

ECLEF-NV1G

CC-Link IE Field Network / ONVIF Network

Gateway Module

FB Library Reference Manual

(For GX Works3)

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mitsubishi ELECTRIC ENGINEERING COMPANY LIMITED

Target Module(s) :

ECLEF-NV1G

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Reference Manual Revision History

Reference Manual Number	Revision Date	Revision Details
50CM-D180212-A	2017/06/16	First revision created
50CM-D180212-B	2018/01/26	Correction of erroneous description



1. Overview

1.1. FB Library Overview

This FB library is for using the ECLEF-NV1G CC-Link IE Field Network / ONVIF Network Gateway Module (hereinafter referred to as Gateway Module.)

1.2. FB Library List

FB Name (*1)	Functions (*2)
P+MEE-ECLEF-NV1G_AbsoluteMove_R	Controls the target camera so that it turns to specified lens position (PTZ coordinates).
P+MEE-ECLEF-NV1G_ChkAliveCam_R	Checks if the specified camera is alive.
P+MEE-ECLEF-NV1G_GetPosCam_R	Gets the current PTZ position number of the specified camera.
P+MEE-ECLEF-NV1G_SendEvent_R	Transmits events.
P+MEE-ECLEF-NV1G_RecvEvent_R	Reads events being received.
P+MEE-ECLEF-NV1G_CCIEErrHist_R	Gets the error history of the CC-Link IE Field Network.
P+MEE-ECLEF-NV1G_ONVIFErrHist_R	Gets the error history of the ONVIF Network.
P+MEE-ECLEF-NV1G_UnitErrHist_R	Gets the error history of the Gateway Module.
P+MEE-ECLEF-NV1G_RecvEventHist_R	Gets the event handling execution history.
P+MEE-ECLEF-NV1G_EtherSend_R	Transmits data to a device on the ONVIF Network. (*3)
P+MEE-ECLEF-NV1G_EtherRecv_R	Reads received data from devices in the ONVIF Network. (*3)

*1 Suffixed added to the end of the FB name such as “_00A” indicate the version of the FB, however, the version will not be stated in this reference manual.

*2 Operation via the ONVIF Network may not be performed properly if the date and time data has not been set to the Gateway Module correctly.

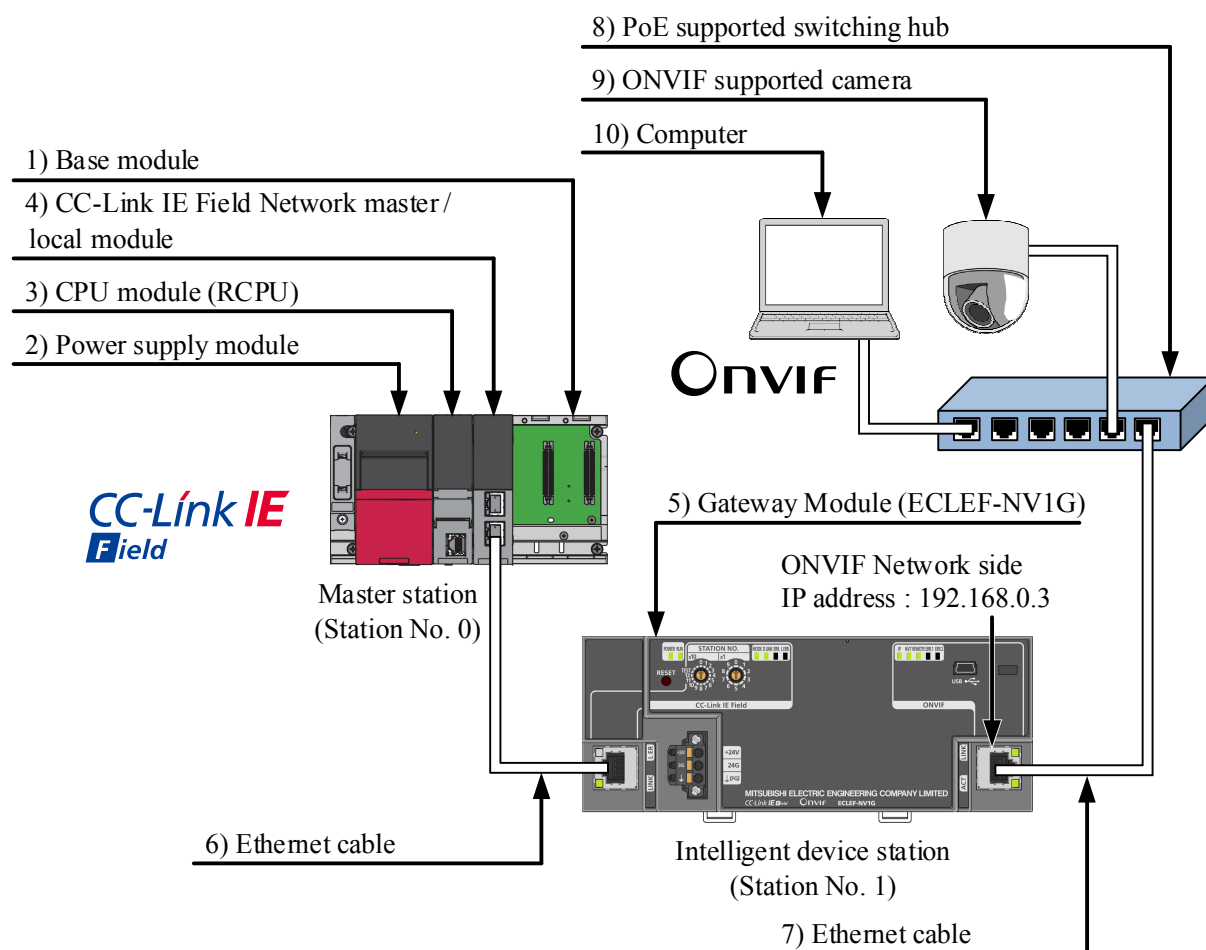
Get the date and time information from the master module through the CC-Link IE Field Network after the Gateway Module has booted up. When the CC-Link IE Field Network link has been established, the date and time information of the CPU module will automatically be set in the Gateway Module.

*3 The device being communicated with must have socket communication functionality (such as a computer.)



1.3. System Configuration Examples

(1) MELSEC iQ-R series system configuration



No.	Device Name	Explanation	
1)	CC-Link IE Field Network master station	Base module	
2)		Power supply module	
3)		CPU module	
		Series	Model
		MELSEC iQ-R series	RCPU
4)		CC-Link IE Field Network master / local module	
5)	Gateway Module	CC-Link IE Field Network / ONVIF Network Gateway Module	
6)	Ethernet cable	Ethernet cable for the CC-Link IE Field Network	
7)	Ethernet cable	Cat 5e or better Ethernet cable	
8)	PoE supported switching hub	Power over Ethernet supported switching hub module * Gateway Modules must be connected to the non-PoE port.	
9)	ONVIF supported camera	Network camera with conformance to ONVIF standards	
10)	Computer	Windows® supported personal computer	



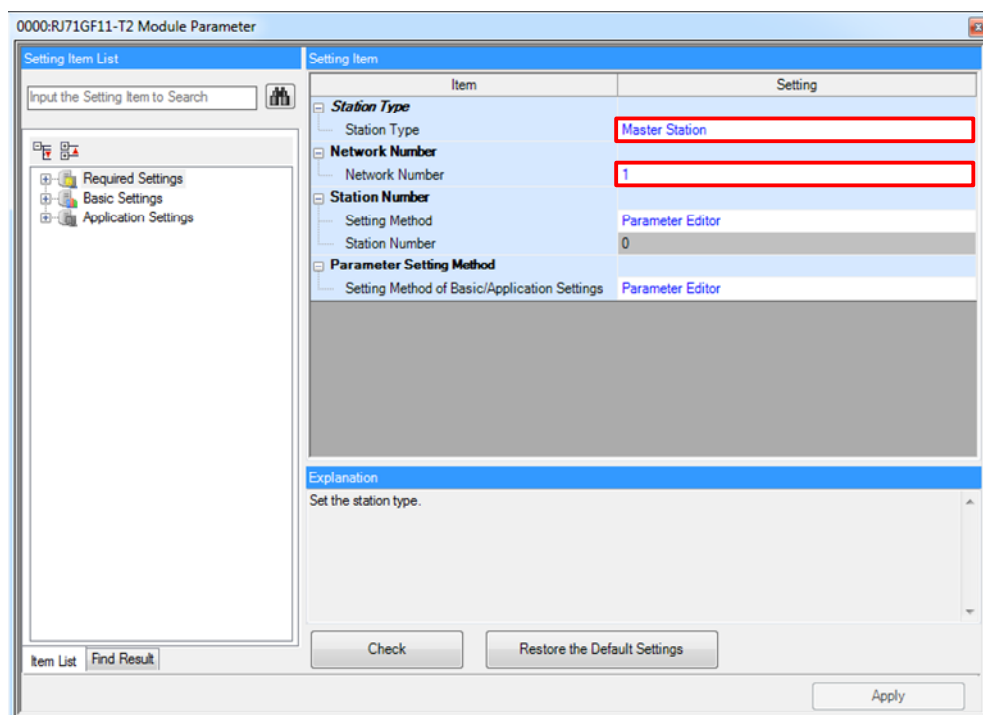
1.4. CC-Link IE Field Network Master / Local Module Settings

This section explains the CC-Link IE Field Network master / local module settings based on section “1.3. System Configuration Examples”.

Set the following items through GX Works3.

(1) Required Settings

Items	Details
Station Type	Select “Master Station”.
Network No.	Set the network number of the master / local module. Set to “1” for this example.

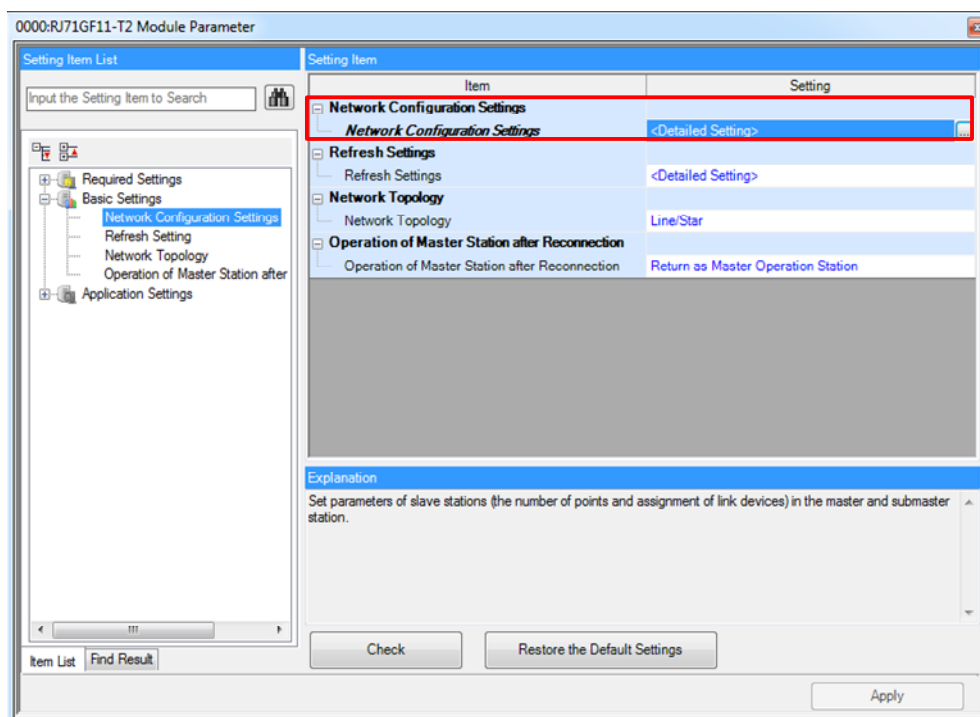


(2) Basic Settings

1) Network Configuration Settings

Items	Details
STA#	Set the station number of the slave station which is to be connected to the master station. Set “1” for this example.
Station Type	Set the station type of the slave station which is to be connected to the master station. Set “Intelligent Device Station” for this example.
RX/RX Setting	Set the RX/RX allocation of the slave station which is to be connected to the master station. Set “80” to the number of points, and “0000” to the start device for this example. (*1)
RWw/RWr Setting	Set the RWw/RWr allocation of the slave station which is to be connected to the master station. Set “1024” to the number of points, and “0000” to the start device for this example. (*1)
Reserved / Error Invalid Station / System Switching Monitoring Target Station.	Set “No settings”.

*1 The start device of each device setting must match the “M_RX”, “M_RY”, “M_RWr”, “M_RWw” settings given in section “1.5. Global Label Settings”.



CC IE Field Configuration (Start I/O: 0000)

CC IE Field Configuration Edit View Close with Discarding the Setting Close with Reflecting the Setting

Detect Now

Mode Setting: Online (Standard Mode) Assignment Method: Point/Start Link Scan Time (Approx.): 1.01 ms

No.	Model Name	STA#	Station Type	RX/RX Setting			RWw/RWw Setting			Reserved/Error Invalid am Switching Monitoring Ta
				Points	Start	End	Points	Start	End	
0	Host Station	0	Master Station							
1	Gen. Intelligent Device Station	1	Intelligent Device Station	80	0000	004F	1024	0000	03FF	No Setting

Host Station

STA#0 Master
Total STA#1
Line/Star

STA#1

Gen. Intelligent Device Station

Module List

Select CC IE Field Find Module My F...

- General CC IE Field Module
 - General Remote I/O Station
 - General Remote Device Station
 - Gen. Intelligent Device Station
 - General Local Station
 - General Extension Module
- CC IE Field Module (Mitsubishi Elec
 - Master/Local Module
 - Head Module
 - Servo Amplifier(MELSERVO-J4 S
 - Basic Digital Input Module
 - Basic Digital Output Module
 - Basic Digital I/O Combined Mod
 - Basic Analog Input Module
 - Basic Analog Output Module
 - Basic Temperature Control Mod



2) Link Refresh Settings

Items	Details	Setting value
Transfer SB	Sets the link refresh span of the SB device.	Link side start device :「00000」 Link side end points :「001FF」 PLC side device name :「SB」 PLC side start device :「00000」
Transfer SW	Sets the link refresh span of the SW device.	Link side start device :「00000」 Link side end points :「001FF」 PLC side device name :「SW」 PLC side start device :「00000」
remote input (RX)	Sets the link refresh span of the RX device.	Link side device name :「RX」 Link side start device :「00000」 Link side end points :「0004F」 PLC side device name :「X」 PLC side start device :「01000」
remote output (RY)	Sets the link refresh span of the RY device.	Link side device name :「RY」 Link side start device :「00000」 Link side end points :「0004F」 PLC side device name :「Y」 PLC side start device :「01000」
remote register (RW _r)	Sets the link refresh span of the RW _r device.	Link side device name :「RW _r 」 Link side start device :「00000」 Link side end points :「003FF」 PLC side device name :「W」 PLC side start device :「00000」
remote register (RW _w)	Sets the link refresh span of the RW _w device.	Link side device name :「RW _w 」 Link side start device :「00000」 Link side end points :「003FF」 PLC side device name :「W」 PLC side start device :「00400」



0000:RJ71GF11-T2 Module Parameter

Setting Item List

Input the Setting Item to Search

- Required Settings
- Basic Settings
 - Network Configuration Settings
 - Refresh Setting**
 - Network Topology
 - Operation of Master Station after Reconnection
- Application Settings

Setting Item

Item	Setting
Network Configuration Settings	
Network Configuration Settings	<Detailed Setting>
Refresh Settings	
Refresh Settings	<Detailed Setting>
Network Topology	
Network Topology	Line/Star
Operation of Master Station after Reconnection	
Operation of Master Station after Reconnection	Return as Master Operation Station

Explanation

Set the link refresh range.

Item List Find Result

Check Restore the Default Settings

Apply

No.	Link Side					CPU Side				
	Device Name	Points	Start	End		Target	Device Name	Points	Start	End
-	SB	512	00000	001FF	↔	Specify Dev	SB	512	00000	001FF
-	SW	512	00000	001FF	↔	Specify Dev	SW	512	00000	001FF
1	RX	80	00000	0004F	↔	Specify Dev	X	80	01000	0104F
2	RY	80	00000	0004F	↔	Specify Dev	Y	80	01000	0104F
3	RWr	1024	00000	003FF	↔	Specify Dev	W	1024	00000	003FF
4	RWw	1024	00000	003FF	↔	Specify Dev	W	1024	00400	007FF
5					↔					



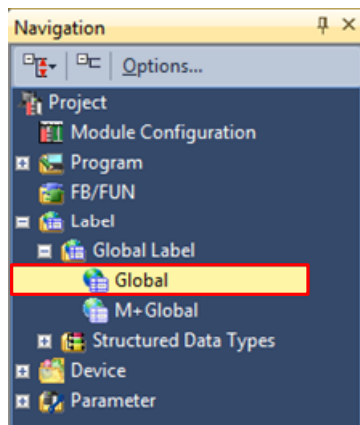
1.5. Global Label Settings

The following global label settings are required when using this FB.

This section explains how to set the global labels.

- (1) Select “Global Label - Global” in the Project tab of the Navigation window.

Switch “Easy Display” under “Global Label Setting” to “Show Details”.



- (2) Set “M_RX” remote output (RX).

Settings	Details
Label Name	Enter “M_RX”.
Data Type	Select “Bit”.
Class	Select “VAR_GLOBAL”.
Assign (Device / Label)	Append the index register “Z9” to the start refresh device “X1000” which was set in “Link Refresh Settings”. Enter “X1000Z9” for this example.

- (3) Set “M_RY” remote output (RY).

Settings	Details
Label Name	Enter “M_RY”.
Data Type	Select “Bit”.
Class	Select “VAR_GLOBAL”.
Assign (Device / Label)	Append the index register “Z8” to the start refresh device “Y1000” which was set in “Link Refresh Settings”. Enter “Y1000Z8” for this example.



(4) Set “M_RWw” remote register (RWw).

Settings	Details
Label Name	Enter “M_RWw”.
Data Type	Select “Word [Signed]”.
Class	Select “VAR_GLOBAL”.
Assign (Device / Label)	Append the index register “Z7” to the start refresh device “W400” which was set in “Link Refresh Settings”. Enter “W400Z7” for this example.

(5) Set “M_RWr” remote register (RWr).

Settings	Details
Label Name	Enter “M_RWr”.
Data Type	Select “Word [Signed]”.
Class	Select “VAR_GLOBAL”.
Assign (Device / Label)	Append the index register “Z6” to the start refresh device “W0” which was set in “Link Refresh Settings”. Enter “W0Z6” for this example.

	Label Name	Data Type	Class	Assign (Device/Label)	Initial Value	Constant	Comment
1	M_RX	Bit	VAR_GLOBAL	X1000Z9			RX refresh device
2	M_RY	Bit	VAR_GLOBAL	Y1000Z8			RY refresh device
3	M_RWw	Word [Signed]	VAR_GLOBAL	W400Z7			RWw refresh device
4	M_RWr	Word [Signed]	VAR_GLOBAL	W0Z6			RWr refresh device
5							



1.6. Interlocking Program Creation

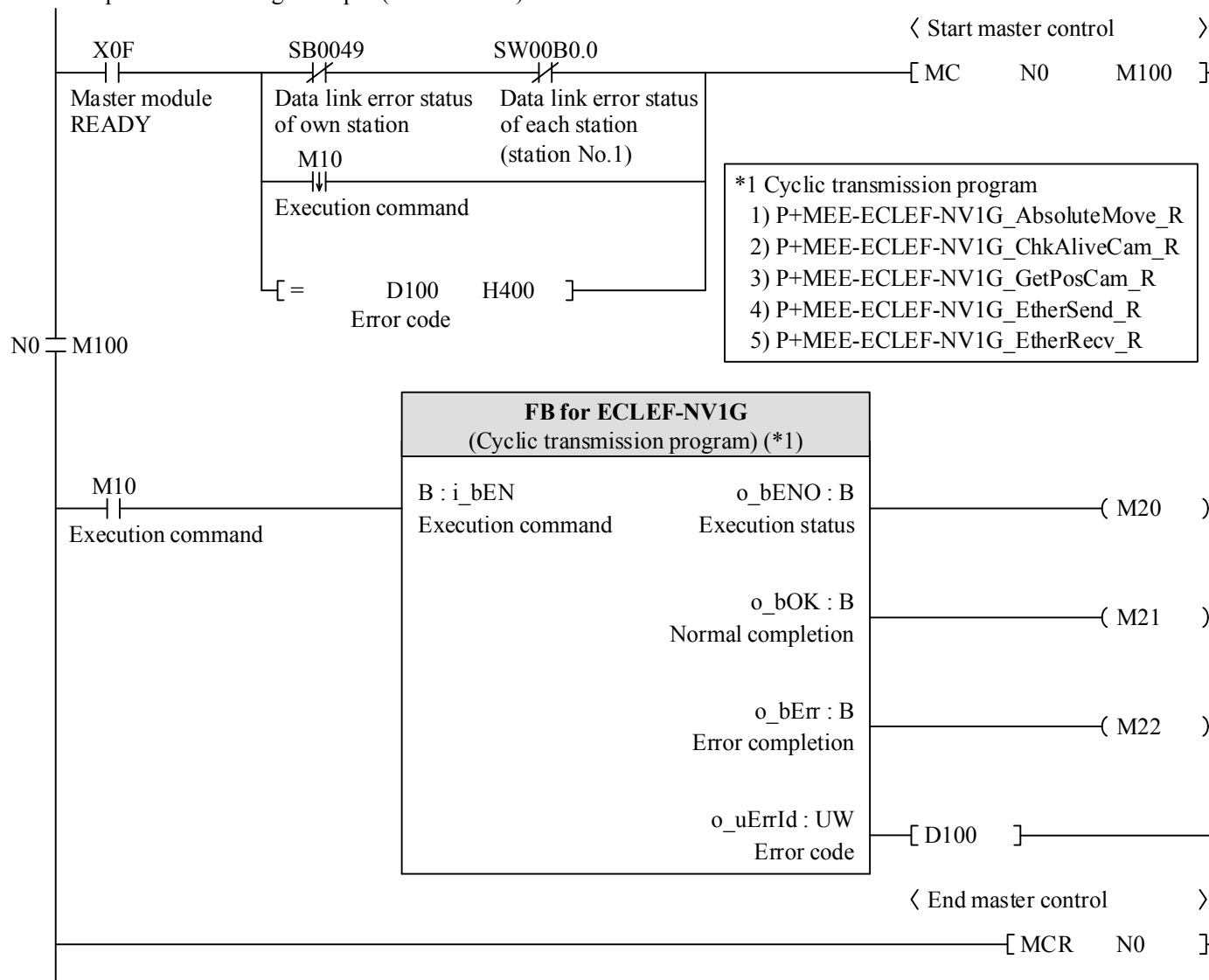
An interlocking program is required when using this FB. An example of the interlocking program is shown below.
(Set the FB being applied between the MC instruction and the MCR instruction.)

1.6.1 Cyclic transmission program

Use the following devices for the interlock program of cyclic transmission.

- Data link error status of each station (SW00B0 - SW00B7)
- Data link error status of own station (SB0049)
- Master module READY (X0F)
- Execution command (M10)
- Error code (D100) : H400 = the process is stopped

Example: Interlocking example (Station No.1)

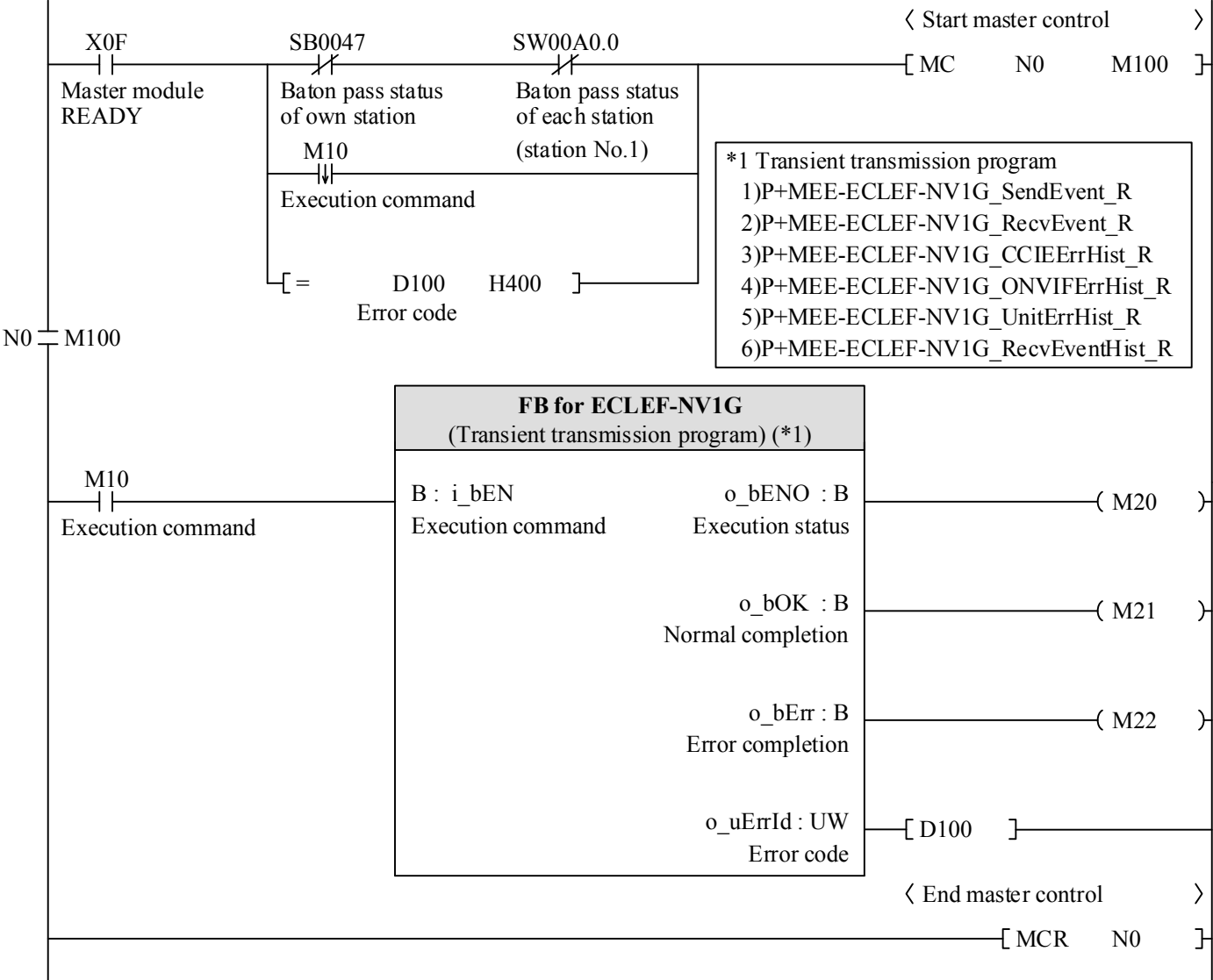


1.6.2 Transient transmission program

Use the following devices for the interlock program of transient transmission.

- Baton pass status of own station (SB0047)
- Baton pass status of each station (SW00A0 - SW00A7)
- Master module READY (X0F)
- Execution command (M10)
- Error code (D100) : H400 = the process is stopped

Example: Interlocking example (Station No. 1)



1.7. Related Manuals

MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup)	(SH-081256ENG)
MELSEC iQ-R CC-Link IE Field Network User's Manual (Application)	(SH-081259ENG)
MELSEC iQ-R CPU Module User's Manual (Startup)	(SH-081263ENG)
MELSEC iQ-R CPU Module User's Manual (Application)	(SH-081264ENG)
GX Works3 Operating Manual	(SH-081215ENG)
CC-Link IE Field Network / ONVIF Network Gateway Module ECLEF-NV1G User's Manual (Detailed Edition)	(50CM-D180219)

1.8. Notes

Please read the latest user's manual of the product prior to use.



2. FB Library Details

2.1. P+MEE-ECLEF-NV1G_AbsoluteMove_R (Camera PTZ position move)

Function Name

P+MEE-ECLEF-NV1G_AbsoluteMove_R

Function Explanation

Items	Explanation							
Function overview	Controls the target camera so that it turns to specified lens position (PTZ coordinates).							
Symbol	<div><div><div>Execution command</div><div>Mounted master module XY address</div><div>CC-Link IE Field Network station number</div><div>Camera number</div><div>Camera PTZ position number</div><div>Pan / tilt speed</div><div>Zoom speed</div></div><div><div>P+MEE-ECLEF-NV1G_AbsoluteMove_R</div><div><div>B : i_bEN</div><div>W : i_wStartIONo</div><div>W : i_wStationNo</div><div>W : i_wCameraNo</div><div>W : i_wCameraPosNo</div><div>W : i_wPanTiltSpeed</div><div>W : i_wZoomSpeed</div></div><div><div>o_bENO : B</div><div>o_bOK : B</div><div>o_bErr : B</div><div>o_uErrId : UW</div><div>o_bModuleErr : B</div><div>o_uModuleErrId: UW</div><div>o_bCamBusy : B</div></div></div><div><div>Execution status</div><div>Normal completion</div><div>Error completion</div><div>Error code</div><div>Device error</div><div>Device error code</div><div>Camera Busy status</div></div></div>							
Target device	Module	ECLEF-NV1G						
	CC-Link IE Field Network system	<table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R series</td><td>RJ71GF11-T2</td></tr></table>			Series	Model	MELSEC iQ-R series	RJ71GF11-T2
	Series	Model						
	MELSEC iQ-R series	RJ71GF11-T2						
CPU module	<table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R series</td><td>R04CPU, R08CPU, R16CPU, R32CPU, R120CPU</td></tr></table>			Series	Model	MELSEC iQ-R series	R04CPU, R08CPU, R16CPU, R32CPU, R120CPU	
Series	Model							
MELSEC iQ-R series	R04CPU, R08CPU, R16CPU, R32CPU, R120CPU							
GX Works3	<table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R series</td><td>Version 1.015R or later</td></tr></table>			Series	Model	MELSEC iQ-R series	Version 1.015R or later	
Series	Model							
MELSEC iQ-R series	Version 1.015R or later							
Language	Ladder							
Steps	980 Steps (for MELSEC iQ-R series / R08CPU) * The number of FB steps incorporated into the program is different depending on the CPU model being used and the input and outputs defined.							



