices (buffer memory) will not be refreshed when forced write to buffer memory has been performed.
- (f) Precautions for changing module configuration When module configuration is changed after starting C Controller setting utility, any of the following operation updates the module configuration information.
 - · Set the Connection settings.
 - Click the Start monitoring button in the <<Module monitoring >> tab.
 - Click the System info button in the <<Module monitoring >> tab.

(2) Module monitoring tab

The status of input (X), output (Y), and buffer memory of the module installed to the selected slot are monitored on this tab.

The forced output of the output (Y) and forced write to the buffer memory are allowed.



Figure 4.12 Module monitoring tab

Table 4.9 Description of the Module monitoring tab

Module information Event history SRAM monitoring Module monitoring Online operation System settings

ltem	Description	Reference page
Slot No.	Specify a slot No. to be monitored. This item cannot be changed during monitoring. Stop monitoring for changing. In a multiple CPU system, the CPU shared memory can be monitored by setting the slot No. where a CPU module is mounted. "CPU" can be set only in a multiple CPU system configuration. (Default: 0, Setting range: "CPU", 0 to 63)	_
Start I/O No.	Displays the start I/O No. of the module installed to the slot specified in "Slot No.".	_
Control CPU	Displays the CPU No. that controls a module installed in the slot specified in "Slot No.". Displays " " (blank) when the slot where a CPU module is installed, or the slot to which "CPU (Empty)" is set as I/O assignment, is specified in "Slot No.". ("*" appears on the right side of the CPU No. of the C Controller module when it is connected with C Controller setting utility and is a control CPU.)	_
Туре	Displays the I/O points and type of the module if the slot where other than a CPU module is installed is specified in "Slot No.". Within parentheses, the value set in "points" in Parameter settings (I/O assignment settings) is displayed. Displays CPU No. and "connected CPU" when the slot where a CPU module (own station) is mounted is specified in "Slot No.". Displays CPU No. when the slot where a CPU module (another CPU) is mounted is specified in "Slot No.". Displays CPU No. when the slot where a CPU module (another CPU) is mounted is specified in "Slot No.". Displays "CPU (Empty)" when the slot to which "CPU (Empty)" is set as I/O assignment is specified in "Slot No.".	_

(To the next page)

(Default: "HEX.")

(Default: "16 bits")

Display format

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DEVICE MONITORING

Table 4.9 Description of the Module monitoring tab (continued) Module information Event history SRAM monitoring Module monitoring Online operation System settings Reference Description Item page Starts or stops monitoring the C Controller module. Start monitoring or "*" flashes in the upper right of the button during monitoring. Stop monitoring button These buttons are disabled in the offline status. Displays the System information screen. Page 4-17 System info button This button is disabled during monitoring. Monitors the input (X) of the module specified in "Slot No.". Input^{*1} 0: OFF 1: ON Monitors the output (Y) of the module specified in "Slot No.". 0: OFF 1: ON Output^{*1} Double-clicking this item enables forced output using the data setting screen. (Page 4-10, Section 4.4 (3)) Specifying an intelligent function module in "Slot No." enables monitoring of the buffer memory. Specifying a CPU module in "Slot No." enables monitoring of the CPU shared memory. Buffer memory, Double-clicking this item enables forced output by using the data setting screen. CPU shared memory ([] Page 4-10, Section 4.4 (3)) (Default: the value to be monitored, Setting range: see below) •"Display format" is "16 bits": -32768 to 32767 (Он to FFFFн) •"Display format" is "32 bits": -2147483648 to 2147483647 (Он to FFFFFFFH) Address format Select the numeric format for "Address" (Default: "HEX.") Select an address of the buffer memory or CPU shared memory to be monitored. (Default: 0, Setting range: see below) •Buffer memory: 0 or more (Offset •CPU shared memory: 0 to FFFн, 2710н to 5F0Fн For the Q06CCPU-V(-B), the range from 2710H to 5F0FH are not available. C Controller Module User's Manual (Hardware Design, Function Explanation) Displays an error code of the latest error occurred in an intelligent function module. "No error" is displayed when the error code is "0". Latest error "-" is displayed when monitoring other than an intelligent function module. For error codes of the intelligent function module, refer to the manual for each module. Select a numeric format for the buffer memory or CPU shared memory. Numeric format

1 The displayed input and output data covers the points assigned in Parameter settings (I/O assignment settings) for the module mounted to the specified slot No.

Select a display format for the buffer memory or CPU shared memory.

(3) System information screen

Information of the C Controller system can be displayed on this screen.



Figure 4.13 System information screen

Table 4.10 Des	cription of the	e System info	rmation screen
10010 4.10 000	onpuon or un	s oystem mile	1111011 3010011

Item	Description	Reference manual
	Displays the status of CPU modules that configure the C Controller system.	
CPU status	Double-clicking the C Controller module or programmable controller CPU with an	_
	error opens the Error details screen. (
	Displays CPU No. of the CPU module.	
CPU module	"Empty" is displayed when no CPU module is mounted.	_
	(Display: "No.1" to "No.4", "Empty")	
Status	Displays the operation status of the CPU module.	
Status	(Display: "RUN", "STOP", "PAUSE", and "RESET")	
Switch	Displays the switch status of the CPU module.	
Switch	(Display: "RUN", "STOP", and "RESET")	—
	Displays an error code of the first stop error and continuous error occurred in the	
	CPU module.	
Error code	The other errors can be confirmed on the Module information tab () Page 4-2,	_
	Section 4.2) or the Event history tab (
Present error	Displays an message corresponding to the "Error code"	_
Date	Displays the date of the error occurrence.	_
Time	Displays the time of the error occurrence.	

(To the next page)

Item	Description	Reference page	×
CPU status	_	—	ERVIE
Error code help button	Selecting a C Controller module (own station) and clicking the Error code help button starts Help of C Controller setting utility, which displays help information of a current error. This button is available only when the C Controller module (own station) is selected. For errors of programmable controller CPU(s), refer to the manual for the programmable controller CPU used.	_	ALLATION AND ISTALLATION OF TWARE PACKAGE
System configuration	Displays the information of CPU modules that configure the C Controller system. Double-clicking a module (or selecting a module and pressing the [Enter] key) updates the display to information of the selected module, and closes the System information screen. Note that CPU module selection is not allowed for a single CPU system.	_	
Slot	Displays the "slot No." of the module. In the parenthesis, module's base No. and mounting position in the base unit are displayed.	_	ON UTILI ATIONS
Туре	Displays the module type. (Display: "Empty", "Input", "Hi.Input", "Output", "I/O mix", "Intelli.", "Interrupt", and "CPU")	_	COMM OPER/
Series	Displays the series name of the module. (Display: "Q" (fixed))	_	
Model name	Displays the model name of the module.		.ЕR LITY
Points	Displays the I/O points of the module. (Display: 0, 16, 32, 48, 64, 128, 256, 512, 1024)	—	ONTROLL
Start I/O No.	Displays the I/O No. of the module. (Display: 0000 to 0FF0, 3E00 to 3E30)	—	он 5
Control CPU	Displays the CPU No. of the control CPU of the module. (Display: "No.1" to "No.4")	—	
Serial No.	Displays the serial No. of the module.		≧
Ver.	Displays the function version of the module.		JTILI
Product No.	Displays the product No. of the C Controller module. When the model does not have product No. indication, "-" is displayed. For the Q06CCPU-V(-B) this item is not displayed	_	CC-FINK (
Save system information button	Saves the displayed information of the C Controller system into the system information file.	Page 4-20	6 11
Select button	Selecting a module and clicking the Select button changes the display to information of the selected module, and closes the System information screen.	Page 4-15	ET/H UTIL
Exit button	Closes the System information screen.	_	SECN

Table 4.10 Description of the System information screen (continued)



configuration when the screen was opened.

To update the information, close and reopen the System information screen.

. .

(a) Error details screen

- Common error infor	mation	Individual error inform	ation	
Drive title	Program memory	Parameter No.	E006	
File name	PARAM .QPA			

Figure 4.14 Error details screen

Table 4.11 Description of the Error details screen

Item	Description	Reference
Common error information	Displays common information corresponding to the error code.	*1
Individual error information	Displays individual information corresponding to the error code.	*1

* 1 For errors of the C Controller module, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

For errors of the programmable controller CPU, refer to the manual for the programmable controller CPU used.

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(4) Specifications of the system information save file

A file format can be selected in "Files of type" on the following screen.



Figure 4.15 Save As screen

To use the text data of the system information save file in a user program, select "System Info File(*.csv)" when saving.

To use them on Microsoft[®] Excel etc., select "System Info File[Form2](*.csv)" when saving.

When "System Info File(*.csv)" is selected

When "System Info File[Form2](*.csv)" is selected

System information,192.168.3.3(Default) CPU status CPU module,status,Switch,Error code,Present error,Date,Time No. 1,RUN,RUN,O,No error	[System inform [192.168.3.3(Default)] [CPU status] [CPU module] [Status] [No. 1] [RUN] [O]	
<pre>Slot,Type,Series,Model name,Points,Start I/O No.,Control CPU,Serial No.,Ver CPU,CPU,Q,QI2OCCPU-V,3E00,-,110110000000000,B,110112110425561-B 0(0-0),Intelli.,Q,Q51BFILN,32 points,0000,No. 1,110420000000000,B,- 1(0-1),Intelli.,Q,Q71LP21-55,32 points,0020,No. 1,090120000000000,0,- 2(0-2),Intelli.Q,Q71LP21-55,32 points,0020,No. 1,090120000000000,D,100411 3(0-3),Intelli.Q,Q750,16 points,0060,No. 1,-,-,- 4(0-4),Output,Q,Q450,16 points,0060,No. 1,-,-,- 5(0-5),-,-,Empty,-,-,-,-,- 7(0-7),-,-Empty,-,-,-,-,-</pre>	[Slot] [Type] [Series] [Model name] [Points] [Stat I/O 1 [Control C[Serial I] [CPU] [CPU] [Q] [Q12DCCPU-V] [-] [3E00] [-] [110110 [00-0] [Intelli] [Q] [QA71EP21-25] [32 points] [0000] [No. 1] [10420 [10-1] [Intelli] [Q] [QA71EP21-25] [32 points] [0000] [No. 1] [109410 [20-3] [Input] [Q] [QA71] [22 points] [0060] [No. 1] [100410 [30-3] [Input] [Q] [QY50] [16 points] [0080] [No. 1] [-] [40-4] [20 points] [0080] [No. 1] [-] [-] [-] [50-5] [-] [-] [Empty] [-] [-] [-] [-]	lo. [Ver. 00 [B] 00 [B] 00 [D] 00 [D] [-] [-]

Figure 4.16 Example of system information save files

Remark
The standard folder of the system information save file is
"C:\MELSEC\CCPU\Param" (when SW3PVC-CCPU has been installed in
"C:\MELSEC").

4.6 Online Operation Tab



(1) Precautions for the Online operation tab

- (a) When a utility communication error has occurred When a utility communication error has occurred during connection, set the connection target again in the Connection settings so that the communication can be restarted.
- (b) During reset Communications are not available while the C Controller module is being reset. Start communications after the reset is complete.
- (c) The drive to which parameters are written When writing parameters from each of the utilities to the following C Controller module, write them to the same drive.

• Q12DCCPU-V whose serial number (first five digits) is "12042" or later If the parameters are written to different drives, those of the drive, which include C Controller setting parameters, will take effect.

(2) Online operation tab

Read, write, and verification of parameters, and remote operation, clock setting, and IP address setting for the C Controller module are available in this tab.

	👔 C Controller setting utility(192.168.3.3(Default))
	Device settings I/D assignment settings Multiple CPU settings Communication diagnostics Module information Event history SRAM monitoring Module monitoring Online operation System settings
	Target drive Standard RAM 💌
	Read parameters from C Controller module.
	Write parameters Write parameters to C Controller module.
	Verify parameters Verify the parameters match with the C Controller module's parameters. Yerify
peration ——	Remote operation RUN Connected CPU Execute
	Defailed settings Change the IP address, Clock, etc. of C Controlle module.
	Connection settings
	C:\MELSEC\CCPU/Param\sample.cst CPU type:Q12DCCPU-V User name: target

Figure 4.17 Online operation tab

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Table 4.12 Description of the Online operation tab

Madula information			Madula manitaning	On	line i	operation	Queters estimat	
Nodule Information	Event history	SRAW monitoring	wodule monitoring	0111		oporation	System settings	

Item	Description	Reference page
	Set a target drive for reading, writing, or verifying parameters.	
arget drive	This setting is not available for the Q06CCPU-V(-B).	*1
	(Default: Parameter boot drive)	
ead parameters	Reads parameters from the C Controller module	
Read button		
	Writes parameters set in C Controller setting utility into the C Controller module.	
	The written parameters take effect when the C Controller module is powered off	
rite parameters	and then on or is reset.	
Vrite button	Parameters can be written only when "Write authority" is selected in Connection	—
	settings. If "Write authority" is not selected, select it in the Connection settings	
	screen before writing parameters. (
"Clear all parameters of all drives		
prior to writing." checkbox (for the	If the <u>write</u> button is clicked with this checkbox selected, all parameters	
Q12DCCPU-V)	(including the following) of all drives will be cleared before parameter writing.	
	•CC-Link module parameters	_
"Clear all parameters before	•MELSECNET/H module parameters	
Writing." checkbox (for the	•CC-Link IE Controller Network module parameters	
Q06CCP0-V(-B))	 Intelligent function module parameters 	
erify parameters	Cross-check the parameters set in the C Controller module and in C Controller	
	setting utility.	—
erity_button	The result is displayed in a message box.	
emote operation	Remotely controls a C Controller module or programmable controller CPU.	*2
Operation	Select a remote operation.	*2
Operation	(Default: "RUN")	2
	Select a CPU that is remote operation target.	
	To remotely operate a own station in a multiple CPU system configuration, select	*2
larger of 0	"connected CPU". Selecting a CPU No. causes an error.	2
	(Default: "connected CPU")	
	Executes a specified remote operation.	
Execute button	For precautions for the remote RESET operation during writing a user file, refer to	*2
	the C Controller Module User's Manual (Hardware Design, Function Explanation).	
	Opens the Detailed settings screen.	
	Sets the IP address, clock, MD function, and Option settings.	
	Detailed settings is available only when "Write authority" is checked in Connection	Dage 1.00
	1	Page 4-23
Detail button	settings. If "Write authority" is not checked, check it in Connection settings and	U
Detail button	settings. If "Write authority" is not checked, check it in Connection settings and then set the Detailed settings. ($\boxed{3}$ Page 3-5, Section 3.5)	Ū

* 2 For remote operation, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

(3) Detailed settings screen

The IP address, clock, MD function and Option for the C Controller module can be set on this screen.

For the Q06CCPU-V-B, the MD function setting is not available.

Detailed settings(192.168.	3.	3(De	fa	ult))			E
IP address Clock MD function	on	Opti	on				
□ IP address settings CH1	-						
IP address		192		168	3	3	
S <u>u</u> bnet mask	Г	255		255	255	0	
Default gateway	Γ						
IP address settings CH2							
IP address	Γ						
S <u>u</u> bnet mask	Γ						
Default gateway	Γ						
							Set
						_	
							E <u>x</u> it

Figure 4.18 Detailed settings screen

IP address Clock MD function Option

ltem	Description	
		page
< <ip address="">> tab</ip>	Set the IP address for the C Controller module.	Page 4-24
< <clock>> tab</clock>	Set the clock of the C Controller module.	Page 4-27
	Set the timeout value of the communications made by the MELSEC data link	
< <md function="">> tab</md>	function.	Page 4-28
	For the Q06CCPU-V-B, this item is not available.	
< <option>> tab</option>	Set priority of the processing for communications with the C Controller module.	Page 4-28
Exit button	Closes the Detailed settings screen.	_

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(a) IP address tab

The IP address for the C Controller module can be set in this tab.



Figure 4.19 IP address tab

Table 4.14 Description of the IP address tab

	Paddress Clock MD fu	nction Option	
	Item	Description	Reference page
IP address settings CH1		Set whether to enable or disable the 10BASE-T/100BASE-TX interface of CH1. CH1 and CH2 cannot be set to blank (disable) simultaneously. (Default: checked (enable))	_
	IP address	Set the IP address for the 10BASE-T/100BASE-TX interface of CH1. (Default: 192.168.3.3, Setting range: 🖅 Page 4-25, Section 4.6 (3) (a) 1))	_
	Subnet mask	Set the subnet mask for the 10BASE-T/100BASE-TX interface of CH1. (Default: 255.255.255.0, Setting range: 🖵 Page 4-25, Section 4.6 (3) (a) 1))	—
Default gateway		Set the IP address of the default gateway for the 10BASE-T/100BASE-TX interface of CH1. (Default: blank, Setting range: \overrightarrow{z} Page 4-25, Section 4.6 (3) (a) 1))	_
IP address settings CH2		Set whether to enable or disable the 10BASE-T/100BASE-TX interface for CH2. For the Q06CCPU-V(-B), this item is not available. CH1 and CH2 cannot be set to blank (disable) simultaneously. (Default: not checked (enable))	_
	IP address	Set the IP address for the 10BASE-T/100BASE-TX interface of CH2. (Default: blank, Setting range: 💭 Page 4-25, Section 4.6 (3) (a) 1))	_
	Subnet mask	Set the IP address for the default gateway for the 10BASE-T/100BASE-TX interface of CH2. (Default: blank, Setting range: 💭 Page 4-25, Section 4.6 (3) (a) 1))	_
	Default gateway	Set the IP address for the default gateway for the 10BASE-T/100BASE-TX interface of CH2. (Default: blank, Setting range: Page 4-25, Section 4.6 (3) (a) 1))	_
S	et button	Writes the settings of "IP address settings CH1" and "IP address settings CH2" into the C Controller module.	_

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- 1) IP address setting
 - IP address setting range

The following table indicates the IP addresses settable to the C Controller module.

For the IP address setting, consult your network administrator (network planner or person in charge of IP addresses)

Table 4.15 IP address setting range

Class	High-order bits of IP address	IP address range
А	0	0.0.0.0 to 126.255.255.255 (excluding 0.x.x.x)
В	10	128.0.0.0 to 191.255.255.255
С	110	192.0.0.0 to 223.255.255.255

Note that the IP address must satisfy all the conditions indicated in the following table.

Table 4.16 Conditions of the IP address

Conditions

•Bits in the network address portion^(*1) are not set with only 0s or only 1s.

•Bits in the host portion^(*1) are not set with only 0s or only 1s.

•Network address of CH1 and CH2 are different.

* 1 The network address portion is the potion where the subnet mask is corresponding to bit 1 in a IP address.

The host portion is the potion where the subnet mask is corresponding to bit 0 in a $\ensuremath{\mathsf{IP}}$ address.

Example)

	Netwo	Host portion		
IP address	192.	168.	3.	3
Subnet mask (Binary)	111111111.	11111111.	111111111.	00000000

Subnet mask setting range

Note that the subnet mask must satisfy all the conditions indicated in the following table.

Table 4.17 Conditions of the subnet mask

Conditions	Setting example	
Set with only 1s including the most significant bit.		
0 is not inserted between 1s.	255.255.0.0	
•The least significant bit is 0.		

· Update of the settings

The settings made in this tab are displayed by reading out from the C Controller module when this tab is opened.

If failed to read out the settings, an error message appears and the settings will be back to default.

• Setting IP address back to the initialization status or factory setting To set the IP address of the C Controller module back to the initialization status or factory setting, execute the "Default IP setting" mode by the hardware self-diagnostic function.

For details of the hardware self-diagnostic function, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation). To enable the settings
 The entered IP address takes effect when the C Controller module is
 powered off and then on or is reset.
 When the IP address is changed, set the connection target with the new
 IP address in Connection setting.

(b) Clock tab

Clock data of the C Controller can be set in this tab.



Figure 4.20 Clock tab

Table 4.18 Description of the Clock tab

IP address	lock	MD function	Option	
------------	------	-------------	--------	--

ltem		Description	Reference
			page
		Set the clock of the C Controller module and displays it.	
Da	te ^{*1}	This setting is disabled when "Synchronize clock with CPU No.1" is checked.	*2
		(Setting range:2000/1/1 to 2099/12/31)	
		Set the clock of the C Controller module and displays it.	
Tin	ne ^{*1}	This setting is disabled when "Synchronize clock with CPU No.1" is checked.	*2
		(Setting range: 00:00:00 to 23:59:59)	
CL	al autobranization function	Set the multiple CPU clock synchronization function of the C Controller module.	
Clock synchronization function		For the Q06CCPU-V(-B), this setting is not available.	_
	Synchronize clock with CPU No.1	Set whether to enable or disable the multiple CPU clock synchronization function of	
		the C Controller module.	
		When the checkbox is checked, the clock of the C Controller module synchronizes	
		with the CPU No.1 in the multiple CPU system.	
		This item cannot be set when the connected C Controller module is in a single	*2
		CPU system or is CPU No. 1 in a multiple CPU system.	
		The setting takes effect when the C Controller module is powered off and then on	
		or is reset.	
		(Default: Selected (synchronized))	
S	et button	Writes the "Date" and "Clock" data into the C Controller module.	_

* 1 The clock data are displayed by reading from the C Controller module when this tab is opened. When failed to read the data, an error message appears and the clock data of a personal computer is displayed.

* 2 For the clock function, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

1) Precautions for the clock setting

When "Synchronize clock with CPU No.1" is disabled (deselected), power off and then on or reset the C Controller module before setting "Date" and "Time". Set "Date" and "Time" after powering off and then on or resetting the C Controller module.

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(c) MD function tab

The timeout value used in the MELSEC data link function can be set in this tab. For the Q06CCPU-V-B, this setting is not available.



Figure 4.21 MD function tab

Table 4.19 Description of the MD function tab

	ltem	Description	Reference page	
MD function timeout value		Set the timeout value for the communication made by the MELSEC data link function. Default value is recommended to use unless any problem, such as too late response from the MD function, is concerned. Change the timeout time value from the default in the above case. For details of precautions for the MELSEC data link function, refer to the following.	_	
	Q series bus interface (Channel No.12)	Set the timeout value for the communication on the Q series bus interface (Channel No.12). (In units of seconds) (Default: 15, Setting range: 1 to 360)	iterface	
	MELSECNET/H (Channel No. 51 to 54)	Set the timeout value for the communication on the MELSECNET/H (Channel No.51 to 54). (In units of seconds) (Default: 15, Setting range: 1 to 360)	_	
	CC-Link (Channel No.81 to 88)	Set the timeout value for the communication on the CC-Link (Channel No.81 to 88). (In units of seconds) (Default: 30, Setting range: 1 to 360)	_	
	CC-Link IE Controller Network (Channel No. 151 to 154)	Set the timeout value for the communication on the CC-Link IE Controller Network (Channel No. 151 to 154). (In units of seconds) (Default: 15, Setting range: 1 to 360)	_	
Default button		Change the settings back to default.	_	
S	et button	Write the "MD function timeout value" data into the C Controller module. The timeout value takes effect after powering off and on or resetting the C Controller module.	_	

IP address Clock MD function Option

(d) Option tab

The priority of processing for communications with the C Controller module can be set in this tab.



Figure 4.22 Option tab

Table 4.20 Description of the Option tab

IP address Clock MD function Option

Item	Description	Reference page
SW3PVC-CCPU communication	Set the processing priority for communications with the C Controller module.	
setting	The smaller the value, the higher the priority. Conversely, the larger the value, the	
	lower the priority.	
	"Priority" setting may affect the communication between each utility and a C	
	Controller module or behavior of the user program.	—
Priority	•Priority for utility 🏹 Page 4-29, Section 4.6 (3) (d) 1)	
	•Priority for user program 🖅 Page 9-26, Section 9.6	
	(Default: 99, Setting range: 99 to 255)	
Default button	Changed the settings back to default.	_
	Write the "Priority" data into the C Controller module.	
Set button	The "Priority" takes effect after powering off and on or resetting the C Controller	_
	module.	

1) "Priority" for "SW3PVC-CCPU communication setting"

- The default setting can be used for normal system operation.
- Change the "Priority" value when the default value may affect the behavior of user programs.

Note that changing "Priority" value may cause timeout in a communication between utility and the C Controller module.

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4.7 System Settings Tab



Parameters (system settings) of the C Controller module and system-related parameters can be set in this tab.

(1) Precautions for the System settings tab

(a) Multiple CPU system configuration
 Set the multiple CPU parameters on the CPU No. 1.
 For the CPU module No.2 and later, utilize the parameters set on the CPU No.1.
 For the multiple CPU parameter, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

(2) System settings tab

👔 C Controller setting utility(192.168.3.3(Default))	
Device settings I/O assignment settings Module information Event history SRAM monitoring	Multiple CPU settings Communication diagnostics
Points occupied by empty slot(") 16 Points	WDT(Watchdog time) setting System WDT setting 1000 - ms
Remote reset	Error check
Output mode at STOP to RUN Previous state Reset output (Y)	Operation mode at the time of error Fuse blown Stop
Intelligent function module settings	Module verify error Stop Module synchronization Image: Synchronization Image: Synchronize intelligent function module on ising edge Image: Synchronize intelligent function
Setting list Load initial setting file Dear	Built-in Ethernet port open settings
×	Event history registration settings
(") must be set identically for all CPUs when using multiple CPUs	Defaulţ
Connection settings	_oad File <u>Save File H</u> elp E <u>xit</u>
crimeroperfection/karamisampleresc	User name: target

Figure 4.23 System settings tab

 Table 4.21 Description of the System settings tab

Module information Event history SRAM monitoring Module monitoring Online operation System settings			
Item Description		Reference page	
Points occupied by empty slot	Set the points to each empty slot of the main base unit and extension base unit. In a multiple CPU, the settings for each CPU module must be identical. (Default: 16 points)	—	
Remote reset	Set whether to allow remote reset of the C Controller module. (Default: not checked (not allowed))	_	
(To the next page)			

Table 4.21 Description of the System settings tab (continued)

Module information Event history SRAM monitoring Module monitoring Online operation System settings

Item	Description	Reference page
Output mode at STOP to RUN	Select the output (Y) status in the case where the C Controller module is switched from STOP to RUN, either from "Previous state" or "Reset output (Y)". (Default: "Previous state")	_
Intelligent function module settings	Clicking the Interrupt event setting button opens the Intelligent function module interrupt event settings screen.	
Initial settings of intelligent function module	Reads the Initial settings of intelligent function module. The Initial settings are written to the C Controller module along with other parameters. Subsequently, they are written to the buffer memory of the intelligent function module when the bus interface driver starts up.	_
Load initial setting file button	Loads the Initial settings of intelligent function module from a project file of GX Developer.	Page 4-48
Setting list	Displays "I/O address", "Module name", and "Initial setting" loaded by clicking the Load initial setting file button.	_
Clear button	Deletes the information displayed in the setting list.	
Default button	Change the settings back to default.	
WDT (Watchdog timer) setting	Set the time of the system watchdog timer. (Default: 1000, Setting range: 20 to 2000)	*1
Error check	Select desired error detection. "Battery check" "Fuse blown check" "Module verification" (Default: all checked (detect errors))	_
Operation mode at the time of error	Set whether to continue or stop operation of the C Controller when an error is detected in "Fuse blown" or "Module verify error" (Default: Stop)	
Module synchronization	Set whether to synchronize the startup of the bus interface driver with that of the intelligent function module. Check the checkbox when making the startup of the C Controller module synchronized with that of the intelligent function module (positioning module). When not setting "Module synchronization", interlocks must be provided between the C Controller module and intelligent function module. (Default: checked (synchronize))	_
Built-in Ethernet port open settings	Set this for communication with peripheral devices through Ethernet. This setting is not available for the following: •Q12DCCPU-V whose serial No. (first five digits) is "12041" or earlier •Q06CCPU-V(-B) Set whether to anable connection with a peripheral such as CX Developer.	*1
Enable MELSOFT connection	(Default: not checked (disable))	

1 For the system watchdog timer and communication with peripheral devices through Ethernet, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

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Table 4.21 Description of the System settings tab (continued)

System settings Module information Event history SRAM monitoring Module monitoring Online operation

	Item	Description	Reference page	OVERVIE
Event history registration settings		Set whether to register the event history data. This setting is not available for the following: •Q12DCCPU-V whose serial No. (first five digits) is "12041" or earlier •Q06CCPU-V(-B)		AND ON OF CKAGE
	Do not register system (information) event details.	Set whether to register System (Info.) events to the event history or not. Events of System (Err.) and System (Warning) are registered to the event history regardless of this setting. If this is selected, System (Info.) events, such as clock data setting or correction, will not be registered to the event history. Therefore, if System (Info.) events have occurred frequently, overwriting and deletion of System (Err.) or System (Warning) events can be prevented. (Default: not checked (not register))	Page 13-1	ILITY SOFTWARE PA

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(3) Intelligent function module interrupt event settings screen

Interrupt event data of an intelligent function module can be set on this screen. The interrupt event is an event for interrupt notification that occurs in response to an interrupt from an intelligent function module.

For interrupt events from the intelligent function module, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).



Figure 4.24 Intelligent function module interrupt event settings screen

Item	Description	Reference page
Interrupt event start No	Set the start No. of the interrupt event.	
interrupt event start NO.	(Default: blank, Setting range: 50 to 255)	
Number of interrupt events	Set the No. of the interrupt events.	
Number of interrupt events	(Default: blank, Setting range: 1 to 16)	
Start I/O No	Set the start I/O No. of the intelligent function module.	
Start 1/O No.	(Default: blank, Setting range: 0000 to 0FF, 3E00 to 3E30)	
	Set the SI No. (Interrupt event No. 🖅 Page 4-34, Section 4.7 (3) (a)) of the	
Start SI No.	intelligent function module.	—
	(Default: blank, Setting range: 0 to 15)	
Check button	Checks whether the settings are correct.	—
[Fad] hutter	Saves the settings and closes the Intelligent function module interrupt event	
	settings screen.	
	Closes the Intelligent function module interrupt event settings screen without	
	saving the settings.	

Table 4.22 Description of the Intelligent function module interrupt event settings screen

Interrupt event No.	Interr	upt factor
0		1st point
1		2nd point
2		3rd point
3		4th point
4		5th point
5		6th point
6		7th point
7	Interrupt by interrupt module	8th point
8		9th point
9		10th point
10		11th point
11		12th point
12		13th point
13		14th point
14		15th point
15		16th point
16 to 49 Not used		·
50 to 255	Intelligent function module interrupt	Using parameters, set which intelligent
50 10 255		function module uses the No.

(a) List for No. and factors of interrupt event

Table 4.23 List for Event No. and factor of event

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4.8 Device Settings Tab

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B

Parameters (device settings) of the C Controller module can be set in this tab. Set whether to enable the device function or the points of the devices used. For the device function, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

The devices set on this screen cannot be used for the following C Controller module. • Q12DCCPU-V whose serial No. (first five digits) is "12041" or earlier

(1) Device settings tab

🛐 C Controller setting utility(192.168.3.3(Default))		
Module information Event history SRAM monitoring Device settings I/D assignment settings	Module monitoring Online Multiple CPU settings	operation System settings Communication diagnostics
Device settings IF Use device function <u>Sym Dg Device</u> <u>Data register</u> <u>D 10</u> 12K Device total <u>25</u> KB Word device <u>24</u> KB Bit of	evice 1 KB	
		Default
Connection settings	Load File Save File	Help Exit
cutare and any special set	COULD - COLOD CODULU	I lass a second barrant

Figure 4.25 Device settings tab

Table 4.24 Description of the Device settings tab

Device settings / I/O assignment settings / Multiple CPU settings / Communication diagnostics

Item	Description				Reference page	
Use device function	Set whether to use the device function or not. (Default: not checked (Do not use the device function.)) When using the device function, the device points can be changed in 16-point units within the ranges shown below. Enter a value for each "Dev. point" in the number format specified in the "Dig." field.				*1	
	Description	Sym.	Dig.	Default	Setting range	
	Internal relay	М	10	8K	0 to 60K	
	Data register	D	10	12K	0 to 4086K	
Device total	Displays the tota	al size of the devi	ces in K bytes. ^{*2}	2		_
Word device	Displays the total size of the word devices in K bytes. ^{*2}					_
Bit device	Displays the total size of the bit devices in K bytes. ^{*2}					_
Default button	Changes the se	tings to default v	alues.			

1 For the device function, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

* 2 The total size is displayed as a value rounded up to the nearest integer. (Example: When the total size is 0.1KB, "1" is displayed before KB.)

Remark
Special relays (SM) and special registers (SD) can be used regardless of the
above setting.

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4.9 I/O Assignment Settings Tab

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B
\bigcirc	\bigcirc	

Parameters (I/O assignment) of the C Controller module can be set in this tab. Assign I/O to slots and set parameters related to the base units where modules are installed.

For the I/O assignment, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

(1) Precautions for the I/O assignment settings tab

(a) Multiple CPU system configuration

Set the multiple CPU parameter on the CPU No. 1.

For the CPU module No.2 and later, utilize the parameters set on the CPU No.1. For the multiple CPU parameter, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

(2) I/O assignment settings tab

👔 C Controller setting utility(192.168.3.3(Default))								
Module info Device	ormatior e setting	n]s	Event history 1/0 assig	SRAM monitoring	Module monitorin Multiple CPU sett	g Online ings	operation Communication	System settings
_1/0 assignr	ment(")							
		Slot	Type	Model name	Points	Start X/Y 🔺	Swi	tch settings
	0	CPU	CPU 👻	Q12DCCPU-V	-		-12-	()
	1	0(*-0)	Intelli. 👻	QJ61BT11N	32 points 👻		Deta	iled settings
	2	1(*-1)	Intelli. 👻	QJ71LP21-25	32 points 👻			
	3	2(*-2)	Intelli. 👻	QJ71GP21-SX	32 points 💌			
	4	3(*-3)	Input 👻	QX41	32 points 🗸			
	5	4(*-4)	Output 👻	QY50	16 points 👻			
	6	5(*-5)	-					
	7	6(*-6)	-			· ·		
Base settin	Lea ig(")	wing start >	Y blank may not b	e recognized as an error duri	ng error check.			
			Base model	Power model	Extension cable	Slots 🔺	Bas	e mode
	M	lain				-		Auto
	Ext	Base 1				<u> </u>		Detail
	Ext	Base 2						
	Ext	Base 3				<u> </u>	8 :	lot default
	Ext.	Base 4						
	E XL	pase o		I			12	slot default
(*) must be set identically for all CPUs when using multiple CPUs Import multiple CPU parameters Default								
Load File Save File Help Egit								
CIMELSEC\CCPU/Param\sample.cst CPU type:012DCCPU-V User name: target								

Figure 4.26 I/O assignment settings tab

Table 4.25 Description of the I/O assignment settings tab

Device settings I/O assignment settings Multiple CPU settings Communication diagnostics

Item		Description	Reference page
I/O assignment		I/O assignment setting. In a multiple CPU system, the settings for each CPU module must be identical.	
	Slot	Displays "slot No." of the module. In the parenthesis, module's base No. and mounting position in the base unit are displayed.	

(To the next page)

Ite

I/O assignment

Туре

Points

Model name

Table I/O assignm	4.25 Description of the I/O assignment settings tab (continued)		N
m	Description	Reference	ERVIE/
	_	page	ک م
	Select the type of the mounted module. In a multiple CPU system, no error will be displayed when "CPU (Empty)" is set to the position where the C Controller module does not support. Check for incorrect setting. (Default: " "(blank))	_	LATION AND TALLATION OF VARE PACKAGE
	Enter the model name of the mounted module.		NSTAL JNINS ⁻ SOFTV
	(Default: " "(blank))	—	3

Device settings

	Start X/Y	When changing I/O No., select the I/O No. of the slot.	—
	Switch settings button	Opens the Switch settings for I/O and intelligent function module screen.	Page 4-39
	Detailed settings button	Opens the Intelligent function module detailed settings screen.	Page 4-40
Ba	se setting	Base unit setting. In a multiple CPU system, the settings for each CPU module must be identical.	—
	Base model	Enter the model name of the base unit.	—
	Power model	Enter the model name of the power supply module.	—
	Extension cable	Enter the model name of the extension cable.	—
	Olate	Select the number of slots of the base unit.	
	3003	(Default: none)	
	Reas mode	Select Base mode either from "Auto" or "Detail"	
		(Default: "Auto")	
	8 slot default], 12 slot default button	Batch-sets the base unit to the specified number of slots.	_
		Reads out multiple CPU parameters either from the following file.	
button		•Project file created with GX Developer	Page 4-48
		 Parameter setting file created with C Controller setting utility. 	
De	fault button	Changes the settings back to default.	_

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(3) Switch settings for I/O and intelligent function module screen

Switch settings for I/O and intelligent function module can be set on this screen. For the switch settings, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).



Figure 4.27 Switch settings for I/O and intelligent function module screen

Item	Item Description	
Input format	Select the numerical input format. (Default: "HEX.")	_
Slot, Type, Model name	Displays the "Slot", "Type", and "Model" set on the I/O assignment screen.	Page 4-37
	Set the switches of the programmable controller CPU or intelligent function	
	module.	
Switch 1 to Switch 5	In a multiple CPU system, the settings for each CPU module must be identical.	_
	Switch settings of the programmable controller CPU is available only in the	
	12DCCPU-V.	
	Saves the settings and closes the Switch settings for I/O and intelligent function	
End button	module screen.	
	Closes the Switch settings for I/O and intelligent function module screen without	
[Cancel] button	saving the settings.	_

Table 4.26 Description of the Switch settings for I/O and intelligent function module screen

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(4) Intelligent function module detailed settings screen

Detailed settings for I/O modules and intelligent function modules can be set on this screen.

For setting items on this screen, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

 Intelligent function module detailed settings
 Image: Control CPU image: CPU image: Control CPU image: Control CPU image: CPU image: CPU image: CPU image: CPU image: CPU image: Control CPU image: CPU image: CPU image: CPU image: CPU image:

Figure 4.28 Intelligent function module detailed settings screen

Item	Descr	Reference page	
Slot, Type, Model name	Displays the "Slot", "Type", and "Model" s	et on the I/O assignment screen.	Page 4-37
Error time output mode	Select the output mode for error detection (Default: "Clear")	_	
H/W error time CPU operation mode	Select the operation mode of the C Contr (Default: "Stop")		
	Set the I/O response time.		
	Mounted module	Default	
I/O response time	High-speed input module, interrupt module	0.2	—
	Input module, I/O combined module	10	
		(In increments of ms)	
	Set the control CPU		
Control CPU	In a multiple CPU system, the settings for	_	
	(Default: "No.1")		
	Saves the settings and closes the Intellig		
End button	screen.		
	Closes the Intelligent function module detailed settings screen without saving the		
[Cancel] button	settings.		—

Table 4.27 Description of the Intelligent function module detailed settings screen

4.10 Multiple CPU Settings Tab

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B

Parameters of the C Controller module (multiple CPU setting) for configuring a multiple CPU system can be set in this tab.

Set parameters regarding the multiple CPU system.

(1) Precautions for the Multiple CPU settings tab

(a) Parameter setting

Set the multiple CPU parameters on the CPU No.1. For the CPU module No.2 or later, utilize the parameters set on the CPU No.1. For the multiple CPU parameter, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

(2) Multiple CPU settings tab

Q12DCCPU-V
 Module information
 Event history
 SRAM monitoring
 Module monitoring
 Online operation
 Sys

 Device settings
 1/10 assignment settings
 Multiple CPU settings
 Communication diag
 Number of CPUs(*) Online module change(*) Enable online module change with another CP 4 🔻 When the online module change with another CPU is enabled I/O status outside of the group cannot be read. Host CPU number 1/D sharing when using Multiple CPUs(*) ☐ All CPUs can read all inputs ☐ All CPUs can read all outputs No specification 💌 Operation mode(") Operation mode at the time of CPU stop Multiple CPU high speed transmission area setting Communication area setting (refresh setting) Use multiple CPU high speed transm All CPUs stopped due to an error in CPU
 CPU specific sund ronge (*)

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 3
 86.0
 3072
 10000
 13071
 0

 3
 36.0
 3072
 10000
 13071
 0

 3
 36.2
 3072
 10000
 13071
 0

 3
 36.3
 3072
 10000
 13071
 0
 CPU specific send range (*) CPU Auto refresh Setting All CPUs stopped due to an error in CPU system area (k)[*] All CPUs stopped due to an error in CPU No. 1 No. 2 1 • 1 • 1 • 1 • Multiple CPU synchronous startup Target CPU I CPU No.1 I CPU No.2 Advanced settings(*) Total 16K points CPU No.3 The maximum total number of points is 16K. The total points contain the capacity of the restricted system (*) must be set identically for all CPUs when using multiple CPUs Import multiple CPU parameters Default Load File Save File Help Connection settings Exit :\MELSEC\CCPU\Param\sample.cst CPU type:Q12DCCPU-V User name: target



Figure 4.29 Multiple CPU settings tab

Device settings I/O assignment settings Multiple CPU settings Communication diagnostics				
Item	Description	Reference page		
Number of CPUs	Set the total number of the programmable controller CPUs, C Controller modules, and Motion CPUs that comprise the multiple CPU system. In a multiple CPU system, the settings for each CPU module must be identical. (Default: 1)	_		
Host CPU number	Set the CPU No. of the host CPU (C Controller module). For the Q06CCPU-V(-B), this setting is not available. This item is disabled when "Number of CPUs" is set to "1". (Default: No specification)	_		
(To the next page)				

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Table 4.28 Description of the Multiple CPU settings tab (continued)

Device settings I/O assignment settings Multiple CPU settings Communication diagnostics						VIEW		
	Item		Desc	cription			Reference page	OVER
Operation mode		Set the operation mode for a CPU stop error on each programmable controller CPU. In a multiple CPU system, the settings for each CPU module must be identical. This item is disabled when "Number of CPUs" is set to "1". (Default: checked (all CPUs are to be stopped for an error on each CPU module))			_	LATION AND TALLATION OF VARE PACKAGE		
Multiple CPU synchronous startup setting		Check the target CPU module(s) of the multiple CPU synchronized boot-up. For the Q06CCPU-V(-B), this setting is not available. In a multiple CPU system, the settings for each CPU module must be identical. This item is disabled when "Number of CPUs" is set to "1". (Default: checked (Multiple CPU synchronized boot-up is enabled))		_	Y 30FTV			
Online module change		Set whether to allow online change on the Process CPU. In a multiple CPU system, the settings for each CPU module must be identical. This item is disabled when "Number of CPUs" is set to "1".			_	IMON UTILIT [,] RATIONS		
I/O sharing when using Multiple CPUs		Set whether to import the non-group input and/or output states. In a multiple CPU system, the settings for each CPU module must be identical. This item is disabled when "Number of CPUs" is set to "1". (Default: not checked (not import the input and output states)		_	COM COM			
Multiple CPU high speed transmission area setting		Set the Multiple CPU high speed transmission area. For the Q06CCPU-V(-B), this item is disabled. In a multiple CPU system, the settings for each CPU module must be identical. This item is disabled when "Number of CPUs" is set to "1".			_	CONTROLLER		
U	Use multiple CPU high speed Set when using multiple CPU high-speed transmission.				_	5 8		
C	PU specific send range	Set the points to the multi module uses to send data (Default: see below, Settin or less including the syster Setting of "Number of CPUs" 2 3 4 2 3	criticities enable ple CPU high-a ing range: 12 to im area)) CPU No.1 7 7 3	speed transmis 14 points or le Send range f CPU No.2 7 3 3 3	sion area when the ss (Note that the ss (Note that the second sec	CPU No.4		
	User setting area	Displays usable range in the user setting area.				H UT		
	Auto refresh	Displays the points of the multiple CPU high-speed transmission area where each CPU module performs auto refresh. For setting the multiple CPU high-speed transmission area, open the Auto refresh settings screen by clicking the Setting button. (_		
	system area	Set size for the system area that is used as the multiple CPU high-speed transmission area. This item is disabled when "Advanced settings" is not checked. (Default: 1)			_	CONTROL UTILIT		
Advanced settings Check when using the system area. (Default: not checked (not use))							CC IE	

(To the next page)

Table 4.28 Description of the Multiple CPU settings tab (continued)

	Device settings I/O assignment settings Multiple CPU settings Communication diagnostics				
	ltem	Description	Reference page		
Communication area setting (refresh setting) ^{*1}		Set the auto refresh area within CPU modules	_		
	Change screens Select any of registered refresh setting. (Default: "Setting1")		_		
	Send range for each CPU	Set the points of a shared memory by which each CPU module use to send data. Points for "Start" and "End" are automatically calculated and displayed. (Default: 0, Setting range: 0 to 2048)	_		
[Import multiple CPU parameters] button		Reads out multiple CPU parameters either from the following file. •Project file created with GX Developer •Parameter setting file created with C Controller setting utility.	Page 4-48		
Default button		Changes the settings back to default.	_		

* 1 The following dialog box appears when switching this screen to another without setting the number smaller than the refresh setting.

C Contr	oller setting utility(192.168.3.3(Default)) 🛛 🛛		
Unset area exists before the set refresh area. The setting No. for the set refresh area will be moved			
	CK]		

Figure 4.30 Dialog box

Clicking the OK button moves up the preset refresh setting to an empty area with the smaller No.

Example)



Points for the system area used for dedicated instructions can be changed to 2K by selecting "Advanced settings" which increases the number of dedicated instructions to be simultaneously executed.

For dedicated instructions, refer to the manual for the Motion CPU used.

Points of the Multiple CPU high speed transmission area to which each CPU module performs auto refresh can be set on this screen.

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Figure 4.32 Auto refresh settings screen

	Item	Description
< <cpu no.1="">> tab to <<cpu no.4="">> tab</cpu></cpu>		Select the CPU module to be configured.
		Either "(Send)" or "(Receive)" is displayed with a tab name when
		"No.1" to "No.4" are selected for "Host CPU number".
		"(Send)" and "(Receive)" indicates whether respective CPU data
		are sent to or received from the C Controller module.
СР	U specific send range	Set the points to the Multiple CPU high speed transmission area
		where each CPU module performs auto refresh.
	points	(Default: " "(blank), Setting range: up to "Max. points")
	Start	Displays the Multiple CPU high speed transmission area set in
		"Auto refresh" by address.
	End	The C Controller module calculates the value to display.
Total points		Displays total of the points set in "Auto refresh".
Settable points		Displays the maximum points that can be set in "Auto refresh".
Check button		Check for incorrect setting.
End button		Saves the settings and closes the Auto refresh settings screen.
Cancel button		Closes the Auto refresh settings screen without saving the
		settings.

4.10 Multiple CPU Settings Tab

Table 4.29 Description of the Auto refresh settings screen

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4.11 Communication Diagnostics Tab

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B
		×

Whether access from the C Controller module in a multiple CPU system to another CPU is available or not can be checked in this tab.

(1) Precautions for the Communication diagnostics tab

(a) When a utility communication error has occurred When a utility communication error has occurred during diagnosing, set the connection target again in the Connection settings so that the communication can be restarted.

(2) Communication diagnostics tab

👔 C Controller setting utility(192.168.3.3(Default))					
Module information Event history SRAM monitoring Device settings I/D assignment settings	Module monitoring Online operation System settings Multiple CPU settings Communication diagnostics				
Communication diagnostics					
Target CPU No. 1 💌 Repeat count	5 Start				
Execution count 5					
Result Normal Error code C)				
Mean time to communicate 50 ms					
<u>Connection settings</u>	Load File Save File Help Exit				
C:\MELSEC\CCPU\Param\sample.cst	CPU type:Q12DCCPU-V User name: target				

Figure 4.33 Communication diagnostics tab

 Table 4.30 Description of the Communication diagnostics tab

Device settings I/O assignment settings Multiple CPU settings Communication diagnostics

	ltem	Description	Reference page	
Communication diagnostics		Performs communication diagnostics		
	Target CPU	Select the CPU to diagnose.		
		Selecting the host CPU displays the error code "19203".		
		Selecting an empty slot displays the error code "19200".	_	
		(Default: "No.1")		
	Popost count	Specify the number of times that communication diagnostics is performed.		
	Repeat count	(Default: 5, Setting range 1 to 32767)		
	Start or Stop button	Executes or stops the communication diagnostics.	_	
	Execution count	Displays the number of times that communication diagnostics has been executed.	_	
		"Normal" appears when the execution result is normal.		
	Result	"Error" appears when the execution was resulted in an error.	—	
		"Diagnosing" appears during diagnosing.		
	Mean time to communicate	Displays the mean time required for communication.	_	
	Error codo	Displays an error code of communication diagnostics.		
		For details of error codes, refer to HELP of the MELSEC data link function.		
4.12 System Menu



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(1) System menu

System menu in C Controller setting utility can be accessed either in the following four way.

- Right-click on the title bar.
- Click the (1) icon on the title bar.
- Press the [Alt] key and then the [\downarrow] key.
- Right-click the icon (1) on the task bar while pressing the [Shift] key.



Figure 4.34 System menu

Table 4.31 Description of the System menu

Item	Description	Reference page
Move, Minimize, Close	Refer to manuals for Microsoft [®] Windows [®] .	_
Specify CPU type	Specifies a C Controller module to which parameters are set or to be monitored. This item cannot be selected during monitoring.	Page 3-4
CC-Link utility	Starts CC-Link utility. When C Controller setting utility is connected online, this utility is started with the same connection target connected.	Page 5-1
MELSECNET/H utility	Starts MELSECNET/H utility. When C Controller setting utility is connected online, this utility is started with the same connection target connected.	Page 6-1
CC IE Control utility	Starts CC IE Control utility. When C Controller setting utility is connected online, this utility is started with the same connection target connected. For the Q06CCPU-V-B, this utility cannot be used.	Page 7-1
Device monitoring utility	Starts Device monitoring utility. When C Controller setting utility is connected online, this utility is started with the same connection target connected. For the Q06CCPU-V-B, this utility cannot be used.	Page 8-1
Version information	Opens the version information screen.	Page 4-47

(2) Version information screen

Version information of C Controller setting utility can be checked on this screen.



Figure 4.35 Version information screen (Example: Version 3.03D)

Table 4.32 Description of the version information scree	Table 4.32	Description	of the	version	information	screen
---------------------------------------------------------	------------	-------------	--------	---------	-------------	--------

Item	Description	Reference page
Software package	_	_
SW3PVC-CCPU-E	Displays the version of SW3PVC-CCPU.	—
C Controller setting utility	Displays the update date of C Controller setting utility.	—
Product information	Displays the product information of the C Controller module (Model name, Serial	
Model name	No., and product No.) when this utility is connected to the module online. The System information screen also displays the same information.	
Serial No.	This information cannot be displayed offline.	
Function version	In a multiple CPU system, the information can also be confirmed in the system monitor (product information list) of GX Developer.	
Product No.	For the Q06CCPU-V(-B), "-" appears for the product No.	
OK button	Closes the version information screen.	_

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4.13 Reading Initial Setting File and Importing Multiple CPU Parameters



(1) Displaying the screen

Display the Open project screen in either of the following ways.

- Click the Load initial setting file button in the System settings tab.
- Click the Import multiple CPU parameters button in the I/O assignment settings tab.
- Click the Import multiple CPU parameters button in the Multiple CPU settings tab

(2) Open project screen

A project of the set data can be selected on this screen.



Figure 4.36 Open project screen

Table 4.33 Description of the Open project screen

Item	Description	
Project drive	Select the drive where a project is saved.	
Drive/Path	Enter the drive and path for the project.	
Project name	Enter the project name to be read.	
Open button	Reads out the project.	
Cancel button	Closes the screen without reading out the project.	

(3) Precautions for utilizing set data

(a) Initial setting file of intelligent function modules and multiple CPU parameters can be imported from the following files.

Table	4.34	Files	to	import
IUNIC	7.07	1 1100	w	mpore

Item	Description
Initial sotting file of intelligent function module	Project file in GX Developer (🖅 Page 4-49, Section 4.13 (3) (d))
	For GX Works2, the projects saved in the format of GX Developer can be reused.
	Project file in GX Developer
Multiple CPU parameters	For GX Works2, the projects saved in the format of GX Developer can be reused.
	•Parameter setting file in C Controller setting utility

(b) When transferring data of GX Developer set by another personal computer, to a development environment (personal computer), transfer the project folder of GX Developer.

The project cannot be specified if only file was transferred.

- (c) When multiple CPU parameters are utilized between different CPU types, (Page 3-4, Section 3.4) default values will be displayed for the parameters not supported by the CPU type.
- (d) Reading out a project file of GX Developer
 On the C Controller module, the Initial settings of intelligent function module can be read out through a project file of GX Developer.
 Note that only the initial settings made by GX Configurator can be read out.

Name	Availability	Measures for unreadable GX Configurator
GX Configurator-AD	0	—
GX Configurator-DA	0	—
GX Configurator-SC	×	Write each parameter of the serial communication module to the buffer memory using the Bus interface function (QBF_ToBuf).
GX Configurator-CT	0	—
GX Configurator-TC	0	—
GX Configurator-TI	0	—
GX Configurator-FL	0	—
GX Configurator-PT	0	—
GX Configurator-AS	0	—
GX Configurator-QP	×	 For the Q12DCCPU-V To write parameters to a positioning module, connect a development environment (personal computer) and the C Controller module with a USB, and use GX Configurator-QP Version 2.30G or later. Image: GX Configurator-QP Version 2 Operating Manual For the Q06CCPU-V(-B) Write parameters to a positioning module to the buffer memory using the Bus interface function (QBF_ToBuf). By using the sample program (QPParamSet.c), the parameter file created with GX Configurator-QP can be transferred to the positioning module. (Image: Page 12-1, CHAPTER 12)
GX Configurator-CC	×	Set parameters for the CC-Link module using CC-Link utility of SW3PVC-CCPU.

Table 4.35 Availability of intelligent function module parameter read

O: Read available, ×: Read N/A

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4.14 Precautions



(1) Simultaneous use of utility

Up to eight C Controller setting utilities can be simultaneously activated.

(2) Written parameters

Parameters written to the C Controller module take effect when the C Controller module is powered off and then on or is reset.

(3) Tabs available to operate offline

When C Controller setting utility connection is offline, data can be set only in the System settings tab, I/O assignment settings tab, and Multiple CPU settings tab.

(4) Terminating Microsoft[®] Windows[®]

Do not terminate Microsoft[®] Windows[®] while C Controller setting utility is running. Terminate C Controller setting utility first and then Microsoft[®] Windows[®].

(5) Connection during script file processing

Connection from utility to a C Controller module may not be available during processing a script file (while the RUN LED is flashing). If the RUN LED remains flashing, refer to the C Controller Module User's Manual

(6) Time required for connection from each utility to the C Controller module

(Hardware Design, Function Explanation) and troubleshoot the problem.

The following time is required for the C Controller module to connect to each utility after power-on or reset.

• When executing a script file, "STARTUP.CMD":

Upon completion of the RUN LED flashing.

• When not executing a script file, "STARTUP.CMD":

Fifteen (15) seconds after completion of start or reset

Do not attempt a connection before the above time has elapsed after completion of power-on or reset.

Changing "Priority" to a larger value in the Option tab of C Controller setting utility increases the time after which the C Controller module can be connected.

CHAPTER 5 CC-LINK UTILITY

5.1 CC-Link Utility Function List

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B
\circ		

			Availability		Poforonco
Name	Description	Q12DCCPU	Q06CCPU	Q06CCPU	nage
		-V	-V	-V-B	page
Specify CPU type	Specifies a C Controller module to which parameters are set		0	0	Page 3.4
Specify CFU type	or to be monitored.	0	0	0	Fage 5-4
Connection settings	Sets parameters to a C Controller module which is to be	0	0	0	Page 3-5
Connection settings	connected with this utility.	0	0	0	Tage 0-0
Parameter setting file	Saves parameters set in C Controller setting utility into a file or	0	0	0	Page 3-14
saving/loading	loads the file.	0	0	0	Tage 0-14
Module information	Displays information of the CC-Link module (own station)	0	0	0	Page 5-2
display	controlled by the connected C Controller module.	0	0	0	Tage J-2
Other station	Displays line states of other stations (CC-Link network	0	0	0	Page 5-6
monitoring	stations).	0	0	0	Tage 5-0
Online operation	Reads, writes, verifies the CC-Link parameter.	0	Δ	Δ	Page 5-9
Parameter settings	Sets parameters for the CC-Link modules.	0	0	0	Page 5-11
Target settings	Sets a logical station number for access to a CPU module in a	0	0	~	Page 5 15
larger settings	multiple CPU system where a CC-Link module is mounted.	0	0	~	1 age 3-13
Test	Tests the mounted CC-Link modules.	0	0	0	Page 5-18

Table 5.1 CC-Link utility function list

 \bigcirc : Available, \triangle : Available but partially restricted, \times : N/A

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5.2 Module Information Tab

Q12DCCPU-V Q06CCPU-V Q06CCPU-V-E

The Module information tab displays information of the CC-Link module (own station) controlled by the connected C Controller module.

(1) Precautions for the Module information tab

(a) When a utility communication error has occurred
 When a utility communication error has occurred during connection, click the

Start monitoring button or set the connection target again in the Connection settings so that the communication can be restarted.

(b) During reset

Communications are not available while the C Controller module is being reset. Start communications after the reset is complete.

(2) Module information tab

Module information Other station monitoring Online operation Parameter settings Target settings Test				
Target module: Slot 1 to 4 Stop monitoring				
Start I/O No. 0000 (Channel No. 81 Sta. No.	0: Master station	Link scan tim	e 2 m
Data link status	In data link	Error status	Normal	Details
Slot 2	Shannel No. Sta. No.	-	Link scan tim	e m
- Slot 3-		Error status		
Start I/O No.	Shannel No. Sta. No.	Error status	Link scan tim	e m Details
- Slot 4 Start I/O No. (Channel No, Sta, No,	,	Link scan tim	ie 🔽 m
Data link status		Error status		Details
onnection settings	Load File	<u>S</u> ave File	Help	Exit

Figure 5.1 Module information tab



Module information Other station monitoring Online operation Parameter settings Target settings Test

	Item	Description
Target module		Select the CC-Link module to display its information.
		(Default: "Slot 1 to 4")
Start monitoring button, Stop monitoring button		Starts/stops monitoring of the CC-Link module.
		"*" flashes in the upper right of the button during monitoring.
		These buttons are disabled in the offline status.
Slot n		Displays information of the CC-Link module.
(n is within the range set to "Target module")		The information is displayed in ascending order of start I/O No.
	Start I/O No.	Displays the start I/O No. of the CC-Link module.
	Channel No.	Displays the channel No. of the CC-Link module whose parameters have been set.
	Channel No.	"-" appears when "Channel No." has not been set.



Table 5.2 Description of Module information tab (continued)

Module information Other station monitoring Online operation Parameter settings Target settings Test

	Item	Description
Slot n		—
		Displays the station No., Station type, and Operation mode.
		(Display example: "0: Master station (Ver.2 mode)", "1: Local station")
	Sta. No.	For details of operation mode, refer to the following.
		∫ Page 5-3, Section 5.2 (2) (a)
Link scan time Data link status		Displays current link scan time of the CC-Link module. (In increments of ms)
		Displays data link status of the CC-Link module. (
	Error status	Displays error status of the CC-Link module. (
		Opens the Detailed module information screen. (
		This button is disabled during monitoring.

(a) Operation mode

The following indicates details of the Operation mode.

Table 5.3 Details of Operation mode

Display	Description
No display	Cyclic transmission data size has not been increased.
no display	Remote net(Ver.1 mode)
	Both the CC-link module supporting/not supporting the cyclic
(Additional mode)	transmission data size increase exist.
	Remote net(Add. mode)
(Vor 2 mode)	Cyclic transmission data size has been increased.
(ver.z mode)	Remote net(Ver.2 mode)

(b) Data link status

The following indicates details of the Data link status.

Table	5.4	Details	of	Data	link	status
IUNIC	v	Dotano	~	Dutu		Juluu

Display	Description
In data link	Data link is being performed.
Suspended data link	Data link is suspended.
Initial status	In initial status (before parameter update)
Waiting for receiving parameters	Parameters have not been received.
Disconnecting (no request polling)	Disconnected from data link network due to no request from the
Disconnecting (no request poining)	master station.
Disconnecting (Link error)	Disconnected from data link network due to a line error.
Disconnecting (Other)	Disconnected from data link network due to any other factor.
Performing line test	Line test is in process.
Performing parameter setting test	Parameter setting test is in process from the master station.
Performing auto return	Processing for automatically returning to data link network is
Penoming auto-return	being performed.
Resetting	CC-Link module is being reset.

(c) Error status

The following indicates details of the Error status.

Table 5.5 Details of error status

Display	Description
Normal	Normal status.
Transport error	Transmission channel error was detected.
Parameter error	Parameter error was detected.
CRC error	CRC error was detected.
Timeout error	Timeout error was detected.
Abort error	CC-Link module (gate array) error was detected.
Setting error	Setting error was detected.
	Any other error was detected.
Other error	Refer to the manual for the CC-Link module and troubleshoot the problem.

(3) Detailed module information screen

Detailed information of the CC-Link module are displayed on this screen.

Detailed module	information	X
Start I/O No.	0000	OK
Channel No.	81	Save SB/SW
Sta. No.	0: Master station	
Mode switch status	2: 2.5Mbps (Online)	
Data link status	In data link	
Error status	Normal	
Model name	QJ61BT11N	
Product information	11042000000000-B	
Link scan time(ms)	Max. 3 Min. 2 Current	2

Figure 5.2 Detailed module information screen

Table 5.6 Description of Detailed module information screen

Item	Description
Start I/O No., Channel No., Sta. No.	Displays detailed information of the CC-Link module. (
Mode switch status	Displays the mode switch status of the CC-Link module. (
Data link status	Displays data link status of the CC-Link module. (
Error status	Displays error status of the CC-Link module. (
Model name	Displays the model name of the CC-Link module.
Product information	Displays the product information (serial No. and function version) of the CC-Link module.
Link scan time (ms)	Displays the maximum, minimum, and current scan time of the CC-Link module. (In increments of ms)
OK button	Closes the Detailed module information screen.
	Saves the link special relay (SB) and link special register (SW) data of the CC-Link module into a
Save SB/SW button	CSV format file. (



The information displayed on the Detailed module information screen is based on the setting when the screen was opened.

To update the information, close and reopen the Detailed module information screen.

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(a) Mode switch status

The following indicates details of the Mode switch states.

Display	Transmission speed	Mode
0: 156kbps (Online)	156Kbps	
1: 625kbps (Online)	625Kbps	
2: 2.5Mbps (Online)	2.5Mbps	Online
3: 5Mbps (Online)	5Mbps	
4: 10Mbps (Online)	10Mbps	
5: 156kbps (Line test □)	156Kbps	
6: 625kbps (Line test □)	625Kbps	Line test
7: 2.5Mbps (Line test □)	2.5Mbps	When \Box =1, station No. is 0.
8: 5Mbps (Line test □)	5Mbps	When \square =2, station No. is 1 to 64.
9: 10Mbps (Line test □)	10Mbps	
A: 156kbps (Hardware test)	156Kbps	
B: 625kbps (Hardware test)	625Kbps	
C: 2.5Mbps (Hardware test)	2.5Mbps	Hardware test
D: 5Mbps (Hardware test)	5Mbps	
E: 10Mbps (Hardware test)	10Mbps	
F: Not available	—	

Table 5.7 Details of Mode switch states

(4) Specifications of the SB/SW save file

A file format can be selected in "Save as" on the following screen.

Save As			? 🛛
Save jn: 🗀	Param	• 6	I 🕂 🎫
File <u>n</u> ame:			Save
Save as type:	SBSW/Save File(*.csv)	•	Cancel
	SBSWS ave File(*.csv)		

Figure 5.3 Save As screen

To use the text data of the SB/SW save file in a user program etc., select "SBSWSave File(*.csv)" when saving.

To use them on Microsoft[®] Excel etc., select "SBSWSave File[Form2](*.csv)" when saving.

When "SBSWSave File(* csv)" is selected	When "SBSWSave File[Form2](* csv)" is selected

SB/SW,192.168.3.3(Default) QJ61BT11N ,11042000000000-B Start I/O No., Station No., Station type 0000, 0, Master station SB/SW information	[SB/SW] [192.168.3.3(Default)] [Q.61BT11N] [11042000000000-B] [Start I/O No.] [Station N [Station type] [0000] [0]
Device, Value, , Device, Value SB0000, 0. , Sw0000, 0000	[SB/SW information]
SB0001, 0, , SW0001, 0000	[Device] [Value] [Device] [Value]
SB0002, 0, , SW0002, 0000	[SB0000] [0] [SW0000] [0000]
SB0003, 0, , SW0003, 0000	(SB0001) (0) (SW0001) (0000)
500004, 0, , 500004, 0000	ໂດດດດກຳ ໂດດດາ ເຊິ່ງ ເຊິ່ງ ເຊິ່ງ ເຊິ່ງ ເ

Figure 5.4 Examples of SB/SW save files

The folder of the SB/SW save file is stored in "C:\MELSEC\CCPU\Param" by default. (When SW3PVC-CCPU has been installed in "C:\MELSEC").

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Other Station Monitoring Tab 5.3



View all stations button Opens the View all stations screen. (Frage 5-8, Section 5.3 (3)) Displays the connection number.

No.