Items	Explanation
Function explanation	<p>1) When i_bEN (Execution command) turns ON, the camera position will turn to the direction of i_wCameraPosNo (Camera PTZ position number) which was set for the camera specified by i_wCameraNo (Camera number).</p> <pre> graph TD Start([Start]) --> i_bEN_ON[i_bEN = ON] i_bEN_ON --> GetOffset[Get offset address (RX, RY, RWr, RWw)] GetOffset --> CheckStation{Check Station number 1 - 120} CheckStation -- Out of range --> SetErrId[Set Error code to o_uErrId] SetErrId --> o_bErr_ON[o_bErr = ON] o_bErr_ON --> i_bEN_OFF[i_bEN = OFF] i_bEN_OFF --> END([END]) CheckStation --> CheckCamNum{Check Camera number 1 - 16} CheckCamNum -- Out of range --> SetErrId CheckCamNum --> CheckPTZ{Check camera PTZ position number 0 - 99} CheckPTZ -- Out of range --> SetErrId CheckPTZ --> CheckPanTilt{Check pan / tilt speed 1 - 10} CheckPanTilt -- Out of range --> SetErrId CheckPanTilt --> CheckZoom{Check zoom speed 1 - 10} CheckZoom -- Out of range --> SetErrId CheckZoom --> CheckAlarm{Check camera alarm Camera alarm = ON} CheckAlarm -- Camera alarm = ON --> SetErrId CheckAlarm -- Camera alarm = OFF --> CheckBusy{Check camera busy Camera busy = ON} CheckBusy -- Camera busy = ON --> SetModuleErr[Set Device error code to o_uModuleErrId] SetModuleErr --> o_bModuleErr_ON[o_bModuleErr = ON] o_bModuleErr_ON --> i_bEN_OFF CheckBusy -- Camera busy = OFF --> CamMove[Camera move instruction] CamMove --> o_bCamBusy_ON[o_bCamBusy = ON] o_bCamBusy_ON --> NormalComp{Normal completion} NormalComp -- No (Error completion) --> SetModuleErr NormalComp -- Yes (Normal completion) --> o_bOK_ON[o_bOK = ON] o_bOK_ON --> i_bEN_OFF i_bEN_OFF --> END </pre>

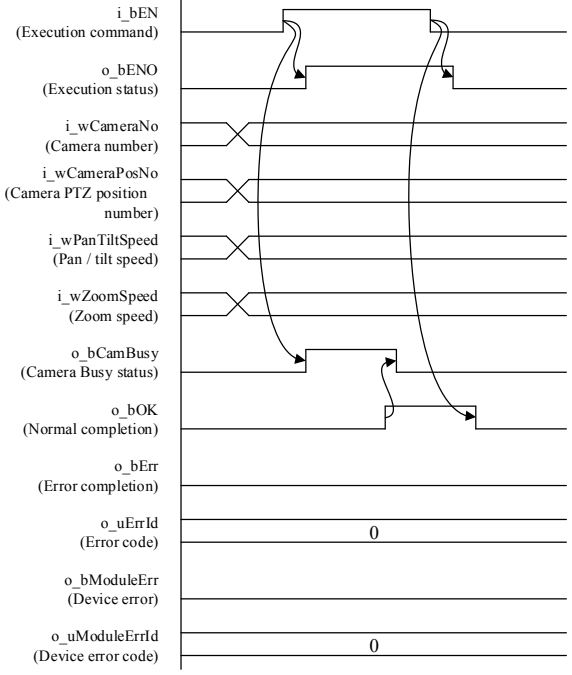
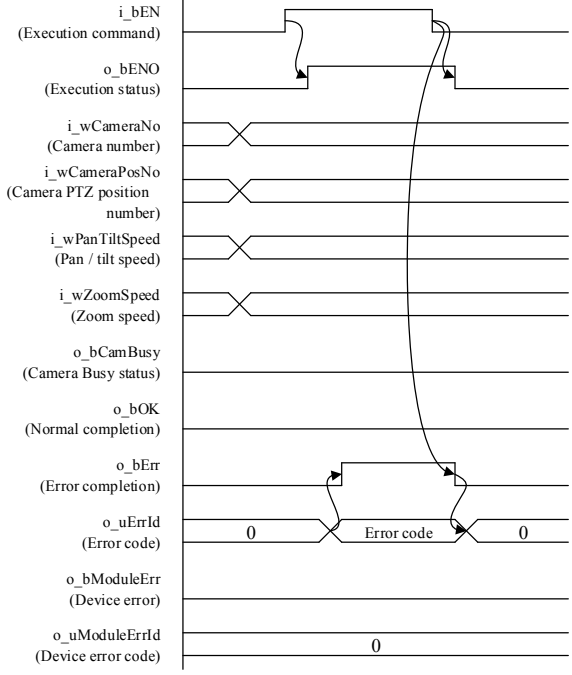
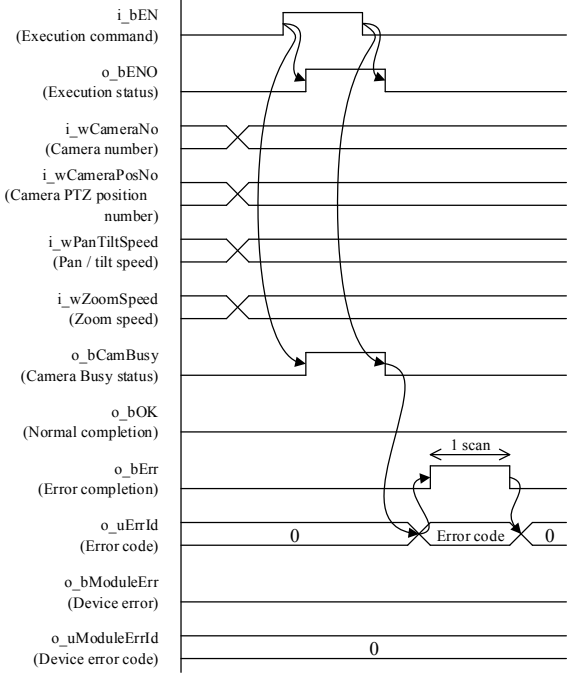
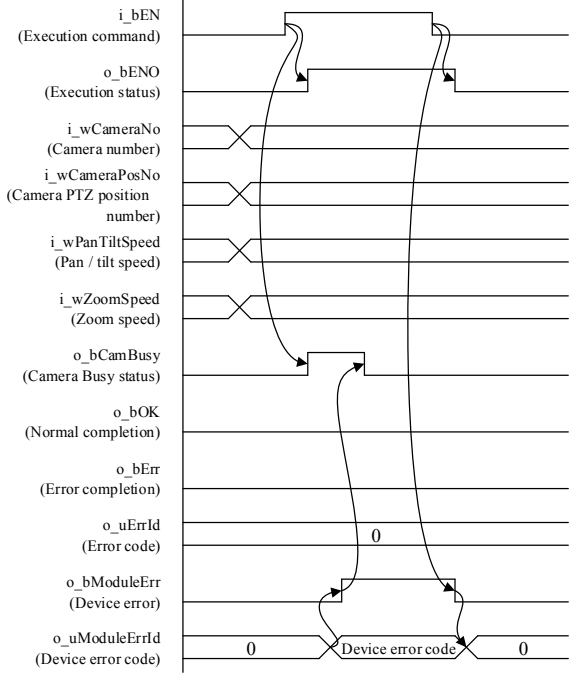


Items	Explanation
Function explanation	<ol style="list-style-type: none"> 2) While the camera is moving, o_bCamBusy (Camera Busy status) will turn ON and o_bOK (Normal completion) will turn ON when the camera operation has completed. 3) If i_wStationNo (CC-Link IE Field Network station number) is not set correctly, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code). 4) If i_wCameraNo (Camera number) is not set correctly, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code). 5) If i_wCameraPosNo (Camera PTZ position number) is not set correctly, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code). 6) If i_wPanTiltSpeed (Pan / tilt speed) is not set correctly, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code). 7) If i_wZoomSpeed (Zoom speed) is not set correctly, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code). 8) If a device error is raised, o_bModuleErr (Device error) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uModuleErrId (Device error code). 9) If a PTZ position is not registered in the camera PTZ position number specified, o_bModuleErr (Device error) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uModuleErrId (Device error code). 10) If an error not shown above is raised, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).



Items	Explanation
FB compile format	Macro
Limitations, Precautions, etc.	<ol style="list-style-type: none"> 1) This FB does not include an error recovery process. The error recover process should be created separately according to the customer's system and requested operation. 2) This FB cannot be used within interrupt programs. 3) For this FB, a number of scans are required from i_bEN (Execution command) turning on, up until o_bOK (Normal completion) turning ON. 4) Verify that both o_bOK (Normal completion) and o_bErr (Error completion) are OFF when i_bEN (Execution command) is turned ON. 5) This FB uses index registers Z6 to Z9. 6) For this FB, a circuit must be set for every input label. 7) Module settings must be set according to section "1.4. CC-Link IE Field Network Master / Local Module Settings". 8) Global labels must be set according to section "1.5. Global Label Settings". 9) This FB requires a cyclic transmission interlocking program in order to use cyclic transmissions. Refer to section "1.6.1 Cyclic transmission program" for information related to the interlocking program. 10) If a camera does not support changeable pan / tilt speeds as well as changeable zoom speeds, the applicable settings will be disabled. 11) By using this FB multiple times, camera PTZ position move can be carried out to multiple cameras at the same time. The camera number being specified should be different for each FB. 12) The following values must not be changed while i_bEN (Execution command) is ON. <ul style="list-style-type: none"> i_wStartIONo (Mounted master module XY address) i_wStationNo (CC-Link IE Field Network station number) i_wCameraNo (Camera number) i_wCameraPosNo (Camera PTZ position number) i_wPanTiltSpeed (Pan / tilt speed) i_wZoomSpeed (Zoom speed) 13) In this FB, the Y signal is operated through internal index modifiers. Therefore, if this FB is used multiple times, a 2 type coil warning will be raised at compile time, however, there will be no particular problems upon usage. 14) Only 1 master / local module can be controlled through this FB. Refer to "Appendix 3. How to Use FBs for Gateway Modules Which Has Been Connected to 2 Separate Master / Local Modules" if 2 or more master / local modules are to be controlled through an FB. 15) Label comments descriptions may be abbreviated due to the character limits of GX Works3.



Items	Explanation	
FB operation	Pulse execution (multiple scan execution)	
Usage example	Refer to “Appendix 1. FB Library Usage Examples”.	
I/O signal timings	<p>[When the process is completed without an error]</p> 	<p>[When the process is completed with an error]</p> 
	<p>[When the process is stopped]</p> 	<p>[When there is a device error]</p> 



Error Code

Error code (hexadecimal)	Error details	Treatment method
H100	CC-Link IE Field Network station number setting is outside 1 to 120.	Restart the FB after verifying the setting.
H101	The CC-Link IE Field Network station number set in the FB and the CC-Link IE Field Network station number set in “Network Configuration Settings” does not match.	Verify the following settings. - Network Configuration Settings Refer to section “1.4. CC-Link IE Field Network Master / Local Module Settings” part “(2) Basic Settings”. - i_wStationNo (CC-Link IE Field Network station number) setting value
H102	Camera number is outside 1 to 16.	Restart the FB after verifying the setting.
H103	Camera PTZ position number is outside 0 to 99.	
H104	Pan / tilt speed is outside 1 to 10.	
H105	Zoom speed is outside 1 to 10.	
H200	An error has occurred in the Gateway Module.	Refer to the “CC-Link IE Field Network / ONVIF Network Gateway Module ECLEF-NV1G User’s Manual (Detailed Edition)”.
H201	The Gateway Module is not READY.	- Execute the FB again after the Gateway Module has completed setting up after power is applied. - If the IP LED is red, the IP address cannot be acquired from the DHCP server. Network settings and connections should be verified.
H202	Camera warning is ON.	Verify the error through the maintenance screen of the Gateway Configuration Tool.
H203	The camera is in a BUSY status.	Execute the FB again after a little while. Turn OFF the execution command of the camera PTZ position move FB which is specifying the same camera number.
H400	The FB was stopped due to i_bEN (Execution command) being turned OFF during execution. * Only output for 1 scan	When executing the FB again, turn i_bEN (Execution command) ON after o_bOK (Normal completion) and o_bErr (Error completion) are both OFF.



Used Labels

(1) Input labels

Name (comment)	Label name	Data type	Valid range	Explanation
Execution command	i_bEN	Bit	ON, OFF	ON : Execute FB. OFF : Do not execute FB.
Mounted master module XY address	i_wStartIONo	Word [Signed]	(*1)	Specify the start XY address for the mounted CC-Link IE Field Network master / local module as a hexadecimal. (E.g. : Enter "H10" for X10)
CC-Link IE Field Network station number	i_wStationNo	Word [Signed]	1 - 120	Specify the Gateway Module station number. Set so the station number which includes the occupied stations number so that it is between 1 and 120.
Camera number	i_wCameraNo	Word [Signed]	1 - 16	Specify the camera number set by the Gateway Configuration Tool.
Camera PTZ position number	i_wCameraPosNo	Word [Signed]	0 - 99	Specify the camera PTZ position number set by the Gateway Configuration Tool.
Pan / tilt speed	i_wPanTiltSpeed	Word [Signed]	1 - 10	Set the move speed for a camera supporting the pan / tilt speed specification function. Set 1 for the slowest speed and 10 for the fastest speed.
Zoom speed	i_wZoomSpeed	Word [Signed]	1 - 10	Set the move speed for a camera supporting the zoom speed specification function. Set 1 for the slowest speed and 10 for the fastest speed.

*1 This is decided depending on the number of IO points of the target CPU module.

Refer to the user's manual of the CPU module for more information.



(2) Output labels

Name (comment)	Label name	Data type	Default value	Explanation
Execution status	o_bENO	Bit	OFF	ON : Executing FB operation. OFF : FB operation stopped.
Normal completion	o_bOK	Bit	OFF	ON indicates that the PTZ position move request has completed.
Error completion	o_bErr	Bit	OFF	ON indicates that there was an error in the FB.
Error code	o_uErrId	Word [Unsigned]	0	Returns the error code related to the error raised in the FB.
Device error	o_bModuleErr	Bit	OFF	ON indicates that there was an error in the configuration device.
Device error code	o_uModuleErrId	Word [Unsigned]	0	Returns the Error code related to the error raised in the configuration device.
Camera Busy status	o_bCamBusy	Bit	OFF	ON : The camera specified in i_wCameraNo (Camera number) is moving process. OFF : The camera specified in i_wCameraNo (Camera number) is not moving process.



FB Version History

Version	Date	Details
00A	2017/05/12	First version created.

Notes

This chapter explains the functionality of the function blocks.

It does not explain the usage limitations of the module and the CPU module, and the limitations due to the combinations.

Please read the user's manuals for those products prior to use.

Depending on the camera being used, the pan/tilt speed specification function, the zoom speed specification function, etc., may have limited functionality.



2.2. P+MEE-ECLEF-NV1G_ChkAliveCam_R (Camera alive check)

Function Name

P+MEE-ECLEF-NV1G_ChkAliveCam_R

Function Explanation

Items	Explanation						
Function overview	Checks if the specified camera is alive.						
Symbol	<div><div><div>Execution command</div><div>Mounted master module XY address</div><div>CC-Link IE Field Network station number</div><div>Camera number</div></div><div><div>P+MEE-ECLEF-NV1G_ChkAliveCam_R</div><div><div>B : i_bEN</div><div>W : i_wStartIONo</div><div>W : i_wStationNo</div><div>W : i_wCameraNo</div></div><div><div>o_bENO : B</div><div>o_bOK : B</div><div>o_bErr : B</div><div>o_uErrId : UW</div><div>o_bModuleErr : B</div><div>o_uModuleErrId : UW</div></div></div><div><div>Execution status</div><div>Normal completion</div><div>Error completion</div><div>Error code</div><div>Device error</div><div>Device error code</div></div></div>						
Target device	Module	ECLEF-NV1G					
	CC-Link IE Field Network system	<table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R series</td><td>RJ71GF11-T2</td></tr></table>		Series	Model	MELSEC iQ-R series	RJ71GF11-T2
	Series	Model					
	MELSEC iQ-R series	RJ71GF11-T2					
CPU module	<table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R series</td><td>R04CPU, R08CPU, R16CPU, R32CPU, R120CPU</td></tr></table>		Series	Model	MELSEC iQ-R series	R04CPU, R08CPU, R16CPU, R32CPU, R120CPU	
Series	Model						
MELSEC iQ-R series	R04CPU, R08CPU, R16CPU, R32CPU, R120CPU						
GX Works3	<table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R series</td><td>Version 1.015R or later</td></tr></table>		Series	Model	MELSEC iQ-R series	Version 1.015R or later	
Series	Model						
MELSEC iQ-R series	Version 1.015R or later						
Language	Ladder						
Steps	590 Steps (for MELSEC iQ-R series / R08CPU) * The number of FB steps incorporated into the program is different depending on the CPU model being used and the input and outputs defined.						



Items	Explanation
Function explanation	<p>1) When i_bEN (Execution command) turns ON, a camera alive check will be carried out on the camera specified by i_wCameraNo (camera number).</p> <pre> graph TD Start([Start]) --> i_bEN_ON[i_bEN = ON] i_bEN_ON --> GetOffset[Get offset address (RX, RY, RWr, RWw)] GetOffset --> CheckStation{Check station number 1 - 120} CheckStation -- "Out of range" --> SetErrId1[Set Error code to o_uErrId] CheckStation --> CheckCamera{Check Camera number 1 - 16} CheckCamera -- "Out of range" --> SetErrId1 CheckCamera --> CameraAlive[Camera alive check] CameraAlive --> NormalComp{Normal completion} NormalComp -- "No (Error completion)" --> SetDevErr[Set Device error code to o_uModuleErrId] SetDevErr --> SetErrId1 NormalComp -- "Yes (Normal completion)" --> o_bOK_ON[o_bOK = ON] SetErrId1 --> o_bErr_ON[o_bErr = ON] o_bErr_ON --> i_bEN_OFF[i_bEN = OFF] i_bEN_OFF --> END([END]) </pre> <p>2) If the camera was confirmed to be alive, o_bOK (Normal completion) will turn ON.</p> <p>3) If i_wStationNo (CC-Link IE Field Network station number) is not set correctly, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p> <p>4) If i_wCameraNo (Camera number) is not set correctly, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p> <p>5) If a device error is raised, o_bModuleErr (Device error) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uModuleErrId (Device error code).</p> <p>6) If an error not shown above is raised, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p>



Items	Explanation
FB compile format	Macro
Limitations, Precautions, etc.	<ol style="list-style-type: none"> 1) This FB does not include an error recovery process. The error recover process should be created separately according to the customer's system and requested operation. 2) This FB cannot be used within interrupt programs. 3) For this FB, a number of scans are required from i_bEN (Execution command) turning on, up until o_bOK (Normal completion) turning ON. 4) Verify that both o_bOK (Normal completion) and o_bErr (Error completion) are OFF when i_bEN (Execution command) is turned ON. 5) This FB uses index registers Z6 to Z9. 6) For this FB, a circuit must be set for every input label. 7) Module settings must be set according to section "1.4. CC-Link IE Field Network Master / Local Module Settings". 8) Global labels must be set according to section "1.5. Global Label Settings". 9) This FB requires a cyclic transmission interlocking program in order to use cyclic transmissions. Refer to section "1.6.1 Cyclic transmission program" for information related to the interlocking program. 10) Camera alive check cannot be performed on multiple cameras simultaneously by using this FB multiple times. 11) The following values must not be changed while i_bEN (Execution command) is ON. <ul style="list-style-type: none"> i_wStartIONo (Mounted master module XY address) i_wStationNo (CC-Link IE Field Network station number) i_wCameraNo (Camera number) 12) In this FB, the Y signal is operated through internal index modifiers. Therefore, if this FB is used multiple times, a 2 type coil warning will be raised at compile time, however, there will be no particular problems upon usage. 13) Only 1 master / local module can be controlled through this FB. Refer to "Appendix 3. How to Use FBs for Gateway Modules Which Has Been Connected to 2 Separate Master / Local Modules" if 2 or more master / local modules are to be controlled through an FB. 14) Label comments descriptions may be abbreviated due to the character limits of GX Works3.



Items	Explanation	
FB operation	Pulse execution (multiple scan execution)	
Usage example	Refer to “Appendix 1. FB Library Usage Examples”.	
I/O signal timings	[When the process is completed without an error]	[When the process is completed with an error]
	[When the process is stopped]	[When there is a device error]



Error Code

Error code (hexadecimal)	Error details	Treatment method
H100	CC-Link IE Field Network station number setting is outside 1 to 120.	Restart the FB after verifying the setting.
H101	The CC-Link IE Field Network station number set in the FB and the CC-Link IE Field Network station number set in “Network Configuration Settings” does not match.	Verify the following settings. - Network Configuration Settings Refer to section “1.4. CC-Link IE Field Network Master / Local Module Settings” part “(2) Basic Settings”. - i_wStationNo (CC-Link IE Field Network station number) setting value
H102	Camera number is outside 1 to 16.	Restart the FB after verifying the setting.
H200	An error has occurred in the Gateway Module.	Refer to the “CC-Link IE Field Network / ONVIF Network Gateway Module ECLEF-NV1G User’s Manual (Detailed Edition)”.
H201	The Gateway Module is not READY.	- Execute the FB again after the Gateway Module has completed setting up after power is applied. - If the IP LED is red, the IP address cannot be acquired from the DHCP server. Network settings and connections should be verified.
H400	The FB was stopped due to i_bEN (Execution command) being turned OFF during execution. * Only output for 1 scan	When executing the FB again, turn i_bEN (Execution command) ON after o_bOK (Normal completion) and o_bErr (Error completion) are both OFF.



Used Labels

(1) Input labels

Name (comment)	Label name	Data type	Valid range	Explanation
Execution command	i_bEN	Bit	ON, OFF	ON : Execute FB. OFF : Do not execute FB.
Mounted master module XY address	i_wStartIONo	Word [Signed]	(*1)	Specify the start XY address for the mounted CC-Link IE Field Network master / local module as a hexadecimal. (E.g. : Enter "H10" for X10)
CC-Link IE Field Network station number	i_wStationNo	Word [Signed]	1 - 120	Specify the Gateway Module station number. Set so the station number which includes the occupied stations number so that it is between 1 and 120.
Camera number	i_wCameraNo	Word [Signed]	1 – 16	Specify the camera number set by the Gateway Configuration Tool.

*1 This is decided depending on the number of IO points of the target CPU module.

Refer to the user's manual of the CPU module for more information.



(2) Output labels

Name (comment)	Label name	Data type	Default value	Explanation
Execution status	o_bENO	Bit	OFF	ON : Executing FB operation. OFF : FB operation stopped.
Normal completion	o_bOK	Bit	OFF	ON indicates that the camera was confirmed to be alive.
Error completion	o_bErr	Bit	OFF	ON indicates that there was an error in the FB.
Error code	o_uErrId	Word [Unsigned]	0	Returns the error code related to the error raised in the FB.
Device error	o_bModuleErr	Bit	OFF	ON indicates that there was an error in the configuration device.
Device error code	o_uModuleErrId	Word [Unsigned]	0	Returns the Error code related to the error raised in the configuration device.



FB Version History

Version	Date	Details
00A	2017/05/12	First version created.

Notes

This chapter explains the functionality of the function blocks.

It does not explain the usage limitations of the module and the CPU module, and the limitations due to the combinations.

Please read the user's manuals for those products prior to use.



2.3. P+MEE-ECLEF-NV1G_GetPosCam_R (Get camera PTZ position)

Function Name

P+MEE-ECLEF-NV1G_GetPosCam_R

Function Explanation

Items	Explanation							
Function overview	Gets the current PTZ position number of the specified camera.							
Symbol	<div><div><div>Execution command</div><div>Mounted master module XY address</div><div>CC-Link IE Field Network station number</div><div>Camera number</div></div><div><div>P+MEE-ECLEF-NV1G_GetPosCam_R</div><div><div>B : i_bEN</div><div>W : i_wStartIONo</div><div>W : i_wStationNo</div><div>W : i_wCameraNo</div></div><div><div>o_bENO : B</div><div>o_bOK : B</div><div>o_bErr : B</div><div>o_uErrId : UW</div><div>o_bModuleErr : B</div><div>o_uModuleErrId : UW</div><div>o_wCameraPosNo : W</div></div><div><div>Execution status</div><div>Normal completion</div><div>Error completion</div><div>Error code</div><div>Device error</div><div>Device error code</div><div>Camera PTZ position number</div></div></div></div>							
Target device	Module	ECLEF-NV1G						
	CC-Link IE Field Network system	<table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R series</td><td>RJ71GF11-T2</td></tr></table>			Series	Model	MELSEC iQ-R series	RJ71GF11-T2
	Series	Model						
	MELSEC iQ-R series	RJ71GF11-T2						
CPU module	<table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R series</td><td>R04CPU, R08CPU, R16CPU, R32CPU, R120CPU</td></tr></table>			Series	Model	MELSEC iQ-R series	R04CPU, R08CPU, R16CPU, R32CPU, R120CPU	
Series	Model							
MELSEC iQ-R series	R04CPU, R08CPU, R16CPU, R32CPU, R120CPU							
GX Works3	<table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R series</td><td>Version 1.015R or later</td></tr></table>			Series	Model	MELSEC iQ-R series	Version 1.015R or later	
Series	Model							
MELSEC iQ-R series	Version 1.015R or later							
Language	Ladder							
Steps	635 Steps (for MELSEC iQ-R series / R08CPU) * The number of FB steps incorporated into the program is different depending on the CPU model being used and the input and outputs defined.							



Items	Explanation
Function explanation	<p>1) When i_bEN (Execution command) turns ON, the current PTZ position of the camera specified by i_wCameraNo (Camera number) will be acquired.</p> <pre> graph TD START([START]) --> i_bEN_ON[i_bEN = ON] i_bEN_ON --> GetOffset[Get offset address (RX, RY, RWr, RWw)] GetOffset --> CheckStation{Check Station number 1 - 120} CheckStation -- "Out of range" --> SetErrId1[Set Error code to o_uErrId] CheckStation --> CheckCamera{Check Camera number 1 - 16} CheckCamera -- "Out of range" --> SetErrId1 CheckCamera --> GetPTZ[Get Camera PTZ position] GetPTZ --> NormalComp{Normal completion} NormalComp -- "No (Error completion)" --> SetErrId2[Set Device error code to o_uModuleErrId] SetErrId2 --> SetModuleErr[o_bModuleErr = ON] NormalComp -- "Yes (Normal completion)" --> SetPosNo[Set Camera PTZ position number to o_wCameraPosNo] SetPosNo --> SetOK[o_bOK = ON] SetErrId1 --> SetErrId3[Set Error code to o_uErrId] SetErrId3 --> SetErrON[o_bErr = ON] SetModuleErr --> Merge(()) SetErrON --> Merge SetOK --> Merge Merge --> i_bEN_OFF[i_bEN = OFF] i_bEN_OFF --> END([END]) </pre>

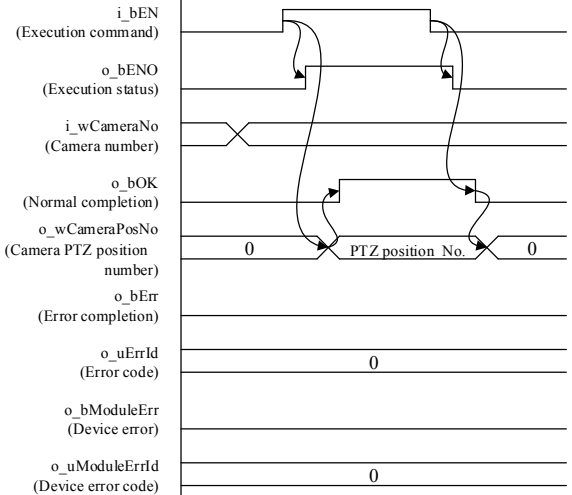
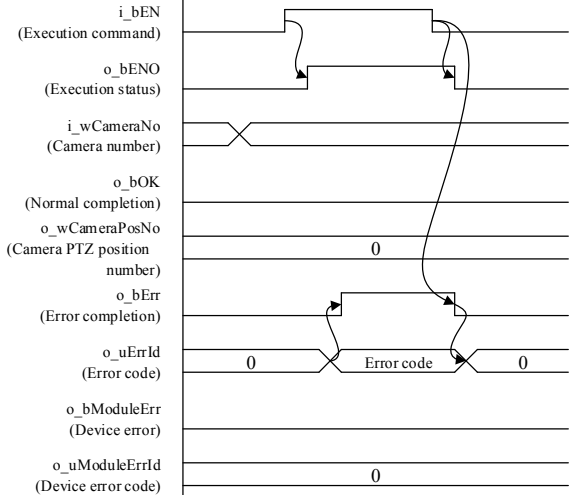
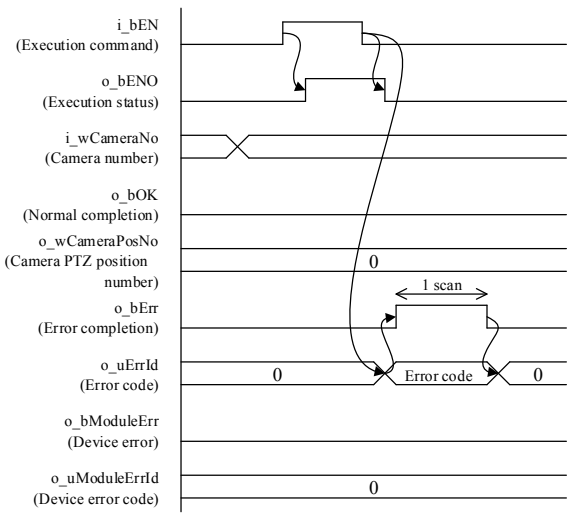
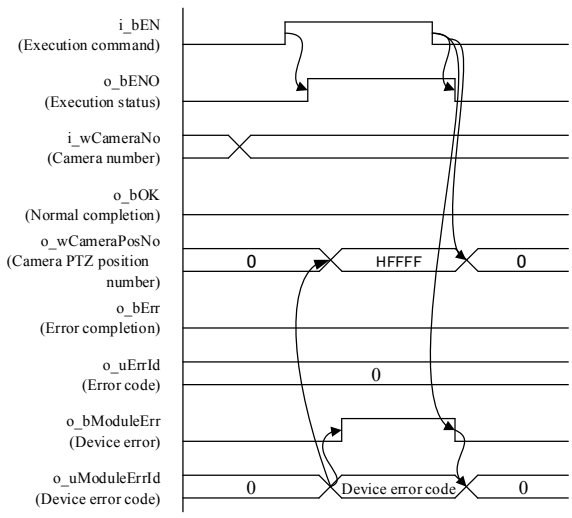


Items	Explanation
Function explanation	<p>2) If the camera PTZ position was successfully acquired, o_bOK (Normal completion) will turn ON. The acquired camera PTZ position number will be stored in o_wCameraPosNo (Camera PTZ position number) as a value between 0 and 99.</p> <p>H00FF will be stored in o_wCameraPosNo (Camera PTZ position number) if the PTZ position has not been registered.</p> <p>3) If i_wStationNo (CC-Link IE Field Network station number) is not set correctly, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p> <p>4) If i_wCameraNo (Camera number) is not set correctly, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p> <p>5) If a device error is raised, o_bModuleErr (Device error) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uModuleErrId (Device error code). Furthermore, HFFFF will be stored in o_wCameraPosNo (Camera PTZ position number).</p> <p>6) If an error not shown above is raised, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p>



Items	Explanation
FB compile format	Macro
Limitations, Precautions, etc.	<ol style="list-style-type: none"> 1) This FB does not include an error recovery process. The error recover process should be created separately according to the customer's system and requested operation. 2) This FB cannot be used within interrupt programs. 3) For this FB, a number of scans are required from i_bEN (Execution command) turning on, up until o_bOK (Normal completion) turning ON. 4) Verify that both o_bOK (Normal completion) and o_bErr (Error completion) are OFF when i_bEN (Execution command) is turned ON. 5) This FB uses index registers Z6 to Z9. 6) For this FB, a circuit must be set for every input label. 7) Module settings must be set according to section "1.4. CC-Link IE Field Network Master / Local Module Settings". 8) Global labels must be set according to section "1.5. Global Label Settings". 9) This FB requires a cyclic transmission interlocking program in order to use cyclic transmissions. Refer to section "1.6.1 Cyclic transmission program" for information related to the interlocking program. 10) Get camera PTZ position cannot be performed on multiple cameras simultaneously by using this FB multiple times. 11) The following values must not be changed while i_bEN (Execution command) is ON. <ul style="list-style-type: none"> i_wStartIONo (Mounted master module XY address) i_wStationNo (CC-Link IE Field Network station number) i_wCameraNo (Camera number) 12) In this FB, the Y signal is operated through internal index modifiers. Therefore, if this FB is used multiple times, a 2 type coil warning will be raised at compile time, however, there will be no particular problems upon usage. 13) The latest PTZ position number will be output if duplicate camera PTZ positions are registered to the target camera. 14) Only 1 master / local module can be controlled through this FB. Refer to "Appendix 3. How to Use FBs for Gateway Modules Which Has Been Connected to 2 Separate Master / Local Modules" if 2 or more master / local modules are to be controlled through an FB. 15) Label comments descriptions may be abbreviated due to the character limits of GX Works3.