Table 5.8 Description of the Other station monitoring tab (continued)

Module information Other station monitoring Online operation Parameter settings Target settings Test

Item	Description
Target module	—
Sta. No.	Displays the station No.
Reserved station information	Displays the reserved station.
Error invalid station information	Displays the error invalid station.
Station type	Displays the error invalid station.
Occupied number	Displays the number of occupied stations.
Status	Displays the status of each station module. (
Transient error	Displays the transient error of each module.
Expanded cyclic setting	Displays the expanded cyclic setting.
	This item are not displayed when the status of the target module is "Remote net(Ver.1 mode).
Pomoto station points	Displays the number of remote station points.
Remote station points	This item are not displayed when the status of the target module is "Remote net(Ver.1 mode).
Start monitoring or	Starts or stops monitoring the CC-Link module.
	"*" flashes in the upper right of the button during monitoring.
Stop monitoring button	These buttons are disabled in the offline status.

(a) States

Details of states are given below.

Table 5.9 Details of states

Display	Description
Normal	Normal
Temporary error invalidity status	Temporary error is invalid.
Data link error	Link status is in error.
WDT error	Watchdog timer error has occurred.
Blown fuse confirmation error	There is a station that has a fuse blow.
Station No. duplication	Station number is duplicated.
Switch changing	Switch setting was changed.

(3) View all stations screen

The following indicates communication states of other stations.



Figure 5.6 View all stations screen

Table 5.10 Description of View all stations screen

Item	Description
	Communication status of each station is coded in color as follows.
	White: Normal communication
	Red: Error station
	Green: Error invalid station
Statue of each station	Blue: Reserved station
Status of each station	Yellow: Temporary error invalid station
	The information displayed on the screen is based on the communication status when the
	screen was opened.
	Any changes on the communication status after opening the screen does not take effect to the
	display.
OK button	Closes the View all stations screen.

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5.4 Online Operation Tab

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B

The CC-Link parameters can be read, written, or verified from this tab.

(1) Precautions for the Online operation tab

- (a) When a utility communication error has occurred When a utility communication error has occurred during connection, set the connection target again in the Connection settings so that the communication can be restarted.
- (b) During reset

Communications are not available while the C Controller module is being reset. Start communications after the reset is completes.

(c) The drive to which parameters are written When writing parameters from each of the utilities to the following C Controller module, write them to the same drive.

• Q12DCCPU-V whose serial No. (first five digits) is "12042" or later If the parameters are written to different drives, those of the drive, which include C Controller setting parameters, will take effect.

(2) Online operation tab

🚝 CC-Link utility(192.168.3.3(Default))
Module information Other station monitoring Online operation Parameter settings Target settings Test
Target drive Standard RAM
- Read parameters
Read parameters from C Controller module.
Wite parameters
Write parameters to C Controller module.
- Verify parameters
Verify the parameters match with the C Controller module's parameters.
Connection settings Load File Save File Help Egit
C:\MELSEC\CCPU/Param\sample.cd CPU type:Q12DCCPU-V User name: target

Figure 5.7 Online operation tab

Table 5.11 Description of Online operation tab

Module information Other station monitoring Online operation		
Item	Description	
	Set a target drive for reading, writing, or verifying parameters.*1	
Target drive	This setting is not available for the Q06CCPU-V(-B).	
	(Default: Parameter boot drive)	
Read parameters		
Read button	Reads out the CC-Link parameter from the C Controller module.	
*	1 For the drives to which parameters can be written (user memory), refer to the C Controller Module	

User's Manual (Hardware Design, Function Explanation).

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Table 5.11 Description of Online operation tab (continued)

Module information Other station monitoring Online operation Parameter settings Target settings Test		
Item	Description	
	Writes the CC-Link parameter to the C Controller module.	
	The written parameters take effect when the C Controller module is powered off and then on or is	
Write parameters	reset.	
Write button Parameters can be written only when "Write authority" is selected in Connection settings. If "W		
	authority" is not selected, select it in the Connection settings screen before writing parameters.	
	([Page 3-5, Section 3.5)	
Verify parameters	Verifies the CC-Link parameters set in the C Controller module and in CC-Link utility.	
Verify button	The verification result is displayed in a message box.	

To read, write, or verify parameters, connect the C Controller module and the development environment (personal computer) online.

5.5 Parameter Settings Tab

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B
0	0	

Set the CC-Link module parameter in the Parameter settings tab.

(1) Parameter settings tab

👯 CC-Link utili	ity(192.168.3.3(Default))		
Module information	n Other station monitoring Online operation Parameter settings Target settings Test		
Number of modules 1 _ Blank : No setting			
Target module	1 Slot		
Start I/O No.	Operation settings		
0000	Type Master station C Hold C Clear		
Channel No.	Mode Remote net(Ver.1 mode)		
81 💌	Expanded cyclic setting Single		
	Occupied number Exclusive station 1		
- Station informa All connect co	ation settings unt 1 🔽		
Karal Station Tune Station Station Station			
1/1	Remote I/O station 🔍 🗸 Single 🔍 Exclusive station 1 💌 32 poir		
Connection settin	gs Load File Save File Help Exit		
C:\MELSEC\CCPU\P	aram\sample.ccl CPU type:Q12DCCPU-V User name: target		

Figure 5.8 Parameter settings tab

Table 5.12 Description of Parameter settings tab

Module information Other station monitoring Online operation Parameter settings Target settings Test			
Item	Description		
	Set the number of CC-Link modules that are to be controlled by the C Controller module.		
Number of modules	Selecting "(Blank)" means no setting (Setting cleared).		
	(Default: "(Blank)")		
	Select a module to configure. (Default: 1)		
Target module	The numbers for this item will be automatically rearranged in ascending order of start I/O numbers		
	when saving the parameter setting file or when switching the tab.		
	Set a start I/O No. of a CC-Link IE Controller Network module.		
Start I/O No.	(Setting range: 0 to FE0H (The set value must be unique, and not duplicated with the one for		
	another CC-Link IE Controller Network module.))		
	Set a channel No. of a CC-Link IE Controller Network module.		
	The set value is used to open the channel from Device monitoring utility or a user program		
Channel No	(MELSEC data link functions).		
Chamerno.	For the Q06CCPU-V-B, this setting is not available.		
	Channel No. must be unique, and not duplicated with the one for another CC-Link IE Controller		
	Network module.		
Default button	Sets the parameters for Operation settings and Station information settings back to default.		
Check button	Checks for any setting error.		

Table 5.12 Description of Parameter settings tab (continued)

Module information Other station monitoring Online operation

Parameter settings Target settings Test

Item	Description
Operation settings	Set the operation mode of the CC-Link module.
Tune	Select a type of the CC-Link module.
Туре	(Default: "Master station")
Mada	Select a mode of the CC-Link module.
Mode	(Default: "Remote net(Ver.1 mode"))
	Select the expanded cyclic setting of the CC-Link module.
Expanded evelie setting	This setting is available only when "Local station" is set in "Type" and other than "Remote net(Ver.1
	mode)" is specified in "Mode".
	(Default: "Single")
Error event: input data status	Set how the input data be handled in the event of data link error.
	(Default: "Clear")
	Set how the link data to be handled in the event of CPU stop.
CPU stop: data link status	This setting is available for the J61BT11N.
CPO stop. data link status	For the QJ61BT11, the "Refresh" is applied regardless of the setting on this tab.
	(Default: "Refresh")
	Set the number of occupied stations of the CC-Link module (local station).
Occupied number	This setting is available only when "Local station" is set in "Type".
	(Default: "Exclusive station 1")
Other settings button	Opens the "Other settings" screen. (
	Set the total of connected modules and each CC-Link module station information.
	This setting is available only when "Master station" is set in "Type", and any of the following is set in
~ ~ ~ ~ ~ ~	"Mode".
Station information settings	•Remote net(Ver.1 mode)
	•Remote net(Ver.2 mode)
	•Remote net(Add. mode)
	Set the number of modules that are to be connected to the CC-Link module.
All connect count	(Default: 64)
	Select a type of the station.
	Default values are given below.
Station Type	•When "Remote net(Ver.1 mode)" is set in "Mode": "Remote I/O station"
	•When "Remote net(Ver.2 mode)" or "Remote net(Add. mode)" is set in "Mode": "Ver.1 Remote I/O
	station"
	Select a expanded cyclic points of the CC-Link module.
	(Default: "Single")
Expanded cyclic setting	This setting is available only when the following conditions are satisfied.
	•When "Remote net(Ver.2 mode)" or "Remote net(Add. mode)" is set in "Mode".
	•When "Ver.2 Remote device station" or "Ver.2 Intelligent device station" is set in "Type".
Occupied number	Select the number of occupied stations.
	(Default: "Exclusive station 1")
	Select the points of remote station.
Remote station points	This setting is available only when "Remote net(Ver.2 mode)" is set in "Mode".
	For defaults and setting range, refer to the CC-Link System Master/Local Module User's Manual.

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Table 5.12 Description of Parameter settings tab (continued)

Module information Other station monitoring Online operation Parameter settings Target settings Test

	ltem		Description
Station information settings		;	—
	Reserve/invalid station select		Set the CC-Link module as a reserved or invalid station.
			(Default: "No setting")
ĺ			This setting is available when any of the following is set in "Type".
	Intelligent buffer select (word)		Intelligent device station
			Ver.1 Intelligent device station
			Ver.2 Intelligent device station
	Cand	Sond	Specify the send area. (In increments of words)
		Senu	(Default: 64, Setting range: 0, 64 to 4096)
	Receive	Pagaina	Specify the receive area. (In increments of words)
		(Default: 64, Setting range: 0, 64 to 4096)	
	Automatic	Specify the automatic update area. (In increments of words)	
		(Default: 128, Setting range: 0, 128 to 4096)	
	Clear button		Clears parameters set in "Station information setting" and set defeat values instead.

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(2) Other settings screen



Figure 5.9 Other settings screen

Table 5.13 Description of Other settings screen

Item	Description
	Set the number of retries in the case of a communication error (transient transmission error
Retry count ^{*1}	occurrence)
	(Default: 3, Setting range: 1 to 7)
Auto roturn station sount*1	Set the number of modules that can be automatically reconnected in one link scan.
Auto return station count	(Default: 1, Setting range: 1 to 10)
Other discusses to the station New *1	Set a station No. of the standby master station.
Standby master station No.	(Default: 0 (no setting), Setting range: 0 to 64)
CDU devues dete liek etetue*1	Set the data link status when an error occurs in the C Controller module.
CPU down: data link status	(Default: "Stop")
Delay information setting ^{*1}	Set "0".
Block data assurance per station	Set whether to use the block data assurance per station function.
block data assurance per station	(Default: unchecked (not use))
Set button	Applies the settings and closes the Other settings screen.
Cancel button	Closes the Other settings screen without applying the settings.
*	1 This setting is available when "Master station" is set in "Type", and any of the following is set in

"Mode".

•Remote net(Ver.1 mode) •Remote net(Ver.2 mode)

•Remote net(Add mode)

5.6 Target Settings Tab

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B
<u> </u>		

A logical station No. is set from the Target settings tab.

The logical station No. is used, when a target station is a multiple CPU system, to access a programmable controller CPU other than the control CPU of the target station. Note that the accesses indicated below does not require the logical station No. settings.

(1) Precaution for the Target settings tab

Set a programmable controller CPU in "Target CPU"

(2) Target settings tab

CC-Link utility(192.168.3.3(Default))
Target module Slot 1: Channel No. 61
CC-Link
Target list Logical sta. No. Sta. No. Target CPU 65 1 Change
Connection settings Load File Save File Help Egit
C:\MELSEC\CCPU\Param\sample.ccl CPU type:Q12DCCPU-V User name: target

Figure 5.10 Target settings tab

Table 5.14 Description of Target settings tab

Module information Other station monitoring Online operation Parameter settings Target settings

	Item	Description
Target module		Select a module to configure.
		(Default: "Slot 1")
		Specify a logical station No. for the module selected in "Target module".
	vicel etc. No	(Default: 65, Setting range: 65 to 239)
Logical sta. No.		The logical sta. No. is a logical number to be specified as "Sta. No." in Device monitoring utility and
		a user program (MELSEC data link function).
[Sta No	Select a station No. of the CC-Link module controlled by a multiple CPU system.
	Sta. NO.	(Default: 0, Setting range: 0 to 63)
Ī	Torgot CDU	Select a CPU of the access target (CPU No. in a multiple CPU system).
	larget CPU	(Default: 1, Setting range: 1 to 4)
	Set button	Enters the added and changed data (Logical sta. No., Sta. No., and Target CPU) to the Target list.

	Table 5.14 Description of Target settings tab (continued)		
M	Module information Other station monitoring Online operation Parameter settings Target settings		
	Item	Description	
Tar	get list	Displays the logical No. set to the module selected in "Target module", corresponding station No., and target CPU in a list.	
	Change button	Displays the setting data (of Logical sta. No.) selected from the target list into a Logical sta. No. field to change. (Clicking the row also displays the setting to change.)	
	Delete button	Deletes the setting data (of Logical sta. No.) selected from the target list.	

(3) Access example

When the settings in the following tab are applied in the below system, a CC-Link module controlled by the C Controller module can access CPU No.4 via another CC-Link module (whose control CPU is CPU No.2) by using the logical station No. "65". The access is also available by opening channel No.81 and setting 65 for the station No. in Device monitoring utility or a user program (MELSEC data link function).



Figure 5.11 System configuration example

* 1 When CPU No.4 cannot configure a multiple CPU system, access to CPU No. 4 is not available by using a logical station No.

The following indicates the Target settings for the above access example.



Figure 5.12 Target settings tab setting

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(4) Access that does not require a logical station No. setting

In the following access, use the station No. of a CC-Link module on other station. The logical station No. setting is not required.



Figure 5.13 Access that does not require a logical station No. setting



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5.7 Test Tab

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B
	\square	

A network test and line test for the mounted CC-Link module can be executed from this tab.

(1) Precautions for the Test tab

- (a) Connection status for testing
 The network and line test can be executed while the CC-Link module is online.
 While in offline, the both tests cannot be executed.
- (b) Line test

Select station(s) to be tested by selecting either "All stations (1 to 64)" or "Selected station" as necessary and then conduct the test.

(Page 5-19, Section 5.7 (3))

 (c) When an communication error has occurred To restart the communication, set data again in the Connection settings.

(2) Test tab

Module information Other station monitoring Online operation Parameter settings Target settings Test
Juuuu Sta. No. Ju Master station Test item
Connection settings Load File Save File Help Egit C:\MELSEC\CCPUIParam\sample.cd CPU type:/012DCCPU-Y User name: target

Figure 5.14 Test tab

Table 5.15 Description of the Test tab

Module information Other station monitoring Online operation Parameter settings Target settings		
Item	Description	
Torget module	Select a module for testing.	
larger module	(Default: "1" slot)	
Start I/O No.	Displays the start I/O No. of the CC-Link module.	

Table 5.15 Description of the Test tab (continued)

M	odule information Other station m	onitoring Online operation	Parameter settings Target settings Test
	Item		Description
Tar	get module		_
		Displays a station No., type of the station, and operation mode.	
	Own station information	For details of the operation mode, refer to the following.	
		Figure 5-3, Section 5.2 (2) (a)	
		Select the test to conduct.	
		Display	Description
	Test item	Line test	Tests the connected station for connectivity with a data link.
			(Selectable for the Master station only)
		Network test	Tests a data link start and stop.
		Conduct a test selected in t	he above "Test item".
	Start button	Line test J Page 5-19, Section 5.7 (3) (a)	
		Network test 🗇 Page	e 5-20, Section 5.7 (3) (b)

(3) Testing procedure

(a) Line test

The line test can be conducted only when the data link status of the CC-Link module (\square Page 5-2, Section 5.2) is "In data link" or "Perform auto-return". When the line test for "All stations (1 to 64)" resulted in error, which indicates possible error station, conduct the line test again selecting "Selected station".

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1) Setting

Select the target station of the line test and click the \overline{OK} button to start the test.

Line test	
All stations(1 to 6)	4]
C Selected station	1 .
OK	Cancel

Figure 5.15 Line test screen

2) Results



For details of error codes, refer to Help of the bus interface function.

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(b) Network test

The network test can be conducted only when the data link status of the CC-Link module is "In data link" or "Perform auto-return". ([] Page 5-2, Section 5.2)

1) Setting

Select whether to start or stop a data link and then click the \overline{OK} button to start the test.

Network test	
 Start data link. Stop data link. 	
	Cancel

Figure 5.17 Network test screen

2) Result

The test result is displayed on the following screen.

CC-Link	utility(192.168.3.3(Default))	×
(į)	Finished normally. Error code: 0x0	
	OK]	

Figure 5.18 Network test result screen

For details of error codes, refer to Help of the bus interface function.

5.8 System Menu

Q.22001.01 Q.00	
	\circ

(1) System menu

System menu in CC-Link utility can be accessed either in the following four way for operation.

- Right-click on the title bar.
- Click the (#) icon on the title bar.
- Press the [Alt] key and then the [\downarrow] key.
- Right-click the icon (#=) on the task bar while pressing the [Shift] key.

쀼	CC-Link utility(192.	168.3.3(D	ef
_	<u>M</u> ove Mi <u>n</u> imize		rir
×	⊆lose	Alt+F4	Ŧ
_	Specify CPU type		
	C Controller setting utility Device monitoring utility	,	ן ח (
	Version information		, (
-	-010(2		

Figure 5.19 System menu

Table 5.16	Description	of System menu
------------	-------------	----------------

Item	Description
Move, Minimize, Close	Refer to manuals for Microsoft [®] Windows [®] .
Specify CPU type	Specifies a C Controller module to which parameters are set or to be monitored. (Page 3-4, Section 3.4) This item is disabled during monitoring.
C Controller setting utility	Starts C Controller setting utility. (Page 4-1, CHAPTER 4) When CC-Link utility is connected online, this utility is started with the same connection target connected.
Device monitoring utility	Starts Device monitoring utility. (Page 8-1, CHAPTER 8) When CC-Link utility is connected online, this utility is started with the same connection target connected. For the Q06CCPU-V-B, this utility cannot be used.
Version information	Opens the Version information screen. (

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(2) Version information screen

Version information of CC-Link utility can be checked on this screen.



	COPYRIGHT (c) 2007 MITSUBISHI ELECTRIC CORPORATION ALL RIGHTS RESERVED Figure 5.20 Version information screen (Example: Version 3.01B) Table 5.17 Description of Version information screen	ATION AND ALLATION OF ARE PACKAGE
ltem		STALI
Software package		ZSX
SW3PVC-CCPU-E	Displays the version of SW3PVC-CCPU.	3
CC-Link utility	Displays the update date of CC-Link utility.	
OK button	Closes the Version information screen.	, ∠Li
		COMMON UTIL

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5.9 Precautions

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B
	0	
-		<u> </u>

(1) Parameter details

For details of respective parameters, refer to CC-Link System Master/Local Module User's Manual.

(2) Simultaneous use of utilities

Up to eight CC-Link setting utilities can be used simultaneously.

(3) Written parameters

Parameters written to the C Controller module take effect when the C Controller is powered off and then on or is reset.

(4) Tabs available to operate offline

When CC-Link utility connection is offline, data can be set only in the Parameter settings tab and the Target settings tab. For the Q06CCPU-V-B, only parameters shown in the Target settings tab can be set.

(5) Terminating Microsoft[®] Windows[®]

Do not terminate $Microsoft^{\ensuremath{\mathbb{R}}}$ Windows^{$\ensuremath{\mathbb{R}}$} while CC-Link utility is running. Terminate CC-Link utility first and then $Microsoft^{\ensuremath{\mathbb{R}}}$ Windows^{$\ensuremath{\mathbb{R}}$}.

(6) Connection during script file processing

Connection from utility to a C Controller module may not be available during processing a script file (while the RUN LED is flashing). If the RUN LED remains flashing, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation) and troubleshoot the problem.

(7) Time required for connection from each utility to the C Controller module

The following time is required for the C Controller module to connect to each utility after power-on or reset.

- When executing a script file, "STARTUP.CMD":
 - Upon completion of the RUN LED flashing.
- When not executing a script file, "STARTUP.CMD":

Fifteen (15) seconds after completion of start or reset

Do not attempt a connection before the above time has elapsed after completion of power-on or reset.

Changing "Priority" to a larger value in the Option tab of C Controller setting utility increases the time after which the C Controller module can be connected.

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MELSECNET/H UTILITY CHAPTER 6

MELSECNET/H Utility Function List 6.1

		Q12DC	CPU-V Q0	6CCPU-V	206ССРU-V-В
	Table 6.1 MELSECNET/H Utility function	on list			
			Availability		
Item	Description	Q12DCCPU	Q06CCPU	Q06CCPU	Reference
		-V	-V	-V-B	page
Specify CDI I type	Specifies a C Controller module to which parameters are set	0	0		Dogo 2.4
Specify CFO type	or to be monitored.	0	0	0	Fage 3-4
Connection sottings	Sets parameters to a C Controller module which is to be	0	0	0	Page 3.5
Connection settings	connected with this utility.	0	0	0	Fage 3-3
Parameter setting file	Saves parameters set in MELSECNET/H utility into a file or	0	0	0	Page 3-14
saving/loading	loads the file.	0	0	0	Tage 5-14
Module information	Displays information of the MELSECNET/H (host station)	0	0	0	Page 6-2
	controlled by the connected C Controller module.	0	0	0	Tage 0-2
Error history	Displays the history of errors that occurred in the	0	0	0	Page 6-9
monitoring	MELSECNET/H module.	0	0	0	Tage 0-0
Other station	Displays line states of other stations (MELSECNET/H network	0	0	0	Page 6-14
monitoring	stations).	0	0	0	Tage 0-14
Online operation	Reads, writes, verifies the MELSECNET/H parameter.	0	Δ	Δ	Page 6-25
Parameter settings	Sets parameters for the MELSECNET/H modules.	0	0	0	Page 6-27
	Sets a logical station number for access to a CPU module in a				
Target settings	multiple CPU system where a MELSECNET/H module is	0	0	×	Page 6-39
	mounted.				

O: Available, ∆: Available but partially restricted, ×: N/A

6.2 Module Information Tab

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B
\bigcirc	\bigcirc	

The Module information tab displays information of the MELSECNET/H module (host station) controlled by the connected C Controller module.

(1) Precautions for the Module information tab

 (a) When a utility communication error has occurred When a utility communication error has occurred during connection, click the

Start monitoring button or set the connection target again in the Connection settings so that the communication can be restarted.

(b) During reset

Communications are not available while the C Controller module is being reset. Start communication after the reset is complete.

(2) Module information tab

HELSECNET/H utility(192.168.3	.3(Default))		_ 🗆 🛛
Online operation Module information	Parameter settings Error history monitoring	Target se Other station m	onitoring ×
Link device refresh time(ms) Max.	1 Min. 1 Cu	irrent 1	op <u>m</u> onitoring
Start I/O No. 0000 Channel No. 51	Network No. 1 Gro	up No. 0 Sta. No.	1
Type Control station Status	In data link	Link scan time(ms)	5 Details
2 Slot Start I/O No. Channel No.	Network No. Gro	up No. Sta. No.	
Type Status		Link scan time(ms)	Details
3 Slot Start I/O No. Channel No.	Network No. Gro	up No. Sta. No.	
Type Status		Link scan time(ms)	Details
4 Slot Start I/O No. Channel No.	Network No. Gro	up No. Sta. No.	
Type Status		Link scan time(ms)	Details
Connection settings	Load File Save F	ile <u>H</u> elp	E <u>x</u> it
C:\MELSEC\CCPU\Param\sample.mnh CP	U type:Q12DCCPU-V	User name: target	

Figure 6.1 Module information tab



	Item	Description	Corresponding SB	Corresponding SW	
Link device refresh time		Displays total link device refresh time required to refresh the			
		MELSECNET/H and CC-Link IE Controller Network controlled by the C	—	—	
		Controller module (host CPU). (In increments of ms)			
		Displays the maximum total link device refresh time in the past record.			
	Max.	"-" appears when Link device refresh cycle (Page 6-27, Section	—	—	
		6.6) is 0ms.			
		Displays the minimum total link device refresh time in the past record.			
	Min.	"-" appears when Link device refresh cycle (—	
		6.6) is 0ms.			
			/T	(I	

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Table 6.2 Description of the Module information tab (continued)

				>
ltem	Description	Corresponding SB	Corresponding SW	OVERVIE
Link device refresh time	-	—	—	2
	Displays current total link device refresh time.			
Current	"-" appears when Link device refresh cycle (Page 6-27, Section	—	—	_ ۳ ۾
	6.6) is 0ms.			
Start monitoring or	Starts or stops monitoring of the MELSECNET/H module.			LATION
	"*" flashes in the upper right of the button during monitoring.	—	—	STAL
Stop monitoring button	These buttons are disabled in the offline status.			
1 Slot to 4 Slot	Displays information of the CC-Link module.			
	The information is displayed in ascending order of start I/O No.			5
Start I/O No.	Displays the start I/O No. of the MELSECNET/H module.	_	_	
	Displays the channel No. of the MELSECNET/H module.			≿
Channel No.	"-" appears when "Channel No." has not been set. (—	—	
	Section 6.6)			
	Displays the network No. of the MELSECNET/H module.			MMO
Network No.	"-" appears when "Network No." has not been set. (_	SW0040	ŏē
	Section 6.6)			4
	Displays the group No. of the MELSECNET/H module.			
Group No.	"-" appears when "Group No." has not been set (_	SW0041	~ >
	Section 6.6)			
Sta. No.	Displays the station No. of the MELSECNET/H module.	_	SW0042	ITRO NG LI
Туре	Displays the type of the MELSECNET/H module.	SB0044	_	CON
	Displays the communication status of the MELSECNET/H module.			ပက်
Status	(→ Page 6-3, Section 6.2 (2) (a))	—	SW0047	5
	Displays the scan time of the MELSECNET/H module.		<u> </u>	
Link scan time	(In increments of ms)	—	—	×
	Opens the Module information tab. (Page 6-4, Section 6.2 (3))			Ē
[Details] button	This button is disabled during monitoring.			N N N N N N N N N N N N N N N N N N N

Module information From history monitoring Other station monitoring

(a) Communication status

Details of communication states are given below.

Table 6.3 Details of communication states

Display	Description
In data link	Data link is being performed.
Suspend data link (Other)	Cyclic transmission was stopped from the other
	station.
Suspend data link (Hostself)	Cyclic transmission was stopped by the host station.
Baton pass (No area)	No B/W transmission assignment to the host station.
Poton poco (Doromotor Holt)	An error has detected in any of the host station
Daton pass (Farameter Hait)	parameter.
Baton pass (No Receive)	Common parameters have not been received.
Disconnecting (no baton)	Station No. duplication, or cable not connected.
Disconnecting (Link error)	Cable not connected.
Testing	Online or offline test is being conducted.
Resetting	Hardware error.

(3) Detailed module information screen.

Detailed information of the MELSECNET/H module are displayed on this screen.

etailed module information		
Model name QJ71LP21-25 Product information 06012000000000-D	OK Save SB/SW	
Own station information Start I/O No. 0000 Network No. 1 Network MELSECNET/H (Loop)	Group No. 0 Sta. No. 1 Type Net control station, PLC-PLC	
Own station status Parameter setting Comm + Specific Reserved station setting Does not exist Transmission mode Normal mode Duplex transmission setting Normal transmission Duplex transmission status Normal transmission Transmission speed 10Mbps	Link information Mode Online Floop status Normal Loopback station Not performed R loop status Normal Loopback station Not performed Link scan time Max 7 ms Min. 5 ms Current 6 ms	
Assign control station 1 Present control station 1 Transmission information Control station communication Sub control station transmission Yes Remote I/O master station number Block 1 None Block 2 None	Data link information 2 Total number of link stations 2 Station of maximum normal transmission 2 Station of maximum data link 2 Transmission status 2 In data link 2 Reason for transmission interruption Normal Reason for transmission stop Normal	

Figure 6.2 Detailed module information screen

	Item	Description	Corresponding SB	Corresponding SW
Мо	del name	Displays the model name of the MELSECNET/H module.	—	—
Product information		Displays the product information (serial No. and version) of the MELSECNET/H module.	_	_
Oł	(button	Closes the Detailed module information screen.	_	—
Save SB/SW button		Saves the link special relay (SB) and link special register (SW) information of the MELSECNET/H module into a CSV format file.	_	_
Own station information		Displays the own station information of the MELSECNET/H module.	—	_
	Start I/O No.	Displays the start I/O No. of the own station.	—	_
	Network No.	Displays the network to of the own station.	—	SW0040
	Group No.	Displays the group No. of the own station.	—	SW0041
	Sta. No.	Displays the station No. of the own station.	—	SW0042
	Network	Displays the network to which the MELSECNET/H module is connected.	SB0057, SB005A	SW0046
	Туре	Displays the type of the own station.	SB0044	_

 Table 6.4 Description of the Detailed module information screen

Item		Description	Corresponding SB	
Эw	n station information	Displays operation setting status of the own station.	—	
	Parameter setting	Displays the parameter setting status of the host station with any of the following. •Common parameter •Common + Specific parameter •Default parameter	SB0054	SW0054
		•Default + Specific		
	Reserved station setting	Displays whether a reserved station exists in the network.	SB0064	_
	Transmission mode	Displays the transmission mode of the own station. (Display: "Normal mode", "Constant scan XX ms" (XX represents the constant link scan setting time))	_	SW0068
	Duplex transmission setting	Displays the multiplex transmission setting of the own station. "-" is displayed in the case of a coaxial bus system. (Display: "Normal transmission", "Multiplex transmission")	SB0069	_
	Duplex transmission status	Displays the multiplex transmission status of the own station. "-" is displayed in the case of a coaxial bus system. (Display: "Normal transmission", "Multiplex transmission", "-")	SB006A	
Ī	Transmission speed	Displays the transmission speed of the own station. (Display: "10Mbps", "25Mbps")		
Control station information		Displays the control station information of the MELSECNET/H network system.	_	—
	Assign control station	Displays the specified control station in the MELSECNET/H network system. "0" appears when the control station is faulty.	_	SW0057
	Present control station	Displays the current control station in the MELSECNET/H network system. "0" appears when the control station is faulty.	_	SW0056
	Transmission information	Displays the transmission information of the MELSECNET/H network system. (Display: "Control station communication", "Sub control station transmission")	SB0056	_
	Sub control station transmission	Displays the sub control station transmission status of the MELSECNET/H network system. (Display: "Yes", "No")	SB0058	_
	Remote I/O station	Displays the station No. of the remote I/O master station for each block.	—	_
	Block 1	Displays the station No. of the remote I/O master station of Block 1.		SW005C
	Block 2	Displays the station No. of the remote I/O master station of Block 2.		SW005D

Table 6.4 Description of the Detailed module information screen (continued)

(To the next page)

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Item	Description	Corresponding SB	Corresponding SW
Link information	Displays the network status	—	
Mode	Displays the operation mode of the own station. (Display: "Online", "Offline", "Loop test")	_	SW0043
F loop status	Displays the forward loop status. "-" is displayed in the case of a coaxial bus system. (Display: "Normal", "Loopback transmission", "Data link disable", "-")	SB0091, SB0099	_
Loopback station	Displays the No. of the station that is performing loopback on the forward loop side. "-" is displayed in the case of a coaxial bus system. The field goes blank when data link is not available. (Display: 1 to 64, "Not performed", "-", "(blank)")	_	SW0099
R loop status	Displays the reverse loop status. "-" is displayed in the case of a coaxial bus system. (Display: "Normal", "Loopback transmission", "-")	SB0095, SB009A	_
Loopback station	Displays the No. of the station that is performing loopback on the reverse loop side. "-" is displayed in the case of a coaxial bus system. The field goes blank when data link is not available. (Display: 1 to 64, "Not performed", "-", "(blank)")	_	SW009A
Link scan time	Displays link scan time. (In increments of ms)	—	
Max.	Displays the maximum link scan time in the past record. The field goes blank when data link is not available.	—	SW006B
Min.	Displays the minimum link scan time in the past record. The field goes blank when data link is not available.	_	SW006C
Current	Displays the current link scan time. The field goes blank when data link is not available.	_	SW006D
Data link information	Displays the data link status of the MELSECNET/H.		
Total number of link stations	Displays the total number of linked stations on MELSECNET/H.	_	SW0059
Station of maximum normal transmission	Displays the maximum number of stations that are communicating normally.	_	SW005A
Station of maximum data link	Displays the maximum number of data link stations on MELSECNET/H.	_	SW005B
Transmission status	Displays the transmission status of MELSECNET/H. ($\boxed{=}$ Page 6-3, Section 6.2 (2) (a))	_	SW0047
Reason for transmission interruption	Displays the reason for transmission interruption on MELSECNET/H. $(\int_{-}^{-} = \frac{1}{2} \operatorname{Page} 6-7$. Section 6.2 (3) (a))	_	SW0048
Reason for transmission stop	Displays the reason for transmission stop on MELSECNET/H.		SW0049

Table 6.4 Description of the Detailed module information screen (continued)

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The information displayed on the Detailed module information screen is based on the information when the screen was opened.

To display the updated information, close and reopen the Detailed module information screen.

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(a) Reason for transmission interruption

The following lists the display in Reason for transmission interruption.

Table 6.5 Details of Reason for transmission interruption

Display	Description/Action
Normal	Communicating normally
Offline	Offline
Offline test	Offline test being conducted.
Initial status	Error occurred. (Error code: F101, F102, F105)
Shift control station	Error occurred. (Error code: F104, F106)
Online testing	Error occurred. (Error code: F103, F109, F10A)
Baton disappearance	Error occurred. (Error code: F107)
Baton repetition	Error occurred. (Error code: F108)
Same station present	Error occurred. (Error code: F10B)
Control Station repetition	Error occurred. (Error code: F10C)
Reception retry error	Error occurred. (Error code: F10E)
Transmission retry error	Error occurred. (Error code: F10F)
Timeout error	Error occurred. (Error code: F110)
Link error	Error occurred. (Error code: F112)
Disconnecting	Error occurred. (Error code: F11B)
No baton to own station	Error occurred. (Error code: F11F)
Error code: XXXX	Error (Refer to the displayed error code)

(b) Cause of transmission stop

Suspend communication

The following lists the description of display in the Reason for transmission stop field on the screen.

Table 6.6 Details of Reason for transmission stop		
Display	Description	
Normal	Communicating normally	
Stop instruction present (All)	Cyclic transmission of all stations was stopped from the own or other station.	
Stop instruction present (HostSelf)	Cyclic transmission of the own station was stopped.	
Stop instruction present	Cyclic transmission of the own station was stopped from the other	
(Station □)	station (Station No. □).	
No parameter	No parameter can be received.	
Illegal parameter	The set parameter is invalid.	
Connected CPU error	Medium or critical error has occurred on the CPU module in the own station.	

Data link error occurred on the own station.

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(4) Specifications of the SB/SW save file

A file format can be selected in "Save as" on the following screen.



Figure 6.3 Save As screen

To use the text data of the SB/SW save file in a user program, select "SBSWSave File(*.csv)" when saving.

To use them on $Microsoft^{(\!8\!)}$ Excel etc., select "SBSWSave File[Form2](*.csv)" when saving.

When "SBSWSave File(*.csv)" is selected	When "SBSWSave File[Form2](*.csv)" is selected

SB/SW,192.168.3.3(pefault) qJ7L1P21-25 ,09012000000000-D Start I/O No., Network No., Group No., Station No., Networ 0000, 1, 0, 1, MELSECNET/H (Loop), Net control station, PL SB/SW information pevice, Value, Device, Value SB0000, 0, , SW0000,0000	[SB/SW] [192.168.3.3(Default)] [GJ.71.LP21-25] [09012000000000-D] [Start VO No.] [Network] [0000] [1] [0] [1] [1] [MELSEC
Device, Value, , Device, Value	[SB/SW information]
SB0001, 0, , SW0001, 0000	[Device] [Value] [Device] [Value]
SB0002, 0, , SW0002, 0000	[SB0000] [0] [SW0000] [0000]
SB0003, 0, , SW0003, 0000 SB0004. 0. , SW0004. 0000	[SB0001] [0] [SW0001] [0000]
SB0005, 0, , SW0005, 0000	[SB0002] [0] [SW0002] [0000]

Figure 6.4 Example of the SB/SW save file



The folder of the SB/SW save file is "C:\MELSEC\CCPU\Param" by default. (When SW3PVC-CCPU has been installed in "C:\MELSEC").


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CC IE CONTROL UTILITY

DEVICE MONITORING UTILITY

6.3 Error History Monitoring Tab

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B
)		

The Error history monitoring tab displays the historical data of loop errors, communication errors, and transient transmission errors.

(1) Precautions for the Error history monitoring tab

- (a) Number of historical data
 Up to 16 loop switching or transient transmission errors are stored.
 When the number of stored data reaches to 16, the next error will be stored by deleting the oldest.
 (No.1 (oldest) to No. 16 (newest))
- (b) Transient transmission error For the error codes and error types displayed in the Transient transmission errors, refer to the Q Corresponding MELSECNET/H Network System Reference Manual (PLC to PLC network)

(2) Error history monitoring tab

HELSECNET/H utility(192.168	. 3. 3(Default))			
Online operation	Parameter settings	Target settings		
Module information	Error history monitoring	Other station monitoring		
Target module - 1 · · · · Slot Own station information Statt/20 No. Network No. Group 10000 · · 0 Network MELSECNET. Type Control station	No. Sta No. 1 /H (Loop)	Clear error history Stop monitoring Number of error occurrences Loop switching 0 Transient transmission errors 0 F.loop R. loop		
- Loop switching		Retry 0 0		
No. Sta. No. Factor 1 2 3 3 4 4	Switched status	Line trouble 0 0 Communication error UNDER 0 0 CRC 0 0 OVER 0 0		
Transient transmission errors		SHORTFRAME 0 0		
No. Err. code Error type 1 2 3 4	×	ABORT 0 0 TIMEOUT 0 0 Exceeded 2KB 0 0 DPLL ERROR 0 0		
Connection settings Load File Save File Help Egit C:\MBLSEC\CCPUPeram\sample.mmh CPU type:Q12DCCPU-V User name: target				

Figure 6.5 Error history monitoring tab

Table 6.7 Description of the Error history monitoring tab

Module information Error history monitoring Other station monitoring

Item	Description	Corresponding SB	Corresponding SW
Target module	Specify a MELSECNET/H for error history monitoring. (Default: 1)	—	—
Clear error history button	Opens the Clear error history screen. (_	_
Start monitoring, or Stop monitoring button	Starts or stops monitoring MELSECNET/H module. "*" flashes in the upper right of the button during monitoring. These buttons are disabled in the offline status.	_	_

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Table 6.7 Description of the Error history monitoring tab (continued)

	ltem	Description	Corresponding SB	Corresponding SW
Own station information		Displays the own station information of the MELSECNET/H module.	—	_
	Start I/O No.	Displays the start I/O No. of the own station.	—	_
	Network No.	Displays the network No. of the own station.	—	SW0040
	Group No.	Displays the group No. of the own station.	—	SW0041
	Sta.No.	Displays the station No. of the own station.	—	SW0042
	Network	Displays the network to which the MELSECNET/H module is connected.	SB0057, SB005A	SW0046
	Туре	Displays the type of the own station.	SB0044	—
Loop switching		Displays the factor of loop switching and the status after the switching. (For optical loop only)	_	
	Sta. No.	Displays the number of the station that requested loop switching or loopback.	_	SW00E0 to SW00E7
	Factor	Displays the factor of loop switching or loopback.	_	SW00D0 to SW00DF
	Switched status	Displays the data link status after loop switching.	_	SW00D0 to SW00DF
Transient transmission errors		Displays error codes for transient transmission errors that occurred on the own station. For details of errors, refer to the Q Corresponding MELSECNET/H Network System Reference Manual (PLC to PLC network).	_	_
	Err. code	Displays error codes that are reported during transient transmission.	—	SW00F0 to SW00FF
	Error type Displays types of errors that occurred during transient transmission.		—	_

Module information Error history monitoring Other station monitoring

(To the next page)

Table 6.7 Description of the Error history monitoring tab

Error history monitoring Other station monitoring Module information

ltem		1	Description	Corresponding SB	Corresponding SW	VERVIEV
Number of error occurrences		Irrences	Displays the number of error occurrences. For details of factors and corrective actions, refer to the following.	_	_	AND ON OF CKAGE
	Loop switching		Displays the number of times that loop switching and loopback has been executed. "-" is displayed in the case of a coaxial bus system.	_	SW00CE	NSTALLATION
	Transient transm	ission errors	Displays the number of transient transmission errors that has been occurred.	—	SW00EE	3
1	Retry		Displays the number of retries (for transmission errors).	—	SW00C8, SW00C9	≻
	Line trouble		"-" is displayed in the case of a coaxial bus system.	_	SW00CC, SW00CD	N UTILIT
	-	UNDER	Displays the number of UNDER errors that has been occurred.	—	SW00B8, SW00C0	COMMC OPERA
		CRC	Displays the number of CRC errors that has been occurred.	_	SW00B9, SW00C1	4
		OVER	Displays the number of OVER errors that has been occurred.	_	SW00BA, SW00C2	₩Ę
	Communication	SHORTFRAME	Displays the number of short frame (too short data message) errors that has been occurred.	_	SW00BB, SW00C3	NTROLLI ING UTIL
er	error	ABORT	Displays the number of AB.IF errors that has been occurred.	_	SW00BC, SW00C4	C CO SETT
		TIMEOUT	Displays the number of timeout errors that has been occurred.	_	SW00BD, SW00C5	5
		Exceeded 2KB	Displays the number of errors exceeding 2K bytes that has been occurred.	_	SW00BE, SW00C6	JILITY
		DPLL ERROR	Displays the number of DPLL (data not properly recognized in synchronization/modulation) errors.	_	SW00BF, SW00C7	C-LINK UT

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(3) Clear error history screen

Clear the number of errors to 0.

Clear type 1. Clear retry counter 2. Clear communication error counter 3. Clear F. loop transmission error 4. Clear R. loop transmission error	Execute E <u>x</u> it
5. Clear loop switching counter	

Figure 6.6 Clear error history screen

Table 6.8 Description of the Clear error history screen

ltem		Description	Corresponding SB	Corresponding SW
Cle	ar type	Select the item(s) for clearing the number of error occurrences.	—	—
		Select to clear the number of retries (link special register		
	Clear retry counter	SW00C8, SE00C9) to 0.	SB0005	—
		(Default: not checked (not cleared to 0))		
	Clear communication error	Select to clear the number of communication errors (link		
	counter	special register SW00B8 to SW00C7) to 0.	SB0006	—
	counter	(Default: not checked (not cleared to 0))		
		Select to clear the number of forward loop side line errors (link		
	Clear F. loop transmission error	special register SW00CC) to 0.	SB0007	—
		(Default: not checked (not cleared to 0))		
		Select to clear the number of reverse loop side line errors (link		
	Clear R. loop transmission error	special register SW00CD) to 0.	SB0008	—
		(Default: not checked (not cleared to 0))		
		Select to clear the number of loop switching (link special		
	Clear loop switching counter	register SW00CE to SW00E7) to 0.	SB0009	—
		(Default: not checked (not cleared to 0))		
		Select to clear the number of transient transmission errors (link		
	Clear transient transmission error	special register SW00EE,SW00EF) to 0.	SB000A	—
		(Default: not checked (not cleared to 0))		
		Clears the item(s) selected on this screen.		
Execute button		(Turns the corresponding SB of the selected item(s) from on to	—	—
		off.)		
E	it button	Closes the Clear error history screen.	_	_

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(4) Factors and actions

The following table shows factors and corrective actions for each error. The information can also be checked from the following link special registers (SW) as well as on the Error history monitoring tab.

For details of special registers (SW), refer to the Q Corresponding MELSECNET/H Network System Reference Manual (PLC to PLC network).

Item	Link special register	Factor	Corrective action
Loop switching	SW00CE	Station's power on/off, cable fault, noise, etc.	Page 6-13, Section 6.3 (4) (a)
Transient transmission errors	SW00EE	Target station's power off, target station's CPU failure, cable fault, noise, etc.	Check the error code of the transient transmission error, and take corrective actions.
Retry	SW00C8, SW00C9	Station's power on/off, cable fault, noise, etc.	
Line trouble	SW00CC, SW00CD	Adjacent station's power off, cable fault, noise, etc.	
UNDER	SW00B8, SW00C0	Adjacent station's power on off, cable fault, etc.	
CRC	SW00B9, SW00C1	Source station of data transmission was disconnected, cable fault, hardware fault, noise, etc.	
OVER	SW00BA, SW00C2	Cable fault hardware fault paice ate	F Page 6-13, Section 6.3 (4) (a)
SHORTFRAME	SW00BB, SW00C3	Cable lauit, flatdware lauit, floise, etc.	
ABORT	SW00BC, SW00C4	Source station of data transmission was disconnected, cable fault, hardware fault, noise, etc.	
TIMEOUT	SW00BD, SW00C5	Too-short data link monitoring time, cable fault, noise, etc.	
Exceeded 2KB	SW00BE, SW00C6	Cable fault, bardware fault, poise, etc.	
DPLL ERROR	SW00BF, SW00C7		

Table 6.9 Error factors and corrective actions

(a) Errors other than transient transmission errors

Unless the error count frequently increases during operation, no specific action is required.

Take the following corrective actions if the error count frequently increases.

- 1) Check the status (on/off) of power supply for the own and other stations.
- 2) Check cables and connectors (for disconnection, loose connectors, broken cables, and improper cable lengths).
- 3) Conduct a self-loopback test, internal self-loopback test, and hardware test.
- 4) Conduct a station-to-station test and forward/reverse loop test.
- Review its wiring, referring to the manuals for the network module and/or MELSECNET/H board used.

Or, reinstall the system, referring to the user's manual for the CPU module used.

6.4 Other Station Monitoring Tab

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B

The Other station monitoring tab displays the status of the other stations (MELSECNET/H network stations).

(1) Precautions for the Other station monitoring tab

(a) Monitoring status

When MELSECNET/H utility is started, monitoring is in stop status.

Click the Start monitoring button to start monitoring.

(b) When a utility communication error has occurredWhen a utility communication error has occurred during connection, click the

Start monitoring button or set the connection target again in the Connection settings so that the communication can be restarted.

(c) During reset

Communications are not available while the C Controller module is being reset. Start communications after the reset is complete.

(2) Other station monitoring tab

🖁 MELSECNET/H utility(192.168.3.3(Defau	nt)) 🗖 🗖 🗹			
Online operation Pa Module information Error his	arameter settings Target settings story monitoring Other station monitoring			
Target module	oStep monitoring			
Other station information	Error status Details			
Communication status of each station Data link status of each station Parameter status of each station	Error 			
CPU operating status of each station CPU RUN status of each station	- Stop/Down			
Reserved station designation of each station PSU operation status of each station extension Each station network type status				
Connection settings Load File Save File Help Egit				
C:\MELSEC\CCPU\Param\sample.mnh CPU type:Q12	2DCCPU-V User name: target			

Figure 6.7 Other station monitoring tab

Table 6.10	Description	of the Other s	station monitoring	tab
		•••••••••••••••••••••••••••••••••••••••		

Module information Error history monitoring Other station monitoring

Item	Description	Corresponding SB	Corresponding SW
Target module	Select the MELSECNET/H module for monitoring.		
larget module	(Default: 1)	_	
Start monitoring or	Starts or stops monitoring the MELSECNET/H module.		
	"*" flashes in the upper right of the button during monitoring.	—	—
Stop monitoring button	These buttons are disabled in the offline status.		
		(

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Table 6.10 Description of the Other station monitoring tab (continued)

Module information Error history monitoring Other station monitoring

Item		Description	Corresponding SB	Corresponding SW	
Ow	n station information	Displays the own station information of the MELSECNET/H module.	—	—	
	Start I/O No.	Displays the start I/O No. of the own station.	—	—	
	Network No.	Displays the network No. of the own station.	—	SW0040	
	Group No.	Displays the group No. of the own station.	—	SW0041	
	Sta.No.	Displays the station No. of the own station.	—	SW0042	
	Notwork	Displays the network to which the MELSECNET/H module is	SB0057,	SW0046	
Network	connected.	SB005A	300040		
	Туре	Displays the type of the own station.	SB0044	—	
Other station information		Displays the error occurrence of the other stations. (Page 6-15, Section 6.4 (3)) Double-clicking an item opens the Details screen that displays the detailed information of the item.	_	_	
	Details button	Opens the Details screen to display the detailed information of the selected item. (—	_	
Other station information Error status		Displays errors in "Error status" when an error corresponding to the			
		item in "Other station information" has occurred.			

(3) Details screens

Detailed information of the item selected on the Other station monitoring tab are displayed on each screen below.

The following lists the details screen corresponding to each item selected on the Other station monitoring tab.

Table 6 11	Other static	on monitoring	tab selection	and correspo	onding Detail	s screen
	Other Static	minionitoring	tab selection	and correspo	muning Detail	3 3016611

Selection on the Other station monitoring tab	Corresponding Details screen	Reference page	
Communication status of each station	Communication status of each station screen	Page 6-16, Section 6.4 (3) (a)	
Data link status of each station	Data link status of each station screen	Page 6-17, Section 6.4 (3) (b)	
Parameter status of each station	Parameter status of each station screen	Page 6-18, Section 6.4 (3) (c)	
CPU operating status of each station	CPU operating status of each station screen	Page 6-19, Section 6.4 (3) (d)	
CPU RUN status of each station	CPU RUN status of each station screen	Page 6-20, Section 6.4 (3) (e)	
Loop status of each station	Loop status of each station screen	Page 6-21, Section 6.4 (3) (f)	
Reserved station designation of each station	Reserved station designation of each station screen	Page 6-22, Section 6.4 (3) (g)	
PSU operation states of each station extension	PSU operation states of each station extension screen	Page 6-23, Section 6.4 (3) (h)	
Each station network type status	Each station network type status screen	Page 6-24, Section 6.4 (3) (i)	



The information on the Details screens is based on the information when the screen was opened.

To display the updated information, close and reopen the Details screen.

(a) Communication status of each status screen

Displays the baton pass status. (Availability of transient transmission) Displayed number of the stations is based on the "Total stations" set on the Parameter settings tab.

Communication status of each station
Own station information Stat I/O No. Network No. Group No. Sta. No. 0000 1 0 1 Network MELSECNET/H (Loop) Type Control station
[Communication status of each station]
Normal communication Error (Disconnected)
1 2

Figure 6.8 Communication status of each status screen

Table 6.12 Descri	ption of the	Communication	status of	f each statu	s screen
14010 0112 200011		oominamouton	otatao oi	ouon otata	

Item	Description	Corresponding SB	Corresponding SW
OK button	Closes the Communication status of each station screen.	—	—
Own station information	Displays the own station information of the MELSECNET/H module. ([Page 6-14, Section 6.4 (2))	SB0044, SB0057, SB005A	SW0040, SW0041, SW0042, SW0046
Communication status of each station	Displays baton pass status (Availability of transient transmission) in the following color code. Light blue: Normally communicating station or reserved station Red: Communication error status (disconnected)	_	SW0070 to SW0073

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(b) Data link status of each station screen

Displays the cyclic transmission status.

The number of displayed stations is based on the "Total stations" set in the Parameter settings tab.

Data link status of each station
Own station information Stat I/O No. Network No. 0000 1 0 0 1 Network MELSECNET/H (Loop) Type Control station
[Data link status of each station] Data link executed Data link not executed

Figure 6.9 Data link status of each station screen

Table 6.13 Description of the Data link status of each station screen

Item	Description	Corresponding SB	Corresponding SW
OK button	Closes the Data link status of each station screen.	—	_
Own station information	Displays the own station information of the MELSECNET/H module. ((Page 6-14, Section 6.4 (2))	SB0044, SB0057, SB005A	SW0040, SW0041, SW0042, SW0046
Data link status of each station	Displays the cyclic transmission status in the following color code. Light blue: Normal or reserved station Red: Error station (Data link not performed)	_	SW0074 to SW0077

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Displays the parameter communication status and parameter error status of each station.

The number of displayed stations is based on the "Total stations" set in the Parameter settings tab.

Parameter status of each station
Own station information Statt I/O No. Network No. Group No. Sta. No. 00000 1 0 1 Network MELSECNET/H (Loop) Type Control station
[Communication status of each station parameter] Other than those communicating
[Error status of each station parameter] [Parameter normal Error

Figure 6.10 Communication status of each station screen

Item	Description	Corresponding SB	Corresponding SW
OK button	Closes the Communication status of each station screen.	_	_
Own station information	Displays the own station information of the MELSECNET/H module. ([Page 6-14, Section 6.4 (2))	SB0044, SB0057, SB005A	SW0040, SW0041, SW0042, SW0046
Communication status of each station parameter	Displays the parameter communication status of each station in the following color code. Light blue: Status other than "communicating with parameters", reserved station, or unconnected station Red: Communicating with parameters	_	SW0078 to SW007B
Error status of each station parameter	Displays the parameter error status of each station in the following color code. Light blue: Parameters normal, reserved station, or unconnected station Red: Parameter error	_	SW007C to SW007F

Table 6.14 Description of the Communication status of each station screen

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- (d) CPU operation status of each station screen Displays the CPU operation status.

The number of displayed stations is based on the "Total stations" set in the Parameter settings tab.

CPU operating status of each station
Own station information Stat I/D No. Network No. Group No. Sta. No. 0000 1 0 1 Network MELSECNET/H (Loop) Type Control station
[CPI Loperating status of each station]
Fror (Critical) Error (Non-critical)

Figure 6.11 CPU operation status of each station screen

Item	Description	Corresponding SB	Corresponding SW
OK button	Closes the "CPU operation status of each station" screen.	—	—
Own station information	Displays the own station information of the MELSECNET/H module. ($[]]]$ Page 6-14, Section 6.4 (2))	SB0044, SB0057, SB005A	SW0040, SW0041, SW0042, SW0046
CPU operation status of each station	Displays the CPU operation status in the following color code. Light blue: CPU normal, reserved station, unconnected station Red: CPU fault Medium error (WDT error, etc.) or, critical error (Hardware error, etc.) Yellow: CPU fault minor error	_	SW0080 to SW0083, SW0088 to SW008B

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DEVICE MONITORING UTILITY (e) CPU RUN status of each station screen

Displays the RUN/STOP states of the CPUs.

The number of displayed stations is based on the "Total stations" set in the Parameter settings tab.

ci o non status of cacil station	
Own station information Stat I/D No. Network No. Group No. Sta. N 00000 1 0 1 Network MELSECNET/H (Loop) Type Control station	
CPU status	
1 PUN 17 2 STOP 18 4 20 5 5 21 5 6 22 7 7 23 8 9 25 10 10 26 11 12 28 11 13 29 14 15 31 15 16 32 22	33 49 34 50 35 51 36 52 37 53 38 54 39 55 40 56 41 57 42 58 43 59 44 60 45 61 46 62 47 53 48 64

Figure 6.12 CPU RUN status of each station screen

Table 6.16 CPU RUN status of each station screen

Item	Description	Corresponding SB	Corresponding SW
OK button	Closes the CPU RUN status of each station screen.	—	—
Own station information	Displays the own station information of the MELSECNET/H module. ($[]]$ Page 6-14, Section 6.4 (2))	SB0044, SB0057, SB005A	SW0040, SW0041, SW0042, SW0046
CPU status	Displays the RUN/STOP status of each CPU. RUN: RUN, STEP RUN STOP: STOP, PAUSE DOWN: ERROR, or unconnected station Reserved Sta.: Reserved station	_	SW0084 to SW0087

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(f) Loop status of each station screen

In the case of the optical loop system, this screen displays the forward and reverse loop states.

The number of displayed stations is based on the "Total stations" set in the Parameter settings tab.



Figure 6.13 Loop status of each station screen

Table 6.1	7 Description	of the Loop	status of	f each	station	screen

Item	Description	Corresponding SB	Corresponding SW
OK button	Closes the Loop status of each station screen.	—	_
Own station information	Displays the own station information of the MELSECNET/H module. ([] Page 6-14, Section 6.4 (2))	SB0044, SB0057, SB005A	SW0040, SW0041, SW0042, SW0046
F. loop status of each station	Displays the forward loop status in the optical loop system in the following color code. Light blue: Normal, reserved station, or unconnected station Red: Error station	_	SW0091 to SW0094
R. loop status of each station	Displays the reverse loop status in the optical loop system in the following color code. Light blue: Normal, reserved station, or unconnected station Red: Error station	_	SW0095 to SW0098

(g) Reserved station designation of each station screen Displays the setting status of the reserved status.

The number of displayed stations is based on the "Total stations" set in the Parameter settings tab.

Reserved station designation of each station
Own station information Stat I/O No. Network No. Group No. Sta No. 0000 1 0 1 Network MELSECNET/H (Loop) Type Control station
[Reserved station designation of each station]
Non-reserved station

Figure 6.14 Reserved station designation of each station screen

Item	Description	Corresponding SB	Corresponding SW
OK button	Closes the Reserved station designation of each station screen.	—	—
Own station information	Displays the own station information of the MELSECNET/H module. ([Page 6-14, Section 6.4 (2))	SB0044, SB0057, SB005A	SW0040, SW0041, SW0042, SW0046
Reserved station designation of each station	Displays the reserved station setting status in the following color code. Light blue: Non-reserved station Blue: Reserved station	_	SW0064 to SW0067

(h) PSU operation status of each station extension screen

Displays the status of 24VDC external power supply for MELSECNET/H module. The number of displayed stations is based on the "Total stations" set in the Parameter settings tab.



Figure 6.15 PSU operation status of each station extension

Item	Description	Corresponding SB	Corresponding SW
OK button	Closes the PSU operation status of each station extension.	—	
Own station information	Displays the own station information of the MELSECNET/H module. ((Page 6-14, Section 6.4 (2))	SB0044, SB0057, SB005A	SW0040, SW0041, SW0042, SW0046
PSU operation status of each station extension	Displays the 24VDC external power supply status of the MELSECNET/H module in the following color code. Light blue: No external power supply Blue: External power supply	_	SW008C to SW008F

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(i) Each station network type status screen

Displays consistency of the network types that are set in the control station and in the normal station.

The number of displayed stations is based on the "Total stations" set in the Parameter settings tab.

Each station network type status
Own station information Statt I/O No. Network No. Group No. Sta. No. 00000 1 0 1 Network MELSECNET/H (Loop) Type Control station
[Each station network type status] Same as control station

Figure 6.16 Each station network type status screen

Table 6.20 Description of the Each station network type status screen

Item	Description	Corresponding SB	Corresponding SW
OK button	Closes the Each station network type status screen.	—	—
Own station information	Displays the own station information of the MELSECNET/H module. ([Page 6-14, Section 6.4 (2))	SB0044, SB0057, SB005A	SW0040, SW0041, SW0042, SW0046
Each station network type status	Displays the consistency of the network types set in the control station and in the normal station in the following color code. Light blue: Normal, reserved, or communication error station whose network type is the same as that of the control station. Red: Normal station whose network type is different from that of the control station.	_	SW01E0 to SW01E3

6.5 Online Operation Tab

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B

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MELSECNET/H parameters can be read, written, or verified from this tab.

(1) Precautions for the Online operation tab

- (a) When a utility communication error has occurred When a utility communication error has occurred during connection, set the connection target again in the Connection settings so that the communication can be restarted.
- (b) During reset

Communications are not available while the C Controller module is being reset. Start communications after the reset is complete.

(c) The drive to which parameters are written When writing parameters from each of the utilities to the following C Controller module, write them to the same drive.

• Q12DCCPU-V whose serial No. (first five digits) is "12042" or later If the parameters are written to different drives, those of the drive, which include C Controller setting parameters, will take effect.

(2) Online operation tab

Module information	Error history monitoring	Other station monitoring
Online operation	Parameter settings	Target settings
rget drive Standard RAM 💌		
Deedeeneelee		
neau parameters		
Read parameters from C Control	ier module.	<u>R</u> ead
Write parameters		
Write parameters to C Controller	module.	Write
Verify parameters		
Verify the narameters match with	the C Controller module's parameter	Varifu
Yony the parameters material	The electroner module a parameter	<u></u>
	1	1

Figure 6.17 Online operation tab

Table 6.21 Description of the Online operation tab

Online operation	Parameter settings Target settings
Item	Description
	Set a target drive for reading, writing, or verifying parameters.*1
Target drive	This setting is not available for the Q06CCPU-V(-B).
	(Default: Parameter boot drive)
Read parameters	
Read button	Reads out MELSECNE I/H parameters from the C Controller module.
	* 1 For the drives to which parameters can be written (user memory), refer to the C Controller Module
	User's Manual (Hardware Design, Function Explanation).

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Table 6.21 Description of the Online operation tab (continued)

Online operation	Parameter settings Target settings
Item	Description
Write parameters Write button	Writes MELSECNET/H parameters to the C Controller module. The written parameters take effect when the C Controller module is powered off and then on or is reset. Parameters can be written only when "Write authority" is selected on the Connection settings screen. If "Write authority" is not selected, select it in the Connection settings screen before writing parameters. (
Verify parameters Verify button	Compares the MELSECNET/H parameters of the C Controller module with those of the MELSECNET/H utility. The results are displayed in a message box.

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Reading, writing, and verification of parameters can be performed only when the C Controller module and a development environment (personal computer) is connected online.

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Parameter Settings Tab 6.6

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Parameters of the MELSECNET/H module can be set in this tab.

(1) Precautions for the Parameter settings tab

(a) Link device refresh cycle and Routing parameter

"Link device refresh cycle" and "Routing parameter" are parameters common to CC-Link IE Controller Networks.

When the defined parameters written from CC IE Control utility differs from that in

this utility, the following dialog box appears after clicking the Write button in the <<Online operation>> tab.

?	The following common parameters with CC-Link IE Controller Network have been changed. The settings in CC IE Control utility will be overwritten. -Link device refress cycle
	OK Cancel

Figure 6.18 Dialog box

(2) Parameter settings tab



Figure 6.19 Parameter setting tab

Table 6.22 Description of the Parameter setting tab

Online operation Parameter settings Target settings		
Item	Description	
	Set the number of MELSECNET/H modules controlled by the C Controller module.	
Number of modules	Selecting "(blank)" is regarded as no setting (setting clear).	
	(Default: "(blank)")	
	(To the next page)	

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Table 6.22 Description of the Parameter setting tab (continued)

Online operation Parameter settings Target settings

Item	Description
	Set the refresh cycle of the link device. (In increments of ms) When using both the CC-Link IE Controller Network and MELSECNET/H, set the same value as the value set in CC IE Control utility.
Link device refresh cycle	When enabling Block data assurance per station ($\square \square$ Page 6-37, Section 6.6 (6)), set 10 or more to the "Link device refresh cycle" and set "Refresh parameters".
	Refresh parameters button is disabled. (Default: 100, Setting range: 0, 10 to 1000) For details of the link device refresh cycle, refer to the C Controller Module User's (Hardware
Routing parameter button	Design, Function Explanation). Displays the Routing parameter settings screen ($\int \overline{\mathcal{F}}$ Page 6-31 Section 6.6 (3))
Target module	Select a module to configure. (Default: 1) The numbers for this item will be automatically rearranged in ascending order of start I/O numbers when saving the parameter setting file or when switching the tab.
Start I/O No.	Set the start I/O No. of the MELSECNET/H module. (Setting range: 0 to FE0H (Note that the number must be unique and cannot be duplicated with the start I/O No. of other MELSECNET/H module.)
Channel No.	Set the channel No. of the MELSECNET/H module. Use this value when opening the channel from Device monitoring utility or a user program (MELSEC data link function). For the Q06CCPU-V-B, this setting is not available. The channel No. must be unique and cannot be duplicated with a channel No. of other MELSECNET/H modules.
Refresh parameters button	Displays the Refresh parameter setting screen. (Page 6-33, Section 6.6 (4)) When enabling Block data assurance per station, (Page 6-37, Section 6.6 (6)), set 10 or more to the "Link device refresh cycle" and set "Refresh parameters".
Check button	Checks for any setting error.
 Default button	Set the operation settings, network range assignments, and refresh parameters back to default.
Operation settings	Operation settings for the MELSECNET/H module.
Network No.	Set the network No. of the MELSECNET/H module. (Default: 1, Setting range: 1 to 239)
Group No.	Set the group No. of the MELSECNET/H module. (Default: 0, Setting range: 0 to 32)
Network type	Set the type of the MELSECNET/H module. (Default: "MNET/H mode (Control station)")
Mode	Set the mode of the MELSECNET/H module. (Default: "Online")
Return	Return setting of the control station. This setting is available when any of the following is selected for "Network type". •MNET/H mode (Control station) •MNET/10 mode (Control station) •MNET/H Ext. mode (Control station) (Default: "Return as control station")

(To the next page)

Dnline operation Paramete	r settings Target settings	
Item	Description	MEW
	Assign network ranges.	VED
	•MNET/H mode (Control station)	ć
etwork range assignment	•MNET/10 mode (Control station)	2
	•MNET/H Ext. mode (Control station)	
Total stations	Set a total number of stations (including the control station) to the target network.	
TOTAL STATIONS	(Default: 2)	ATIO
Assignment method	Switches the device range input method between Points/Start and Start/End.	IATI
Assignment method	(Default: "Start/End")	INS ⁻
Monitoring time	Set the monitoring time for the link scan time. (In increments of 10ms)	SE S
	(Default: 200, Setting range: 1 to 200)	3
	Select the link device to which network range is to be assigned.	
Switch screens	"Low speed LB" and "Low speed LW" can be set when MNET/H mode (Control station) or MNET/H	~
Switch Scicens	Ext. mode (Control station) is selected for "Network type".	ΈĽ,
	(Default: "LB/LW settings")	
	Set the No. of the link device points assigned to the target station.	IOMI
Points	This setting is available when "Point/Start" is selected for "Assignment method".	
	(Default: "(blank)", Setting range: 🗇 Page 6-30, Section 6.6 (2) (a))	4
Start	Set the start No. of the link device assigned to the target station.	
Start	(Default: "(blank)", Setting range: 💭 Page 6-30, Section 6.6 (2) (a))	
	Set the end No. of the link device assigned to the target station.	Ë
End	This setting is available when "Start/End" is selected for "Assignment method".	ROL
	(Default: "(blank)", Setting range: 💬 Page 6-30, Section 6.6 (2) (a))	
	Sets the selected station as an I/O master station of the link device (LX/LY), or cancels the setting.	
Specify I/O master Sta. butto	This button is enabled when "(LX/LY) settings (1)" or "(LX/LY) settings (2)" is selected for "Switch screens".	5
Specify reserved Sta. button	Sets the selected station as a reserved station, or cancels the setting.	
Equal assignment button	Displays the Equal assignment screen. (
Supplementary settings butte	Displays the Supplementary settings screen. (
Clear butten	Clears the "Points", "Start", and "End" settings and then sets the "Total stations" and "Monitoring	-
	time" settings back to default.	