Items	Explanation	
FB operation	Pulse execution (multiple scan execution)	
Usage example	Refer to “Appendix 1. FB Library Usage Examples”.	
I/O signal timings	<p>[When the process is completed without an error]</p> 	<p>[When the process is completed with an error]</p> 
	<p>[When the process is stopped]</p> 	<p>[When there is a device error]</p> 



Error Code

Error code (hexadecimal)	Error details	Treatment method
H100	CC-Link IE Field Network station number setting is outside 1 to 120.	Restart the FB after verifying the setting.
H101	The CC-Link IE Field Network station number set in the FB and the CC-Link IE Field Network station number set in “Network Configuration Settings” does not match.	Verify the following settings. - Network Configuration Settings Refer to section “1.4. CC-Link IE Field Network Master / Local Module Settings” part “(2) Basic Settings”. - i_wStationNo (CC-Link IE Field Network station number) setting value
H102	Camera number is outside 1 to 16.	Restart the FB after verifying the setting.
H200	An error has occurred in the Gateway Module.	Refer to the “CC-Link IE Field Network / ONVIF Network Gateway Module ECLEF-NV1G User’s Manual (Detailed Edition)”.
H201	The Gateway Module is not READY.	- Execute the FB again after the Gateway Module has completed setting up after power is applied. - If the IP LED is red, the IP address cannot be acquired from the DHCP server. Network settings and connections should be verified.
H400	The FB was stopped due to i_bEN (Execution command) being turned OFF during execution. * Only output for 1 scan	When executing the FB again, turn i_bEN (Execution command) ON after o_bOK (Normal completion) and o_bErr (Error completion) are both OFF.



Used Labels

(1) Input labels

Name (comment)	Label name	Data type	Valid range	Explanation
Execution command	i_bEN	Bit	ON, OFF	ON : Execute FB. OFF : Do not execute FB.
Mounted master module XY address	i_wStartIONo	Word [Signed]	(*1)	Specify the start XY address for the mounted CC-Link IE Field Network master / local module as a hexadecimal. (E.g. : Enter "H10" for X10)
CC-Link IE Field Network station number	i_wStationNo	Word [Signed]	1 - 120	Specify the Gateway Module station number. Set so the station number which includes the occupied stations number so that it is between 1 and 120.
Camera number	i_wCameraNo	Word [Signed]	1 - 16	Specify the camera number set by the Gateway Configuration Tool.

*1 This is decided depending on the number of IO points of the target CPU module.

Refer to the user's manual of the CPU module for more information.



(2) Output labels

Name (comment)	Label name	Data type	Default value	Explanation
Execution status	o_bENO	Bit	OFF	ON : Executing FB operation. OFF : FB operation stopped.
Normal completion	o_bOK	Bit	OFF	ON indicates that the camera PTZ position number was able to be acquired.
Error completion	o_bErr	Bit	OFF	ON indicates that there was an error in the FB.
Error code	o_uErrId	Word [Unsigned]	0	Returns the error code related to the error raised in the FB.
Device error	o_bModuleErr	Bit	OFF	ON indicates that there was an error in the configuration device.
Device error code	o_uModuleErrId	Word [Unsigned]	0	Returns the Error code related to the error raised in the configuration device.
Camera PTZ position number	o_wCameraPosNo	Word [Signed]	0	Indicates the acquired camera PTZ position number. (0 - 99) H00FF will be stored if the PTZ number has not been registered. If the camera PTZ position number could not be acquired, HFFFF will be stored, and the ONVIF related Error code will be stored in the device Error code.



FB Version History

Version	Date	Details
00A	2017/05/12	First version created.

Notes

This chapter explains the functionality of the function blocks.

It does not explain the usage limitations of the module and the CPU module, and the limitations due to the combinations.

Please read the user's manuals for those products prior to use.



2.4. P+MEE-ECLEF-NV1G_SendEvent_R (Event transmit)

Function Name

P+MEE-ECLEF-NV1G_SendEvent_R

Function Explanation

Items	Explanation						
Function overview	Transmits events.						
Symbol	<div><div><div>Execution command</div><div>Mounted master module XY address</div><div>CC-Link IE Field Network station number</div><div>Access code</div><div>Source</div><div>Data 1</div><div>Data 2</div><div>Data 3</div></div><div><div>P+MEE-ECLEF-NV1G_SendEvent_R</div><div><div>B : i_bEN</div><div>W : i_wStartIONo</div><div>W : i_wStationNo</div><div>W : i_wAccessCode</div><div>W : i_wSource</div><div>W : i_wData1</div><div>W : i_wData2</div><div>W : i_wData3</div></div></div><div><div>o_bENO : B</div><div>o_bOK : B</div><div>o_bErr : B</div><div>o_uErrId: UW</div></div><div><div>Execution status</div><div>Normal completion</div><div>Error completion</div><div>Error code</div></div></div>						
Target device	Module	ECLEF-NV1G					
	CC-Link IE Field Network system	<table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R series</td><td>RJ71GF11-T2</td></tr></table>		Series	Model	MELSEC iQ-R series	RJ71GF11-T2
	Series	Model					
	MELSEC iQ-R series	RJ71GF11-T2					
CPU module	<table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R series</td><td>R04CPU, R08CPU, R16CPU, R32CPU, R120CPU</td></tr></table>		Series	Model	MELSEC iQ-R series	R04CPU, R08CPU, R16CPU, R32CPU, R120CPU	
Series	Model						
MELSEC iQ-R series	R04CPU, R08CPU, R16CPU, R32CPU, R120CPU						
GX Works3	<table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R series</td><td>Version 1.015R or later</td></tr></table>		Series	Model	MELSEC iQ-R series	Version 1.015R or later	
Series	Model						
MELSEC iQ-R series	Version 1.015R or later						
Language	Ladder						
Steps	463 Steps (for MELSEC iQ-R series / R08CPU) * The number of FB steps incorporated into the program is different depending on the CPU model being used and the input and outputs defined.						



Items	Explanation
Function explanation	<p>1) When i_bEN (Execution command) turns ON, an event will be transmitted.</p> <pre> graph TD START([START]) --> i_bEN_ON[i_bEN = ON] i_bEN_ON --> GetOffset[Get offset address (RX, RY, RWr, RWw)] GetOffset --> CheckStation{Check Station number} CheckStation -- "1 - 120" --> CheckAccess{Check Access code} CheckAccess -- "0BH, 0CH" --> EventTransmit[Event transmit] EventTransmit --> NormalComp{Normal completion} NormalComp -- "No (Error completion)" --> SetError[Set Error code to o_uErrId] NormalComp -- "Yes (Normal completion)" --> o_bOK_ON[o_bOK = ON] SetError --> o_bErr_ON[o_bErr = ON] o_bErr_ON --> i_bEN_OFF[i_bEN = OFF] o_bOK_ON --> i_bEN_OFF i_bEN_OFF --> END([END]) </pre>



Items	Explanation
Function explanation	<p>2) If event transmission is successful, o_bOK (Normal completion) will turn ON.</p> <p>3) If i_wStationNo (CC-Link IE Field Network station number) is not set correctly, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p> <p>4) If i_wAccessCode (Access code) is not set correctly, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p> <p>5) If the event transmission failed, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p> <p>6) If an error not shown above is raised, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p>



Items	Explanation
FB compile format	Macro
Limitations, Precautions, etc.	<ol style="list-style-type: none"> 1) This FB does not include an error recovery process. The error recover process should be created separately according to the customer's system and requested operation. 2) This FB cannot be used within interrupt programs. 3) For this FB, a number of scans are required from i_bEN (Execution command) turning on, up until o_bOK (Normal completion) turning ON. 4) Verify that both o_bOK (Normal completion) and o_bErr (Error completion) are OFF when i_bEN (Execution command) is turned ON. 5) This FB uses index registers Z6 to Z9. 6) For this FB, a circuit must be set for every input label. 7) Module settings must be set according to section "1.4. CC-Link IE Field Network Master / Local Module Settings". 8) Global labels must be set according to section "1.5. Global Label Settings". 9) This FB requires a transient transmission interlocking program in order to use transient transmissions. Refer to section "1.6.2 Transient transmission program" for information related to the interlocking program. 10) This FB uses transient transmissions. When an FB which uses other transient transmissions is running, i_bEN (Execution command) should be turned ON. 11) The following values must not be changed while i_bEN (Execution command) is ON. <ul style="list-style-type: none"> i_wStartIONo (Mounted master module XY address) i_wStationNo (CC-Link IE Field Network station number) i_wAccessCode (Access code) i_wSource (Source) i_wData1 (Data 1) i_wData2 (Data 2) i_wData3 (Data 3) 12) In this FB, the Y signal is operated through internal index modifiers. Therefore, if this FB is used multiple times, a 2 type coil warning will be raised at compile time, however, there will be no particular problems upon usage. 13) Only 1 master / local module can be controlled through this FB. Refer to "Appendix 3. How to Use FBs for Gateway Modules Which Has Been Connected to 2 Separate Master / Local Modules" if 2 or more master / local modules are to be controlled through an FB. 14) Label comments descriptions may be abbreviated due to the character limits of GX Works3.



Items	Explanation	
FB operation	Pulse execution (multiple scan execution)	
Usage example	Refer to “Appendix 1. FB Library Usage Examples”.	
I/O signal timings	<div> <p>[When the process is completed without an error]</p> </div> <div> <p>[When the process is completed with an error]</p> </div> <div> <p>[When the process is stopped]</p> </div>	



Error Code

Error code (hexadecimal)	Error details	Treatment method
H100	CC-Link IE Field Network station number setting is outside 1 to 120.	Restart the FB after verifying the setting.
H101	The CC-Link IE Field Network station number set in the FB and the CC-Link IE Field Network station number set in “Network Configuration Settings” does not match.	Verify the following settings. - Network Configuration Settings Refer to section “1.4. CC-Link IE Field Network Master / Local Module Settings” part “(2) Basic Settings”. - i_wStationNo (CC-Link IE Field Network station number) setting value
H106	Event transmit access code is outside H0B and H0C.	Restart the FB after verifying the setting.
H200	An error has occurred in the Gateway Module.	Refer to the “CC-Link IE Field Network / ONVIF Network Gateway Module ECLEF-NV1G User’s Manual (Detailed Edition)”.
H201	The Gateway Module is not READY.	- Execute the FB again after the Gateway Module has completed setting up after power is applied. - If the IP LED is red, the IP address cannot be acquired from the DHCP server. Network settings and connections should be verified.
H204	An error has occurred in the transient transmission.	Execute the FB again after verifying the connection of the Gateway Module with the CC-Link IE Field Network (master station), and verifying the settings.
H400	The FB was stopped due to i_bEN (Execution command) being turned OFF during execution. * Only output for 1 scan	When executing the FB again, turn i_bEN (Execution command) ON after o_bOK (Normal completion) and o_bErr (Error completion) are both OFF.



Used Labels

(1) Input labels

Name (comment)	Label name	Data type	Valid range	Explanation
Execution command	i_bEN	Bit	ON, OFF	ON : Execute FB. OFF : Do not execute FB.
Mounted master module XY address	i_wStartIONo	Word [Signed]	(*1)	Specify the start XY address for the mounted CC-Link IE Field Network master / local module as a hexadecimal. (E.g. : Enter “H10” for X10)
CC-Link IE Field Network station number	i_wStationNo	Word [Signed]	1 - 120	Specify the Gateway Module station number. Set so the station number which includes the occupied stations number so that it is between 1 and 120.
Access code	i_wAccessCode	Word [Signed]	H0B, H0C	Specify the access code. H0B: User Alarm High level events such as intrusion detection. H0C: User Event Normal level events such as lot numbers.
Source	i_wSource	Word [Signed]	–	Specify the transmit data (Source). A 32 Word area is required. Transferred as a fixed 32 word string. (*2)
Data 1	i_wData1	Word [Signed]	–	Specify the transmit data (Data1). A 32 word area is required. Transferred as a fixed 32 word string. (*2)
Data 2	i_wData2	Word [Signed]	–	Specify the transmit data (Data2). A 32 word area is required. Transferred as a fixed 32 word string. (*2)
Data 3	i_wData3	Word [Signed]	–	Specify the transmit data (Data3). A 32 word area is required. Transferred as a fixed 32 word string. (*2)

*1 This is decided depending on the number of IO points of the target CPU module.

Refer to the user's manual of the CPU module for more information.

*2 Make sure that the device range for “Source”, “Data 1”, “Data 2” and “Data 3” is not duplicated.



Event transmits are performed with the following data (arbitrary character strings).

Word address	Data contents	Data type	Data size
xx0 + i_wSource	Source	Word[Signed]	32 words (64 Bytes)
xx0 + i_wData1	Data1	Word[Signed]	32 words (64 Bytes)
xx0 + i_wData2	Data2	Word[Signed]	32 words (64 Bytes)
xx0 + i_wData3	Data3	Word[Signed]	32 words (64 Bytes)

* “xx” refers to the device name.

E.g. : When intrusion is detected in an intrusion forbidden area. (User Alarm H0B)

i_wSource : D100

i_wData1 : D200

i_wData2 : D300

i_wData3 : D400

Device	Data (character string)	Details
D100 - D131	“INTRUSION”	Intrusion detection
D200 - D231	“FLOOR_3”	Intrusion floor
D300 - D331	“AREA_2”	Intrusion area number
D400 - D431	“SENSOR_5”	Intrusion detection sensor number

(2) Output labels

Name (comment)	Label name	Data type	Default value	Explanation
Execution status	o_bENO	Bit	OFF	ON : Executing FB operation. OFF : FB operation stopped.
Normal completion	o_bOK	Bit	OFF	ON indicates that the event was able to be transmitted.
Error completion	o_bErr	Bit	OFF	ON indicates that there was an error in the FB.
Error code	o_uErrId	Word [Unsigned]	0	Returns the error code related to the error raised in the FB.



FB Version History

Version	Date	Details
00A	2017/05/12	First version created.

Notes

This chapter explains the functionality of the function blocks.

It does not explain the usage limitations of the module and the CPU module, and the limitations due to the combinations.

Please read the user's manuals for those products prior to use.



2.5. P+MEE-ECLEF-NV1G_RecvEvent_R (Event receive)

Function Name

P+MEE-ECLEF-NV1G_RecvEvent_R

Function Explanation

Items	Explanation					
Function overview	Reads events being received.					
Symbol	<div><div><div>Execution command</div><div>Mounted master module XY address</div><div>CC-Link IE Field Network station number</div><div>Event receive number</div></div><div><div>P+MEE-ECLEF-NV1G_RecvEvent_R</div><div><div>B : i_bEN</div><div>W : i_wStartIONo</div><div>W : i_wStationNo</div><div>W : i_wEventRecvNo</div></div></div><div><div>o_bENO : B</div><div>o_bOK : B</div><div>o_bErr : B</div><div>o_uErrId : UW</div><div>o_wDate : W</div><div>o_wSource : W</div><div>o_wData1 : W</div><div>o_wData2 : W</div><div>o_wData3 : W</div></div><div><div>Execution status</div><div>Normal completion</div><div>Error completion</div><div>Error code</div><div>Date and time data</div><div>Source</div><div>Data 1</div><div>Data 2</div><div>Data 3</div></div></div>					
Target device	Module	ECLEF-NV1G				
	CC-Link IE Field Network system	<table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R series</td><td>RJ71GF11-T2</td></tr></table>	Series	Model	MELSEC iQ-R series	RJ71GF11-T2
	Series	Model				
	MELSEC iQ-R series	RJ71GF11-T2				
CPU module	<table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R series</td><td>R04CPU, R08CPU, R16CPU, R32CPU, R120CPU</td></tr></table>	Series	Model	MELSEC iQ-R series	R04CPU, R08CPU, R16CPU, R32CPU, R120CPU	
Series	Model					
MELSEC iQ-R series	R04CPU, R08CPU, R16CPU, R32CPU, R120CPU					
GX Works3	<table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R series</td><td>Version 1.015R or later</td></tr></table>	Series	Model	MELSEC iQ-R series	Version 1.015R or later	
Series	Model					
MELSEC iQ-R series	Version 1.015R or later					
Language	Ladder					
Steps	598 Steps (for MELSEC iQ-R series / R08CPU) * The number of FB steps incorporated into the program is different depending on the CPU model being used and the input and outputs defined.					



Items	Explanation
Function explanation	<p>1) When i_bEN (Execution command) turns ON, events being received will be read. If there are no events being received, the FB will wait until an event is received, and start reading the event after reception has completed.</p> <pre> graph TD START([START]) --> i_bEN_ON[i_bEN = ON] i_bEN_ON --> GetOffset[Get offset address (RX, RY, RWr, RWw)] GetOffset --> CheckStation{Check Station number 1 - 120} CheckStation -- "Out of range" --> SetError[Set Error code to o_uErrId] CheckStation --> CheckEventNum{Check Event receive number 1 - 16} CheckEventNum -- "Out of range" --> SetError CheckEventNum -- "Not event received" --> CheckEventRec{Check Event receive} CheckEventRec -- "Event received" --> EventRead[Event read] CheckEventRec -- "Not event received" --> CheckEventRec EventRead --> NormalComp{Normal completion} NormalComp -- "No (Error completion)" --> SetError NormalComp -- "Yes (Normal completion)" --> o_bOK_ON[o_bOK = ON] SetError --> o_bErr_ON[o_bErr = ON] o_bErr_ON --> i_bEN_OFF[i_bEN = OFF] o_bOK_ON --> i_bEN_OFF i_bEN_OFF --> END([END]) </pre>



Items	Explanation
Function explanation	<ol style="list-style-type: none"> 2) If event read is successful, o_bOK (Normal completion) will turn ON. The received data will be stored in o_wSource (Source), o_wData1 (Data 1), o_wData2 (Data 2) and o_wData3 (Data 3). 3) After o_bOK (Normal completion) turns ON, i_bEN (Execution command) must be turned ON for the next event to be received. 4) During the time until event read finishes, o_bOK (Normal completion) will not turn ON while o_bENO (Execution status) is still ON. 5) If i_wStationNo (CC-Link IE Field Network station number) is not set correctly, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code). 6) If i_wEventRecvNo (Event receive number) is not set correctly, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code). 7) If an error not shown above is raised, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).



Items	Explanation
FB compile format	Macro
Limitations, Precautions, etc.	<ol style="list-style-type: none"> 1) This FB does not include an error recovery process. The error recover process should be created separately according to the customer's system and requested operation. 2) This FB cannot be used within interrupt programs. 3) For this FB, a number of scans are required from i_bEN (Execution command) turning on, up until o_bOK (Normal completion) turning ON. 4) Verify that both o_bOK (Normal completion) and o_bErr (Error completion) are OFF when i_bEN (Execution command) is turned ON. 5) This FB uses index registers Z6 to Z9. 6) For this FB, a circuit must be set for every input label. 7) Module settings must be set according to section "1.4. CC-Link IE Field Network Master / Local Module Settings". 8) Global labels must be set according to section "1.5. Global Label Settings". 9) This FB requires a transient transmission interlocking program in order to use transient transmissions. Refer to section "1.6.2 Transient transmission program" for information related to the interlocking program. 10) This FB uses transient transmissions. When an FB which uses other transient transmissions is running, i_bEN (Execution command) should be turned ON. 11) The following values must not be changed while i_bEN (Execution command) is ON. <ul style="list-style-type: none"> i_wStartIONo (Mounted master module XY address) i_wStationNo (CC-Link IE Field Network station number) i_wEventRecvNo (event receive number) 12) In this FB, the Y signal is operated through internal index modifiers. Therefore, if this FB is used multiple times, a 2 type coil warning will be raised at compile time, however, there will be no particular problems upon usage. 13) Only 1 master / local module can be controlled through this FB. Refer to "Appendix 3. How to Use FBs for Gateway Modules Which Has Been Connected to 2 Separate Master / Local Modules" if 2 or more master / local modules are to be controlled through an FB. 14) Label comments descriptions may be abbreviated due to the character limits of GX Works3.



Items	Explanation	
FB operation	Pulse execution (multiple scan execution)	
Usage example	Refer to “Appendix 1. FB Library Usage Examples”.	
I/O signal timings	<div> <p>[When the process is completed without an error]</p> </div> <div> <p>[When the process is completed with an error]</p> </div> <div> <p>[When the process is stopped]</p> </div>	



Error Code

Error code (hexadecimal)	Error details	Treatment method
H100	CC-Link IE Field Network station number setting is outside 1 to 120.	Restart the FB after verifying the setting.
H101	The CC-Link IE Field Network station number set in the FB and the CC-Link IE Field Network station number set in “Network Configuration Settings” does not match.	Verify the following settings. - Network Configuration Settings Refer to section “1.4. CC-Link IE Field Network Master / Local Module Settings” part “(2) Basic Settings”. - i_wStationNo (CC-Link IE Field Network station number) setting value
H107	Event receive number is outside 1 to 16.	Restart the FB after verifying the setting.
H200	An error has occurred in the Gateway Module.	Refer to the “CC-Link IE Field Network / ONVIF Network Gateway Module ECLEF-NV1G User’s Manual (Detailed Edition)”.
H201	The Gateway Module is not READY.	- Execute the FB again after the Gateway Module has completed setting up after power is applied. - If the IP LED is red, the IP address cannot be acquired from the DHCP server. Network settings and connections should be verified.
H204	An error has occurred in the transient transmission.	Execute the FB again after verifying the connection of the Gateway Module with the CC-Link IE Field Network (master station), and verifying the settings.
H400	The FB was stopped due to i_bEN (Execution command) being turned OFF during execution. * Only output for 1 scan	When executing the FB again, turn i_bEN (Execution command) ON after o_bOK (Normal completion) and o_bErr (Error completion) are both OFF.



Used Labels

(1) Input labels

Name (comment)	Label name	Data type	Valid range	Explanation
Execution command	i_bEN	Bit	ON, OFF	ON : Execute FB. OFF : Do not execute FB.
Mounted master module XY address	i_wStartIONo	Word [Signed]	(*1)	Specify the start XY address for the mounted CC-Link IE Field Network master / local module as a hexadecimal. (E.g. : Enter "H10" for X10)
CC-Link IE Field Network station number	i_wStationNo	Word [Signed]	1 - 120	Specify the Gateway Module station number. Set so the station number which includes the occupied stations number so that it is between 1 and 120.
Event receive number	i_wEventRecvNo	Word [Signed]	1 - 16	Specify the receive event number that was specified by the Gateway Configuration Tool.

*1 This is decided depending on the number of IO points of the target CPU module.

Refer to the user's manual of the CPU module for more information.



(2) Output labels

Name (comment)	Label name	Data type	Default value	Explanation
Execution status	o_bENO	Bit	OFF	ON : Executing FB operation. OFF : FB operation stopped.
Normal completion	o_bOK	Bit	OFF	ON indicates that the event was able to be read.
Error completion	o_bErr	Bit	OFF	ON indicates that there was an error in the FB.
Error code	o_uErrId	Word [Unsigned]	0	Returns the error code related to the error raised in the FB.
Date and time data	o_wDate	Word [Signed]	0	Indicates the date and time data when the event is received. A 3 word area is required. Transferred in 3 words. (*1)
Source	o_wSource	Word [Signed]	0	Indicates received data (Source). A 32 word area is required. Transferred in 32 words. (*1)
Data 1	o_wData1	Word [Signed]	0	Indicates received data (Data 1). A 32 word area is required. Transferred in 32 words. (*1)
Data 2	o_wData2	Word [Signed]	0	Indicates received data (Data 2). A 32 word area is required. Transferred in 32 words. (*1)
Data 3	o_wData3	Word [Signed]	0	Indicates received data (Data 3). A 32 word area is required. Transferred in 32 words. (*1)

*1 Make sure that the device range for “Date and time data”, “Source”, “Data 1”, “Data 2” and “Data 3” is not duplicated.



1) Date and time data

Word address	Data contents	Data type	Explanation	Notes
xx0 + o_wDate	Occurrence date (Year, Month)	Word [Signed]	The date the event occurred. <div> <div>Upper 8bits : Last 2 digit of the western calendar year</div> <div>Lower 8bits : Month</div> </div>	Stored in a BCD format. All values will be HFFFF if no date has been set to the date and time setting.
xx1 + o_wDate	Occurrence date (Day, Hour)	Word [Signed]	The date the event occurred. <div> <div>Upper 8bits : Day</div> <div>Lower 8bits : Hour (24 hour clock)</div> </div>	
xx2 + o_wDate	Occurrence date (Minute, Second)	Word [Signed]	The date the event occurred. <div> <div>Upper 8bits : Minute</div> <div>Lower 8bits : Second</div> </div>	

* “xx” refers to the device name.

2) Event data

Received events are read with the following data (arbitrary character strings).

Word address	Data contents	Data type	Data size
xx0 + o_wSource	Source	Word[Signed]	32 words (64 Bytes)
xx0 + o_wData1	Data 1	Word[Signed]	32 words (64 Bytes)
xx0 + o_wData2	Data 2	Word[Signed]	32 words (64 Bytes)
xx0 + o_wData3	Data 3	Word[Signed]	32 words (64 Bytes)

* “xx” refers to the device name.



FB Version History

Version	Date	Details
00A	2017/05/12	First version created.

Notes

This chapter explains the functionality of the function blocks.

It does not explain the usage limitations of the module and the CPU module, and the limitations due to the combinations.

Please read the user's manuals for those products prior to use.



2.6. P+MEE-ECLEF-NV1G_CCIEErrHist_R (Get CC-Link IE error history)

Function Name

P+MEE-ECLEF-NV1G_CCIEErrHist_R

Function Explanation

Items	Explanation			
Function overview	Gets the error history of the CC-Link IE Field Network.			
Symbol	<div><div><div>Execution command</div><div>Mounted master module XY address</div><div>CC-Link IE Field Network station number</div><div>Error history read start point</div><div>Error history read points</div></div><div><div>P+MEE-ECLEF-NV1G_CCIEErrHist_R</div><div><div>B : i_bEN</div><div>W : i_wStartIONo</div><div>W : i_wStationNo</div><div>W : i_wErrHistStart</div><div>W : i_wErrHistCount</div></div><div><div>o_bENO : B</div><div>o_bOK : B</div><div>o_bErr : B</div><div>o_uErrId : UW</div><div>o_wReadData : W</div></div></div><div><div>Execution status</div><div>Normal completion</div><div>Error completion</div><div>Error code</div><div>Error history read data</div></div></div>			
Target device	Module	ECLEF-NV1G		
	CC-Link IE Field Network system	Series	Model	
		MELSEC iQ-R series	RJ71GF11-T2	
	CPU module	Series	Model	
		MELSEC iQ-R series	R04CPU, R08CPU, R16CPU, R32CPU, R120CPU	
GX Works3	Series	Model		
	MELSEC iQ-R series	Version 1.015R or later		
Language	Ladder			
Steps	496 Steps (for MELSEC iQ-R series / R08CPU) * The number of FB steps incorporated into the program is different depending on the CPU model being used and the input and outputs defined.			