Table 6.22 Description of the Parameter setting tab (continued)

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(a) Network range assignment

The following table indicates the setting ranges of network assignment.

Table 6.23 Setting ranges of network range assignment

Device		Points/Start/End	Setting range
LX		Points	16 to 8192 ^{*1}
		Start	0000 to 1FF0 ^{*1}
		End	000F to 1FFF ^{*2}
		Points	16 to 8192 ^{*1}
LY		Start	0000 to 1FF0 ^{*1}
		End	000F to 1FFF ^{*2}
		Points	16 to 16384 ^{*1}
	LB	Start	0000 to 3FF0 ^{*1}
		End	000F to 3FFF ^{*2}
		Points	1 to 16384
	LW	Start	0000 to 3FFF
When "Network type" 's either of the following		End	0000 to 3FFF
•MINET/H Ext. mode (Control station)	Low- speed LB	Points	16 to 8192 ^{*1}
		Start	2000 to 3FF0 ^{*1}
		End	200F to 3FFF*2
	Low-	Points	1 to 8192
		Start	2000 to 3FFF
	speed LW	End	2000 to 3FFF
		Points	16 to 8192 ^{*1}
	LB	Start	0000 to 1FF0 ^{*1}
When "Network type"*3 is "MNET/10 mode (Control station)		End	000F to 1FFF*2
		Points	1 to 8192
	LW	Start	0000 to 1FFF
		End	0000 to 1FFF

* 1 Only a multiple of 16 can be set to "Points" and "Start" of LX, LY, and LB.

* 2 Only a (multiple of 16 minus 1) can be set to "End" of LX, LY, and LB.

* 3 Set the "Network type" in the Parameter settings tab.

(Page 6-27, Section 6.6 (2))

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(3) Routing parameter settings screen

Transfer destination, relay network No., and relay station No. are set on this screen.

- The MELSECNET/H module controlled by the C Controller module cannot be used a relay station which operates as a bridge.
 For a relay station, use the MELSECNET/H module that is controlled by a programmable controller CPU which is capable of configuring multiple network systems.
- 2. Routing parameters are common in the following channels. Different parameters cannot be set for each channel No.
 - MELSECNET/H (Channel No.51 to 54)
 - CC-Link IE Controller Network (Channel No.151 to 154)

	Transfer	target No	Relay n	stwork No.	Relay station No.	-
1	TIGHTOIN					H
2						-
3						
4						
5			_			
5			_			_
-						-
9						-
10						
11						
12						
13						_
14						-
16			_			-
Max.	size of transie	ent transi	mission via	other networ	k No.	
Char	nel No.51:	C 96	SO Words	480 1	Words	
Char	nel No.52:	C 96	50 Words	• 480 •	Vords	
Char		~ ~	10 1 . /	G 4001		
Char	inei N0.53	0.96	spip words	480 1	words	
Char	nel No.54:	C 96	50 Words	• 480 \	Words	
*960 (target are us	words can be station, whic red.	selecte h perfor	d only wher m transient	MELSEC-G transmission	Series relay station a via other network No	nd

Figure 6.20 Routing parameter settings screen

Table 6.24 Description of the Routing parameter settings screen

Item	Description
Transfor target network No	Set the transfer target network No.
Transier target network no.	(Default: "(blank)", Setting range: 1 to 239)
Polov potwork No	Set the relay network No.
Relay network no.	(Default: "(blank)", Setting range: 1 to 239)
Polov station No.	Set the relay station No.
Relay Station No.	(Default: "(blank)", Setting range: 1 to 120)

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	Item	Description
Max. size of transient transmission via		For each channel No., set the maximum transmission size of data sent by transient transmission
oth	ner network No.	from a user program via another network (No.).
	Channel No.51 to Channel No.54	For each channel No., set the maximum transmission size for the case where data are sent by transient transmission to another network (No.) via a MELSECNET/H module. Only when the relay stations and target stations of transient transmission are the MELSEC-Q series network modules, select 960 words. When the relay stations and target stations of transient transmission are other than the MELSEC-Q series network modules, select 480 words. If 960 words is set for this case, data may be cut off, resulting in incorrect transient transmission. (Default: 480 words)
Clear button		Clears the "Transfer target network No.", "Relay network No.", and "Relay station No." settings.
Check button		Checks the "Transfer target network No.", "Relay network No.", and "Relay station No." settings.
End button		Saves the settings and closes the Routing parameter settings screen.
Cancel button		Closes the Routing parameter settings screen without saving the settings.

Table 6.24 Description of the Routing parameter settings screen (continued)

MELSEG Q series

(4) Refresh parameter settings screen

Set refresh parameters.



Figure 6.21 Refresh parameter settings screen

Table 6.25 Description of the Refresh parameter settings screen

Item	Description	
Assignment method	The device range input method can be switched between Points/Start and Start/End.	
Assignment method	(Default: "Start/End")	
	Set the refresh parameters of the target module selected on the Parameter settings tab.	
Link side	Up to 64 refresh parameters can be set.	
	Set a unique value for each device. Duplicated devices are not allowed.	
Dovico namo	Set the name of the link device to be refreshed.	
	(Default: 🖵 Page 6-34, Section 6.6 (4) (a), Setting range: 🖵 Page 6-34, Section 6.6 (4) (b))	
Deinte	Set the points of the link device to be refreshed.	
Foints	(Default: 🖅 Page 6-34, Section 6.6 (4) (a), Setting range: 🛒 Page 6-34, Section 6.6 (4) (c))	
Start	a unique value for each device. Duplicated devices are not allowed. the name of the link device to be refreshed. fault: I Page 6-34, Section 6.6 (4) (a), Setting range: Page 6-34, Section 6.6 (4) (b)) the points of the link device to be refreshed. fault: Page 6-34, Section 6.6 (4) (a), Setting range: Page 6-34, Section 6.6 (4) (c)) the start No. of the link device to be refreshed. fault: Page 6-34, Section 6.6 (4) (a), Setting range: Page 6-34, Section 6.6 (4) (c)) the end No. of the link device to be refreshed. fault: Page 6-34, Section 6.6 (4) (a), Setting range: Page 6-34, Section 6.6 (4) (c)) the end No. of the link device to be refreshed. fault: Page 6-34, Section 6.6 (4) (a), Setting range: Page 6-34, Section 6.6 (4) (c)) the end No. of the link device to be refreshed. fault: Page 6-34, Section 6.6 (4) (a), Setting range: Page 6-34, Section 6.6 (4) (c)) olays refresh parameters of the CPU module. olays the name of the device to be refreshed on the CPU module. splay: Page 6-34, Section 6.6 (4) (b)) plays the points of the device to be refreshed on the CPU module. plays the same start No. as the one in "Points" in the "Link side" field. plays the start No. of the device to be refreshed on the CPU module.	
Start	(Default: 🖅 Page 6-34, Section 6.6 (4) (a), Setting range: 🖵 Page 6-34, Section 6.6 (4) (c))	
End	Set the end No. of the link device to be refreshed.	
	(Default: 🗇 Page 6-34, Section 6.6 (4) (a), Setting range: 🗇 Page 6-34, Section 6.6 (4) (c))	
	Displays refresh parameters of the CPU module.	
	Displayed data are corresponding to each setting in "Link side".	
Dovico namo	Displays the name of the device to be refreshed on the CPU module.	
	The device range input method can be switched between Points/Start and Start/End. (Default: "Start/End") Set the refresh parameters of the target module selected on the Parameter settings tab. Up to 64 refresh parameters can be set. Set the name of the link device to be refreshed. (Default: [S]" Page 6-34, Section 6.6 (4) (a), Setting range: [S]" Page 6-34, Section 6.6 (4) (t) Set the points of the link device to be refreshed. (Default: [S]" Page 6-34, Section 6.6 (4) (a), Setting range: [S]" Page 6-34, Section 6.6 (4) (c) Set the start No. of the link device to be refreshed. (Default: [S]" Page 6-34, Section 6.6 (4) (a), Setting range: [S]" Page 6-34, Section 6.6 (4) (c) Set the end No. of the link device to be refreshed. (Default: [S]" Page 6-34, Section 6.6 (4) (a), Setting range: [S]" Page 6-34, Section 6.6 (4) (c) Set the end No. of the link device to be refreshed. (Default: [S]" Page 6-34, Section 6.6 (4) (a), Setting range: [S]" Page 6-34, Section 6.6 (4) (c) Set the end No. of the link device to be refreshed. (Default: [S]" Page 6-34, Section 6.6 (4) (a), Setting range: [S]" Page 6-34, Section 6.6 (4) (c) Displays refresh parameters of the CPU module. Displays the name of the device to be refreshed on the CPU module. (Display: [S]" Page 6-34, Section 6.6 (4) (b)) Displays the same start No. as the one in "Points" in the "Link side" field.<	
Points	Displays the points of the device to be refreshed on the CPU module.	
	Displays the same start No. as the one in "Points" in the "Link side" field.	
Start	Displays the start No. of the device to be refreshed on the CPU module.	
	Description The device range input method can be switched between Points/Start and Start/End. (Default: "Start/End") Set the refresh parameters of the target module selected on the Parameter settings tab. Up to 64 refresh parameters can be set. Set a unique value for each device. Duplicated devices are not allowed. Set the name of the link device to be refreshed. (Default: [
End	Displays the start No. of the device to be refreshed on the CPU module.	
	Displays the same start No. as the one in "End" in the "Link side" field.	
Default button	Set the "Link side" and "CPU side" settings back to default.	
Check button	Checks the "Link side" and "CPU side" settings for error.	
End button	Saves the settings and closes the Refresh parameter settings screen.	
Cancel button	Closes the Refresh parameter settings screen without saving the settings.	

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(a) Default

The following indicates the default for "Device name", "Points", "Start", and "End". Table 6.26 Default for "Device name", "Points", "Start", and "End"

Setting item	Device name	Points	Start	End
Trans.1	LB	8192	0000	1FFF
Trans.2	LW	8192	0000	1FFF
Trans.3 to	"/Plank\"			
Trans.64		uir <i>j</i>		

(b) Device names

The following indicates the setting ranges of the "Device names" on the "Link side", and the display of the "Device names" on the "CPU side".

Table 6.27 "Device names" on "Link side" and "CPU side"

"Link side" setting range	"CPU side" display
LX	LX buffer
LY	LY buffer
LB	LB buffer
LW	LW buffer

(c) Setting range on the link side

The following indicates the setting ranges of the link side "Points", "Start", and "End".

(The same setting ranges are applied to "Trans.1" to "Trans.64".)

Table C 20 Catting ranges	مطالعات منطم	"Deinte"	"Ctout"	a	"End"
Table 6.26 Setting ranges	s of link side	Points .	Start .	anu	Ena
		,	,		

Device name	Points/Start/End	Setting range
	Points	16 to 8192 ^{*1}
LX	Start	0000 to 1FF0 ^{*1}
	End	000F to 1FFF ^{*2}
	Points	16 to 8192 ^{*1}
LY	Start	0000 to 1FF0 ^{*1}
	End	000F to 1FFF ^{*2}
	Points	16 to 16384 ^{*1}
LB	Start	0000 to 3FF0 ^{*1}
	End	000F to 3FFF ^{*2}
	Points	1 to 16384
LW	Start	0000 to 3FFF
	End	0000 to 3FFF

* 1 Only a multiple of 16 can be set to "Points" and "Start" of LX, LY, and LB.

 * 2 Only a (multiple of 16 minus 1) can be set to "End" of LX, LY, and LB.

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(5) Equal assignment screen

The link device points of all stations can be equally assigned on this screen. For the start and end stations, set values within the number of the stations for equal assignment target, which can be calculated in the following expression: (Total link stations - (Start station No. - 1))

(a) When "LB/LW settings" is set for "Switch screens" in the Parameter settings tab.

Equal assignment	
C Identical point assignment Points	
Equal assignment	
LB/LW settings	Low speed LB/LW settings
Start station Sta.	Start station Sta.
End station Sta.	End station Sta.
Start No.	Start No.
Total points assigned	Total points assigned
LW equal assignment	Low speed LW equal assignment
Start station Sta.	Start station Sta.
End station Sta.	End station Sta.
Start No.	Start No.
Total points assigned	Total points assigned
	OK Cancel

Figure 6.22 Equal assignment screen (for LB/LW settings)

Table 6.29 Descrip	tion of the Equa	l assignment screer	(for LB/LW settings)

		Item	Description
Identical point assignment		al point appignment	Equally assigns entered points to the link devices of each station. (In increments of 16)
		a point assignment	(Default "(Blank)", Setting range: 16 or more)
	Z h.	itten	Validates the equal assignment setting according to entered values and closes the Equal
Or		1001	assignment screen.
Ca	ance	button	Discard the settings and closes the Equal assignment screen.
Eq	ual a	assignment	Equally divides the entered points and assigns them to the link devices of each station.
	LB	equal assignment	Set the method for equal assignment to LB
			Set the first of the stations to which equal assignment will be performed.
			(Default "(Blank)", Setting range: 1 to (Value set in "Total stations"))
		Start station	The value for "Total stations" can be set in the "Network range assignment" in the Parameter
			settings tab. (Page 6-27, Section 6.6 (2))
			Set the last of the stations to which equal assignment will be performed.
			(Default "(Blank)", Setting range: (Value set in "Start station" to "Total stations"))
		End station	The value for "Total stations" can be set on the "Network range assignment" in the Parameter
			settings tab. (Page 6-27, Section 6.6 (2))
			Set the start No. of the link device to be equally assigned.
		Start NO.	(Default "(Blank)", Setting range: 🗇 Page 6-30, Section 6.6 (2) (a))
		Total points assigned	Set the total points of the link devices to be equally assigned.
			(Default "(Blank)", Setting range: 🗇 Page 6-30, Section 6.6 (2) (a))
	LW aqual assignment		Set the method for equal assignment to LW.
		equal assignment	Set each item the same as for "LB equal assignment"
		w spood I B oqual assignment	Set the method for equal assignment to low-speed LB.
	20		Setting method is the same as for "LB equal assignment" described above.
		w speed I W equal assignment	Set the method for equal assignment to low-speed LW.
	LO	low speed Lvv equal assignment	Setting method is the same as for "LB equal assignment" described above.

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(b) When "LX/LY settings (1)" or "LX/LY settings (2)" is set for "Switch screens" in the Parameter settings tab.

Equal assignment	X
C Identical point assignment Points	
Equal assignment	
M station to L station equal assignment	
Start station Sta.	Start station Sta.
End station Sta.	End station Sta.
Start No.	Start No.
Total points assigned	Total points assigned
L station to M station equal assignment	
Start station Sta.	Start station Sta.
End station Sta.	End station Sta.
Start No.	Start No.
Total points assigned	Total points assigned
	OK Current 1
	UK Lancel

Figure 6.23 Equal assignment screen (for LX/LY settings (1))

Table 6.30 Description of the Equal assignment scre	een (for LX/LY settings (1) and (2))
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		ltem	Description
			Equally assigns entered points to the link devices of each station. (In increments of 16)
Identical point assignment			Note that the points will not be assigned to the station, which is set as the I/O master station. (
iuc	111100		Page 6-27, Section 6.6 (2))
			(Default "(Blank)", Setting range: 16 or more)
	Z h.,	tten	Validates the equal assignment setting according to entered values and closes the Equal
	I bu		assignment screen.
C	ance	l button	Discard the settings and closes the Equal assignment screen.
Eq	ual a	assignment	Equally divides the entered points and assigns them to the link devices of each station.
	M s	station to L station equal	Set the method for equal assignment to I V(1) or I V(2)
	ass	ignment	
		Start station	Set the first of the stations to which equal assignment will be performed.
			(Default "(Blank)", Setting range: 1 to (Value set in "Total stations"))
			The value for "Total stations" can be set in the "Network range assignment" in the Parameter
			settings tab. (Page 6-27, Section 6.6 (2))
		End station	Set the last of the stations to which equal assignment will be performed.
			(Default "(Blank)", Setting range: (Value set in "Start station" to "Total stations"))
			The value for "Total stations" can be set in the "Network range assignment" in the Parameter
			settings tab. (Page 6-27, Section 6.6 (2))
		Stort No.	Set the start No. of the link device to be equally assigned.
		Start No.	(Default "(Blank)", Setting range: 🗇 Page 6-30, Section 6.6 (2) (a))
			Set the total points of the link devices to be equally assigned.
		Total points assigned	(Default "(Blank)", Setting range: 🗇 Page 6-30, Section 6.6 (2) (a))
L station to M station equal		tation to M station equal	Set the method for equal assignment to $LX(1)$ or $LX(2)$.
assignment		ignment	Setting method is the same as for "M station to L station equal assignment" described above.

(6) Supplementary settings screen

The supplementary settings is used for advanced settings. Default values can be applied for normal usage.



Figure 6.24 Supplementary settings screen



Item	Description
Constant scan	Constant scan is used to maintain the link scan time at a constant time. Set a value to prevent fluctuation of the link scan time. (Unit: ms) (Default: "(Blank)"), Setting range: 1 to 500
Max. number of returned stations per scan	Set the number of communication error stations that can return during one link scan. (Default: 2, Setting range: 1 to 64 ("Total stations" setting)) "Total station" can be set in the "Network range assignment" field in the Parameter settings tab. (I Page 6-27, Section 6.6 (2))
With multiplex transmission	Select this when executing the multiplex transmission function. Multiplex transmission is used in the optical loop system to increase the transmission speed by using both the forward and reverse loops simultaneously when they are in a normal condition. This setting is available only when "Total stations" is set to 4 or more. "Total station" can be set in the "Network range assignment" field in the Parameter settings tab. (Confourth National Content of the avaeuta)
There is a data link thorough the sub- controlling station when the controlling station is down.	Select this when allowing another normal station on the network to continue communication (the control station switch function) as a alternate station (sub-control station) when the specified control station is disconnected due to some fault. (Default: Selected (Enable the control station switch function))
Block send data assurance per station	Select this when securing consistency ^{*1} of link data for each station in cyclic transmission. This enables to handle multiple word data without providing interlocks in the program. Note that this function ^{*1} can be used only for the link device refresh processing between the C Controller module and MELSECNET/H module. Set the following parameters when selecting any of these items for assuring data per station.
Block receive data assurance per station	 "Link device refresh cycle" in the "Parameter settings" tab. ([] Page 6-27, Section 6.6 (2)) •Refresh parameters in the "Refresh parameter settings" tab. ([] Page 6-33, Section 6.6 (4)) (Default: [] Page 6-38, Section 6.6 (6) (a))
*	1 Securing consistency means preventing 2-word (32 bits) link data, such as the current value of the positioning module, from being divided into new and old data in units of 1 word (16 bits) due to cyclic transmission timing. The link device refresh processing between the C Controller module and MELSECNET/H module can be set in the "Refresh parameter settings" tab. (For Page 6-33, Section 6.6 (4)). (To the next page)

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Table 6.31 Description of the Supplementary settings screen (continued)

	Item	Description
Transient settings		Determine the conditions for transient transmission.
	Max. number of transients per	Enter the number of transient transmissions (total of entire network) that can be performed by one
		network during one scan.
	Scall	(Default: 2, Setting range: 1 to 255)
	Max. number of transients per	Enter the number of transient transmissions that can be performed by one station during one scan.
	station	(Default: 2, Setting range: 1 to 10 ("Max. number of transients per scan" setting)
		Set the execution conditions when sending link data (LB, LW) in slow cycles (low speed cyclic
L٥١	w speed cyclic transmission	transmission) in addition to the normal cyclic transmission.
set	tings	This setting is available only when "Low speed LB" and "Low speed LW" of "Network range
		assignment" are set on the "Parameter settings" tab.
	Transmit data of one station per	Select this when collectively sending data to another station per link scan
	scan	
	Interval of fixed cycle	Low-speed cyclic transmission is performed at specified intervals.
		(Default: "(Blank)", Setting range: 1 to 65535 (Unit: Sec.))
		Low-speed cyclic transmission is performed at specified time.
	Timor optingo	Any of "Hour", "Min.", and "Sec." settings cannot be skipped.
		When no value are set to "Year", "Month", and "Day", the transmission is executed at specified time
		every day.
	Timer settings	When no value are set to "Year" and "Month", the transmission is executed at specified time every
		month.
		When no value is set to "Year", the transmission is executed at specified time every year.
		(Default: "(Blank)", Setting range: 00:00:00, January 1, 2000 to 23:59:59, December 31, 2099)
Er	nd button	Saves the settings and closes the Supplementary setting screen.
Ca	ancel button	Closes the Supplementary setting screen without saving the settings.

(a) "Block send data assurance per station" "Block receive data assurance per station"

Default settings differ depending on the network type as follows. (\square Page 6-27, Section 6.6 (2))

Table 6.32 Network types and default

Network type	Default	
MNET/H mode (Control station)	Send and receive both deselected	
MNET/10 mode (Control station)		
MNET/H Extended mode (Control station)	Send and receive both selected	

Target Settings Tab 6.7



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Logical station numbers are set on this tab.

Logical station numbers are used when the target station is a multiple CPU system to access the programmable controller other than control CPU in the target station. Note that the logical station number setting is not required for the following access. Page 6-41, "6.7 (4) Access that does not require a logical station No. setting"

(1) Precaution for the Target settings tab

Select a programmable controller CPU for the "Target module".

(2) The Target settings tab



Figure 6.25 Target settings tab

Table 6.33 Description of the Target settings tab

Online operation Parameter settings	Target settings
Item	Description
Target module	Select the module to be configured.
larget module	(Default: "Slot 1")
	Specify the logical station No. of the module selected in "Target module".
Logical Sta. No	(Default: 65, Setting range: 65 to 239)
Logical Sta. No.	The logical station No. is logical numbers to be set in "Sta. No." in Device monitoring utility and
	MELSEC data link function (MELSECNET data link function).
	Set the network No. of the CC-Link IE Controller Network module and MELSECNET/H module
Network No.	controlled by the multiple CPU system.
	(Default: 1, Setting range: 1 to 239)
	Set the station No. of the CC-Link IE Controller Network module and MELSECNET/H module
Sta. No.	controlled by the multiple CPU system.
	(Default: 1, Setting range: 1 to 120)
	Set the CPU (CPU No. used in the multiple CPU system) to be accessed.
	(Default: 1, Setting range: 1 to 4)
Set button	Registers the settings (Logical Sta. No., Network No., Sta. No., and Target CPU) to the Target list.

Table 6.33 Description of the Target settings tab (continued)

Online operation Parameter settings Target settings

ltem		Description	
Target list		Displays a list of the Logical Sta. No. set to the module selected in "Target module" and the	
		corresponding network No., station No., and target CPUs	
		Displays the data of the selected row (Logical sta. No.) in the Target list.	
	Change button	(Setting for the logical sta. No. can also be changed by double-clicking the row.)	
	Delete button	Deletes the line (Logical sta. No.) selected in the Target list area.	

(3) Access example

When the settings in the following screen are applied in the below system, a MELSECNET/H module controlled by the C Controller module can access to the CPU No.4 via the MELSECNET/H module (controlled by CPU No. 2, network No. 1) by using the logical station No. "65".

The access is also available by opening channel No. 51 and setting 65 for the station No. in Device monitoring utility or a user program (MELSEC data link function).



* 1 When CPU No. 4 cannot configure a multiple CPU system, access to the CPU No. 4 is not available by using the logical station number.

The target settings for the above access is shown below.



Figure 6.27 Target settings tab

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(4) Access that does not require a logical station No. setting

In the following access, use the station No. of a MELSECNET/H module on other station.

The logical station number setting is not required.



Figure 6.28 Access that does not require a logical station No. setting

6.8 System menu

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B
	0	

(1) System menu

Open the system menu of MELSECNET/H utility in any of the following four methods.

- Right-click on the title bar.
- Click the (👫) icon on the title bar.
- Press the [Alt] key and then the $[\downarrow]$ key.
- Right-click the icon (">) on the task bar while pressing the [Shift] key.

뱜	MELSECNET/H utility	(192.168.3
_	<u>M</u> ove Mi <u>n</u> imize	
×	⊆lose	Alt+F4
	Specify C <u>P</u> U type	8.
	C Controller <u>s</u> etting utility <u>D</u> evice monitoring utility	/ 51
_	Version information	
-		

Figure 6.29 System menu

 Table 6.34 Description of the System menu

Item	Description	
Move, Minimize, Close	Refer to the Microsoft [®] Windows [®] manual.	
Specify CPU type	Specifies a C Controller module to which parameters are set or to be monitored. (Page 3-4, Section 3.4) This item is not selectable during monitoring.	
C Controller setting utility () Page 4-1, CHAPTER 4) While online, check that C Controller setting utility is connected to the same target device MELSECNET/H utility.		
Device monitoring utility	Starts Device monitoring utility. (FFP Page 8-1, CHAPTER 8) While online, check that Device monitoring utility is connected to the same target device as for MELSECNET/H utility. For the Q06CCPU-V-B, Device monitoring utility is not available.	
Version information	Opens the Version information screen. (

(2) Version information screen

Displays the version information of MELSECNET/H utility.



		COPYRIGHT (C) 2007 MITSUBISHI ELECTRIC CORPORATION ALL RIGHTS RESERVED Figure 6.30 Version information screen (Example: Version 3.01B) Table 6.35 Description of the Version information screen	LLATION AND STALLATION AND MARE PACKAGE
	Item	Description	USTA NINS OFT
So	ftware package	-	
	SW3PVC-CCPU-E	Displays the version of SW3PVC-CCPU.	3
	MELSECNET/H utility	Displays the update date of MELSECNET/H utility.	
Oł	< display="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-style="block-	Closes the Version information screen.	
			COMMON UTI

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6.9 Precautions

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B

(1) Parameter details

For details of each parameter, refer to Q Corresponding MELSECNET/H Network System Reference Manual (PLC to PLC network).

(2) Simultaneous use of utility

Up to eight MELSECNET/H utilities can be simultaneously activated.

(3) Written parameters

Parameters written to the C Controller module take effect when the C Controller module is powered off and then on or is reset.

(4) Tabs available to operate offline

When MELSECNET/H utility connection is offline, data can be set only in the Parameter settings tab and the Target settings tab. For the Q06CCPU-V-B, only parameters shown in the Target settings tab can be set.

(5) Terminating Microsoft[®] Windows[®]

Do not terminate Microsoft[®] Windows[®] while MELSECNET/H utility is running. Terminate MELSECNET/H utility first and then Microsoft[®] Windows[®].

(6) Connection during script file processing

Connection from utility to a C Controller module may not be available during processing a script file (while the RUN LED is flashing). If the RUN LED remains flashing, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation) and troubleshoot the problem.

(7) Time required for connection from each utility to the C Controller module

The following time is required for the C Controller module to connect to each utility after power-on or reset.

- When executing a script file, "STARTUP.CMD":
 - Upon completion of the RUN LED flashing.
- When not executing a script file, "STARTUP.CMD":

Fifteen (15) seconds after completion of start or reset

Do not attempt a connection before the above time has elapsed after completion of power-on or reset.

Changing "Priority" to a larger value in the Option tab of C Controller setting utility increases the time after which the C Controller module can be connected.
CHAPTER 7 CC IE CONTROL UTILITY

7.1 CC IE Control Utility Function List

	Q12D	CCPU-V Q0	6CCPU-V	Q06CCPU-V-B
	Table 7.1 CC IE Control utility function list			
		Applic	ability	Poforonco
Name	Description	Q12DCCPU	Q06CCPU	nage
		-V	-V	page
Specify CPU type	Specifies a C Controller module for parameter setting and monitoring.	0	0	Page 3-4
Connection settings	Sets the C Controller module to which CC IE Control utility is to be connected.	0	0	Page 3-5
Parameter setting file saving/loading	Saves parameters set in CC IE Control utility into a file or loads the file.	0	0	Page 3-14
Module information display	Displays information on the CC-Link IE Controller Network module (own station) that is controlled by the connected C Controller module.	0	0	Page 7-2
Online operation	Reads, writes, or verifies CC-Link IE Controller Network parameters.	0	Δ	Page 7-20
Parameter settings	Sets parameters for the CC-Link IE Controller Network modules.	0	0	Page 7-23
Target settings	Sets a logical station number for access to a CPU module in a multiple CPU system when a CC-Link IE Controller Network module is mounted in the system.	0	0	Page 7-34

 \bigcirc : Applicable, \bigtriangleup : Applicable but partially restricted, \times : N/A

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7.2 Module Information Tab

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B
\bigcirc	<u> </u>	×

The Module information tab displays information of the CC-Link IE Controller Network module (own station) that is controlled by the connected C Controller module.

(1) Precautions for the Module information tab

 (a) When a utility communication error has occurred When a utility communication error has occurred during connection, click the

Start monitoring button or set the connection target again in the Connection settings so that the communication can be restarted.

(b) During reset

Communications are not available while the C Controller module is being reset. Start communications after the reset is complete.

(2) Module information tab

🛃 CC IE Control utility(192.168	.3.3(Default))		_ – 🛛
Module information Online operation	Parameter settings Ta	rget settings	,
Link device refresh time(ms) Max.	1 Min. 1	Current 1 Diagnostics	* Stop <u>m</u> onitoring
Start I/O No. 0000 Channel No. 1	51 Network No. 1	Group No. 1 Sta. No. 1	
Type Control station Status	In data link	Link scan time(ms) 2	Save SB/SW
2 Slot Start I/O No. Channel No.	Network No.	Group No. Sta. No.	
Type Status	,	Link scan time(ms)	Save SB/SW
3 Slot Start I/O No, Channel No.	Network No.	Group No. Sta. No.	_
Type Status		Link scan time(ms)	Save SB/SW
4 Slot Start I/O No. Channel No.	Network No.	Group No. Sta. No.	_
Type Status		Link scan time(ms)	Save SB/SW
<u>Connection settings</u>	Load File	Save File Help	E <u>x</u> it
C:\MELSEC\CCPU\Param\sample.mng	CPU type:Q12DCCPU-V	User name: target	

Figure 7.1 Module information tab



Module information Online operation Parameter settings Target settings				
	Item	Description	Corresponding SB	Corresponding SW
Lin	k device refresh time	Displays the total link device refresh time required to refresh the MELSECNET/H and CC-Link IE Controller Networks, which are controlled by the C Controller module (host CPU). (In increments of ms)	_	_
	Max.	Displays the maximum total link device refresh time recorded in the past. When Link device refresh cycle (FFP Page 7-23, Section 7.5) is 0ms, "-" appears.	_	_
	Min.	Displays the minimum total link device refresh time recorded in the past. When Link device refresh cycle (FFP Page 7-23, Section 7.5) is 0ms, "-" appears.	_	_
			(To	the next page)

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Table 7.2 Description of Module information tab (continued)

Module information Online operation Parameter settings Target settings

Item	Description	Corresponding SB	Corresponding SW	DVERVIEW
Link device refresh time	_	_	—	2
	Displays the current total link device refresh time.			
Current	When Link device refresh cycle (Page 7-23, Section 7.5) is 0ms, "-"	—	—	AGE AGE
	appears.			ACK
	Displays the "CC IE Control Network diagnostics result" screen.			LLAT RE P.
Diagnostics button	(🖅 Page 7-5, Section 7.3)	_	—	
	This button cannot be clicked in the offline status.			UNIN SOF:
Start monitoring or	Starts or stops monitoring the CC-Link IE Controller Network module.			2
	"*" flashes in the upper right of the button during monitoring.	_	—	
Stop monitoring button	These buttons are disabled in the offline status.			
1 Slot to 4 Slot	Displays CC-Link IE Controller Network module information in order of	_		È
	start I/O No.			UTII SNC
Start I/O No.	Displays the start I/O No. of the CC-Link IE Controller Network module.	—	—	MON
	Displays the channel No. of the CC-Link IE Controller Network module.			DER
Channel No.	When the "Channel No." parameter is not specified (—	—	00
	Section 7.5), "-" appears.			4
	Displays the network No. of the CC-Link IE Controller Network module.			
Network No.	When the "Network No." parameter is not specified (_	SW0040	∝≽
	Section 7.5), "-" appears.			
	Displays the group No. of the CC-Link IE Controller Network module.			ITRO NG U
Group No.	When the "Group No" parameter is not specified $\int \overline{\mathcal{F}}$ Page 7-23	_	SW0041	
	Section 7.5). "-" appears.)			с 2 2
Sta. No.	Displays the station No. of the CC-Link IE Controller Network module.	_	SW0042	5
Туре	Displays the type of the CC-Link IE Controller Network module.	SB0044		
	Displays the communication status of the CC-Link IE Controller Network			~
	module as one of the following.			LT.
	• In data link			K UT
Otativa	Suspend data link		014/00/47	LIN
Status	Baton passing	_	500047	8
	Suspend baton pass			6
	Offline testing			≻
	• Offline			
Link scan time	Displays the link scan time of the CC-Link IE Controller Network module.			.∩ H
	(In increments of ms)	_		NET
	Saves information of the CC-Link IE Controller Network module's link			SEC
Save SB/SW button	special relay (SB) and link special register (SW) into a CSV file. (—	—	MEL
	Page 7-4, Section 7.2 (3))			7

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(3) Specifications of the SB/SW save file

A file format can be selected in "Save as type" on the following screen.



Figure 7.2 SaveAs screen

To use the text data of the SB/SW save file in a user program etc, select "SBSWSave File(*.csv)" when saving.

To use them on Microsoft[®] Excel etc., select "SBSWSave File[Form2](*.csv)" when saving.

When "SBSWSave File(*.csv)" is selected When "SBSWSave File[Form2](*.csv)" is selected

SB/Sw,192.168.3.3(Default) QJ7LGP21-SX ,10041000000000-D Start I/O No., Network No., Group No., Station No., Network 0000, 1, 1, 1, CC-Link IE Controller Network, Control stati SB/SW information	[SB/SW] [QJ71GP21-SX] [Start I/O No.] [0000]	[192.168.3 [10041000 [Network [1]	.3(Default)] 0000000-D] I [Group Nc [1]	[Station N [1]	[Network] [CC-Link I	[Type] [Control st	tation]
Gevice, value, , device, value SB0000. 0 SW0000. 0000	[SB/SW information	tion]					
SB0001, 0, , SW0001, 0000	[device]	[value]		[device]	[value]		
SB0002, 0, , SW0002, 0000	[SB0000]	[0]		[SW0000]	[0000]		
SB0003, 0, , SW0003, 0000 SB0004. 0 SW0004. 0000	[SB0001]	[0]		[SW0001]	[0000]		
SB0005, 0, , SW0005, 0000	[SB0002]	[0]		[SW0002]	[0000]		

Figure 7.3 Example of SB/SW save files

Remark

The folder of the SB/SW save file is "C:\MELSEC\CCPU\Param" by default (when SW3PVC-CCPU has been installed in "C:\MELSEC").

7.3 Diagnostics Result Screen



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Clicking the Diagnostics button in the <<Module information>> tab displays this screen.

IE Control Network diagnostics result		X
Change module Selected station 1 Change station	Start monitoring Stop monitor	oring
/odule1 Network No.1 Total no. of stations: 3 I/O master stati	ion[Block1: 0,Block2: 0]	Link scan time: 2ms
	2 1 Connected 3	
	Present control station	
	Specified control station	
	Prev Next	
	Network device status of selected station	
Test confirmation	Station No.1	Group No.0
to the target station.		Mode:Online
Link start/stop : Start/stop data link of the selected station.		
		RUN PRM MODE DLINK
Information confirmation		SD RD
save the error logs.		ERR.
	1.	

Figure 7.4 CC IE Control Network diagnostics result screen

When there are two or more CC-Link IE Controller Network modules that are controlled by the C Controller module, the following "Select diagnostics destination" window is displayed prior to "CC IE Control Network diagnostics result".

Select a network to be diagnosed and click the OK button.

Select diagnostics destination	×
Select network	
Module 1: CC IE Control (Channel No.151, Network No.1)	
C Module 2: CC IE Control (Channel No.152, Network No.2)	
O Module 3:	
O Module 4:	
Cancel	
Figure 7.5 Select diagnostics destination scr	eer

Item	Description
	Displays the Select diagnostics destination" screen when there are two or more CC-Link IE Controller
Change module button	Network modules that are controlled by the C Controller module.
	Change the network to one that is to be diagnosed.
	Entering a station No. and clicking the Change station button changes the display to the one for the
Selected station	selected station.
	The status of the selected station is displayed in the "Network device status of selected station" area.
	(Default: Station No. of the connected station, Setting range: 1 to 120)
Change station button	Determines the entry in "Selected station".
Start monitoring button	Starts automatic updating of "CC IE Control Network diagnostics result".
Stop monitoring button	Stops automatic updating of "CC IE Control Network diagnostics result".
Notwork information	Displays the link status and station status of the network.
	(🖵 Page 7-7, Section 7.3 (1))
Network device status of selected	Displays the detailed information on the selected station.
station	(🖵 Page 7-10, Section 7.3 (2))
	Displays the "Communication Test" screen.
Communication test button	([Page 7-13, Section 7.3 (3))
Link stat/stan	Displays the "Link start/stop" screen.
	(🕞 Page 7-15, Section 7.3 (4))
Logging butten	Displays the "Logging" screen.
	(🖵 Page 7-16, Section 7.3 (5))
Close button	Closes the "CC IE Control Network diagnostics result" screen.

Table 7.3 Description of Select diagnostics destination

(1) Network information

The link status and station status of the network are displayed.

Module1 Network No.1	Total no. of stations: 3 I/O master station[Block1: 0,Block2: 0]	Link scan time: 2ms
	2 1 Connected 3	
	Present control station Specified control station	

Prev Next

Figure 7.6 Network information display

Table 7.4 Description of Network information display

Item	Description	
Madula	Displays the module on the network, which is being diagnosed.	
Module	The number corresponds to one of Slots 1 to 4 on the "Module information" screen.	
Network No.	Displays the network No. of the network being diagnosed.	
Total no. of stations	Displays the total number of connected and reserved stations.	
I/O master station	Displays the station No. of the I/O master station on the network being diagnosed.	
Link scan time	Displays the current link scan time. (In increments of ms)	
leane	Displays each station status or inter-station status.	
ICONS	(🖵 Page 7-8, Section 7.3 (1) (a))	
Prev button	Switches the screen when the total number of stations is 61 or more	
Next button		

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(a) Icons

Each icon represents its station status or inter-station status.



Figure 7.7 Displaying each station status and inter-station status

1) Station No.

Station No. of each CC-Link IE Controller Network module is displayed.

2) Connected

This word is shown for the station connected to the CC IE Control utility (own station).

3) Icons

The meanings of the icons are listed below.

Table 7.5 Descriptions of icons

lcon	Description
	Normally operating station
	Faulty station
	•CC-Link IE Controller Network module
	•CC-Link IE Controller Network interface board
	•Cable
뤖	Faulty station (Cyclic station is stopped.)
	Disconnected station (black)
	Reserved station (gray)
	Selected station (an icon in a green frame)
	•To select, click a station icon, or move the focus with the left and right arrow keys and
	press the space key.
	•The detailed information is displayed in "Network device status of selected station".
	•Disconnected or reserved stations are not selectable.
	Being focused (an icon in a dotted line frame)
	•To make it selected, press the space key.
<u></u>	•Disconnected or reserved stations are not selectable.
	Communication error
- 1	•Selecting the station next to a faulty station will display the detailed information in the
	"Network device status of selected station" area.

4) Present control station and Specified control station
 Present control station: Station that is actually operating as a control station
 Specified control station: Control station that is set with a parameter

- (b) Position of a disconnected station
 - If the station has obtained normal connection information The disconnected station is displayed in the position where it was connected when it was normal.



Figure 7.8 When the disconnected station has obtained normal connection information

Conditions and timing for normal connection information acquisition When all of the following conditions are met, normal connection information is stored in a CC-Link IE Controller Network module.

- All stations are in data link status. (Cyclic transmission status of each station (SB00B0) is off.)
- No loopback station (Loopback status (SB0065) is off.)
- No station has a parameter error. (Parameter status of each station (SB00E0) is off.)
- The number of actually connected stations is the same as the total number of stations (except reserved stations) set on the control station.

If all the above conditions are met again after any of them was not met, the normal connection information will be updated.

 For acquisition of normal connection information, there are restrictions on the version of the CC-Link IE Controller Network module that is directly connected to CC IE Control utility.

Check the version of the CC-Link IE Controller Network module.

CC-Link IE Controller Network Reference Manual

(2) After acquisition of normal connection information, if the network configuration is changed with a cable or station disconnected, the changes cannot be displayed correctly.

Update the information as instructed below.

(If the network has an error, however, normal connection information cannot be obtained, and the condition is displayed as it is.)

- Set Normal connection information refresh instruction (SB000C) to on.
- Power off and then on, or reset the connected station.
- Take corrective actions to set all stations into normal states.
- (3) If a station that is not included in the normal connection information is added, it is displayed on the IN side of the CC IE Control utility connected station.
- If the station has not obtained normal connection information A disconnected station is displayed on the IN side of the CC IE Control utility connected station.



Figure 7.9 When the disconnected station has not obtained normal connection information

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(2) Network device status of selected station

The detailed information of a selected station is displayed.



Figure 7.10 Network device status of selected station

Table 7.6 Description of Network device status of selected station

Item	Display	Description
Group No		Displays the group No. of the selected station.
		(Range: 0 to 32)
Mode		Displays the mode of the selected station.
		(Display item: "Online", "Line test")
	Station No.1	Normal operation
Operating status	Station No.1 Error occurs.	Error (data link continued) (yellow)
	Station No.1 Error occurs.	Error (data link stopped) (red)
LEDs of selected station	RUN D PRM	Displays the operating status of the selected station.
network device	SD RD	$(\square = \square Page 7-11 Section 7.3 (2) (a))$
	ERR.	
		In data link
Communication status		Cable disconnection
Communication status		Communication error (other than cable disconnection)
		Module error (CC-Link IE Controller Network parameter error or transient transmission error)
Error details button	Module error etc	Displayed in the faulty area.
	, cit.	(💭 Page 7-12, Section 7.3 (2) (b))



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(a) LEDs of the selected station network device

The operating status of the selected station is displayed.



Figure 7.11 LEDs of the selected station network device

Table 7.7 Description of LEDs of the selected station network devi	ice
--------------------------------------------------------------------	-----

LED	LED status	Description
DUN	On, green	In normal operation
NON	Off	Hardware fault or watchdog timer error
	On, green	Online mode
MODE	Flashing, green	Test mode
	Off	Offline mode
SD	On, green	Sending data
30	Off	Not yet sending data
		•Received data are erroneous. (Receive frame error)
		•A certain level frame error has occurred between stations.
	On, red	•Control station or station No. is duplicated.
ERR.		•Cables are disconnected or incorrectly connected between OUT and IN.
		•Network parameters are corrupted, or some settings (reserved station setting, total number of
		stations, network No., etc.) are inconsistent between control and normal stations.
	Off	Normal status
DDM	On, green	Operating as a control station
	Off	Operating as a normal station
	On, green	In data link (cyclic transmission operated)
D LINK	Flashing, green	In data link (cyclic transmission stopped)
	Off	Not yet in data link (being disconnected)
PD	On, green	Receiving data
RD	Off	Not yet receiving data
	On, green	External power is being supplied
EXI.PVV '	Off	External power not yet supplied

* 1 Displayed only when the module is equipped with an external power supply.

7.3 Diagnostics Result Screen

(b) Error details button

Clicking the button displays the "Error details" screen.

The detailed information, error factor, and troubleshooting tips are displayed.

Error details - [selected station No.: 1]	
Detailed information	
Total number of receive data on IN side. 26124514 Total number of receive data on OII side. 1652428 Own station connection status:Loopback on OIII side (Cable disconnection on IN side) Baton pass error in own station/Normal (Power On) Number of path switch: 5 Number of detected cable disconnections on IN side: 2	
	~
Error factor	
coopeau, on do'n sue. The nuer opic caue is asconnected of normened on in sue.	
	~
Froubleshooting	
Check if the cable is properly inserted on IN side of own station, or replace the broken cc If the cable is properly connected, the network module or board may be faulty. Replace to network module or board.	ble. 🔺
	×
<u></u>	ose

Figure 7.12 Error details screen

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(3) Communication Test screen

The route from the own station to the specified destination is displayed on this screen, and whether transient transmissions can be performed correctly or not is checked. Upon completion of the communication test, the test result is displayed. If an error occurs, take actions according to the error message.

Communication test detail	\$			
1. Destination	2. Communication data			
Network No. 1	Length	100 Byte		
Station No. 2	Communication count	1 time(s)	2020	
	W.D.T	5 Second	Execute test	
Communication test result				
Outward Inward				
Network No.				
	No.1			
	1 2 Dwn Destina	tion		
	2 Dum Destinal			
Own station	Communication information	tion	Destination	
Own station Network No.	Que Destinat Communication information	tion	Destination Network No. 1	ĩ
Own station Network No.	Communication information Communication count Communication time	n 1 time(s) 0 *100ms	Destination Network No. 1 Station No. 2	Ĩ

Figure 7.13 Communication Test screen

Item		Description		
Со	mmunication test details	Set the destination and communication data.		
	Network No.	Set a network No. of the destination.		
		(Default:1, Setting range: 1 to 239)		
	Station No.	Set a station No. of the destination.		
	Station No.	(Default: 1, Setting range: 0 (I/O master station), 1 to 120 (control/normal station))		
	Longth	Set a communication data length.		
	Length	(Default: 100, Setting range: 1 to 900)		
	Communication count	Specify how many times the communication is to be made.		
	Communication count	(Default: 1, Setting range: 1 to 100)		
	WDT	Set a timeout time for the communication test (in units of seconds).		
	VV.D.1.	(Default: 5, Setting range: 1 to 100)		
	Execute test button	Executes the communication test.		
Со	mmunication test result	Displays the destination and communication data.		
	< Outwards > tab	Displays the numbers of the networks and stations that are on the route from the source station		
	< <outward>> tab</outward>	(connected station) to the specified destination.		
		Displays the numbers of the networks and stations that are on the route back from the specified		
		destination to the source station (connected station).		
		Displays the network No. of the turn-around point on the way from the source station (connected		
	Network No.	station) to the specified destination.		
		(Range: 1 to 239)		
		Displays the station No. of the turn-around point on the way from the source station (connected		
	Station No.	station) to the specified destination).		
		(Range: 0 to 120)		

(To the next page)

	Item	Description		
Ow	n station	Displays the information on the own (connected) station.		
	Network No.	Displays the network No. of the own (connected) station.		
	Station No.	Displays the station No. of the own (connected9 station.		
Communication information		Displays the communication information.		
	Communication count	Displays how many times the communication has been made.		
		(Range: 1 to 100)		
	Communication time	Displays the communication time. (In increments of 100ms)		
		(Range: 0 or greater)		
De	stination	Displays the information on the destination.		
	Network No.	Displays the network No. that was entered in the Target settings.		
	Station No.	Displays the station No. that was entered in the Target settings.		
Close button		Closes the "Communication Test" screen.		

Table 7.8 Description of Communication Test screen (continued)



On the default screen, only the communication test setting area is displayed as below.

Communication test	details				
1. Destination	2	Communication data			
Network No.	1	.ength	100	Byte	
Station No.	1	Communication count	1	time(s)	
	1	w.d.t	5	Second	Execute test

(4) Link start/stop screen

From this screen, data link of the specified station can be started or stopped.

Network CC IE Control Type Controller netwo		ork control static	n Group Station	No. [No. [0
tatus of all	stations		1	1	1
elected/i	non-selected	Station No.	Link status	Group	Туре
		1	Linking	0	Control Station
		2	Linking	0	Normal Station
		3	Linking	0	Normal Station
	Select gr	oup			
	Select al				
	Clear all				

Figure 7.15 Link start/stop screen

Table 7.9 Description of Link start/stop screen

	ltem	Description
Ne	twork information	Displays the information on the selected network (own station).
	Notwork	Displays the name of the selected network (own station).
	NELWOIK	(Display item: "CC IE Control" (fixed))
	Tupo	Displayed the station type of the selected network (own station).
	туре	(Display item: "Controller network control station", "Controller network normal station")
	Network No.	Displays the network No. of the selected network (own station).
	Group No.	Displays the group No. of the selected network (own station).
	Station No.	Displays the station No. of the selected network (own station).
Sta	tus of all stations	Displays the information on each station that is connected to the selected network (own station).
		Select a station to start or stop the link.
	Solootod/pop colootod	By right-clicking on each information area in "Status of all stations", a pop-up menu appears.
	Selected/1011-Selected	From the pop-up menu, the displayed status can be changed.
		(Default: Not checked (Link start or stop))
		Displays station No. on the specified network.
	Station No.	Reserved station numbers are not displayed.
		(Range: 1 to 120)
	Link status	Displays the link status of a station on the specified network.
		(Display item: "Linking (blue)", "Suspended (red)")
	Croup	Displays the group No. of a station on the specified network.
	Gloup	(Range: 0 to 32)
	T	Displays the type of a station on the specified network.
	туре	(Display item: "Control station", "Normal station")
		Specify the link start or stop.
Lin	k start/stop	When "Forced start" is selected, the link can be started from a station other than the stop-requested station.
		(Default: "Start")
	Execute button	Executes the operation selected in the Link start/stop setting for the selected station.
CI	ose button	Closes the "Link start/stop" screen.

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(5) Logging screen

Transmission pass switching and transient transmission error logs can be monitored, and error information can be cleared.

<<Clear error>> tab

Figure 7.16 Logging screen

Table 7.10 Description of Logging screen

	Item	Description
Connected station		Displays the information on the connected stations.
	Notwork No	Displays the network No. of the connected station.
	Network NO.	(Range: 1 to 239)
	Group No.	Displays the group No. of the connected station.
		(Range: 0 to 32)
	Station No.	Displays the station No. of the connected station.
	อเลแอก ทอ.	(Range: 1 to 120)

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Item	Description	
Monitoring details>> tab	Displays logs in the Transmission path switch and Transient transmission error areas.	1EW
Transmission noth quitch	Up to 100 transmission path switch logs can be displayed.	ERV
Transmission pain switch	If more than 100 logs have occurred, the oldest log will be deleted to record the latest log.	8
	Displays the information on the transmission lines on the entire network.	2
Loop status	(Display item: "Normal", "Loopback", "Error in all stations")	
Leophack station IN	Displays the station No. of the station where an IN-side loopback has occurred.	AGE AGE
	(Range: 1 to 120)	NAN
Loopback station OLIT	Displays the station No. of the station where an OUT-side loopback has occurred.	ATIO LLLAI RE F
	(Range: 1 to 120)	ALL/ ISTA
Date/time	Displays the date and time at which the transmission path was switched.	INST UNIN SOF
Transient transmission error	Displays up to 100 transient transmission error logs.	2
	If more than 100 logs have occurred, the oldest log will be deleted to record the latest log.	3
Frror code	Displays error codes.	
	For details of the error codes, refer to the CC-Link IE Controller Network Reference Manual.	È
	When a transient transmission error has occurred, the network No. of the error-detected station	UTIL
Target network	is displayed.	ION I ATIO
	(Range: 1 to 239)	OMM
	When a transient transmission error has occurred, the station No. of the error-detected station	22
Target station No.	is displayed.	4
	(Range: 1 to 120)	
Date/time	Displays the date and time at which the transment transmission error occurred.	
	Saves the < <monitoring details="">> tab data to a USV file.</monitoring>	LER
	Select a CSV file format by clicking the Browse button.	ROL 3 UT
	() Page 7-19, Section 7.3 (6))	TINC
		C C SET
	Save error log	5
Save error log button	Drive/Path Browse	
	File name	
	Same Canad	≧
		JTL
	•Drive/Path: Specify where the CSV file is saved.	N
	•File name: Specify a name for the CSV file to be saved.(*.csv)	C-FI
	Starts or stops the on-screen Logging monitoring.	G
	During monitoring, the Start monitoring button is enabled.	0
Start monitoring button	While monitoring is stopped the Start monitoring button is enabled	È.
Stop monitoring button		IILO
	when a utility communication error has occurred, the Start monitoring and Stop monitoring	ET/H
	buttons will de disadied.	- CNE
	(To the next page)	ELSE
		Ξ

Table 7.10 Description of Logging screen (continued)

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Item		Description	
<<	Clear error>> tab	Clears the errors.	
	Clear communication error counter	The communication error counter can be cleared to zeros.	
Clear communication error counter	(Default: Checked (Clears to 0))		
	Clear IN side transmission error	The areas for detected IN-side line errors (SW0068, SW0069, SB006E, SB0140, SW0074, and	
		SW0140 to SW0147) can be cleared to zeros.	
	Counter	(Default: Checked (Clears to 0))	
		The areas for detected OUT-side line errors (SB006F, SB0150, SW006A, SW006B, SW0084,	
	counter	and SW0150 to SW0157) can be cleared to zeros.	
	Counter	(Default: Checked (Clears to 0))	
		The areas for path switch detection of the own station (SB008E, SB0160, SW006E, and	
	Clear loop switching counter	SW0160 to SW0167) can be cleared to zeros.	
		(Default: Checked (Clears to 0))	
		The areas for transient transmission errors of the own station (SB008F, SB0170, SW006F, and	
	Clear transient transmission error	SW0170 to SW0177) cam be cleared to zeros.	
		(Default: Checked (Clears to 0))	
	Clear error info. button	Clears the selected information.	
		Closes the "Logging" screen.	
CI	ose button	The 17th and later logs displayed are deleted when this screen is closed.	
		To save all of the displayed logs, click the "Save error log" button.	

Table 7.10 Description of Logging screen (continued)

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(6) Specifications of the error log file

A file format can be selected in "Files of type" on the following screen.

To save the file, go back to the error log save screen by clicking the Open button after selecting the format.



Figure 7.17 Open screen

To use the text data of the SB/SW save file in a user program etc, select "Error Log File(*.csv)" when saving.

To use them on Microsoft[®] Excel etc., select "Error Log File[Form2](*.csv)" when saving.

(a) For Transmission path switch

The following data are saved in an error log file for transmission path switch.

- · Loop status
- Loopback station No. (IN side)
- · Loopback station No. (OUT side)
- · Date and time

The following is an example error log file for transmission path switch.

When "Error Log File(*.csv)" is selected When "Error Log File[Form2](*.csv)" is selected

Loop status, Loopback station IN, Loopback static Normal,2009/04/21 18:48:30 Loopback,2,1,2009/04/21 18:48:26 Error in all stations,2009/04/21 18:47:59 Nonback.2.1.2009/04/21 18:47:56	[Loop statl. [Loopback] [Date] [Normal] [-] [2009/04/21 18:48:30] [Loopback] [1] [2009/04/21 18:48:26] [Error in al] [-] [-] [2009/04/21 18:47:59]
oopback,2,1,2009/04/2118:47:56	[Lerror in al [-] [-] [2009/04/21 16:47:59] [Loopback [2] [1] [2009/04/21 18:47:56]

Figure 7.18 Examples of error log files (Transmission path switch)

(b) For Transient transmission error

The following data are saved in an error log file for transient transmission errors.

- · Error code
- Network No.
- Station No.
- · Date and time

E5F0,1,3,2009/04/21 18:54:49 E5F0,1,3,2009/04/21 18:54:48

The following is an example error log file for transient transmission errors.

When "Error Log File(*.csv)" is selected

code, Target network, Target station No., Da 1,3,2009/04/21 18:54:52 1,3,2009/04/21 18:54:51 1,3,2009/04/21 18:54:50

When "Error Log File[Form2](*.csv)" is selected

E5F0]	[1]	[3]	[2009/04/21 18:54:52]
E5F0]	[1]	[3]	[2009/04/21 18:54:51]
E5F0]	[1]	[3]	[2009/04/21 18:54:50]
E5F0]	[1]	[3]	[2009/04/21 18:54:49]
E5F01	[1]	[3]	[2009/04/21 18:54:48]

Figure 7.19 Examples of error log files (Transient transmission error)

Remark Only the logs displayed in the << Monitoring details>> tab can be saved in an error

log file by clicking the Save error log button.

7.4 Online Operation Tab

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B
		L X

The CC-Link IE Controller Network parameters can be read, written, or verified from this tab.

(1) Precautions for the Online operation tab

- (a) When a utility communication error has occurred When a utility communication error has occurred during connection, set the connection target again in the Connection settings so that the communication can be restarted.
- (b) During reset

Communications are not available while the C Controller module is being reset. Start communications after the reset is complete.

(c) The drive to which parameters are written When writing parameters from each of the utilities to the following C Controller module, write them to the same drive.

• Q12DCCPU-V whose serial No. (first five digits) is "12042" or later If the parameters are written to different drives, those of the drive, which include C Controller setting parameters, will take effect.

(2) Online operation tab

CC IE Control utility(192.168.3.3(Default))	×
Target drive Standard RAM	1
Read parameters	
Read parameters from C Controller module.	
Wite parameters	
Write parameters to C Controller module.	
Veily parameters	
Verify the parameters match with the C Controller module's parameters.	
Load File Save File Help Ext	

Figure 7.20 Online operation tab

Table 7.11 Description of Online operation tab

This setting is not available for the Q06CCPU-V(-B).

Module information U Online op	eration Parameter settings Target settings
Item	Description
	Set a target drive for reading, writing, or verifying parameters. ^{*1}

 (Default: Parameter boot drive)
 * 1 For the drives to which parameters can be written (user memory), refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

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Target drive

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Module information Online op	eration Parameter settings Target settings	IEW
Item	Description	/ERV
Read parameters	Reads CC Link IE Controller Network parameters from the C Controller module	б
Read button	Reads CC-Link IE Controller Network parameters from the C Controller module.	2
	Writes CC-Link IE Controller Network parameters to the C Controller module.	щ
	The written parameters take effect when the C Controller module is powered off and then on or is	
Write parameters	reset.	ATION
Write button	Parameters can be written only when "Write authority" is selected in Connection settings. If "Write	LAT
	authority" is not selected, select it in the Connection settings screen before writing parameters.	STAL VINS
	() Page 3-5, Section 3.5)	ΞΞω
	Check for consistency between the CC-Link IE Controller Network parameters of the C Controller	3
Verify parameters	module and those set in CC IE Control utility.	
	The verification results are shown in a message box.	≻
Verify button	If a mismatch is found, a message appears and prompts the user to save the results to a file.	S
	() Page 7-22, Section 7.4 (3))	

Table 7.11 Description of Online operation tab (continued)

Remark

Reading, writing, and verification are available while the C Controller module is connected online to the development environment (personal computer).

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(3) Verification results file

If a mismatch is found, a message appears and prompts the user to save the results to a file.

To save a verification results file, click the Yes button and enter appropriate data on the following screen.

The verification results file is saved in text format.

For "Save as" operations, refer to the following.

Page 3-14, Section 3.8



Figure 7.21 Save As screen

The following is an example of a verification results file.





The default folder for saving a verification results file is "C:\MELSEC\CCPU\Param" (when SW3PVC-CCPU has been installed in "C:\MELSEC").

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Parameter Settings Tab 7.5

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B
\bigcirc	\bigcirc	

Parameters of the CC-Link IE Controller Network module can be set in this tab.

(1) Precautions for the Parameter settings tab

(a) Link device refresh cycle and Routing parameter

"Link device refresh cycle" and "Routing parameter" are parameters common to MELSECNET/H.

When some of the set values written from MELSECNET/H utility are different from

those set in this utility, clicking the Write button in <<Online operation>> will display the following dialog box.

CC IE Control utility(192.168.3.3(Default))		
?	The following common parameters with MELSECNET/H have been changed. The settings in MELSECNET/H utility will be overwritten. Continue? - Link device refresh cycle - Routing parameter	
	<u>Yes</u> <u>No</u>	

Figure 7.22 Dialog box

(2) Parameter settings tab

CC IE Control utility	operation Parameter settings Target settings	
Number of modules 1	Blank : No setting Link device refresh cycle 100 - ms Slot	<u>R</u> outing parameter
Start I/O No. 0000	Operation settings	Default
Channel No. 151 💌	Network type CC IE Control (Control station)	Check
	Mode Online	Refresh parameters
	Group No.	Network range assignment
	Station No. 1 +	
Connection settings	Load File Save File	Help E <u>x</u> it
:)MELSEC)CCPLI)Param)sam	le.mng CPU type:012DCCPU-V User n	ame: target

Figure 7.23 Parameter settings tab

Table 7.12 Description of Parameter settings tab

Module information Online operation	Parameter settings Target settings
Item	Description
Number of modulos	Set the number of CC-Link IE Controller Network modules that are to be controlled by the C
	Controller module.
Number of modules	Selecting "(Blank)" means no setting (Setting cleared).
	(Default: "(Blank)")

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Table 7.12 Description of Parameter settings tab (continued)

Module information Online operation Parameter settings Target settings

	Item	Description	
		Set a refresh cycle for link devices. (In increments of ms)	
		When using both the CC-Link IE Controller Network and MELSECNET/H network, set the same value as the value set in MELSECNET/H utility.	
		To enable the "Block data assurance per station" setting (Page 7-33, Section 7.5 (7)), enter	
Link de	vice refresh cycle	Setting 0 for "Link device refresh cycle" disables any refresh with all refresh parameter settings	
		deleted, and disables the Refresh parameters button.	
		(Default: 100, Setting range: 0, 10 to 1000)	
		For further details, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).	
Routir	g parameter button	Displays the "Routing parameter settings" screen. (
		Select a module to configure. (Default: 1)	
Target	module	The numbers for this item will be automatically rearranged in ascending order of start I/O numbers	
		when saving the parameter setting file or when switching the tab.	
Stort 1/		Set a start I/O No. of a CC-Link IE Controller Network module.	
Start I/	J NO.	another CC-Link IE Controller Network module.))	
		Set a channel No. of a CC-Link IE Controller Network module.	
		The set value is used to open the channel from Device monitoring utility or a user program	
Channe	el No.	(MELSEC data link functions).	
		Channel No. must be unique, and not duplicated with the one for another CC-Link IE Controller Network module.	
Defau	t button	Sets the operation settings, network range assignments, and refresh parameters to default values.	
Check	button	Checks for any setting error.	
		Displays the "Refresh parameter settings" screen. (
Refres	h parameters button	To enable the Block data assurance per station" setting (Page 7-33, Section 7.5 (7)), enter	
		10ms or more for "Link device refresh cycle", and set refresh parameters.	
Network range assignment button		Displays the "Network range assignment" screen. (Page 7-29, Section 7.5 (5))	
Interwork range assignment buttom		When "CC IE Control (Control station)" is selected for "Network type", this button is enabled.	
Operat	ion settings	Specify the CC-Link IE Controller Network module operation.	
	Network type	Set a type of the CC-Link IE Controller Network module.	
		(Default: "CCTE Control (Control station)")	
	Mada	Set a mode of the CC-Link IE Controller Network module.	
	Mode	Line test can be set when "UC IE Control (Control station)" is selected for "Network type".	
		Set a network No. of the CC-I ink IF Controller Network module	
	Network No.	(Default: 1. Setting range: 1 to 239)	
		Set a group No. of the CC-Link IE Controller Network module.	
	Group No.	(Default: 0, Setting range: 0 to 32)	
	Station No.	Set a station No. of the CC-Link IE Controller Network module.	
	Station NO.	(Default: 1, Setting range: 1 to 120)	

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(3) Routing parameter settings screen

The transfer target network, relay network, and relay station can be specified on this screen.

- The CC-Link IE Controller Network module controlled by a C Controller module cannot be a relay station that is supposed to act as a bridge. As a relay station, use a CC-Link IE Controller Network module controlled by a programmable controller CPU with which multiple network systems can be constructed.
- 2. Common routing parameters must be used for the following channels. Different settings for each channel No. are not allowed.
 - CC-Link IE Controller Network (Channel No.151 to 154)
 - MELSECNET/H (Channel No.51 to 54)



Figure 7.24 Routing parameter settings screen

Table 7.13	Description	of Routing	parameter	settings screen
		•••••••••••••••••••••••••••••••••••••••	P	

Item	Description
Transfer torget network No	Set a transfer target network No.
Transfer target hetwork no.	(Default: "(Blank)", Setting range: 1 to 239)
Polov potwork No	Set a relay network No.
Relay network no.	(Default: "(Blank)", Setting range: 1 to 239)
Polov station No.	Set a relay station No.
Relay station No.	(Default: "(Blank)", Setting range: 1 to 120)

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	Item	Description
Max. si	ze of transient transmission via	For each channel No, set the maximum size of transient transmission data sent from a user
other n	etwork No.	program via another network (No.)
		For each channel, set the maximum size of transient transmission data sent to another network
		(No.) via a CC-Link IE Controller Network module.
		Only when all of the relay and target stations of the transient transmission are MELSEC-Q series
	Channel No.151 to	network modules, select 960 words.
	Channel No.154	Select 480 words if a module other than the MELSEC-Q series network modules is included in the
		relay and target stations. Setting 960 words in this case may truncate some of the data, disabling
		normal transient transmission.
		(Default: 480 words)
Clear	button	Clears the "Transfer target network No.", "Relay network No.", and "Relay station No." settings.
Check] button	Checks the "Transfer target network No.", "Relay network No.", and "Relay station No." settings.
End	outton	Saves the settings and closes the "Routing parameter settings" screen.
Cance		Closes the "Routing parameters settings" screen without saving the settings.