Items	Explanation
Function explanation	<p>1) When i_bEN (Execution command) turns ON, the CC-Link IE Field Network error history will be acquired.</p> <pre> graph TD START([START]) --> i_bEN_ON[i_bEN = ON] i_bEN_ON --> GetOffset[Get offset address (RX, RY, RWr, RWw)] GetOffset --> CheckStation{Check Station number 1 - 120} CheckStation -- "Out of range" --> SetError[Set Error code to o_uErrId] CheckStation --> CheckReadStartPos1{Check read start position 1 - 50} CheckReadStartPos1 -- "Out of range" --> SetError CheckReadStartPos1 --> CheckReadPoints{Check read points 1 - 50} CheckReadPoints -- "Out of range" --> SetError CheckReadPoints --> CheckReadStartPos2{Check read start position + read points 2 - 51} CheckReadStartPos2 -- "Out of range" --> SetError CheckReadStartPos2 --> GetErrorHistory[Get CC-Link IE error history] GetErrorHistory --> NormalComp{Normal completion} NormalComp -- "No (Error completion)" --> SetError NormalComp -- "Yes (Normal completion)" --> o_bOK_ON[o_bOK = ON] SetError --> o_bErr_ON[o_bErr = ON] o_bErr_ON --> i_bEN_OFF[i_bEN = OFF] o_bOK_ON --> i_bEN_OFF i_bEN_OFF --> END([END]) </pre>



Items	Explanation
Function explanation	<p>2) If get CC-Link IE Field Network error history is successful, o_bOK (Normal completion) will turn ON.</p> <p>3) If i_wStationNo (CC-Link IE Field Network station number) is not set correctly, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p> <p>4) If i_wErrHistStart (Error history read start position) is not set correctly, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p> <p>5) If i_wErrHistCount (Error history read points) is not set correctly, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p> <p>6) If any combination of i_wErrHistStart (Error history start position) and i_wErrHistCount (Error history read points) are not set correctly, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p> <p>7) If get CC-Link IE Field Network error history has failed, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p> <p>8) If an error not shown above is raised, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p>



Items	Explanation
FB compile format	Macro
Limitations, Precautions, etc.	<ol style="list-style-type: none"> 1) This FB does not include an error recovery process. The error recover process should be created separately according to the customer's system and requested operation. 2) This FB cannot be used within interrupt programs. 3) For this FB, a number of scans are required from i_bEN (Execution command) turning on, up until o_bOK (Normal completion) turning ON. 4) Verify that both o_bOK (Normal completion) and o_bErr (Error completion) are OFF when i_bEN (Execution command) is turned ON. 5) This FB uses index registers Z6 to Z9. 6) For this FB, a circuit must be set for every input label. 7) Module settings must be set according to section "1.4. CC-Link IE Field Network Master / Local Module Settings". 8) Global labels must be set according to section "1.5. Global Label Settings". 9) This FB requires a transient transmission interlocking program in order to use transient transmissions. Refer to section "1.6.2 Transient transmission program" for information related to the interlocking program. 10) This FB uses transient transmissions. When an FB which uses other transient transmissions is running, i_bEN (Execution command) should be turned ON. 11) The following values must not be changed while i_bEN (Execution command) is ON. <ul style="list-style-type: none"> i_wStartIONo (Mounted master module XY address) i_wStationNo (CC-Link IE Field Network station number) i_wErrHistStart (Error history read start position) i_wErrHistCount (Error history read points) 12) In this FB, the Y signal is operated through internal index modifiers. Therefore, if this FB is used multiple times, a 2 type coil warning will be raised at compile time, however, there will be no particular problems upon usage. 13) Only 1 master / local module can be controlled through this FB. Refer to "Appendix 3. How to Use FBs for Gateway Modules Which Has Been Connected to 2 Separate Master / Local Modules" if 2 or more master / local modules are to be controlled through an FB. 14) Label comments descriptions may be abbreviated due to the character limits of GX Works3.



Items	Explanation	
FB operation	Pulse execution (multiple scan execution)	
Usage example	Refer to “Appendix 1. FB Library Usage Examples”.	
I/O signal timings	<div> <p>[When the process is completed without an error]</p> </div> <div> <p>[When the process is completed with an error]</p> </div> <div> <p>[When the process is stopped]</p> </div>	



Error Code

Error code (hexadecimal)	Error details	Treatment method
H100	CC-Link IE Field Network station number setting is outside 1 to 120.	Restart the FB after verifying the setting.
H101	The CC-Link IE Field Network station number set in the FB and the CC-Link IE Field Network station number set in “Network Configuration Settings” does not match.	Verify the following settings. - Network Configuration Settings Refer to section “1.4. CC-Link IE Field Network Master / Local Module Settings” part “(2) Basic Settings”. - i_wStationNo (CC-Link IE Field Network station number) setting value
H108	Error history read start position is outside of 1 to 50.	Restart the FB after verifying the setting.
H109	Error history read points is outside 1 to 50.	
H10A	The sum of the error history read start position and the error history read points exceeds 51.	
H200	An error has occurred in the Gateway Module.	Refer to the “CC-Link IE Field Network / ONVIF Network Gateway Module ECLEF-NV1G User’s Manual (Detailed Edition)”.
H201	The Gateway Module is not READY.	- Execute the FB again after the Gateway Module has completed setting up after power is applied. - If the IP LED is red, the IP address cannot be acquired from the DHCP server. Network settings and connections should be verified.
H204	An error has occurred in the transient transmission.	Execute the FB again after verifying the connection of the Gateway Module with the CC-Link IE Field Network (master station), and verifying the settings.
H400	The FB was stopped due to i_bEN (Execution command) being turned OFF during execution. * Only output for 1 scan	When executing the FB again, turn i_bEN (Execution command) ON after o_bOK (Normal completion) and o_bErr (Error completion) are both OFF.



Used Labels

(1) Input labels

Name (comment)	Label name	Data type	Valid range	Explanation
Execution command	i_bEN	Bit	ON, OFF	ON : Execute FB. OFF : Do not execute FB.
Mounted master module XY address	i_wStartIONo	Word [Signed]	(*1)	Specify the start XY address for the mounted CC-Link IE Field Network master / local module as a hexadecimal. (E.g. : Enter "H10" for X10)
CC-Link IE Field Network station number	i_wStationNo	Word [Signed]	1 - 120	Specify the Gateway Module station number. Set so the station number which includes the occupied stations number so that it is between 1 and 120.
Error history read start point	i_wErrHistStart	Word [Signed]	1 - 50	Specify the start position in which the error history will be read (start history number).
Error history read points	i_wErrHistCount	Word [Signed]	1 - 50	Specify the number of error histories which will be read.

*1 This is decided depending on the number of IO points of the target CPU module.

Refer to the user's manual of the CPU module for more information.

(2) Output labels

Name (comment)	Label name	Data type	Default value	Explanation
Execution status	o_bENO	Bit	OFF	ON : Executing FB operation. OFF : FB operation stopped.
Normal completion	o_bOK	Bit	OFF	ON indicates that the CC-Link IE Field Network error history was able to be acquired.
Error completion	o_bErr	Bit	OFF	ON indicates that there was an error in the FB.
Error code	o_uErrId	Word [Unsigned]	0	Returns the error code related to the error raised in the FB.
Error history read data	o_wReadData	Word [Signed]	0	Indicates the CC-Link IE Field Network error history. The size must be 8 words × error history read points. Refer to "1) Error history area" and "2) History data details" below for more information.



1) Error history area

Error histories are stored in the following order.

If the number of errors raised exceeds 50, the oldest errors will be removed and the latest errors will be stored.

Error history area	Number of errors raised					
	1	2	-	49	50	51
Error history area 1	1st error	2nd error	-	49th error	50th error	51th error
Error history area 2	Blank	1st error	-	48th error	49th error	50th error
,	,	,	,	,	,	,
Error history area 49	Blank	Blank	-	1st error	2nd error	3rd error
Error history area 50	Blank	Blank	-	Blank	1st error	2nd error



2) History data details

The error history data will be read to the device for the number of error history read points.

Word address	Data contents	Data type	Explanation	Notes
xx0 + o_wReadData	Occurrence date (Year, Month)	Word [Signed]	The date the error was raised. <div> <div>Upper 8bits : Last 2 digit of the western calendar year</div> <div>Lower 8bits : Month</div> </div>	Stored in a BCD format. All values will be HFFFF if there are no errors, and if no date has been set to the date and time setting.
xx1 + o_wReadData	Occurrence date (Day, Hour)	Word [Signed]	The date the error was raised. <div> <div>Upper 8bits : Day</div> <div>Lower 8bits : Hour (24 hour clock)</div> </div>	
xx2 + o_wReadData	Occurrence date (Minute, Second)	Word [Signed]	The date the error was raised. <div> <div>Upper 8bits : Minute</div> <div>Lower 8bits : Second</div> </div>	
xx3 + o_wReadData	Uptime (Days)	Word [Signed]	The time until the error was raised. <div> <div>Number of days the system was operational</div> </div>	Stored in a BCD format. All values will be HFFFF if there are no errors. This is the elapsed time from when the Gateway Module has booted up.
xx4 + o_wReadData	Uptime (Hours, Minutes)	Word [Signed]	The time until the error was raised. <div> <div>Upper 8bits : Hours</div> <div>Lower 8bits : Minutes</div> </div>	
xx5 + o_wReadData	Uptime (Seconds)	Word [Signed]	The time until the error was raised. <div> <div>Upper 8bits : Seconds</div> <div>Lower 8bits : Not used</div> </div>	
xx6 + o_wReadData	Error occurrence order	Word [Signed]	The order in which the error was raised.	0 - 65535
xx7 + o_wReadData	Error code	Word [Signed]	The error code of the error raised.	Refer to the “ECLEF-NV1G CC-Link IE Field Network / ONVIF Network Gateway Module User’s Manual (Detailed Edition)”.

* “xx” refers to the device name.



FB Version History

Version	Date	Details
00A	2017/05/12	First version created.

Notes

This chapter explains the functionality of the function blocks.

It does not explain the usage limitations of the module and the CPU module, and the limitations due to the combinations.

Please read the user's manuals for those products prior to use.



2.7. P+MEE-ECLEF-NV1G_ONVIFErrHist_R (Get ONVIF error history)

Function Name

P+MEE-ECLEF-NV1G_ONVIFErrHist_R

Function Explanation

Items	Explanation						
Function overview	Gets the error history of the ONVIF Network.						
Symbol	<div><div><div>Execution command</div><div>Mounted master module XY address</div><div>CC-Link IE Field Network station number</div><div>Error history read start point</div><div>Error history read points</div></div><div><div>P+MEE-ECLEF-NV1G_ONVIFErrHist_R</div><div><div>B : i_bEN</div><div>W : i_wStartIONo</div><div>W : i_wStationNo</div><div>W : i_wErrHistStart</div><div>W : i_wErrHistCount</div></div><div><div>o_bENO : B</div><div>o_bOK : B</div><div>o_bErr : B</div><div>o_uErrId : UW</div><div>o_wReadData : W</div></div></div><div><div>Execution status</div><div>Normal completion</div><div>Error completion</div><div>Error code</div><div>Error history read data</div></div></div>						
Target device	Module	ECLEF-NV1G					
	CC-Link IE Field Network system	<table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R series</td><td>RJ71GF11-T2</td></tr></table>	Series	Model	MELSEC iQ-R series	RJ71GF11-T2	
	Series	Model					
	MELSEC iQ-R series	RJ71GF11-T2					
CPU module	<table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R series</td><td>R04CPU, R08CPU, R16CPU, R32CPU, R120CPU</td></tr></table>	Series	Model	MELSEC iQ-R series	R04CPU, R08CPU, R16CPU, R32CPU, R120CPU		
Series	Model						
MELSEC iQ-R series	R04CPU, R08CPU, R16CPU, R32CPU, R120CPU						
GX Works3	<table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R series</td><td>Version 1.015R or later</td></tr></table>	Series	Model	MELSEC iQ-R series	Version 1.015R or later		
Series	Model						
MELSEC iQ-R series	Version 1.015R or later						
Language	Ladder						
Steps	496 Steps (for MELSEC iQ-R series / R08CPU) * The number of FB steps incorporated into the program is different depending on the CPU model being used and the input and outputs defined.						



Items	Explanation
Function explanation	<p>1) When i_bEN (Execution command) turns ON, the ONVIF Network error history will be acquired.</p> <pre> graph TD START([START]) --> i_bEN_ON[i_bEN = ON] i_bEN_ON --> GetOffset[Get offset address (RX, RY, RWr, RWw)] GetOffset --> CheckStation{Check Station number 1 - 120} CheckStation -- Out of range --> SetError[Set Error code to o_uErrId] SetError --> o_bErr_ON[o_bErr = ON] o_bErr_ON --> i_bEN_OFF[i_bEN = OFF] CheckStation --> CheckReadStartPos{Check read start position 1 - 50} CheckReadStartPos -- Out of range --> SetError SetError --> o_bErr_ON o_bErr_ON --> i_bEN_OFF CheckReadStartPos --> CheckReadPoints{Check read points 1 - 50} CheckReadPoints -- Out of range --> SetError SetError --> o_bErr_ON o_bErr_ON --> i_bEN_OFF CheckReadPoints --> CheckReadStartPosPlusPoints{Check read start position + read points 2 - 51} CheckReadStartPosPlusPoints -- Out of range --> SetError SetError --> o_bErr_ON o_bErr_ON --> i_bEN_OFF CheckReadStartPosPlusPoints --> GetErrorHistory[Get ONVIF error history] GetErrorHistory --> NormalCompletion{Normal completion} NormalCompletion -- No (Error completion) --> SetError SetError --> o_bErr_ON o_bErr_ON --> i_bEN_OFF NormalCompletion -- Yes (Normal completion) --> o_bOK_ON[o_bOK = ON] o_bOK_ON --> i_bEN_OFF i_bEN_OFF --> END([END]) </pre>



Items	Explanation
Function explanation	<p>2) If get ONVIF Network error history is successful, o_bOK (Normal completion) will turn ON.</p> <p>3) If i_wStationNo (CC-Link IE Field Network station number) is not set correctly, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p> <p>4) If i_wErrHistStart (Error history read start position) is not set correctly, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p> <p>5) If i_wErrHistCount (Error history read points) is not set correctly, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p> <p>6) If any combination of i_wErrHistStart (Error history start position) and i_wErrHistCount (Error history read points) are not set correctly, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p> <p>7) If get ONVIF Network error history has failed, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p> <p>8) If an error not shown above is raised, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p>



Items	Explanation
FB compile format	Macro
Limitations, Precautions, etc.	<ol style="list-style-type: none"> 1) This FB does not include an error recovery process. The error recover process should be created separately according to the customer's system and requested operation. 2) This FB cannot be used within interrupt programs. 3) For this FB, a number of scans are required from i_bEN (Execution command) turning on, up until o_bOK (Normal completion) turning ON. 4) Verify that both o_bOK (Normal completion) and o_bErr (Error completion) are OFF when i_bEN (Execution command) is turned ON. 5) This FB uses index registers Z6 to Z9. 6) For this FB, a circuit must be set for every input label. 7) Module settings must be set according to section "1.4. CC-Link IE Field Network Master / Local Module Settings". 8) Global labels must be set according to section "1.5. Global Label Settings". 9) This FB requires a transient transmission interlocking program in order to use transient transmissions. Refer to section "1.6.2 Transient transmission program" for information related to the interlocking program. 10) This FB uses transient transmissions. When an FB which uses other transient transmissions is running, i_bEN (Execution command) should be turned ON. 11) The following values must not be changed while i_bEN (Execution command) is ON. <ul style="list-style-type: none"> i_wStartIONo (Mounted master module XY address) i_wStationNo (CC-Link IE Field Network station number) i_wErrHistStart (Error history read start position) i_wErrHistCount (Error history read points) 12) In this FB, the Y signal is operated through internal index modifiers. Therefore, if this FB is used multiple times, a 2 type coil warning will be raised at compile time, however, there will be no particular problems upon usage. 13) Only 1 master / local module can be controlled through this FB. Refer to "Appendix 3. How to Use FBs for Gateway Modules Which Has Been Connected to 2 Separate Master / Local Modules" if 2 or more master / local modules are to be controlled through an FB. 14) Label comments descriptions may be abbreviated due to the character limits of GX Works3.



Items	Explanation	
FB operation	Pulse execution (multiple scan execution)	
Usage example	Refer to “Appendix 1. FB Library Usage Examples”.	
I/O signal timings	<div> <p>[When the process is completed without an error]</p> </div> <div> <p>[When the process is completed with an error]</p> </div> <div> <p>[When the process is stopped]</p> </div>	



Error Code

Error code (hexadecimal)	Error details	Treatment method
H100	CC-Link IE Field Network station number setting is outside 1 to 120.	Restart the FB after verifying the setting.
H101	The CC-Link IE Field Network station number set in the FB and the CC-Link IE Field Network station number set in “Network Configuration Settings” does not match.	Verify the following settings. - Network Configuration Settings Refer to section “1.4. CC-Link IE Field Network Master / Local Module Settings” part “(2) Basic Settings”. - i_wStationNo (CC-Link IE Field Network station number) setting value
H108	Error history read start position is outside of 1 to 50.	Restart the FB after verifying the setting.
H109	Error history read points is outside 1 to 50.	
H10A	The sum of the error history read start position and the error history read points exceeds 51.	
H200	An error has occurred in the Gateway Module.	Refer to the “CC-Link IE Field Network / ONVIF Network Gateway Module ECLEF-NV1G User’s Manual (Detailed Edition)”.
H201	The Gateway Module is not READY.	- Execute the FB again after the Gateway Module has completed setting up after power is applied. - If the IP LED is red, the IP address cannot be acquired from the DHCP server. Network settings and connections should be verified.
H204	An error has occurred in the transient transmission.	Execute the FB again after verifying the connection of the Gateway Module with the CC-Link IE Field Network (master station), and verifying the settings.
H400	The FB was stopped due to i_bEN (Execution command) being turned OFF during execution. * Only output for 1 scan	When executing the FB again, turn i_bEN (Execution command) ON after o_bOK (Normal completion) and o_bErr (Error completion) are both OFF.



Used Labels

(1) Input labels

Name (comment)	Label name	Data type	Valid range	Explanation
Execution command	i_bEN	Bit	ON, OFF	ON : Execute FB. OFF : Do not execute FB.
Mounted master module XY address	i_wStartIONo	Word [Signed]	(*1)	Specify the start XY address for the mounted CC-Link IE Field Network master / local module as a hexadecimal. (E.g. : Enter "H10" for X10)
CC-Link IE Field Network station number	i_wStationNo	Word [Signed]	1 - 120	Specify the Gateway Module station number. Set so the station number which includes the occupied stations number so that it is between 1 and 120.
Error history read start point	i_wErrHistStart	Word [Signed]	1 - 50	Specify the start position in which the error history will be read (start history number).
Error history read points	i_wErrHistCount	Word [Signed]	1 - 50	Specify the number of error histories which will be read.

*1 This is decided depending on the number of IO points of the target CPU module.

Refer to the user's manual of the CPU module for more information.

(2) Output labels

Name (comment)	Label name	Data type	Default value	Explanation
Execution status	o_bENO	Bit	OFF	ON : Executing FB operation. OFF : FB operation stopped.
Normal completion	o_bOK	Bit	OFF	ON indicates that the ONVIF Network error history was able to be acquired.
Error completion	o_bErr	Bit	OFF	ON indicates that there was an error in the FB.
Error code	o_uErrId	Word [Unsigned]	0	Returns the error code related to the error raised in the FB.
Error history read data	o_wReadData	Word [Signed]	0	Indicates the ONVIF Network error history. The size must be 9 words × error history read points. Refer to "1) Error history area" and "2) History data details" below for more information.



1) Error history area

Error histories are stored in the following order.

If the number of errors raised exceeds 50, the oldest errors will be removed and the latest errors will be stored.

Error history area	Number of errors raised					
	1	2	-	49	50	51
Error history area 1	1st error	2nd error	-	49th error	50th error	51th error
Error history area 2	Blank	1st error	-	48th error	49th error	50th error
,	,	,	,	,	,	,
Error history area 49	Blank	Blank	-	1st error	2nd error	3rd error
Error history area 50	Blank	Blank	-	Blank	1st error	2nd error



2) History data details

The error history data will be read to the device for the number of error history read points.

Word address	Data contents	Data type	Explanation	Notes
xx0 + o_wReadData	Occurrence date (Year, Month)	Word [Signed]	The date the error was raised. <div> <div>Upper 8bits : Last 2 digit of the western calendar year</div> <div>Lower 8bits : Month</div> </div>	Stored in a BCD format. All values will be HFFFF if there are no errors, and if no date has been set to the date and time setting.
xx1 + o_wReadData	Occurrence date (Day, Hour)	Word [Signed]	The date the error was raised. <div> <div>Upper 8bits : Day</div> <div>Lower 8bits : Hour (24 hour clock)</div> </div>	
xx2 + o_wReadData	Occurrence date (Minute, Second)	Word [Signed]	The date the error was raised. <div> <div>Upper 8bits : Minute</div> <div>Lower 8bits : Second</div> </div>	
xx3 + o_wReadData	Uptime (Days)	Word [Signed]	The time until the error was raised. <div> <div>Number of days the system was operational</div> </div>	Stored in a BCD format. All values will be HFFFF if there are no errors. This is the elapsed time from when the Gateway Module has booted up.
xx4 + o_wReadData	Uptime (Hours, Minutes)	Word [Signed]	The time until the error was raised. <div> <div>Upper 8bits : Hours</div> <div>Lower 8bits : Minutes</div> </div>	
xx5 + o_wReadData	Uptime (Seconds)	Word [Signed]	The time until the error was raised. <div> <div>Upper 8bits : Seconds</div> <div>Lower 8bits : Not used</div> </div>	
xx6 + o_wReadData	Error occurrence order	Word [Signed]	The order in which the error was raised.	0 - 65535
xx7 + o_wReadData	Error code	Word [Signed]	The error code of the error raised.	Refer to the “ECLEF-NV1G CC-Link IE Field Network / ONVIF Network Gateway Module User’s Manual (Detailed Edition)”.
xx8 + o_wReadData	Camera number	Word [Signed]	0 or the Camera number (1 to 16) of the camera where the error was raised.	Will be 0 if the error is not related to a camera.

* “xx” refers to the device name.



FB Version History

Version	Date	Details
00A	2017/05/12	First version created.

Notes

This chapter explains the functionality of the function blocks.

It does not explain the usage limitations of the module and the CPU module, and the limitations due to the combinations.

Please read the user's manuals for those products prior to use.



2.8. P+MEE-ECLEF-NV1G_UnitErrHist_R (Get Module error history)

Function Name

P+MEE-ECLEF-NV1G_UnitErrHist_R

Function Explanation

Items	Explanation			
Function overview	Gets the error history of the Gateway Module.			
Symbol	<div><div><div>Execution command</div><div>Mounted master module XY address</div><div>CC-Link IE Field Network station number</div><div>Error history read start point</div><div>Error history read points</div></div><div><div>P+MEE-ECLEF-NV1G_UnitErrHist_R</div><div><div>B : i_bEN</div><div>W : i_wStartIONo</div><div>W : i_wStationNo</div><div>W : i_wErrHistStart</div><div>W : i_wErrHistCount</div></div></div><div><div>o_bENO : B</div><div>o_bOK : B</div><div>o_bErr : B</div><div>o_uErrId : UW</div><div>o_wReadData : W</div></div><div><div>Execution status</div><div>Normal completion</div><div>Error completion</div><div>Error code</div><div>Error history read data</div></div></div>			
Target device	Module	ECLEF-NV1G		
	CC-Link IE Field Network system	Series	Model	
		MELSEC iQ-R series	RJ71GF11-T2	
	CPU module	Series	Model	
		MELSEC iQ-R series	R04CPU, R08CPU, R16CPU, R32CPU, R120CPU	
GX Works3	Series	Model		
	MELSEC iQ-R series	Version 1.015R or later		
Language	Ladder			
Steps	496 Steps (for MELSEC iQ-R series / R08CPU) * The number of FB steps incorporated into the program is different depending on the CPU model being used and the input and outputs defined.			



Items	Explanation
Function explanation	<p>1) When i_bEN (Execution command) turns ON, the Gateway Module error history will be acquired.</p> <pre> graph TD START([START]) --> i_bEN_ON[i_bEN = ON] i_bEN_ON --> GetOffset[Get offset address (RX, RY, RWr, RWw)] GetOffset --> CheckStation{Check Station number 1 - 120} CheckStation -- Out of range --> SetError[Set Error code to o_uErrId] SetError --> o_bErr_ON[o_bErr = ON] o_bErr_ON --> i_bEN_OFF[i_bEN = OFF] CheckStation --> CheckReadStartPos{Check read start position 1 - 50} CheckReadStartPos -- Out of range --> SetError SetError --> o_bErr_ON o_bErr_ON --> i_bEN_OFF CheckReadStartPos --> CheckReadPoints{Check read points 1 - 50} CheckReadPoints -- Out of range --> SetError SetError --> o_bErr_ON o_bErr_ON --> i_bEN_OFF CheckReadPoints --> CheckReadStartPosPoints{Check read start position + read points 2 - 51} CheckReadStartPosPoints -- Out of range --> SetError SetError --> o_bErr_ON o_bErr_ON --> i_bEN_OFF CheckReadStartPosPoints --> GetErrorHistory[Get Module error history] GetErrorHistory --> NormalCompletion{Normal completion} NormalCompletion -- No (Error completion) --> SetError SetError --> o_bErr_ON o_bErr_ON --> i_bEN_OFF NormalCompletion -- Yes (Normal completion) --> o_bOK_ON[o_bOK = ON] o_bOK_ON --> i_bEN_OFF i_bEN_OFF --> END([END]) </pre>



Items	Explanation
Function explanation	<p>2) If get module error history is successful, o_bOK (Normal completion) will turn ON.</p> <p>3) If i_wStationNo (CC-Link IE Field Network station number) is not set correctly, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p> <p>4) If i_wErrHistStart (Error history read start position) is not set correctly, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p> <p>5) If i_wErrHistCount (Error history read points) is not set correctly, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p> <p>6) If any combination of i_wErrHistStart (Error history start position) and i_wErrHistCount (Error history read points) are not set correctly, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p> <p>7) If get module error history has failed, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p> <p>8) If an error not shown above is raised, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p>



Items	Explanation
FB compile format	Macro
Limitations, Precautions, etc.	<ol style="list-style-type: none"> 1) This FB does not include an error recovery process. The error recover process should be created separately according to the customer's system and requested operation. 2) This FB cannot be used within interrupt programs. 3) For this FB, a number of scans are required from i_bEN (Execution command) turning on, up until o_bOK (Normal completion) turning ON. 4) Verify that both o_bOK (Normal completion) and o_bErr (Error completion) are OFF when i_bEN (Execution command) is turned ON. 5) This FB uses index registers Z6 to Z9. 6) For this FB, a circuit must be set for every input label. 7) Module settings must be set according to section "1.4. CC-Link IE Field Network Master / Local Module Settings". 8) Global labels must be set according to section "1.5. Global Label Settings". 9) This FB requires a transient transmission interlocking program in order to use transient transmissions. Refer to section "1.6.2 Transient transmission program" for information related to the interlocking program. 10) This FB uses transient transmissions. When an FB which uses other transient transmissions is running, i_bEN (Execution command) should be turned ON. 11) The following values must not be changed while i_bEN (Execution command) is ON. <ul style="list-style-type: none"> i_wStartIONo (Mounted master module XY address) i_wStationNo (CC-Link IE Field Network station number) i_wErrHistStart (Error history read start position) i_wErrHistCount (Error history read points) 12) In this FB, the Y signal is operated through internal index modifiers. Therefore, if this FB is used multiple times, a 2 type coil warning will be raised at compile time, however, there will be no particular problems upon usage. 13) Only 1 master / local module can be controlled through this FB. Refer to "Appendix 3. How to Use FBs for Gateway Modules Which Has Been Connected to 2 Separate Master / Local Modules" if 2 or more master / local modules are to be controlled through an FB. 14) Label comments descriptions may be abbreviated due to the character limits of GX Works3.



Items	Explanation	
FB operation	Pulse execution (multiple scan execution)	
Usage example	Refer to “Appendix 1. FB Library Usage Examples”.	
I/O signal timings	<div> <p>[When the process is completed without an error]</p> </div> <div> <p>[When the process is completed with an error]</p> </div> <div> <p>[When the process is stopped]</p> </div>	



Error Code

Error code (hexadecimal)	Error details	Treatment method
H100	CC-Link IE Field Network station number setting is outside 1 to 120.	Restart the FB after verifying the setting.
H101	The CC-Link IE Field Network station number set in the FB and the CC-Link IE Field Network station number set in “Network Configuration Settings” does not match.	Verify the following settings. - Network Configuration Settings Refer to section “1.4. CC-Link IE Field Network Master / Local Module Settings” part “(2) Basic Settings”. - i_wStationNo (CC-Link IE Field Network station number) setting value
H108	Error history read start position is outside of 1 to 50.	Restart the FB after verifying the setting.
H109	Error history read points is outside 1 to 50.	
H10A	The sum of the error history read start position and the error history read points exceeds 51.	
H200	An error has occurred in the Gateway Module.	Refer to the “CC-Link IE Field Network / ONVIF Network Gateway Module ECLEF-NV1G User’s Manual (Detailed Edition)”.
H201	The Gateway Module is not READY.	- Execute the FB again after the Gateway Module has completed setting up after power is applied. - If the IP LED is red, the IP address cannot be acquired from the DHCP server. Network settings and connections should be verified.
H204	An error has occurred in the transient transmission.	Execute the FB again after verifying the connection of the Gateway Module with the CC-Link IE Field Network (master station), and verifying the settings.
H400	The FB was stopped due to i_bEN (Execution command) being turned OFF during execution. * Only output for 1 scan	When executing the FB again, turn i_bEN (Execution command) ON after o_bOK (Normal completion) and o_bErr (Error completion) are both OFF.



Used Labels

(1) Input labels

Name (comment)	Label name	Data type	Valid range	Explanation
Execution command	i_bEN	Bit	ON, OFF	ON : Execute FB. OFF : Do not execute FB.
Mounted master module XY address	i_wStartIONo	Word [Signed]	(*1)	Specify the start XY address for the mounted CC-Link IE Field Network master / local module as a hexadecimal. (E.g. : Enter "H10" for X10)
CC-Link IE Field Network station number	i_wStationNo	Word [Signed]	1 - 120	Specify the Gateway Module station number. Set so the station number which includes the occupied stations number so that it is between 1 and 120.
Error history read start point	i_wErrHistStart	Word [Signed]	1 - 50	Specify the start position in which the error history will be read (start history number).
Error history read points	i_wErrHistCount	Word [Signed]	1 - 50	Specify the number of error histories which will be read.

*1 This is decided depending on the number of IO points of the target CPU module.

Refer to the user's manual of the CPU module for more information.

(2) Output labels

Name (comment)	Label name	Data type	Default value	Explanation
Execution status	o_bENO	Bit	OFF	ON : Executing FB operation. OFF : FB operation stopped.
Normal completion	o_bOK	Bit	OFF	ON indicates that the Gateway Module error history was able to be acquired.
Error completion	o_bErr	Bit	OFF	ON indicates that there was an error in the FB.
Error code	o_uErrId	Word [Unsigned]	0	Returns the error code related to the error raised in the FB.
Error history read data	o_wReadData	Word [Signed]	0	Indicates the Gateway Module error history. The size must be 8 words × error history read points. Refer to "1) Error history area" and "2) History data details" below for more information.



1) Error history area

Error histories are stored in the following order.

If the number of errors raised exceeds 50, the oldest errors will be removed and the latest errors will be stored.

Error history area	Number of errors raised					
	1	2	-	49	50	51
Error history area 1	1st error	2nd error	-	49th error	50th error	51th error
Error history area 2	Blank	1st error	-	48th error	49th error	50th error
,	,	,	,	,	,	,
Error history area 49	Blank	Blank	-	1st error	2nd error	3rd error
Error history area 50	Blank	Blank	-	Blank	1st error	2nd error



2) History data details

The error history data will be read to the device for the number of error history read points.