Table 7.13 Description of Routing parameter settings screen (continued)

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(4) Refresh parameter settings screen

Refresh parameters are set on this screen.



Figure 7.25 Refresh parameter settings screen

Table 7.14 Description of Refresh parameter settings screen

	Item	Description
Assignment method		How to enter the device range data can be switched between Points/Start and Start/End styles.
Assignment method		(Default: "Start/End")
		Set refresh parameters of the module selected on the "Parameter settings" tab.
Link side		Up to 64 refresh parameters can be set.
		Since duplicated device setting is not allowed, prevent any overlapped settings.
	Dovico nomo	Set a link device name to be refreshed.
	Device name	(Default: 🖵 Page 7-28, Section 7.5 (4) (a), Setting range: 🖵 Page 7-28, Section 7.5 (4) (b))
	Dointo	Set points of the link device to be refreshed.
	Foints	(Default: 🖵 Page 7-28, Section 7.5 (4) (a), Setting range: 🖵 Page 7-28, Section 7.5 (4) (c))
	Start	Set the start No. of the link device to be refreshed.
	Start (Default: 🖅 Page 7-28, Section 7.5 (4) (a), Setting range: 🖵 Page 7-28, S	
End	Set the end No. of the link device to be refreshed.	
		(Default: 🖅 Page 7-28, Section 7.5 (4) (a), Setting range: 🖵 Page 7-28, Section 7.5 (4) (c))
CPUs	ide	Displays refresh parameters of the CPU module.
	Data corresponding to respective "Link side" settings are shown.	
Device name	Displays the name of the device whose data are refreshed onto the CPU module.	
	(Range: 💭 Page 7-28, Section 7.5 (4) (b))	
Deinte	Displays the points of the device whose data are refreshed onto the CPU module.	
Foints		The points is the same as those shown in "Points" of "Link side".
Stort		Displays the start No. of the device whose data are refreshed onto the CPU module.
		The start No. is the same as that shown in "Start" of "Link side".
	End	Displays the end No. of the device whose data are refreshed onto the CPU module.
		The end No. is the same as that shown in "END" of "Link side".
Defau	It button	Resets the "Link side" and "CPU side" settings back to defaults.
Check	button	Checks the "Link side" and "CPU side" settings for errors.
End	button	Saves the settings and closes the "Refresh parameter settings" screen.
Cance	el button	Closes the "Refresh parameter settings" screen without saving the settings.

(a) Default values for "Device name", "Points", "Start", and "End"

The following table lists the default values for "Device name", "Points", "Start", and "End".

Table 7.15 Default values for "Device name", "Points", "Start", and "End"

Setting item	Device name	Points	Start	End
Trans.1	LB	32768	0000	7FFF
Trans.2	LW	131072	00000	1FFFF
Trans.3 to		"(blc	nek)"	
Trans.64		(Jie	uik)	

(b) "Device names" on "Link side" and "CPU side"

The following table lists the setting range for "Device name" of "Link side" and "CPU side" "Device name" displays.

Table 7.16 "Device names" on "Link side" and "CPU side"

"Link side" setting range	"CPU side" display
LX	LX buffer
LY	LY buffer
LB	LB buffer
LW	LW buffer

(c) Setting ranges for the link side "Points", "Start", and "End"

The following table lists the setting ranges for the link side "Points", "Start", and "End".

(These setting ranges apply to all of "Trans.1" to "Trans.64".)

Table 7.17 Setting ranges for the link side "Points", "Start", and "End"

Device name	Points/Start/End	Setting range
	Points	16 to 8192 ^{*1}
LX	Start	0000 to 1FF0 ^{*1}
	End	000F to 1FFF ^{*2}
	Points	16 to 8192 ^{*1}
LY	Start	0000 to 1FF0 ^{*1}
	End	000F to 1FFF ^{*2}
	Points	16 to 32768 ^{*1}
LB	Start	0000 to 7FF0 ^{*1}
	End	000F to 7FFF ^{*2}
	Points	1 to 131072
LW	Start	00000 to 1FFFF
	End	00000 to 1FFFF

* 1 Only a multiple of 16 can be set for "Points" and "Start" of LX, LY, and LB.

* 2 Only (a multiple of 16 minus 1) can be set for "End" of LX, LY, and LB.

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CC IE CONTROL UTILITY

DEVICE MONITORING UTILITY

(5) Network range assignment screen

For each station, set cyclic transmission ranges of LB, LW, LX, and LY.



Figure 7.26 Network range assignment screen

Table 7.18 Description of Network range assignment screen

Item	Description
Total stations	Set the total number of stations (including control stations) on the network.
	(Default: 2)
Assignment method	How to enter the device range data can be switched between Points/Start and Start/End styles.
Assignment method	(Default: "Start/End")
Monitoring time	Set a monitoring time for the link scan time. (In increments of ms)
	(Default: 2000, Setting range: 5 to 2000)
Switch screens	Select a link device for which network ranges are assigned.
	(Default: "LB/LW settings (1)")
	Set the number of link device points assigned to the target station.
Points	This setting is available when "Points/Start" is selected for "Assignment method".
	(Default: "(Blank)", Setting range: 💭 Page 7-30, Section 7.5 (5) (a))
01	Set the start No. of the link device, which is assigned to the target station.
Start	(Default: "(Blank)", Setting range: 💭 Page 7-30, Section 7.5 (5) (a))
	Set the end No. of the link device, which is assigned to the target station.
End	This setting is available when "Start/End" is selected for "Assignment method".
	(Default: "(Blank)", Setting range: 💭 Page 7-30, Section 7.5 (5) (a))
Specify I/O master station	Specifies the selected station as an I/O master station of the link device (LX/LY), or cancels the setting.
button	This button can be used when "LX/LY settings (1)" or "LX/LY settings (2)" is selected for "Switch screens".
Specify reserved station	
button	Specifies the selected station as a reserved station, or cancels the setting.
Equal assignment button	Displays the "Equal assignment" screen. (
Supplementary settings button	Displays the "Supplementary settings" screen. (
	Erases the "Points", "Start", and "End" settings, and sets "Total stations" and "Monitoring time" back to
	defaults.
Check button	Checks the "Points", "Start", "End", "Total stations", and "Monitoring time" settings for errors.
End button	Saves the settings and closes the "Network range assignment" screen.
Cancel button	Closes the "Network range assignment" screen without saving the settings.

(a) Setting ranges for Network range assignment

The following are the setting ranges for Network range assignment. Table 7.19 Setting ranges for Network range assignment

Device name	Points/Start/End	Setting range
	Points	16 to 8192 ^{*1}
LX	Start	0000 to 1FF0 ^{*1}
	End	000F to 1FFF ^{*2}
	Points	16 to 8192 ^{*1}
LY	Start	0000 to 1FF0 ^{*1}
	End	000F to 1FFF ^{*2}
	Points	16 to 32768 ^{*1}
LB	Start	0000 to 7FF0 ^{*1}
	End	000F to 7FFF ^{*2}
	Points	1 to 131072
LW	Start	00000 to 1FFFF
	End	00000 to 1FFFF

 * 1 Only a multiple of 16 can be set for "Points" and "Start" of LX, LY, and LB.

 * 2 Only (a multiple of 16 minus 1) can be set for "End" of LX, LY, and LB.

(6) Equal assignment screen

The link device points of all stations can be equally assigned to each station. The Start and End stations for equal assignment can be set within (Total link stations - (Start station No. - 1)).

(a) When "LB/LW settings (1)" or "LB/LW settings (2)" is set for "Switch screens" in "Network range assignment"

C Identical point assignment Point	OK Cancel
Equal assignment	
LB/LW settings (1)	
LB equal assignment	LW equal assignment
Start station Station	Start station Station
End station Station	End station Station
Start No.	Start No.
Total points assigned	Total points assigned

Figure 7.27 Equal assignment screen (for LB/LW settings (1))

Table 7.20 Description of Equal assignment screen (for LB/LW settings (1) or LB/LW settings (2))

		Item	Description
Identical point assignment			Equally assigns the entered points to link devices of each station. (In increments of 16 points) (Default: "(Blank)", Setting range: 16 or greater)
OK button			Executes equal assignment according to the settings, and closes the "Equal assignment" screen.
Cance	buttor	ı	Closes the "Equal assignment" screen without executing equal assignment.
Equal a	assignme	ent	Equally divides the entered points and assigns them to link devices of each station.
	LB equ	al assignment	Set data for equal assignment of LB (1) or LB (2).
			Specify the start station.
		Chart station	(Default: "(Blank)", Setting range: 1 to ("Total stations" setting))
		Start station	"Total stations" is set on the "Network range assignment" screen. (
			(5))
			Specify the end station.
		End station	(Default: "(Blank)", Setting range: (Start station" setting) to ("Total stations" setting))
			"Total stations" is set on the "Network range assignment" screen. (
			(5))
	Start No.	Start No.	Set the start No. of the link device.
		Start NO.	(Default: "(Blank)", Setting range: 🖅 Page 7-30, Section 7.5 (5) (a))
		Set the total link device points.	
		Total points assigned	(Default: "(Blank)", Setting range: 🖅 Page 7-30, Section 7.5 (5) (a))
	LW aqual accimment		Set data for equal assignment of LW (1) or LW (2).
Lvv equal assignment		iai assiyiinelli	Set respective items as in "LB equal assignment".

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DEVICE MONITORING UTILITY (b) When "LX/LY settings (1)" or "LX/LY settings (2)" is set for "Switch screens" in "Network range assignment"

C Identical point assignment Point	nts OK Cance
Equal assignment	
LX/LY settings (1)	
M station to L station equal assignment-	L station to M station equal assignment
Start station Station	Start station Station
End station Station	End station Station
Start No.	Start No.
Total points assigned	Total points assigned

Figure 7.28 Equal assignment screen (for LX/LY settings (1))

Table 7.21 Description of Equal assignment screen (for LX/LY settings (1) or LX/LY settings (2))

ltem			Description
			Equally assigns the entered points to link devices of each station. (In increments of 16 points)
Identical point assignment			Note that no points are assigned to any I/O master station. (
			(Default: "(Blank)", Setting range: 16 or greater)
OK button			Executes equal assignment according to the settings, and closes the "Equal assignment" screen.
Cancel button			Closes the "Equal assignment" screen without executing equal assignment.
Equal a	assignm	ent	Equally divides the entered points and assigns them to link devices of each station.
	M station to L station equal assignment		Set data for equal assignment of LY (1) or LY (2).
		Start station	Specify the start station.
			(Default: "(Blank)", Setting range: 1 to ("Total stations" setting))
			"Total stations" is set on the "Network range assignment" screen. (
			(5))
		End station	Specify the end station.
			(Default: "(Blank)", Setting range: ("Start station" setting) to ("Total stations" setting))
			"Total stations" is set on the "Network range assignment" screen. (
			(5))
		Start No.	Set the start No. of the link device.
			(Default: "(Blank)", Setting range: 🖅 Page 7-30, Section 7.5 (5) (a))
		Total points assigned	Set the total link device points.
			(Default: "(Blank)", Setting range: 🖅 Page 7-30, Section 7.5 (5) (a))
	L station to M station equal		Set data for equal assignment of LX (1) or LX (2).
assignment		ment	Set respective items as in "M station to L station equal assignment".

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(7) Supplementary settings screen

The Supplementary settings screen is useful for advanced applications. Use the default settings normally.

s	upplementary settings 🛛 🔀
	Constant scan ms Block data assurance per station IF Allow
	Transient settings Constant scan time assurance Max. number of transients per station
	End

Figure 7.29 Supplementary settings screen

	Item	Description
Constant scan		Constant scan is a feature provided for keeping a fixed link scan time.
		Set a value if variation in link scan time undesirable. (In increments of ms)
		(Default: "(Blank)", Setting range: 1 to 500, "(Blank)")
		Select this to assure the station-based link data consistency in cyclic transmissions. ^{*1}
		No interlock program is needed for operation of multiple word data if this item is selected.
		Note that this function ^{*1} is available only for link device refresh processing between a C Controller
		module and a CC-Link IE Controller Network module.
Block data assurance per station		When selecting this item, make sure the following parameters are set.
		•"Link device refresh cycle" on the "Parameter settings" tab
		(🖅 Page 7-23, Section 7.5 (2))
		•Refresh parameters on the "Refresh parameter settings" tab
		([Page 7-27, Section 7.5 (4))
		(Default: Checked (Allow))
Transient settings		Set execution conditions for transient transmissions.
	Constant scan time assurance	Set whether or not to assure the constant scan time. (
	Constant scan time assurance	(Default: Checked (Enabled))
	Max. number of transients per	Set the number of transient transmissions that one station can execute during one link scan.
	station	(Default: 2, Setting range: 1 to 10)
End button		Saves the settings and closes the "Supplementary settings" screen.
Cancel button		Closes the "Supplementary settings" screen without saving the settings.
	*	1 A two-word (32-bit) link data, such as a present value of a positioning module, may be divided into
		two one-word data (new 16-bit data and old 16-bit data) at a timing of cyclic transmission. This

Table 7.22 Description of Supplementary settings screen

Network module on the "Refresh parameter settings" screen. (

Set link device refresh processing between a C Controller module and a CC-Link IE Controller

(a) Link scan operations by the Constant scan time assurance setting

function prevents this situation from occurring.

Constant scan time assurance	Link scan operation
	•Link scan time is kept constant.
Selected	 Link scan time is longer compared with the deselected setting.
Selected	•The larger the "Max. number of transients per station" value is, the longer the link scan time will
	become.
	 Link scan time varies when a transient transmission is requested.
Deselect	•The larger the "Max. number of transients per station" value is, the larger the link scan time
	variation will become.

7.5 Parameter Settings Tab

7.6 Target Settings Tab

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B
\bigcirc	\bigcirc	

Logical station No. can be set on this tab.

When the target station is on a multiple CPU system, a logical station No. is used for accessing a programmable controller CPU that is controlled by another CPU. For the access in the following section, however, the logical station No. setting is not

required.

Page 7-36, "7.6 (4) Access that does not require a logical station No. setting"

(1) Precautions for the Target settings tab

Set a programmable controller CPU for "Target CPU".

(2) Target settings tab

🐻 CC IE Control utility(192.168.3.3(Default))				
Module information Online operation Parameter settings Target settings				
Target module Slot 1: Channel No. 151 💌				
Logical station No. 65_+				
	Set			
	Station No. 1 🗧			
CC-Link IE Controller Network	Target CPU 1 🗧			
Target list				
Logical station No. Network No. Station No. Target Cl	PU Change			
	Delete			
	V			
Connection settings Load File Save File Help Exit				
C:\MELSEC\CCPU\Param\sample.mng CPU type:Q12DCCPU-V User name: target				

Figure 7.30 Target settings tab

Table 7.24 Description of Target settings tab

Module information Online operation Parameter settings Target settings

	Item	Description
Target module		Select a module to configure.
		(Default: "Slot 1")
		Specify a logical station No. of the module selected for "Target module".
	rical station No.	(Default: 65, Setting range: 65 to 239)
Logical station No.		Logical station No. is a logical number that is specified as "station No." in Device monitoring utility or
		user programs (MELSEC data link functions).
		Set a network No. of a CC-Link IE Controller Network module or MELSECNET/H module that is
	Network No.	controlled by a multiple CPU system.
		(Default: 1, Setting range: 1 to 239)
		Set a station No. of a CC-Link IE Controller Network module or MELSECNET/H module that is
	Station No.	controlled by a multiple CPU system.
		(Default: 1, Setting range: 1 to 120)
		Set an access target CPU (CPU No. used in the multiple CPU system).
		(Default: 1, Setting range: 1 to 4)
	Sat hutton	Registers the set or modified data (Logical station No., Network No., Station No., and Target CPU) to
		the Target list.

(To the next page)

Table 7.24 Description of Target settings tab (continued)

Module information Online operation Parameter settings Target settings

Item		Description
Target list		Displays the logical station No. set for the selected "Target module", the relevant network No. and
		station No., and the target CPU in the list.
	Change button	Updates a setting change (logical station No.) of a row selected in the Target list into the above
		Logical station No. box.
		(Logical No. setting can be also changed by double-clicking the row.)
	Delete button	Deletes the selected row (logical station No.) from the Target list.

(3) Access example

When the settings in the following screen are applied in the below system, a CC-Link IE Controller Network module controlled by a C Controller module can access CPU No. 4 via another CC-Link IE Controller Network module (controlled by CPU No.2, network No.1) by using logical station No."65".

The access is also available by opening channel No.151 and setting 65 for the station No. in Device monitoring utility or a user program (MELSEC data link functions).



* 1 When CPU No.4 cannot configure a multiple CPU system, access to CPU No. 4 is not available by using the logical No.

The following is the target setting for the above access.



Figure 7.32 Target settings tab setting

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(4) Access that does not require a logical station No. setting

In the following cases, use the station No. of a CC-Link IE Controller Network module on other station.

The logical station number setting is not required.



Figure 7.33 Access that does not require a logical station No. setting
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System Menu 7.7

	Q12DCCPU-V OOX	OVERVIEW
(1)	System menu	2
(1)	To open the system menu of CC IE Control utility, use any of the following four methods: • Right-click on the title bar. • Click the () icon on the title bar.	STALLATION AND VINSTALLATION OF DFTWARE PACKAGE
	 Press the [Alt] key and then the [↓] key. 	z58
	• Right-click the icon (🔄) on the task bar while pressing the [Shift] key.	5
	CC IE Control utility(192.168.3. Move - Migimize Y Glose Alk+F4 Specify CEU type C Controller setting utility Device monitoring utility Version informgition Figure 7.34 System menu	UTILITY COMMON UTILITY
	Table 7.25 Description of System menu	NTR(
Item	Description	C CC SET
Specify CPU type	Refer to the Microsoft [®] Windows [®] manual. Specifies a C Controller module to which parameters are set or to be monitored. (Figure Page 3-4, Section 3.4) This item is not selectable while monitoring is active.	5 ⊥
C Controller setting utility	Starts C Controller setting utility. (Page 4-1, CHAPTER 4) If CC IE Control utility is connected online, this utility is started with the same target being connected.	CC-LINK UTILI
Device monitoring utility	Starts Device monitoring utility. (Page 8-1, CHAPTER 8) If CC IE Control utility is connected online, this utility is started with the same target being connected.	6 ШГІТҮ
Version information	Opens the "Version information" screen. (LU H

DEVICE MONITORING UTILITY

(2) Version information screen

Version information of the CC IE Control utility is displayed.



Figure 7.35 Version information screen (Example: Version 3.02C)

Table 7.26 Description of Version information screen

	Item	Description
Sot	tware package	—
	SW3PVC-CCPU-E	Displays the version of SW3PVC-CCPU.
	CC IE Control utility	Displays the update date of the CC IE Control utility.
Ok	button	Closes the "Version information" screen.

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7.8 Precautions

Q12DCCPU-V Q06CCPU-V Q06CCPU-V-B

(1) Parameter details

For details of respective parameters, refer to the CC-Link IE Controller Network Reference Manual.

(2) Simultaneous use of utilities

Up to eight CC IE Control utilities can be used simultaneously.

(3) Written parameters

Parameters written to the C Controller module take effect when the C Controller module is powered off and then on or is reset.

(4) Tabs available to operate offline

When CC IE Control utility connection is offline, data can be set only in the Parameter settings and the Target settings tab.

(5) Terminating Microsoft[®] Windows[®]

Do not terminate Microsoft[®] Windows[®] while CC IE Control utility is running. Terminate CC IE Control utility first and then Microsoft[®] Windows[®].

(6) Connection during script file processing

Connection from utility to a C Controller module may not be available during processing a script file (while the RUN LED is flashing). If the RUN LED remains flashing, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation) and troubleshoot the problem.

(7) Time required for connection from each utility to the C Controller module

The following time is required for the C Controller module to connect to each utility after power-on or reset.

- When executing a script file, "STARTUP.CMD":
- Upon completion of the RUN LED flashing.
- When not executing a script file, "STARTUP.CMD":

Fifteen (15) seconds after completion of start or reset.

Do not attempt a connection before the above time has elapsed after completion of power-on or reset.

Changing "Priority" to a larger value in the Option tab of C Controller setting utility increases the time after which the C Controller module can be connected.

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CHAPTER 8 DEVICE MONITORING UTILITY

8.1 Device Monitoring Utility Function List

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B
	\bigcirc	

Namo	Description	Applica	Reference	
Name	Description	Q12DCCPU-V	Q06CCPU-V	page
Connection setting	Sets the connection target of Device monitoring utility.	0	0	Page 3-5
Batch monitoring	Monitors only one specified device.	0	0	Page 8-2
16-point register monitoring	Monitors up to five bit devices and one word device at the same time.	0	0	Page 8-4
Setting monitoring target	Sets a network for which Device monitoring utility is used.	0	0	Page 8-6
Setting device to be monitored	Sets the device(s) to be monitored.	0	0	Page 8-7
Word device value change	Changes the specified word device data.	0	0	Page 8-8
Continuous word device value change	Changes the specified points of word device data to the specified data.	0	0	Page 8-10
ON/OFF of bit device	Turns on or off the specified bit device.	0	0	Page 8-12
Changing the format	Changes the display format for device monitoring.	0	0	Page 8-14
Start/stop monitoring	Starts or stops monitoring by Device monitoring utility.	0	0	Page 8-15
Numerical pad	Enters numerical data by a mouse.	0	0	Page 8-16

Table 8.1 Device monitoring utility function list

 \bigcirc : Applicable, \triangle : Applicable but partially restricted, \times : N/A

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8.2 Batch Monitoring



Only one specified device can be monitored.

(1) Precautions for batch monitoring

(a) When a utility communication error has occurred

When a utility communication error has occurred during connection, set the connection target again in the Connection settings so that the communication can be restarted.

(b) CC-Link module monitoring

When monitoring has been performed to the CC-Link module (specified as own station) where the block data assurance per station is enabled, cyclic data are will be automatically refreshed.

However, data are automatically refreshed only when monitoring has been performed within the range set in "Station information settings" for the master station.

The range set in "Station information settings" can be confirmed by "Slave station offset, size information" (buffer memory address: 3E0H to 5DFH) of the CC-Link module.

For details of the block data assurance per station, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

Note also that the write (send) area of the link refresh devices (the buffer memory) will not be refreshed when monitoring has been performed.

8

(2) Selected menu items

From the menu bar, select [Menu]→[Batch monitoring]. (The above procedure is available only when 16-point register monitoring is active. Batch monitoring is displayed immediately after start of Device monitoring utility.) Select [Setting]→[Device settings] and set the device to be monitored. ([] Page 8-7, Section 8.5)

(3) Display screen



Figure 8.1 Batch monitoring

Table 8.2 Description	ı of	Batch	monitoring	screen
-----------------------	------	-------	------------	--------

Item	Description
1) Device information	Displays the current device status.
T) Device mornation	Changing display format (
2) Network statue	Displays the status of the currently specified network.
2) Network status	Network setting (Page 8-6, Section 8.4)
	The following items describe devices shown on the display.
	•Device type (word device or bit device)
	•Display format
	•Display format for a SPG device (special direct buffer register or intelligent
3) Display format	function module buffer memory)
	(only when monitoring a SPG device)
	Changing device type (
	Changing display format (

MELSEC **Q** series

8.3 16-Point Register Monitoring

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B
<u> </u>	\bigcirc	

Up to five bit devices and one word device can be monitored at the same time.

(1) Precautions for 16-point register monitoring

(a) When a utility communication error has occurred

When a utility communication error has occurred during connection, set the connection target again in the Connection settings so that the communication can be restarted.

(b) CC-Link module monitoring

When monitoring has been performed to the CC-Link module (specified as own station) where the block data assurance per station is enabled, cyclic data will be automatically refreshed.

However, data are automatically refreshed only when monitoring has been performed within the range set in "Station information settings" for the master station.

The range set in "Station information settings" can be confirmed by "Slave station offset, size information" (buffer memory address: 3E0H to 5DFH) of the CC-Link module.

For details of the block data assurance per station, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

Note also that the write (send) area of the link refresh devices (the buffer memory) will not be refreshed when monitoring has been performed.

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(2) Selected menu items

From the menu bar, select [Menu] \rightarrow [16-point monitoring]. (The above procedure is available only when batch monitoring is active.) Select [Setting] \rightarrow [Device settings] and set the device to be monitored. (\square Page 8-7, Section 8.5)

(3) Display screen

	Ę	🗟 Device mo	onit	oring uti	lity(19	2.168	.3.3(D	efa	ult))					
	Ľ	<u>M</u> enu <u>S</u> etting	Wr	ite device	Data <u>F</u>	ormat	Option	He	elp					
	Γ	L. 0000		L coro					L. 0000		Lucoro		N	
1	L	X 0000	0	X 0010	0	SMU		U	Y 0000	0	Y 0010	U	WW 0000	
	L	X 0001	0	X 0011	0	ISM I		1	Y 0001	0		1	WW 0001	64
	L	X 0002	0	X 0012	0	ISM Z		1	Y 0002	0	Y 0012	1	WW 0002	
	L	× 0003	0		0	ICM A		0	1 0003 V 0004	0	V 0014	0	WW 0003	
	L	× 0004	0	V 0014	0	CM E		0	V 0005	0	V 0015	0	WW 0004	0
	L	X 0005	0	X 0015	0	SMB		0	2000	0	V 0016	0	Ww 0005	0
	L	× 0007	0	X 0017	0	ISM 7		n	Y 0007	0	Y 0017	n	WW 0007	0
1) →	L	× 0008	1	X 0018	0	SM 8		n	Y 0008	1	Y 0018	n	Ww 0008	0
	L	X 0009	1	X 0019	0	ISM 9		Ō	Y 0009	1	Y 0019	Ō	Ww 0009	0
	L	X 000A	0	X 001A	0	SM 10		0	Y 000A	0	Y 001A	0	Ww 000A	0
	L	X 000B	0	X 001B	0	SM 11		0	Y 000B	0	Y 001B	0	Ww 000B	0
	L	X 000C	0	X 001C	0	SM 12		0	Y 000C	0	Y 001C	0	Ww 000C	0
	L	X 000D	0	X 001D	1	SM 13		0	Y 000D	0	Y 001D	1	Ww 000D	0
	L	X 000E	0	X 001E	0	SM 14		0	Y 000E	0	Y 001E	0	Ww 000E	0
	L	X 000F	0	X 001F	0	SM 15		0	Y 000F	0	Y 001F	0	Ww 000F	0
	L													
	L												Stop mon	itoring
	L		Char	nel No 81)								_	- Data Format	
	L	The Channe	el Info	ormation in t	he Curre	ent Displ	lav Scree	n						×
	L	Netwo	ork N	lo.: 0	St	ation No	o.: 255						Word device	
	L												DEC (16bit)	
	L													
							~ <u> </u>						<u> </u>	/
	1						1							
							2)						3)	

Figure 8.2 16-point register monitoring

Item	Description
1) Device information	Displays the current device status.
1) Device information	Changing display format (
	Displays the status of the currently specified network.
2) Network status	Network setting (
	Displays the device type (word device or bit device) and display format.
3) Display format	Changing device type (
	Changing display format (

8.4



(3) Dialog box

101.00-	Link (chainer iso.of)	
Own sta.	© Other sta.	
Network No.		
Sta. No.		

Figure 8.3 Network settings dialog box

Table 8.4 Description of Network settings dialog box

Item	Description
Channel	Select a channel.
Channel	(Page 10-1, Section 10.1, Page 10-9, Section 10.10)
Natural a atting a	Select Own or Other station, and set network No. and station No.
Network settings	(Page 10-1, Section 10.1, Page 10-10, Section 10.11)

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8.5 Setting Device to Be Monitored

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B
	\bigcirc	

Set the device to be monitored.

(1) Precautions for device setting

(a) Devices available for 16-point register monitoring

Only the randomly accessible devices can be monitored by 16-point register monitoring.

If random access is not allowed for the specified device, a device type error (-3) will occur.

For random accessibility of each device, refer to the following.

Page 10-17, Section 10.13

(2) Selected menu items

From the menu bar, select [Setting]→[Device settings].

(3) Dialog box

D

Batch monitoring	16-point register monitoring
ce settings 🛛 🔀	Device settings
evice type X (input)	Device type Device type Verice type
evice No.	Device No. • HEX C DEC C OCT 00000
Execute Cancel	Register device list
	Bit device Word device Change
	Execute Cancel

Figure 8.4 Device settings dialog box

Table 8.5 Description of Device settings dialog box

Rom	
Device type	ne type (Page 10-12, Section 10.12), block No., and network No. of
the d	evice to be monitored.
Devrice No.	ne start No. of the device to be monitored.
(HEX	: Hexadecimal, DEC: Decimal, OCT: Octal)
Register device list Lists	the registered devices.
Regis	sters the device type and device No. settings, and adds the information in
the R	egister device list.
Change button Chan	ges the registered data of the selected device.
Delete button Delet	es the registered data of the selected device from the Register device list.

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8.6 Changing Word Device Values



Data of the specified word device can be changed.

WARNING • Configure safety circuits external to the C Controller module to ensure that the entire system operates safely even when a fault occurs in the external power supply or the C Controller module. For the following controls, configure an interlock circuit in the user program to ensure that the entire system will always operate safely. (1) Changing data of the running C Controller module from the development environment (personal computer) connected (2) Changing the operating status (3) Operating from the development environment (personal computer) Especially, in the case of a control from an external device to a remote C Controller module, immediate action cannot be taken for a problem on the C Controller module due to a communication failure. To prevent this, configure an interlock circuit in the user program, and determine corrective actions to be taken between the external device and C Controller module in case of a communication failure.

(1) Precautions for changing word device values

- (a) When a utility communication error has occurred When a utility communication error has occurred during connection, set the connection target again in the Connection settings so that the communication can be restarted.
- (b) CC-Link module monitoring

When devices has been written to a CC-Link module (specified as own station) where the block data assurance per station is enabled, cyclic data will be automatically refreshed.

However, data are automatically refreshed only when device writing has been performed within the range set in "Station information settings" for the master station.

The range set in "Station information settings" can be confirmed by "Slave station offset, size information" (buffer memory address: 3E0H to 5DFH) of the CC-Link module.

For details of the block data assurance per station, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

Note also that the read (receive) area of the link refresh devices (the buffer memory) will not be refreshed when devices have been written.

(2) Selected menu items

From the menu bar, select [Write device]→[Data change].

(3) Dialog box

Data change	
Device type	
Device type SD (special r	egister)
Device No.	
© HEX € DEC ⊂ C	ост 🛛 🚽
Setting data	
○ HEX	
Execute	Cancel

Figure 8.5 Data change dialog box

Table 8.6 Description of Data change dialog box

Item	Description
Device type	Set the type (Page 10-12, Section 10.12), block No. and network No. of
	the device of which data are changed.
Device No.	Set the start No. of the device of which data are changed.
	(HEX: Hexadecimal, DEC: Decimal, OCT: Octal)
Setting data	Set new data. (HEX: Hexadecimal, DEC: Decimal)

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8.7 Continuously Changing Word Device Values

Q12DCCPU-V Q06CCPU-V Q06CCPU-V X

The specified points of word device data can be changed to the specified data.

A	
	Configure safety circuits external to the C Controller module to
	ensure that the entire system operates safely even when a fault
	occurs in the external power supply or the C Controller module.
	For the following controls, configure an interlock circuit in the user
	program to ensure that the entire system will always operate safely.
	(1) Changing data of the running C Controller module from the
	development environment (personal computer) connected
	(2) Changing the operating status
	(3) Operating from the development environment (personal computer)
	Especially, in the case of a control from an external device to a
	remote C Controller module, immediate action cannot be taken for a
	problem on the C Controller module due to a communication failure.
	To prevent this, configure an interlock circuit in the user program,
	and determine corrective actions to be taken between the external
	device and C Controller module in case of a communication failure.

(1) Precautions for continuous change of word device values

- (a) When a utility communication error has occurred When a utility communication error has occurred during connection, set the connection target again in the Connection settings so that the communication can be restarted.
- (b) CC-Link module monitoring

When devices have been written to a CC-Link module (specified as own station) where the block data assurance per station is enabled, cyclic data will be automatically refreshed.

However, data are automatically refreshed only when device writing has been performed within the range set in "Station information settings" for the master station.

The range set in "Station information settings" can be confirmed by "Slave station offset, size information" (buffer memory address: 3E0H to 5DFH) of the CC-Link module.

For details of the block data assurance per station, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

Note also that the read (receive) area of the link refresh devices (the buffer memory) will not be refreshed when devices have been written.

(2) Selected menu items

From the menu bar, select [Write device]→[Continuous data change].

(3) Dialog box

Device type	SD (s	pecial registe	97)	¥
Device No	• DEC	O OCT	0	×
C HEX	• DEC		0	
Points	€ DEC	О ОСТ	1	

Figure 8.6 Continuous data change dialog box

Table 8.7 Description of the Continuous data change dialog box

Item	Description
Device type	Set the type, block No., and network No. of the device whose data are changed.
	(∬ Page 10-12, Section 10.12)
Device No.	Set the start No. of the device whose data are changed.
	(HEX: Hexadecimal, DEC: Decimal, OCT: Octal)
Setting data	Set the data to be changed continuously.
	(HEX: Hexadecimal, DEC: Decimal)
Points	Set the points for which data are to be changed continuously.
	(HEX: Hexadecimal, DEC: Decimal, OCT: Octal)

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8.8 Tuning On and Off Bit Device



The specified bit device can be turned on and off.

WARNING • Configure safety circuits external to the C Controller module to ensure that the entire system operates safely even when a fault occurs in the external power supply or the C Controller module. For the following controls, configure an interlock circuit in the user program to ensure that the entire system will always operate safely. (1) Changing data of the running C Controller module from the development environment (personal computer) connected (2) Changing the operating status (3) Operating from the development environment (personal computer) Especially, in the case of a control from an external device to a remote C Controller module, immediate action cannot be taken for a problem on the C Controller module due to a communication failure. To prevent this, configure an interlock circuit in the user program, and determine corrective actions to be taken between the external device and C Controller module in case of a communication failure.

(1) Precaution for turning on and off the bit device

- (a) When a utility communication error has occurred When a utility communication error has occurred during connection, set the connection target again in the Connection settings so that the communication can be restarted.
- (b) CC-Link module monitoring

When devices have been written to a CC-Link module (specified as own station) where the block data assurance per station is enabled, cyclic data will be automatically refreshed.

However, data are automatically refreshed only when device writing has been performed within the range set in "Station information settings" for the master station.

The range set in "Station information settings" can be confirmed by "Slave station offset, size information" (buffer memory address: 3E0H to 5DFH) of the CC-Link module.

For details of the block data assurance per station, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

Note also that the read (receive) area of the link refresh devices (the buffer memory) will not be refreshed when devices have been written.

(2) Selected menu

From the menu bar, select [Write device]→[Set (Reset) bit device].

(3) Dialog box



Figure 8.7 Set bit device dialog box

Table 8.8 Description of the Set (reset) bit device dialog box

Item	Description
Daviashma	Set the type, block No., and network No. of the device to be turned on or off.
Device type	([Page 10-12, Section 10.12)
Device No.	Set the bit device No. of the device to be turned on or off.
	(HEX: Hexadecimal, DEC: Decimal, OCT: Octal)

Changing the Display Format 8.9

Q12DCCPU-V Q06CCPU-V-B 0 0

The display format in device monitoring can be changed.

Note that the menu options for Batch monitoring and 16-point register monitoring are different.

(1) Selected menu

After selecting the [display switch] on the menu bar, select the display format of Word device, Bit device, or SPG device (special direct buffer register and intelligent function module buffer memory).



Figure 8.8 Data Format menu

Item	Description		
Word device	Selects the numeric format and units of displays for values to be monitored.		
Bit device	Selects the numeric format, units of displays, and order of the bits for values to be monitored.		
SPG device display format	Selects the numeric format for the following values when a SPG device is monitored.		

Table 8.9 Display format

CC IE CONTROL UTILITY 8 DEVICE MONITORING

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8.10 Start and Stop Monitoring

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B
<u> </u>	\bigcirc	

The <u>Start monitoring</u> and <u>Stop monitoring</u> buttons of Device monitoring utility are operated on this screen.

The <u>Start monitoring</u> and <u>Stop monitoring</u> buttons become operable after completing the Device setting.

(1) Operation

Monitoring can be started and stopped by using the <u>Start monitoring</u> and <u>Stop monitoring</u> buttons.

(2) Screen



Figure 8.9 Screen for monitoring start and stop

Table 8.10 Description of buttons

Item	Description
Start monitoring button and	Starts or stops monitoring.
	"*" flashes in the bottom right of the button during monitoring.
Stop monitoring button	These buttons are disabled in the offline status.

8.11 Numerical Pad

Q12DCCPU-V Q06CCPU-V Q06CCPU-V-B X

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From the menu bar, select [Option]→[Numerical pad] so that device values can be entered using the Numerical pad.



DEVICE MONITORING

8.12 Other Operations

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B
\bigcirc	\bigcirc	

Double-clicking the device No. on the screen during monitoring enables to change word device data and to turn on and off bit devices.

WARNING	 Configure safety circuits external to the C Controller module to ensure that the entire system operates safely even when a fault occurs in the external power supply or the C Controller module. For the following controls, configure an interlock circuit in the user program to ensure that the entire system will always operate safely. Changing data of the running C Controller module from the development environment (personal computer) connected
	(2) Changing the operating status (3) Operating from the development environment (personal computer)
	Especially, in the case of a control from an external device to a remote C Controller module, immediate action cannot be taken for a problem on the C Controller module due to a communication failure.
	To prevent this, configure an interlock circuit in the user program,
	and determine corrective actions to be taken between the external
	device and C Controller module in case of a communication failure.

(1) Precautions for changing the word device and bit device

- (a) When a utility communication error has occurred When a utility communication error has occurred during connection, set the connection target again in the Connection settings so that the communication can be restarted.
- (b) CC-Link module monitoring

When devices have been written to a CC-Link module (specified as own station) where the block data assurance per station is enabled, cyclic data will be automatically refreshed.

However, data are automatically refreshed only when device writing has been performed within the range set in "Station information settings" for the master station.

The range set in "Station information settings" can be confirmed by "Slave station offset, size information" (buffer memory address: 3E0H to 5DFH) of the CC-Link module.

For details of the block data assurance per station, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

Note also that the read (receive) area of the link refresh devices (the buffer memory) will not be refreshed when devices have been written.

(2) Changing a word device

The following describes how to change a word device.



(3) Changing a bit device

The following describes how to turn on and off a bit device. Note that this operation is available only when the display format is set to "Vertical".



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8.13 Precautions

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B
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(1) Connection during script file processing

Connection from utility to a C Controller module may not be available during processing a script file (while the RUN LED is flashing).

If the RUN LED remains flashing, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation) and troubleshoot the problem.

(2) Time required for connection from each utility to the C Controller module

The following time is required for the C Controller module to connect to each utility after power-on or reset.

- When executing the script file, "STARTUP.CMD":
 - Upon completion of the RUN LED flashing.
- When not executing the script file, "STARTUP.CMD":

Fifteen (15) seconds after completion of start or reset.

Do not attempt a connection before the above time has elapsed after completion of power-on or reset.

Changing "Priority" to a larger value in the Option tab of C Controller setting utility increases the time after which the C Controller module can be connected.

(3) When accessing Q24DHCCPU-V/-VG

The accessible range of B device in Device monitoring utility is within 0 to 65534.

9

PROGRAMMING USING MELSEC DATA LINK FUNCTIONS

PROGRAMMING USING VxWorks API FUNCTIONS

CHAPTER 9 PROGRAMMING USING BUS INTERFACE **FUNCTIONS**



When applying program examples introduced in this chapter into actual systems, fully examine the applicability, and confirm that they will not cause system control problems.

9.1 Outline of Bus Interface Functions



To access and control programmable controllers and each module in a user program, functions provided by SW3PVC-CCPU must be used.

intelligent function module or an interrupt module are available)

(1) The following indicates features of bus interface functions.

- 1) Input and output control of I/O modules controlled by the C Controller module.
- 2) Access to the buffer memories of the intelligent function modules controlled by the C Controller module. (X/Y access, buffer memory access, and wait for an interrupt event from an
- 3) Linkage between the programmable controller CPU and the Motion CPU that are in the same system as the C Controller module.
- 4) Message exchange with the following modules or personal computers via CC-Link IE Controller Network module(s) or MELSECNET/H module(s) controlled by the C Controller module.
 - C Controller module (another station)
 - Programmable controller CPU (another station)
 - Personal computer equipped with MELSECNET/H board (only via MELSECNET/H module(s))
- 5) Access to link devices of the CC-Link IE Controller Network module or MELSECNET/H module controlled by the C Controller module.
- 6) Start of a routine from the user watchdog timer error interrupt.
- 7) Remote RUN/STOP/PAUSE control of the C Controller module.
- 8) Registration of the event log to the event history file.
- 9) Mounting and unmounting of the CompactFlash card.
- 10)Shutdown of the standard ROM.
- 11)Setting and reading of the clock data.
- 12)Writing data to or reading data from the battery-backed-up RAM.

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The system illustration below represents a system image based on the features described on the previous page.



Figure 9.1 Bus interface function image

Table	9.1	Access	targets	of bus	interface	functions
abic	J. I	ACCESS	largela	01 043	menace	runctions

Arrow	Access target	No. given above	Remarks
-	Input module/output module	1)	 Input (X): Reading enabled Output (Y): Reading and writing enabled
$\langle \Box$	Intelligent function module	2)	Reading from and writing to buffer memory enabled
	Programmable controller CPU/MotionCPU	3)	_
<u> </u>	CC-Link IE Controller Network module (another station), or MELSECNET/H module (another station)	4)	_
<i>\$</i>	CC-Link IE Controller Network module (own station), or MELSECNET/H module (host station)	5)	_
			The following operations are available.
	C Controller module	6) to 12)	•Remote RUN/STOP/PAUSE
		-,,	 Setting and reading clock data
			 Reading from and writing to battery-backed-up RAM

PROGRAMMING USING BUS INTERFACE FUNCTIONS

9.2 Bus Interface Function List

 Q12DCCPU-V
 Q06CCPU-V
 Q06CCPU-V-B

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MELSEG **Q** series

(1) Bus interface function list

Table 9.2 Bus interface function list

Category Function Availability Open/close QBF_Open Opens a bus. O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O	1)Q12DCCPU-V 2)Q06CCPU-V 3)Q06CCPU-V-E				CPU-V-B		
Open (close) Open (Close)<	Category	Eunction name	Function	Availability			
Opencidose QBF_Copen QBF_Close Openca bus. O O O VO access QBF_X.In_BitEx Reads a single point in the input signal (X). O O O VO access QBF_X.In_WordEx Reads input signal (X) in 1-word units. O O O QBF_Y_OUT_BitEx Outputs a single point in the output signal (Y). O O O QBF_Y_In_BitEx Reads a single point in the output signal (Y). O O O QBF_Y_OUT_WordEx Reads a single point in the output signal (Y). O O O QBF_Y_In_BitEx Reads a tingle point in the output signal (Y). O O O QBF_Tin_WordEx Reads a tingle point in the output signal (Y). O O O QBF_YIn_WordEx Reads at to the CPU shared memory of the intelligent function module (For instruction). O O O QBF_FromBuf Specified module and the buffer memory of the intelligent function module (Form instruction). O O O Link device QBF_RefeshLinkDevice Refeshes the CC-Link module link device. O O O <th>Oalegoly</th> <th></th> <th></th> <th>1)</th> <th>2)</th> <th>3)</th>	Oalegoly			1)	2)	3)	
Operation OBF_Close Closes a bus. O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O <tho< td=""><td>Open/close</td><td>QBF_Open</td><td>Opens a bus.</td><td>0</td><td>0</td><td>0</td></tho<>	Open/close	QBF_Open	Opens a bus.	0	0	0	
UD access OBF_X_In_WordEx Reads a single point in the input signal (X). O O O VID access OBF_X_In_WordEx Reads input signal (X) in 1-word units. O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O	open/olose	QBF_Close	Closes a bus.	0	0	0	
I/O access OBF_X_In_WordEx Reads input signal (X) in 1-word units. O O O I/O access OBF_Y_Out_BREx Outputs a single point in the output signal (Y). O O O OBF_Y_Out_WordEx Outputs output signal (Y) in 1-word units. O O O OBF_Y_In_BIEx Reads output signal (Y) in 1-word units. O O O OBF_Y_In_BIEx Reads output signal (Y) in 1-word units. O O O OBF_Y_In_BIEx Reads output signal (Y) in 1-word units. O O O OBF_Y_In_BIEx Reads data to the CPU shared memory of the specified module and the buffer memory of the specified module on station). O O Link device refresh QBF_FromBuf Reads data from the CPU shared memory of the memory of the specified module (own station). O O O Link device refresh QBF_WriteLinkDevice Refreshes the C2-Link module (ink devices. O O O O Uhk device access QBF_ReadLinkDevice Reads data from link devices of a C2-Link IE Contr		QBF_X_In_BitEx	Reads a single point in the input signal (X).	0	0	0	
I/O access QBF_Y_Out_BitEx Outputs a single point in the output signal (Y). O O O QBF_Y_Out_WordEx Outputs output signal (Y) in 1-word units. O O O O QBF_Y_In_BitEx Reads a single point in the output signal (Y). O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O		QBF_X_In_WordEx	Reads input signal (X) in 1-word units.	0	0	0	
Modelses QBF_Y_In_BitEx Reads a single point in the output signal (Y) in 1-word units. O O O QBF_Y_In_BitEx Reads a single point in the output signal (Y). O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O </td <td></td> <td>QBF_Y_Out_BitEx</td> <td>Outputs a single point in the output signal (Y).</td> <td>0</td> <td>0</td> <td>0</td>		QBF_Y_Out_BitEx	Outputs a single point in the output signal (Y).	0	0	0	
DBF_Y_In_BitEx Reads a single point in the output signal (Y). O O QBF_Y_In_WordEx Reads output signal (Y) in 1-word units. O O O CPU shared memory/buffer memory access QBF_ToBuf Specified module and the DPU shared memory of the intelligent function module (To instruction). O O O QBF_ToBuf Specified module and the DPU shared memory of the intelligent function module (To instruction). O O O QBF_RefreshLinkDevice Refreshes the CPU shared memory of the intelligent function module (From instruction). O O O Link device access QBF_RefreshLinkDevice Refreshes the CC-Link module link device. O O O QBF_ReadLinkDevice Refreshes the CC-Link module (In struction). O O O QBF_ReadLinkDevice Reads data from link devices of a CC-Link IE Controller Network module (own station) or O O O QBF_SEND Sends messages to another station via CC-Link IE Controller Network module or MELSECNET/H module.) O O O Message QBF_RecV Receives messages from another station via CC-Link IE Controller Network module or MELSECNET/H module.) O <td>1/O access</td> <td>QBF_Y_Out_WordEx</td> <td>Outputs output signal (Y) in 1-word units.</td> <td>0</td> <td>0</td> <td>0</td>	1/O access	QBF_Y_Out_WordEx	Outputs output signal (Y) in 1-word units.	0	0	0	
QBF_Y_In_WordEx Reads output signal (Y) in 1-word units. O O O CPU shared memory/buffer memory access QBF_ToBuf Writes data to the CPU shared memory of the specified module and the buffer memory of the specified module from instruction). O O Link device refresh QBF_RefreshLinkDevice Refreshes the CC-Link module (From instruction). O O Link device refresh QBF_WriteLinkDevice Refreshes the CC-Link module (from instruction). O O Link device refresh QBF_WriteLinkDevice Refreshes the CC-Link module (from instruction). O O Link device refresh QBF_WriteLinkDevice Refreshes the CC-Link module (from instruction). O O QBF_ReadLinkDevice Controller Network module (own station) or MELSECNET/H module (own station) or MELSECNET/H module (own station). O O QBF_SEND Sends messages to another station via CC-Link IE Controller Network module or MELSECNET/H module. O O QBF_RECV Receives messages from another station via CC-Link IE Controller Network module or MELSECNET/H module. O O O QB		QBF_Y_In_BitEx	Reads a single point in the output signal (Y).	0	0	0	
CPU shared memory/buffer memory access QBF_ToBuf Writes data to the CPU shared memory of the specified module and the buffer memory of the intelligent function module [To instruction]. O O Link device refresh QBF_RefreshLinkDevice Reads data from the CPU shared memory of the specified module and the buffer memory of the intelligent function module (From instruction). O O Link device refresh QBF_RefreshLinkDevice Refreshes the CC-Link module link device. O O O Link device access QBF_WriteLinkDevice Refreshes the CC-Link module link device. O O O QBF_B_ReadLinkDevice Refreshes the CC-Link module (own station) or module (own station). O O O QBF_ReadLinkDevice Reads data from link devices of a CC-Link IE Controller Network module (own station) or MELSECNET/H module. O O O QBF_SEND Reads messages to another station via CC-Link IE Controller Network module or MELSECNET/H module. O O O QBF_RECV Receives messages from another station via CC-Link IE Controller Network module or MELSECNET/H module. O O O QBF_RECV Receives messages from another station via CC-Link IE Controller Network module or MELSECNET/H module. O		QBF_Y_In_WordEx	Reads output signal (Y) in 1-word units.	0	0	0	
CPU shared memory/buffer memory access QBF_ToBuf specified module and the buffer memory of the intelligent function module (To instruction). O O QBF_FromBuf Reads data from the CPU shared memory of the intelligent function module (Form instruction). O O O Link device refresh QBF_RefreshLinkDevice Refreshes the CC-Link module link device. O O O Link device refresh QBF_WriteLinkDevice Writes data to link devices of a CC-Link IE Controller Network module (own station) or MELSECNET/H module (own station) or MELSECNET/H module (own station). O O QBF_ReadLinkDevice Controller Network module (own station). O O O QBF_SEND Controller Network module or MELSECNET/H module. (Equivalent to SEND instruction of CC-Link IE Controller Network module or MELSECNET/H module. (Equivalent to SEND instruction of CC-Link IE Controller Network module or MELSECNET/H module. (Equivalent to SEND instruction of CC-Link IE Controller Network module or MELSECNET/H module. O O QBF_RECV Receives messages from another station via CC-Link IE Controller Network module or MELSECNET/H module. O O QBF_RECV Receives messages from another station via CC-Link IE Controller Network module or MELSECNET/H module. O O QBF_UnitInfo Rea			Writes data to the CPU shared memory of the				
Or 0 stated memory/buffer memory/access intelligent function module (To instruction). QBF_FromBuf Reads data from the CPU shared memory of the specified module and the buffer memory of the intelligent function module (From instruction). Link device refresh QBF_RefreshLinkDevice Refreshes the CC-Link module link device. Link device refresh QBF_WriteLinkDevice Refreshes the CC-Link module (own station) or MELSECNET/H module (own station). QBF_ReadLinkDevice Reads data from link devices of a CC-Link IE Controller Network module (own station) or MELSECNET/H module (own station). QBF_SEND Sends messages to another station via CC-Link IE Controller Network module or MELSECNET/H module. <	CPU shared	QBF_ToBuf	specified module and the buffer memory of the	0	0	0	
Ministry Jourse QBF_FromBuf Reads data from the CPU shared memory of the specified module and the buffer memory of the intelligent function module (From instruction). O O O Link device refresh QBF_RefreshLinkDevice Refreshes the CC-Link module link device. O O O O Link device access QBF_WriteLinkDevice Refreshes the CC-Link module (we vice. O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O<	memory/buffer		intelligent function module (To instruction).				
Ministry decoded QBF_FromBuf specified module and the buffer memory of the intelligent function module (From instruction). O O O Link device refresh QBF_RefreshLinkDevice Refreshes the CC-Link module link device. O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O <td rowspan="2">memory access</td> <td></td> <td>Reads data from the CPU shared memory of the</td> <td></td> <td></td> <td></td>	memory access		Reads data from the CPU shared memory of the				
Link device refresh QBF_RefreshLinkDevice Refreshes the CC-Link module link device. O O O Link device refresh QBF_WriteLinkDevice Writes data to link devices of a CC-Link IE Controller Network module (own station) or MELSECNET/H module (own station). O O O O Link device access QBF_ReadLinkDevice Reads data from link devices of a CC-Link IE Controller Network module (own station). O O O O QBF_ReadLinkDevice Reads data from link devices of a CC-Link IE Controller Network module (own station). O O O O Message QBF_SEND Sends messages to another station via CC-Link IE Controller Network module or MELSECNET/H module. O O O O QBF_SEND Receives messages from another station via CC-Link IE Controller Network module or MELSECNET/H module. O O O O QBF_RECV Receives messages from another station via CC-Link IE Controller Network module or MELSECNET/H module. O O O O QBF_UnitInfo Reads module configuration information. O O O O WDT control QBF_StartWDT Sets an interval of WDT and starts up the user WDT. O O O <		QBF_FromBuf	specified module and the buffer memory of the	0	0	0	
Link device refresh QBF_RefreshLinkDevice Refreshes the CC-Link module link device. O O O Link device access QBF_WriteLinkDevice Writes data to link devices of a CC-Link IE Controller Network module (own station) or MELSECNET/H module (own station). O O O QBF_ReadLinkDevice Reads data from link devices of a CC-Link IE Controller Network module (own station). O O O QBF_ReadLinkDevice Reads data from link devices of a CC-Link IE Controller Network module (own station). O O O Message QBF_SEND Sends messages to another station via CC-Link IE Controller Network module or MELSECNET/H module. O O O QBF_SEND Receives messages from another station via CC-Link IE Controller Network module or MELSECNET/H module. O O O QBF_RECV Receives messages from another station via CC-Link IE Controller Network module or MELSECNET/H module. O O O Acquisition of module QBF_UnitInfo Reads module configuration information. O O O WDT control QBF_StartWDT Sets an interval of WDT and starts up the user WDT. O O O QBF_ResetWDT Resets the user WDT. O O <			intelligent function module (From instruction).	L			
Link device access QBF_WriteLinkDevice Writes data to link devices of a CC-Link IE Controller Network module (own station) or MELSECNET/H module (own station). O O O QBF_ReadLinkDevice Reads data from link devices of a CC-Link IE Controller Network module (own station) or MELSECNET/H module (own station) or MELSECNET/H module (own station). O O O Wessage communication QBF_SEND Sends messages to another station via CC-Link IE Controller Network module or MELSECNET/H module. (Equivalent to SEND instruction of CC-Link IE Controller Network module or MELSECNET/H module.) O O O QBF_RECV Receives messages from another station via CC-Link IE Controller Network module or MELSECNET/H module. O O O Acquisition of module QBF_LinkInfo Receives messages from another station via CC-Link IE Controller Network module or MELSECNET/H module. O O O Acquisition of module QBF_UnitInfo Reads module configuration information. O O O WDT control QBF_StartWDT Sets an interval of WDT and starts up the user WDT. O O O QBF_ResetWDT Resets the user WDT. O O O O QBF_RestorWDT Stops the	Link device refresh	QBF_RefreshLinkDevice	Refreshes the CC-Link module link device.	0	0	0	
Link device access QBF_WriteLinkDevice Network module (own station) or MELSECNET/H module (own station). O O O Access QBF_ReadLinkDevice Reads data from link devices of a CC-Link IE Controller Network module (own station) or MELSECNET/H module (own station). O O O Message communication QBF_SEND Sends messages to another station via CC-Link IE Controller Network module or MELSECNET/H module. (Equivalent to SEND instruction of CC-Link IE Controller Network module or MELSECNET/H module.) O O O Message communication QBF_RECV Receives messages from another station via CC-Link IE Controller Network module or MELSECNET/H module. O O O Acquisition of module QBF_RECV Receives messages from another station via CC-Link IE Controller Network module or MELSECNET/H module. O O O Acquisition of module QBF_UnitInfo Receives messages from another station via CC-Link IE Controller Network module or MELSECNET/H module. O O O Acquisition of module QBF_UnitInfo Receives messages from another station via CC-Link IE Controller Network module or MELSECNET/H module. O O O MESESENET QBF_UnitInfo Receives messages from another station via CC-Link IE Controller Network module or MELSECNET/H module. O			Writes data to link devices of a CC-Link IE Controller				
Link device access module (own station). module (own station). module (own station). QBF_ReadLinkDevice Reads data from link devices of a CC-Link IE Controller Network module (own station) or MELSECNET/H module (own station). O O QBF_SEND Sends messages to another station via CC-Link IE Controller Network module or MELSECNET/H module. (Equivalent to SEND instruction of CC-Link IE Controller Network module or MELSECNET/H module.) O O Message communication Receives messages from another station via CC-Link IE Controller Network module or MELSECNET/H module.) O O Acquisition of module Receives messages from another station via CC-Link IE Controller Network module or MELSECNET/H module. O O Acquisition of module QBF_RECV Receives messages from another station via CC-Link IE Controller Network module or MELSECNET/H module. O O Acquisition of module QBF_UnitInfo Reads module configuration information. O O WDT control QBF_StartWDT Sets an interval of WDT and starts up the user WDT. O O O QBF_StopWDT Stops the user WDT. O O O O O		QBF_WriteLinkDevice	Network module (own station) or MELSECNET/H	0	0	0	
access QBF_ReadLinkDevice Reads data from link devices of a CC-Link IE Controller Network module (own station) or MELSECNET/H module (own station). 0 0 0 Message communication QBF_SEND Sends messages to another station via CC-Link IE Controller Network module or MELSECNET/H module. 0 0 0 0 Message communication QBF_SEND Receives messages from another station via CC-Link IE Controller Network module or MELSECNET/H module.) 0 0 0 0 Message communication QBF_RECV Receives messages from another station via CC-Link IE Controller Network module or MELSECNET/H module.) 0 0 0 0 Acquisition of module QBF_RECV Receives messages from another station via CC-Link IE Controller Network module or MELSECNET/H module. 0 0 0 Acquisition of module QBF_UnitInfo Reads module configuration information. 0 0 0 WDT control QBF_ResetWDT Sets an interval of WDT and starts up the user WDT. 0 0 0 QBF_StoryWDT Stops the user WDT. 0 0 0 0	Link device		module (own station).				
QBF_ReadLinkDevice Controller Network module (own station) or MELSECNET/H module (own station). O O O Message communication QBF_SEND Sends messages to another station via CC-Link IE Controller Network module or MELSECNET/H module. (Equivalent to SEND instruction of CC-Link IE Controller Network module or MELSECNET/H module.) O O O Message communication QBF_RECV Receives messages from another station via CC-Link IE Controller Network module or MELSECNET/H module. (Equivalent to RECV instruction of CC-Link IE Controller Network module or MELSECNET/H module. (Equivalent to RECV instruction of CC-Link IE Controller Network module or MELSECNET/H module.) O O Acquisition of module information QBF_UnitInfo Reads module configuration information. O O O WDT control QBF_ResetWDT Sets an interval of WDT and starts up the user WDT. O O O QBF_StartWDT Resets the user WDT. O O O O QBF_StopWDT Stops the user WDT. O O O O	access		Reads data from link devices of a CC-Link IE		0		
Melssage QBF_SEND Sends messages to another station via CC-Link IE Controller Network module or MELSECNET/H module. (Equivalent to SEND instruction of CC-Link IE Controller Network module or MELSECNET/H module.) O O O Message communication QBF_SEND Receives messages from another station via CC-Link IE Controller Network module or MELSECNET/H module.) O O O Acquisition of module information QBF_RECV Receives messages from another station via CC-Link IE Controller Network module or MELSECNET/H module.) O O O Acquisition of module information QBF_LunitInfo Reads module configuration information. O O O WDT control QBF_StartWDT Sets an interval of WDT and starts up the user WDT. O O O QBF_StopWDT Stops the user WDT. O O O O		QBF_ReadLinkDevice	Controller Network module (own station) or	0		0	
Message QBF_SEND Sends messages to another station via CC-Link IE Controller Network module or MELSECNET/H module. (Equivalent to SEND instruction of CC-Link IE Controller Network module or MELSECNET/H module.) O O O Message communication QBF_SEND Receives messages from another station via CC-Link IE Controller Network module or MELSECNET/H module.) O O O QBF_RECV Receives messages from another station via CC-Link IE (Equivalent to RECV instruction of CC-Link IE Controller Network module or MELSECNET/H module. (Equivalent to RECV instruction of CC-Link IE Controller Network module or MELSECNET/H module.) O O Acquisition of module information QBF_UnitInfo Reads module configuration information. O O O WDT control QBF_StartWDT Sets an interval of WDT and starts up the user WDT. O O O WDT control QBF_EstartWDT Stops the user WDT. O O O QBF_StopWDT Stops the user WDT. O O O O QBF_EntryWDTInt Resets the user WDT. O O O O			MELSECNET/H module (own station).	ļ			
Message QBF_SEND Controller Network module or MELSECNET/H module. (Equivalent to SEND instruction of CC-Link IE Controller Network module or MELSECNET/H module.) O O O Communication QBF_RECV Receives messages from another station via CC-Link IE Controller Network module or MELSECNET/H module. (Equivalent to RECV instruction of CC-Link IE Controller Network module or MELSECNET/H module. (Equivalent to RECV instruction of CC-Link IE Controller Network module or MELSECNET/H module.) O O O Acquisition of module QBF_UnitInfo Reads module configuration information. O O O WDT control QBF_StartWDT Sets an interval of WDT and starts up the user WDT. O O O WDT control QBF_StortWDT Stops the user WDT. O O O O QBF_StortWDT Stops the user WDT. O O O O O			Sends messages to another station via CC-Link IE				
Message communication QBF_SEND Imodule. (Equivalent to SEND instruction of CC-Link IE Controller Network module or MELSECNET/H module.) O O O Message communication Receives messages from another station via CC-Link IE Controller Network module or MELSECNET/H module. (Equivalent to RECV instruction of CC-Link IE Controller Network module or MELSECNET/H module. (Equivalent to RECV instruction of CC-Link IE Controller Network module or MELSECNET/H module.) O O Acquisition of module information QBF_UnitInfo Reads module configuration information. O O O WDT control QBF_ResetWDT Sets an interval of WDT and starts up the user WDT. O O O WDT control QBF_StortWDT Stops the user WDT. O O O QBF_StortWDT Resets the user WDT. O O O			Controller Network module or MELSECNET/H				
Message Controller Network module or MELSECNET/H Image: Controller Network module or MELSECNET/H Message Receives messages from another station via CC-Link Image: Controller Network module or MELSECNET/H QBF_RECV Receives messages from another station via CC-Link IE Image: Controller Network module or MELSECNET/H Acquisition of (Equivalent to RECV instruction of CC-Link IE Omage: Controller Network module or MELSECNET/H Acquisition of (Equivalent to RECV instruction of CC-Link IE Omage: Controller Network module or MELSECNET/H Message Reads module configuration information. Omage: Controller Network module or MELSECNET/H Module QBF_UnitInfo Reads module configuration information. Omage: Controller Network module or MELSECNET/H WDT control QBF_StartWDT Sets an interval of WDT and starts up the user WDT. Omage: Control of CONTROL ON CONT		QBF_SEND	module.	0	0	0	
Message module.) Receives messages from another station via CC-Link IE Controller Network module or MELSECNET/H module. 0 0 0 QBF_RECV Receives messages from another station via CC-Link IE Controller Network module or MELSECNET/H module. 0 0 0 Acquisition of module QBF_UnitInfo Reads module configuration information. 0 0 0 Message QBF_StartWDT Sets an interval of WDT and starts up the user WDT. 0 0 0 WDT control QBF_StortWDT Stops the user WDT. 0 0 0 QBF_StortWDT Stops the user WDT. 0 0 0 QBF_Extrement Stops the user WDT. 0 0 0							
Initial control communication Receives messages from another station via CC-Link IE Controller Network module or MELSECNET/H module. (Equivalent to RECV instruction of CC-Link IE Controller Network module or MELSECNET/H module.) O O O Acquisition of module QBF_UnitInfo Reads module configuration information. O O O MDT control QBF_StartWDT Sets an interval of WDT and starts up the user WDT. O O O WDT control QBF_StopWDT Stops the user WDT. O O O QBF_StopWDT Stops the user WDT. O O O	Maaaaaa		Controller Network module or MELSECNET/H				
WDT control QBF_StartWDT Sets an interval of WDT and starts up the user WDT. 0 0 0 WDT control QBF_StopWDT Stops the user WDT. 0 0 0 QBF_StopWDT Stops the user WDT. 0 0 0	communication		Paceivos mossagos from another station via CC Link				
QBF_RECV In Controller Network module of MELSECNET/H module. (Equivalent to RECV instruction of CC-Link IE Controller Network module or MELSECNET/H module.) 0 0 0 Acquisition of module information QBF_UnitInfo Reads module configuration information. 0 0 0 Module information QBF_StartWDT Sets an interval of WDT and starts up the user WDT. 0 0 0 WDT control QBF_StopWDT Resets the user WDT. 0 0 0 QBF_StopWDT Stops the user WDT. 0 0 0	communication		IE Controller Network module or MELSECNET/H				
QBF_RECV Information. (Equivalent to RECV instruction of CC-Link IE Controller Network module or MELSECNET/H module.) 0 0 0 Acquisition of module information QBF_UnitInfo Reads module configuration information. 0 0 0 WDT control QBF_ResetWDT Sets an interval of WDT and starts up the user WDT. 0 0 0 QBF_StopWDT Resets the user WDT. 0 0 0 0 QBF_StopWDT Stops the user WDT. 0 0 0 QBF_EntrowWDTInt Registers a routine for the user WDT error interrupt 0 0 0			module				
Acquisition of module QBF_UnitInfo Reads module configuration information. O O Module QBF_StartWDT Sets an interval of WDT and starts up the user WDT. O O WDT control QBF_StopWDT Resets the user WDT. O O QBF_StopWDT Stops the user WDT. O O O QBF_EntrowWDTInt Begisters a routine for the user WDT error interrunt O O O		QBF_RECV	(Equivalent to RECV instruction of CC-Link IE	0	0	0	
Acquisition of module QBF_UnitInfo Reads module configuration information. O O O MDT control QBF_StartWDT Sets an interval of WDT and starts up the user WDT. O O O WDT control QBF_StopWDT Resets the user WDT. O O O QBF_StopWDT Stops the user WDT. O O O QBF_EntrowWDTInt Begisters a routine for the user WDT error interrunt O O			Controller Network module or MELSECNET/H				
Acquisition of module information QBF_UnitInfo Reads module configuration information. O O O WDT control QBF_StartWDT Sets an interval of WDT and starts up the user WDT. O O O WDT control QBF_ResetWDT Resets the user WDT. O O O QBF_StopWDT Stops the user WDT. O O O QBF_EntryWDTInt Begisters a routine for the user WDT error interrupt O O			module.)				
module information QBF_UnitInfo Reads module configuration information. O O O WDT control QBF_StartWDT Sets an interval of WDT and starts up the user WDT. O O O QBF_ResetWDT Resets the user WDT. O O O O QBF_StopWDT Stops the user WDT. O O O O QBF_EntroWDTInt Begisters a routine for the user WDT error interrupt O O O	Acquisition of		,				
information	module	QBF_UnitInfo	Reads module configuration information.	0	0	0	
WDT control QBF_StartWDT Sets an interval of WDT and starts up the user WDT. O O O QBF_ResetWDT Resets the user WDT. O O O O O QBF_StopWDT Stops the user WDT. O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O	information	_	Ĵ		-	-	
WDT control QBF_ResetWDT Resets the user WDT. O O QBF_StopWDT Stops the user WDT. O O QBF_EntryWDTInt Registers a routine for the user WDT error interrupt O O		QBF_StartWDT	Sets an interval of WDT and starts up the user WDT.	0	0	0	
WD I control QBF_StopWDT Stops the user WDT. O O OBE_EntryWDTInt Registers a routine for the user WDT error interrupt O O	WDT .	QBF_ResetWDT	Resets the user WDT.	0	0	0	
OBE EntryWDTInt Registers a routine for the user WDT error interrupt	WD1 control	QBF_StopWDT	Stops the user WDT.	0	0	0	
		QBF_EntryWDTInt	Registers a routine for the user WDT error interrupt.	0	0	0	

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AMING USING RFACE VS

EVENT NUMBER LIST

9 PROGRAMMING USING BUS INTERFACE FUNCTIONS

Table 9.2 Bus interface function list (continued)

1)Q12DCCPU-V 2)Q06CCPU-V 3)Q06CCPU-V-B

MELSEG Q series

Catagory		Function		Availability			
Category	Function name	Function	1)	2)	3)		
Timer event	QBF_EntryTimerEvent	Registers timer events.	0	0	0		
control	QBF_WaitTimerEvent	Waits for an occurrence of a timer event.	0	0	0		
Acquisition of module status information	QBF_ReadStatusEx	Reads the status information (LED, error, etc.) of C Controller module.	0	0	0		
	QBF_ControlLED	Controls USER LED of C Controller module.	0	0	0		
User LED control	QBF_Control7SegLED	Controls the 7-segment LED of C Controller module.	0	×	×		
	QBF_Reset ^{*1}	Resets the bus master CPU (CPU No.1).	0	0	0		
CPU operating	QBF_Control	Controls remote operations (RUN/STOP/PAUSE) for the C Controller module.	0	0	0		
	QBF_ControlEx	Controls remote operations (RUN/STOP/PAUSE) for specified CPU.	0	0	0		
Event registration	QBF_RegistEventLog	Registers event logs in the event history file.	0	0	0		
CF card mount/	QBF_MountCfCard	Mounts a CompactFlash card. (Q06CCPU-V only)	0	0	×		
unmount	QBF_UnmountCfCard	Unmounts a CompactFlash card. (Q06CCPU-V only)	0	0	×		
Standard ROM shutdown	QBF_ShutdownRom	Sets C Controller module to power-off-available condition. (Shuts down the standard ROM.)	×	0	0		
Obselvatete	QBF_SetTime	Sets up clock data.	0	0	0		
Clock data	QBF_GetTime	Reads clock data.	0	0	0		
Battery backed-up	QBF_WriteSRAM	Writes data to the battery-backed-up RAM.	0	0	0		
RAM access	QBF_ReadSRAM	Reads data from the battery-backed-up RAM.	0	0	0		
	QBF_WaitUnitEvent	Waits for an interrupt event notification from an intelligent function module or an interrupt module.	0	0	0		
	QBF_WaitEvent	Waits for an interrupt event notification from another CPU.	0	0	0		
Interrupt event	QBF_GINT	Issues an interrupt to another CPU. (Equivalent to the S(P). GINT instruction of programmable controller CPU.)	0	0	0		
Control	QBF_EntryMultiCPUSyncInt	Registers a routine so that it can be called when a multiple CPU synchronization interrupt occurs.	0	×	×		
	QBF_EnableMultiCPUSyncInt	Enables the routine registered for the multiple CPU synchronization interrupt.	0	×	×		
	QBF_DisableMultiCPUSyncInt	Disables the routine registered for the multiple CPU synchronization interrupt.	0	×	×		

O: Available, X: N/A

* 1 For precautions on remote RESET during writing a user file, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

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Table 9.2 Bus interface function list (continued)

1)Q12DCCPU-V 2)Q06CCPU-V 3)Q06CCPU-V-B

MELSEC Q series

9

SAMPLE PROGRAMS

EVENT NUMBER LIST

Catogony	Cotomore Eurotion		Availability		У	MMIN RFA(NS	
Calegory	Function name	Function	1)	2)	3)	GRAI INTE DTIOI	
		Registers an interrupt so that the routine can be called	_ ^{*2}	~	~		
		when the interrupt is issued from another CPU.	0	^	^	10	
	QBF EnableCoulnt	Enables the routine registered for an interrupt from	_ ^{*2}	×	×		
		another CPU.	0	^	~	SING	
	OBF DisableCoulot	Disables the routine registered for an interrupt from	○ *2	×	×	G US	
Interrunt event		another CPU.	0	~	~	ATA	
control		Registers an interrupt so that the routine can be called				EC D	
Control	QBF_EntryUnitInt	when the interrupt is issued from an intelligent function	0 ^{*2}	×	×	INC.	
		module or an interrupt module.				뛽콜픽	
	OBE Enablel InitInt	Enables the routine registered for an interrupt from an	○ *2	~	×	11	
		intelligent function module or an interrupt module.	0	^	^	Q	
	OBF Disablel InitInt	Disables the routine registered for an interrupt from an	_ ^{*2}	~	~	USIN	
		intelligent function module or an interrupt module.	0	^	^	DNG	
Ladder program	OBE ControlProgram	Controls execution type of a ladder program	0	0	\circ	API	
control		Controls execution type of a ladder program.	0	0	0	GR/ orks	
Motion CPU		Requests to start the specified Motion SFC program.				PRO VXW	
control (program	QBF_MotionSFCS	(Equivalent to S(P).SFCS instruction of programmable	0	0	0	12	
start)		controller CPU.)			l		
		Requests to start the specified servo program.				<u>s</u>	
	QBF_MotionSVST	(Equivalent to S(P).SVST instruction of programmable	0	0	0	RAM	
		controller CPU.)				SOG	
		Requests to change the current value of the specified				E H	
	QBF_MotionCHGA	axis.	-			MPL	
		(Equivalent to S(P).CHGA instruction of programmable	0	0	0	SA	
Motion CPU		controller CPU.)				13	
control		Requests to change the speed of the specified axis.					
(operations)	QBF_MotionCHGV	BF_MotionCHGV (Equivalent to S(P).CHGV instruction of programmable		0	0	0	LIST
	_	controller CPU.)				ER	
		Requests to change the torque limit value of the				UME	
	QBF_MotionCHGT	specified axis.	_	0	0	z F	
		(Equivalent to S(P).CHGT instruction of programmable	0			EVE!	
		controller CPU.)					
		Writes data to the Motion CPU devices.					
	QBF MotionDDWR	(Equivalent to S(P).DDWR instruction or D(P).DDWR	0	0	0		
Motion device	_	instruction of programmable controller CPU.)	-	_	_		
access		Reads data from the Motion CPU devices.					
	QBF MotionDDRD	(Equivalent to S(P).DDRD instruction or D(P).DDRD	0	0	0		
	_	instruction of programmable controller CPU.)	-	_	_		
		Writes data to the internal user or system devices of	*0				
	QBF_WriteDevice	the C Controller module.	0~2	×	×		
C Controller		Reads data from the internal user or system devices of	*0				
module's internal	QBF_ReadDevice	the C Controller module.	0 ^{*2}	×	×		
user or system		Sets the internal user or system devices (bit devices) of					
device access	QBF_SetDevice	the C Controller module.	0 ^{*2}	×	×		
		Resets the internal user or system devices (bit devices)					
	QBF_ResetDevice	of the C Controller module.	0 ^{*2}	×	×		
Error clear		Clears an error	^{*2}	~	~		
			0	^	^		

* 2 Not available for the following C Controller module.

• Q12DCCPU-V with serial number (first five digits) "12041" or earlier

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(2) Bus interface function for ISR list

Table 9.3 Bus interface function for ISR

1)Q12DCCPU-V 2)Q06CCPU-V 3)Q06CCPU-V-B

Category	Category Eulection name Eulection		Availability			
Gategory		runction	1)	2)	3)	
	QBF_X_In_Word_ISR	Reads input signal (X) in 1-word units.	0	×	×	
I/O access	QBF_Y_Out_Word_ISR	Outputs output signal (Y) in 1-word units.	0	×	×	
	QBF_Y_In_Word_ISR	Reads output signal (Y) in 1-word units.	0	×	×	
		Writes data to the CPU shared memory of a specified				
CPU shared	QBF_ToBuf_ISR	module and a buffer memory ^{*1} in an intelligent function	0	×	×	
		module (To instruction).				
memory		Reads data from the CPU shared memory of a				
	QBF_FromBuf_ISR	specified module and a buffer memory ^{*1} in an	0	×	×	
		intelligent function module (From instruction).				
	QBF_ControlLED_ISR	Controls USER LED of C Controller module.	0	×	×	
User LED control	OBE Control7Sed ED ISB	Controls the 7-segment LED of the C Controller	0	~	~	
		module.	0	^	^	
Battery-backed-	QBF_WriteSRAM_ISR	Writes data to the battery backup RAM (user area).	0	×	×	
up RAM access	QBF_ReadSRAM_ISR	Reads data from the battery backup RAM (user area).	0	×	×	

O: Available, ×: N/A

* 1 For the following C Controller module, intelligent function modules cannot be accessed (reading and writing).

• Q12DCCPU-V with serial number (first five digits) "12041" or earlier.

(To the next page)

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Table 9.3 Bus interface function for ISR (continued)

1)Q12DCCPU-V 2)Q06CCPU-V 3)Q06CCPU-V-B

Cotocony	Eurotion name	Function	A	у	
Callegory	Function name	Function	1)	2)	3)
	QBF_EnableMultiCPUSyncInt_IS R	Enables a routine registered for a multiple CPU synchronization interrupt.	0	×	×
	QBF_DisableMultiCPUSyncInt_I SR	Disables a routine registered for a multiple CPU synchronization interrupt.	0	×	×
Interrupt event	QBF_EnableCpuInt_ISR	Enables a routine registered for an interrupt from another CPU.	O ^{*2}	×	×
control	QBF_DisableCpuInt_ISR	Disables a routine registered for an interrupt from another CPU.	O ^{*2}	×	×
	QBF_EnableUnitInt_ISR	Enables a routine registered for an interrupt from an intelligent function module or an interrupt module.	O ^{*2}	×	×
	QBF_DisableUnitInt_ISR	Disables a routine registered for an interrupt from an intelligent function module or an interrupt module.	O ^{*2}	×	×
	QBF_WriteDevice_ISR	Writes data to the internal user or system devices of the C Controller module.	O ^{*2}	×	×
C Controller's internal user or	QBF_ReadDevice_ISR	Reads data from the internal user or system devices of the C Controller module.	O ^{*2}	×	×
system device access	QBF_SetDevice_ISR	Sets the internal user or system devices (bit devices) of the C Controller module.	O ^{*2}	×	×
	QBF_ResetDevice_ISR	Resets the internal user or system devices (bit devices) of the C Controller module.	O ^{*2}	×	×

O: Available, ×: N/A

* 2 Not available for the following C Controller module.

• Q12DCCPU-V with serial number (first five digits) "12041" or earlier

⊠POINT -

For details of the bus interface functions, refer to the Bus Interface Function HELP of SW3PVC-CCPU.

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9.3 Programming Procedure



Figure 9.2 Programming procedure

PROGRAMMING USING BUS INTERFACE **FUNCTIONS**

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Creating and Compiling a New Project of User Program 9.4



This section explains:

9.4.1

- How to create a new project (Page 9-9, Section 9.4.1 (1))
- How to compile (Page 9-13, Section 9.4.1 (2))
- How to check the endian format (memory layout) of the execution file (Page 9-16, Section 9.4.1 (3))

This section explains the procedures of when Wind River Workbench is used. When using CW Workbench, refer to the CW Workbench Operating Manual.

(1) How to create a new project



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Ļ		
🕲 New VxWorks Downloadable Kernel Module Project 🛛 🛛 🕅		
Build Setup and Defaults Choose the managed build type and specify the build defaults source.	4	Click the Next> button. (No setting is necessary.)
Managed build type Standard Flexible Note: Use standard managed build if your build structure is similar to the file system structure, or the build definitions from project contents. The build type cannot be changed once the project is created. Build defaults source Use workspace defaults From existing project: Image: Standard S		
New VxWorks Downloadable Kernel Module Project K Build Support Choose the build support and specify the build command.	5	Click the Next> button. (No setting is necessary.)
Build command: %makeprefix% makeno-print-directory Build output passing		
New VxWorks Downloadable Kernel Module Project Select available and enabled build specs.	6	Select "SH7750gnule" and click the Finish button.
Available and enabled build specs Select All Deselect All SH7750dabb SH7750dabb SH7750dabb SH7750dabb SH7750dabb SH7750dabb SH7750dabb SH7750dabb SH7750dabb SH7750dabb SH71NUK/dab SHMTGnu SHMTGnu SHMTGnu SHMSPARCSOLARISdab SHMSPARCSOLARISdab		REFERENCE To set the release mode, deselect "Debug Mode".
Active build spec: SH7750gnule		
Image: Second		
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Right-click on the created project on the "Project Navigator" window and select [Properties] from the menu.

- filter text **Build Propertie** Build Properties Builders Project Info Project Referen Refactoring His' "*atic Analysis Build Support Build Targets Build Specs Build T - Build Paths Browse... Note: Leave this field blank to st (environment variables ar er an absolute nath uild spec: SH7750gnuk ~ Redirection directory: SH7750gnule Default Include path Generate dude Add... Add to all... Remove... Up Down efaults Apply OK Cancel
- 8 Open the <<Build Paths>> tab by selecting "Build Properties" in the tree on the left side of the screen. Add the settings of the include files for each function to "Include paths:" and click the OK button.

REFERENCE

Use "/" as a delimiter of the folder path. "\" cannot be used.

Add "-IC:/MELSEC/CCPU/DVx/Include" to the setting of the include file. (When SW3PVC-CCPU is installed to "C:\MELSEC")

Select [File] \rightarrow [New] \rightarrow [File] from the menu bar.

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Ļ	
😵 New File 🛛 🔀	D Enter the file name of the source file in the "File name:" field
File	
	and click the Finish button.
Enter or select the parent folder:	
UserProject	
UserProject (Wind River VxWorks 6.4)	
File name: Sample.c	
Advanced >>	
⑦ Einish Cancel	
e.c ×	
lude "ObfFunc.h"	Edit the source file and include the following include files.
	Bus interface function: "QbfFunc.h"
	MELSEC communication function: "Mdfunc.h"
↓ ↓	
(Completed)	

(2) How to compile

The following operations are required for compiling.



Right-click on the source file to be compiled on the "Project Navigator" window and select [Refresh] from the menu.

Right-click on the project to be compiled on the "Project Navigator" window and select [Rebuild Project] from the menu.

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6 Select only "SH7750gnule" to "Modify include search paths for selected build specs:" and click the Finish button.

Compiling process appears on the "Build Console" window as shown on the left.

during compiling. file names. UserProject.out REFERENCE

Ţ (Completed)

5.37 KB

🛃 My Computer

Other Places

🛅 Us rProjec My Documents 👰 My Computer Ny Network Places When compiling is finished, user programs that are executable in the C Controller module are generated. The user programs are not generated if an error occurred The user programs are saved with the following folder and

Folder: <Folder where the project is saved>\SH7750gnule DEBUG

File name: <Project name>.out

In the release mode, the user programs are saved in the folder where the project is saved.

(3) How to check the endian format (memory layout) of the execution file

(a) Checking method

The endian format of the execution file can be checked by the objdumpsh command of VxWorks.

Execute the objdumpsh command on the VxWorks Development Shell from the development environment (personal computer) as follows:^{*1}

objdumpsh -p Execution file name [Enter]

* 1 Start VxWorks Development Shell from "Wind River" in Windows Start.

(b) Checking result

The checking result is indicated as below.

Execution file name:	file format <u>elf32-shl</u>		
	L elf	32-shl 32-sh	: Little endian : Big endian

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9.4.2 For the Q06CCPU-V(-B)

The following information is provided in this section.

- How to create a new project (Page 9-17, Section 9.4.2 (1))
- How to compile (Page 9-21, Section 9.4.2 (2))
- How to check the endian format (memory layout) of the execution file (Page 9-22, Section 9.4.2 (3))

(1) How to create a new project

The screens shown in this section are of the Q06CCPU-V.

For the Q06CCPU-V-B, refer to REFERENCE.

Start Tornado. When the work space automatically opens, proceed to step 7 If not, perform the following operations. 🚝 Tornado Select [File]→[New Project] from the menu bar. File Edit View Project Build Debug Tools New... Ctrl+N Ctrl+O Open... New Project... Open Workspace... Save Workspace as... ? × reate Project in New/Existir 3 Select "Create downloadable application modules for Recent New Existing VxWorks" and click the OK button. What would you like to do? ПK 뛇 Create a bootable VxWorks image (custom configured) Cancel Create downloadable application modules for VxWorks Help Show this window on startup ? × tion n Enter "Name", "Location", and "Workspace" and then click Project .0 .0 N<u>a</u>me the Next> button. Location C:\Tornado\target\proj\Project0 **V**×Works Project description (optional) <Enter description here: 4 Workspace Add to a New or Existing Workspace C:\Tornado\target\proj\Workspace1.wsp Help Next > Cancel

> ↓ (To the next page)

(From the previous page)	
Create downloadable application modules for YxWorks: step 2 Image: Specify a toolchain for building this Project. This toolchain can be set explicitly, or can be copied from an existing Downloadable Project. Image: Specify a toolchain for building this Project. This toolchain can be set explicitly, or can be copied from an existing Downloadable Project. Would you like to base your project on: Image: Specify a toolchain Image: Specify a toolchain for building this Project. This toolchain can be set explicitly, or can be copied from an existing Downloadable Project. Would you like to base your project on: Image: Specify a toolchain Image: Specify a toolchain Image: Specify a toolchain Image: Specify a toolchain for building this Project. This toolchain can be set explicitly, or can be copied from an existing Downloadable Project. Image: Specify a toolchain Image: S	 Select "A toolchain" and select the setting corresponding to the modules below in the pull-down menu and click the Next> button. Q06CCPU-V: SH7750gnule (Little endian) Q06CCPU-V-B: SH7750gnu (Big endian) REFERENCE This setting defines the endian format. The program does not run if the setting with a different endian format is selected.
Create downloadable application modules for YxWorks: step 3 2 X The Project Creation Wizard will now create your Downloadable Project Worksnace C:\Tormado\Uarnet\proj:\Worksnace1.wsp.	6 Check that the settings of "Workspace" and "Tool Chain" are valid and then click the Finish button.
Project [C:\Tornado\target\proj\ProjectO\ProjectO\wpi Tool Chain [SH7750gnule Help Cancel	
Workspace: Workspace1	Open the < <builds>> tab on the "Workspace" window.</builds>
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General C/C++ compiler	Rules Link Order	assembler	lacros linker	ок.
Include debug info g -m4 -fno-weak -ml - D_REENTRANT -fvo IC:/Tornado/target/H DCPU=SH7750	Optimi: ansi •DRW_MUL Iatile •fno•builtin • •IC:/Melsec/CCI	zation level	none 💌	Cancel Apply Help
			v	

Open the <<C/C++ compiler>> tab. In the center text area on the screen, add the folder settings where the include files of the bus interface functions and MELSEC data link functions are installed, and click the OK button.

IMPORTANT

Use "/" as a delimiter of the folder path. "\" cannot be used.

For the include file setting, add the following according to the model.(When the SW3PVC-CCPU is installed to "C:\MELSEC")

Q06CCPU-V: "-IC:/Melsec/CCPU/Vx/Include" Q06CCPU-V-B: "-IC:/Melsec/CCPU/VxB/Include"

				•			
🍠 Ta	ornad	lo					
File	Edit	View	Project	Build	Debug	Tools	Wind
Ne	ew			C	trl+N	21	
Op	ben			C	trl+0	빋	
C	ose					* 🔤	
Ne Op	ew Pro ben W	oject Iorkspa	ce				
				Ļ			
lew							? ×
Files	1						
C/C+-	+ Include	File		dd to projec	st		
C/C+ Tel Fi	+ Source le	File	Proj	ect0.wpj			•
Text F Wind	-ile View Log		<u>F</u> ile r	name:			
			San	nple.c			
			Loca	ition:			
			C:V	∫ornado\tar	get\proj\Projec	:tO	
				<u>0</u> K	<u>C</u> ancel	<u>H</u>	elp
				1			

T

11 Select [File] \rightarrow [New] from the menu bar.

 Select "C/C++ Source File", enter the source file name into "File name", and click the OK button.

13 A screen to edit the source file appears. Include "QbfFunc.h" when using the bus interface functions. Include "MdFunc.h" when using the MELSEC communication functions.

↓ (Completed)

C:\Tornado\target\proj\l

. 🗆 🗙

(2) How to compile

⊠POINT -

The following operations are required for compiling.

Workspace: Workspace1 Build Spec SH7750gnule	In the < <files>> tab on the "Workspace" window, right-click on the source file name to be compiled, and select [Dependencies] from the menu.</files>
Image: Sample Sample Comparison of the second se	
Files VxWorks Builds	
Dependencies ? ★ Regenerate project file dependencies: OK C All Project files ØSample.c C Selected Project files Advanced Help Help	2 Check the source file name to be compiled, and click the OK button.
Image: Second	3 Select [Build]→[Rebuild All] from the menu bar.
(To the next page)	

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PROGRAMMING USING MELSEC DATA LINK FUNCTIONS

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Compiling process appears on the screen as shown on the left.

When compiling is finished, user programs that can be executed in the C Controller module are generated. The user programs are not generated if an error occurred during compiling.

The user programs are saved with the following folder and file names.

Folder: <Folder where the project is saved>\SH7750gnule File name: <Project name>.out

REFERENCE

For the Q06CCPU-V-B, user programs are generated in the "SH7750gnu" folder.



(3) How to check the endian format (memory layout) of the execution file

(a) Checking method

The endian format of the execution file can be checked by the objdumpsh command of VxWorks.

Execute the objdumpsh command on the command prompt from the development environment (personal computer) as follows:^{*1}

objdumpsh -p Execution file name [Enter]

- * 1 To use the objdumpsh command, execute the following file and set environment variable. <Tornado InstallDir> \host\x86-win32\bin\torVars.bat
 - (<Tornado InstallDir> is a folder where Tornado has been installed.)
- (b) Checking result

The checking result is indicated as below.

Execution file name: file format <u>elf32-shl</u> elf32-shl : Little endian elf32-sh : Big endian PROGRAMMING USING BUS INTERFACE FUNCTIONS

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9.5 Programming Flow for Bus Interface Functions



(1) **Programming flow**

The following flowchart shows the procedure for programming using the bus interface functions.



Figure 9.3 Bus interface function programming flow



The following flowchart shows the outline in the case of a user watchdog timer error interrupt.



Figure 9.4 User watchdog timer error interrupt programming outline

(2) Precautions for using the bus interface functions

- (a) Programming precautions
 - 1) Open/close processing

Perform the bus open and close processing (QBF_Open function/QBF_Close functions) only once at the beginning and end of the program respectively. Communication performance will decrease if open/close is repeated at each communication.

Simultaneous processing of bus interface functions
 Bus interface functions are serialized in the C Controller module for processing.

When the MELSEC data link function are requested simultaneously in multiple tasks, one of the task starts its processing and the other tasks will have to wait until the processing is complete.

- User watchdog timer error interrupt When using the bus interface functions on multiple tasks, register the routine for the user watchdog timer error interrupt from one of the tasks.
- 4) Clock setting

When setting the clock of the C Controller module, confirm that both the QBF_WaitEvent and QBF_WaitUnitEvent functions are not in process.

- 5) Remote STOP/PAUSE and bus interface function execution result When the operation status of the C Controller module is remote STOP or remote PAUSE, the execution result of the following operations by the user program will be STOP/PAUSE error.
 - Output (Y) (QBF_Y_OutBitExfunction, QBF_Y_OutWordEx function)
 - Buffer memory writing (QBF_ToBuf function)

Y output and buffer memory writing can be executed from the <<Module monitoring>> tab of the C Controller setting utility.

- 6) The sequence program control function (QBF_ControlProgram function) can be executed only to the High Performance model QCPU.
- 7) For tasks that use bus interface functions, do not use a mutual-exclusion semaphore that specifies the SEM_INVERSION_SAFE option.

- (b) Precautions for own station device access via CC-Link module
 When accessing via a CC-Link module, create a user program that provides interlocks to enable write to/read from the own station device.
 Data become effective only when the following conditions are satisfied.
 - Module error (Xn0) is off (normal)
 - Module ready (XnF) is on (operable)
 - Own data link status (Xn1) is on (in data link)

Write to/read from the own station is terminated normally irrespective of the above conditions.

(c) Precautions for host station device access via MELSECNET/H module

When accessing via MELSECNET/H module, create a user program that provides interlocks to enable writing to/reading from the host station device.

Data become valid only when the following conditions are satisfied.

- Module status (SB20) is off (normal)
- Baton pass status of host station (SB47) is off (normal)
- Data link status of host station (SB49) is off (in data link)

Write to/read from the host station is terminated normally irrespective of the above conditions.

(d) Precautions for own station device access via CC-Link IE Controller Network module

When accessing via CC-Link IE Controller Network module, create a user program that provides interlocks to enable write to/read from the own station device.

Data become effective only when the following conditions are satisfied.

- Data link status of own station (SB49) is off (in data link)
- Data link status (the bit corresponding to the communication targets in SWB0 to B7 which is read from the own station) is off (normal)

Write to/read from the own station is terminated normally irrespective of the above conditions.

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9.6 Precautions for Functions

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B
<u> </u>	\bigcirc	

This section provides precautions for the bus interface function and MELSEC data link function.

(1) Endian format (Memory layout)

There are two types of models for the Q06CCPU-V(-B), which are in little endian format (memory layout) and in big endian format.

Create user programs in either little or big endian that is appropriate to the model used.

(Set the compiler by selecting "A toolchain" when creating a project on Tornado. (\square Page 9-17, Section 9.4.2)

(2) Execution type priority

Set the priority of a task for executing the FTP user program as described below.

- (a) When access is not made via FTP during user program execution Set the priority of the user program task to 100 or more (100 to 255).If the priority is set within 0 to 99, the system may not operate properly.
- (b) When access is made via FTP during user program execution The actual FTP processing (task) of the C Controller module is performed at the priority of 200.

When accessing via FTP during user program execution, perform programming as described below.

- Set the priority of the user program task within 201 to 255.
- When setting the priority of the user program task within 100 to 200, insert wait processing (such as taskDalay) in the user program to enable the actual FTP processing.

(3) User program execution

Execute a user program by starting a task from the script file.

(F Page 9-51, Section 9.9)

The system may malfunction if the user program is executed without a task being started.

(4) When communicating from utility while a user program is running

If a communication from utility may affect the user program, lower the task priority of utility communication than that of the user program.

Check the port number being used in the C Controller module by using the VxWorksstandard "inetstatShow" command.

Do not use any port number that has already been used. Normal communication may not be available if used.

Execute the "inetstatShow" command as follows:

[For the Q12DCCPU-V]

Use the Telnet tool.

[For the Q06CCPU-V(-B)]

Execute from the Tornado Shell.

Example) When using the Telnet tool on the Q12DCCPU-V



Figure 9.5 When using Telnet tool on the Q12DCCPU-V

(6) When writing a file from the user program by the Q06CCPU-V(-B) Do not write a file to the standard ROM.

Write it to a CompactFlash card, network device (such as FTP/NFS/netDrv driver) file, or RAM disk.

For details of network devices and RAM disks, refer to the manual for VxWorks.

(7) CompactFlash card replacement

Refer to the C Controller Module User's Manual (Hardware Design, Function Explanation) when replacing the CompactFlash card while the power is on. Close all the files being written if any. (Program example Page 12-1, CHAPTER 12) 9

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(8) When the operation status is changed from RUN to STOP/PAUSE

When the operation status of the C Controller module is changed from RUN to STOP/ PAUSE, the user program task does not stop.

Use the QBF_Read StatusEx function when splitting the user program processing according to the operation status of the C Controller module.

(9) When a user watchdog timer cannot be reset

A user watchdog timer error occurs when the user watchdog timer cannot be reset due to some reasons such as user program runaway.

When a user watchdog timer has occurred, perform the following.

- Increase the WDT time set by the QBF_StartWDT function.
- Lower the CPU utilization of tasks that require high utilization.
- Or set them not to operate.
- Review the user program.

After the above operations, reset the C Controller system.

For resetting, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

(10)Relation between system tasks and the system watchdog timer, user watchdog timer, and link device refresh cycles

When using any of the following functions, set a sufficiently long time for each of the system watchdog timer, user watchdog timer, and link device refresh cycles.

- Shell command
- Workbench/Tornado connection
- File access
- Mount/unmount of CompactFlash card
- Ethernet communications
- NFS server communication

If any of the above is used, CPU utilization for a system task with high priority may increase and a system watchdog timer error, a user watchdog timer error, and link refresh timeout may occur more frequently.

For the link refresh timeout, the rate of occurrence may also increase when bus interface driver processing (connections with peripheral devices or communication with an intelligent function module, etc.) is used.

(11) IP address setting

The IP address of the C Controller module cannot be set from the user program. Set it in the <<Online operation>> tab of C Controller setting utility.

(12)Power off and reset during writing a user file

Data corruption or file system error may occur if the C Controller system is powered of or is reset (including remote RESET) during writing data to the user file in the standard RAM, standard ROM, or CompactFlash card.

To power off or reset the C Controller system, perform the following first.

- (a) When writing data to a file in the standard RAM or standard ROM
 Close the file where data are being written. (Program example Page 12-1, CHAPTER 12)
- (b) When writing data to a file in a CompactFlash card
 Close the file where data are being written, and unmount the CompactFlash card.
 (Program example F Page 12-1, CHAPTER 12)

For halting the CompactFlash card processing, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation)

(13)Login user

The login user settings are cleared and return to default when the C Controller module is powered off or is reset.

To retain the login user settings, describe a registration (adding/deleting) of the settings in a script file.

Describe either of the following in the script file.

• Directly describe the login user operation commands (loginUserAdd function or loginUserDelete function).

• Provide a description that starts the user program task for login user operation. For login user settings, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

(14)VxWorks real-time process applications

The C Controller module does not support applications running in VxWorks real-time process.

Create a user program as an application based on the VxWorks kernel.

9

PROGRAMMING USING MELSEC DATA LINK FUNCTIONS

(15)Functions that can be used in the interrupt routine (interrupt program) of the Q12DCCPU-V

The following functions can be used in the interrupt routine (interrupt program) of the Q12DCCPU-V.

- Bus interface function for ISR
- QBF_RegistEventLog
- QBF_WriteSRAM
- QBF_ReadSRAM

Do not use bus interface functions and MELSEC data link functions other than the above in the interrupt routine (interrupt program). Using any of those functions may cause the operating system to run away.

When using the functions offered by the operating system, understand the restrictions on Interrupt Service Routine of VxWorks 6.4.

For the restrictions on Interrupt Service Routine of VxWorks 6.4, refer to VxWorks Kernel Programmer's Guide 6.4.

(16)Functions that can be used in the interrupt routine (interrupt program) registered by the QBF_EntryWDTInt function when using the Q06CCPU-V(-B)

The following functions can be used in the interrupt routine (interrupt program) registered by the QBF_EntryWDTInt function when using the Q06CCPU-V(-B).

- QBF_RegistEventLog
- QBF_WriteSRAM
- QBF_ReadSRAM

Do not use bus interface functions other than the above or MELSEC data link functions in the interrupt routine (interrupt program). Using any of those functions may cause the operating system to run away.

When using the functions offered by the operating system, understand the restrictions on Interrupt Service Code of VxWorks 5.4.

For the restrictions on Interrupt Service Code of VxWorks 5.4, refer to VxWorks Kernel Programmer's Guide 5.4.

PROGRAMMING USING BUS INTERFACE FUNCTIONS

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PROGRAMMING USING MELSEC DATA LINK FUNCTIONS

PROGRAMMING USING VxWorks API FUNCTIONS

SAMPLE PROGRAMS

EVENT NUMBER LIST

9.7 Precautions for Program Debugging

9.7.1



- (a) Specifying method
 - Check that the VxWorks image file in the system memory of the development environment (personal computer) is identical with that of the C Controller module.

([Page 9-33, Section 9.7.1 (1) (b))

- 2) Start Workbench.
- Right-click on the "Target Manager" window.
 Select [New] → [Connection] to open the "New Connection" dialog box.
- Select "Wind River VxWorks 6.x Target Server Connection" and click the Next> button.

5) Set "Backend settings" as follows.

Backend:	wdbrpc	*	Cpu:	SH-4A
Target na	me / IP address:	192.168.3.3		Check Port:

Table 9.4 Backend settings

Item	Value
Backend:	wdbrpc
Cpu:	SH-4A
	192.168.3.3
Target name / IP address:	(If the IP address of the C Controller module has been
	changed, enter the latest one.)
Port:	" " blank

6) Select the "File" radio button in the "Kernel image" field and click the Browse button.

-Kernel ima O File pa	age th from target (if available)		
📀 File:	C:\MELSEC\CCPU\DVx\Tools\Q12DCCPU-V_11011-B	Browse	
Bypass checksum comparison			
Advanced	target server options		

 Select "*" in "Files of type" to select the VxWorks image file and click the Finish button.

My Computer			
	File <u>n</u> ame:	×	<u>O</u> pen
My Network	Files of type:	×	Cancel
		vxWorks*	

For the folder where the VxWorks image file is stored, refer to the following. \square Page 9-33, Section 9.7.1 (1) (b)

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NG USING A LINK

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PROGRAMMING USING VxWorks API FUNCTIONS

SAMPLE PROGRAMS

EVENT NUMBER LIST

(b) VxWorks image file

VxWorks image files are required to be copied from C Controller module to the development environment (personal computer) by FTP.

1) VxWorks image file storage source

VxWorks image files are stored in the following system drive of C Controller module.

Table 9.5 VxWorks in	mage file	storage	source
----------------------	-----------	---------	--------

Model	File
Q12DCCPU-V	
(Basic mode)	SYSTEMROM\OS_IMAGEFILE\Q12DCCPU-V_XXXX-Y '
Q12DCCPU-V	
(Extended mode)	SYSTEMROM/OS_IMAGEFILE/QT2DCCPU-V_XXXX-Y_MODEX

- * 1 XXXXX: First five digits of the serial No. of the C Controller module
 - Y : Function version of the C Controller module

For the checking method of the serial No. and function version, refer to the following manuals. Q12DCCPU-V(Basic mode):

C Controller Module User's Manual (Hardware Design, Function Explanation) Q12DCCPU-V(Extended mode):

Setting/Monitoring Tools for the C Controller Module Operating Manual

2) VXWorks image file copy destination

Copy the VxWorks image files from C Controller module to the development environment (personal computer) by FTP. (

Table 9.6 Example of VXWorks image file copy destination

Model		File
Q12DCCPU-V		
(Basic mode)		
Q12DCCPU-V	C.IMELSECICCPUIDVX/100IS/	
(Extended mode)		

3) When VxWorks image files are not identical

When the VxWorks image file of the development environment (personal computer) is not identical with that of the C Controller module, copy the image file from the C Controller module to the development environment (personal computer) via FTP. (Page 9-46, Section 9.8)

When the VxWorks image files in the C Controller module and in Workbench are not identical, a system watchdog timer error may occur in the C Controller module.

In addition, debugging cannot be performed normally.

Remark

For other debugging methods, refer to the manual for Workbench.

(2) Precautions for Telnet connection

If the line is disconnected during use of Telnet, it cannot be reconnected until TCP connection including the Telnet on the C Controller module side is timed out. If this occurs, reconnect it after timeout.

The timeout time for the C Controller module side Telnet (TCP) connection can be changed by setting the values in the calculation formula by the following setting methods.

[Calculation formula]

Timeout time is determined by the following calculation formula.

Timeout time =	net.inet.tcp.keepidle				
	+ (net.inet.tcp.keepintvl × 8 (Retry count) ^{*1}) [ms]				
	Default value of the C Controller module: 30000 (30 sec.)				
	Default value of VxWorks: 7800000 (2 hr. 10 min.)				
net inet ton keeni	dle: Time from line disconnection to the first retry (ms)				
Initial value for C Controller module: 22000					
	Initial value for VxWorks: 7200000				
net.inet.tcp.keepi	ntvl: Retry interval (ms)				

Initial value for C Controller module: 1000

Initial value for VxWorks: 75000 * 1 The number of retries cannot be changed.

[Setting method]

The following explains how to set the initial value to 30 seconds.

- Setting while the C Controller module is in operation
 - 1) Connect the line to the C Controller module with the Telnet tool.
 - 2) Execute the following two Sysct1() commands with the Telnet tool to set the timeout time to the initial value.

Sysctl("net.inet.tcp.keepidle = 22000")
Sysctl("net.inet.tcp.keepintvl = 1000")

3) Close the Telnet connection.

· Setting at the timing of starting C Controller module

1) Describe the following two Sysct1() commands on the script file, "STARTUP.CMD".

Sysctl("net.inet.tcp.keepidle = 22000")

Sysctl("net.inet.tcp.keepintvl = 1000")

- 2) Write the above script file, "STARTUP.CMD" to a CompactFlash card, and insert it into the C Controller module.
- 3) Upon start of the C Controller module, the timeout time is set to the initial value.

(3) Precautions for executing a Shell command from Workbench Shell or the Telnet tool

- When executing a Shell command from Workbench Shell When executing a Shell command from Workbench Shell, pay attention to the following since the entered Shell commands operate on the task of priority 1 in the C Controller module.
 - Only alphanumeric characters and special characters can be used.
 - Some commands, such as those exclusively using the CPU module and those including characters other than alphanumeric characters and special characters, may be regarded as a command causing a watchdog timeout error, a control code (such as "CTRL + X"), or being garbled. As a result, a system error, such as a system watchdog timer error, or stop may occur in the C Controller module. Pay full attention to the command when entering it.
 - Some commands (example: the status-indicating Show command) may disable an interrupt for a long time.
 During the time, processing called from an interrupt routine (interrupt program) (example: bus interface functions for ISR) is not executed.
 Interrupts that are expected to occur at fixed intervals, such as multiple CPU synchronous interrupt, may delay. When executing a command, pay attention to the above.

A VxWorks message may appear on Shell during connecting from Shell to the C Controller module.

For messages of VxWorks, refer to the manual for VxWorks or Workbench.

 When executing the Shell command from the Telnet tool Make one to one connection between the Telnet tool and the C Controller module.

Connection cannot be made from multiple Telnet tools to the same C Controller module.

When exchanging the Telnet tool with another, first close the connection with the currently used Telnet tool, and then connect the line to the C Controller module from another Telnet tool.

9

PROGRAMMING USING MELSEC DATA LINK FUNCTIONS The Shell commands entered by the Telnet tool of the development environment (personal computer) operate on the task of priority 1 in the C Controller module.

Pay full attention to the command when entering it.

When using a Shell command, pay attention to the following.

- Only alphanumeric characters and special characters can be used.
- Some commands, such as those exclusively using the CPU module and those including characters other than alphanumeric characters and special characters, may be regarded as a command causing a watchdog timeout error, a control code (such as "CTRL + X"), or being garbled. As a result, a system error, such as a system watchdog timer error, or stop may occur in the C Controller module. Pay full attention to the command when entering it.
- Some commands (example: the status-indicating Show command) may disable an interrupt for a long time.

During the time, processing called from an interrupt routine (interrupt program) (example: bus interface functions for ISR) is not executed. Interrupts that are expected to occur at fixed intervals, such as multiple CPU synchronous interrupt, may delay. When executing a command, pay attention to the above.

A VxWorks message may appear on the Telnet tool screen during a Telnet connection to the C Controller module.

For messages of VxWorks, refer to the manual for VxWorks or Workbench.

- 3) When executing the Shell command from Workbench Shell or the Telnet tool
 - Execution of VxWorks reboot command Do not reboot VxWorks by executing the reboot function or pressing the CTRL + X keys.^{*1}

If VxWorks is rebooted, the C Controller module does not start properly. Reset it in the C Controller module.

For resetting, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

- * 1 Do not enter characters other than alphanumeric characters or special characters in Shell either since they may be regarded as a control code.
 - Execution of command without argument specified If a command that requires an argument is executed without any argument specified, 0 is substituted for the argument. A system error or stop (such as a system watchdog timer error) may occur in the C Controller module depending on the command (example: command that occupies CPU processing).

Before executing a command, confirm the specifications and specified argument of the command.

Example)

Do not execute the "close" command without an argument. If executed, the resource reserved in the VxWorks system will be closed.

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PROGRAMMING USING MELSEC DATA LINK FUNCTIONS

PROGRAMMING USING VXWorks API FUNCTIONS

SAMPLE PROGRAMS

EVENT NUMBER LIST

(4) Precautions for debugging from Workbench

- (a) When downloading by specifying the user program from Workbench
 A system error or stop (such as a system watchdog timer error) may occur in the
 C Controller module during downloading if the program is too large.
 When a system error or stop (such as a system watchdog timer error) has
 occurred, take either of the following measures.
 - Increase the value of "WDT (watchdog timer) setting" on the System settings tab of the C Controller setting utility.
 - Load the program in the C Controller module before debugging.

An interrupt to the C Controller module may be disabled during debugging. During the time, processing called from an interrupt routine (interrupt program) (example: bus interface functions for ISR) is not executed. Interrupts that are expected to occur at fixed intervals, such as multiple CPU synchronous interrupt, may delay. For debugging from Workbench, pay attention to the above.

(b) When restarting the C Controller module
 Before restarting the C Controller module, disconnect the connection with Workbench.
 Eailure to do so movies on error in the C Controller module.

Failure to do so may cause an error in the C Controller module.

9.7.2 For the Q06CCPU-V(-B)

(1) Specifying a VxWorks image file

To debug the user program, specify the same VxWorks image file as that of the C Controller module for Tornado.



- (a) Specifying method of VxWorks image file
 - Check that the VxWorks image file in the system memory of the development environment (personal computer) is identical with that of the C Controller module.

(Page 9-39, Section 9.7.2 (1) (b))

- 2) Start Tornado.
- 3) Select [Tools]→[Target Server]→[Configure] to open the "Configure Target Servers" dialog box.
- 4) Select "Core File and Symbols" in the "Target Server Properties" pull-down menu.
- 5) Select the "File" radio button and specify the storage location of the VxWorks image file to the text box.
 For the VXWorks image file copy destination, refer to the following section.
 () Page 9-39, Section 9.7.2 (1) (b))
- 6) Click the OK button.

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PROGRAMMING USING VXWorks API FUNCTIONS

SAMPLE PROGRAMS

EVENT NUMBER LIST

The following screen provides an example of specifying the VxWorks image file whose serial No. (first five digits) and the function version is "09051" and "B" respectively.

onfigure Target Servers	? X			
Target Server Descriptions				
Q06CCPU-V_09051-8	New			
	Copy			
Description Q06CCPU-V_09051-B				
Add description to menu	Hemove			
Target Server Name				
- Target Server Properties - Core File and Sym	bols 💌			4
C File Path From Target (If Available)				
Eile C:\MELSEC\CCPU\Vx\Tools\Q06C	CPU-V	·	• •	5
Global Symbols C All Symbols C I	N <u>o</u> Symbols			
🔲 Synchronize Target/Host Symbol Tables				
Object Module Format				
Target Name/IP Address				
Command Line				
tgtsvr.exe -V -c C:\MELSEC\CCPU\Vx\Tools\Q06CCPU-V_090	151-8 V			
OK <u>L</u> aunch Cancel	Help			

Figure 9.6 VxWorks image file specification

(b) VxWorks image file

VxWorks image files are required to be copied from C Controller module to the development environment (personal computer) by FTP.

1) VxWorks image file storage source

VxWorks image files are stored in the following system drive of C Controller module.

Table 9.	7 VxWorks	storage	source
----------	-----------	---------	--------

Model	File
Q06CCPU-V	\SYSTEMROM\OS_IMAGEFILE\Q06CCPU-V_XXXXX-Y ^{*1}
Q06CCPU-V-B	\SYSTEMROM\OS_IMAGEFILE\Q06CCPU-V-B_XXXXX-Y ^{*1}

* 1 XXXXX: First five digits of the serial No. of the C Controller module Y : Function version of the C Controller module

For the checking method of the serial No. and function version, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

 VXWorks image file copy destination Copy the VxWorks image files from C Controller module to the development environment (personal computer) by FTP. (FP Page 9-46, Section 9.8)

Table 9.8 Example of VXWorks image file copy destination

Model	File
Q06CCPU-V	C:\MELSEC\CCPU\Vx\Tools\
Q06CCPU-V-B	C:\MELSEC\CCPU\VxB\Tools\

3) When VxWorks image files are not identical

When the VxWorks image file in the development environment (personal computer) is not identical with that of the C Controller module, copy the image file from the C Controller module to the development environment (personal computer) via FTP. (FPP Page 9-46, Section 9.8)

When the VxWorks image files in the C Controller module and in Workbench are not identical, a system watchdog timer error may occur in the C Controller module. In addition, debugging cannot be performed normally.

Remark For other debugging methods, refer to the manual for Tornado.

(2) IP address setting of C Controller module

To debug the user program by connecting the development environment (personal computer) with the C Controller module in Ethernet, specify the IP address of the C Controller module to Tornado.

- 1) Start Tornado.
- 2) Select [Tools]→[Target Server]→[Configure] from the menu bar to open the "Configure Target Servers" dialog box.
- 3) Select "Back End" in the "Target Server Properties" pull-down menu.
- 4) Select "wdbrpc" from the "Available Back Ends" list.
- 5) In "Target Name/IP Address", set the IP address of the C Controller module to be connected.

As the IP address for the C Controller module, set the same value as in "IP address" in the <<Online operation>> tab of the C Controller setting utility.

6) Click the OK button.



Figure 9.7 IP address setting of the C Controller module

Remark For other debugging methods, refer to the manual for Tornado.

(3) Symbol information synchronization setting

To debug the user program, the symbol information of the C Controller module and that of the development environment (personal computer) must be synchronized.

- 1) Start Tornado.
- Select [Tools]→[Target Server]→[Configure] to open the "Configure Target Servers" dialog box.
- 3) Select "Core File and Symbols" in the "Target Server Properties" pull-down menu.
- 4) Check the "Synchronize Target/Host Symbol Tables" checkbox.
- 5) Click the OK button.

Configure Target Servers		
Target Server Descriptions		
Q06CCPU-V_09051-8		
Description Q06CCPU-V_09051-8 Bemove Add description to menu		
Target Server Name		
Target Server Properties Core File and Symbols	· · · 3	3)
C File Path From Target (If Available)		
Eile C:\MELSEC\CCPU\Vx\Tools\Q06CCPU-V		
Global Symbols O All Symbols O No Symbols		
Synchronize Target/Host Symbol Tables	· · · 4	I)
Object Module Format		
Target Name/IP Address 192.168.3.3		
Command Line		
tgtsvr.exe 192.168.3.3 -s -V -B wdbrpc -c C:\MELSEC\CCPU\Vx\Tools\Q06CCPU-V_09051-B		
OK Launch Cancel Help		

Figure 9.8 Symbol information synchronization setting

- Select [Tools]→[Options] from the menu bar to open the "Options" dialog box, and select the "Tornado Registry" tab.
- 7) Select the "Remote registry" radio button and specify the IP address or host name of the development environment (personal computer).
- 8) Click the OK button.



Figure 9.9 Development environment (personal computer) IP address setting

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Remark ••••••

For other debugging methods, refer to the manual for Tornado.

(4) Shell display setting

To display output information (such as printf) from each task of the C Controller module, the following setting is required.

Without the following setting, only the output information on the Shell task is displayed.

- 1) Start Tornado.
- Select [Tools]→[Target Server]→[Configure] to open the "Configure Target Servers" dialog box.
- 3) Select "Console and Redirection" in the "Target Server Properties" pull-down menu.
- 4) Check the "Redirect Target IO" checkbox.

5) Click the OK button.



Figure 9.10 Shell display setting

Remark For other debugging methods, refer to the manual for Tornado.

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(5) Precautions for Telnet connection

If the line is disconnected during use of Telnet, it cannot be reconnected until TCP connection including the Telnet on the C Controller module side is timed out. If this occurs, reconnect it after timeout.

The timeout time for the C Controller module side Telnet (TCP) connection can be changed by setting the values in the calculation formula by the following setting methods.

[Calculation formula]

The timeout time is determined by the following calculation formula.

Timeout time = tcp_keepidle + (tcp_keepintvl ÷ 2 × tcp_keepcnt) [s]		SING
	Initial value: 15000 (4 hours and 10 minutes)	MMING U API NS
tcp_keepidle:	Time from disconnection to the first retry (s)	GRAI orks / CTIO
	Initial value: 14400	PRO VXW
tcp_keepintvl:	Retry interval (in 0.5s units)	12
	Initial value: 150	
tcp_keepcnt:	Number of retries	SMA
	Initial value: 8	JGRA

[Setting method]

The following explains how to set the initial value to 4 hours and 10 minutes.

- Setting while the C Controller module is in operation
 - 1) Connect the line to the C Controller module with the Telnet tool.
 - 2) Set the following three external variables with the Telnet tool to change the timeout time to the initial value.

tcp_keepi	dle = 14400
tcp_keepi	ntvl = 150
tcp keep	cnt = 8

3) Close the Telnet connection.

• Setting at the timing of starting C Controller module

1) Describe the following three external variable settings on the script file, "STARTUP.CMD".

```
tcp_keepidle = 14400
tcp_keepintvl = 150
tcp_keepcnt = 8
```

- Write the above script file, "STARTUP.CMD" to a CompactFlash card, and insert it into the C Controller module.
- Upon start of the C Controller module, the timeout time is set to the initial value.

SAMPLE PROGRAMS

(6) Precautions for executing Shell commands from Tornado Shell or the Telnet tool

- 1) When executing the Shell command from Tornado Shell, pay attention to the following since the entered Shell commands operate on the task of priority 1 in the C Controller module.
 - Only alphanumeric characters and special characters can be used.
 - Some commands, such as those exclusively using the CPU module and those including characters other than alphanumeric characters and special characters, may be regarded as a command causing a watchdog timeout error, a control code (such as "CTRL + X"), or being garbled. As a result, a system error, such as a system watchdog timer error, or stop may occur in the C Controller module. Pay full attention to the command when entering it.

A VxWorks message may appear on the Telnet tool screen during a Telnet connection to the C Controller module.

For messages of VxWorks, refer to the manual for VxWorks or Tornado.

 When executing the Shell command from the Telnet tool Make one-to-one connection between the Telnet tool and the C Controller module.

Connection cannot be made from multiple Telnet tools to the same C Controller module.

When exchanging the Telnet tool with another, first close the connection with the currently used Telnet tool, and then connect the line to the C Controller module from another Telnet tool.

Pay attention to the following since the Shell commands entered by the Telnet tool of the development environment (personal computer) operate on the task of priority 2 in the C Controller module.

When using Shell commands, pay attention to the following.

- Only alphanumeric characters and special characters can be used.
- Some commands, such as those exclusively using the CPU module and those including characters other than alphanumeric characters and special characters, may be regarded as a command causing a watchdog timeout error, a control code (such as "CTRL + X"), or being garbled. As a result, a system error, such as a system watchdog timer error, or stop may occur in the C Controller module. Pay full attention to the command when entering it.

A VxWorks message may appear on the Telnet tool screen during a Telnet connection to the C Controller module.

For messages of VxWorks, refer to the manual for VxWorks or Tornado.

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PROGRAMMING USING MELSEC DATA LINK FUNCTIONS

PROGRAMMING USING VXWorks API FUNCTIONS

SAMPLE PROGRAMS

EVENT NUMBER LIST

3) When executing the Shell command from Tornado Shell or the Telnet toolExecution of VxWorks reboot command

Do not reboot VxWorks by executing the reboot function or pressing the CTRL + X keys.^{*1}

If VxWorks is rebooted, the C Controller module does not start properly. Reset it in the C Controller module.

For resetting, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

- * 1 Do not enter characters other than alphanumeric characters or special characters in Shell either since they may be regarded as a control code.
 - Execution of command without argument specified If a command that requires an argument is executed without any argument specified, 0 is substituted for the argument. Some commands may cause a system error or stop (such as a system watchdog timer error) in the C Controller module. Before executing a command, confirm the specifications and specified argument of the command.

Example)

Do not execute the close command without the argument specified. If executed, the resource reserved in the VxWorks system will be closed.

9.8 Program Registration

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B
<u> </u>	\bigcirc	

To register respective file to the C Controller module, write the file to a standard RAM or standard ROM of the C Controller module or a CompactFlash card.

Table	9.9	How	to	write	to	each	drive
labic	0.0		w		w	ouon	41110

Writing method		Program storage location			
		Standard ROM	CompactFlash card	RAM disk (When creating a RAM disk)	
Registration via FTP	0	0	0	0	
Copy registration from CompactFlash card	0	0	×	0	
Copy registration from development environment (personal computer) to CompactFlash card	×	×	0	×	

O: Available, X: N/A

Before registering a file to the standard RAM, standard ROM, or a CompactFlash card, close all the tasks running on the C Controller module.

(1) Registration via FTP

This section explains file registration to the C Controller module via FTP.

(a) Drives and operations allowed via FTP

The following table indicates the drive names and operations allowed for registration via FTP.

Drive	Drive name	Operation
Standard RAM	/RAM	Write/read available
Standard ROM	/ROM	Write/read available
CompactFlash card	/CF	Write/read available
System drive	/SYSTEMROM	Only read available
RAM disk (When creating a RAM disk) ^{$*2$}	/RAMDISK ^{*1}	Write/read available

Table 9.10 Drives available for FTP

* 1 This drive name is for the sample program (MakeRAMDisk.c).

Do not use "/RAM", "/ROM", "/CF", or "/SYSTEMROM" for a drive name of a RAM disk. The system may not operate properly if any of the above name is used.

* 2 The RAM disk drive name is not displayed in Windows[®] Explorer for the following C Controller module.

- Q12DCCPU-V with serial number (first five digits) "12041" or earlier
- The Q06CCPU-V(-B) with the serial No. (first five digits) "12081" or higher.
- For the above C Controller module, enter the drive name directly in the address field of Explorer.
- Example) When the RAM disk drive name is "/RAMDISK," enter the following. ftp://192.168.3.3/RAMDISK

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PROGRAMMING USING MELSEC DATA LINK FUNCTIONS

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SAMPLE PROGRAMS

(b) Login user when using FTP

The following indicates the login user data (user name, password) when using FTP.

Table 9.11 Login user detaults		
Item	Value	
User name	"target"	
Password	"password"	

For addition or change of the login user etc. other than above, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

- (c) Precautions for program registration via FTP
 - 1) Login user setting

The user login setting of the C Controller module is for limiting users and setting operation of the C Controller module. It does not completely prevent illegal access from the outside.

- When security against illegal access from the outside is needed Take measures at user's discretion when it is necessary to secure the safety of the C Controller system against illegal access from the outside.
 (FF C Controller Module User's Manual (Hardware Design, Function Explanation)
- 3) When registering by overwriting using FTP
 Before registering a file of the C Controller module by overwriting using FTP, close the file being opened by a user program.
 If the registering the file by overwriting without closing them, the registration may fail.
- Number of FTP tools that are simultaneously connectable Up to 10 FTP tools can be simultaneously connected to the C Controller module.

Connection may become unavailable if the FTP tool is repeatedly used since Windows[®] Explorer does not immediately disconnect the connection when terminated.

When a connection is not available in Explorer, perform either of the following.

- Terminate Explorer from Windows[®] Task Manager.
- Reconnect 200 seconds after terminating Explorer.
- Use the FTP tool other than in Explorer.

- 5) Precautions for Internet Explorer6 Service Pack2
 - When the following dialog box appeared, restart Internet Explorer6 Service Pack2 or use another FTP tool.

FTP Fol	der Error
8	An error occurred opening that folder on the FTP Server. Make sure you have permission to access that folder. Details: 250 Changed directory to "/RAM" 200 Type set to A, ASCII mode
	OK.

- Figure 9.11 Dialog box
- When the file is not displayed in Internet Explorer6 Service Pack2 after registering it to the C Controller module, update the information by pressing the [F5] key.

If the file is found not registered, check the free space of the registration destination.

- When too many files are registered into the directory created in the C Controller module, the total size may not be displayed correctly. In this case, use another FTP tool.
- (d) Registration procedure using FTP

The following indicates an example procedure of a registration of a user program via FTP using Windows[®] Explorer.

1) Start Explorer and enter the address of the C Controller module into the Address bar in the following format.

ftp://<User name>:<Password>@<IP address of the C Controller module> <Drive name.>

 Example) When logging into the standard RAM using the settings for module initialization of the Q12DCCPU-V ftp://target:password@192.168.3.3/RAM 2) The screen display after logging in to the C Controller module is as follows.



- Figure 9.12 Connection via FTP
- 3) After logging in to the C Controller module, perform write and read just as normal file operations in Explorer.

SH7750gnule_DEBUG	*1	🕸 ftp://192.168.3.3/RAM/	
Eile Edit View Favorites Iools Help 🥂		<u>File E</u> dit <u>Vi</u> ew F <u>a</u> vorites <u>T</u> ools <u>H</u> elp	A.
🚱 Back 🝷 🕤 - 🏂 🔎 Search 🎼 Folders 🛄 -		🔇 Back 🔹 🕥 🕤 🎓 Search 🎼 Folders 🔛 -	
Address 🛅 C:\WindRiver\workspace\UserProject\SH7750gnule_DEBUG 🛛 🛛 🏹 Go		Address 👰 ftp://192.168.3.3/RAM/	💌 🄁 Go
File and Folder Tasks File and Folder Tasks File and Folder Tasks File Sample.d		Other Places	
Move this file DesProject.out Gopy this file DesProject_partialImage.o	 /	My Documents	
Drag & drop to trans	sfer a file.	Details	
Other Places			
My Documents My Computer			
Type: OUT File Date Modified: 4/21/2009 7:42 PM Size; 1.54 KB 🛛 繴 My Computer 🧮		User: target 🌒 Internet	

Figure 9.13 File operation

1. Other than Explorer, registration via FTP is available by Internet Explorer and the FTP command which is started up from command prompt.

(For error messages of Internet Explorer, go to Microsoft[®] Help and Support, enter keyword such as "Internet Explorer" and "FTP", and check the information.)

2. If registration by FTP fails when using Internet Explorer7, use other FTP tools such as Explorer.



(2) Copy registration from a CompactFlash card to the standard RAM

The following explains copy registration of the files in the CompactFlash card to the standard RAM of the C Controller module.

This operation is not available on the Q06CCPU-V(-B).

This operation allows to easily register the same user programs to multiple C Controller modules.

In the following copy registration procedure, an example with "STARTUP.CMD" is used as a script file for installation into the standard RAM.

- (a) Copy registration procedure from CompactFlash card to standard RAM
 - 1) Install the CompactFlash card into the development environment (personal computer) and write the following files to it.

Table 9.12 Wri	tten file list
----------------	----------------

File name	Description
STARTUP.CMD	Script file for installation into the standard RAM
STARTUP.RAM	Script file to be used in the standard RAM
*******.out	User program to be used in the standard RAM

- 2) Remove CompactFlash card from the development environment (personal computer), and install it in the C Controller module.
- 3) Power on the C Controller module.
- 4) The installation script file "STARTUP.CMD" in the CompactFlash card is started and each file in the CompactFlash card is copied to the standard RAM of the C Controller module.
- 5) When copying is completed, the "sysLedSet" command is executed, and "FF" is displayed in the 7-segment LED.
- 6) After confirming that "FF" is displayed in the 7-segment LED, power off the C Controller module and remove the CompactFlash card.
- 7) When the C Controller module is powered on, the script file copied into the standard RAM is started and a user program is executed.
- (b) Program example of script file for installation into standard RAM



- 1) The user program "project.out" in the CompactFlash card is copied as the user program "project.out" of the standard RAM.
- 2) The script file for standard RAM "STARTUP.ROM" in the CompactFlash card is copied as the script file "STARTUP.CMD" of the standard RAM.
- Describe the command "sysLedSet(0xFF)" at the end of the installation script file for confirmation of the completion of the copy.

Figure 9.14 Program example of a script file for installation
PROGRAMMING USING BUS INTERFACE FUNCTIONS

MELSEG Q series

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PROGRAMMING USING MELSEC DATA LINK FUNCTIONS

PROGRAMMING USING VxWorks API FUNCTIONS

SAMPLE PROGRAMS

EVENT NUMBER LIST

9.9 Creating a Script File "STARTUP.CMD"

Q12DCCPU-V Q06CCPU-V Q06CCPU-V-B

(1) Definition of script file

"STARTUP.CMD" is a script file of a user program which starts in booting up of the C Controller module, and it contains the loading location, startup order, parameter setting, etc. of the user program.



Figure 9.15 Script file is stored into the standard RAM or standard ROM

(2) Precautions for creating a script file

(a) Restrictions on command description

In the script file, only one command can be described in one line.

For the Q06CCPU-V(-B), up to 128 characters can be specified in one command (in one line).

If more than 128 characters are specified, the following stop error occurs.

Other (error code: 2502, CAN'T EXE.PRG.)
 The error (event No.:0xC0000111) is registered to the event history. (Free Page 13-5, CHAPTER 13 (6))

- (b) Argument that can be specified for one command.Up to 12 arguments can be specified for one command.
- (c) When C++ function is executed in a script file
 Describe the function declaration part of C++ source code as follows.
 extern "C" { Function declaration part }
- (d) At user program start
 Describe a command that starts the task (priority 100 to 255) when the user program is executed.
 The system may malfunction if the user program is executed without the task being started.
- (e) Description of comment statement
 To describe a comment statement, describe "//" at the beginning of a command (line).

The line where "//" has been described is handled as a comment statement. No restrictions are applied on the number of characters in a comment statement. (f) Task activation

Always specify the VX_FP_TASK option for the third argument of taskSpawn when activating a task that:

- Performs floating-point operations.
- Calls a function that returns a floating-point value.
- Calls a function that takes a floating-point value as an argument.

If the above task is activated without the VX_FP_TASK option specified, the operating system may run away.

Use the following value when specifying a VX_FP_TASK option for the third argument of taskSpawn in a script file.

Table	9.13	VX	FP	TASK	values
		_		_	

C Controller module	VX_FP_TASK value		
Q12DCCPU-V	0x1000000		
Q06CCPU-V(-B)	0x8		

Example) When activating the "funcA" function with the VX_FP_TASK option specified: < For the Q12DCCPU-V>

taskSpawn("taskA",100,0x1000000,20000,funcA,0,0,0,0,0,0,0) <For the Q06CCPU-V(-B)>

taskSpawn("taskA",100,0x8,20000,funcA,0,0,0,0,0,0,0)

For details on the VX_FP_TASK option, refer to the following.