Word address	Data contents	Data type	Explanation	Notes
xx0 + o_wReadData	Occurrence date (Year, Month)	Word [Signed]	The date the error was raised. <div> <div>Upper 8bits : Last 2 digit of the western calendar year</div> <div>Lower 8bits : Month</div> </div>	Stored in a BCD format. All values will be HFFFF if there are no errors, and if no date has been set to the date and time setting.
xx1 + o_wReadData	Occurrence date (Day, Hour)	Word [Signed]	The date the error was raised. <div> <div>Upper 8bits : Day</div> <div>Lower 8bits : Hour (24 hour clock)</div> </div>	
xx2 + o_wReadData	Occurrence date (Minute, Second)	Word [Signed]	The date the error was raised. <div> <div>Upper 8bits : Minute</div> <div>Lower 8bits : Second</div> </div>	
xx3 + o_wReadData	Uptime (Days)	Word [Signed]	The time until the error was raised. <div> <div>Number of days the system was operational</div> </div>	Stored in a BCD format. All values will be HFFFF if there are no errors. This is the elapsed time from when the Gateway Module has booted up.
xx4 + o_wReadData	Uptime (Hours, Minutes)	Word [Signed]	The time until the error was raised. <div> <div>Upper 8bits : Hours</div> <div>Lower 8bits : Minutes</div> </div>	
xx5 + o_wReadData	Uptime (Seconds)	Word [Signed]	The time until the error was raised. <div> <div>Upper 8bits : Seconds</div> <div>Lower 8bits : Not used</div> </div>	
xx6 + o_wReadData	Error occurrence order	Word [Signed]	The order in which the error was raised.	0 - 65535
xx7 + o_wReadData	Error code	Word [Signed]	The error code of the error raised.	Refer to the “ECLEF-NV1G CC-Link IE Field Network / ONVIF Network Gateway Module User’s Manual (Detailed Edition)”.

* “xx” refers to the device name.



FB Version History

Version	Date	Details
00A	2017/05/12	First version created.

Notes

This chapter explains the functionality of the function blocks.

It does not explain the usage limitations of the module and the CPU module, and the limitations due to the combinations.

Please read the user's manuals for those products prior to use.



2.9. P+MEE-ECLEF-NV1G_RecvEventHist_R (Get event handling history)

Function Name

P+MEE-ECLEF-NV1G_RecvEventHist_R

Function Explanation

Items	Explanation			
Function overview	Gets the event handling execution history.			
Symbol	<div><div><div>Execution command</div><div>Mounted master module XY address</div><div>CC-Link IE Field Network station number</div><div>Event handling history read start position</div><div>Event handling history read points</div></div><div><div>P+MEE-ECLEF-NV1G_RecvEventHist_R</div><div><div>B : i_bEN</div><div>W : i_wStartIONo</div><div>W : i_wStationNo</div><div>W : i_wEvtHistStart</div><div>W : i_wEvtHistCount</div></div></div><div><div>o_bENO : B</div><div>o_bOK : B</div><div>o_bErr : B</div><div>o_uErrId : UW</div><div>o_wReadData : W</div></div><div><div>Execution status</div><div>Normal completion</div><div>Error completion</div><div>Error code</div><div>Event handling history read data</div></div></div>			
Target device	Module	ECLEF-NV1G		
	CC-Link IE Field Network system	Series	Model	
		MELSEC iQ-R series	RJ71GF11-T2	
	CPU module	Series	Model	
		MELSEC iQ-R series	R04CPU, R08CPU, R16CPU, R32CPU, R120CPU	
GX Works3	Series	Model		
	MELSEC iQ-R series	Version 1.015R or later		
Language	Ladder			
Steps	496 Steps (for MELSEC iQ-R series / R08CPU) * The number of FB steps incorporated into the program is different depending on the CPU model being used and the input and outputs defined.			



Items	Explanation
Function explanation	<p>1) When i_bEN (Execution command) turns ON, the event handling execution history will be acquired.</p> <pre> graph TD START([START]) --> i_bEN_ON[i_bEN = ON] i_bEN_ON --> GetOffset[Get offset address (RX, RY, RWr, RWw)] GetOffset --> CheckStation{Check Station number 1 - 120} CheckStation -- Out of range --> SetError[Set Error code to o_uErrId] SetError --> o_bErr_ON[o_bErr = ON] o_bErr_ON --> i_bEN_OFF[i_bEN = OFF] i_bEN_OFF --> END([END]) CheckStation --> CheckReadStart{Check read start position 1 - 50} CheckReadStart -- Out of range --> SetError SetError --> o_bErr_ON o_bErr_ON --> i_bEN_OFF i_bEN_OFF --> END CheckReadStart --> CheckReadPoints{Check read points 1 - 25} CheckReadPoints -- Out of range --> SetError SetError --> o_bErr_ON o_bErr_ON --> i_bEN_OFF i_bEN_OFF --> END CheckReadPoints --> CheckReadStartPos{Check read start position + read points 2 - 51} CheckReadStartPos -- Out of range --> SetError SetError --> o_bErr_ON o_bErr_ON --> i_bEN_OFF i_bEN_OFF --> END CheckReadStartPos --> GetHistory[Get Event handling history] GetHistory --> NormalComp{Normal completion} NormalComp -- No (Error completion) --> SetError SetError --> o_bErr_ON o_bErr_ON --> i_bEN_OFF i_bEN_OFF --> END NormalComp -- Yes (Normal completion) --> o_bOK_ON[o_bOK = ON] o_bOK_ON --> i_bEN_OFF i_bEN_OFF --> END </pre>



Items	Explanation
Function explanation	<p>2) If get event handling history is successful, o_bOK (Normal completion) will turn ON.</p> <p>3) If i_wStationNo (CC-Link IE Field Network station number) is not set correctly, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p> <p>4) If i_wEvtHistStart (Event handling history read start position) is not set correctly, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p> <p>5) If i_wEvtHistCount (Event handling history read points) is not set correctly, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p> <p>6) If any combination of i_wEvtHistStart (Event handling history read start position) and i_wEvtHistCount (Event handling history read points) is not set correctly, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p> <p>7) If get event handling history has failed, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p> <p>8) If an error not shown above is raised, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p>



Items	Explanation
FB compile format	Macro
Limitations, Precautions, etc.	<ol style="list-style-type: none"> 1) This FB does not include an error recovery process. The error recover process should be created separately according to the customer's system and requested operation. 2) This FB cannot be used within interrupt programs. 3) For this FB, a number of scans are required from i_bEN (Execution command) turning on, up until o_bOK (Normal completion) turning ON. 4) Verify that both o_bOK (Normal completion) and o_bErr (Error completion) are OFF when i_bEN (Execution command) is turned ON. 5) This FB uses index registers Z6 to Z9. 6) For this FB, a circuit must be set for every input label. 7) Module settings must be set according to section "1.4. CC-Link IE Field Network Master / Local Module Settings". 8) Global labels must be set according to section "1.5. Global Label Settings". 9) This FB requires a transient transmission interlocking program in order to use transient transmissions. Refer to section "1.6.2 Transient transmission program" for information related to the interlocking program. 10) This FB uses transient transmissions. When an FB which uses other transient transmissions is running, i_bEN (Execution command) should be turned ON. 11) The following values must not be changed while i_bEN (Execution command) is ON. <ul style="list-style-type: none"> i_wStartIONo (Mounted master module XY address) i_wStationNo (CC-Link IE Field Network station number) i_wEvtHistStart (Event handling history read start position) i_wEvtHistCount (Event handling history read points) 12) In this FB, the Y signal is operated through internal index modifiers. Therefore, if this FB is used multiple times, a 2 type coil warning will be raised at compile time, however, there will be no particular problems upon usage. 13) Only 1 master / local module can be controlled through this FB. Refer to "Appendix 3. How to Use FBs for Gateway Modules Which Has Been Connected to 2 Separate Master / Local Modules" if 2 or more master / local modules are to be controlled through an FB. 14) Label comments descriptions may be abbreviated due to the character limits of GX Works3.



Items	Explanation	
FB operation	Pulse execution (multiple scan execution)	
Usage example	Refer to “Appendix 1. FB Library Usage Examples”.	
I/O signal timings	<div> <p>[When the process is completed without an error]</p> </div> <div> <p>[When the process is completed with an error]</p> </div> <div> <p>[When the process is stopped]</p> </div>	



Error Code

Error code (hexadecimal)	Error details	Treatment method
H100	CC-Link IE Field Network station number setting is outside 1 to 120.	Restart the FB after verifying the setting.
H101	The CC-Link IE Field Network station number set in the FB and the CC-Link IE Field Network station number set in “Network Configuration Settings” does not match.	Verify the following settings. - Network Configuration Settings Refer to section “1.4. CC-Link IE Field Network Master / Local Module Settings” part “(2) Basic Settings”. - i_wStationNo (CC-Link IE Field Network station number) setting value
H10B	Event handling history read start position is outside 1 and 50.	Restart the FB after verifying the setting.
H10C	Event handling history read points is outside 1 to 25.	
H10D	The sum of the event handling history start position and the event handling history read points exceeds 51.	
H200	An error has occurred in the Gateway Module.	Refer to the “CC-Link IE Field Network / ONVIF Network Gateway Module ECLEF-NV1G User’s Manual (Detailed Edition)”.
H201	The Gateway Module is not READY.	- Execute the FB again after the Gateway Module has completed setting up after power is applied. - If the IP LED is red, the IP address cannot be acquired from the DHCP server. Network settings and connections should be verified.
H204	An error has occurred in the transient transmission.	Execute the FB again after verifying the connection of the Gateway Module with the CC-Link IE Field Network (master station), and verifying the settings.
H400	The FB was stopped due to i_bEN (Execution command) being turned OFF during execution. * Only output for 1 scan	When executing the FB again, turn i_bEN (Execution command) ON after o_bOK (Normal completion) and o_bErr (Error completion) are both OFF.



Used Labels

(1) Input labels

Name (comment)	Label name	Data type	Valid range	Explanation
Execution command	i_bEN	Bit	ON, OFF	ON : Execute FB. OFF : Do not execute FB.
Mounted master module XY address	i_wStartIONo	Word [Signed]	(*1)	Specify the start XY address for the mounted CC-Link IE Field Network master / local module as a hexadecimal. (E.g. : Enter "H10" for X10)
CC-Link IE Field Network station number	i_wStationNo	Word [Signed]	1 - 120	Specify the Gateway Module station number. Set so the station number which includes the occupied stations number so that it is between 1 and 120.
Event handling history read start position	i_wEvtHistStart	Word [Signed]	1 - 50	Specify the event handling history read start position (starting number of the history).
Event handling history read points	i_wEvtHistCount	Word [Signed]	1 - 25	Specify the event handling history read points (number of histories to read). If more than 26 event handling histories are to be obtained, this FB must be executed twice or more.

*1 This is decided depending on the number of IO points of the target CPU module.

Refer to the user's manual of the CPU module for more information.



(2) Output labels

Name (comment)	Label name	Data type	Default value	Explanation
Execution status	o_bENO	Bit	OFF	ON : Executing FB operation. OFF : FB operation stopped.
Normal completion	o_bOK	Bit	OFF	ON indicates that the event handling execution history was able to be acquired.
Error completion	o_bErr	Bit	OFF	ON indicates that there was an error in the FB.
Error code	o_uErrId	Word [Unsigned]	0	Returns the error code related to the error raised in the FB.
Event handling history read data	o_wReadData	Word [Signed]	0	Indicates the event handling execution history. The size must be 16 words × event handling history read points. Refer to “1) Event handling history area” and “2) History data details” below for more information.



1) Event handling history area

The event handling history is stored in the following order.

If the number of event handling occurred exceeds 50, the oldest event will be deleted, and the latest event handling will be stored.

Event handling history area	Number of events occurred					
	1	2	-	49	50	51
Event handling history area 1	1st event	2nd event	-	49th event	50th event	51th event
Event handling history area 2	Blank	1st event	-	48th event	49th event	50th event
	,	,	,	,	,	,
Event handling history area 49	Blank	Blank	-	1st event	2nd event	3rd event
Event handling history area 50	Blank	Blank	-	Blank	1st event	2nd event

* A maximum of 25 event handling points can be acquired at a time.

If more than 26 event handling histories are to be obtained, this FB must be executed twice or more.



2) History data details

The event handling history data will be read to the device for the number of event handling history read points.

Word address	Data contents	Data type	Explanation	Notes
xx0 + o_wReadData	Occurrence date (Year, Month)	Word [Signed]	The date the event occurred. <div> <div>Upper 8bits : Last 2 digit of the western calendar year</div> <div>Lower 8bits : Month</div> </div>	Stored in a BCD format. All values will be HFFFF if there are no events, and if no date has been set to the date and time setting.
xx1 + o_wReadData	Occurrence date (Day, Hour)	Word [Signed]	The date the event occurred. <div> <div>Upper 8bits : Day</div> <div>Lower 8bits : Hour (24 hour clock)</div> </div>	
xx2 + o_wReadData	Occurrence date (Minute, Second)	Word [Signed]	The date the event occurred. <div> <div>Upper 8bits : Minute</div> <div>Lower 8bits : Second</div> </div>	
xx3 + o_wReadData	Uptime (Days)	Word [Signed]	The time until the event occurred. <div> <div>Number of days the system was operational</div> </div>	Stored in a BCD format. All values will be HFFFF if there are no events.
xx4 + o_wReadData	Uptime (Hours, Minutes)	Word [Signed]	The time until the event occurred. <div> <div>Upper 8bits : Hours</div> <div>Lower 8bits : Minutes</div> </div>	This is the elapsed time from when the Gateway Module has booted up.
xx5 + o_wReadData	Uptime (Seconds)	Word [Signed]	The time until the event occurred. <div> <div>Upper 8bits : Seconds</div> <div>Lower 8bits : Not used</div> </div>	
xx6 + o_wReadData	Event occurrence order	Word [Signed]	The order in which the event occurred.	0 - 65535
xx7 + o_wReadData	Transmission classification	Word [Signed]	Classification of whether the Gateway Module received or transmitted data. H0000 : Event receive H0001 : Event transmit	—
xx8 + o_wReadData	Event item	Word [Signed]	H0000 : Subscribe H0001 : Renew H0002 : Unsubscribe H0003 : Receive item H0004 : Transmit item	The value of the data contents code list will be stored in the data (xx13 + o_wReadData) if this is set to H0003 or H0004.



Word address	Data contents	Data type	Explanation	Notes
xx9 + o_wReadData	Transmit source IP address	Double word [Signed]	Transmit source IP address E.g. : H0100A8C0 for 192.168.0.1	Only valid if event item (xx8 + o_wReadData) is between H0000 and H0003.
xx11 + o_wReadData	Camera number	Word [Signed]	Target camera number	Only valid if event item (xx8 + o_wReadData) is between H0000 and H0002.
xx12 + o_wReadData	Event number	Word [Signed]	Event number (1 - 16)	Only valid if event item (xx8 + o_wReadData) is between H0000 and H0003.
xx13 + o_wReadData	Data	Word [Signed]	Refer to “3) Data code list” below.	Only valid if event item (xx8+o_wReadData) is between H0003 and H0004.
xx14 + o_wReadData	Reserved area	Word [Signed]	Cannot be used	—
xx15 + o_wReadData	Reserved area	Word [Signed]	Cannot be used	—

* “xx” refers to the device name.

3) Data code list

Item	Data code	Details
Receive item	H0004	Received an event which was set by the Gateway Configuration Tool.
Transmit items	H0004	A User Alarm was transmitted.
	H0005	A User Event was transmitted.



FB Version History

Version	Date	Details
00A	2017/05/12	First version created.

Notes

This chapter explains the functionality of the function blocks.

It does not explain the usage limitations of the module and the CPU module, and the limitations due to the combinations.

Please read the user's manuals for those products prior to use.



2.10. P+MEE-ECLEF-NV1G_EtherSend_R (Socket communication transmit)

Function Name

P+MEE-ECLEF-NV1G_EtherSend_R

Function Explanation

Items	Explanation							
Function overview	Transmits data to a device on the ONVIF Network.							
Symbol	<div><div><div>Execution command</div><div>Mounted master module XY address</div><div>CC-Link IE Field Network station number</div><div>Transmit destination device IP address</div><div>Transmit destination device port number</div><div>Transmit data size</div><div>Transmit data</div></div><div><div>P+MEE-ECLEF-NV1G_EtherSend_R</div><div><div>B : i_bEN</div><div>W : i_wStartIONo</div><div>W : i_wStationNo</div><div>S : i_s32EtherIPAddr</div><div>W : i_wEtherPort</div><div>W : i_wSize</div><div>W : i_wSendData</div></div></div><div><div>o_bENO : B</div><div>o_bOK : B</div><div>o_bErr : B</div><div>o_uErrId : UW</div><div>o_bModuleErr : B</div><div>o_uModuleErrId : UW</div></div><div><div>Execution status</div><div>Normal completion</div><div>Error completion</div><div>Error code</div><div>Device error</div><div>Device error code</div></div></div>							
Target device	Module	ECLEF-NV1G						
	CC-Link IE Field Network system	<table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R series</td><td>RJ71GF11-T2</td></tr></table>			Series	Model	MELSEC iQ-R series	RJ71GF11-T2
	Series	Model						
	MELSEC iQ-R series	RJ71GF11-T2						
CPU module	<table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R series</td><td>R04CPU, R08CPU, R16CPU, R32CPU, R120CPU</td></tr></table>			Series	Model	MELSEC iQ-R series	R04CPU, R08CPU, R16CPU, R32CPU, R120CPU	
Series	Model							
MELSEC iQ-R series	R04CPU, R08CPU, R16CPU, R32CPU, R120CPU							
GX Works3	<table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R series</td><td>Version 1.015R or later</td></tr></table>			Series	Model	MELSEC iQ-R series	Version 1.015R or later	
Series	Model							
MELSEC iQ-R series	Version 1.015R or later							
Language	Ladder							
Steps	683 Steps (for MELSEC iQ-R series / R08CPU) * The number of FB steps incorporated into the program is different depending on the CPU model being used and the input and outputs defined.							



Items	Explanation
Function explanation	<p>1) When i_bEN (Execution command) turns ON, data transmission is performed through socket communication to the IP address specified by i_s32EtherIPAddr (Transmit destination device IP address) in which will be connected to in the ONVIF Network.</p> <p>The socket communication protocol is the TCP (Transmission Control Protocol).</p> <pre> graph TD START([START]) --> i_bEN_ON[i_bEN = ON] i_bEN_ON --> GetOffset[Get offset address (RX, RY, RWr, RWw)] GetOffset --> CheckStation{Check station number} CheckStation -- "1 - 120" --> CheckPort{Check port number} CheckPort -- "1 - 32767" --> CheckDataSize{Check data size} CheckDataSize -- "1 - 944 words" --> SocketTransmit[Socket communication transmit process] CheckStation -- "Out of range" --> SetErrId1[Set Error code to o_uErrId] CheckPort -- "Out of range" --> SetErrId1 CheckDataSize -- "Out of range" --> SetErrId1 SocketTransmit --> NormalComp{Normal completion} NormalComp -- "Yes (Normal completion)" --> SetModuleErrId[Set Device error code to o_uModuleErrId] NormalComp -- "No (Error completion)" --> SetErrId2[Set Error code to o_uErrId] SetModuleErrId --> o_bModuleErr_ON[o_bModuleErr = ON] SetErrId1 --> o_bErr_ON[o_bErr = ON] SetErrId2 --> o_bErr_ON o_bModuleErr_ON --> o_bOK_ON[o_bOK = ON] o_bErr_ON --> o_bOK_ON o_bOK_ON --> i_bEN_OFF[i_bEN = OFF] i_bEN_OFF --> END([END]) </pre>

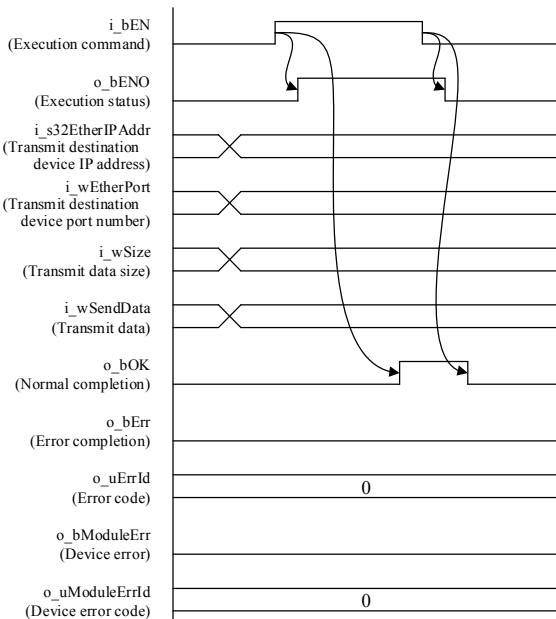
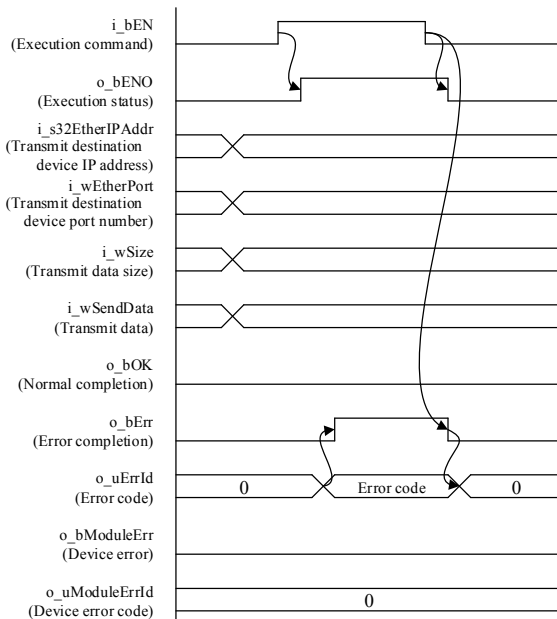
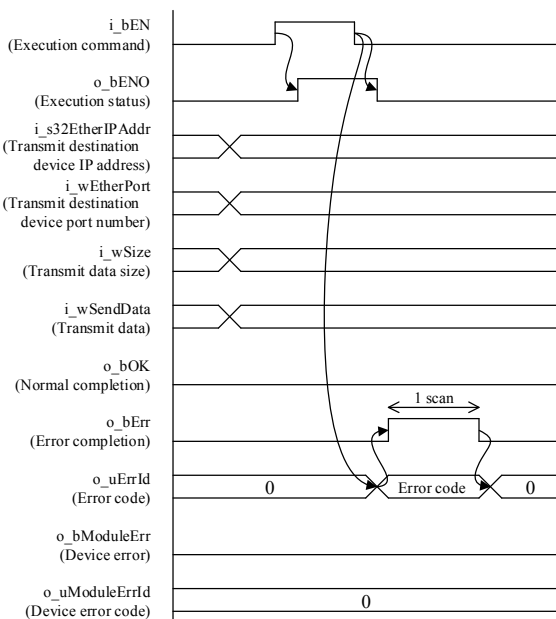
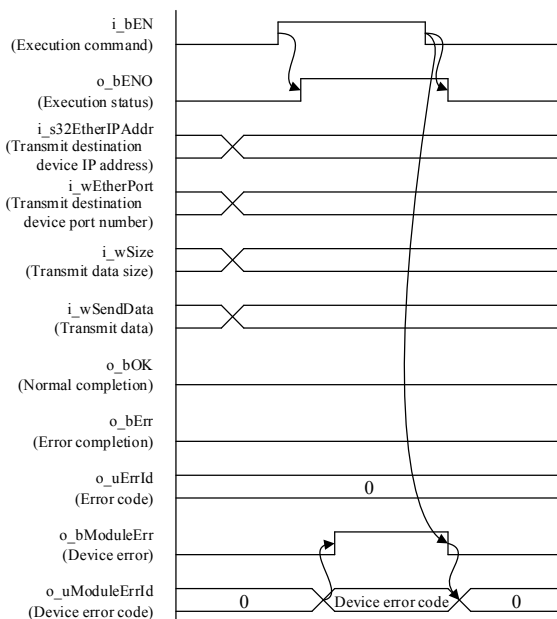


Items	Explanation
Function explanation	<p>2) If data transmission was successful (received ACK of the TPC), o_bOK (Normal completion) will turn ON. The timeout time for receiving ACK is approximately 10 seconds.</p> <p>3) If i_wStationNo (CC-Link IE Field Network station number) is not set correctly, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p> <p>4) If i_wEtherPort (Transmit destination device port number) is not set correctly, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p> <p>5) If i_wSize (Transmit data size) is not set correctly, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p> <p>6) If a device error is raised, o_bModuleErr (Device error) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uModuleErrId (Device error code).</p> <p>7) If an error not shown above is raised, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p>
FB compile format	Macro



Items	Explanation
Limitations, Precautions, etc.	<ol style="list-style-type: none"> 1) This FB does not include an error recovery process. The error recover process should be created separately according to the customer's system and requested operation. 2) This FB cannot be used within interrupt programs. 3) For this FB, a number of scans are required from i_bEN (Execution command) turning on, up until o_bOK (Normal completion) turning ON. 4) Verify that both o_bOK (Normal completion) and o_bErr (Error completion) are OFF when i_bEN (Execution command) is turned ON. 5) This FB uses index registers Z6 to Z9. 6) For this FB, a circuit must be set for every input label. 7) Module settings must be set according to section "1.4. CC-Link IE Field Network Master / Local Module Settings". 8) i_wEtherPort (Transmit destination device port number) can be set between 1 and 32767. Port numbers 32768 and above, cannot be specified. Furthermore, well-known ports are not distinguished (can be specified) 9) Global labels must be set according to section "1.5. Global Label Settings". 10) This FB requires a cyclic transmission interlocking program in order to use cyclic transmissions. Refer to section "1.6.1 Cyclic transmission program" for information related to the interlocking program. 11) This FB uses transient transmissions. When an FB which uses other transient transmissions is running, i_bEN (Execution command) should be turned ON. 12) The following values must not be changed while i_bEN (Execution command) is ON. <ul style="list-style-type: none"> i_wStartIONo (Mounted master module XY address) i_wStationNo (CC-Link IE Field Network station number) i_s32EtherIPAddr (Transmit destination device IP address) i_wEtherPort (Transmit destination device port number) i_wSize (Transmit data size) i_wSendData (Transmit data) 13) In this FB, the Y signal is operated through internal index modifiers. Therefore, if this FB is used multiple times, a 2 type coil warning will be raised at compile time, however, there will be no particular problems upon usage. 14) Only 1 master / local module can be controlled through this FB. Refer to "Appendix 3. How to Use FBs for Gateway Modules Which Has Been Connected to 2 Separate Master / Local Modules" if 2 or more master / local modules are to be controlled through an FB. 15) Label comments descriptions may be abbreviated due to the character limits of GX Works3.



Items	Explanation	
FB operation	Pulse execution (multiple scan execution)	
Usage example	Refer to “Appendix 1. FB Library Usage Examples”.	
I/O signal timings	<p>[When the process is completed without an error]</p> 	<p>[When the process is completed with an error]</p> 
	<p>[When the process is stopped]</p> 	<p>[When there is a device error]</p> 



Error Code

Error code (hexadecimal)	Error details	Treatment method
H100	CC-Link IE Field Network station number setting is outside 1 to 120.	Restart the FB after verifying the setting.
H101	The CC-Link IE Field Network station number set in the FB and the CC-Link IE Field Network station number set in “Network Configuration Settings” does not match.	Verify the following settings. - Network Configuration Settings Refer to section “1.4. CC-Link IE Field Network Master / Local Module Settings” part “(2) Basic Settings”. - i_wStationNo (CC-Link IE Field Network station number) setting value
H10E	The port number of the transmit destination device is outside of 1 to 32767.	Restart the FB after verifying the setting.
H10F	The transmit data size is outside of 1 to 944 words.	
H200	An error has occurred in the Gateway Module.	Refer to the “CC-Link IE Field Network / ONVIF Network Gateway Module ECLEF-NV1G User’s Manual (Detailed Edition)”.
H201	The Gateway Module is not READY.	- Execute the FB again after the Gateway Module has completed setting up after power is applied. - If the IP LED is red, the IP address cannot be acquired from the DHCP server. Network settings and connections should be verified.
H204	An error has occurred in the transient transmission.	Execute the FB again after verifying the connection of the Gateway Module with the CC-Link IE Field Network (master station), and verifying the settings.
H400	The FB was stopped due to i_bEN (Execution command) being turned OFF during execution. * Only output for 1 scan	When executing the FB again, turn i_bEN (Execution command) ON after o_bOK (Normal completion) and o_bErr (Error completion) are both OFF.



Used Labels

(1) Input labels

Name (comment)	Label name	Data type	Valid range	Explanation
Execution command	i_bEN	Bit	ON, OFF	ON : Execute FB. OFF : Do not execute FB.
Mounted master module XY address	i_wStartIONo	Word [Signed]	(*1)	Specify the start XY address for the mounted CC-Link IE Field Network master / local module as a hexadecimal. (E.g. : Enter "H10" for X10)
CC-Link IE Field Network station number	i_wStationNo	Word [Signed]	1 - 120	Specify the Gateway Module station number. Set so the station number which includes the occupied stations number so that it is between 1 and 120.
Transmit destination device IP address	i_s32EtherIPAddr	String	—	Specify the IP address of the transmit destination device through socket communication. A 30 word area is required.
Transmit destination device port number	i_wEtherPort	Word [Signed]	1 - 32767	Specify the Ethernet port number of the transmit destination device through socket communication. * Well known ports should be taken into account.
Transmit data size	i_wSize	Word [Signed]	1 - 944	Specify the size (words) of the transmit data through socket communication.
Transmit data	i_wSendData	Word [Signed]	—	Set the transmit data. Up to 944 word data can be set.

*1 This is decided depending on the number of IO points of the target CPU module.

Refer to the user's manual of the CPU module for more information.



(2) Output labels

Name (comment)	Label name	Data type	Default value	Explanation
Execution status	o_bENO	Bit	OFF	ON : Executing FB operation. OFF : FB operation stopped.
Normal completion	o_bOK	Bit	OFF	ON indicates that data was able to be transmitted without an error through socket communication.
Error completion	o_bErr	Bit	OFF	ON indicates that there was an error in the FB.
Error code	o_uErrId	Word [Unsigned]	0	Returns the error code related to the error raised in the FB.
Device error	o_bModuleErr	Bit	OFF	ON indicates that there was an error in the configuration device.
Device error code	o_uModuleErrId	Word [Unsigned]	0	Returns the Error code related to the error raised in the configuration device.



FB Version History

Version	Date	Details
00A	2017/05/12	First version created.

Notes

This chapter explains the functionality of the function blocks.

It does not explain the usage limitations of the module and the CPU module, and the limitations due to the combinations.

Please read the user's manuals for those products prior to use.



2.11. P+MEE-ECLEF-NV1G_EtherRecv_R (Socket communication receive)

Function Name

P+MEE-ECLEF-NV1G_EtherRecv_R

Function Explanation

Items	Explanation					
Function overview	Reads received data from devices in the ONVIF Network.					
Symbol	<div><div><div>Execution command</div><div>Mounted master module XY address</div><div>CC-Link IE Field Network station number</div></div><div><div>P+MEE-ECLEF-NV1G_EtherRecv_R</div><div><div>B : i_bEN</div><div>W : i_wStartIONo</div><div>W : i_wStationNo</div></div></div><div><div>o_bENO : B</div><div>o_bOK : B</div><div>o_bErr : B</div><div>o_uErrId : UW</div><div>o_s32EtherIPAddr : S</div><div>o_wSize : W</div><div>o_wRecvData : W</div></div><div><div>Execution status</div><div>Normal completion</div><div>Error completion</div><div>Error code</div><div>Transmit source device IP address</div><div>Receive data size</div><div>Receive data</div></div></div>					
Target device	Module	ECLEF-NV1G				
	CC-Link IE Field Network system	<table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R series</td><td>RJ71GF11-T2</td></tr></table>	Series	Model	MELSEC iQ-R series	RJ71GF11-T2
	Series	Model				
	MELSEC iQ-R series	RJ71GF11-T2				
CPU module	<table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R series</td><td>R04CPU, R08CPU, R16CPU, R32CPU, R120CPU</td></tr></table>	Series	Model	MELSEC iQ-R series	R04CPU, R08CPU, R16CPU, R32CPU, R120CPU	
Series	Model					
MELSEC iQ-R series	R04CPU, R08CPU, R16CPU, R32CPU, R120CPU					
GX Works3	<table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC iQ-R series</td><td>Version 1.015R or later</td></tr></table>	Series	Model	MELSEC iQ-R series	Version 1.015R or later	
Series	Model					
MELSEC iQ-R series	Version 1.015R or later					
Language	Ladder					
Steps	649 Steps (for MELSEC iQ-R series / R08CPU) * The number of FB steps incorporated into the program is different depending on the CPU model being used and the input and outputs defined.					



Items	Explanation
Function explanation	<p>1) When i_bEN (Execution command) turns ON, the data being received from devices in the ONVIF Network will be read. If no data is being received, the FB will wait until data is received and will start reading once data reception has completed.</p> <pre> graph TD START([START]) --> i_bEN_ON[i_bEN = ON] i_bEN_ON --> GetOffset[Get offset address (RX, RY, RWr, RWw)] GetOffset --> CheckStation{Check Station number} CheckStation -- Out of range --> SetError[Set Error code to o_uErrId] SetError --> o_bErr_ON[o_bErr = ON] CheckStation -- 1 - 120 --> SocketComm[Socket communication receive process] SocketComm --> CheckData{Check data recieve} CheckData -- No --> SocketComm CheckData -- Yes --> SetIP[Set IP address to o_s32EtherIPAddr] SetIP --> SetSize[Set Receive data size to o_wSize] SetSize --> SetData[Set Receive data to o_wRecvData] SetData --> o_bOK_ON[o_bOK = ON] o_bErr_ON --> i_bEN_OFF[i_bEN = OFF] o_bOK_ON --> i_bEN_OFF i_bEN_OFF --> END([END]) </pre>



Items	Explanation
Function explanation	<p>2) If the reading of received data was successful, o_bOK (Normal completion) will turn ON. The data will be stored in o_wRecvData (Received data), o_s32EtherIPAddr (Transmit source device IP address), and o_wSize (Receive data size).</p> <p>3) In order to receive the next set of data after o_bOK (Normal completion) has turn ON, i_bEN (Execution command) must be turned OFF.</p> <p>4) During the time until data read finishes, o_bOK (Normal completion) will not turn ON while o_bENO (Execution status) is still ON.</p> <p>5) If i_wStationNo (CC-Link IE Field Network station number) is not set correctly, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p> <p>6) If an error not shown above is raised, o_bErr (Error completion) will turn ON, and the FB process will be stopped. An error code will then be stored in o_uErrId (Error code).</p>



Items	Explanation
FB compile format	Macro
Limitations, Precautions, etc.	<ol style="list-style-type: none"> 1) This FB does not include an error recovery process. The error recover process should be created separately according to the customer's system and requested operation. 2) This FB cannot be used within interrupt programs. 3) For this FB, a number of scans are required from i_bEN (Execution command) turning on, up until o_bOK (Normal completion) turning ON. 4) Verify that both o_bOK (Normal completion) and o_bErr (Error completion) are OFF when i_bEN (Execution command) is turned ON. 5) This FB uses index registers Z6 to Z9. 6) For this FB, a circuit must be set for every input label. 7) Module settings must be set according to section "1.4. CC-Link IE Field Network Master / Local Module Settings". 8) Global labels must be set according to section "1.5. Global Label Settings". 9) This FB requires a cyclic transmission interlocking program in order to use cyclic transmissions. Refer to section "1.6.1 Cyclic transmission program" for information related to the interlocking program. 10) The following values must not be changed while i_bEN (Execution command) is ON. i_wStartIONo (Mounted master module XY address) i_wStationNo (CC-Link IE Field Network station number) 11) In this FB, the Y signal is operated through internal index modifiers. Therefore, if this FB is used multiple times, a 2 type coil warning will be raised at compile time, however, there will be no particular problems upon usage. 12) Only 1 master / local module can be controlled through this FB. Refer to "Appendix 3. How to Use FBs for Gateway Modules Which Has Been Connected to 2 Separate Master / Local Modules" if 2 or more master / local modules are to be controlled through an FB. 13) Label comments descriptions may be abbreviated due to the character limits of GX Works3.



Items	Explanation	
FB operation	Pulse execution (multiple scan execution)	
Usage example	Refer to “Appendix 1. FB Library Usage Examples”.	
I/O signal timings	<div> <p>[When the process is completed without an error]</p> </div> <div> <p>[When the process is completed with an error]</p> </div> <div> <p>[When the process is stopped]</p> </div>	



Error Code

Error code (hexadecimal)	Error details	Treatment method
H100	CC-Link IE Field Network station number setting is outside 1 to 120.	Restart the FB after verifying the setting.
H101	The CC-Link IE Field Network station number set in the FB and the CC-Link IE Field Network station number set in “Network Configuration Settings” does not match.	Verify the following settings. - Network Configuration Settings Refer to section “1.4. CC-Link IE Field Network Master / Local Module Settings” part “(2) Basic Settings”. - i_wStationNo (CC-Link IE Field Network station number) setting value
H200	An error has occurred in the Gateway Module.	Refer to the “CC-Link IE Field Network / ONVIF Network Gateway Module ECLEF-NV1G User’s Manual (Detailed Edition)”.
H201	The Gateway Module is not READY.	- Execute the FB again after the Gateway Module has completed setting up after power is applied. - If the IP LED is red, the IP address cannot be acquired from the DHCP server. Network settings and connections should be verified.
H204	An error has occurred in the transient transmission.	Execute the FB again after verifying the connection of the Gateway Module with the CC-Link IE Field Network (master station), and verifying the settings.
H400	The FB was stopped due to i_bEN (Execution command) being turned OFF during execution. * Only output for 1 scan	When executing the FB again, turn i_bEN (Execution command) ON after o_bOK (Normal completion) and o_bErr (Error completion) are both OFF.



Used Labels

(1) Input labels

Name (comment)	Label name	Data type	Valid range	Explanation
Execution command	i_bEN	Bit	ON, OFF	ON : Execute FB. OFF : Do not execute FB.
Mounted master module XY address	i_wStartIONo	Word [Signed]	(*1)	Specify the start XY address for the mounted CC-Link IE Field Network master / local module as a hexadecimal. (E.g. : Enter "H10" for X10)
CC-Link IE Field Network station number	i_wStationNo	Word [Signed]	1 - 120	Specify the Gateway Module station number. Set so the station number which includes the occupied stations number so that it is between 1 and 120.

*1 This is decided depending on the number of IO points of the target CPU module.

Refer to the user's manual of the CPU module for more information.

(2) Output labels

Name (comment)	Label name	Data type	Default value	Explanation
Execution status	o_bENO	Bit	OFF	ON : Executing FB operation. OFF : FB operation stopped.
Normal completion	o_bOK	Bit	OFF	ON indicates that the received data was able to be read through socket communication.
Error completion	o_bErr	Bit	OFF	ON indicates that there was an error in the FB.
Error code	o_uErrId	Word [Unsigned]	0	Returns the error code related to the error raised in the FB.
Transmit source device IP address	o_s32EtherIPAddr	String	0	Stores the IP address of the data transmit source device.
Receive data size	o_wSize	Word [Signed]	0	Stores the size of the data received (word).
Receive data	o_wRecvData	Word [Signed]	0	Stores the received data. Up to a 944 word area is required.



FB Version History

Version	Date	Details
00A	2017/05/12	First version created.

Notes

This chapter explains the functionality of the function blocks.

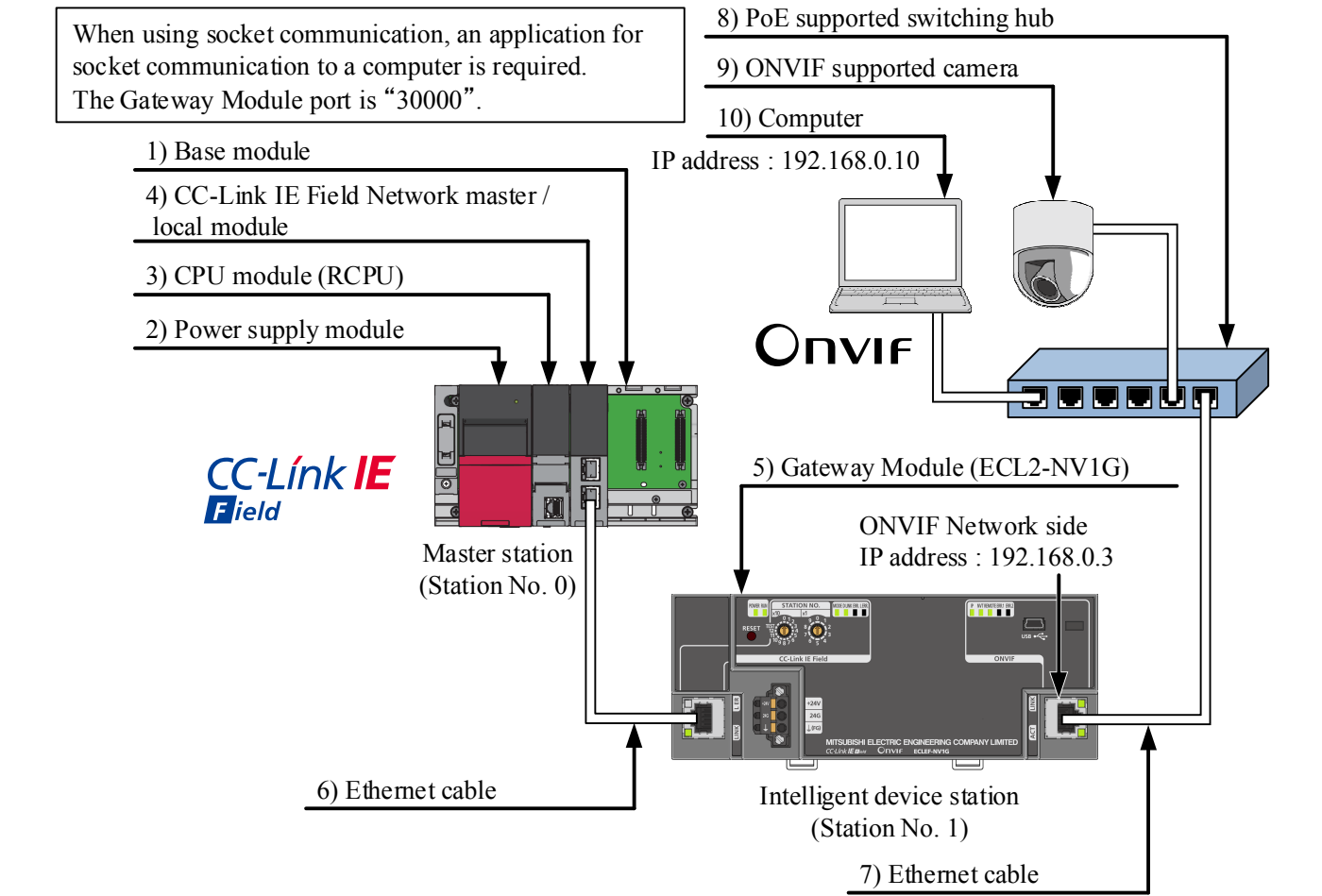
It does not explain the usage limitations of the module and the CPU module, and the limitations due to the combinations.

Please read the user's manuals for those products prior to use.



Appendix 1. FB Library Usage Examples

Appendix 1.1. System Configuration Example



No.	Device Name	Explanation	
1)	CC-Link IE Field Network master station	Base module	
2)		Power supply module	
3)		CPU module	
4)		CC-Link IE Field Network master / local module	
5)	Gateway Module	CC-Link IE Field Network / ONVIF Network Gateway Module	
6)	Ethernet cable	Ethernet cable for the CC-Link IE Field Network	
7)	Ethernet cable	Cat 5e or better Ethernet cable	
8)	PoE supported switching hub	Power over Ethernet supported switching hub module * Gateway Modules must be connected to the non-PoE port.	
9)	ONVIF supported camera	Network camera with conformance to ONVIF standards	
10)	Computer	Windows® supported personal computer	

Appendix 1.2. CC-Link IE Field Network Master / Local Module Settings

In this example, “Required Settings”, “Network Configuration Settings” and “Link Refresh Settings” have been allocated as shown below.

(a) Required Settings

The screenshot shows the '0000-RJ71GF11-T2 Module Parameter' window. On the left, the 'Setting Item List' pane shows a tree structure with 'Required Settings' selected. The main 'Setting Item' pane displays a table of settings:

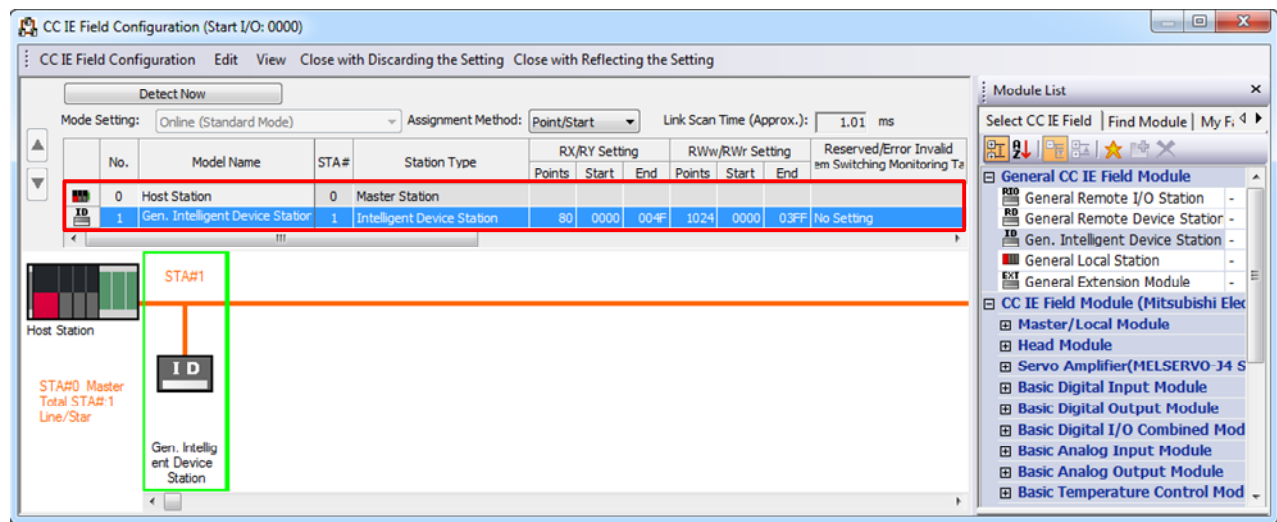
Item	Setting
Station Type	
Station Type	Master Station
Network Number	
Network Number	1
Station Number	
Setting Method	Parameter Editor
Station Number	0
Parameter Setting Method	
Setting Method of Basic/Application Settings	Parameter Editor

Below the table is an 'Explanation' section with the text: 'Set the station type.'

At the bottom of the window are buttons for 'Check', 'Restore the Default Settings', and 'Apply'.



(b) Network Configuration Settings



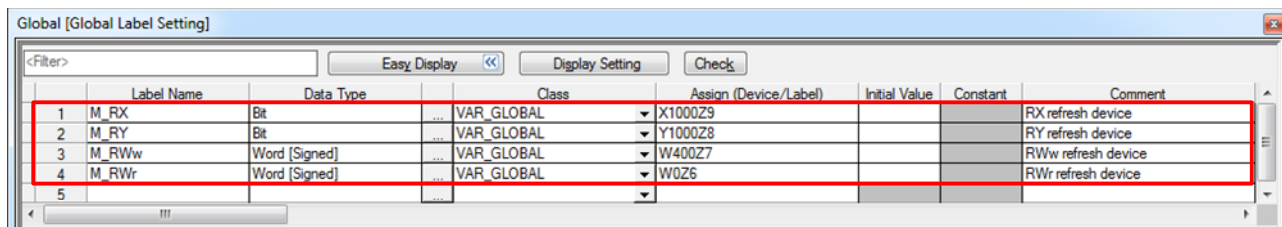
(c) Link Refresh Settings

No.	Link Side					CPU Side				
	Device Name	Points	Start	End		Target	Device Name	Points	Start	End
-	SB	512	00000	001FF	↔	Specify Dev	SB	512	00000	001FF
-	SW	512	00000	001FF	↔	Specify Dev	SW	512	00000	001FF
1	RX	80	00000	0004F	↔	Specify Dev	X	80	01000	0104F
2	RY	80	00000	0004F	↔	Specify Dev	Y	80	01000	0104F
3	RWr	1024	00000	003FF	↔	Specify Dev	W	1024	00000	003FF
4	RWw	1024	00000	003FF	↔	Specify Dev	W	1024	00400	007FF
5					↔					

Appendix 1.3. Global Label Settings

(1) Common settings

Class	Label name	Data type	Device
VAR_GLOBAL	M_RX	Bit	X1000Z9
VAR_GLOBAL	M_RY	Bit	Y1000Z8
VAR_GLOBAL	M_RWw	Word [Signed]	W400Z7
VAR_GLOBAL	M_RWr	Word [Signed]	W0Z6



Appendix 1.4. Used Devices List

(1) External inputs (instructions)

Device	FB name	Purpose (when ON)
M100	P+MEE-ECLEF-NV1G_AbsoluteMove_R	Camera PTZ position shift request
M101	P+MEE-ECLEF-NV1G_ChkAliveCam_R	Camera alive check request
M102	P+MEE-ECLEF-NV1G_GetPosCam_R	Get camera PTZ position request
M103	P+MEE-ECLEF-NV1G_SendEvent_R	Event transmit request
M104		Set event character string request
M105	P+MEE-ECLEF-NV1G_RecvEvent_R	Event receive request
M106	P+MEE-ECLEF-NV1G_CCIEErrHist_R	Get CC-Link IE error history request
M107	P+MEE-ECLEF-NV1G_ONVIFErrHist_R	Get ONVIF error history request
M108	P+MEE-ECLEF-NV1G_UnitErrHist_R	Get module error history request
M109	P+MEE-ECLEF-NV1G_RecvEventHist_R	Get event handling history request
M110	P+MEE-ECLEF-NV1G_EtherSend_R	Socket communication transmit request
M111	P+MEE-ECLEF-NV1G_EtherRecv_R	Socket communication receive request

(2) External devices (data)

Device	FB name	Purpose (when ON)
D2000 - D2031	P+MEE-ECLEF-NV1G_SendEvent_R	Transmit data (Source)
D2032 - D2063		Transmit data (Data 1)
D2064 - D2095		Transmit data (Data 2)
D2096 - D2127		Transmit data (Data 3)
D3000 - D3943	P+MEE-ECLEF-NV1G_EtherSend_R	Socket communication transmit data



(3) External Output (verification)

Device	FB name	Purpose (when ON)
M200	P+MEE-ECLEF-NV1G_AbsoluteMove_R	Execution status
M201		Normal completion
M202		Error completion
M203		Device error
M204		Camera Busy status
D200		Error code
D201		Device error code
M300	P+MEE-ECLEF-NV1G_ChkAliveCam_R	Execution status
M301		Normal completion
M302		Error completion
M303		Device error
D300		Error code
D301		Device error code
M400	P+MEE-ECLEF-NV1G_GetPosCam_R	Execution status
M401		Normal completion
M402		Error completion
M403		Device error
D400		Camera PTZ position number
D401		Error code
D402		Device error code
M500	P+MEE-ECLEF-NV1G_SendEvent_R	Execution status
M501		Normal completion
M502		Error completion
D500		Error code



Device	FB name	Purpose (when ON)
M600	P+MEE-ECLEF-NV1G_RecvEvent_R	Execution status
M601		Normal completion
M602		Error completion
D600		Error code
D4000 - D4002		Date and time data
D4100 - D4131		Receive data (Source)
D4132 - D4163		Receive data (Data 1)
D4164 - D4195		Receive data (Data 2)
D4196 - D4227		Receive data (Data 3)
M700	P+MEE-ECLEF-NV1G_CCIEErrHist_R	Execution status
M701		Normal completion
M702		Error completion
D700		Error code
D4500 - D4579		CC-Link IE Field error history read data
M800	P+MEE-ECLEF-NV1G_ONVIFErrHist_R	Execution status
M801		Normal completion
M802		Error completion
D800		Error code
D5000 - D5089		ONVIF error history read data
M900	P+MEE-ECLEF-NV1G_UnitErrHist_R	Execution status
M901		Normal completion
M902		Error completion
D900		Error code
D5500 - D5579		Module error history read data
M1000	P+MEE-ECLEF-NV1G_RecvEventHist_R	Execution status
M1001		Normal completion
M1002		Error completion
D1000		Error code
D2500 - D2659		Event handling history read data



Device	FB name	Purpose (when ON)
M1100	P+MEE-ECLEF-NV1G_EtherSend_R	Execution status
M1101		Normal completion
M1102		Error completion
M1103		Device error
D1100		Error code
D1101		Device error code
M1200	P+MEE-ECLEF-NV1G_EtherRecv_R	Execution status
M1201		Normal completion
M1202		Error completion
D1200		Error code
D1201		Receive data size
D1202 - D1231		Transmit source device IP address
D6000 - D6943		Socket communication receive data

(4) Common settings

I/O items	Value	Explanation
Mounted master module XY address	H0	Specify the hexadecimal start XY address in which the CC-Link IE Field Network master / local module will be mounted.
CC-Link IE Field Network station number	K1	Enter the station number of the Gateway Module to be connected.



Appendix 1.5. Program

For all input labels, a circuit must be set. If a circuit is not set, the FB cannot operate properly.

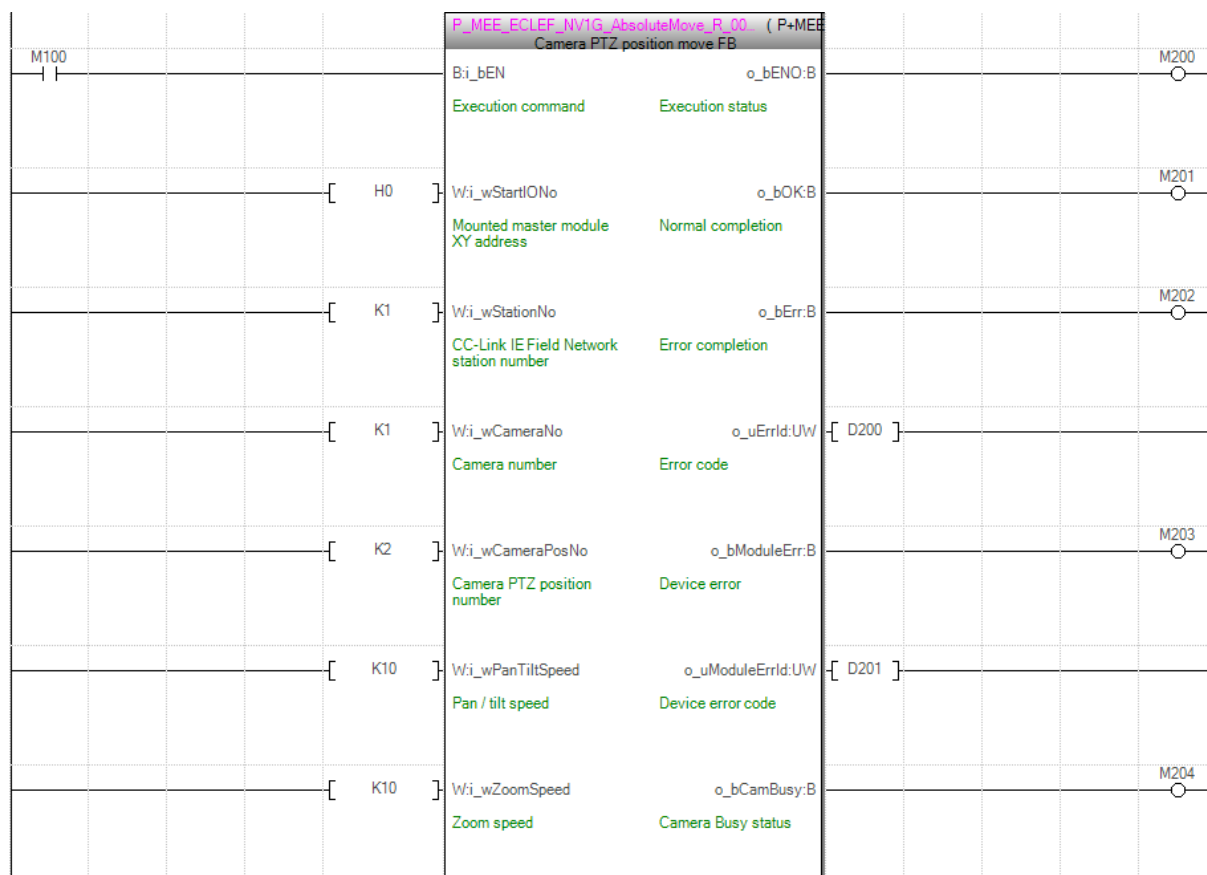
Refer to section “1.6. Interlocking Program Creation” for an interlocking program.

Appendix 1.5.1. P+MEE-ECLEF-NV1G_AbsoluteMove_R (Camera PTZ position move)

Set the following values to the input labels for this example.

I/O items	Setting value
Mounted master module XY address	H0
CC-Link IE Field Network station number	K1
Camera number	K1
Camera PTZ position number	K2
Pan / tilt speed	K10
Zoom speed	K10

Below is an example program which shows that when M100 turns ON, the camera PTZ position will be moved with the above conditions.

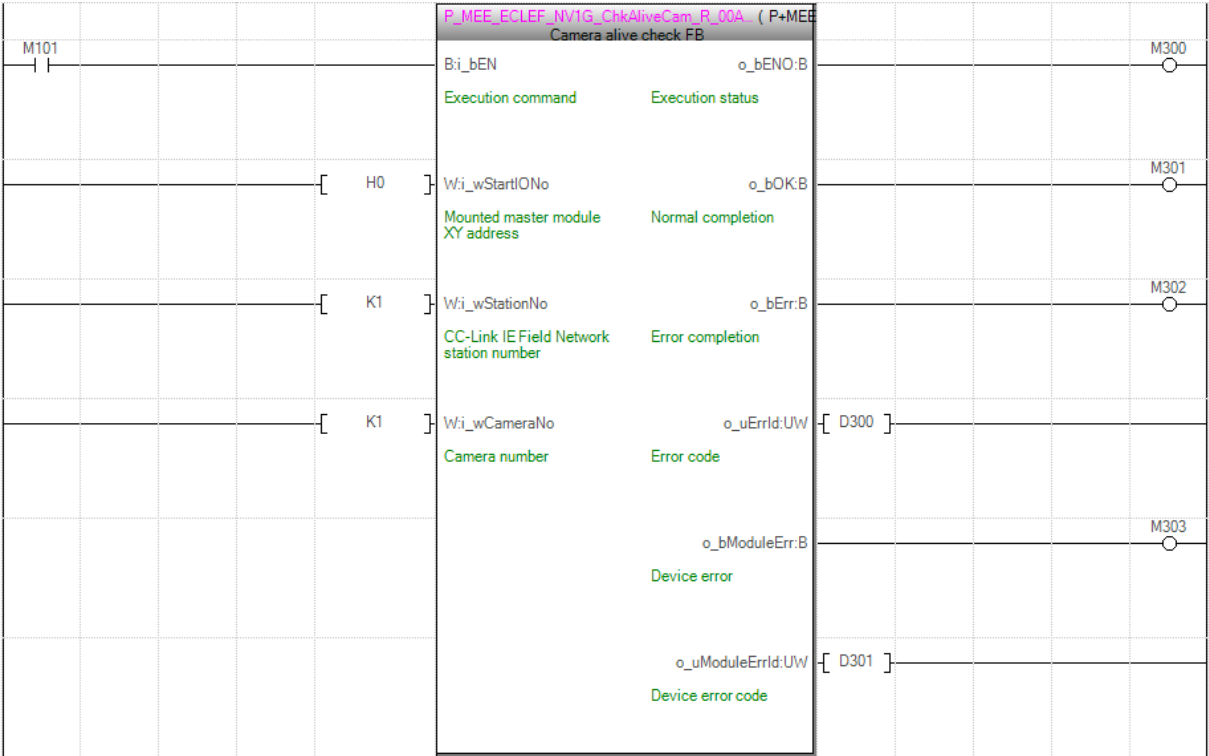


Appendix 1.5.2. P+MEE-ECLEF-NV1G_ChkAliveCam_R (Camera alive check)

Set the following values to the input labels for this example.

I/O items	Setting value
Mounted master module XY address	H0
CC-Link IE Field Network station number	K1
Camera number	K1

Below is an example program which shows that when M101 turns ON, a camera alive check will be performed with the above conditions.