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Remark ••••••

- Depending on the description in the script file, the following operation can be performed from the CompactFlash card to the standard RAM or standard ROM (excluding the Q06CCPU-V-B).
 - Copy registration of a program to the standard RAM or standard ROM (
 - Standard RAM and standard ROM formatting (C Controller Module User's Manual (Hardware Design, Function Explanation))
- 2. Commands described in a script file are identical with those described in the startup script file for VxWorks. (
- 3. The RUN LED of the C Controller module flashes while the script file (command) is in process.
- 4. For precautions for the user program, refer to the following.
 - Page 9-23, "9.5 Programming Flow for Bus Interface Functions" Page 9-26, "9.6 Precautions for Functions"

Page 10-5, "10.5 MELSEC Data Link Function Programming Flow" In the script file, describe commands used for login user setting (addition/ change) and user program task start as necessary. For login user, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

The script file can be stored into the standard RAM, standard ROM, and CompactFlash card.

- (a) Script file storage location
 Store the script file in the root directory.
 - Standard RAM
 - Root directory of standard RAM "/RAM"
 - Standard ROM
 - Root directory of standard ROM "/ROM"
 - CompactFlash card Root directory of CompactFlash card "/CF"
- (b) When a script file is stored into either the standard RAM or standard ROM and CompactFlash card

When a script file is stored into either the standard RAM or standard ROM and CompactFlash card, the one in the CompactFlash card is started by priority. (The script file in the standard RAM or standard ROM is ignored.)

For example, the script file used for maintenance can be processed by installing the Compact Flash card with a maintenance script file stored, even when the script file in the standard RAM or standard ROM is used for system operation.





Figure 9.16 Example of the use when script files are stored in both locations

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(4) Example of script file description

The following provides an example of describing the script file to start user programs on the Q12DCCPU-V.

(a) When loading the user program from the script file in the standard RAM The following is an example of loading a user program ("fileA.out", "fileB.out") in the standard RAM from the script file in the standard RAM.

<Stored files>



<Task settings>

Startup order	Task name	Priority	Stack size (byte)	Function name	Argument specification	File storage location
1	Default: tN (N=1, 2,)	Default: 100	Default: 20000	funcA	None	/RAM/DirA/fileA.out
2	taskB	120	5000	funcB	Specified (First argument: 10)	/RAM/DirB/fileB.out

<example description="" file="" of="" script=""></example>	1
Id (1, 0, "/RAM/DirA/fileA.out")	<u> </u>
Id (1, 0, "/RAM/DirB/fileB.out")	<u> </u>
sp (funcA, 0, 0, 0, 0, 0, 0, 0, 0, 0)	- 3)
taskSpawn ("taskB", 120, 0, 5000, funcB,10, 0, 0, 0, 0, 0, 0)	<u> </u>

1) The "fileA.out" file is loaded from the standard RAM "DirA" directory.

2) The "fileB.out" file is loaded from the standard RAM "DirB" directory.

3) The "funcA" function is generated under the default task name (t1).

4) The "funcB" function is generated under the task name "taskB".

Figure 9.17 Example of script file description (loaded from standard RAM)

Since the maximum number of arguments to be specified for one command is 12, up to seven arguments can be given to the function entry specified in taskSpawn (funcB in the above example).

The task will not start if eight or more arguments are specified for the function entry specified in task Spawn (funcB in the above example).

 (b) When loading the user program from the script file in CompactFlash card The following provides an example of loading user programs ("fileA.out", "fileB.out") in the standard RAM and CompactFlash card from the script file in the CompactFlash card.





*1 "funcA" function already included in fileA.out *2 "funcB" function already included in fileB.out

<Task settings>

Startup order	Task name	Priority	Stack size (byte)	Function name	Argument specification	File storage location
1	Default: tN (N=1, 2,)	Default: 100	Default: 20000	funcA	None	/CF/DirA/fileA.out
2	taskB	120	5000	funcB	Specified (First argument: 10)	/RAM/DirB/fileB.out

i	Script file description example>	I
	ld (1, 0, "/CF/DirA/fileA.out") ◀	- 1)
	Id (1, 0, "/RAM/DirB/fileB.out")	2)
	sp (funcA, 0, 0, 0, 0, 0, 0, 0, 0, 0)	
	taskSpawn ("taskB", 120, 0, 5000, funcB,10, 0, 0, 0, 0, 0, 0)	<u> </u>
		1

1) The "fileA.out" file is loaded from the CompactFlash card "DirA" directory.

2) The "fileB.out" file is loaded from the standard RAM "DirB" directory.

3) The "funcA" function is generated under the default task name (t1).

4) The "funcB" function is generated under the task name "taskB".

Figure 9.18 Example of script file description (loaded from CompactFlash card)

Since the maximum number of arguments to be specified for one command is 12, up to seven arguments can be given to the function entry specified in taskSpawn (funcB in the above example).

The task will not start if eight or more arguments are specified for the function entry specified in task Spawn (funcB in the above example). PROGRAMMING USING BUS INTERFACE UNCTIONS

MELSEG Q series

9.10 Device Types for Bus Interface Functions



The device types used for the bus interface functions can be specified either by the code number or device name indicated in this section.

(1) Motion CPU dedicated device types

The motion CPU dedicated device types can be specified in the argument sDevType of the QBF_MotionDDWR, QBF_MotionDDRD function.

Device type		rpe		
Code spe	ecification	Device name	Device	
Dec.	Hex.	specification ^{*1}		
1	1н	QBFDev_MCPU_X	Input (X)	
2	2н	QBFDev_MCPU_Y	Output (Y)	
3	Зн	QBFDev_MCPU_L	Latch relay (L) ^{*2}	
4	4н	QBFDev_MCPU_M	Internal relay (M)	
5	5н	QBFDev_MCPU_SM	Special relay (SM) ^{*3}	
6	6н	QBFDev_MCPU_F	Annunciator (F)	
13	Dн	QBFDev_MCPU_D	Data register (D)	
14	Ен	QBFDev_MCPU_SD	Special register (SD) ^{*4}	
23	17н	QBFDev_MCPU_B	Link relay (B)	
24	18н	QBFDev_MCPU_W	Link register (W)	
61	3Dн	QBFDev_MCPU_MR	Motion register (#)	

Table 9.14 Motion CPU dedicated device types

* 1 The device name specification (macro) is defined in the include file "QbfFunc.h" of the bus interface function. (

* 2 For the Q172DCPU and Q173DCPU, L (latch relay) cannot be used.

* 3 When SM (special relay) is specified in sDevType, the ulDevNo specification is as follows. [When using the Q172DCPU or Q173DCPU]

0 to 1999 (SM2000 to SM2255 are SM compatibility areas in the Motion CPU other than the Q172DCPU and Q173DCPU.)

[When using the Motion CPU other than the Q172DCPU and Q173DCPU]

0 and higher (corresponds to M9000 and higher areas in the Motion CPU)

* 4 When SD (special register) is specified in sDevType, the ulDevNo specification is as follows. [When using the Q172DCPU or Q173DCPU]

0 to 1999 (SD2000 to SD2255 are SD compatibility areas in the Motion CPU other than the Q172DCPU and Q173DCPU.)

[When using the Motion CPU other than the Q172DCPU and Q173DCPU]

0 and higher (corresponds to M9000 and higher areas in the Motion $\ensuremath{\mathsf{CPU}}\xspace$)

(2) Device types for accessing CC-Link IE Controller Network modules or MELSECNET/H modules

Specify the device type for accessing a CC-Link IE Controller Network module or MELSECNET/H module with the argument QBF_WriteLinkDevice or QBF_ReadLinkDevice function.

In the user program, either of the following two link device accessing methods can be selected by specifying the device.

(a) Internal buffer access

Table 9.15 Device types for internal buffer access

Device type		ре		
Code specification		Device name	Device	
Dec.	Hex.	specification ^{*1}		
1	1н	QBFDev_LXBuf	Link input internal buffer (LX buffer)	
2	2н	QBFDev_LYBuf Link output internal buffer (LY buffer)		
23	17н	QBFDev_LBBuf	Link relay internal buffer (LB buffer)	
24	18н	QBFDev_LWBuf	Link register internal buffer (LW buffer)	

* 1 The device name specification (macro) is defined in the include file "QbfFunc.h" of the bus

interface function. (

(b) Direct access

Table 9.16 Device types for internal direct access

Device type		9		
Code spe	cification	Device name	Device	
Dec.	Hex.	specification ^{*1}		
1000	3Е8н	QBFDev_LX	Direct link input (LX)	
2000	7D0н	QBFDev_LY	Direct link output (LY)	
23000	59D8н	QBFDev_LB	Direct link relay (LB) ^{*2}	
24000	5DC0н	QBFDev_LW	Direct link register (LW) ^{*2}	
25000	61А8н	QBFDev_LSB	Direct link special relay (SB)	
28000	6D60н	QBFDev_LSW	Direct link special register (SW)	

* 1 The device name specification (macro) is defined in the include file "QbfFunc.h" of the bus

interface function. (

* 2 Only CC-Link IE Controller Network modules can access to the areas of LB4000 and higher and LW4000 and higher.

9

(3) Device types for internal user or system device access

The device type for access to the internal user device or the internal system device can be specified with an argument, sDevType, of the following functions.

- QBF_WriteDevice
- QBF_ReadDevice
- QBF_SetDevice
- QBF_ResetDevice
- QBF_WriteDevice_ISR
- QBF_ReadDevice_ISR
- QBF_SetDevice_ISR
- QBF_ResetDevice_ISR

Table 9.17 Device types for internal user or system device access

Device type		9		
Code specification Device name		Device name	Device	
Dec.	Hex.	specification ^{*1}		
4	4н	QBFDev_CCPU_M	Internal relay (M)	
5	5н	QBFDev_CCPU_SM	Special relay (SM)	
13	Dн	QBFDev_CCPU_D	Data register (D)	
14	Ен	QBFDev_CCPU_SD	Special register (SD)	

* 1 The device name specification (macro) is defined in the include file "QbfFunc.h" of the bus

interface function. (Page 9-9, Section 9.4)

1. Use the internal link device buffers (LX buffer, LY buffer, LB buffer, and LW buffer) by setting the following items and refresh them with link devices (LX, LY, LB, and LW).

Table 9.18 Setting	link device refresh	cvcle and ranges
		.,

Network	Item	Reference page
CC-Link IE Controller	Link device refresh cycle	Page 7-23, Section 7.5 (2)
Network	Refresh parameters	Page 7-27, Section 7.5 (4)
	Link device refresh cycle	Page 6-27, Section 6.6 (2)
MELOCONCI/II	Refresh parameters	Page 6-33, Section 6.6 (4)

 The link devices (SB, SW) are accessible only by direct access. The internal link device buffers cannot be used for access since the setting of the CC IE Control utility or MELSECNET/H utility (setting of link device refresh cycle and ranges) does not enable the refresh.



Manual (Hardware Design, Function Explanation).

PROGRAMMING USING MELSEC DATA LINK FUNCTIONS

CHAPTER 10 PROGRAMMING USING MELSEC DATA LINK FUNCTIONS



When applying program examples introduced in this chapter into actual systems, fully examine the applicability, and confirm that they do not cause system control problems.

10.1 Outline of MELSEC Data Link Functions

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B
0		
	\square	\square

To access and control a programmable controller CPU and each module in a user program, the functions provided by SW3PVC-CCPU must be used.

(1) The following indicates features of bus interface functions.

- 1) Access to the programmable controller CPU that is in the same system as the C Controller module.
- 2) Access to the programmable controller on another station via CC-Link module(s) controlled by the C Controller module.
- Access to the programmable controller on another station via CC-Link module(s) or MELSECNET/H module(s) controlled by the C Controller module.
- Message exchange with the following modules or personal computers via CC-Link IE Controller Network module(s) or MELSECNET/H module(s) controlled by the C Controller module.
 - C Controller module (another station)
 - Programmable controller (another station)
 - Personal computer equipped with MELSECNET/H board (only via MELSECNET/H module(s))

The system illustration below represents a system image based on the features described on the previous page. Intelligent function module CC-Link module I/O modules CC-Link IE Controller Q06CCPU-V Network module or MELSECNET/H module Programmable Programmable controller CPU controller CPU ⊕ ⊕ ⊕ 6 1) 2 3) to 4 Motion CPU CC-Link IE Controller Network or MELSECNET/H CC-Link module Programmable controller CPU ۲ @ 2

Figure 10.1 MELSEC data link function image

CC-Link

MELSEG Q series

PROGRAMMING USING BUS INTERFACE FUNCTIONS

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SAMPLE PROGRAMS

EVENT NUMBER LIST

MELSEC **Q** series

No. Communic		Communication	Setting of Device monitoring		Desmarker	
Arrow	Access target	given	path	Utility Channel name	Station	Remarks
4	Programmable controller CPU	1)	Q series bus	12: Q series bus interface	Other sta.	—
	C Controller module	_	Q series bus	12: Q series bus interface	Own sta.	Only CPU shared memory accessible
	CC-Link module (own station)	_	CC-Link	8n: CC-Link (Channel No.8n) ^{*1}	Own sta.	_
	Programmable controller CPU (other station)	2)	CC-Link	8n: CC-Link (Channel No.8n) ^{*1}	Other sta.	Station No.: 0 to 63 (access to control CPU of other station CC-Link module)
	Programmable controller CPU (other station in multiple CPU system)	2)	CC-Link	8n: CC-Link (Channel No.8n) ^{*1}	Other sta.	Station No.: 65 to 239 ^{*2} (access to CPU that does not control other station CC-Link module)
(LIII)	MELSECNET/H module (host station) CC-Link IE Controller Network module (own station)	_	MELSECNET/H CC-Link IE Controller Network	5n: MELSECNET/H (Channel No.5n) ^{*3} 15n: CC-Link IE Controller Network (Channel No.15n) ^{*4}	Own sta.	_
		nmable controller	MELSECNET/H	5n: MELSECNET/ H(Channel No.5n) ^{*3}	Other	Station No.: 1 to 64 (access to control CPU of other station MELSECNET/H module)
(other station)	3), 4)	CC-Link IE Controller Network	15n: CC-Link IE Controller Network (Channel No.15n) ^{*4}	sta.	Station No.: 1 to 120 (access to control CPU of other station CC-Link IE Controller Network module)	
CF mu	Programmable controller CPU (other station in 3), 4 multiple CPU system)		MELSECNET/H	5n: MELSECNET/H (Channel No.5n) ^{*3}	Other	Station No.: 65 to 239 ^{*5} (access to CPU that does not control other station MELSECNET/H module)
		3), 4) CC-Link IE Controller Network	CC-Link IE Controller Network	15n: CC-Link IE Controller Network (Channel No.15n) ^{*4}	sta.	Station No.: 65 to 239 ^{*6} (access to CPU that does not control other station CC-Link IE Controller Network)

Table 10.1 Access targets of MELSEC data link functions

* 1 "n" indicates the last digit of the channel No. set in the CC-Link utility.

* 2 The logical station No. must be set in the <<Target settings>> tab of the CC-Link utility to access the CPU that does not control other station CC-Link module.

 * 3 "n" indicates the last digit of the channel No. set in the MELSECNET/H utility.

* 4 "n" indicates the last digit of the channel No. set in the CC IE Control utility.

* 5 The logical station No. must be set in the <<Target settings>> tab of the MELSECNET/H utility to access the CPU that does not control the other station MELSECNET/H module.

* 6 The logical station No. must be set in the <<Target settings>> tab of the CC IE Control utility to access the CPU that does not control the other station CC-Link IE Controller Network module.

10.2 MELSEC Data Link Function List

Q12DCCPU-V Q06CCPU-V Q06CCPU-V-B

1)01200000111

MELSEC **Q** series

2)00600011

Q

PROGRAMMING USING BUS INTERFACE FUNCTIONS

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, USING

PROGRAMMING USING VxWorks API FUNCTIONS

SAMPLE PROGRAMS

EVENT NUMBER LIST

Table 10.2 MELSEC data link function list

			-v 2)Q00	
Category Eulerion name Description		Description	Availa	ability
Calegory	Function name	Description	1)	2)
Open/close	mdOpen	Opens a communication line.	0	0
Open/close	mdClose	Closes a communication line.	0	0
Remote control	mdControl	Remote operations (RUN/STOP/PAUSE) of the programmable	0	0
		controller CPU.))
CPU model read	mdTypeRead	Reads the model name of the programmable controller CPU.	0	0
	mdSond	•Batch writes devices.	0	0
	IndSend	 Sends messages (SEND function) 	0	
	mdSendEx	Batch writes devices. (Extended function)	0	0
	mdReceive	•Batch reads devices.	0	0
		•Receives messages. (RECV function)	0	0
	mdReceiveEx	Batch reads devices. (Extended function)	0	0
D .	mdDevSet	Sets bit devices.	0	0
Device access	mdDevSetEx	Sets bit devices. (Extended function)	0	0
	mdDevRst	Resets bit devices.	0	0
	mdDevRstEx	Resets bit devices. (Extended function)	0	0
	mdRandR	Reads devices randomly.	0	0
	mdRandREx	Reads devices randomly. (Extended function)	0	0
	mdRandW	Writes devices randomly.	0	0
	mdRandWEx	Writes devices randomly. (Extended function)	0	0
Initialize	mdInit	Refreshes the programmable controller device address table.	0	0

O: Available, ×: N/A

For details of the MELSEC data link functions, refer to the MELSEC data link function HELP of SW3PVC-CCPU.

10.3 Programming Procedure



For details of programming procedures, refer to the following.

10.4 Creating a New Project of User Program and Compiling



For details of creating a new project of user program and compiling, refer to the following.

10.5 MELSEC Data Link Function Programming Flow

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B
0		

(1) **Programming flow**

The following flowchart shows the procedure for programming using the MELSEC data link functions.



For details of precautions for each process, refer to the following.

Page 10-6, "10.5 (2) (a) Precautions for programming"

Figure 10.2 Programming using MELSEC data link functions

PROGRAMMING USING BUS INTERFACE FUNCTIONS

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PROGRAMMING USING VXWorks API FUNCTIONS

(2) Precautions for using MELSEC data link functions

- (a) Precautions for programming
 - Opening and closing of communication lines (1)
 Opening and closing of a communication line (mdOpen and mdClose functions) is allowed only once each at the start (task start) and the end (task end) of the user program task.
 Repeating opening and closing for every communication degrades communication performance.
 - 2) Execution time for initial execution (2)
 When a device is added, the function collects information of the programmable controller in detail at first execution, which increases the execution time.
 To avoid the increase, make dummy access to each target in advance.
 - 3) MELSEC data link function execution in multiple tasks (3) The MELSEC data link functions cannot be simultaneously processed in multiple tasks within the C Controller module. When processing by the MELSEC data link function are requested simultaneously in multiple tasks, one of the tasks starts its processing and the other tasks will be in waiting status since the processing is performed one at a time.

Create a program that completes all preparatory processing (3) first and then execute the main processing (4).

4) Accessing to other station (4)

When accessing other station from the C Controller module via any of the following, one of the communication processing starts and the others will be in the waiting status.

- · Q series bus interface
- CC-Link IE Controller Network module
- MELSECNET/H module
- CC-Link module

Note that if one communication processing times out, the other communication processing may time out.

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- (b) Precautions for accessing to CC-Link module own station devices and other station programmable controller devices.
 When accessing via CC-Link module, provide interlocks according to the link states of the own and other stations.
 - 1) Access to own station device

Create a user program that provides interlocks to enable write to/read from the own station device.

Data take effect only when the following conditions are satisfied.

- Module error (Xn0) is off (normal)
- Own station link status (Xn1) is off (in data link)
- Module ready (XnF) is on (operable)

Write to/read from the own station is terminated normally irrespective of the above conditions.

2) Transient access to other stations (other station programmable controller CPU remote operation and device access)

Create a user program that allows to access under the following conditions, in addition to the interlocks for own station device access.

- Data link status of the access target station (Bits corresponding to a communication target station of SW80 to 83, which are read from the own station) is off (normal communication).
- (c) Precautions for access to MELSECNET/H module host station devices and other station programmable controller devices When accessing via MELSECNET/H module, provide interlocks according to the

When accessing via MELSECNET/H module, provide interlocks according to the link status of the host station.

1) Access to host station device

Create a user program that provides interlocks to enable write to/read from the host station devices.

Data take effect only when the following conditions are satisfied.

- Module status (SB20) is off (normal)
- Baton pass status of the host station (SB47) is off (normal)
- Data link status of the host station (SB49) is off (in data link)

Write to/read from the host station is terminated normally irrespective of the above conditions.

2) Transient access to other stations (other station programmable controller CPU remote operation and device access)

Create a user program that makes access when any of the following conditions is satisfied, in addition to the interlocks for the host station device access.

- Baton pass status of the access target station (Bits corresponding to a communication target station of SW70 to 73, which are read from the host station) is off (normal communication).
- Data link status (Bits corresponding to the communication target station of SW74 to 77, which are read from the host station) is off (normal communication).

- (d) Precautions for access to CC-Link IE Controller Network module own station devices and other station programmable controller devices
 When accessing via a CC-Link IE Controller Network module, provide interlocks according to the link status of the own station.
 - 1) Access to own station devices

Create a user program that provides interlocks to enable write to/read from the own station device.

Data take effect only when the following conditions are satisfied.

- Data link status of own station (SB49) is off (in data link)
- Data link status (Bits corresponding to the communication target station of SWB0 to B7, which are read from the own station) is off (normal communication).

Write to/read from the own station is terminated normally irrespective of the above conditions.

 Transient access to other stations (other station programmable controller CPU remote operation and device access)

Create a user program that allows to access under the following conditions, in addition to the interlocks for own station device access.

- Baton pass status of own station (SB47) is off (normal)
- Baton pass status of the access target station (Bits corresponding to the communication target station of SWA0 to A7, which are read from the own station) is off (normal communication)
- (e) Other precautions
 - 1) Time out value setting for MELSEC data link function
 - When either of the following problems occur, change the communication timeout value for the MELSEC data link function in C Controller setting utility. (\bigcirc Page 4-28, Section 4.6 (3) (c))
 - Frequent communication timeouts due to line congestion.
 → Increase the timeout value
 - To allow communication timeout at shorter timing
 - \rightarrow Decrease the timeout value

When the above problems do not occur, operate by default setting.

Detailed settings(192.168.3.3(Default))	×
IP address Clock MD function Option	
MD function timeout value	
Q series bus interface(Channel No.12) 5. Sec.	
MELSECNET/H (Channel No.51 to 54) 15-	
CC-Link (Channel No.81 to 88) 30 ^{-±} / _± Sec.	
CC-Link IE Controller Network (Channel No.151 to 154) 15-	
DefadįSet	
Egit	

Figure 10.3 MD function communication timeout value setting screen

PROGRAMMING USING BUS INTERFACE FUNCTIONS

10

MMING USING DATA LINK

PROGRAMMING USING VXWorks API FUNCTIONS

10.6 Precautions for the MELSEC Data Link Function



For details of precautions for the MELSEC data link function, refer to the following.

10.7 Precautions for Program Debugging

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B

For details of precautions for program debugging, refer to the following.

10.8 Program Registration



For details of program registration, refer to the following.

10.9 Creating a Script File "STARTUP.CMD"

1	Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B
l		\bigcirc	

For details of creating a script file "STARTUP.CMD", refer to the following.

10.10 Channel

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B
		L X

No.	Channel name	Description
12	Q series bus interface	Used when communication is performed via a bus.
		Used when communication is performed via a MELSECNET/H module controlled by the C
	MELSECNET/H	Controller module.
51 to 54	(Channel No.51 to 54)	Channel No. is set for each target module in the < <parameter settings="">> tab of</parameter>
		MELSECNET/H utility. (
		Used when communication is performed via CC-Link module controlled by the C
	CC-Link	Controller module.
81 to 88	(Channel No.81 to 88)	Channel No. is set for each target module in the < <parameter settings="">> tab of CC-Link</parameter>
		utility. (🖅 Page 5-11, Section 5.5)
		Used when communication is performed via CC-Link IE Controller Network module
151 to 154	CC-Link IE Controller Network	controlled by the C Controller module.
	(Channel No.151 to 154)	Channel No. is set for each target module in the < <parameter settings="">> tab of CC IE</parameter>
		Control utility. (

Table 10.3 Channels used for MELSEC data link functions

MELSEG Q series

MELSEC Q series

9 PROGRAMMING USING BUS INTERFACE FUNCTIONS 10.11 Station No. Setting for MELSEC Data Link Functions Q06CCPU-V-B 0 0 10 (1) Functions other than extended functions Table 10.4 Functions other than extended functions Communication Station No. specification Own station: 255 (FFн)^{*1} Q series bus interface Other station: 1 (CPU No.1), 2 (CPU No.2), 3 (CPU No.3), 4 (CPU No.4) Own station: 255 (FFH) CC-Link IE Controller Network Other station: Page 10-10, Section 10.11 (1) (a) PROGRAMMING USING VXWorks API FUNCTIONS Host station: 255 (FFH) MELSECNET/H Other station: Page 10-10, Section 10.11 (1) (a) Own station: 255 (FFH) Other station: 0 (0H) to 63 (3FH), 65 (41H) to 239 (EFH) CC-Link Page 10-11, Section 10.11 (1) (b) 1 Transmission to the C Controller module (own station) using a MELSEC data link function may take a longer time than the one using a bus interface function. Use bus interface functions when creating a user program for which performance quality is SAMPLE PROGRAMS required (such as a control program). (a) Station No. setting for CC-Link IE Controller Network module (other station) and MELSECNET/H (other station) Network No 1(1_H) to 239(EF_H): When specifying the other station in the local network or a station in other network (When making a send request to CC-Link IE Controller Network, MELSECNET/H or EVENT NUMBER LIST MELSECNET/10) Station No., group No. or all stations 1(1н) to 120(78н) : Other stations 129(81H) to 160(A0H): Group No.1 to 32 Upper Lower Group No.1 to 9 (129(81H) to 137(89H)) are used in the MELSECNET/10 mode when the target CPU is the QnACPU. 240(F0_H) : All stations (Available only when the SEND function (mdSend) is used.) <Logical station No. setting method> Set "0" in the upper byte (network No.) and a logical station No. in the lower byte (station No.). <Setting range of logical station No.> Set it in the target settings of the MELSECNET/H utility, CC IE Control utility. 65 (41H) to 239 (EFH): MELSECNET/H communication 65 (41H) to 239 (EFH): CC-Link IE Controller Network communication (Friend Page 6-39, Section 6.7, Page 7-34, Section 7.6) Figure 10.4 Station No. setting for CC-Link IE Controller Network module and MELSECNET/H module





(b) Station No. setting for CC-Link module (other station)

Figure 10.5 Station No. setting for CC-Link module

Station No. 64 cannot be specified for the CC-Link (other station). When the own station No. is 64, the other station cannot be specified. (Access is allowed only to the own station.) Specify the station No. other than 64.

(2) Extended functions

Table 10.5 Extended function

Communication	Network No. specification	Station No. specification
Q series bus interface	0(0н)	Own station: 255(FFн) ^{*4} Other station: 1 (CPU No.1), 2 (CPU No.2), 3 (CPU No.3), 4 (CPU No.4)
CC-Link IE Controller Network, or MELSECNET/H	Own (host) station: 0(0н) Other station: 1(1н) to 239(EFн) Logical station: 0(0н)	Own (Host) station: $255(FFH)$ Other station: $1(1H)$ to $120(78H)^{1}$ Logical station: $65(41H)$ to $239(EFH)^{2}$
CC-Link	0(0н)	Own station: 255(FFн) Other station: 0(0н) to 63(3Fн) ^{*3} Logical station: 65(41н) to 239(EFн) ^{*2}

* 1 65(41_H) to 120(78_H) can be specified for other station on a CC-Link IE Controller Network.

- * 2 Logical station No. is set in the << Target settings>> tab of CC IE Control utility (Page 7-34),
 - MELSECNET/H utility (Page 6-39), or CC-Link utility (Page 5-15).

* 3 For CC-Link (other station), station No. 64 cannot be specified. When the own station No. is 64, other station cannot be specified. (Access is allowed only to the own station.)

Specify the station No. other than 64.

* 4 Transmission to the C Controller module (own station) using a MELSEC data link function may take a longer time than the one using a bus interface function.

Use bus interface functions when creating a user program for which performance quality is required (such as a control program).

10.12 Device Types for the MELSEC Data Link Function

Q12DCCPU-V Q06CCPU-V Q06CCPU-V-B O O X

Device type used for the MELSEC data link functions can be specified either by code numbers or device names.

(1) Common device types

Table 10.6 Common device types of MELSEC data link functions

Device name"DeviceDEC.HEX.DevXX22 μ .DevYY33 μ .DevIL44 μ .DevMM55 μ .DevSMSM(special relay), SB(link special relay for MELSECNET/H, CC-Link IE Controller Network, and CC-Link)66 μ .DevFF77 μ .DevTCT (contact)88 μ .DevCCC (contact)99 μ .DevCCC (contact)10A μ .DevTNT (current value)12Cu.DevCNC (current value)13D μ .DevDD14E μ .DevSSSD (special register), SW(link special register for MELSECNET/H, CC-Link IE Controller Network, and CC-Link)15F μ .DevTMT (main setting)160033E83 μ .DevTS2T (sub setting 2)160033E83 μ .DevTS3T (sub setting 2)160033E83 μ .DevCS2C (sub setting 3)1711 μ .DevCSC (sub setting 1)180024652 μ .DevCS2C (sub setting 1)180034653 μ .DevCS2C (sub setting 1)1800316 μ .DevZZ ² 22000000C μ .DevZZ220010225655F μ to 56F μ DevCRR (file register) ² 220010225655F μ to 56F μ DevZR2317 μ .DevWW2418 μ	Device type		9		
DEC.HEX.Device name11nDevXX22hDevYY33nDevLL44nDevMM55nDevSMSM(special relay), SB(link special relay for MELSECNET/H, CC-Link IE Controller Network, and CC-Link)66nDevFF77nDevTTT (contact)88nDevCTC (contact)99nDevCCC (contact)10AnDevCCC (coll)11BnDevTNT (current value)12CnDevCNC (current value)13DnDevCNC (current value)14EnDevSDD15FnDevTMT (main setting)1610nDevTST (sub setting 1)186023E82nDevTS2T (sub setting 1)186033E83nDevCS3C (sub setting 1)186034652nDevCS3C (sub setting 1)180024652nDevCS2C (sub setting 1)180034653nDevCS3C (sub setting 2)180034653nDevCS3C (sub setting 2)1913nDevAA2010nDevRR (file register)2115nFnDevRZ (file register)2216nDevRR (file register)2315nDevRZ (file register)2418nDevRR (file register) <t< th=""><th colspan="2">Code</th><th>5 . *1</th><th colspan="2">Device</th></t<>	Code		5 . *1	Device	
11HDevXX22HDevXY33HDevLL44HDevMM5SHDevSMSM(special relay). SB(link special relay for MELSECNET/H, CC-Link IE Controller Network, and CC-Link)66HDevFF77HDevTTT (contact)88HDevCCT (coll)99HDevCCC (coll)10AHDevCCC (coll)118HDevTOT (cournet value)12CHDevCNC (current value)13DHDevDD14EHDevSDSD (special register), SW(link special register for MELSECNET/H, CC-Link IE Controller Network, and CC-Link)15FHDevTMT (main setting)1610+DevTST (sub setting 1)160023E82HDevTS3T (sub setting 2)160033E83HDevCS2C (sub setting 2)1711+DevCS2C (sub setting 1)180024652HDevCS2C (sub setting 1)180034653HDevCS3C (sub setting 1)1800415+DevCC (sub setting 1)1800515+DevCC (sub setting 1)1800616+DevCC (sub setting 1)1800715+DevCC (sub setting 1)180084653HDevCS2C (sub setting 1)1800915+DevCC (sub setting 2)1915+ <t< th=""><th>DEC.</th><th>HEX.</th><th>Device name</th><th></th></t<>	DEC.	HEX.	Device name		
224Dev/Y334Dev/L444Dev/M554DevSMSM(special relay), SB(link special relay for MELSECNET/H, CC-Link IE Controller Network, and CC-Link)554DevTT (contact)774DevTT (contact)884DevTCC (contact)10A4DevCCC (coll)11B4DevTOC (contact)11B4DevTNT (current value)12C4DevCNC (current value)13D4DevCNC (current value)14E4DevTST (sub setting 1)15F4DevTST (sub setting 1)160023E824DevTS3T (sub setting 1)160033E834DevTS3T (sub setting 3)17114DevCS4C (sub setting 3)180033E834DevTS3C (sub setting 1)1800246534DevCS4C (sub setting 1)1800346534DevCS3C (sub setting 1)1800346534DevCS4C (sub setting 1)1800346534DevCS4C (sub setting 1)1800446DevCS4C (sub setting 1)1800546534DevCS4C (sub setting 1)1800546534DevCS4C (sub setting 1)1800546534DevCS4C (sub setting 2)19134DevCAA20001544DevCS4C (sub setting 2	1	1н	DevX	X	
3 34 DevL L 4 44 DevM M 6 54 DevSM SM(special relay), SB(link special relay for MELSECNET/H, CC-Link IE Controller Network, and CC-Link) 6 64 DevF F 7 74 DevTT T (contact) 8 84 DevCC T (coll) 9 94 DevTC T (coll) 10 Art DevCC C (coll) 11 B4 DevTN T (current value) 12 C4 DevCN C (current value) 13 D4 DevCN C (current value) 14 E4 DevSD D (current value) 15 F4 DevTM T (current value) 1600 38234 DevTS2 T (sub setting 1) 1600 38244 DevTS3 T (sub setting 2) 16003 382834 DevTS2 C (sub setting 2) 17 114 DevCS2 C (sub setting 2) 18002	2	2н	DevY	Y	
4HDevMM5SHDevSMSM(special relay, SR(ink special relay for MELSECNET/H, CC-Link IE Controller Network, and CC-Link)66HDevFF7MDevT0T (contact)88HDevCTC (contact)99HDevCCC (contact)10AHDevCCC (contact)11BHDevCCC (contact)12CHDevCNC (current value)13DHDevCNC (current value)14EHDevCNC (current value)15FHDevCNC (current value)1610HDevTMT (main setting)1610HDevTST (sub setting 1)160023E82+DevTS2T (sub setting 3)1711HDevCS3C (sub setting 3)180033E83+DevTS3T (sub setting 1)180034653+DevCS2C (sub setting 1)180034653+DevCS3C (sub setting 2)180034653+DevCS3C (sub setting 2)180034653+DevCS3C (sub setting 2)180034653+DevCS4A2000 to 2225StortusetsDevER(to to the register)^2220100DC+DevER(to to the register)220200DC+DevER(to to the register)22118HDevWW222118HDevW22317HDevER(to to the register)22418H <td< td=""><td>3</td><td>3н</td><td>DevL</td><td>L</td></td<>	3	3н	DevL	L	
S1DevSMSM(special relay). SB(link special relay for MELSECNET/H, CC-Link IE Controller Network, and CC-Link)66HDevFF77HDevTTT (contact)88HDevCCT (coil)99HDevCCC (contact)10AHDevCCC (contact)11BHDevCNC (control value)12CHDevCNC (current value)13DHDevCNC (current value)14BHDevCNC (current value)15FHDevCNC (current value)16DHDevTNT (main setting)16THDevTNT (sub setting 1)160023E82HDevTS2T (sub setting 1)1711HDevCS2C (sub setting 1)180033E83HDevTS3T (sub setting 1)180044652HDevCS2C (sub setting 1)180054663HDevCS3C (sub setting 1)1800613HDevCS3C (sub setting 1)1800713HDevCS4C (sub setting 1)180084653HDevCS3C (sub setting 1)1800913HDevCZ ² 1800914HDevCZ ² 1800914HDevCZ ² 1800913HDevCS4C (sub setting 1)1800913HDevCZ ² 1800913HDevCZ ² 1800913HDevCS4S200013H <t< td=""><td>4</td><td>4_H</td><td>DevM</td><td>M</td></t<>	4	4 _H	DevM	M	
Controller Network, and CC-Link)66HDevF77HDevTT77HDevTT88HDevTC99HDevCC10AHDevCC11BHDevTN12CHDevCN13DHDevCD14BHDevSD15FHDevSD1610hDevTS17(surrent value)18DHDevSD19SD (special register), SW(link special register for MELSECNET/H, CC-Link IE Controller Network, and CC-Link)1610hDevTS160023E82HDevTS2160033E83HDevTS31711hDevCS2180034652HDevCS3180034652HDevCS3180034653HDevCS31913HDevX22000DCHDevZR220002CHDevZR220002CHDevZR220002CHDevZR2317HDevB2418HDevW2519HDevSB2418HDevW2519HDevSB261AHDevSB271BHDevST2810HDevST2910HBevST20010HBevST21010HDevZR22010HDevZR2317HDevSB2418H <td< td=""><td>5</td><td>5</td><td>DevSM</td><td>SM(special relay), SB(link special relay for MELSECNET/H, CC-Link IE</td></td<>	5	5	DevSM	SM(special relay), SB(link special relay for MELSECNET/H, CC-Link IE	
66+DevFF77+DevTTT (contact)88+DevCCT (coil)99+DevCTC (contact)10A+DevCCC (coil)11B+DevTNT (current value)12C+DevCNC (current value)13D+DevCNC (current value)14E+DevSDD15F+DevTMT (main setting)1610+DevTST (sub setting 1)160023E82+DevTS2T (sub setting 2)160033E83+DevTS3T (sub setting 3)1711+DevCSC (sub setting 1)1812+DevCS2C (sub setting 1)180024652+DevCS2C (sub setting 1)180034653+DevCS3C (sub setting 2)180034653+DevCS2C (sub setting 1)1913+DevAA20014+DevZ $2^{'2}$ 2115+DevXX (line register)^22200100DC+DevRR (file register)220000DC+DevRR (file register)22000225655F0+ to 56F0+ DevER(26)DevER(26)2317+DevSB2418+DevWW2519+DevSBQ/An link special regiv (within Q/QnACPU)261A+DevSTRetentive timer (contact)261A+DevSTRetentive timer (contact		011	Borom	Controller Network, and CC-Link)	
77DevTT (contact)88HDevCTT (coil)99HDevCTC (contact)100AHDevCCC (coil)111BHDevTNT (current value)122CHDevCNC (current value)133DHDevDD144EHDevSDSD (special register), SW(link special register for MELSECNET/H, CC-Link IE Controller Network, and CC-Link)15FHDevTST (sub setting 1)160023E82HDevTS2T (sub setting 2)160033E83HDevTS3T (sub setting 3)1711HDevCSC (sub setting 3)180024652HDevCS2C (sub setting 1)180034653HDevCS3C (sub setting 3)180034653HDevCS3C (sub setting 3)180034653HDevCS3C (sub setting 3)180024653HDevCS3C (sub setting 3)180034653HDevCS3C (sub setting 3)180044652HDevCS3C (sub setting 3)180054653HDevCS3C (sub setting 3)180024653HDevCS4C (sub setting 3)180034653HDevCS4C (sub setting 3)180044652HDevCS4C (sub setting 3)1913HDevAA20014HDevZ5C (sub setting 3)21115HDevKRR (file register) ² 2220100CHDevER(0)ER (exte	6	6н	DevF	F	
8 8H DevTC T (coil) 9 9H DevCT C (contact) 10 AH DevCC C (coil) 11 BH DevTN T (current value) 12 CH DevCN C (current value) 13 DH DevCN C (current value) 14 EH DevSD D (special register), SW(link special register for MELSECNET/H, CC-Link IE Controller Network, and CC-Link) 15 FH DevTS T (sub setting 1) 16002 3E82H DevTS2 T (sub setting 2) 16003 3E82H DevTS3 T (sub setting 3) 17 11H DevCM C (main setting) 18003 3E63H DevCS3 C (sub setting 2) 18003 4663H DevCS3 C (sub setting 3) 18003 4663H DevCS4 C (sub setting 3) 18003 4663H DevCA Z 20 14H DevZ Z 21 15H DevV V (index regis	7	7н	DevTT	T (contact)	
99HDevCTC (contact)10AHDevCCC (coil)11BHDevTNT (current value)12CHDevCNC (current value)13DHDevDD14EHDevSDSD (special register), SW(link special register for MELSECNET/H, CC-Link IE Controller Network, and CC-Link)15FHDevTMT (sub setting 1)160023E82HDevTS2T (sub setting 2)160033E83HDevTS3T (sub setting 3)1711HDevCSC (main setting 2)180034652HDevCS2C (sub setting 1)180034653HDevCS3C (sub setting 2)180034653HDevCS3C (sub setting 2)1913HDevAA2014HDevZ $2^{'2}$ 2115HDevRRR (file register)220000DCHDevRR (file register)220000DCHDevRR (file register)220017HDevBB2418HDevWW2519HDevQBQ/OA link special register (out)261AHDevSTRetentive timer (contact)261AHDevSTA2718HDevST261AHDevST2718HDevST261AHDevST2718HDevST261AHDevST2718HDevST26	8	8н	DevTC	T (coil)	
10 A_H DevCCC (coil)11 B_H DevTNT (current value)12 C_H DevCNC (current value)13DHDevDD14 E_H $DevSD$ SD (special register), SW(link special register for MELSECNET/H, CC-Link IE Controller Network, and CC-Link)15FHDevTMT (main setting)1610HDevTS2T (sub setting 1)160023E82HDevTS2T (sub setting 2)160033E83HDevTS3T (sub setting 3)1711HDevCSC (main setting)1812HDevCS2C (sub setting 2)180024652HDevCS2C (sub setting 2)180034653HDevCS3C (sub setting 3)1913HDevAA2014HDevC2'22115HDevVV (index register)2200 to 2226 $5FO_H$ to $56FO_H$ DevER(0) to DevER(256)ER (extended file register)2200 to 222619HDevWW2317HDevBB2418HDevWW2519HDevQSBQiOAlink special relay (within Q/QnACPU)261AHDevSTCRetentive timer (contact)2718HDevSTCRetentive timer (contact)	9	9н	DevCT	C (contact)	
11BitDevTNT (current value)12CHDevCNC (current value)13DHDevCNC (current value)13DHDevDD14EHDevSDSD (special register), SW(link special register for MELSECNET/H, CC-Link IE Controller Network, and CC-Link)15FHDevTMT (main setting)1610HDevTS2T (sub setting 1)160023E82HDevTS3T (sub setting 2)160033883HDevTS3T (sub setting 3)1711HDevCMC (main setting)1812HDevCS2C (sub setting 1)180024652HDevCS3C (sub setting 2)180034653HDevCS3C (sub setting 3)1913HDevCZ'22115HDevVV (index register)22016HDevZZ'2220000DCHDevZRZR (file register) ² 220000DCHDevZRZR (file register)220002CHDevZR(26)Argument value of device name (0 to 256 ⁻²) is Block No.2317HDevBB2418HDevVW2519HDevQSBQ/OnA link special relay (within Q/QnACPU)261AHDevSTRetentive timer (contact)271BHDevSTRetentive timer (coll)	10	Ан	DevCC	C (coil)	
12C+HDevCNC (current value)13DHDevDD14EHDevSDSD (special register), SW(link special register for MELSECNET/H, CC-Link IE Controler Network, and CC-Link)15FHDevTMT (main setting)1610HDevTST (sub setting 1)160023E82HDevTS3T (sub setting 2)160033E83HDevTS3T (sub setting 3)1711HDevCMC (main setting)180112HDevCS3C (sub setting 3)18024652HDevCS3C (sub setting 3)18034653HDevCS3C (sub setting 3)18034653HDevCS3C (sub setting 3)18034653HDevCS3C (sub setting 3)18034653HDevCS3C (sub setting 3)1913HDevCAA20014HDevZ2'22115HDevVV (index register)220000DCHDevZR2R (file register)'2220000DCHDevZR2R (file register)'2220002DCHDevZRA qurment value of device name (0 to 256'2) is Block No.2317HDevBB2418HDevVSTQ/0A/1 ink special relay (within Q/QAACPU)2519HDevXSTRetentive timer (contact)261AHDevSTCRetentive timer (contact)271BHDevSTCRetentive timer (coll)	11	Вн	DevTN	T (current value)	
13DHDevDD14EHDevSDSD (special register), SW(link special register for MELSECNET/H, CC-Link IE Controller Network, and CC-Link)15FHDevTMT (sub setting)16010HDevTST (sub setting 1)160023E82HDevTS2T (sub setting 2)160033E83HDevTS3T (sub setting 3)1711HDevCMC (main setting)180024652HDevCS2C (sub setting 1)180034653HDevCS3C (sub setting 2)180034653HDevCS3C (sub setting 3)1913HDevCAA20014HDevZ2 ^{'2} 2115HDevVAK (file register) ^{'2} 220000DCHDevZRCR (file register) ^{'2} 220000DCHDevZRCR (file register) ^{'2} 220002DCHDevER(256)Argument value of device name (0 to 256 ^{'2}) is Block No.2317HDevBB2418HDevWW2519HDevQSBQ/OA/ link special relay (within Q/QnACPU)2618HDevSTTRetentive timer (contact)2718HDevSTCRetentive timer (contact)	12	Сн	DevCN	C (current value)	
14 E_H $DevSD$ SD (special register), SW(link special register for MELSECNET/H, CC-Link IE Controller Network, and CC-Link) 15 FH DevTM T (min setting) 16 10H DevTS2 T (sub setting 1) 16002 3E82H DevTS3 T (sub setting 2) 16003 3E83H DevTS3 T (sub setting 3) 177 11H DevCM C (main setting) 180 12H DevCS2 C (sub setting 1) 18003 4652H DevCS3 C (sub setting 2) 18004 4653H DevCS3 C (sub setting 3) 18003 4653H DevCS3 C (sub setting 3) 18004 4653H DevCS3 C (sub setting 3) 18003 4653H DevCA X 200 13H DevA A 21 15H DevV V (index register) ² 2200 00DCH DevZR ZR (file register) ² 22000 to 22256 55F0 _H to 56F0 _H DevER(0) to DevER(256) FR (extended file register) </td <td>13</td> <td>Dн</td> <td>DevD</td> <td>D</td>	13	Dн	DevD	D	
H* DevSD Controller Network, and CC-Link) 15 FH DevTM T (main setting) 16 10H DevTS T (sub setting 1) 16002 3E82H DevTS2 T (sub setting 2) 16003 3E83H DevTS3 T (sub setting 3) 17 11H DevCM C (main setting) 18 12H DevCS2 C (sub setting 1) 18002 4652H DevCS3 C (sub setting 2) 18003 4653H DevCS3 C (sub setting 3) 19 13H DevCA A 20 14H DevZ $2^{'2}$ 21 15H DevV V (index register) 22 16H DevR R (file register)^{'2} 2200 00DCH DevZR ZR (file register) 22000 to 22256 $55F0_{H}$ to 56F0_{H} DevER(256) Argument value of device name (0 to 256 ^{'2}) is Block No. 23 17H DevB B 24 18H DevVW W <	14	Eu	DovSD	SD (special register), SW(link special register for MELSECNET/H, CC-Link IE	
15FнDevTMT (main setting)1610нDevTST (sub setting 1)160023E82нDevTS2T (sub setting 2)160033E83нDevTS3T (sub setting 3)1711нDevCMC (main setting)1812нDevCSC (sub setting 1)180024652нDevCS2C (sub setting 2)180034653нDevCS3C (sub setting 2)18034653нDevCS3C (sub setting 2)1913нDevAA2014нDevZZ ² 2115нDevVV (index register)2216нDevZZR (file register) ^{*2} 220000DCHDevZRR (file register) ^{*2} 2200155F0H to 56F0HDevER(0) to DevER(256)ER (extended file register) Argument value of device name (0 to 256 ^{*2}) is Block No.2317нDevQBBQ/QnA link special relay (within Q/QnACPU)261AHDevYTRetentive timer (contact)271BHDevSTCRetentive timer (coli)	14		EH	Devod	Controller Network, and CC-Link)
16 10H DevTS T (sub setting 1) 16002 $3E82H$ DevTS2 T (sub setting 2) 16003 $3E83H$ DevTS3 T (sub setting 3) 17 11H DevCS C (main setting) 18 12H DevCS2 C (sub setting 1) 18002 4652H DevCS3 C (sub setting 2) 18003 4653H DevCS3 C (sub setting 3) 19 13H DevA A 20 14H DevZ Z^{*2} 21 15H DevV V (index register) 22 16H DevZ Zr (file register)*2 2200 00DCH DevZR ZR (file register) 22000 to 22256 55F0H to 56F0H DevER(0) to DevER(256) ER (extended file register) 23 17H DevB B 24 18H DevW W 25 19H DevQSB Q/QnA link special relay (within Q/QnACPU) 26 1AH DevSTT Retentive timer (co	15	Fн	DevTM	T (main setting)	
16002 $3E82+$ DevTS2 T (sub setting 2) 16003 $3E83+$ DevTS3 T (sub setting 3) 17 11+ DevCM C (main setting) 18 12+ DevCS C (sub setting 1) 18002 4652+ DevCS2 C (sub setting 2) 18003 4653+ DevCS3 C (sub setting 3) 19 13+ DevA A 20 14+ DevZ Z^{*2} 21 15+ DevV V (index register) 22 16+ DevZ Z^{*2} 210 0DC+ DevZR ZR (file register) ^{*2} 2200 0DC+ DevZR ZR (file register) 22000 to 22256 55F0+ to 56F0+ DevER(0) to DevER(256) ER (extended file register) 23 17+ DevB B 24 18+ DevW W 25 19+ DevQSB Q/QnA link special relay (within Q/QnACPU) 26 1A+ DevSTT Retentive timer (contact)	16	10н	DevTS	T (sub setting 1)	
16003 $3E83_{H}$ DevTS3 T (sub setting 3) 17 11 _H DevCM C (main setting) 18 12 _H DevCS C (sub setting 1) 18002 4652 _H DevCS2 C (sub setting 2) 18003 4653 _H DevCS3 C (sub setting 3) 19 13 _H DevA A 20 14 _H DevZ Z^*^2 21 15 _H DevV V (index register) 22 16 _H DevZ Z^* 2200 00DCH DevZR ZR (file register) ^{*2} 22000 to 22256 $55F0_H$ to $56F0_H$ DevER(0) to DevER(256) ER (extended file register) Argument value of device name (0 to 256^{*2}) is Block No. 23 17 _H DevB B 24 18 _H DevW W 25 19 _H DevQSB Q/QnA link special relay (within Q/QnACPU) 26 1A _H DevSTC Retentive timer (contact) 27 1B _H DevSTC Retentive timer (coil)	16002	3Е82н	DevTS2	T (sub setting 2)	
17 11H DevCM C (main setting) 18 12H DevCS C (sub setting 1) 18002 4652H DevCS2 C (sub setting 2) 18003 4653H DevCS3 C (sub setting 3) 19 13H DevA A 20 14H DevZ Z^*^2 21 15H DevV V (index register) 22 16H DevZ R ZR (file register) ^{*2} 2200 00DCH DevZR ZR (file register) ^{*2} 22000 to 22256 55F0H to 56F0H DevER(0) to DevER(256) ER (extended file register) Argument value of device name (0 to 256 ^{*2}) is Block No. 23 17H DevB B 24 18H DevW W 25 19H DevQSB Q/QnA link special relay (within Q/QnACPU) 26 1AH DevSTC Retentive timer (contact) 27 1BH DevSTC Retentive timer (coil)	16003	3Е83н	DevTS3	T (sub setting 3)	
18 12_{H} DevCS C (sub setting 1) 18002 4652_{H} DevCS2 C (sub setting 2) 18003 4653_{H} DevCS3 C (sub setting 3) 19 13_{H} DevA A 20 14_{H} DevZ 2^{*2} 21 15_{H} DevV V (index register) 22 16_{H} DevZ R (file register) ^{*2} 200 00DCH DevZR ZR (file register) ^{*2} 22000 to 22256 $55F0_{H}$ to $56F0_{H}$ DevER(0) to DevER(256) ER (extended file register) 23 17_{H} DevB B 24 18_{H} DevW W 25 19_{H} DevQSB Q/QnA link special relay (within Q/QnACPU) 26 $1A_{H}$ DevSTT Retentive timer (contact) 27 18_{H} DevSTC Retentive timer (coil)	17	11н	DevCM	C (main setting)	
18002 4652 μ DevCS2 C (sub setting 2) 18003 4653 μ DevCS3 C (sub setting 3) 19 13 μ DevA A 20 14 μ DevZ 2^{*2} 21 15 μ DevV V (index register) 22 16 μ DevZ R (file register) ^{*2} 220 00DC μ DevZR ZR (file register) ^{*2} 2200 00DC μ DevER(0) to DevER(256) ER (extended file register) DevER(256) 23 17 μ DevB Argument value of device name (0 to 256 ^{*2}) is Block No. 23 17 μ DevB B 24 18 μ DevVW W 25 19 μ DevQSB Q/QnA link special relay (within Q/QnACPU) 26 1A μ DevSTC Retentive timer (contact) 27 18 μ DevSTC Retentive timer (coil)	18	12н	DevCS	C (sub setting 1)	
180034653нDevCS3C (sub setting 3)1913нDevAA2014нDevZZ*22115нDevVV (index register)2216нDevRR (file register)*22000 to 2225600DCHDevZRZR (file register)*22000 to 2225655F0н to 56F0нDevER(0) to DevER(256)ER (extended file register) Argument value of device name (0 to 256*2) is Block No.2317нDevBB2418нDevQSBQ/QnA link special relay (within Q/QnACPU)261АнDevSTTRetentive timer (contact)271BнDevSTCRetentive timer (coil)	18002	4652н	DevCS2	C (sub setting 2)	
1913нDevAA2014нDevZ Z^*^2 2115нDevVV (index register)2216нDevRR (file register)*2220000DCHDevZRZR (file register)*222000 to 2225655F0H to 56F0HDevER(0) to DevER(256)ER (extended file register) Argument value of device name (0 to 256*2) is Block No.2317HDevBB2418HDevQSBQ/QnA link special relay (within Q/QnACPU)261AHDevSTCRetentive timer (contact)271BHDevSTCRetentive timer (coil)	18003	4653н	DevCS3	C (sub setting 3)	
2014HDevZZ*22115HDevVV (index register)2216HDevRR (file register)*2220000DCHDevZRZR (file register)*222000 to 2225655F0H to 56F0HDevER(0) to DevER(256)ER (extended file register) Argument value of device name (0 to 256*2) is Block No.2317HDevBB2418HDevQSBQ/QnA link special relay (within Q/QnACPU)261AHDevSTTRetentive timer (contact)271BHDevSTCRetentive timer (coil)	19	13н	DevA	A	
2115HDevVV (index register)2216HDevRR (file register)*222000DCHDevZRZR (file register)*222000 to 2225655F0H to 56F0HDevER(0) to DevER(256)ER (extended file register) Argument value of device name (0 to 256*2) is Block No.2317HDevBB2418HDevQSBQ/QnA link special relay (within Q/QnACPU)261AHDevSTTRetentive timer (contact)271BHDevSTCRetentive timer (coil)	20	14н	DevZ	Z*2	
2216HDevRR (file register)*222000DCHDevZRZR (file register)*222000 to 2225655F0H to 56F0HDevER(0) to DevER(256)ER (extended file register) Argument value of device name (0 to 256*2) is Block No.2317HDevBB2418HDevQSBQ/QnA link special relay (within Q/QnACPU)2519HDevQSBQ/QnA link special relay (within Q/QnACPU)261AHDevSTTRetentive timer (contact)271BHDevSTCRetentive timer (coil)	21	15н	DevV	V (index register)	
22000DCHDevZRZR (file register)*222000 to 2225655F0H to 56F0HDevER(0) to DevER(256)ER (extended file register) Argument value of device name (0 to 256*2) is Block No.2317HDevBB2418HDevQSBQ/QnA link special relay (within Q/QnACPU)261AHDevSTTRetentive timer (contact)271BHDevSTCRetentive timer (coil)	22	16н	DevR	R (file register) ^{*2}	
22000 to 2225655F0H to 56F0HDevER(0) to DevER(256)ER (extended file register) Argument value of device name (0 to 256*2) is Block No.2317HDevBB2418HDevWW2519HDevQSBQ/QnA link special relay (within Q/QnACPU)261AHDevSTTRetentive timer (contact)271BHDevSTCRetentive timer (coil)	220	00DCн	DevZR	ZR (file register) ^{*2}	
22000 to 22256S5F0H to 56F0HDevER(256)Argument value of device name (0 to 256*2) is Block No.2317HDevBB2418HDevWW2519HDevQSBQ/QnA link special relay (within Q/QnACPU)261AHDevSTTRetentive timer (contact)271BHDevSTCRetentive timer (coil)	00000 1 00050		DevER(0) to	ER (extended file register)	
2317HDevBB2418HDevWW2519HDevQSBQ/QnA link special relay (within Q/QnACPU)261AHDevSTTRetentive timer (contact)271BHDevSTCRetentive timer (coil)	22000 to 22256	22000 to 22256 55F0н to 56F0н	DevER(256)	Argument value of device name (0 to 256 ^{*2}) is Block No.	
24 18H DevW W 25 19H DevQSB Q/QnA link special relay (within Q/QnACPU) 26 1AH DevSTT Retentive timer (contact) 27 1BH DevSTC Retentive timer (coil)	23	17н	DevB	В	
25 19H DevQSB Q/QnA link special relay (within Q/QnACPU) 26 1AH DevSTT Retentive timer (contact) 27 1BH DevSTC Retentive timer (coil)	24	18н	DevW	W	
26 1AH DevSTT Retentive timer (contact) 27 1BH DevSTC Retentive timer (coil)	25	19н	DevQSB	Q/QnA link special relay (within Q/QnACPU)	
27 1BH DevSTC Retentive timer (coil)	26	1Ан	DevSTT	Retentive timer (contact)	
	27	1Вн	DevSTC	Retentive timer (coil)	

* 1 The device name specification (macro) is defined in this function's include file "MdFunc.h". (

* 2 Even if a non-existing device is specified in mdRandR or mdRandREx functions, they complete normally. (The read data is "-1".)

(To the next page)

MELSEG **Q** _{series}

PROGRAMMING USING BUS INTERFACE FUNCTIONS

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S USING



Device type			
Co	de	D *1	Device
DEC.	HEX.	Device name	
28	1Сн	DevQSW	Q/QnA link special register (within Q/QnACPU)
30	1Ен	DevQV	Q/QnA edge relay (within Q/QnACPU)
35	23н	DevSTN	Retentive timer (current value)
101	65н	DevMAIL	Q/QnA SEND function (with arrival confirmation) and RECV function
102	66н	DevMAILNC	Q/QnA SEND function (no arrival confirmation)
1001 to 1255	250 to 457	DevLX(1) to	Direct link input (other station side)
100110 1255	3E9H tO 4E7H	DevLX(255)	Argument value of device name (1 to 255 ^{*2}) is Network No.
2004 +- 2055	704 4- 005	DevLY(1) to	Direct link output (other station side)
2001 to 2255 7D1H to 8CFH		DevLY(255)	Argument value of device name (1 to 255 ^{*2}) is Network No.
22001 to 22255	59D9н to	DevLB(1) to	Direct link relay (other station side)
23001 10 23255	5AD7н	DevLB(255)	Argument value of device name (1 to 255 ^{*2}) is Network No.
24001 to 24255	5DC1н to	DevLW(1) to	Direct link register (other station side)
24001 10 24255	5EBFн	DevLW(255)	Argument value of device name (1 to 255 ^{*2}) is Network No.
25001 to 25255	6140 to 6247	DevLSB(1) to	Direct link special relay (other station side)
25001 10 25255	01A9H 10 02A7H	DevLSB(255)	Argument value of device name (1 to 255 ^{*2}) is Network No.
28001 to 28255		DevLSW(1) to	Direct link special register (other station side)
20001 10 20255		DevLSW(255)	Argument value of device name (1 to 255 ^{*2}) is Network No.
			Special direct buffer register,
29000 to 29255	7148н to 7247н	DevSPG(0) to	Intelligent function module buffer memory
		Dev3FG(233)	Argument value of device name (1 to 255^{*2}) is start I/O No. divided by 16
31000 to 31255	7018u to 7017u	DevEM(0) to	EM (shared device) ^{*3}
51000 10 51255	79TOH LO TATTH	DevEM(255)	Argument value of device name (0 to 255 ^{*2}) is Block No.
22000 to 22055	7D00н to	DevED(0) to	ED (shared device) ^{*3}
32000 to 32255	7DFFH	DevED(255)	Argument value of device name (0 to 255^{*2}) is Block No

Table 10.6 Common device types of MELSEC data link functions (continued)

* 1 The device name specification (macro) is defined in this function's include file "MdFunc.h". (

* 2 Even if a non-existing device is specified in mdRandR or mdRandREx functions, they complete normally. (The read data is "-1".)

* 3 Available for accessing other station's personal computers. (Only when the communication target is on Microsoft[®] Windows NT[®] Workstation 4.0 where MX Links (SW2D5F-CSKP or later) is running).

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SAMPLE PROGRAMS

EVENT NUMBER LIST

(2) Dedicated device types for Q series bus interface

Table 10.7 Q series bus interface dedicated device types

Device types				
Code		Dauliaa waxaa*1	Device	
DEC.	HEX.	Device name		
501	1F5н	DevSPB1 CPU shared memory (area for CPU No.1)*2		
502	1F6н	DevSPB2	CPU shared memory (area for CPU No.2) ^{*2}	
503	1F7н	DevSPB3	CPU shared memory (area for CPU No.3) *2	
504	1F8н	DevSPB4	CPU shared memory (area for CPU No.4)*2	

* 1 The device name specification (macro) is defined in this function's include file "MdFunc.h". (

* 2 The device cannot be used in the mdRandR, mdRandREx, mdRandW, mdRandWEx, mdDevSet, mdDevSetEx, mdDevRst, or mdDevRstEx function.

(3) Device types for accessing the CC-Link modules

Table 10.8 Device types for accessing CC-Link module				
Device type				
Co	ode	Davias nomo*1	Device	
DEC.	HEX.	Device name		
1	1н	DevX	Own station RX ^{*5}	
2	2н	DevY	Own station RY ^{*5}	
5	5н	DevSM Own station SB (link special relay for CC-Link) ^{*3}		
14	Ен	DevSD Own station SW (link special register for CC-Link) ^{*4}		
25	19н	DevQSB Own station SB (link special relay for CC-Link) ^{*3}		
28	1Сн	DevQSW Own station SW (link special register for CC-Link) ^{*4}		
33	21н	DevMRB	Own station random access buffer	
36	24н	DevWw	Own station link register (for sending) ^{*5}	
37	25н	DevWr	Own station link register (for receiving) ^{*5}	
50	32н	DevSPB	Own station buffer memory ^{*5}	
-32768	8000н	DevRBM	Other station buffer memory ^{*2}	
-32736	8020н	DevRAB	Other station random access buffer ^{*2}	

* 1 The device name specification (macro) is defined in this function's include file "MdFunc.h". (

* 2 The device cannot be used in the mdRandR, mdRandREx, mdRandW, mdRandWEx, mdDevSet, mdDevSetEx, mdDevRst, or mdDevRstEx functions.

* 3 These (DevSM, DevQSB) are the same device.

* 4 These (DevSD, DevQSW) are the same device.

* 5 Note that maximum of one scan time may delay when the block data assurance per station function is enabled and the link device is continuously accessed (mdSend, mdSendEx(1), mdReceive(1), mdReceiveEx, mdDevSet, mdDevSetEx, mdDevRst, mdDevRstEx). (This is the same behavior when the auto refresh method is selected as CC-Link refreshing method in the QBF_ToBuf and QBF_FromBuf functions.)

Moreover, block data assurance per station cannot be used in dReadR, mdRandREx, mdReadW, and mdRandWEx functions.

For details, refer to the following.

For block data assurance per station, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

For the MELSEC data link functions, refer to the HELP of the MELSEC data link function.

Table 10.8 Device types for accessing CC-Link module (continued)

Device type				
Code		Davias nome*1	Device	
DEC.	HEX.	Device name		
-32735	8021н	DevRX	Other station RX	
-32734	8022н	DevRY	Other station RY	
-32732	8024н	DevRW Other station link register ^{*2}		
-32669	8063н	DevSB Other station SB (link special relay for CC-Link)		
-32668	8064н	DevSW	W Other station SW (link special register for CC-Link) ^{*2}	

* 1 The device name specification (macro) is defined in this function's include file, "MdFunc.h". (

* 2 The device cannot be used in the mdRandR, mdRandREx, mdRandW, mdRandWEx, mdDevSet, mdDevSetEx, mdDevRst, or mdDevRstEx functions.

(4) Device types for accessing CC-Link IE Controller Network modules or MELSECNET/H modules

In a user program, link device access methods and message send/receive can be selected by specifying a device.

(a) Internal buffer access

Table 10.9 Device types for internal buffer access

Device Type				
Code		Device nome*1	Device	
DEC.	DEC. HEX. Device name			
1	1н	DevX	Own station link input internal buffer (LX buffer)	
2	2н	DevY	Own station link output internal buffer (LY buffer)	
23	17н	DevB Own station link relay internal buffer (LB buffer)		
24	18н	DevW	DevW Own station link register internal buffer (LW buffer)	

* 1 The device name specification (macro) is defined in this function's include file, "MdFunc.h". (

(b) Direct access

Table 10.10 Device types for direct access

Device Type				
Code		D	Device	
DEC.	HEX.	Device name		
5	5н	DevSM	Own station direct link special relay (SB) ^{*2}	
14	Ен	DevSD	Own station direct link special register (SW) ^{*3}	
25	19н	DevQSB	Own station direct link relay (SB) ^{*2}	
28	1Сн	DevQSW	Own station direct link register (SW) ^{*3}	
1000	3Е8н	DevLX(0)	Own station direct link input (LX)	
2000	7D0н	DevLY(0)	Own station direct link output (LY)	
23000	59D8н	DevLB(0)	Own station direct link relay (LB) ^{*4}	
24000	5DC0н	DevLW(0)	Own station direct link register (LW) ^{*4}	
25000	61А8н	DevLSB(0)	Own station direct link special relay (SB) ^{*2}	
28000	6D60н	DevLSW(0)	Own station direct link special register (SW) ^{*3}	

* 1 The device name specification (macro) is defined in this function's include file, "MdFunc.h". (

* 2 These (DevSM, DevQSB, and DevLSB(0)) are the same device.

* 3 These (DevSD, DevQSW, and DevLSW(0)) are the same device.

* 4 Only for CC-Link IE Controller Network modules, access can be made to areas of LB4000 and higher and LW4000 and higher.

PROGRAMMING USING MELSEC DATA LINK FUNCTIONS

(c) Message send/receive

Table 10.11 Device types for message send receive

Device type				
Code		Device name ^{*1}	Device	
DEC. HEX.				
101	65н	DevMAIL	Q/QnA SEND function (with arrival confirmation) and RECV function	
102 66н DevMAILNC		DevMAILNC	Q/QnA SEND function (no arrival confirmation)	

* 1 The device name specification (macro) is defined in this function's include file, "MdFunc.h". (

POINT -

1. Use the internal link device buffers (LX buffer, LY buffer, LB buffer, and LW buffer) by setting the following items and refresh them with link devices (LX, LY, LB, and LW).

Table 10.12 Setting link device refresh cycle and ranges				
Network Item Reference page				
CC-Link IE Controller	Link device refresh cycle	Page 7-23, Section 7.5 (2)		
Network	Refresh parameters	Page 7-27, Section 7.5 (4)		
MELSECNET/H	Link device refresh cycle	Page 6-27, Section 6.6 (2)		
WEESECKET/IT	Refresh parameters	Page 6-33, Section 6.6 (4)		

 The link devices (SB and SW) are accessible only by direct access. Access by using internal link device buffers cannot be made since the settings (link device refresh cycle and ranges) of the CC IE Control utility and MELSECNET/H utility cannot perform link device refresh.

Remark

For the link device accessing method, refer to the C Controller Module User's Manual (Hardware Design, Function Explanation).

PROGRAMMING USING BUS INTERFACE FUNCTIONS

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10.13 Accessible Ranges and Devices of the MELSEC Data Link Function

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B
\bigcirc	\bigcirc	

This section explains accessible ranges and devices for the following accesses.

Table 10.13 Access list

Access route	Reference page
Bus	Page 10-17
CC-Link	Page 10-23
MELSECNET/H	Page 10-29
CC-Link IE Controller Network	Page 10-38

10.13.1 Access via a bus

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B
\bigcirc		

(1) Accessible range

Via a bus connection, access to the following is allowed.

- Own station (Own station (C Controller module))
- Other station (Programmable controller CPU or C Controller module)



Figure 10.6 Range accessible via a bus

(2) Accessible devices

- (a) How to read the table
 - 1) Batch and random of devices

Table 10.14 Batch and random

Item in the table	Description	
Batch	 Batch write (mdSend, mdSendEx functions) 	
Daton	 Batch read (mdReceive, mdReceiveEx functions) 	
	 Random write (mdRandW, mdRandWEx functions) 	
	 Random read (mdRandR, mdRandREx functions) 	
Bandom	 Bit set (mdDevSet, mdDevSetEx functions) 	
Rahuuili	Only bit devices can access.	
	 Bit reset (mdDevRst, mdDevRstEx functions) 	
	Only bit devices can access.	

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(b) Accessible device range for accessing own CPU

Table 10.15 Accessible devices for accessing own CPU

Device		Device type	Access target	
		(Device name specification)	Own station (C Controller module)	
×	Batch	DovX		
^	Random	DevA	0.	
v	Batch	DovY	0*1	
1	Random	Devi	0.	
w*2	Batch	DovM	o*1.*3	
M -	Random	Devini	0., -	
SM (special relay) SP	Batch	DevSM	o*1	
Sivi (special relay), SB	Random		0.	
D*2	Batch	DevD	o*1.*3	
D-	Random		0	
SD (special register) SW	Batch	DevSD	O ^{*1}	
	Random			
Special direct buffer register,	Batch			
Intelligent function module buffer memory	Random	DevSPG(0) to DevSPG(255)	0"	
	Batch	DevSPB1 (for CPU No.1), DevSPB2 (for CPU No.2),	0	
CPU shared memory ^{*4,*5}				
or o charod monory	Random	DevSPB3 (for CPU No.3), DevSPB4 (for CPU No.4)	×	

O: Accessible x: Inaccessible

* 1 The following C Controller module is not accessible.

Q12DCCPU-V with serial number (first five digits) "12041" or earlier
 Q06CCPU-V

- * 2 To access a device of device No.32768 (8000H)or higher, use an extended function. (Page 10-4, Section 10.2)
- * 3 Available only when the device function is used. (Page 4-35, Section 4.8)
- * 4 The CPU shared memory is accessible only when multiple CPU setting has been done. (
- * 5 Specify the device No.10000 (2710_H) or later for accessing to the Multiple CPU high speed transmission area.

SAMPLE PROGRAMS

PROGRAMMING USING BUS INTERFACE FUNCTIONS

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(c) Accessible device range for accessing other CPU

Table 10.16 Accessible devices for accessing other CPU

		Device type	Access target				
Device		(Device name specification)	Programmable controller CPU	C Controller module			
v	Batch	PovX	0	o*1			
^	Random	Deva	0	0 ·			
Y	Batch	DevY	0	_ *1			
	Random	2001	0	0			
L	Batch	DevL	0	×			
	Random		·				
M ^{*2}	Batch	DevM	O ^{*3}	O ^{*1,*4}			
	Random						
SM (special relay), SB (link special relay for MELSECNET/	Batch	DevSM	0	^{*1,*4}			
H, CC-Link IE Controller Network and CC-Link)	Random	Develvi	0	0			
F	Batch	DavE	0				
F	Random	Devr	0	×			
T (contact)	Batch	DevTT	0	~			
	Random	Boviri	0				
T (coil)	Batch	DevTC	0	×			
	Random		, 				
C (contact)	Batch	DevCT	0	×			
. ,	Random						
C (coil)	Batch	DevCC	0	×			
	Batch						
T (current value)	Random	DevTN	0	×			
	Batch						
C (current value)	Random	DevCN	0	×			
- *2	Batch	Durin	- *5	_ *1 */			
D 2	Random	DevD	0 '	O ^{1, 4}			
SD (special register), SW (link special register for	Batch						
MELSECNET/H, CC-Link IE Controller Network and CC- Link)	Random	DevSD	0	O ^{*1,*4}			

O: Accessible ×: Inaccessible

- * 1 The following C Controller module is not accessible.
 - Q12DCCPU-V with serial number (first five digits) "12041" or earlier
 Q06CCPU-V
- * 2 To access a device of device No.32768 (8000н)or higher, use an extended function. (Э Раде 10-4, Section 10.2)
- * 3 The following C Controller module cannot access the internal relay (M) of device No.32768 (8000H) or higher.
 - · Q06CCPU-V
- * 4 Available only when the device function is used. (FF Page 4-35, Section 4.8)
- * 5 The following C Controller module cannot access the extended data register (D).
 Q06CCPU-V with serial number (first five digits) "10011" or earlier

PROGRAMMING USING MELSEC DATA LINK FUNCTIONS

MELSEG Q series

SAMPLE PROGRAMS

EVENT NUMBER LIST

		Device type	Access target				
Device		(Device name specification)	Programmable controller CPU	C Controller module			
T (main setting)	Batch	DevTM	×	×			
	Ratio						
T (sub setting 1)	Bandom	DevTS	×	×			
	Batch						
T (sub setting 2)	Bandom	DevTS2	×	×			
	Batch						
Γ (sub setting 3)	Bandom	DevTS3	×	×			
	Batch						
C (main setting)	Random	DevCM	×	×			
	Batch						
C (sub setting 1)	Random	DevCS	×	×			
	Batch	DevCS2					
C (sub setting 2)	Random		×	×			
C (sub setting 3)	Batch	DevCS3					
	Random		×	×			
	Batch						
Α	Random	DevA	×	×			
	Batch						
2	Random	DevZ	0	×			
	Batch						
√ (index register)	Random	- DevV	×	×			
	Batch						
R (file register)	Random	DevR	×* ⁶	×			
	Batch						
ZR (file register) ^{*2}	Random	DevZR	0	×			
	Batch						
ER (extended file register)	Random	DevER(0) to DevER(256)	0	×			
10	Batch			10.110			
3 ^{°2}	Random	- DevB	O ^{*7}	O ^{*9,*10}			
+0	Batch						
W ^{~2}	Random	DevW	O ^{*8}	O ^{*9}			
Q/QnA link special relay (within	Batch	DavOSP					
Q/QnACPU)	Random	DevQSB	U U	×			

O: Accessible x: Inaccessible

- * 2 When accessing to the device of No.32768 (8000H) or higher, use an extended function. (Page 10-4, Section 10.2)
- * 6 For the access, use ZR (file register) or ER (extended file register).
- * 7 The following C Controller module cannot access the link relay (B) of device No.32768 (8000H) or higher.
 - Q06CCPU-V
- * 8 The following C Controller module cannot access the extended link register (W). • Q06CCPU-V with serial number (first five digits) "10011" or earlier
- * 9 Only the following C Controller module is accessible.
 - Q12DCCPU-V (Extended mode)
 - Q24DHCCPU-V with serial number (first five digits) "14081" or later
 - Q24DHCCPU-VG
- * 10 BFFFF_H or later cannot be accessed.

MELSEC **Q** series

		Device type	Access target				
Device		(Device name specification)	Programmable controller CPU	C Controller module			
Retentive timer (contact)	Batch	DevSTT	0	~			
	Random	Devoli	0	^			
Retentive timer (coil)	Batch	DevSTC	0	~			
	Random	Devoto	0	^			
Q/QnA link special register	Batch	DevOSW	0	~			
(within Q/QnACPU)	Random	Bergon	0	^			
Q/QnA edge relay (within Q/	Batch	Dev(Ω\/	0	~			
QnACPU)	Random	Devigi	0	^			
Own station random access	Batch	DevMRB	~	~			
buffer	Random	Devinite	^	^			
Retentive timer (current value)	Batch	DevSTN	0	~			
	Random	Devolin	0	X			
Own station link register	Batch	DevWw	~	~			
(for sending)	Random	Boww	^	<u>^</u>			
Own station link register	Batch	Dev/Wr	~	~			
(for receiving)	Random	Berrin	~				
Own station buffer memory	Batch	DevSPB	×	×			
own station ballet memory	Random	Bereirb	~	^			
Direct link input (other station	Batch	Devi X(1) to Devi X(255)	0	^*1			
side)	Random		0	0			
Direct link output (other station	Batch	Devl Y(1) to Devl Y(255)	0	_*1			
side)	Random		0	0			
Direct link relay (other station	Batch	DevI B(1) to DevI B(255)	0	∩ *1			
side)	Random		0	0			
Direct link register (other station	Batch	Dev(1)/(1) to $Dev(1)/(255)$	0	^*1			
side) ^{*2}	Random		0	0			
Direct link special relay (other	Batch	David SB(1) to David SB(255)	0	o*1			
station side)	Random		0	0.			
Direct link special register	Batch	Devil SW(1) to Devil SW(255)	0	o*1			
(other station side)	Random		0	0			
Special direct buffer register,	Batch						
Intellligent function module buffer memory	Random	DevSPG(0) to DevSPG(255)	0	O ^{*1}			

Table 10.16 Accessible devices for accessing other CPU (continued)

O: Accessible ×: Inaccessible

* 1 The following C Controller module is not accessible.

Q12DCCPU-V with serial number (first five digits) "12041" or earlier

• Q06CCPU-V

 * 2 When accessing to the device of number 32768 (8000 ${\rm \tiny H})$ or higher, use an extended function.

(Page 10-4, Section 10.2)

MELSEG **Q** series

		Device type	Access	Access target		
Device		(Device name specification)	Programmable controller CPU	C Controller module		
Other station buffer memory	Batch	DovPRM	× ·			
Other station bullet memory	Random	Devitaiwi	×	*		
Other station random access	Batch	Dev/RAB	× ·	~		
buffer	Random	DevitAD	*	~		
Other station RX	Batch	DevRY	×	×		
	Random	Devitx	X	×		
Other station RV	Batch	DevRV	×	×		
	Random	Deviti	~	^		
Other station link register	Batch	DevRW	× ·	~		
Other station link register	Random	Devitiv	*	^		
Other station SB (link special	Batch	DovSB	X	~		
relay for CC-Link)	Random	Devod	X	X		
Other station SW (link special	Batch	DovSW	× ·	~		
relay for CC-Link)	Random	Dev3vv	X	×		
	Batch	DevSPB1 (for CPU No.1),				
CDLL shared memory *6.*7	Datch	DevSPB2 (for CPU No.2),	× ·	~		
CPU shared memory ",	Random	DevSPB3 (for CPU No.3),	*	^		
	Tanuom	DevSPB4 (for CPU No.4)				

Table 10.16 Accessible devices for accessing other CPU (continued)

O: Accessible ×: Inaccessible

* 6 The CPU shared memory is accessible only when multiple CPU setting has been done. (

* 7 Specify the device number 10000 (2710_H) or and higher for accessing to the multiple CPU high speed transmission area.

PROGRAMMING USING BUS INTERFACE FUNCTIONS

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RAMMING USING C DATA LINK

PROGRAMMING USING VxWorks API FUNCTIONS

MELSEC **Q** series

10.13.2 Access via CC-Link

Q12DCCPU-V Q06CCPU-V Q06CCPU-V-B X	
 (1) Accessible range The following accesses are allowed via CC-Link. Master station where the CC-Link module is connected Local station where the CC-Link module is connected C Controller module PC CPU module Intelligent device station of CC-Link Personal computer with the CC-Link board is installed 	
Own station (master or local station controlled by C Controller module) Our station (master or local station controlled by C Controller module) Our station (master or local station) Our stat	
Figure 10.7 Accessible range for access via CC-Link	

⊠POINT -

When the own station is station No.64, access to another station is not allowed. Access is allowed only to the own station.

PROGRAMMING USING BUS INTERFACE FUNCTIONS

10

PROGRAMMING USING VXWorks API FUNCTIONS

SAMPLE PROGRAMS

(2) Accessible devices

(a) How to read the table

1) Batch and random of devices

Item in the table	Description
Ratch	 Batch write (mdSend, mdSendEx functions)
Daton	 Batch read (mdReceive, mdReceiveEx functions)
	 Random write (mdRandW, mdRandWEx functions)
	 Random read (mdRandR, mdRandREx functions)
Pandam	 Bit set (mdDevSet, mdDevSetEx functions)
Ranuom	Only bit devices can access.
	 Bit reset (mdDevRst, mdDevRstEx functions)
	Only bit devices can access.

2) Access targets for accessing other station

Table 10.18 Access targets for accessing other station

No.	Access target
1)	A1NCPU
2)	A0J2HCPU, A1S(H)CPU, A1SJ(H)CPU, A2NCPU(-S1), A2S(H)CPU
3)	A2ACPU(-S1), A2UCPU(-S1), A2USCPU(-S1), A2USHCPU-S1
3)	Q02(H)CPU-A, Q06HCPU-A
4)	A3NCPU, A3ACPU, A3UCPU
5)	A4UCPU
	Q2ACPU(-S1), Q3ACPU, Q4ACPU, Q4ARCPU, Q2ASCPU(-S1), Q2ASHCPU(-S1)
	Q00JCPU, Q00CPU, Q01CPU
	Q02(H)CPU, Q06HCPU, Q12HCPU, Q25HCPU
	Q02PHCPU, Q06PHCPU, Q12PHCPU, Q25PHCPU
6)	Q00UJCPU, Q00UCPU, Q01UCPU, Q02UCPU, Q03UDCPU, Q04UDHCPU, Q06UDHCPU,
	Q10UDHCPU, Q13UDHCPU, Q20UDHCPU, Q26UDHCPU, Q03UDECPU, Q04UDEHCPU,
	Q06UDEHCPU, Q10UDEHCPU, Q13UDEHCPU, Q20UDEHCPU, Q26UDEHCPU,
	Q50UDEHCPU, Q100UDEHCPU, Q03UDVCPU, Q04UDVCPU, Q06UDVCPU, Q13UDVCPU,
	Q26UDVCPU
	C Controller module that controls a CC-Link module,
7)	PC CPU module that controls a CC-Link module,
()	Personal computer with a CC-Link board,
	Intelligent device station on CC-Link
8)	L02CPU, L26CPU-BT

(b) Accessible devices for accessing own station Table 10.19 Accessible devices for accessing own station

Device		Device type (Device name specification)	Accessibility			
Own station BX	Batch	DavX	0			
Own station tx	Random	Devx	0			
Own station BY	Batch	Dov/X	0			
Own station KT	Random	Devi	0			
Own station SB (link special	Batch	DovSM	0			
relay for CC-Link)	Random	DevSim	0			
Own station SW (link special	Batch	DavSD	0			
register for CC-Link)	Random	Devad	0			
Own station link register (for	Batch	DovMM	0			
sending)	Random	Devvvw	0			
Own station link register (for	Batch	Dov/Wr	0			
receiving)	Random	Devvvi	0			
Own station buffer memory	Batch	DovSPR	0			
Own station bullet memory	Random	Devorb	0			
Own station random access	Batch	DovMPR	0			
buffer	Random	DevivingD	0			

○: Accessible ×: Inaccessible

(c) Accessible devices for accessing other station

Table 10.20 Accessible devices for accessing other station

Device		Device type	Access target							
Device		(Device name specification)	1)	2)	3)	4)	5)	6)	7)	8) ^{*1}
x	Batch	DevY	0	0	0	0	0	0		0
^	Random	Devx	0	0	0	0	0	0	0-	0
Y	Batch	DevY	0	0	0	0	\circ	\sim		0
	Random	2001	0	0	0	0	0	0	0	0
L	Batch	Devl	\circ	\circ	\circ	0	0	0	×	\circ
	Random	DEVL	0	0	U					0
M ^{*3,*4}	Batch	DevM	0	0	0	0	0	0	○*2,*5	0
	Random		0	0	0	0	Ŭ	Ŭ	Ŭ	Ŭ
SM (special relay), SB (link special relay for MELSEC/H_CC-Link IE	Batch	DevSM	0	0	0	0	0	0	^{*2,*5}	0
Controller Network, and CC-Link)	Random		Ŭ							0
F	Batch	DevE	0	0	\circ	0	0	\circ	~	0
·	Random		0	0	0	0	0	0	^	0
T (contact)	Batch	DevTT	\circ	\circ	\circ	\circ	\circ	\circ	~	\circ
	Random	2000	Ŭ	Ŭ	0	0	Ŭ	0	^	
T (coil)	Batch	DevTC	0	0	0	0	0	0	×	0
	Random	20010	U	U	0	0	U	0	^	0

O: Accessible x: Inaccessible

- * 1 The following C Controller module is not accessible.
 - Q06CCPU-V with serial number (first five digits) "10101" or earlier
- * 2 The following C Controller module is not accessible.
 - Q12DCCPU-V with serial number (first five digits) "12041" or earlier
 Q06CCPU-V
- * 3 When accessing to the device of No.32768 (8000н) or higher, use an extended function. ([______ Page 10-4, Section 10.2)
- * 4 The following C Controller module cannot access the internal relay (M) of device No.32768 (8000_H) or higher.
 - Q06CCPU-V
- * 5 Available only when the device function is used. (

⁽To the next page)

PROGRAMMING USING MELSEC DATA LINK FUNCTIONS

Tab	le 10.20 Accessibl	e devices for accessing other	station	(cont	inuea)																		
Device		Device type	1)	2)	2)	Acces	ss targe	et	7)	o*1														
	Batch		1	2)	3)	4)	3)	0)	<i>()</i>	0)														
C (contact)	Random	DevCT	0	0	0	0	0	0	×	0														
- /	Batch			-	-	-	-	-		-														
C (coll)	Random	DevCC	0	0	0	0	0	0	×	0														
T (current value)	Batch	DovTN		0	0	0	0	0	~															
	Random	Devin	0	0	0	0	0	0	×	0														
C (current value)	Batch	DevCN		0	0	0	0	0	×															
	Random		0	0	0	U	0	U	^	0														
D ^{*3,*6}	Batch	DevD	0	0	0	0	0	0	○*2,*5	0														
	Random		Ĭ	Ľ					Ĭ															
SD (special register), SW (link special register for MELSECNET/H and CC	Batch	DevSD			0				O ^{*2,*5}	0														
Link)	Random			0	0	0	0	0																
T (main setting)	Batch	— DevTM	0	0	0	0	0																	
	Random		×	×	×	×	×	×	×	×														
T (sub setting 1)	Batch	- DevTS			O*7	0	0																	
	Random		×	×	×	×	×	×	×	×														
	Batch	DevTS2					0																	
I (sub setting 2)	Random		×	×	×	×	×	×	×	×														
	Batch									0														
I (sub setting 3)	Random	Dev1S3	×	×	×	×	×	×	×	×														
o /	Batch	D 011	0	0	0	0	0																	
C (main setting)	Random	DevCM	×	×	×	×	×	×	×	×														
	Batch				O*7	0	0																	
C (sub setting 1)	Random	DevCS	×	×	×	×	×	×	×	×														
	Batch			× ×	× ×	× ×	× ×	× ×	×	×			0											
ub setting 2)	Random	DevCS2	×								×	×	×	×	×	×	×	×	×	×	×	×	×	×
	Batch							0																
C (sub setting 3)	Random	DevCS3	×	×	×	×	×	×	×	×														
٨	Batch	Dev	_										L											
<u></u>	Random	DevA	0	0	0	0	0	×	×	×														
Z	Batch	DevZ	0	0	0	0	0	0	×	0														
=	Random		Ŭ	\smile))	Ŭ		Ŭ														

O: Accessible ×: Inaccessible

MELSEC **Q** series

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SAMPLE PROGRAMS

EVENT NUMBER LIST

* 1 The following C Controller module is not accessible.

• Q06CCPU-V with serial number (first five digits) "10101" or earlier

* 2 The following C Controller module is not accessible.

- Q12DCCPU-V with serial number (first five digits) "12041" or earlier • Q06CCPU-V
- * 3 When accessing to the device of No.32768 (8000H) or higher, use an extended function. (Page 10-4, Section 10.2)
- * 5 Available only when the device function is used. (
- * 6 The following C Controller module cannot access the extended data register (D). Q06CCPU-V with serial number (first five digits) "10011" or earlier
- * 7 Access is not allowed for the A2ACPU(-S1).

1 O PROGRAMMING USING MELSEC DATA LINK FUNCTIONS

MELSEC Q series

		Device type	Access target								
Device		(Device name specification)	1)	2)	3)	4)	5)	6)	7)	8) ^{*1}	
V (index register)	Batch	Double			~		0				
v (index register)	Random	Devv	0	0	0	0	0	×	x	×	
R (file register)	Batch	DevR	~	0	0	0	0	v *8	×	0	
	Random	Dont	^	0	0	0	0	^	^	0	
ZD (file register)*3	Batch	DevZR	~	~	~	~	~	○ *9	~	0	
ZR (lile register)	Random	Devzit	^	~	~	~	~	0	^	0	
EP (ovtended file register)	Batch	DevER(0) to $DevER(256)$		~	0	0	(○ *9		(
ER (extended me register)	Random	Dever(0) to Dever(256)	×	0	0	0	0	0,	×	0	
D*3 *10	Batch	DovR		0	0	0	0	~	~*12 *13	0	
В °, 10	Random	Devb	0	0	0	0	0	0	0 .2, .0	0	
w/*3.*11	Batch	Dev/W	0	0	\sim	0	0	\sim	^*12	(
VV ·	Random			0	0	0	0	0	0	0	
Q/QnA link special relay (within	Batch	DevOSB	×	×	×	×	×	0	×	\circ	
Q/QnACPU)	Random	201402	Â	Â	^	^	^	0	^	0	
Retentive timer (contact)	Batch	DevSTT	×	×	×	×	×	0	×	0	
	Random		^	~	~	~	~	Ŭ	~	0	
Retentive timer (coil)	Batch	DevSTC	×	x	x	x	×	0	×	0	
	Random		~	~	~	~	~	Ŭ	~)	
Q/QnA link special register	Batch	DevQSW	×	x	x	x	x	0	×	0	
(within Q/QnACPU)	Random									0	
Q/QnA edge relay (within Q/	Batch	DevQV	×	×	×	×	×	0	×	0	
QnACPU)	Random							0		0	
Own station random access	Batch	DevMRB	×	×	×	×	×	×	×	×	
buffer	Random										
Retentive timer (current value)	Batch	DevSTN	×	×	×	×	×	0	×	0	
	Random										
Own station link register	Batch	DevWw	×	×	×	×	×	×	×	×	
	Random										
Own station link register	Bandom	DevWr	×	×	×	×	×	×	×	×	
	Batch										
Own station buffer memory	Random	DevSPB	×	×	×	×	×	×	×	×	
	Batch										
arrival confirmation)	Random	DevMAIL	×	×	×	×	×	×	×	×	
O/OnA SEND function (no	Batch										
arrival confirmation)	Random	DevMAILNC	×	×	×	×	×	×	×	×	

Table 10.20 Accessible devices for accessing other station (continued)

○: Accessible ×: Inaccessible

* 1 The following C Controller module is not accessible.

• Q06CCPU-V with serial number (first five digits) "10101" or earlier

 * 3 When accessing to the device of number 32768 (8000 ${\rm \tiny H})$ or higher, use an extended function.

(Page 10-4, Section 10.2)

- * 8 For the access, use ZR (file register) or ER (extended file register).
- * 9 Access is not allowed for the Q00JCPU.
- * 10 The following C Controller module cannot access the link relay (B) of device No.32768 (8000н) or higher.
 - Q06CCPU-V
- * 11 The following C Controller module cannot access the extended link register (W).
 - Q06CCPU-V with serial number (first five digits) "10011" or earlier
- * 12 Only the following C Controller module is accessible.
 - Q12DCCPU-V (Extended mode)
 - Q24DHCCPU-V with serial number (first five digits) "14081" or later
 - Q24DHCCPU-VG
- * 13 BFFFF_H or later cannot be accessed.
PROGRAMMING USING MELSEC DATA LINK FUNCTIONS

			•		•	,					S
		Device type	Access target								ACE
Device		(Device name specification)	1)	2)	3)	4)	5)	6)	7)	8) ^{*1}	AMM ERF/
Direct link input (Other station	Batch	Dovil X(1) to Dovil X(255)				~			○ *2	~	INT CTIC
side)	Random		×	×	×	×	×	0	0-	×	PRC FUN
Direct link output (Other station	Batch	$P_{2}(1) = P_{2}(1) $		~	~	~	~			~	10
side)	Random		^	^	^	^	^	0	0	^	
Direct link relay (Other station	Batch	Devil B(1) to Devil B(255)	~	~	~	~	~	0		~	SING
side)	Random		^	^	^	^	^	0	0	^	S US
Direct link register (Other	Batch	DevI W(1) to DevI W(255)		×		~	×	0	O ^{*2}	×	MING ATA I S
station side) ^{*3}	Random		Â	^	^	^	^	0	0	^	C D/
Direct link special relay (Other	Batch	Poul SP(1) to Poul SP(255)						0	o*2		OGF ILSE NCT
station side)	Random		×	×	×	×	×	0	0-	×	RAD
Direct link special register	Batch	Dovid $S(M/(1))$ to Dovid $S(M/(255))$	~	~	~	~	~	0	○ *2	~	11
(Other station side)	Random			~	^	~	~	0	0-	~	Ŋ
Special direct buffer register,	Batch										SUS
Intelligent function module buffer memory	Random	DevSPG(0) to DevSPG(255)	×	×	×	×	×	0	O*2	0	
*14	Batch	DavDDM	0	0	0	0	0	0	0	0	GRA orks.
Other station buffer memory "	Random	DevRBM	×	×	×	×	×	×	×	×	PRO VXW
Other station random access	Batch		0	0	0	0	0	0	0	0	12
buffer ^{*14}	Random	Devicad	×	×	×	×	×	×	×	×	
0", t ", DV*14	Batch	DavBY	0	0	0	0	0	0	0	0	WS
Other station RX 14	Random	Devkx	×	×	×	×	×	×	×	×	GRA
0", t.", DV*14	Batch	Dev/DV	0	0	0	0	0	0	0	0	PRO
Other station RY	Random	Devici	×	×	×	×	×	×	×	×	PLE
ou	Batch	Dev DW/	0	0	0	0	0	0	0	0	SAM
Other station link register	Random	DevRvv	×	×	×	×	×	×	×	×	13
Other station SB (Link special	Batch	D 0D	0	0	0	0	0	0	0	0	
relay for CC-Link) ^{*14}	Random	Dev2R	×	×	×	×	×	×	×	×	IST
Other station SW (Link special	Batch	DevOW	0	0	0	0	0	0	0	0	ERL
register for CC-Link)*14	Random	DevSvv	×	×	×	×	×	×	×	×	UMB

Table	10 20	Accessible	devices	for	accessing	other	station	(continued)	۱
Iable	10.20	ACCESSINIE	uevices	IUI.	accessing	other	Station	Commueu	,

O: Accessible x: Inaccessible

* 1 The following C Controller module is not accessible.

• Q06CCPU-V with serial number (first five digits) "10101" or earlier

* 2 The following C Controller module is not accessible.

• Q12DCCPU-V with serial number (first five digits) "12041" or earlier • Q06CCPU-V

* 3 When accessing to the device of number 32768 (8000H) or higher, use an extended function.

(Page 10-4, Section 10.2)

* 14 Indicates the access to the buffer memory of a CC-Link module (intelligent device station) installed with each CPU module.

Access is not allowed to multiple CPU systems (when the logical station number is specified).

MELSEG Q series

SAMPLE PROGRAMS

MELSEC **Q** series

10.13.3 Access via MELSECNET/H

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B

(1) Accessible range

(a) How to read the table

The items from [1.Connected network] to [4.Target CPU] in Table 10.22 correspond to the numbers indicated in the figure below.



The numbers in the [4.Target CPU] column indicate the modules or boards for personal computer as in the table below.

No.	CPU type					
1)	C Controller module, PC CPU module					
2)	MELSECNET/H board (personal computer)					
3)	CC-Link IE Controller Network interface board (personal computer)					

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- (b) Accessible range for own station and [2.Connected station CPU] The own station and [2.Connected station CPU] are all accessible.
- (c) Accessible range for [4.Target CPU]

			4.Target CPU									
1.Connected network	2.Connected station CPU	3.Relayed network	QCPU		QnA CPU	ACPU	1)	Board for personal computer		LCPU		
			Q mode	A mode				2)	3)			
		CC-Link IE Controller Network ^{*1}	0	×	×	×	O ^{*4,*5}	×	×	×		
		CC-Link IE Field Network	×	×	×	×	×	×	×	×		
	QCPU (Q mode)	MELSECNET/H ^{*2}	0	×	×	×	0	0	×	×		
		MELSECNET/10 ^{*3}	0	0	0	0	0	0	×	×		
		MELSECNET(II)	×	×	×	×	×	×	×	×		
		Ethernet	0	×	×	×	×	×	×	×		
		Computer link	×	×	×	×	×	×	×	×		
MELSECNET/H		CC-Link	×	×	×	×	×	×	×	×		
		CC-Link IE Controller Network	×	×	×	×	×	×	×	×		
		CC-Link IE Field Network	×	×	×	×	×	×	×	×		
	C Controller	MELSECNET/H	×	×	×	×	×	×	×	×		
	module ^{*6}	MELSECNET/10	×	×	×	×	×	×	×	×		
		MELSECNET(II)	×	×	×	×	×	×	×	×		
		Ethernet	×	×	×	×	×	×	×	×		
		Computer link	×	×	×	×	×	×	×	×		
		CC-Link	×	×	×	×	×	×	×	×		

Table 10.22 Accessibility table

 \bigcirc : Accessible \times : Inaccessible

MELSEG Q series

- * 1 Only when all the CPU module connected and relay stations are Universal model QCPU, a CC-Link IE Controller Network module of station number 65 or higher can be accessed.
- * 2 Access is allowed when the MELSECNET/H module of the connected station is in the MELSECNET/ H mode.

* 3 Access is allowed when the MELSECNET/H module of the connected station is in the MELSECNET/ 10 mode.

- * 4 The following C Controller module cannot access the C Controller module allocated to [4. Target CPU].
 - Q06CCPU-V with serial number (first five digits) "10011" or earlier
- * 5 Access is not allowed to PC CPU modules.
- * 6 The following C Controller module is not accessible.
 - Q12DCCPU-V with serial number (first five digits) "12041" or earlier
 Q06CCPU-V

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			4.Target CPU									
								Boar				
1.Connected	2.Connected	3.Relayed	QCPU		QnA	ACPU	1)	pers	LCPU			
network	station CPU	network			CPU			computer				
			Q mode	A mode				2)	3)			
		CC-Link IE Controller					- *4 *5					
		Network ^{*1}	0	×	×	×	O ^{~4,~5}	×	×	×		
		CC-Link IE Field Network	×	×	×	×	×	×	×	×		
	QCPU	MELSECNET/H	0	×	×	×	O ^{*5}	0	×	×		
	(Q mode)	MELSECNET/10	0	0	0	0	O ^{*5}	0	×	×		
		MELSECNET(II)	×	×	×	×	×	×	×	×		
		Ethernet	0	×	×	×	×	×	×	×		
		Computer link	×	×	×	×	×	×	×	×		
		CC-Link	×	×	×	×	×	×	×	×		
		CC-Link IE Controller Network	×	×	×	×	×	×	×	×		
	QnACPU	CC-Link IE Field Network	×	×	×	×	×	×	×	×		
		MELSECNET/H	×	×	×	×	×	×	×	×		
		MELSECNET/10	0	0	0	0	O ^{*5}	0	×	×		
		MELSECNET(II)	×	×	×	×	×	×	×	×		
		Ethernet	×	×	0	×	×	×	×	×		
		Computer link	×	×	×	×	×	×	×	×		
MELSECNET/10		CC-Link	×	×	×	×	×	×	×	×		
		CC-Link IE Controller Network	×	×	×	×	×	×	×	×		
		CC-Link IE Field Network	×	×	×	×	×	×	×	×		
	QCPU	MELSECNET/H	×	×	×	×	×	×	×	×		
	(A mode),	MELSECNET/10	0	0	0	0	O ^{*5}	0	×	×		
	ACFU	MELSECNET(II)	×	×	×	×	×	×	×	×		
		Ethernet	×	×	×	×	×	×	×	×		
		Computer link	×	×	×	×	×	×	×	×		
		CC-Link	×	×	×	×	×	×	×	×		
		CC-Link IE Controller Network	×	×	×	×	×	×	×	×		
		CC-Link IE Field Network	×	×	×	×	×	×	×	×		
	C Controller	MELSECNET/H	×	×	×	×	×	×	×	×		
	module ^{*6}	MELSECNET/10	×	×	×	×	×	×	×	×		
		MELSECNET(II)	×	×	×	×	×	×	×	×		
		Ethernet	×	×	×	×	×	×	×	×		
		Computer link	×	×	×	×	×	×	×	×		
		CC-Link	×	×	×	×	×	×	×	×		

Table 10.22 Accessibility table (continued)

 \bigcirc : Accessible \times : Inaccessible

* 1 Only when all the CPU module connected and relay stations are Universal model QCPU, a CC-Link IE Controller Network module of station number 65 or higher can be accessed.

* 4 The following C Controller module cannot access the C Controller module allocated to [4. Target CPU].

• Q06CCPU-V with serial number (first five digits) "10011" or earlier

 * 5 Access is not allowed to PC CPU modules.

* 6 The following C Controller module is not accessible.

• Q12DCCPU-V with serial number (first five digits) "12041" or earlier • Q06CCPU-V

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(2) Accessible devices

(a) How to read the table

1) Batch and random of devices

Item in the table	Description
Potob	 Batch write (mdSend, mdSendEx functions)
Daton	 Batch read (mdReceive, mdReceiveEx functions)
	 Random write(mdRandW, mdRandWEx functions)
	 Random read(mdRandR, mdRandREx functions)
Pandom	 Bit set(mdDevSet, mdDevSetEx functions)
Kandom	Only bit devices can access.
	 Bit reset(mdDevRst, mdDevRstEx functions)
	Only bit devices can access.

2) Access target for accessing other station

Table 10.24 Access target for accessing other station

No.	Access target
1)	A1NCPU
2)	A0J2HCPU, A1S(H)CPU, A1SJ(H)CPU, A2NCPU(-S1), A2S(H)CPU
2)	A2ACPU(-S1), A2UCPU(-S1), A2USCPU(-S1), A2USHCPU-S1
3)	Q02(H)CPU-A, Q06HCPU-A
4)	A3NCPU, A3ACPU, A3UCPU
5)	A4UCPU
	Q2ACPU(-S1), Q3ACPU, Q4ACPU, Q4ARCPU, Q2ASCPU(-S1), Q2ASHCPU(-S1)
	Q00JCPU, Q00CPU, Q01CPU
	Q02(H)CPU, Q06HCPU, Q12HCPU, Q25HCPU
	Q02PHCPU, Q06PHCPU, Q12PHCPU, Q25PHCPU
6)	Q00UJCPU, Q00UCPU, Q01UCPU, Q02UCPU, Q03UDCPU, Q04UDHCPU, Q06UDHCPU,
	Q10UDHCPU, Q13UDHCPU, Q20UDHCPU, Q26UDHCPU, Q03UDECPU, Q04UDEHCPU,
	Q06UDEHCPU, Q10UDEHCPU, Q13UDEHCPU, Q20UDEHCPU, Q26UDEHCPU,
	Q50UDEHCPU, Q100UDEHCPU, Q03UDVCPU, Q04UDVCPU, Q06UDVCPU, Q13UDVCPU,
	Q26UDVCPU
	C Controller module that controls a CC-Link IE Controller Network module,
	C Controller module that controls a MELSECNET/H module,
7)	PC CPU module that controls a MELSECNET/H module,
	Personal computer with a CC-Link IE Controller Network interface board,
	Personal computer with a MELSECNET/H board
8)	L02CPU, L26CPU-BT

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MELSEC **Q** series

(b) Accessible devices for accessing own station

Table 10.25 Accessible devices for accessing own station

Device		Device type (Device name specification)	Accessibility
Own station input internal	Batch	DevX	0
buffer (LX buffer)	Random	Devx	0
Own station output internal	Batch	Dev/Y	0
buffer (LY buffer)	Random		0
Own station link relay internal	Batch	DevB	
buffer (LB buffer)	Random		0
Own station link register	Batch		
internal buffer (LW buffer)	Random		0
	Batch	DovMAII	0
	Random	Devinale	×
Own station direct link input	Batch	Dovil X(0)	0
(LX)	Random	Devex(0)	0
Own station direct link output	Batch	Devi V(0)	0
(LY)	Random	Dever(0)	0
Own station direct link relay	Batch		0
(LB)	Random	Deveb(0)	0
Own station direct link register	Batch		0
(LW)	Random	Devew(0)	0
Own station direct link special	Batch	DevSB(0)	
relay (SB)	Random		0
Own station direct link special	Batch	DevSW(0)	
register (SW)	Random	20000(0)	5

O: Accessible ×: Inaccessible

MELSEG **Q** series

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EVENT NUMBER LIST

		10.26 Accessible devices for		cing of	nuon or stati	o.n					NG U
	Table	Device type									
Device		(Device name specification)	1)	2)	3)	4)	5)	6)	7)	8)	OGR NCTION
х	Batch Random	DevX	0	0	0	0	0	0	O*1	×	
Y	Batch Random	DevY	0	0	0	0	0	0	O*1	×	DN NG
L	Batch Random	DevL	0	0	0	0	0	0	×	×	NG USI A LINK
M ^{*2,*3}	Batch Random	DevM	0	0	0	0	0	0	O ^{*1,*4}	×	SRAMM EC DAT
SM (special relay), SB (link special relay for MELSECNET/	Batch	DovSM							0*1		PR00 MELS
H, CC-Link IE Controller Network and CC-Link)	Random	Devom	0	0	0	0	0	0	0.	×	ŋ
F	Batch Random	DevF	0	0	0	0	0	0	×	×	NG USII
T (contact)	Batch Random	DevTT	0	0	0	0	0	0	×	×	BRAMMI rks API TIONS
T (coil)	Batch Random	DevTC	0	0	0	0	0	0	×	×	PROG VXWo
C (contact)	Batch Random	DevCT	0	0	0	0	0	0	×	×	12
C (coil)	Batch Random	DevCC	0	0	0	0	0	0	×	×	SMAR
T (current value)	Batch Random	DevTN	0	0	0	0	0	0	×	×	BORD :
C (current value)	Batch Random	DevCN	0	0	0	0	0	0	×	×	
D ^{*2,*5}	Batch Random	DevD	0	0	0	0	0	0	O ^{*1,*4}	×	13
SD (special register), SW (link special register for	Batch										NT NT
MELSECNET/H, CC-Link IE Controller Network and CC- Link)	Random	DevSD	0	0	0	0	0	0	O ^{*1}	×	NUMBER

(c) Accessible devices for accessing other station

O: Accessible x: Inaccessible

- * 1 The following C Controller module is not accessible. • Q12DCCPU-V with serial number (first five digits) "12041" or earlier
 - Q06CCPU-V

* 2 When accessing to the device of number 32768 (8000_H) or higher, use an extended function.

(Page 10-4, Section 10.2)

- * 3 The following C Controller module cannot access the internal relay (M) of device No.32768 (8000H) or higher.
 - ·Q06CCPU-V
- * 4 Available only when the device function is used. (FFP Page 4-35, Section 4.8)
- * 5 The following C Controller module cannot access the extended data register (D).
 - Q06CCPU-V with serial number (first five digits) "10011" or earlier

Daviaa		Device type				Acces	ss target			
Device		(Device name specification)	1)	2)	3)	4)	5)	6)	7)	8)
T (main setting)	Batch	DevTM	0	0	0	0	0	,	~	v
r (main setting)	Random	Devition	×	×	×	×	×	^	^	~
T(sub softing 1)	Batch	DovTS		~	O ^{*6}	0	0	~	~	2
	Random	Devis	X	X	×	×	×	×	×	X
T (sub softing 2)	Batch	DovTS2					0			
r (sub setting 2)	Random	Devi 52	X	X	X	X	×	×	×	X
T(sub softing 3)	Batch	DovTS3	~	×	~	~	0	~	×	
r (sub setting 5)	Random	Devi 33	X	X	×	X	×	×	×	X
C (main potting)	Batch	DavCM	Access target 1) 2) 3) 4) 5) 6) 7) DevTM \bigcirc <							
C (main seuing)	Random	DevCivi	×	×	×	×	×	×	×	X
C (sub softing 1)	Batch	DavCS			O ^{*6}	0	0			
	Random	DevC3	x	X	×	×	×	×	×	×
Q (sub setting Q)	Batch	D000					0			
C (sub setting 2)	Random	DevC32	x	×	×	×	×	×	×	x
C (auth actting 2)	Batch	Dev(CS)					0			
C (sub setting 3)	Random	DevCSS	x	×	×	×	×	×	×	x
۵	Batch	ΠονΔ	0	0	\sim	0	0	~	~	>
<i>N</i>	Random	Dewr	0	0	0	0	0	^	^	^
Z	Batch	DevZ	0	0	0	0	0	0	×	×
	Random				Ũ					
V (index register)	Batch	DevV	0	0	0	0	0	×	×	×
	Batch									
R (file register)	Random	DevR	×	0	0	0	0	× *7	×	×
	Batch	D 7D						- *9		
ZR (file register) ²	Random	DevZR	×	×	×	×	×	٥°	×	×
EP (ovtopdod filo registor)	Batch	DovEP(0) to $DovEP(256)$	~	0	\sim	0	0	○ *8	~	~
ER (extended life register)	Random		X	0	0	0	0	0.	×	X
B ^{*2,*9}	Batch	DevB	0	0	0	0	0	0	^{*11,*12}	x
5	Random		Ŭ	0	0	0	Ŭ	Ŭ	0	
W*2,*10	Batch	DevW	0	0	0	0	0	0	O ^{*11}	×
Q/QnA link appaint rolay (within	Batch									
Q/QnACPU)	Random	DevQSB	×	×	×	×	×	0	×	×

Table 10 26 Accessible	devices for	accessing	other station	(continued)
Table TO.20 Accessible	0001003 101	accessing	other station	(continueu)

O: Accessible x: Inaccessible

* 2 When accessing to the device of number 32768 (8000 ${\mbox{\tiny H}})$ or higher, use an extended function.

(F Page 10-4, Section 10.2)

- * 6 Access is not allowed for the A2ACPU(-S1).
- * 7 For the access, use ZR (file register) or ER (extended file register).
- * 8 Access is not allowed for the Q00JCPU.
- * 9 The following C Controller module cannot access the link relay (B) of device No.32768 (8000_H) or higher.
 - Q06CCPU-V
- * 10 The following C Controller module cannot access the extended link register (W).
 - Q06CCPU-V with serial number (first five digits) "10011" or earlier
- * 11 Only the following C Controller module is accessible.
 - Q12DCCPU-V (Extended mode)
 - Q24DHCCPU-V with serial number (first five digits) "14081" or later
 - Q24DHCCPU-VG
- * 12 BFFFF_H or later cannot be accessed.

PROGRAMMING USING MELSEC DATA LINK FUNCTIONS

Table 10.26 Accessible devices for accessing other station (continued)								SING			
		Device type	Access target								с В С
Device		(Device name specification)	1)	2)	3)	4)	5)	6)	7)	8)	MMIN
Retentive timer (contact)	Batch	DevSTT	~	~	~	~	v	0	~	~	GRAI
	Random	Devoli	^	^	^	^	^	0	^	^	
Retentive timer (coil)	Batch	DevSTC	~	~	~	~	~	0	~	~	40
	Random	Bevoro	^	^	^	^	^	0	^	^	
Q/QnA link special register (within	Batch	DevOSW	~	~	~	~	~	0	~	×	NG
Q/QnACPU)	Random	bordon	Â	^	^	^	^	0	^	^	US INK
Q/QnA edge relay (within Q/	Batch	DevQV	×	×	×	×	×	0	×	×	
QnACPU)	Random		^	~	^	~	~	0	^	~	
Own station random access buffer	Batch	DevMRB	×	×	×	×	×	×	×	×	SEC
	Random		~	~	~	~	~	~	~	~	PR(MEI FUN
Retentive timer (current value)	Batch	DevSTN	×	×	×	×	×	0	×	×	11
	Random		~	~	~	~	~	0	~	~	
Own station link register (for	Batch	DevWw	×	×	×	×	×	×	×	×	SING
sending)	Random										- 9
Own station link register (for	station link register (for Batch ring) Random	DevWr	×	×	×	x x	×	×	×	×	MINC
receiving)											S AF
Own station buffer memory	Batch	DevSPB	×	×	×	×	×	×	×	×	NCT
Own station buller memory	Random		~			~					ЯŅЭ
Q/QnA SEND function (with arrival	Batch	DevMAll	x	~	~	~	×	0	O ^{*14}	×	12
confirmation) ^{*13}	Random	Doving all	Â	^	^	^	^	×	×	^	
Q/QnA SEND function (no arrival	Batch	5. 144						0	O ^{*14}		MS MS
confirmation) ^{*13}	Random	DevMAILNC	×	×	×	×	×	×	×	×	GRA
	Batch										- ON
Direct link input (other station side)	Random	DevLX(1) to DevLX(255)	×	×	×	×	×	0	O*1	×	Ë
Direct link output (other station	Batch								*4		- MP
side)	Random	DevLY(1) to DevLY(255)	×	×	×	×	×	0	01	×	Ś
	Batch							_	- *1		13
Direct link relay (other station side)	Random	DevLB(1) to DevLB(255)	×	×	×	×	×	0	0'	×	
Direct link register (other station	Batch							-	- *1		- ISI
side) ^{*2}	Random	DevLW(1) to DevLW(255)	×	×	×	×	×	0	0 '	×	BER
Direct link special relay (other	Batch							_	- *1		NUME
station side)	Random	DevLSB(1) to DevLSB(255)	×	×	×	×	×	0	0"	×	L L
Direct link special register (other	Batch							_	- *1		EVE
station side)	Random	DevLSW(1) to DevLSW(255)	×	×	×	×	×	0	0 '	×	
Special direct buffer register,	Batch										
Intelligent function module buffer memory	Random	DevSPG(0) to DevSPG(255)	×	×	×	×	×	0	×	×	
	Batch										-
Other station buffer memory	Random	DevRBM	×	×	×	×	×	×	×	×	

O: Accessible ×: Inaccessible

MELSEC **Q** series

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EVENT NUMBER LIST

- * 1 The following C Controller module is not accessible.
 - Q12DCCPU-V with serial number (first five digits) "12041" or earlier • Q06CCPU-V
- * 2 When accessing to the device of number 32768 (8000H) or higher, use an extended function.

(Page 10-4, Section 10.2)

- * 13 This function is used to send messages to a network module on the other station via a MELSECNET/H module.
- Access is not allowed to a multiple CPU system (when the logical station numbers are specified). * 14 Access is not allowed for MELSECNET/H modules (PC CPU modules) and CC-Link IE Controller Network interface boards (personal computers).

(To the next page)

10.13 Accessible Ranges and Devices of the MELSEC Data Link Function 10.13.3 Access via MELSECNET/H O PROGRAMMING USING MELSEC DATA LINK FUNCTIONS

MELSEG **Q** series

Device		Device type	Device type Access target							
		(Device name specification)	1)	2)	3)	4)	5)	6)	7)	8)
Other station random access	Batch	DevRAB	~	~	~	~	~	~	~	~
buffer	Random	DEVITAD	~	~	~	~	~	~	~	~
Other station RX	Batch	DevRY	~	~						
	Random	DevitX	×	^	^	^	^	~	~	~
Other station RV	Batch DovPY		×	~	~	~	~	~	~	~
	Random	DevRY ×	×	^	^	^	^	~	~	~
Other station link register	Batch	DevRW	~	~	~	~	~	~	~	~
	Random	Devitw	^	^	^	^	^	~	~	~
Other station SB (link special relay	Batch	DevSB	~	~	~	~	~	~	~	~
for CC-Link)	Random	udom DevSB		^	^	^	^	~	~	~
Other station SW (link special	Batch	DevSW	~	~	~	~	~	~	~	~
register for CC-Link)	Random	Devow	^	^	^	^	^	~	~	~

Table 10.26 Accessible devices for accessing other station (continued)

O: Accessible ×: Inaccessible

MELSEG **Q** series

10.13.4 Access via CC-Link IE Controller Network



(1) Accessible range

(a) How to read the table

The items from [1.Connected network] to [4.Target CPU] in the Accessibility table correspond to the numbers indicated in the figure below.



Figure 10.9 Accessible range via CC-Link IE Controller Network

The numbers in the [4.Target CPU] column indicate the modules or boards for personal computer as in the table below.

Table	10.27	Routing	target	CPU

No.	CPU type
1)	C Controller module, PC CPU module
2)	MELSECNET/H board (personal computer)
3)	CC-Link IE Controller Network interface board (personal computer)

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PROGRAMMING USING VXWorks API FUNCTIONS (b) Accessible range for own station and [2.Connected station CPU] The own station and [2.Connected station CPU] are all accessible.

			4.Target CPU									
1.Connected	2.Connected	3.Relayed network	QCPU					Board for				
network	station CPU				QnACPU	ACPU	1)	computer		LCPU		
			Q mode	A mode				2)	3)			
		CC-Link IE Controller Network ^{*1}	O*2	×	×	×	O ^{*3,*4}	×	×	×		
		CC-Link IE Field Network	×	×	×	×	×	×	×	×		
		MELSECNET/H	O ^{*2}	×	×	×	O ^{*4}	0	×	×		
	QCPU (Q mode)	MELSECNET/10	O ^{*2}	0	0	0	O ^{*4}	0	×	×		
		MELSECNET(II)	×	×	×	×	×	×	×	×		
		Ethernet	0	×	×	×	×	×	×	×		
CC-Link IE		Computer link	×	×	×	×	×	×	×	×		
Controller		CC-Link	×	×	×	×	×	×	×	×		
Network		CC-Link IE Controller Network	×	×	×	×	×	×	×	×		
		CC-Link IE Field Network	×	×	×	×	×	×	×	×		
	C Controller	MELSECNET/H	×	×	×	×	×	×	×	×		
	module ^{*5}	MELSECNET/10	×	×	×	×	×	×	×	×		
		MELSECNET(II)	×	×	×	×	×	×	×	×		
		Ethernet	×	×	×	×	×	×	×	×		
		Computer link	×	×	×	×	×	×	×	×		
		CC-Link	×	×	×	×	×	×	×	×		

(c) Accessible range for [4.Target CPU]

Table 10.28 Accessibility table

O: Accessible x: Inaccessible

MELSEG Q series

* 1 Only when all the CPU module on the connected and relay stations are Universal model QCPU, a CC-Link IE Controller Network module of station number 65 or higher can be accessed.

* 2 Access is not allowed when the connected station CPU is the Q00CPU or Q01CPU.

* 3 The following C Controller module cannot access the C Controller module allocated to [4. Target CPU].

• Q06CCPU-V with serial number (first five digits) "10011" or earlier

* 4 Access is not allowed to the PC CPU modules.

* 5 The following C Controller module is not accessible.

• Q12DCCPU-V with serial number (first five digits) "12041" or earlier

• Q06CCPU-V

(2) Accessible devices

(a) How to read the table

1) Batch and random of devices

Tuble 10.20 Buton and fundom of devices

Item in the table	Description
Potob	 Batch write (mdSend, mdSendEx functions)
Daton	 Batch read (mdReceive, mdReceiveEx functions)
	 Random write(mdRandW, mdRandWEx functions)
	 Random read(mdRandR, mdRandREx functions)
Pandom	 Bit set(mdDevSet, mdDevSetEx functions)
Kandom	Only bit devices can access.
	 Bit reset(mdDevRst, mdDevRstEx functions)
	Only bit devices can access.

2) Access target for accessing other station

Table 10.30 Access target for accessing other station

No.	Access target
1)	A1NCPU
2)	A0J2HCPU, A1S(H)CPU, A1SJ(H)CPU, A2NCPU(-S1), A2S(H)CPU
2)	A2ACPU(-S1), A2UCPU(-S1), A2USCPU(-S1), A2USHCPU-S1
3)	Q02(H)CPU-A, Q06HCPU-A
4)	A3NCPU, A3ACPU, A3UCPU
5)	A4UCPU
	Q2ACPU(-S1), Q3ACPU, Q4ACPU, Q4ARCPU, Q2ASCPU(-S1), Q2ASHCPU(-S1)
	Q00JCPU, Q00CPU, Q01CPU
	Q02(H)CPU, Q06HCPU, Q12HCPU, Q25HCPU
	Q02PHCPU, Q06PHCPU, Q12PHCPU, Q25PHCPU
6)	Q00UJCPU, Q00UCPU, Q01UCPU, Q02UCPU, Q03UDCPU, Q04UDHCPU, Q06UDHCPU,
	Q10UDHCPU, Q13UDHCPU, Q20UDHCPU, Q26UDHCPU, Q03UDECPU, Q04UDEHCPU,
	Q06UDEHCPU, Q10UDEHCPU, Q13UDEHCPU, Q20UDEHCPU, Q26UDEHCPU,
	Q50UDEHCPU, Q100UDEHCPU, Q03UDVCPU, Q04UDVCPU, Q06UDVCPU, Q13UDVCPU,
	Q26UDVCPU
	C Controller module that controls a CC-Link IE Controller Network module,
	C Controller module that controls a MELSECNET/H module,
7)	PC CPU module that controls a MELSECNET/H module,
	Personal computer with a CC-Link IE Controller Network interface board,
	Personal computer with a MELSECNET/H board
8)	L02CPU, L26CPU-BT

SAMPLE PROGRAMS

PROGRAMMING USING BUS INTERFACE FUNCTIONS

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PROGRAMMING USING VXWorks API FUNCTIONS

MELSEC **Q** series

(b) Accessible devices for accessing own station

Table 10.31 Accessible devices for accessing own station

Device		Device type (Device name specification)	Accessibility
Own station input internal	Batch	DevX	0
buffer (LX buffer)	Random	Devx	0
Own station output internal	Batch	DevV	0
buffer (LY buffer)	Random	Devi	0
Own station link relay internal	Batch	DevB	
buffer (LB buffer)	Random	DevD	0
Own station link register	Batch		0
internal buffer (LW buffer)	Random	Bevvv	0
O/OnA RECV/ function	Batch		0
	Random	Devinale	×
Own station direct link input	Batch	Davit X(0)	0
(LX)	Random	Deven(0)	0
Own station direct link output	Batch	Devi Y(0)	
(LY)	Random	Dever(0)	0
Own station direct link relay	Batch	Devi B(0)	
(LB)	Random	DCVED(0)	0
Own station direct link register	Batch		0
(LW) ^{*1}	Random	DevEvv(0)	0
Own station direct link special	Batch	Dov(SB(0)	0
relay (SB)	Random	Dev3D(0)	0
Own station direct link special	Batch	DevSW(0)	0
register (SW)	Random	Devovi(0)	0

O: Accessible x: Inaccessible

 * 1 When accessing to the device of number 32768 (8000 ${\mbox{\tiny H}})$ or higher, use an extended function.

(Page 10-4, Section 10.2)

MELSEG **Q** series

	Table 10.32 Accessible devices for accessing other station									
Davias		Device type				Acces	s target			
Device		(Device name specification)	1)	2)	3)	4)	5)	6)	7)	8)
x	Batch	DevX					\sim		O*1	~
^	Random	Devx	0	0	0	0	0	0	0	~
Y	Batch	DevY	0	0	0	0	0	0	O*1	×
•	Random		0	0	0	0	0	0	0	^
L	Batch	DevL	0	0	0	0	0	0	×	×
	Random		Ŭ	Ŭ	Ŭ	<u> </u>	0	Ŭ	~	~
M ^{*2,*3}	Batch	DevM	0	0	0	0	0	0	O ^{*1,*4}	×
	Random		Ŭ	Ŭ	Ŭ	0	0	Ŭ	Ŭ	
SM (special relay), SB (link special relay for	Batch	5.04					•		- *1	
Controller Network and CC- Link)	Random	DevSM	0	0	0	0	0	0	0'	×
c	Batch	DovE	~	~	~	0	0	~	~	~
F	Random	Deve	0	0	0	0	0	0	×	x
T (contact)	Batch	DevTT	0	0	0	\circ	0	0	~	×
r (contact)	Random	Devii	0	0	0	0	0	0	^	^
T (coil)	Batch	DevTC		\circ	0	\circ	\circ	\circ	~	×
. ()	Random	20110	0	0	0	0	0	0	~	~
C (contact)	Batch	DevCT	0	0	0	0	0	0	×	×
	Random	-	Ŭ	Ŭ	Ŭ	Ŭ	0	Ŭ		
C (coil)	Batch	DevCC	0	0	0	0	0	0	×	×
- ()	Random		Ŭ	Ŭ	0	0	0	0		
T (current value)	Batch	DevTN	0	0	0	0	0	0	×	×
· · ·	Random		-	-	-	-	-	-		
C (current value)	Batch	DevCN	0	0	0	0	0	0	×	×
	Random									
D*2,*5	Batch	DevD	0	0	0	0	0	0	O ^{*1,*4}	×
CD (anagial register) CM	Kandom									
(link special register), SW (link special register for MELSECNET/H_CC-Link IE	Batch	DevSD					0	0	O*1	×
Controller Network and CC-	Random	0000					0		0	^

(c) Accessible devices for accessing other station

O: Accessible x: Inaccessible

* 1 The following C Controller module is not accessible.

• Q12DCCPU-V with serial number (first five digits) "12041" or earlier • Q06CCPU-V

* 2 When accessing to the device of number 32768 (8000H) or higher, use an extended function. (Page 10-4, Section 10.2)

* 3 The following C Controller module cannot access the internal relay (M) of device No.32768 (8000H) or higher.

• Q06CCPU-V

*4 Available only when the device function is used. (

* 5 The following C Controller module cannot access the extended data register (D). • Q06CCPU-V with serial number (first five digits) "10011" or earlier

PROGRAMMING USING BUS INTERFACE FUNCTIONS 10 TA LINK PROGRAMMING USING VXWorks API FUNCTIONS

		Device type				Acces	ss target			
Device		(Device name specification)	1)	2)	3)	4)	5)	6)	7)	8)
T (main potting)	Batch	DovTM	0	0	0	0	0			
r (main setting)	Random	Devilvi	×	×	×	×	×	×	×	×
T (sub setting 1)	Batch	DevTS	>	>	O ^{*6}	0	0		~	V
	Random	Devio	~	^	×	×	×	^	^	^
	Batch	DeuTOO					0			
I (sub setting 2)	Random	Devi 52	×	×	×	×	×	×	×	×
T(a,b,a,b)	Batch	DeuT02					0			
I (sub setting 3)	Random	Devis3	×	×	×	×	×	×	×	×
	Batch	DevOM	0	0	0	0	0			
C (main setting)	Random	DevCM	×	×	×	×	×	×	×	×
C (sub setting 1)	Batch	Daves			O ^{*6}	0	0		×	
	Random	DevCS	×	×	×	×	×	×		×
	Batch	Dav 000	×		×		0			
C (sub setting 2)	Random	DevCS2		×		×	×	×	×	×
C (out cotting 2)	Batch	Dov(CS2	×				0			
C (sub setting 5)	Random	DevC35		×	×	×	×	×		×
۵	Batch	DevA	0	0	0	0	0	~	×	×
	Random	Dewr	0	0	0	0	0	^	^	^
Z	Batch	DevZ	0	0	0	0	0	0	×	×
	Random		0	-			-	<u> </u>		
V (index register)	Batch	DevV	0	0	0	0	0	×	×	×
	Batch									
R (file register)	Random	DevR	×	0	0	0	0	× *7	×	×
	Batch	D 70						*0	×	
ZR (file register) ²	Random	. DevZR	×	×	×	×	×	0 °		×
FD (automote d file na minter)	Batch			0	-	~	-	*0		
ER (extended file register)	Random	Dever(0) to Dever(256)	×	0	0	0	0	00	×	×
p*2, *9	Batch	DevB	0	0	0	0	0	0	*11,*12	~
	Random	2010	0	0	0	0	0		<u> </u>	^
W ^{*2, *10}	Batch	DevW	0	0	0	0	0	0	0 ^{*11}	×
	Random		1	-	-	-	-	-		
Q/QnA link special relay (within Q/	Bandom	DevQSB	×	×	×	×	×	0	×	×
	Nanuom							1	1	

Table 10.32 Accessible devices for accessing other station (continued)

O: Accessible ×: Inaccessible

* 1 The following C Controller module is not accessible.

Q12DCCPU-V with serial number (first five digits) "12041" or earlier
 Q06CCPU-V

* 2 When accessing to the device of number 32768 (8000 $_{\text{H}}$) or higher, use an extended function.

(🖅 Page 10-4, Section 10.2)

- * 6 Access is not allowed for the A2ACPU(-S1).
- * 7 For the access, use ZR (file register) or ER (extended file register).
- * 8 Access is not allowed for the Q00JCPU.
- * 9 The following C Controller module cannot access the link relay (B) of device No.32768 (8000_H) or higher.
 Q06CCPU-V

 * 10 The following C Controller module cannot access the extended link register (W).

Q06CCPU-V with serial number (first five digits) "10011" or earlier

- * 11 Only the following C Controller module is accessible.
 - Q12DCCPU-V (Extended mode)
 - Q24DHCCPU-V with serial number (first five digits) "14081" or later
 - Q24DHCCPU-VG
- * 12 BFFFFH or later cannot be accessed.