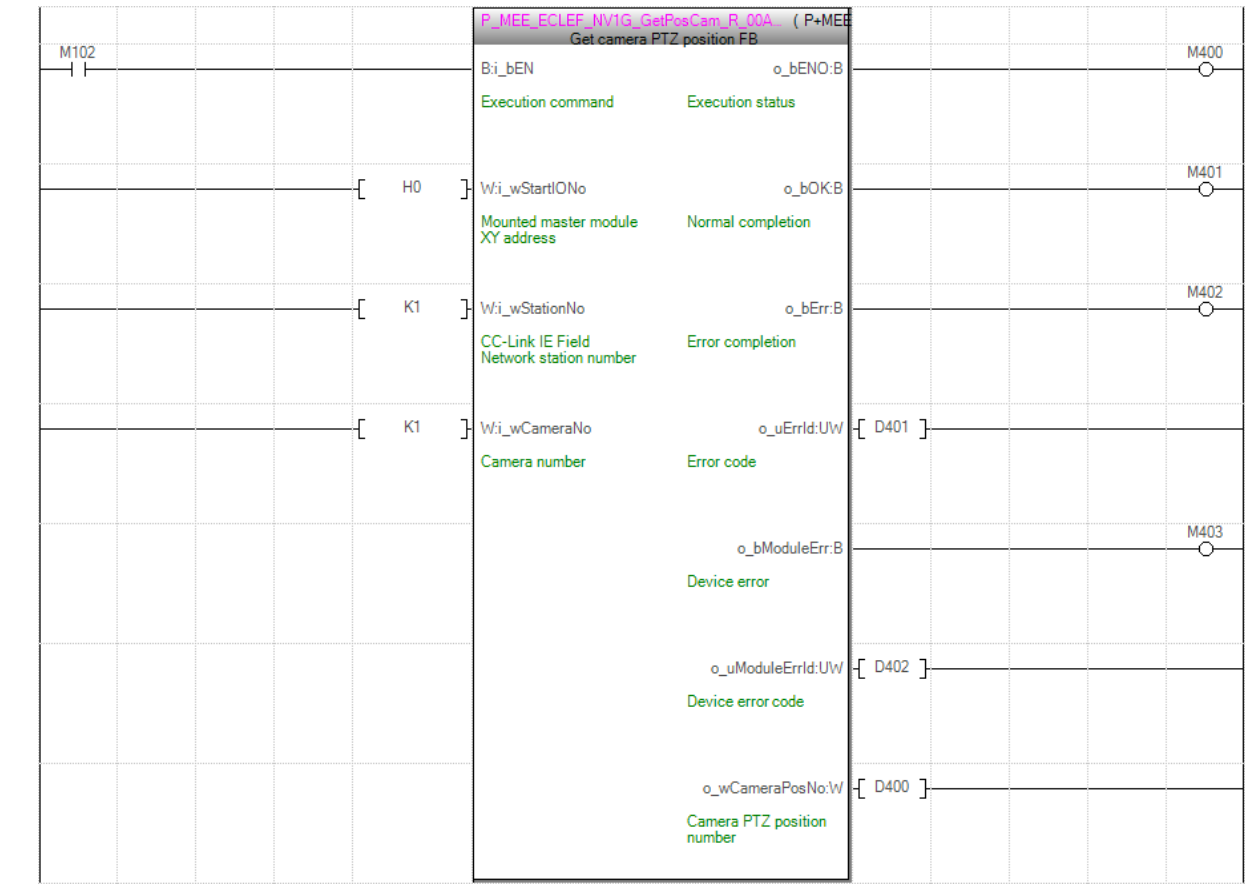


Appendix 1.5.3. P+MEE-ECLEF-NV1G_GetPosCam_R (Get camera PTZ position)

Set the following values to the input labels for this example.

I/O items	Setting value
Mounted master module XY address	H0
CC-Link IE Field Network station number	K1
Camera number	K1

Below is an example program which shows that when M102 turns ON, get camera PTZ position will be performed with the above conditions.



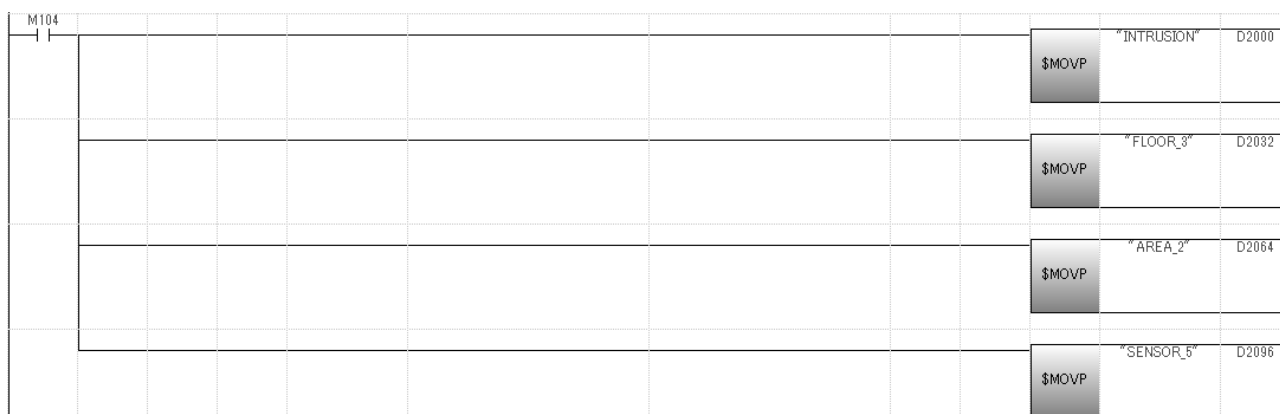
Appendix 1.5.4. P+MEE-ECLEF-NV1G_SendEvent_R (Event transmit)

Set the following values to the input labels for this example.

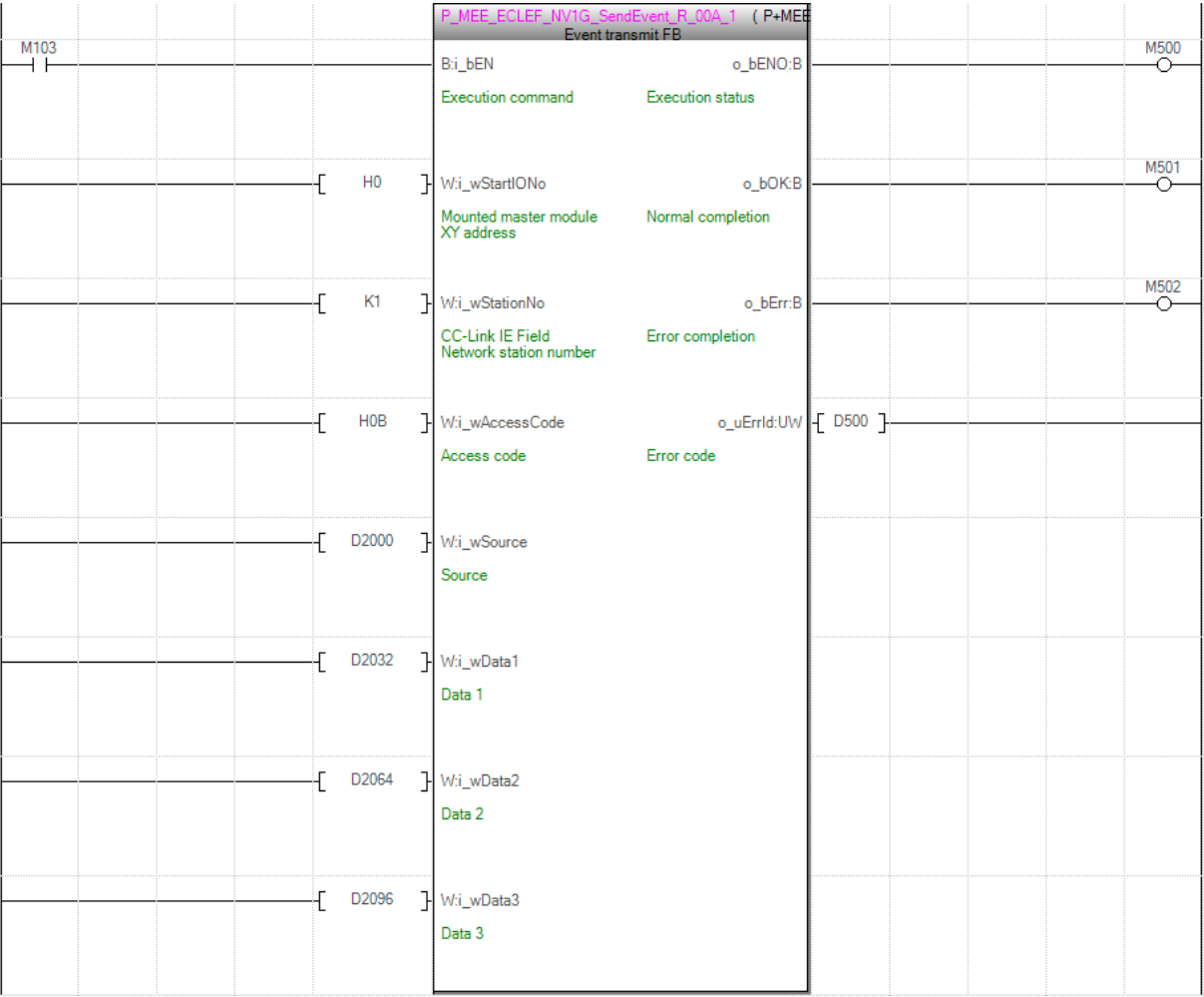
I/O items	Setting value
Mounted master module XY address	H0
CC-Link IE Field Network station number	K1
Access code	H0B

When M104 turns ON, the following transmit data will be set.

Device	Contents	Data type	Data size	Setting value
D2000 - D2031	Source	Word	32 words	"INTRUSION"
D2032 - D2063	Data 1	Word	32 words	"FLOOR_3"
D2064 - D2095	Data 2	Word	32 words	"AREA_2"
D2096 - D2127	Data 3	Word	32 words	"SENSOR_5"



Below is an example program which shows that when M103 turns ON, an event transmit will be performed with the conditions on the previous page.

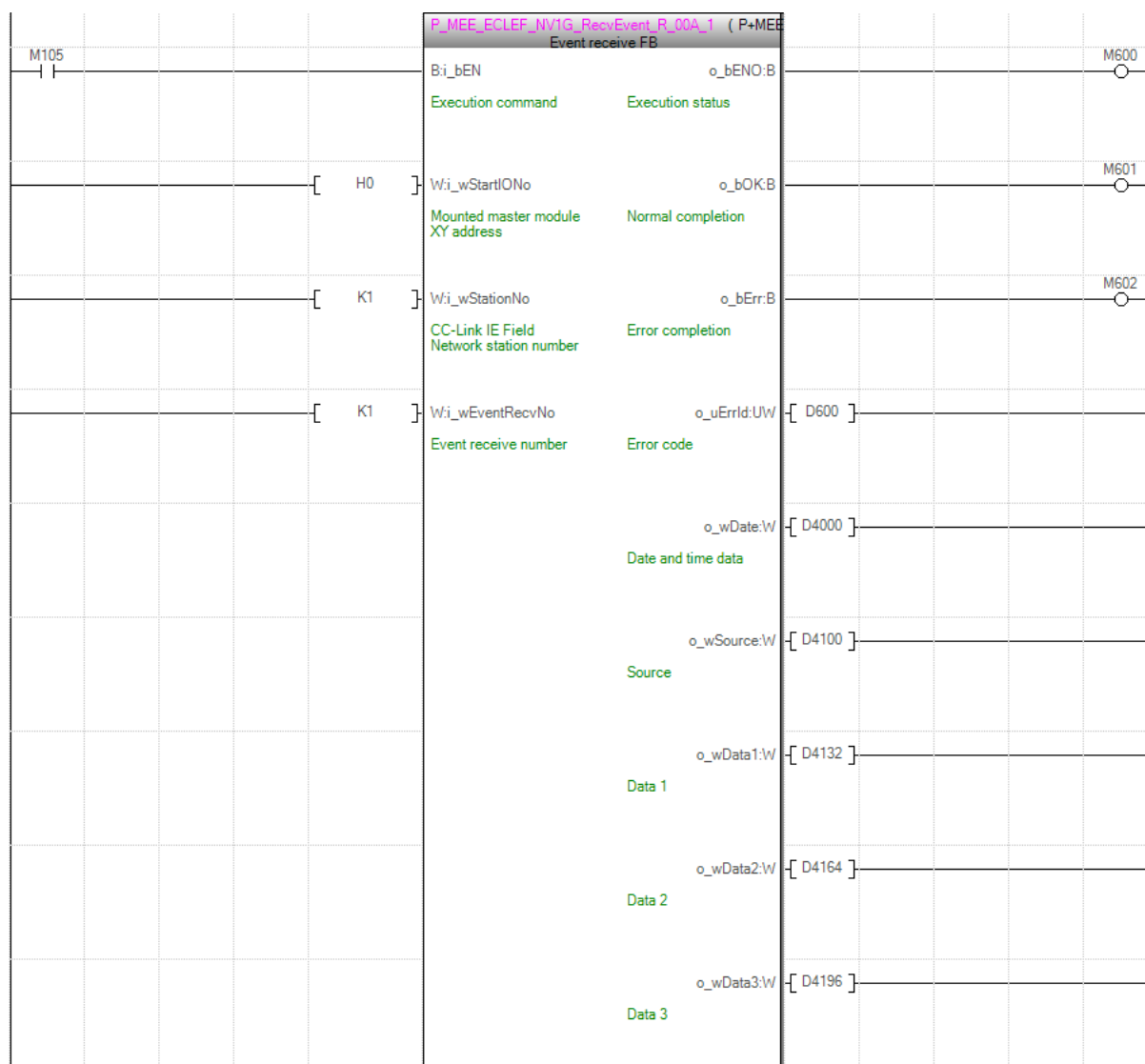


Appendix 1.5.5. P+MEE-ECLEF-NV1G_RecvEvent_R (Event receive)

Set the following values to the input labels for this example.

I/O items	Setting value
Mounted master module XY address	H0
CC-Link IE Field Network station number	K1
Event receive number	K1

Below is an example program which shows that when M105 turns ON, the received event data will be read with the above conditions.



Receive data contents

Device	Data contents	Data type	Explanation	Notes
D4000	Occurrence date (Year, Month)	Word	The date the event occurred. <div> <div>Upper 8bits : Last 2 digit of the western calendar year</div> <div>Lower 8bits : Month</div> </div>	Stored in a BCD format. All values will be HFFFF if no date has been set to the date and time setting.
D4001	Occurrence date (Day, Hour)	Word	The date the event occurred. <div> <div>Upper 8bits : Day</div> <div>Lower 8bits : Hour (24 hour clock)</div> </div>	
D4002	Occurrence date (Minute, Second)	Word	The date the event occurred. <div> <div>Upper 8bits : Minute</div> <div>Lower 8bits : Second</div> </div>	
D4100 - D4131	Source	Word	Data character string (Source)	32 words (64 Bytes)
D4132 - D4163	Data 1	Word	Data character string (Data 1)	32 words (64 Bytes)
D4164 - D4195	Data 2	Word	Data character string (Data 2)	32 words (64 Bytes)
D4196 - D4227	Data 3	Word	Data character string (Data 3)	32 words (64 Bytes)

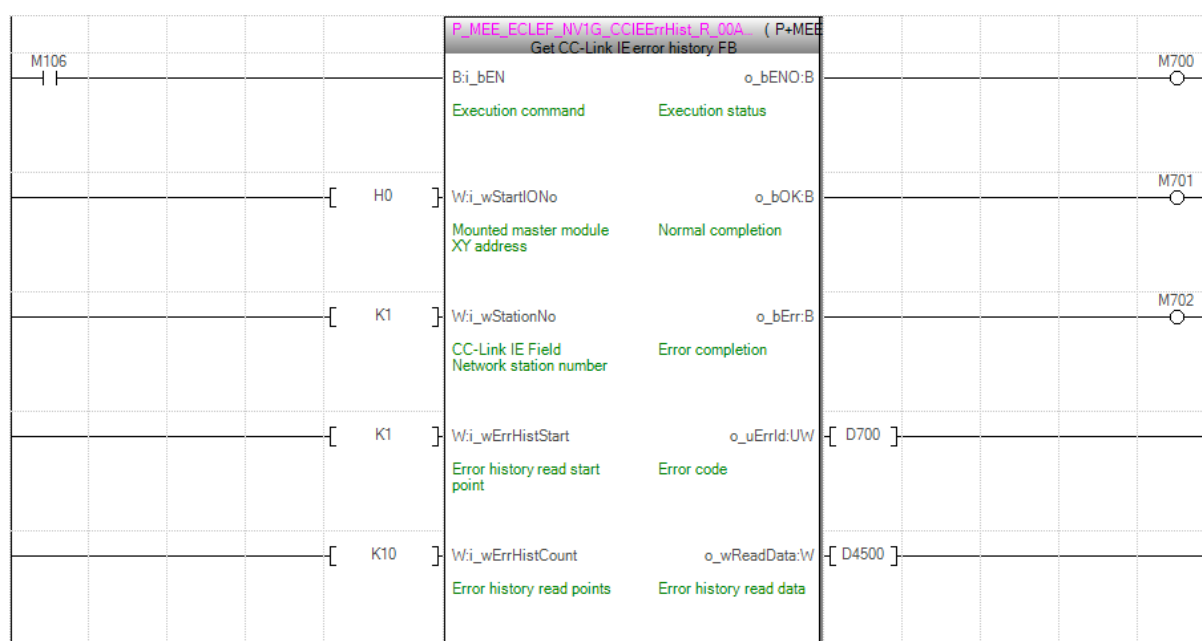


Appendix 1.5.6. P+MEE-ECLEF-NV1G_CCIEErrHist_R (Get CC-Link IE error history)

Set the following values to the input labels for this example.

I/O items	Setting value
Mounted master module XY address	H0
CC-Link IE Field Network station number	K1
Error history read start position	K1
Error history read points	K10

Below is an example program which shows that when M106 turns ON, the CC-Link IE Field Network error get function will be performed with the above conditions.



(1) Error history read data (o_wReadData)

The error history data will be read to the device for the number of error history read points.

Device	Data contents	Data type	Explanation	Notes
D4500	Occurrence date (Year, Month)	Word	The date the error was raised. <div> <div>Upper 8bits : Last 2 digit of the western calendar year</div> <div>Lower 8bits : Month</div> </div>	Stored in a BCD format. All values will be HFFFF if there are no errors, and if no date has been set to the date and time setting.
D4501	Occurrence date (Day, Hour)	Word	The date the error was raised. <div> <div>Upper 8bits : Day</div> <div>Lower 8bits : Hour (24 hour clock)</div> </div>	
D4502	Occurrence date (Minute, Second)	Word	The date the error was raised. <div> <div>Upper 8bits : Minute</div> <div>Lower 8bits : Second</div> </div>	
D4503	Uptime (Days)	Word	The time until the error was raised. <div> <div>Number of days the system was operational</div> </div>	Stored in a BCD format. All values will be HFFFF if there are no errors. This is the elapsed time from when the Gateway Module has booted up.
D4504	Uptime (Hours, Minutes)	Word	The time until the error was raised. <div> <div>Upper 8bits : Hours</div> <div>Lower 8bits : Minutes</div> </div>	
D4505	Uptime (Seconds)	Word	The time until the error was raised. <div> <div>Upper 8bits : Seconds</div> <div>Lower 8bits : Not used</div> </div>	
D4506	Error occurrence order	Word	The order in which the error was raised.	0 - 65535
D4507	Error code	Word	The error code of the error raised.	Refer to the “ECLEF-NV1G CC-Link IE Field Network / ONVIF Network Gateway Module User’s Manual (Detailed Edition)”.

* Only the contents of error history area 1 are stated.

All other error history areas are repeated and saved after error history area 1.



(2) Error history area

In this example, 10 of the 50 error history areas are being used.

Device	Details
D4500 - D4507	Error history area 1
D4508 - D4515	Error history area 2
D4516 - D4523	Error history area 3
D4572 - D4579	Error history area 10

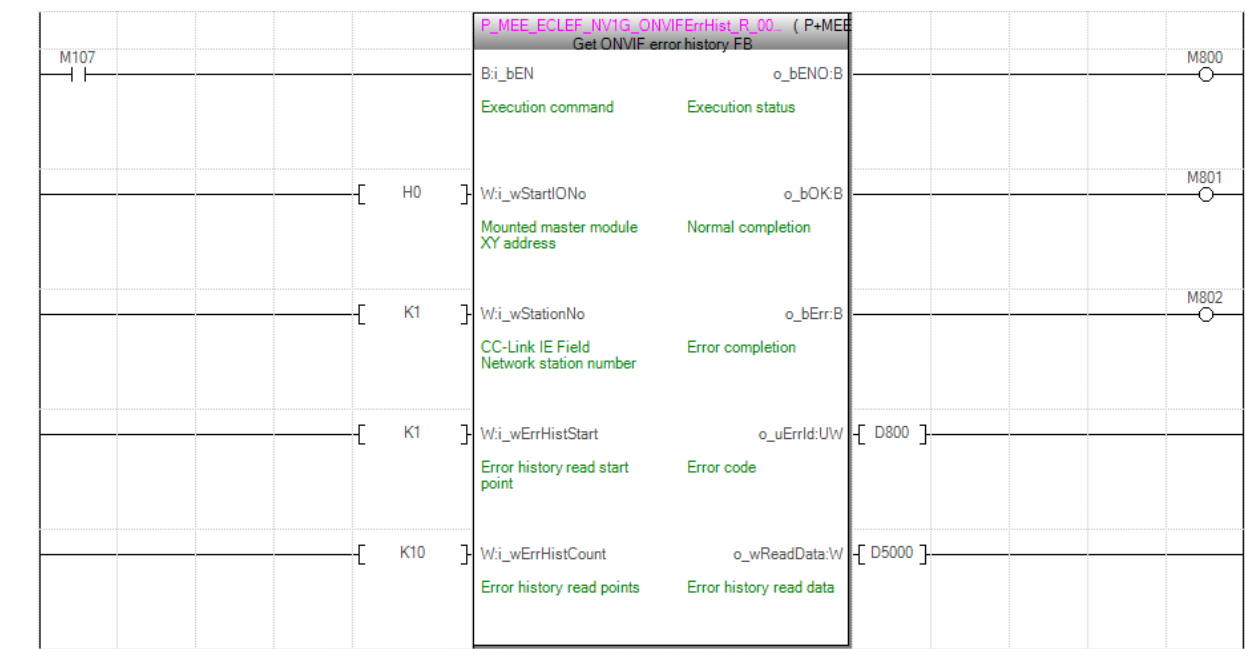


Appendix 1.5.7. P+MEE-ECLEF-NV1G_ONVIFErrHist_R (Get ONVIF error history)

Set the following values to the input labels for this example.

I/O items	Setting value
Mounted master module XY address	H0
CC-Link IE Field Network station number	K1
Error history read start position	K1
Error history read points	K10

Below is an example program which shows that when M107 turns ON, the ONVIF Network error get function will be performed with the above conditions.



(1) Error history read data (o_wReadData)

The error history data will be read to the device for the number of error history read points.

Device	Data contents	Data type	Explanation	Notes
D5000	Occurrence date (Year, Month)	Word	The date the error was raised. <div> <div>Upper 8bits : Last 2 digit of the western calendar year</div> <div>Lower 8bits : Month</div> </div>	Stored in a BCD format. All values will be HFFFF if there are no errors, and if no date has been set to the date and time setting.
D5001	Occurrence date (Day, Hour)	Word	The date the error was raised. <div> <div>Upper 8bits : Day</div> <div>Lower 8bits : Hour (24 hour clock)</div> </div>	
D5002	Occurrence date (Minute, Second)	Word	The date the error was raised. <div> <div>Upper 8bits : Minute</div> <div>Lower 8bits : Second</div> </div>	
D5003	Uptime (Days)	Word	The time until the error was raised. <div> <div>Number of days the system was operational</div> </div>	Stored in a BCD format. All values will be HFFFF if there are no errors. This is the elapsed time from when the Gateway Module has booted up.
D5004	Uptime (Hours, Minutes)	Word	The time until the error was raised. <div> <div>Upper 8bits : Hours</div> <div>Lower 8bits : Minutes</div> </div>	
D5005	Uptime (Seconds)	Word	The time until the error was raised. <div> <div>Upper 8bits : Seconds</div> <div>Lower 8bits : Not used</div> </div>	
D5006	Error occurrence order	Word	The order in which the error was raised.	0 - 65535
D5007	Error code	Word	The error code of the error raised.	Refer to the “ECLEF-NV1G CC-Link IE Field Network / ONVIF Network Gateway Module User’s Manual (Detailed Edition)”.
D5008	Camera number	Word	0 or the Camera number (1 to 16) of the camera where the error was raised.	Will be 0 if the error is not related to a camera.

* Only the contents of error history area 1 are stated.

All other error history areas are repeated and saved after error history area 1.



(2) Error history area

In this example, 10 of the 50 error history areas are being used.

Device	Details
D5000 - D5008	Error history area 1
D5009 - D5017	Error history area 2
D5016 - D5026	Error history area 3
,	,
D5081 - D5089	Error history area 10

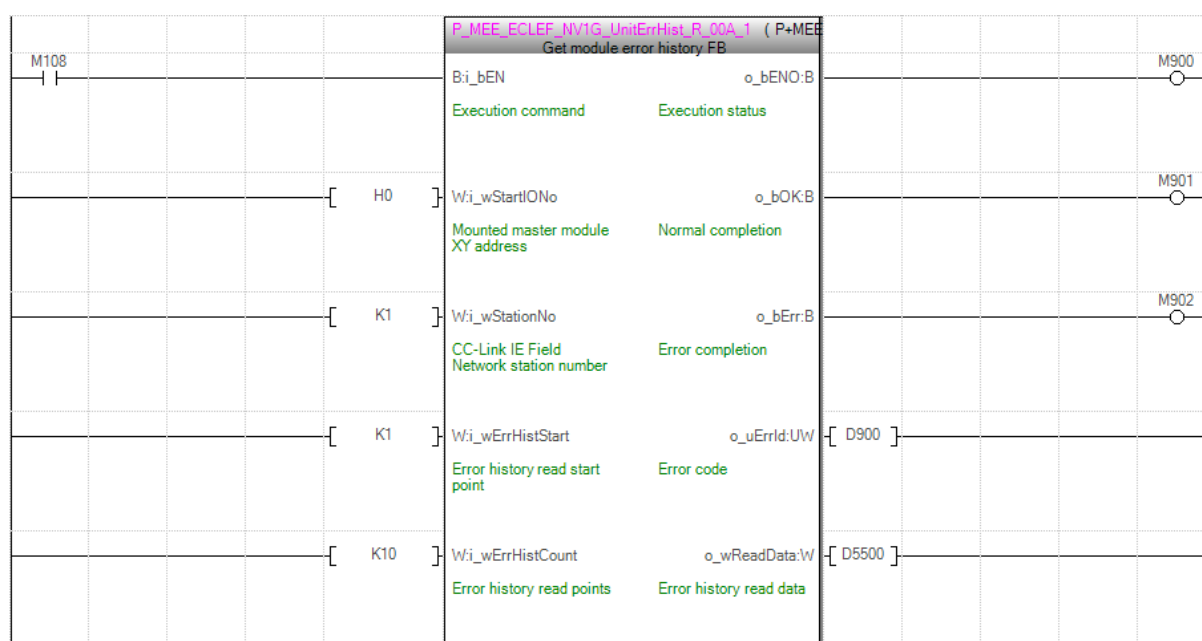


Appendix 1.5.8. P+MEE-ECLEF-NV1G_UnitErrHist_R (Get Module error history)

Set the following values to the input labels for this example.

I/O items	Setting value
Mounted master module XY address	H0
CC-Link IE Field Network station number	K1
Error history read start position	K1
Error history read points	K10

Below is an example program which shows that when M108 turns ON, the Gateway Module error get function will be performed with the above conditions.



(1) Error history read data (o_wReadData)

The error history data will be read to the device for the number of error history read points.

Device	Data contents	Data type	Explanation	Notes
D5500	Occurrence date (Year, Month)	Word	The date the error was raised. <div> <div>Upper 8bits : Last 2 digit of the western calendar year</div> <div>Lower 8bits : Month</div> </div>	Stored in a BCD format. All values will be HFFFF if there are no errors, and if no date has been set to the date and time setting.
D5501	Occurrence date (Day, Hour)	Word	The date the error was raised. <div> <div>Upper 8bits : Day</div> <div>Lower 8bits : Hour (24 hour clock)</div> </div>	
D5502	Occurrence date (Minute, Second)	Word	The date the error was raised. <div> <div>Upper 8bits : Minute</div> <div>Lower 8bits : Second</div> </div>	
D5503	Uptime (Days)	Word	The time until the error was raised. <div> <div>Number of days the system was operational</div> </div>	Stored in a BCD format. All values will be HFFFF if there are no errors. This is the elapsed time from when the Gateway Module has booted up.
D5504	Uptime (Hours, Minutes)	Word	The time until the error was raised. <div> <div>Upper 8bits : Hours</div> <div>Lower 8bits : Minutes</div> </div>	
D5505	Uptime (Seconds)	Word	The time until the error was raised. <div> <div>Upper 8bits : Seconds</div> <div>Lower 8bits : Not used</div> </div>	
D5506	Error occurrence order	Word	The order in which the error was raised.	0 - 65535
D5507	Error code	Word	The error code of the error raised.	Refer to the “ECLEF-NV1G CC-Link IE Field Network / ONVIF Network Gateway Module User’s Manual (Detailed Edition)”.

* Only the contents of error history area 1 are stated.

All other error history areas are repeated and saved after error history area 1.



(2) Error history area

In this example, 10 of the 50 error history areas are being used.

Device	Details
D5500 - D5507	Error history area 1
D5508 - D5515	Error history area 2
D5516 - D5523	Error history area 3
D5572 - D5579	Error history area 10

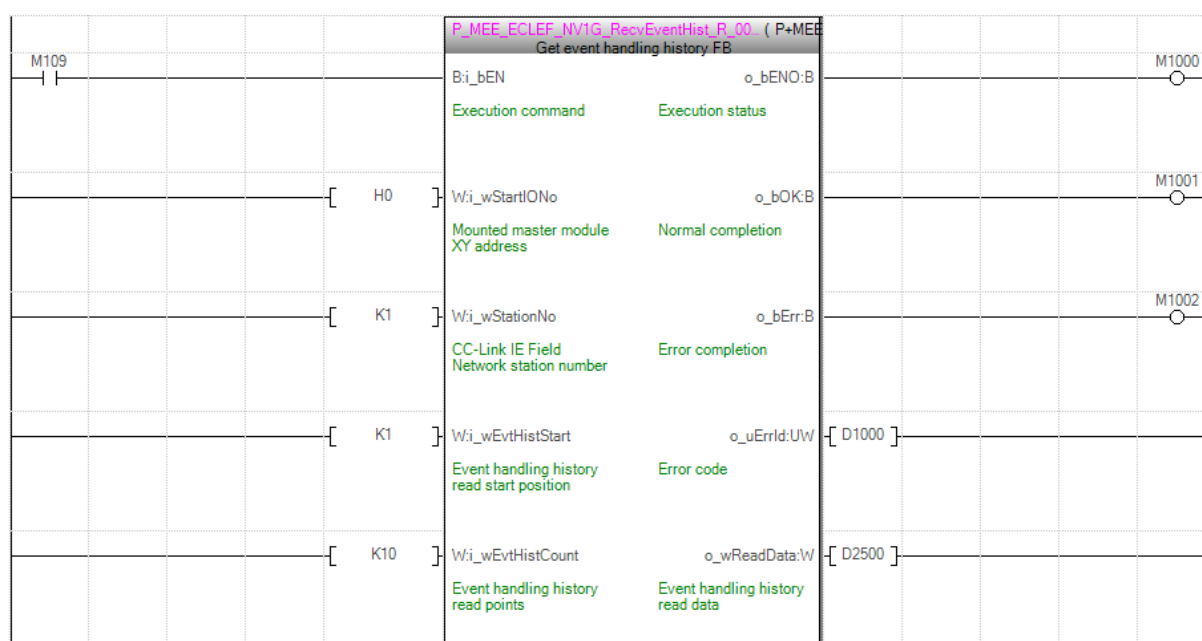


Appendix 1.5.9. P+MEE-ECLEF-NV1G_RecvEventHist_R (Get event handling history)

Set the following values to the input labels for this example.