PROGRAMMING USING MELSEC DATA LINK FUNCTIONS

	Table 10.32	Accessible devices for acce	ssing o	ther sta	tion (co	ntinued)				DNISU
Device		Device type									
Retentive timer (contact)	Batch Random	(Device name specification) DevSTT	1) ×	2) ×	3) ×	4) ×	5) ×	6)	/) ×	8) ×	SOGRAMI JS INTER
Retentive timer (coil)	Batch	DevSTC	×	×	×	×	×	0	×	×	± ਛ ਦ 10
Q/QnAlink special register (within Q/QnACPU)	Batch Random	DevQSW	×	×	×	×	×	0	×	×	USING
Q/QnA edge relay (within Q/ QnACPU)	Batch Random	DevQV	×	×	×	×	×	0	×	×	MMING I DATA LIN NS
Own station random access buffer	Batch Random	DevMRB	×	×	×	×	×	×	×	×	
Retentive timer (current value)	Batch Random	DevSTN	×	×	×	×	×	0	×	×	11
Own station link register (for sending)	Batch Random	DevWw	×	×	×	×	×	×	×	×	USING
Own station link register (for receiving)	Batch Random	DevWr	×	×	×	×	×	×	×	×	AMMING s API ONS
Own station buffer memory	Batch Random	DevSPB	×	×	×	×	×	×	×	×	PROGF VxWork FUNCT
Q/QnA SEND function (with arrival confirmation) ^{*13}	Batch Random	DevMAIL	×	×	×	×	×	0 ×	0 ^{*14}	×	12
Q/QnA SEND function (no arrival confirmation) ^{*13}	Batch Random	DevMAILNC	×	×	×	×	×	O ×	0 ^{*14}	×	SRAMS
Direct link input (other station)	Batch Random	DevLX(1) to DevLX(255)	×	×	×	×	×	0	O*1	×	LE PROG
Direct link output (other station)	Batch Random	DevLY(1) to DevLY(255)	×	×	×	×	×	0	O*1	×	SAMP
Direct link relay (other station)	Batch Random	DevLB(1) to DevLB(255)	×	×	×	×	×	0	O*1	×	
Direct link register (other station) ^{*2}	Batch Random	DevLW(1) to DevLW(255)	×	×	×	×	×	0	O*1	×	BER LIS
Direct link special relay (other station)	Batch Random	DevLSB(1) to DevLSB(255)	×	×	×	×	×	0	O*1	×	NT NUMI
Direct link special register (other station)	Batch	DevLSW(1) to DevLSW(255)	×	×	×	×	×	0	O*1	×	EVE
Special direct buffer register,	Batch	DevSPG(0) to DevSPG(255)		~	~			0	O*1		
buffer memory	Random			^	^	^	^	0		^	

Table 10.32 Accessible devices for acc	essing other station (continued)
----------------------------------------	----------------------------------

O: Accessible x: Inaccessible

MELSEG Q series

SAMPLE PROGRAMS

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* 1 The following C Controller module is not accessible.

• Q12DCCPU-V with serial number (first five digits) "12041" or earlier • Q06CCPU-V

- * 2 When accessing to the device of number 32768 (8000H) or higher, use an extended function. (Page 10-4, Section 10.2)
- * 13 This function is used to send messages to a network module on the other station via a CC-Link IE Controller Network module.
- Access is not allowed to a multiple CPU system (when the logical station numbers are specified). * 14 Access is not allowed for MELSECNET/H modules (PC CPU modules) and CC-Link IE Controller

Network interface boards (personal computers).

O PROGRAMMING USING MELSEC DATA LINK FUNCTIONS

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Device		Device type	Access target							
Device		(Device name specification)	1)	2)	3)	4)	5)	6)	7)	8)
Other station huffer memory	Batch	DovPRM		~	~	~		~	~	~
Other station builer memory	Random	Deviabili	~	×	X	×	~	~	~	~
Other station random access	Batch	DovPAR	~	~		~	~			~
buffer	Random	DEVICAD	×	×	×	×	×	×	×	×
Other station BY	Batch	DovPX	×	×	~	~	×	~	~	×
	Random	Devitx	^	^	^	~	^	^	~	^
Other station RV	Batch	DevRY	×	~	~	~	×	~	~	~
	Random	Deviti		^	^	^		^	^	^
Other station link register	Batch	Dev/BW/		×	× ×	~	×	×	×	~
Other station link register	Random	Devitor	^	×		^				×
Other station SB (link special	Batch	DovSR	~	×	~	~	×	~	~	×
relay for CC-Link)	Random	Dev3b	~	×	~	^	×	~	~	~
Other station SW (link special	Batch	DevSW	~	~				~		~
register for CC-Link)	Random	Devow	~	~	~	~	~	~	~	~

Table 10.32 Accessible devices for accessing other station (continued)

O: Accessible x: Inaccessible

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CHAPTER 11 PROGRAMMING USING VxWorks API FUNCTIONS

For the component list and information checking method of the VxWorks component implemented in the C Controller module, refer to the following.

Page APPX-1, "Appendix 1 VxWorks Component List"

For each component functionality and VxWorks API functions, refer to the manual for VxWorks.

(1) Sample program using VxWorks functions

Installing SW3PVC-CCPU registers the sample programs of the following functions.

- (F Page 12-1, CHAPTER 12)
 - The Connect function between C Controller module and GOT (Microcomputer connection)
 - The RAM disk function

(2) Precautions for using VxWorks API functions

(a) Changing the system clock rate

The C Controller module supports system clock rate of 60 to 1000. (Default: 60) When changing the system clock rate, use the sysClkRateSet function. For setting and changing the system clock rate, refer to the manual for VxWorks.

(3) Precautions for the Wind River Systems product

We, Mitsubishi, make no warranty for the Wind River Systems product and will not be liable for any problems and damages caused by the Wind River Systems product during use of the C Controller module. For the problems or specifications of the Wind River Systems product, refer to the corresponding manual or consult Wind River Systems, Inc.

Contact information is available on the following website. www.windriver.com

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lemo				
nemo				

CHAPTER 12 SAMPLE PROGRAMS

Q12DCCPU-V Q06CCPU-V Q06CCPU-V-B Q06CCPU-V-B

Sample programs are provided as a reference used in creating user programs. Please use the sample programs at user's own discretion.

(1) Sample programs for the Q12DCCPU-V

Sample programs for the Q12DCCPU-V are installed in "C:\MELSEC\CCPU\CCPUTOOL\Sample\DVx" (When SW3PVC-CCPU has been installed in "C:\MELSEC".).

For opening sample programs, refer to the following.

Page 12-5, Section 12.1

Table 12.1 Registered sample programs

Fol	Folder name File nar		Description of sample program				
GOTtest		GOTtest.c	For connection to GOT.				
	DevAccess\DevAcc essChanCCIEC	DevAccessChanC CIEC.c	 For access to the following modules using MELSEC data link functions A CC-Link IE Controller Network module (own station) controlled by the C Controller module. CC-Link IE Controller Network modules or programmable controller CPUs on other stations via a CC-Link IE Controller Network module controlled by the C 				
			Controller module.				
MDtest	DevAccess\DevAcc DevAccessChanC essChanCCL CL.c		 For access to the following modules using MELSEC data link functions A CC-Link module (own station) controlled by the C Controller module. CC-Link modules or programmable controller CPUs on other stations via a CC-Link module controlled by the C Controller module. 				
	DevAccess∖DevAcc essChanMNH	DevAccessChanM NH.c	For access to the following modules using MELSEC data link functions •A MELSECNET/H module (host station) controlled by the C Controller module. •MELSECNET/H modules or programmable controller CPUs on other stations via a MELSECNET/H module controlled by the C Controller module.				
	DevAccess\DevAcc essChanQBF	DevAccessChanQ BF.c	For access to the following module using MELSEC data link functions •CPU No.1 mounted together with the C Controller module in a multiple CPU system.				

(To the next page)

PROGRAMMING USING BUS INTERFACE FUNCTIONS

PROGRAMMING USING MELSEC DATA LINK FUNCTIONS

ParamRestore

RAMFormat

STARTUP.CMD

STARTUP.CMD

			gistered sample programs (continued)				
Fo	lder name	File name	Description of sample program				
	CCIEField\	LocalStation.c	For performing cyclic transmission with the master station in the CC-Link IE Field				
	LocalStation		Network (local station).				
	CCIEField\	MasterStation Loc	For performing cyclic transmission with the local station in the CC-Link IE Field				
	MasterStation_Loc	alStation.c	Network (master station).				
	aiStation						
		MasterStation_Re	For performing cyclic transmission with the intelligent device station in the CC-				
	otelO	moteIO.c	Link IE Field Network (master station).				
Others		CETaskPrioritySet	For priority (default: 50) change of the system task (XBD service task) which				
0	CFTaskPrioritySet.c	c	operates when accessing to a CompactFlash card.				
	FTPGet.c	FTPGet.c	For FTP communications				
	MakeRAMDisk.c MakeRAMDisk.c		For RAM disk creation				
	OD75Status c	OD75Status c	For 1-shot monitoring of the positioning module status (current feed value, axis				
	dD100lald0.0	QD/ Coldido.c	error No., and axis warning No.)				
	QPParamSet c	QPParamSet c	For automatic transfer of the parameter file created in GX Configurator-QP to a				
			positioning module				
	SntpTimeSet.c	SntpTimeSet.c	For setting clock data by acquiring the data from the SNTP server computer				
	CFChange	CFChange.c	For unmounting a CompactFlash card when X0 turns on				
	EntryWDTInt	EntryWDTInt.c	For user watchdog timer error interrupt registration				
	MotionLink\	MotionLink c	The linkage with the Motion CPLL is utilized for this sample program				
QBFtest	MotionLink	Wodonenk.c					
	MotionLink\	MotionSynclat c	For execution of the interrupt process synchronizing with the multiple CPU high				
	MotionSyncInt	MotionSyncint.c	speed transmission with either the Q172DCPU or Q173DCPU.				
	QBFMessage	QBFMessage.c	For sending messages via MELSECNET/H				
	LoginUserRegist	STARTUP.CMD	Sample script file for login user registration				
Script	ParamBackUp	STARTUP.CMD	Sample script file for parameter backup				
Script							

Sample script file for parameter restoration

Sample script file for standard RAM formatting

Table 12.1 Registered sample programs (continued)

MELSEG Q series



(2) Sample programs for the Q06CCPU-V(-B)

Sample programs for the Q06CCPU-V(-B) are installed in "C:\MELSEC\CCPU\CCPUTOOL\Sample\Vx" (When SW3PVC-CCPU has been installed in "C:\MELSEC".).

For opening sample programs, refer to the following.

F Page 12-5, Section 12.1

Fo	Folder name		Description of sample program				
GOTtest		GOTtest.c	For connection to GOT				
MDtest	DevAccess\ DevAccessChanC CIEC		 For access to the following modules using MELSEC data link functions For the Q06CCPU-V-B, this sample program cannot be used. A CC-Link IE Controller Network module (own station) controlled by the C Controller module. CC-Link IE Controller Network modules or programmable controller CPUs on other stations via a CC-Link IE Controller Network module controlled by the C Controller module. 				
	DevAccess\ DevAccessChanC CL DevAccessChanC		For access to the following modules using MELSEC data link functions For the Q06CCPU-V-B, this sample program cannot be used. •A CC-Link module (own station) controlled by the C Controller module. •CC-Link modules and programmable controller CPUs on other stations via a CC- Link module controlled by the C Controller module.				
	DevAccess\ DevAccessChanM NH	DevAccessChanM NH.c	For access to the following modules using MELSEC data link functions For the Q06CCPU-V-B, this sample program cannot be used. •A MELSECNET/H module (host station) controlled by the C Controller module. •MELSECNET/H modules and programmable controller CPUs on other stations via a MELSECNET/H module controlled by the C Controller module.				
	DevAccess\ DevAccessChanQ BF	DevAccessChanQ BF.c	For access to the following module using MELSEC data link functions For the Q06CCPU-V-B, this sample program cannot be used. •CPU No.1 configuring a multiple CPU system with the C Controller module.				

Table 12.2 Registered sample programs

(To the next page)

PROGRAMMING USING BUS INTERFACE FUNCTIONS

PROGRAMMING USING MELSEC DATA LINK FUNCTIONS (

FO	ider name	Flie name	Description of sample program			
	CCIEField\ LocalStation	LocalStation.c	For performing cyclic transmission with the master station in the CC-Link IE Field Network (local station).			
Dthers	CCIEField\ MasterStation_Loc alStation	MasterStation_Loc alStation.c	For performing cyclic transmission with the local station in the CC-Link IE Field Network (master station).			
	CCIEField\ MasterStation_Rem oteIO	MasterStation_Re motelO.c	For performing cyclic transmission with the intelligent device station in the CC- Link IE Field Network (master station).			
	FTPGet.c	FTPGet.c	For FTP communication			
	MakeRAMDisk.c	MakeRAMDisk.c	For RAM disk creation			
	QD75Status.c	QD75Status.c	For 1-shot monitoring of the positioning module status (current feed value, axis error No., and axis warning No.)			
	QPParamSet.c	QPParamSet.c	For automatic transfer of the parameter file created in GX Configurator-QP to a positioning module			
	SntpTimeSet.c	SntpTimeSet.c	For setting clock data by acquiring the data from the SNTP server computer			
	CFChange	CFChange.c	For unmounting a CompactFlash card when X0 turns on For the Q06CCPU-V-B, this sample program cannot be used.			
	EntryWDTInt	EntryWDTInt.c	For user watchdog timer error interrupt registration			
Driesi	MotionLink	MotionLink.c	The linkage with the Motion CPU is used for this sample program.			
	QBFMessage	QBFMessage.c	For sending messages via MELSECNET/H			
	Shutdown	ROMShutdown.c	For shutting down the standard ROM when X0 turns on			
	LoginUserRegist	STARTUP.CMD	Sample script file for login user registration			
Script	ParamBackUp	STARTUP.CMD	Sample script file for parameter backup			
Jouh	ParamRestore	STARTUP.CMD	Sample script file for parameter restoration			
	ROMFormat	STARTUP.CMD	Sample script file for standard ROM formatting			

Table	12.2	Registered	sample	programs	(continued)
			oumpio	programo,	oominaoa

MELSEG **Q** series



Sample programs which cannot be used in the C Controller module contain the notification message as shown below.

/*	Sample program	*
/*	When X0 is ON, unmount the CF card.	*
/*	Note)	*
/*	This sample program cannot be used because	*
/*	Q06CCPU-V-B does not support CF card interface.	*
/*	If the following functions are executed, unsupported	*
/*	communications path error (19203 [0x4B03]) will be	*
/*	returned.	*

Figure 12.1 A sample program which cannot be used in the Q06CCPU-V-B

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PROGRAMMING USING BUS INTERFACE FUNCTIONS

PROGRAMMING USING MELSEC DATA LINK FUNCTIONS

PROGRAMMING USING VxWorks API FUNCTIONS

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SAMPLE PROGRAMS

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12.1 Procedure for Opening Sample Programs



This section describes the procedure for opening sample programs when SW3PVC-CCPU is installed in "C:\MELSEC".

When installing SW3PVC-CCPU in folders other than "C:\MELSEC", create a new project with reference to the following procedure. Copying the contents of the sample program to the source file enables the compiling.

Page 9-9, Section 9.4

(1) Procedure for opening the sample program for the Q12DCCPU-V The following windows are those of Wind River Workbench, but the procedure is the same when CW Workbench is used.



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Start Workbench.

Select the [File] \rightarrow [Import].



(Completed)



(2) Procedure for opening the sample program for the Q06CCPU-V(-B)



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12 sample programs

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(From the previous page)		
Create downloadable application modules for V×Works: step 3 ? Image: State of the Project Creation Wizard will now create your Downloadable Project. VxWorks Workspace C:\Tormado\target\proj\Workspace0.wsp	6 After "Tool	confirming the setting of "Workspace", "Project", and Chain" are correct, click the <u>Finish</u> button.
Project [C:\Tomado\larget\proj\Project0\Project0.wpj Tool Chain [SH7750gnule Help		
Image: Tornado - Workspace: Workspace0 File Edit View Project Build Debug Tools Window He New Ctrl+N Open Ctrl+O Image: Ctrl+O	7 Selec	t the "File" → "Add Project to Workspace".
Add Project(s) to Workspace 'Workspace0' ? × Look jn: GOTtest • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • <td>8 Selec the sa</td> <td>t the file whose extension is wpi in the same folder of ample program, and click the Add button.</td>	8 Selec the sa	t the file whose extension is wpi in the same folder of ample program, and click the Add button.
Image: Control - CMPLESC - MCCPUIDUX Sample/ WindOTtest. Image: Control - CMPLESC - MCCPUIDUX Sample/ WindOTtest. Image: Control - CMPLESC - MCCPUIDUX Sample/ Ver(COTtest. Image: Control - CMPLESC - MCCPUIDUX Sample - MC	9 For th from t For th	e Q06CCPU-V, the sample program can be opened the project added to Workspace. the Q06CCPU-V-B, operate the following procedures.
(To the next page)		

1	2	SAMPLE PROGRAMS
-		

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4

🚺 Workspace0

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Ne<u>w</u> Build... Properties

12.1 Procedure for Opening Sample Programs

PROGRAMMING USING VxWorks API FUNCTIONS

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SAMPLE PROGRAMS

EVENT NUMBER LIST



(From the previous page)

\downarrow				
J Tornado - C:\MELSEC\\CCPUTOOL\Sample\Vx\GOTtest\GOTtest.c	_			
Elle Edit Wew Project Build Debug Iools Window Help	1:			
Del Xel e ? K				
Workspace: Workspace0 C:\C:\WELSEC\\CCPUTOOL\Sample\Vx\GOTtest\GOTtest.c				
Build Spec SH7750gnu				
finclude (sioLib.h)				
GOTTest Files				
finclude <tasklib.h></tasklib.h>				
External Dependencies Employed Modules [SH7750gnu] #define PACKET_SIZE_MAX 518				
#define DEV_MAX 6				
#define ASCII_MAX 1				
#define HMEOUL_COUNT 50				
fdefine CHD_BLOCK_READ "RD"				
#define CMD_RANDOM_READ "RR"				
#define CHD_RANDOH_WRITE "RW" /				
Ļ				
(Completed)				

The sample program can be opened from the project when opening the <<Files>> tab of the "Workspace" window.



MELSEG **Q** series

When an event such as an error occurs in the C Controller system, information required to correct errors such as an event No. is displayed on the Event history tab. When an event has occurred, check the event No. in the following procedure and take corrective actions.

When more than one event occur, take corrective actions for each event in chronological order.

 Open the "Detailed event information" screen by double-clicking on a event to correct on the history screen of C Controller setting utility. (FP Page 4-6, Section 4.3 (3))

Detailed ev	ent informatio	n		
Date:	2009/04/21		ОК	
Time:	16:39:03		Previous	
Source:	MQbfDrv		Next	
Event No.:	C000020B	Event type:	System(Err.)	
Event info:	for An error occurred during module initialization. [Enor code: 3100 Error information: 5000]			

Figure 13.1 Detailed event information screen

- 2) When "Application" is shown in the "Event type" field, it indicates that the event was registered by the user program (QBF_RegistEventLog function). Take corrective actions determined by user.
- The following "Event type" indicate that the event has occurred in the C Controller system.
 - System (Info.)
 - System (Warning)
 - System (Err.)

Check "source" and "event No." on the Detailed event information screen, and take corrective actions referring to the following table.

Table	13.1	Source	list

Source	Data type	Reference	
MQbfDrv	Bus interface driver (bus part) related	Page 13-2	
MXwdkDrv	Bus interface driver (system part) related	Page 13-3	
MUtllfQbf	Utility communication interface (bus interface part) related	Page 13-3	
MUItUfMd	Utility communication interface (MELSEC communication	Page 13-4	
Motilinia	part) related	Tage 15-4	
MUtllfCom	Utility communication interface (common part) related	Page 13-4	
MMain	C Controller module main part related	Page 13-5	
MFDrv	Flash ROM and standard RAM related	Page 13-5	
MCfDrv	CompactFlash card related	Page 13-7	
MEtherDrv	Ethernet related	Page 13-8	

PROGRAMMING USING BUS INTERFACE FUNCTIONS

(1) When the source is "MQbfDrv"

When taking corrective actions of corresponding error code, refer to HELP of C Controller setting utility.

Event No.	Event type	Event	Corrective action
00000445		Failed to allocate memory required for the	Increase the system memory.
С000011Ен	System(Err.)	driver start-up.	Reduce the memory usage of other programs.
С0000127н	System(Err.)	SYSTEM WDT ERROR occurred.	Take corrective actions for error code 5000.
С0000131н	System(Err.)	USER WDT ERROR occurred.	Take corrective actions for error code 5001.
С0000201н	System(Err.)	AC/DC DOWN occurred.	Take corrective actions for error code 1500.
С0000202н	System(Err.)	CONTROL-BUS.ERR. occurred.	Take corrective actions for error code 1413, 1414, 1415, and 1416.
С0000204н	System(Err.)	UNIT VERIFY ERR. occurred.	Take corrective actions for error code 2000.
С0000206н	System(Err.)	FUSE BREAK OFF occurred.	Take corrective actions for error code 1300.
С0000207н	System(Err.)	SP.UNIT DOWN occurred.	Take corrective actions for error code 1401 and 1403.
С0000208н	System(Err.)	CONTROL-BUS.ERR. occurred.	Take corrective actions for error code 1412.
С0000209н	System(Err.)	SP.UNIT LAY ERR. occurred.	Take corrective actions for error code 2100, 2103, 2106, 2107, 2108, 2120, 2121, 2122, 2124, 2125, 2126, and 2150.
С000020Ан	System(Err.)	PARAMETER ERROR occurred.	Take corrective actions for error code 3000, 3001, 3010, 3012, 3014, 3015, and 3016.
С000020Вн	System(Err.)	An error occurred during module initialization. (Only the first error is displayed.)	Take corrective actions corresponding to the error code displayed in the event information.
С000020Ен	System(Err.)	A CPU module built-in battery error occurred.	Take corrective actions for error code 1600.
С0000210н	System(Err.)	MULTI CPU DOWN occurred.	Take corrective actions for error code 7000 and 7002.
С0000211н	System(Err.)	MULTI EXE.ERROR occurred.	Take corrective actions for error code 7010, 7011, and 7013.
С0000212н	System(Err.)	MULTI CPU ERROR occurred.	Take corrective actions for error code 7020.
С0000213н	System(Err.)	SP.PARAMETER ERROR occurred.	Take corrective actions for error code 3300,3301, 3302, and 3303.
С0000214н	System(Err.)	LINK PARAMETER ERROR occurred.	Take corrective actions for error code 3100, 3101, 3102, 3103, 3104, 3105, and 3107.
С0000215н	System(Err.)	I/O INT.ERROR occurred.	Take corrective actions for error code 1310.
С0000216н	System(Err.)	MAIN CPU DOWN occurred.	Take corrective actions for error code 1000 and 1009.
С0000217н	System(Err.)	A momentary stop occurred.	Take corrective actions for error code 1500.
С0000218н	System(Err.)	LINK REFRESH TIME OVER occurred.	Take corrective actions for error code 5012.
С0000219н	System(Err.)	SINGLE PS.DOWN occurred.	Take corrective actions for error code 1510.
С000021Ан	System(Err.)	SINGLE PS.ERROR occurred.	Take corrective actions for error code 1520.
С000021Вн	System(Err.)	MULTI-C.BUS.ERR. occurred.	Take corrective actions for error code 1430, 1431, 1432, 1433, 1434, 1435, 1436, 1437, and 1439.
С000021Сн	System(Err.)	CPU LAY ERROR occurred.	Take corrective actions for error code 7036.

(2) When the source is "MXwdkDrv"

Event No.	Event type	Event	Corrective action
40000000н	System(Info.)	The clock data of the C Controller module have been set. This event occurs when: •Clock data was set by executing the QBF_SetTime function. •Clock data was set by C Controller setting utility. •Clock data was set by peripheral devices such as GOT and MX Component.	_
С000001н	System(Err.)	An exceptional error occurred.	Reexamine the user program by checking the event detail information (such as error details, task names, and program counters). Check the operation methods of Workbench or Tornado as well. Please consult your local Mitsubishi service center or representative, explaining the details of the problem.
4000002н	System(info.)	The clock data were corrected by the clock synchronization function. This event is registered when a clock data difference from a CPU No. 1 is detected after enabling the Clock synchronization function.	_

Table 13.3 Corrective action

(3) When source is "MUtllfQbf"

Table 13.4 Corrective action

Event No.	Event type	Event	Corrective action
			Check the port No. used and change it if
С000000н	System(Err.)	An illegal packet error occurred.	necessary.
			Change the IP address.
C000001u	System/Err)	An instruction error occurred	Check the utility and the C Controller module
C000001H	System(En.)	An instruction endiroccurred.	versions.
			Restart the C Controller module.
C0000024	System(Err.)	A socket generation error occurred.	Please consult your local Mitsubishi service
C000002H			center or representative, explaining the details
			of the problem.
			Check the port No. used.
С000003н	System(Err.)	A port acquisition error occurred.	Check for overlap between the C Controller
			module ports.
	System(Err.)		Restart the C Controller module.
C000004u		A bind orrer occurred	Please consult your local Mitsubishi service
C000004H		A bind error occurred.	center or representative, explaining the details
			of the problem.

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PROGRAMMING USING PROGRAMMING USING MELSEC DATALINK D BUS INTERFACE FUNCTIONS D FUNCTIONS

MELSEG **Q** series

(4) When source is "MUtllfMd"

Table 13.5 Corrective action

Event No.	Event type	Event	Corrective action
			Check the port No. used and change it if
С000000н	System(Err.)	An illegal packet error occurred.	necessary.
			Change the IP address.
C000001u	System(Err.)	An instruction error occurred	Check the utility and C Controller module
C000001H	System(En.)	An instruction error occurred.	versions.
			Restart the C Controller module.
			Please consult your local Mitsubishi service
С000002н	System(Err.)	A socket generation error occurred.	center or representative, explaining the details
			of the problem.
			A port acquisition error occurred.
			Check the port No. used.
С000003н	System(Err.)	A port acquisition error occurred.	Check for overlap between the C Controller
			module ports.
			Restart the C Controller module.
C000004.	Systom/Err)	A hind arrar accurred	Please consult your local Mitsubishi service
C000004H		A bind entit occurred.	center or representative, explaining the details
			of the problem.

(5) When the source is "MUtllfCom"

Table 13.6 Corrective action

Event No.	Event type	Event	Corrective action
			Check the port No. used and change it if
С000000н	System(Err.)	An illegal packet error occurred.	necessary.
			Change the IP address.
C000001	Systom(Err.)	An instruction error occurred	Check the utility and C Controller module
C000001H	System(En.)	An instruction endroccurred.	versions.
			Restart the C Controller module.
C0000020	System(Err.)	A socket generation error occurred.	Please consult your local Mitsubishi service
C000002H			center or representative, explaining the details
			of the problem.
			Check the port No. used.
С000003н	System(Err.)	A port acquisition error occurred.	Check for overlap between the C Controller
			module ports.
			Restart the C Controller module.
C00000411	System(Err.)	A hind array accurred	Please consult your local Mitsubishi service
C000004H		A bind error occurred.	center or representative, explaining the details
			of the problem.

(6) When the source is "MMain"

When taking corrective actions for an error code, refer to HELP of C Controller setting utility.

Event No.	Event type	Event	Corrective action
С0000110н	System(Err.)	A script execution error occurred.	A system error in the C Controller module is possible. Please consult your local Mitsubishi service center or representative, explaining the details of the problem.
С0000111н	System(Err.)	 One of commands (lines) in the script file has more than 129 characters. The command in the script file cannot be executed. (An error exists in the syntax, or the command does not exist.) (A stop error occurs in the C Controller module [CPU error code 2502] and the module stops execution of the script command.) 	Take corrective actions for error code 2502.
С0000330н	System(Err.)	Failed to access LAN.	The parameter file (IP address setting area) does not exist. Using the C Controller setting utility, set the IP address or write the parameters. A system error in the C Controller is possible cause. Please consult your local Mitsubishi service center or representative, explaining the details of the problem.

Table 13.7 Corrective action

(7) When the source is "MFDrv"

When taking corrective actions for an error code, refer to HELP of C Controller setting utility.

Table 13.8 Corrective action

Event No.	Event type	Event	Corrective action
8000000H	System(Warning)	•Q12DCCPU-V The standard ROM drive was illegally accessed. •Q06CCPU-V(-B) The number of standard ROM drive "/ROM" deletions exceeded 100 thousand times.	 •Q12DCCPU-V It might be a breakdown of the C Controller module. Please consult your local Mitsubishi service center or representative, explaining the details of the problem. •Q06CCPU-V(-B) Change the writing media from the standard ROM drive to the CompactFlash card "/CF", or replace the C Controller module.
С0000400н	System(Err.)	A standard ROM drive "/ROM" format error occurred.	Reformat the standard ROM drive "/ROM".
С0000401н	System(Err.)	Usage of the battery backup RAM exceeded the capacity	A system error in the C Controller is possible cause. Please consult your local Mitsubishi service center or representative, explaining the details of the problem.
			(To the next page)

PROGRAMMING USING BUS INTERFACE FUNCTIONS

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Event No.	Event type	Event	Corrective action
80000406H	System(Warning)	A timeout occurred during writing to file in the standard ROM drive "/ROM".	Write the file again if the file was not written
			correctly.
			If this event occurs frequently, reexamine the
			user program (processing, task priority, etc.)
			that runs on the C Controller module.
С0000408н	System(Err.)	A battery backup RAM error was detected.	Check if an interrupt ruotine (interrupt program)
			is writing data into the same SRAM area.
			If the error persists, a system error in the C
			Controller module is probable. Please consult
			your local Mitsubishi service center or
			representative, explaining the details of the
			problem.
С0000409н	System(Err.)	An internal ROM ("/ROM","/SYSTEMROM") error was detected.	A system error in the C Controller module is
			probable. Please consult your local Mitsubishi
			service center or representative, explaining the
			details of the problem.
С000040Ан	System(Err.)	MAIN CPU DOWN occurred.	It refers to the Error Code 1000.
С0000410н	System(Err.)	A standard RAM drive "/RAM" format error occurred.	Reformat the standard RAM drive "/RAM".
			When this event is generated even if it formats
			it again, it might be a breakdown of the C
			Controller module. Please consult your local
			Mitsubishi service center or representative,
			explaining the details of the problem.
С0000416н	System(Err.)	A standard RAM drive "/RAM" error was	It refers to the Error Code 1106.
		detected.	
С0000417н	System(Err.)	RAM ERROR occurred.	It refers to the Error Code 1106.

Table 13.8 Corrective action (continued)

MELSEC **Q** series
(8) When the source is "MCfDrv"

Event No. Event Event type **Corrective action** The CompactFlash Card is pulled out once, С0000480н System(Err.) The CompactFlash card is not responding. and it inserts it again. Replace the CompactFlash card. The CompactFlash Card is pulled out once, An error occurred while obtaining the С0000481н System(Err.) and it inserts it again. CompactFlash card drive information. Replace the CompactFlash card. The CompactFlash Card is pulled out once, and it inserts it again. An error occurred while reading master boot С0000482н System(Err.) Reformat the CompactFlash card on a record (MBR). personal computer, etc. Replace the CompactFlash card. Reformat the CompactFlash card on a The master boot record (MBR) cannot be С0000483н System(Err.) personal computer, etc. recognized in this format. Replace the CompactFlash card. Check the utilization of the memory, provide a С0000490н System(Err.) A resource shortage error occurred. free space, and execute again. A system error in the C Controller is possible cause. С0000491н Please consult your local Mitsubishi service System(Err.) A CF driver initialization error occurred. center or representative, explaining the details of the problem. A system error in the C Controller is possible cause. С0000492н System(Err.) A device name registration error occurred. Please consult your local Mitsubishi service center or representative, explaining the details of the problem. A system error in the C Controller is possible cause. С0000493н System(Err.) A block No. error occurred. Please consult your local Mitsubishi service center or representative, explaining the details of the problem.

Table 13.9 Corrective action

PROGRAMMING USING BUS INTERFACE FUNCTIONS

(9) When the source is "MEtherDrv"

Event No. Event Event type **Corrective action** A system error in the C Controller is possible cause. С0000200н System(Err.) An initialization parameter error occurred. Please consult your local Mitsubishi service center or representative, explaining the details of the problem. A system error in the C Controller is possible cause. С0000201н System(Err.) Please consult your local Mitsubishi service A resource shortage error occurred. center or representative, explaining the details of the problem. A system error in the C Controller is possible cause. An END or MIB-II structure initialization error С0000202н Please consult your local Mitsubishi service System(Err.) occurred. center or representative, explaining the details of the problem. A system error in the C Controller is possible cause. С0000203н System(Err.) An interrupt registration error occurred. Please consult your local Mitsubishi service center or representative, explaining the details of the problem. A system error in the C Controller is possible cause. Please consult your local Mitsubishi service С0000210н System(Err.) An MII clock stop was detected. center or representative, explaining the details of the problem.

Table 13.10 Corrective action

PROGRAMMING USING BUS INTERFACE FUNCTIONS

PROGRAMMING USING MELSEC DATA LINK FUNCTIONS

PROGRAMMING USING VXWorks API FUNCTIONS

SAMPLE PROGRAMS

EVENT NUMBER LIST

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APPENDICES

Appendix 1 VxWorks Component List



This section describes the components implemented in the C Controller module and how to check information of the components.

(1) VxWorks component list

(a) For the Q12DCCPU-V

The following list shows the components implemented in the C Controller module.

Table APPX.1 VxWorks component list

Component	Macro
Address Space Allocator Show Routines	INCLUDE_ADR_SPACE_SHOW
address space shell commands	INCLUDE_ADR_SPACE_SHELL_CMD
ANSI assert	INCLUDE_ANSI_ASSERT
ANSI ctype	INCLUDE_ANSI_CTYPE
ANSI errno to erro string conversion function	INCLUDE_ANSI_STRERROR
ANSI locale	INCLUDE_ANSI_LOCALE
ANSI math	INCLUDE_ANSI_MATH
ANSI stdio	INCLUDE_ANSI_STDIO
ANSI stdio extensions	INCLUDE_ANSI_STDIO_EXTRA
ANSI stdlib	INCLUDE_ANSI_STDLIB
ANSI string	INCLUDE_ANSI_STRING
ANSI string duplication function	INCLUDE_ANSI_STRDUP
ANSI time	INCLUDE_ANSI_TIME
application initialization	INCLUDE_USER_APPL
arpLib	INCLUDE_ARP_API
Attach END to IPv4	INCLUDE_IPATTACH
AUX clock	INCLUDE_AUX_CLK
basic memory allocator	INCLUDE_MEM_MGR_BASIC
basic MMU	INCLUDE_MMU_BASIC
basic network support	INCLUDE_NETWORK
Basic PPP Components ^{*1}	INCLUDE_BASIC_PPP
binary semaphore creation routine	INCLUDE_SEM_BINARY_CREATE
binary semaphores	INCLUDE_SEM_BINARY
Boot parameter process	INCLUDE_NET_BOOT
BPF Support	INCLUDE_BPF
BSD socket support	INCLUDE_BSD_SOCKET
BSP Memory Configuration	INCLUDE_MEMORY_CONFIG
buffer manager	INCLUDE_BUF_MGR
built-in symbol table	INCLUDE_STANDALONE_SYM_TBL
c line interpreter	INCLUDE_SHELL_INTERP_C
C++ symbol demangler	INCLUDE_CPLUS_DEMANGLER
C++ compiler support routines	INCLUDE_CPLUS_LANG
C++ core runtime	INCLUDE_CPLUS
C++ iostream and other standard library facilities	INCLUDE_CPLUS_IOSTREAM

* 1 The following C Controller module cannot be used.

• The Q12DCCPU-V with the serial No. (first five digits) "12041" or higher.

Table APPX.1 VxWorks component list (continued)

Component	Macro
cache support	INCLUDE_CACHE_SUPPORT
command line interpreter	INCLUDE_SHELL_INTERP_CMD
coprocessor	INCLUDE_COPROCESSOR
coprocessor show routine	INCLUDE_COPROCESSOR_SHOW
Core NFS client	INCLUDE_CORE_NFS_CLIENT
counting semaphore creation routine	INCLUDE_SEM_COUNTING_CREATE
counting semaphores	INCLUDE_SEM_COUNTING
Create Basic PPP Framework ^{*1}	INCLUDE_PPP_FRAMEWORK
debug shell commands	INCLUDE_DEBUG_SHELL_CMD
debugging facilities	INCLUDE_DEBUG
Device Manager	INCLUDE_DEVICE_MANAGER
DHCP client show routines	INCLUDE_DHCPC_SHOW
DHCP client timestamp setup	INCLUDE_DHCPC_LEASE_GET
DHCP Core files	INCLUDE_DHCP_CORE
DHCPv4 boot-time client	INCLUDE_DHCPC_BOOT
DHCPv4 client common library	INCLUDE_DHCPC_SHARE
DHCPv4 Client Lease Verification/Assignment	INCLUDE_DHCPC_LEASE_TEST
DHCPv4 client timestamp storage	INCLUDE_DHCPC_LEASE_SAVE
DHCPv4 runtime client	INCLUDE_DHCPC
DNS resolver	INCLUDE_DNS_RESOLVER
DNS resolver debug output	INCLUDE_DNS_RESOLVER_DEBUG
DOS File System Consistency Checker	INCLUDE_DOSFS_CHKDSK
DOS File System FAT12/16/32 Handler	INCLUDE_DOSFS_FAT
DOS File System Old Directory Format Handler	INCLUDE_DOSFS_DIR_FIXED
DOS File System VFAT Directory Handler	INCLUDE_DOSFS_DIR_VFAT
DOS File System Volume Fomatter Module	INCLUDE_DOSFS_FMT
DOS filesystem backward-compatibility	INCLUDE_DOSFS
dosfs File System Main Module (dosFs2)	INCLUDE_DOSFS_MAIN
doubly linked lists	INCLUDE_DLL
ED&R shell commands	INCLUDE_EDR_SHELL_CMD
ED&R show routines	INCLUDE_EDR_SHOW
enable caches	INCLUDE_CACHE_ENABLE
enable guard pages for kernel task stacks	INCLUDE_PROTECT_TASK_STACK
enable non-executable kernel task stacks	INCLUDE_TASK_STACK_NO_EXEC
END driver polled statistics support	INCLUDE_END_POLLED_STATS
END interface support	INCLUDE_END
error status table	INCLUDE_STAT_SYM_TBL
Ethernet interface support	INCLUDE_ETHERNET
Event Reporting Framework	INCLUDE_ERF
exception handling	INCLUDE_EXC_HANDLING
exception show routines	INCLUDE_EXC_SHOW
exception task	INCLUDE_EXC_TASK
Extended Block Device	INCLUDE_XBD
extended object library	INCLUDE_OBJ_OPEN
File System and Disk Utilities	INCLUDE_DISK_UTIL
File System Event Utilities	INCLUDE_FS_EVNET_UTIL
File System Monitor	INCLUDE_FS_MONITOR
file system shell commands	INCLUDE_DISK_UTIL_SHELL_CMD
file upload path initialization	INCLUDE_WVUPLOAD_FILE

* 1 The following C Controller module cannot be used.

• The Q12DCCPU-V with the serial No. (first five digits) "12041" or higher.

Component

Macro

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PROGRAMMING BUS INTERFACE FUNCTIONS

PROGRAMMING USING MELSEC DATA LINK FUNCTIONS

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Table APPX.1 VxWorks component list (continued)

floating point show routine	INCLUDE_WH_FP_SHOW
formatted IO	INCLUDE_FORMATTED_IO
formatted output routines	INCLUDE_FORMATTED_OUT_BASIC
fpp formatting for printf	INCLUDE_FLOATING_POINT
FTP client	INCLUDE_FTP
full featured memory allocator	INCLUDE_MEM_MGR_FULL
General BSP macros	INCLUDE_BSP_MACROS
get name info	INCLUDE_GETNAMEINFO
get serv by name	INCLUDE_GETSERVBYNAME
GNU compiler support routines	INCLUDE_GNU_INTRINSICS
GTF support	INCLUDE_GTF
gtf_timer_start	INCLUDE_GTF_TIMER_START
handle show routines	INCLUDE_HANDLE_SHOW
hardware fpp support	INCLUDE_HW_FP
hash library	INCLUDE_HASH
high resolution timestamping	INCLUDE_TIMESTAMP
Highly Reliable File System	INCLUDE_HRFS
host table	INCLUDE_HOST_TBL
Host/target breakpoint synchronization	INCLUDE_WDB_BP_SYNC
host/target modules and symbols synchronization	INCLUDE_WDB_MDL_SYM_SYNC
ICMP show routines ^{*1}	INCLUDE_ICMP_SHOW
ICMP v4	INCLUDE_ICMPV4
IF	INCLUDE_IF
ifIndex Initialization	INCLUDE_IFINDEX
IGMP v2/v3	INCLUDE_IGMP
Include Protocol Framework ^{*1}	INCLUDE_PROTOCOL_FRAMEWORK
inetLib	INCLUDE_INETLIB
initialize system symbol table	INCLUDE_SYM_TBL_INIT
IO system	INCLUDE_IO_SYSTEM
IP v4	INCLUDE_IPV4
IPv4 interface address library	INCLUDE_IFLIB
Job Queue support	INCLUDE_JOB_QUEUE
job task	INCLUDE_JOB_TASK
kernel	INCLUDE_KERNEL
link BufPool	INCLUDE_LINKBUFPOOL
linked list library	INCLUDE_LSTLIB
logical set library	INCLUDE_SET
loopback interface support	INCLUDE_LOOPBACK
mapped files shell commands	INCLUDE_MAPPED_FILES_SHOW_SHELL_CMD
md5	INCLUDE_NET_MD5
memory allocator info routines	INCLUDE_MEM_MGR_INFO
memory show routine	INCLUDE_MEM_SHOW
message logging	
message queue creation and deletion library	INCLUDE_MESSAGE_Q_CREATE_DELETE
message queue info routines	INCLUDE_MESSAGE_Q_INFO
message queue show routine	INCLUDE_MSG_Q_SHOW
message queues	INCLUDE_MESSAGE_Q
MIB2 ICMP Management APIs	INCLUDE_MIB2_ICMP
MIB2 IF Counter Instrumentation	INCLUDE_MIB2_IF

* 1 The following C Controller module cannot be used.

• The Q12DCCPU-V with the serial No. (first five digits) "12041" or higher.

Table APPX.1 VxWorks component list (continued)

Component	Macro
MIB2 TCP Management APIs	INCLUDE_MIB2_TCP
MIB2 UDP Management APIs	INCLUDE_MIB2_UDP
MMU global map	INCLUDE_MMU_GLOBAL_MAP
module manager	INCLUDE_MODULE_MANAGER
mutex semaphore creation routine	INCLUDE_SEM_MUTEX_CREATE
mutex semaphores	INCLUDE_SEM_MUTEX
MUX support	INCLUDE_MUX
netBufLib	INCLUDE_NETBUFLIB
netBufPool	INCLUDE_NETBUFPOOL
NetDrv for remote IO	INCLUDE_NET_DRV
netstat	INCLUDE_NETSTAT
netstat for IPv4	INCLUDE_NETSTAT_IPV4
network boot device configuration	INCLUDE_NET_BOOT_CONFIG
Network Daemon Support	INCLUDE_NET_DAEMON
network device netmask setup	INCLUDE_NETMASK_GET
Network function binding	INCLUDE_NET_FUNCBIND
network init	INCLUDE_NET_INIT
Network interface show routines	INCLUDE_NET_IF_SHOW
network remote I/O access	INCLUDE_NET_REM_IO
Network route show routines	INCLUDE_NET_ROUTE_SHOW
Network route show snprintf buffering	INCLUDE_NET_ROUTE_SHOW_SNPRINTF
Network Stack Memory Pool Configuration	INCLUDE_NET_POOL
NETWORK SYSCTL	INCLUDE_NET_SYSCTL
NFS client All	INCLUDE_NFS_CLIENT_ALL
NFS server	INCLUDE_CORE_NFS_SERVER
NFS server All	INCLUDE_NFS_SERVER_ALL
NFS server V2	INCLUDE_NFS2_SERVER
NFS server V3	INCLUDE_NFS3_SERVER
NFS v2 client	INCLUDE_NFS2_CLIENT
NFS v3 client	INCLUDE_NFS3_CLIENT
non-blocking message logging	INCLUDE_NBIO_LOG
object management	INCLUDE_OBJ_LIB
object management ownership	INCLUDE_OBJ_OWNERSHIP
old route	INCLUDE_OLDROUTE
persistent error log	INCLUDE_EDR_ERRLOG
persistent memory	INCLUDE_EDR_PM
PING client	INCLUDE_PING
pipes	INCLUDE_PIPES
pool allocation library	INCLUDE_POOL
POSIX advisory file locking	INCLUDE_POSIX_ADVISORY_FILE_LOCKING
POSIX AIO driver	INCLUDE_POSIX_AIO_SYSDRV
POSIX asynchronous IO	INCLUDE_POSIX_AIO
POSIX clocks	INCLUDE_POSIX_CLOCKS
POSIX directory utilities	INCLUDE_POSIX_DIRLIB
POSIX ftruncate	INCLUDE_POSIX_FTRUNC
POSIX Memory Mapped Files for RTPs	INCLUDE_POSIX_MAPPED_FILES
POSIX message queue show routine	INCLUDE_POSIX_MQ_SHOW
POSIX message queues	INCLUDE_POSIX_MQ
POSIX mman	INCLUDE_POSIX_MEM

Component

Macro

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POSIX process scheduling	INCLUDE_POSIX_SCHED
POSIX PSE52 support for RTPs	INCLUDE_RTP_POSIX_PSE52
POSIX scheduling policies SCHED_FIFO/SCHED_RR/	
SCHED_OTHER support in RTPs	
POSIX semaphore	INCLUDE_POSIX_SEM
POSIX semaphore show routine	INCLUDE_POSIX_SEM_SHOW
POSIX Shared Memory Objects	INCLUDE_POSIX_SHM
POSIX signal	INCLUDE_POSIX_SIGNALS
POSIX thread CPU-time clock	INCLUDE_POSIX_THREAD_CPUTIME
POSIX thread scheduler in RTPs	INCLUDE_POSIX_PTHREAD_SCHEDULER
POSIX threads	INCLUDE_POSIX_PTHREADS
POSIX timers	INCLUDE_POSIX_TIMERS
process shell commands	INCLUDE_RTP_SHELL_CMD
process show shell commands	INCLUDE_RTP_SHOW_SHELL_CMD
Pseudo terminal driver	INCLUDE_PTYDRV
public hostname setup	INCLUDE_NET_HOST_SETUP
RAM Disk	INCLUDE_RAM_DISK
RAM disk driver	INCLUDE_RAMDRV
random	INCLUDE_KERN_RANDOM
raw filesystem	INCLUDE_RAWFS
RAW v4	INCLUDE_RAWV4
rBuff library	INCLUDE_RBUFF
read the bootline	INCLUDE_BOOT_LINE_INIT
Remote Command	INCLUDE_REMLIB
Reverse ARP client	INCLUDE_RARP
ring buffers	INCLUDE_RING_BUF
route	INCLUDE_ROUTE
route_storage	INCLUDE_ROUTE_STORAGE
Routing Socket	INCLUDE_ROUTING_SOCKET
RPC	INCLUDE_RPC
RTP	INCLUDE_RTP
RTP Hook Support	INCLUDE_RTP_HOOKS
RTP Show	INCLUDE_RTP_SHOW
RTP Startup Facility: User-defined code	INCLUDE_RTP_APPL_USER
run static initializers	INCLUDE_CTORS_DTORS
select	INCLUDE_SELECT
semaphore deletion routines	INCLUDE_SEM_DELETE
semaphore info routines	INCLUDE_SEM_INFO
semaphore show routine	INCLUDE_SEM_SHOW
SH-4A 32-Bit Address Extended Mode	INCLUDE_SH4A_EXTENDED_32BIT_SUPPORT
shared data region support in RTPs or kernel	INCLUDE_SHARED_DATA
Shared Data Show	INCLUDE_SHARE_DATA_SHOW
shared data show shell commands	INCLUDE_SHARED_DATA_SHOW_SHELL_CMD
shared library commands	INCLUDE_SHL_SHELL_CMD
Shared Library Show	INCLUDE_SHL_SHOW
shared library support in RTPs	INCLUDE_SHL
shell banner	INCLUDE_SHELL_BANNER
Show routines for memory mapped objects	INCLUDE_MAPPED_FILES_SHOW
sigevent notification library	INCLUDE_SIGEVENT

Table APPX.1 VxWorks component list (continued)

Component	Macro
signals	INCLUDE_SIGNALS
SIO	INCLUDE_SIO
SNTP client	INCLUDE_SNTPC
Socket API	INCLUDE_SOCKLIB
Socket API System Call support	INCLUDE_SC_SOCKLIB
spy	INCLUDE_SPY
Stack/Application Logging Utility	INCLUDE_APPL_LOG_UTIL
stdio	INCLUDE_STDIO
stricmp	INCLUDE_STRICMP
strnicmp	INCLUDE_STRNICMP
Support for reboot hooks	INCLUDE_REBOOT_HOOKS
symbol shell commands	INCLUDE_SYM_SHELL_CMD
symbol table show routine	INCLUDE_SYM_TBL_SHOW
SYSCTL	INCLUDE_SYSCTL
SYSCTL CLI	INCLUDE_SYSCTL_CLI
sysctl System Call	INCLUDE_SC_SYSCTL
System Call Hook Support	INCLUDE_SYSCALL_HOOKS
System clock	INCLUDE_SYSCLK_INIT
system debug flag	INCLUDE_EDR_SYSDBG_FLAG
System Viewer class instrumentation	INCLUDE_WINDVIEW_CLASS
System Viewer library	INCLUDE_WINDVIEW
system-defined timestamping	INCLUDE_SYS_TIMESTAMP
target loader	INCLUDE_LOADER
target loader shell command	INCLUDE_MODULE_SHELL_CMD
target symbol table	INCLUDE_SYM_TBL
target unloader	INCLUDE_UNLOADER
target-resident kernel shell	INCLUDE_SHELL
task hook show routine	INCLUDE_TASK_HOOKS_SHOW
task hooks	INCLUDE_TASK_HOOKS
task shell commands	INCLUDE_TASK_SHELL_CMD
task show routine	INCLUDE_TASK_SHOW
task variables	INCLUDE_TASK_VARS
TCP v4	INCLUDE_TCPV4
Telnet server	INCLUDE_TELNET
TELNET/FTP password protection	INCLUDE_SECURITY
terminal driver	INCLUDE_TTY_DEV
terminal driver support	INCLUDE_TYLIB
TFTP client	INCLUDE_TFTP_CLIENT
timex	INCLUDE_TIMEX
TSFS upload path initialization	INCLUDE_WVUPLOAD_TSFSSOCK
UDP v4	INCLUDE_UDPV4
uipc_domain	INCLUDE_DOMAIN_INIT
unix compatible environment variables	INCLUDE_ENV_VARS
unloader shell command	INCLUDE_UNLOADER_SHELL_CMD
vi-like editing mode	INCLUDE_SHELL_VI_MODE
VIO driver	INCLUDE_WDB_VIO
virtual memory show shell commands	INCLUDE_VM_SHOW_SHELL_CMD
Virtual Root File Sytem	INCLUDE_VRFS
VM library show routine	INCLUDE_VM_SHOW

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SAMPLE PROGRAMS

Table APPX.1 VxWorks component list (continued)

Component	Macro	AC
VxWorks events	INCLUDE_VXEVENTS	AMM ERF, DNS
watchdog timers	INCLUDE_WATCHDOGS	DGR/
watchdog timers creation and deletion library	INCLUDE_WATCHDOGS_CREATE_DELETE	PRO
WDB agent	INCLUDE_WDB	10
WDB banner	INCLUDE_WDB_BANNER	
WDB breakpoints	INCLUDE_WDB_BP	NISING
WDB call functions	INCLUDE_WDB_FUNC_CALL	A LIN
WDB callouts	INCLUDE_WDB_DIRECT_CALL	MMIL
WDB eventpoints	INCLUDE_WDB_EVENTPOINTS	GRAI
WDB events	INCLUDE_WDB_EVENTS	
WDB exception notification	INCLUDE_WDB_EXC_NOTIFY	
WDB gopher	INCLUDE_WDB_GOPHER	
WDB memory access	INCLUDE_WDB_MEM	SING
WDB network connection	INCLUDE_WDB_COMM_NETWORK	e ne
WDB post kernel initialization	INCLUDE_WDB_POST_KERNEL_INIT	
WDB register access	INCLUDE_WDB_REG	RAN ks A TION
WDB RTP breakpoints	INCLUDE_WDB_RTP_BP	20G NCC
WDB RTP control support	INCLUDE_WDB_RTP_CONTROL	<u> </u>
WDB RTP support	INCLUDE_WDB_RTP	12
WDB target server file system	INCLUDE_WDB_TSFS	رم م
WDB task breakpoints	INCLUDE_WDB_TASK_BP	RAM:
WDB task creation	INCLUDE_WDB_START_NOTIFY	NOGF
WDB task debugging	INCLUDE_WDB_TASK	E PA
WDB task exit notification	INCLUDE_WDB_EXIT_NOTIFY	MPL
WDB task hooks	INCLUDE_WDB_TASK_HOOKS	SA
WDB task registers	INCLUDE_WDB_TASK_REG	13
WDB tasks	INCLUDE_WDB_CTXT	
WDB user event	INCLUDE_WDB_USER_EVENT	LIST
WDB virtual I/O library	INCLUDE_WDB_VIO_LIB	BER
XBD Block Device	INCLUDE_XBD_BLK_DEV	NUM
XBD Disk Partition Handler	INCLUDE_XBD_PART_LIB	TN.
XBD Ram Drive	INCLUDE_XBD_RAMDRV	EVE
XDR	INCLUDE_XDR	Λ

(b) For the Q06CCPU-V(-B)

The following list shows the components implemented in the C Controller module.

	•
Component	Масто
ANSI assert	INCLUDE_ANSI_ASSERT
ANSI ctype	INCLUDE_ANSI_CTYPE
ANSI locale	INCLUDE_ANSI_LOCALE
ANSI math	INCLUDE_ANSI_MATH
ANSI stdio	INCLUDE_ANSI_STDIO
ANSI stdio extensions	INCLUDE_ANSI_STDIO_EXTRA
ANSI stdlib	INCLUDE_ANSI_STDLIB
ANSI string	INCLUDE_ANSI_STRING
ANSI time	INCLUDE_ANSI_TIME
API to ARP tables	INCLUDE_ARP_API
application initialization	INCLUDE_USER_APPL
basic C++ iostreams	INCLUDE_CPLUS_IOSTREAMS
basic network support	INCLUDE_NETWORK
binary semaphores	INCLUDE_SEM_BINARY
BOOT protocol client library	INCLUDE_BOOTP
BSD 4.4 TCPv4	INCLUDE_TCP
BSD 4.4. UDPv4	INCLUDE_UDP
BSD SOCKET	INCLUDE_BSD_SOCKET
BSP hardware initialization	INCLUDE_SYSHW_INIT
BSP Memory Configuration	INCLUDE_MEMORY_CONFIG
buffer manager	INCLUDE_BUF_MGR
built-in symbol table	INCLUDE_STANDALONE_SYM_TBL
C++ runtime support	INCLUDE_CPLUS
C++ standard template library	INCLUDE_CPLUS_STL
C++ string i/o	INCLUDE_CPLUS_STRING_IO
C++ string type	INCLUDE_CPLUS_STRING
C++ symbol demangler	INCLUDE_CPLUS_DEMANGLER
cache support	INCLUDE_CACHE_SUPPORT
CBIO (Cached Block I/O) Support, cbioLib	INCLUDE_CBIO
configure the network boot device	INCLUDE_NETDEV_CONFIG
counting semaphores	INCLUDE_SEM_COUNTING
DHCP client timestamp removal	INCLUDE_DHCPC_LEASE_CLEAN
Disk Cache Handler	INCLUDE_DISK_CACHE
Disk Partition Handler	INCLUDE_DISK_PART
DNS resolver	INCLUDE_DNS_RESOLVER
DOS File System Consistency Checker	INCLUDE_DOSFS_CHKDSK
DOS File System FAT12/16/32 Handler	INCLUDE_DOSFS_FAT
DOS File System Old Directory Format Handler	INCLUDE_DOSFS_DIR_FIXED
DOS File System VFAT Directory Handler	INCLUDE_DOSFS_DIR_VFAT
DOS File System Volume Formatter	INCLUDE_DOSFS_FMT
DOSFS2 File System Primary Module	INCLUDE_DOSFS_MAIN
doubly linked lists	INCLUDE_DLL

Table APPX.2 VxWorks component list

Component

Macro

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PROGRAMMING USING MELSEC DATA LINK FUNCTIONS

Table APPX.2 VxWorks component list (continued)

enable caches	INCLUDE_CACHE_ENABLE
END attach interface	INCLUDE_END_BOOT
END interface support	INCLUDE_END
environment variables	INCLUDE_ENV_VARS
exception handling	INCLUDE_EXC_HANDLING
exception task	INCLUDE_EXC_TASK
file upload path initialization	INCLUDE_WVUPLOAD_FILE
floating point show routine	INCLUDE_HW_FP_SHOW
formatted IO	INCLUDE_FORMATTED_IO
fpp formatting for printf	INCLUDE_FLOATING_POINT
full C++ iostreams	INCLUDE_CPLUS_IOSTREAMS_FULL
full featured memory allocator	INCLUDE_MEM_MGR_FULL
hardware fpp support	INCLUDE_HW_FP
hash library	INCLUDE_HASH
HOST TBL	INCLUDE_HOST_TBL
ICMP show routines *1	INCLUDE ICMP SHOW
ICMPv4	
IGMPv4	
initialize network at boot time	INCLUDE NET INIT
initialize symbol table	INCLUDE SYM TBL INIT
IO system	INCLUDE IO SYSTEM
IPv4	
kernel	INCLUDE KERNEL
loopback driver	
message logging	
message queue show routine	INCLUDE MSG Q SHOW
message queues	INCLUDE MSG Q
minimal memory allocator	INCLUDE MEM MGR BASIC
module manager	INCLUDE MODULE MANAGER
mutex semaphores	INCLUDE SEM MUTEX
network buffer initialization	INCLUDE NET SETUP
network device name selection	INCLUDE NETDEV NAMEGET
network device netmask setup	INCLUDE NETMASK GET
network host setup	INCLUDE NET HOST SETUP
network library support	INCLUDE NET LIB
network mux initialization	INCLUDE_MUX
network remote I/O access	INCLUDE_NET_REM_IO
NetWork show routines ^{*1}	INCLUDE NET SHOW
NFS client	
NFS mount all	INCLUDE NFS MOUNT ALL
NFS server	INCLUDE NFS SERVER
PING client	
pipes	INCLUDE PIPES
POSIX AIO driver	INCLUDE POSIX AIO SYSDRV
POSIX asynchronous IO	INCLUDE POSIX AIO
POSIX clocks	
POSIX ftruncate	INCLUDE POSIX FTRUNC
POSIX message queues	INCLUDE POSIX MQ

* 1 The following C Controller module cannot be used.

• The Q06CCPU-V(-B) with the serial No. (first five digits) "11101" or higher.

Table APPX.2 VxWorks component list (continued)

Component	Macro
POSIX mman	INCLUDE_POSIX_MEM
POSIX scheduler	INCLUDE_POSIX_SCHED
POSIX semaphores	INCLUDE_POSIX_SEM
POSIX signals	INCLUDE_POSIX_SIGNALS
POSIX timers	INCLUDE_POSIX_TIMERS
RAM disk driver	INCLUDE_RAMDRV
rBuff library	INCLUDE_RBUFF
read the bootline	INCLUDE_BOOT_LINE_INIT
Remote Procedure Call system	INCLUDE_RPC
ring buffers	INCLUDE_RNG_BUF
RLOGIN/TELNET password protection	INCLUDE_SECURITY
select	INCLUDE_SELECT
sequential timestamping	INCLUDE_SEQ_TIMESTAMP
shell banner	INCLUDE_SHELL_BANNER
signals	INCLUDE_SIGNALS
SIO component	INCLUDE_SIO
SNTP client	INCLUDE_SNTPC
software fpp support	INCLUDE_SW_FP
stdio	INCLUDE_STDIO
symbol table	INCLUDE_SYM_TBL
synchronize host and target symbol tables	INCLUDE_SYM_TBL_SYNC
System clock component	INCLUDE_SYSCLK_INIT
system startup code	INCLUDE_SYS_START
target debugging	INCLUDE_DEBUG
target loader	INCLUDE_LOADER
target shell	INCLUDE_SHELL
target unloader	INCLUDE_UNLOADER
task hooks	INCLUDE_TASK_HOOKS
task show routine	INCLUDE_TASK_SHOW
task variables support library	INCLUDE_TASK_VARS
TCP show routines ^{*1}	INCLUDE_TCP_SHOW
TELNET server	INCLUDE_TELNET
terminal driver	INCLUDE_TTY_DEV
TFTP client	INCLUDE_TFTP_CLIENT
TSFS upload path initialization	INCLUDE_WVUPLOAD_TSFSSOCK
UDP show routines ^{*1}	INCLUDE_UDP_SHOW
utility to measure function execution time	INCLUDE_TIMEX
VIO driver	INCLUDE_WDB_VIO

* 1 The following C Controller module cannot be used.

• The Q06CCPU-V(-B) with the serial No. (first five digits) "11101" or higher.

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PROGRAMMING USING BUS INTERFACE FUNCTIONS

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Table APPX.2 VxWorks component list (continued)

Component	Macro
watchdog timers	INCLUDE_WATCHDOGS
WDB agent	INCLUDE_WDB
WDB banner	INCLUDE_WDB_BANNER
WDB breakpoints	INCLUDE_WDB_BP
WDB call functions	INCLUDE_WDB_FUNC_CALL
WDB callouts	INCLUDE_WDB_DIRECT_CALL
WDB END driver connection	INCLUDE_WDB_COMM_END
WDB eventpoints	INCLUDE_WDB_EVENTPOINTS
WDB events	INCLUDE_WDB_EVENTS
WDB exception notification	INCLUDE_WDB_EXC_NOTIFY
WDB gopher	INCLUDE_WDB_GOPHER
WDB hardware fpp support	INCLUDE_WDB_HW_FP
WDB memory access	INCLUDE_WDB_MEM
WDB register access	INCLUDE_WDB_REG
WDB system agent hardware fpp support	INCLUDE_WDB_SYS_HW_FP
WDB system debugging	INCLUDE_WDB_SYS
WDB target server file system	INCLUDE_WDB_TSFS
WDB task breakpoints	INCLUDE_WDB_TASK_BP
WDB task creation	INCLUDE_WDB_START_NOTIFY
WDB task debugging	INCLUDE_WDB_TASK
WDB task exit notification	INCLUDE_WDB_EXIT_NOTIFY
WDB task hardware fpp support	INCLUDE_WDB_TASK_HW_FP
WDB tasks	INCLUDE_WDB_CTXT
WDB user event	INCLUDE_WDB_USER_EVENT
WDB virtual I/O library	INCLUDE_WDB_VIO_LIB
windview class instrumentation	INCLUDE_WINDVIEW_CLASS
windview library	INCLUDE_WINDVIEW

PROGRAMMING USING PROGRAMMING USING VXWorks API MELSEC DATA LINK FUNCTIONS FUNCTIONS

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(2) VxWorks component information checking method

VxWorks component information can be checked by the following procedure. VxWorks image cannot be created (changed).

(a) For the Q12DCCPU-V

The following windows are those of Wind River Workbench, but the procedure is the same when CW Workbench is used.





APPENDICES

(From the previous page)		
↓		
Create a bootable VxWorks image (custom configured): step 2	4	Select "A BSP" and click the <u>Next></u> button.
Would you like to base your project on:		
↓	~	
Create a bootable VxWorks image (custom configured): step 3 ? X The Project Creation Wizard will now create your Bootable	5	Check that the values in "Workspace", "Project", and "Basis
Project. (Help)		BSP" are correct and then click the Finish button.
Workspace C:\Tornado\target\proj\Workspace1.wsp Project C:\Tornado\target\proj\Project1\Project1.wpj Basis BSP C:\Tornado\target\config\ms7750se		
Workspace: Workspace1 Build Spec Workspace1 Workspace1 Files VAWorks Builds	6	Open the < <vxworks>> tab of the "Workspace" window.</vxworks>
(To the next page)		

APPENDICES



SAMPLE PROGRAMS

EVENT NUMBER LIST

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(Completed)

Appendix 1 VxWorks Component List **APPX - 15**

Remark

The VxWorks components can be located by the following procedure.

Workspace: Image: Constraint of the system Build Spec default Image: Constraint of the system Image: Constraint of the system Image: Constraint of the system Image: Constraint of the system Image: Constraint of the system Image: Constraint of the system Image: Constraint of the system Image: Constraint of the system Image: Constraint of the system Image: Constraint of the system Image: Constraint of the system Image: Constraint of the system Image: Constraint of the system Image: Constraint of the system Image: Constraint of the system Image: Constraint of the system Image: Constraint of the system Image: Constraint of the system Image: Constraint of the system Image: Constraint of the system Image: Constraint of the system Image: Constraint of the system Image: Constraint of the system Image: Constraint of the system Image: Constraint of the system Image: Constraint of the system Image: Constraint of the system Image: Constraint of the system Image: Constraint of the system Image: Constraint of the system Image: Constraint of the system Image: Constraint of the system Image: Constraint of the system	Right click to select [Find Object] from the menu.
Find Object Find Object Select the type of object to search for, then enter a macro name and press Find to locate the corresponding object. Jype Component Qbject INCLUDE_ANSI_ASSERT Find Cancel Help	Click the Find button.

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Appendix 2 Precautions for Program Replacement

Q12DCCPU-V	Q06CCPU-V	Q06CCPU-V-B
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(1) When the Q06CCPU-V has been replaced with the Q12DCCPU-V

When porting the programs developed by Tornado to Workbench, refer to the Migration Guide provided by Wind River Systems, Inc. The Migration Guide can be downloaded from the website:

(www.windriver.com).



Α

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1. Gratis Warranty Term and Gratis Warranty Range

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[Gratis Warranty Range]

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- (2) Even within the gratis warranty term, repairs shall be charged for in the following cases.
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 - 2. Failure caused by unapproved modifications, etc., to the product by the user.
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