I/O items	Setting value
Mounted master module XY address	H0
CC-Link IE Field Network station number	K1
Event handling history read start position	K1
Event handling history read points	K10

Below is an example program which shows that when M109 turns ON, the event history get function will be performed with the above conditions.



(1) Event handling history read data (o_wReadData)

The event handling history data will be read to the device for the number of event handling history read points.

Device	Data contents	Data type	Explanation	Notes
D2500	Occurrence date (Year, Month)	Word	The date the event occurred. <div> <div>Upper 8bits : Last 2 digit of the western calendar year</div> <div>Lower 8bits : Month</div> </div>	Stored in a BCD format. All values will be HFFFF if there are no events, and if no date has been set to the date and time setting.
D2501	Occurrence date (Day, Hour)	Word	The date the event occurred. <div> <div>Upper 8bits : Day</div> <div>Lower 8bits : Hour (24 hour clock)</div> </div>	
D2502	Occurrence date (Minute, Second)	Word	The date the event occurred. <div> <div>Upper 8bits : Minute</div> <div>Lower 8bits : Second</div> </div>	
D2503	Uptime (Days)	Word	The time until the event occurred. <div> <div>Number of days the system was operational</div> </div>	Stored in a BCD format. All values will be HFFFF if there are no events. This is the elapsed time from when the Gateway Module has booted up.
D2504	Uptime (Hours, Minutes)	Word	The time until the event occurred. <div> <div>Upper 8bits : Hours</div> <div>Lower 8bits : Minutes</div> </div>	
D2505	Uptime (Seconds)	Word	The time until the event occurred. <div> <div>Upper 8bits : Seconds</div> <div>Lower 8bits : Not used</div> </div>	
D2506	Event occurrence order	Word	The order in which the event occurred.	0 - 65535
D2507	Transmission classification	Word	Classification of whether the Gateway Module received or transmitted data. H0000 : Event receive H0001 : Event transmit	—
D2508	Event item	Word	H0000 : Subscribe H0001 : Renew H0002 : Unsubscribe H0003 : Receive item H0004 : Transmit item	The value of the data contents code list will be stored in the data (D2513) if this is set to H0003 or H0004.



Device	Data contents	Data type	Explanation	Notes
D2509	Transmit source IP address	Double word	Transmit source IP address E.g. : H0100A8C0 for 192.168.0.1	Only valid if event item (D2508) is between H0000 and H0003.
D2511	Camera number	Word	Target camera number	Only valid if event item (D2508) is between H0000 and H0002.
D2512	Event number	Word	Event number (1 - 16)	Only valid if event item (D2508) is between H0000 and H0003.
D2513	Data	Word	Refer to “2.9 (2) 3) Data code list”.	Only valid if event item (D2508) is between H0003 and H0004.
D2514	Reserved area	Word	Cannot be used	—
D2515	Reserved area	Word	Cannot be used	—

* Only the contents of error history area 1 are stated.

All other error history areas are repeated and saved after error history area 1.

(2) Event handling history area

In this example, 10 of the 50 event handling history areas are being used.

Device	Details
D2500 - D2515	Event handling history area 1
D2516 - D2531	Event handling history area 2
D2532 - D2547	Event handling history area 3
,	,
D2644 - D2659	Event handling history area 10

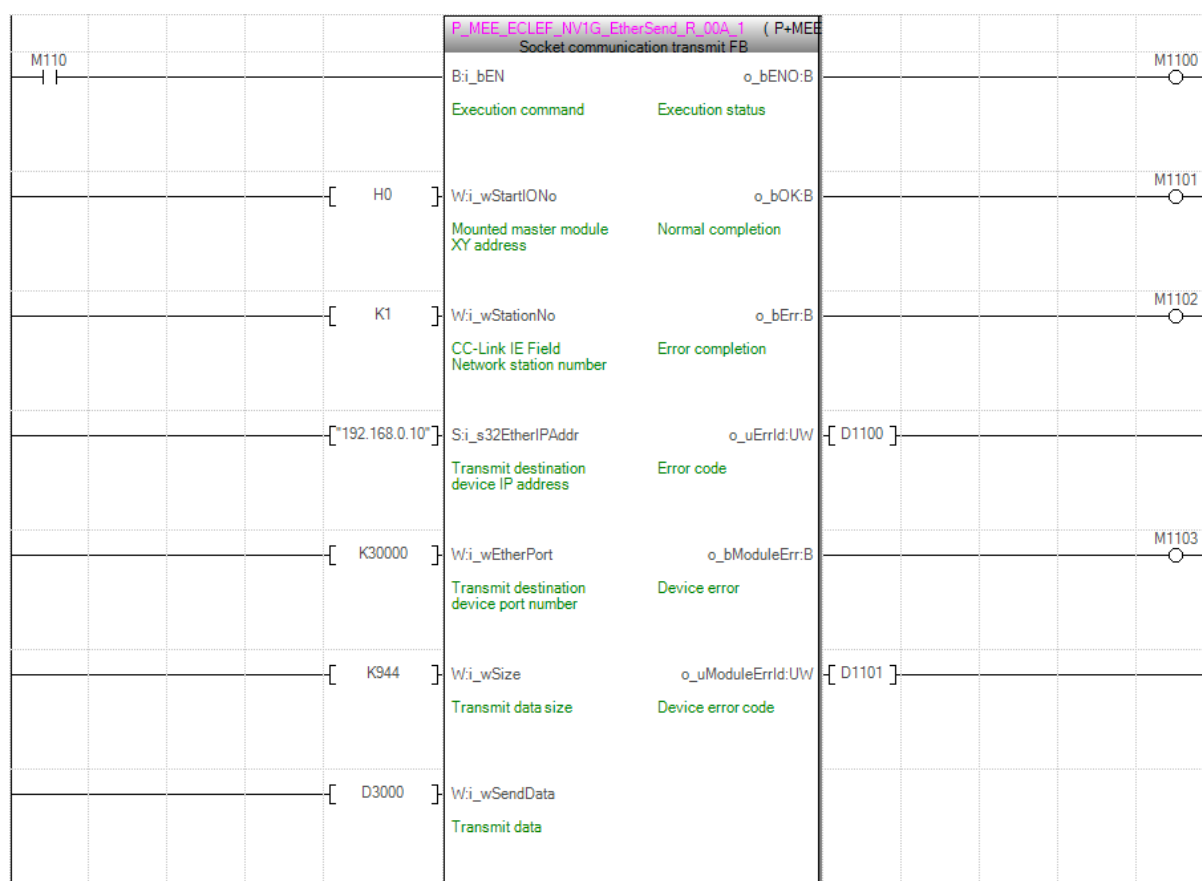


Appendix 1.5.10. P+MEE-ECLEF-NV1G_EtherSend_R (Socket communication transmit)

Set the following values to the input labels for this example.

I/O items	Setting value
Mounted master module XY address	H0
CC-Link IE Field Network station number	K1
Transmit destination device IP address	“192.168.0.10”
Transmit destination device port number	K30000
Transmit data size	K944
Transmit data	D3000 - D3943

Below is an example program which shows that when M110 turns ON, data transmission will be performed through socket communication with the above conditions.

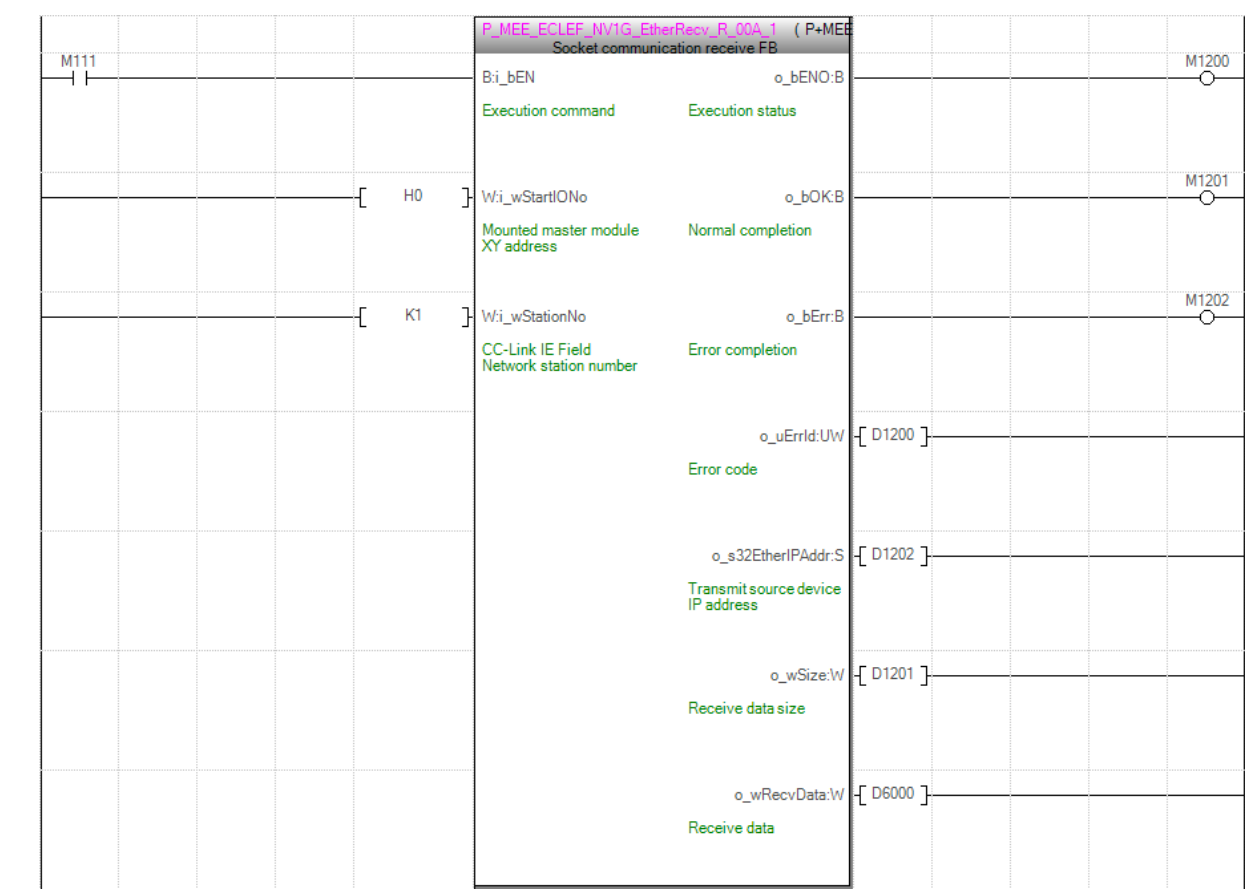


Appendix 1.5.11. P+MEE-ECLEF-NV1G_EtherRecv_R (Socket communication receive)

Set the following values to the input labels for this example.

I/O items	Setting value
Mounted master module XY address	H0
CC-Link IE Field Network station number	K1

Below is an example program which shows that when M111 turns ON, the reading of received data will be performed through socket communication with the above conditions.



Receive data contents

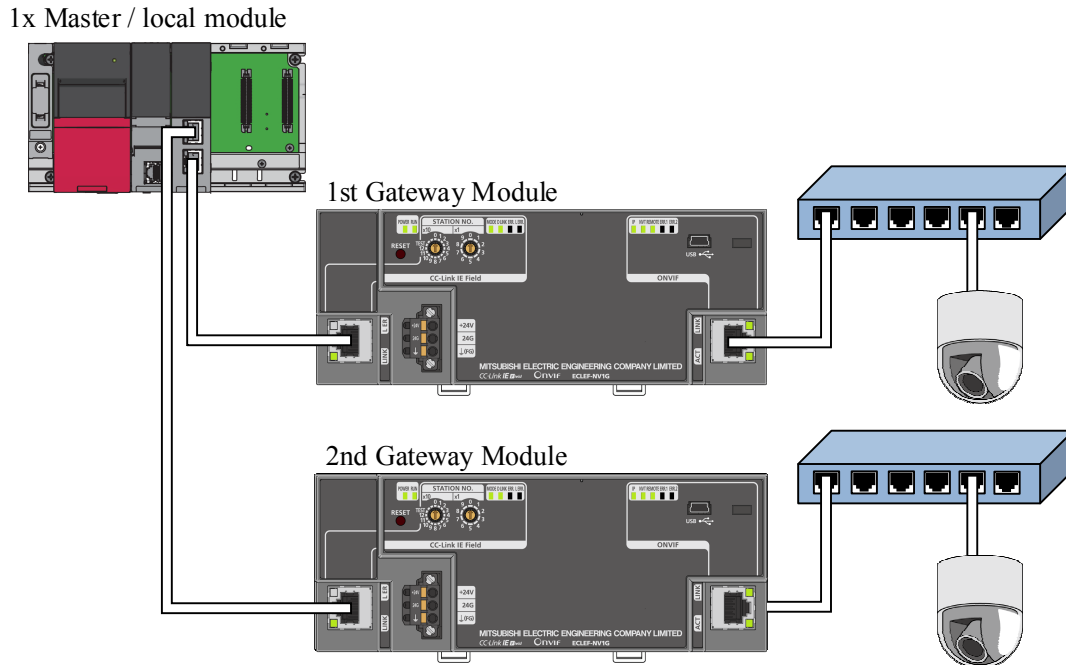
Device	Data contents	Data type	Explanation	Notes
D1201	Receive data size	Word	Stores the size of the received data (word).	–
D1202 - D1231	Transmit source device IP address	String	Stores the data transmit source IP address (IPv4).	30 word data size required.
D6000 - D6943	Receive data	Word	Stores the received data.	Maximum 944 words required.



Appendix 2. How to Use FBs for 2 Gateway Modules

Which Have Been Connected to 1 Master / Local Module

This section explains a case in which 2 Gateway Modules are connected to 1 CC-Link IE Field Network master / local module.



When using 2 or more CC-Link IE Field Network master / local modules, it is necessary to set unique “Global labels” and “Devices” which will be handled by the FB being used by each master / local module.

Therefore, internal FB devices should be replaced, and the following 5 steps must be performed.

- 1) Required Settings
- 2) Basic Settings
- 3) Global Label Setting
- 4) Library Duplication (Copy)
- 5) Device Replacement

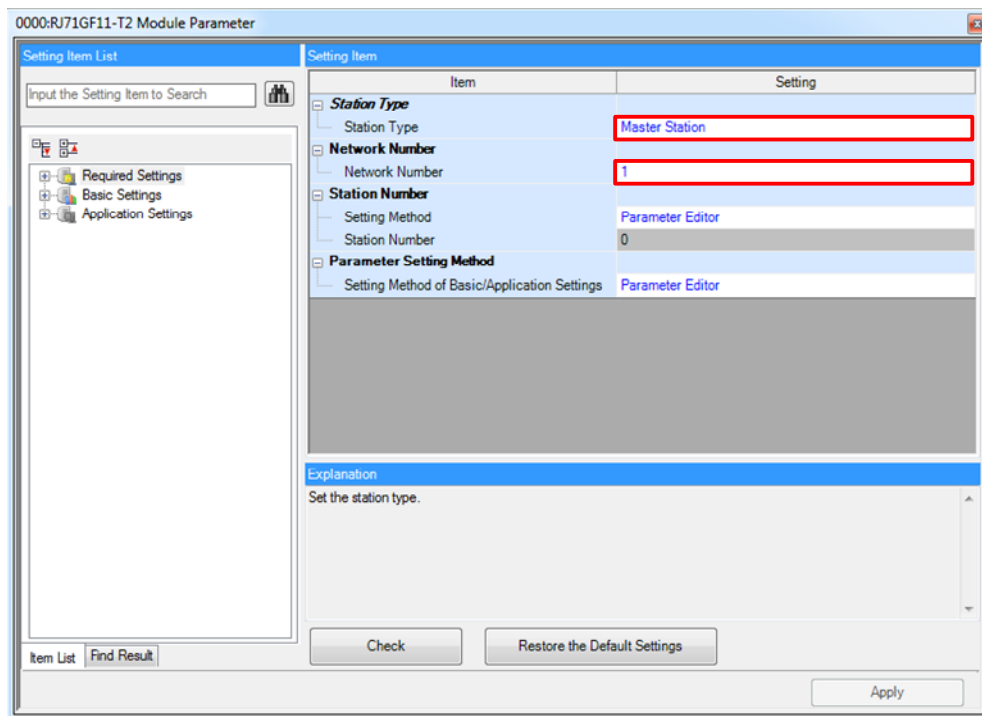
The examples in this section explain cases where 2 Gateway Modules are connected to 1 CC-Link IE Field Network master / local module.



Appendix 2.1. Required Settings

Set the following “Required Settings”.

Items	Details
Station Type	Select “Master Station”.
Network No.	Set the network number of the master / local module. Set to “1” for this example.



Appendix 2.2. Basic Settings

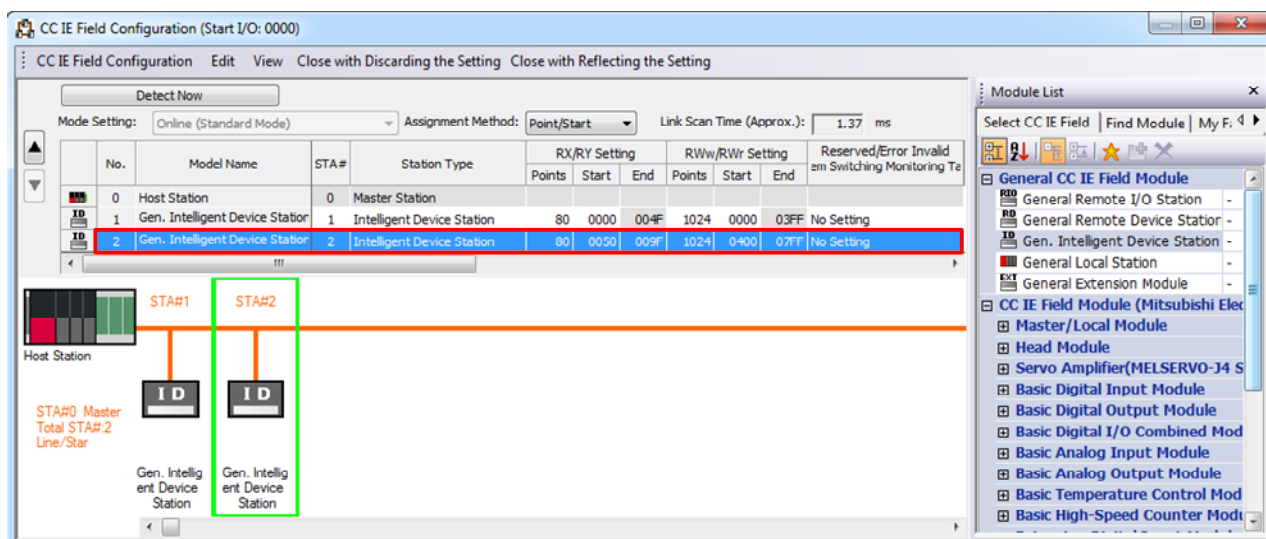
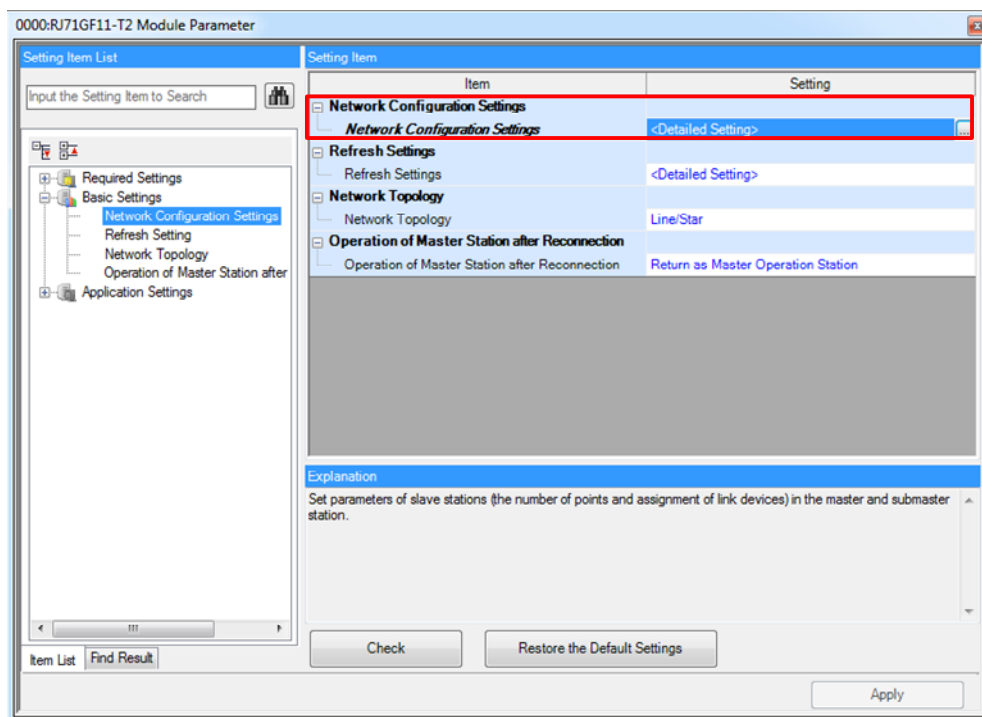
(1) Network Configuration Settings

Set the following “CC IE Field Configuration”.

Items	Details
STA#	Set the station number of the slave station which is to be connected to the master station. Set “2” for this example.
Station Type	Set the station type of the slave station which is to be connected to the master station. Set “Intelligent Device Station” for this example.
RX/RV Setting	Set the RX/RV allocation of the slave station which is to be connected to the master station. Set “80” to the number of points, and “0050” to the start device for this example. (*1)
RWw/RWr Setting	Set the RWw/RWr allocation of the slave station which is to be connected to the master station. Set “1024” to the number of points, and “0400” to the start device for this example. (*1)
Reserved / Error Invalid Station / System Switching Monitoring Target Station.	Set “No settings”.

*1 The start device of each device setting must match the “M_RX”, “M_RV”, “M_RWr”, “M_RWw” settings given in section “Appendix 2.3. Global Label Settings”.





(2) Link Refresh Settings

Set the following “Link Refresh Settings”.

Items	Details	Setting value
remote input (RX)	Sets the link refresh span of the RX device.	Link side device name :「RX」 Link side start device :「00050」 Link side end points :「0009F」 PLC side device name :「X」 PLC side start device :「01050」
remote output (RY)	Sets the link refresh span of the RY device.	Link side device name :「RY」 Link side start device :「00050」 Link side end points :「0009F」 PLC side device name :「Y」 PLC side start device :「01050」
remote register (RW _r)	Sets the link refresh span of the RW _r device.	Link side device name :「RW _r 」 Link side start device :「00400」 Link side end points :「007FF」 PLC side device name :「W」 PLC side start device :「00800」
remote register (RW _w)	Sets the link refresh span of the RW _w device.	Link side device name :「RW _w 」 Link side start device :「00400」 Link side end points :「007FF」 PLC side device name :「W」 PLC side start device :「00C00」

No.	Link Side					CPU Side				
	Device Name	Points	Start	End		Target	Device Name	Points	Start	End
-	SB	512	00000	001FF	↔	Specify Devi	SB	512	00000	001FF
-	SW	512	00000	001FF	↔	Specify Devi	SW	512	00000	001FF
1	RX	80	00000	0004F	↔	Specify Devi	X	80	01000	0104F
2	RY	80	00000	0004F	↔	Specify Devi	Y	80	01000	0104F
3	RW _r	1024	00000	003FF	↔	Specify Devi	W	1024	00000	003FF
4	RW _w	1024	00000	003FF	↔	Specify Devi	W	1024	00400	007FF
5	RX	80	00050	0009F	↔	Specify Devi	X	80	01050	0109F
6	RY	80	00050	0009F	↔	Specify Devi	Y	80	01050	0109F
7	RW _r	1024	00400	007FF	↔	Specify Devi	W	1024	00800	00BFF
8	RW _w	1024	00400	007FF	↔	Specify Devi	W	1024	00C00	00FFF
9					↔					

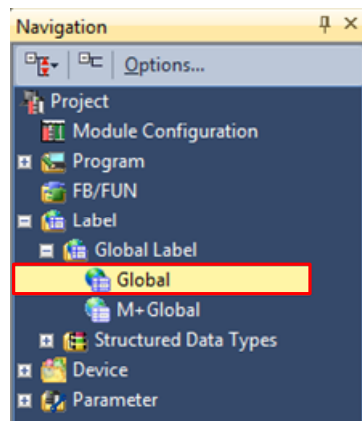


Appendix 2.3. Global Label Settings

Set the first master / local module, according to section “1.5. Global Label Settings”.

Global labels should be defined so that any label name used in the first module is not used in the second label.

(1) Select “Global label - Global” in the Project tab of the Navigation window.



(2) Set “M_RX2” remote output (RX).

Settings	Details
Label Name	Enter “M_RX2”.
Data Type	Select “Bit”.
Class	Select “VAR_GLOBAL”.
Assign (Device / Label)	Append the index register “Z9” to the start refresh device “X1050” which was set in “Link Refresh Settings”. Enter “X1050Z9” for this example.

(3) Set “M_RY2” remote output (RY).

Settings	Details
Label Name	Enter “M_RY2”.
Data Type	Select “Bit”.
Class	Select “VAR_GLOBAL”.
Assign (Device / Label)	Append the index register “Z8” to the start refresh device “Y1050” which was set in “Link Refresh Settings”. Enter “Y1050Z8” for this example.



(4) Set “M_RWw2” remote register (RWw).

Settings	Details
Label Name	Enter “M_RWw2”.
Data Type	Select “Word [Signed]”.
Class	Select “VAR_GLOBAL”.
Assign (Device / Label)	Append the index register “Z7” to the start refresh device “W0C00” which was set in “Link Refresh Settings”. Enter “W0C00Z7” for this example.

(5) Set “M_RWr2” remote register (RWr).

Settings	Details
Label Name	Enter “M_RWr2”.
Data Type	Select “Word [Signed]”.
Class	Select “VAR_GLOBAL”.
Assign (Device / Label)	Append the index register “Z6” to the start refresh device “W0800” which was set in “Link Refresh Settings”. Enter “W800Z6” for this example.

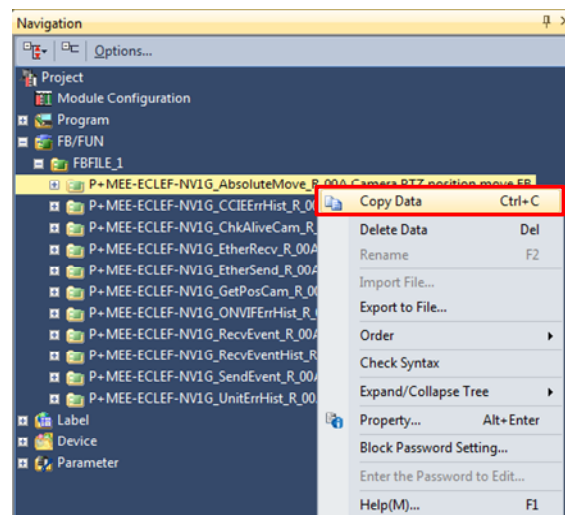
	Label Name	Data Type	Class	Assign (Device/Label)	Initial Value	Constant	Comment
1	M_RX	Bit	VAR_GLOBAL	X1000Z9			RX refresh device
2	M_RY	Bit	VAR_GLOBAL	Y1000Z8			RY refresh device
3	M_RWw	Word [Signed]	VAR_GLOBAL	W400Z7			RWw refresh device
4	M_RWr	Word [Signed]	VAR_GLOBAL	W0Z6			RWr refresh device
5	M_RX2	Bit	VAR_GLOBAL	X1050Z9			RX2 refresh device
6	M_RY2	Bit	VAR_GLOBAL	Y1050Z8			RY2 refresh device
7	M_RWw2	Word [Signed]	VAR_GLOBAL	W0C00Z7			RWw2 refresh device
8	M_RWr2	Word [Signed]	VAR_GLOBAL	W800Z6			RWr2 refresh device
9							



Appendix 2.4. Library Duplication (Copy)

(1) Copying a library

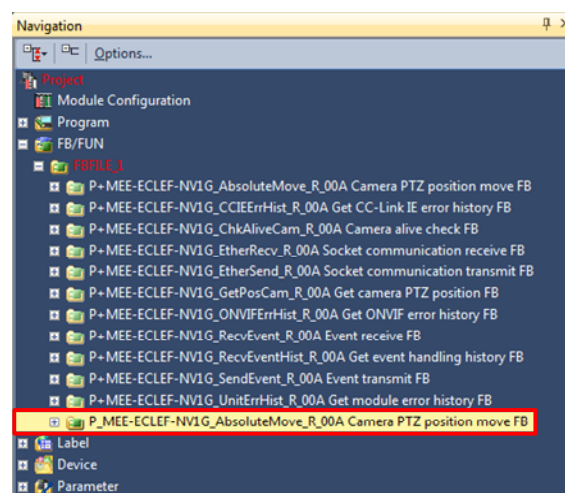
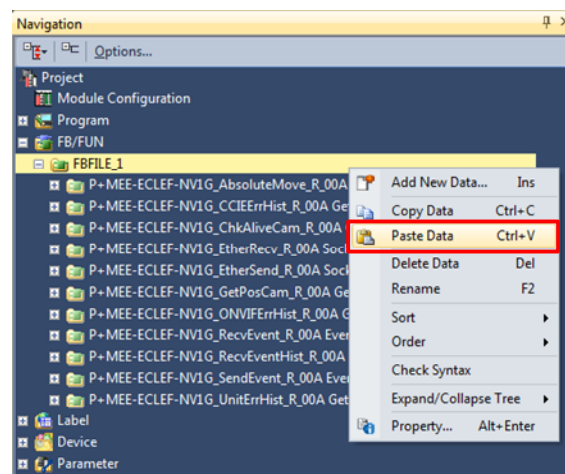
Select and copy (Copy Data) the required FB for the second master / local module in the Project tab of the Navigation window.



(2) Pasting a library

Paste the previously copied FB to "FBFILE_1" located in the Project tab of the Navigation window.

The FB name will automatically be added.



[Note]

The "+" in "P+..." string cannot be entered.

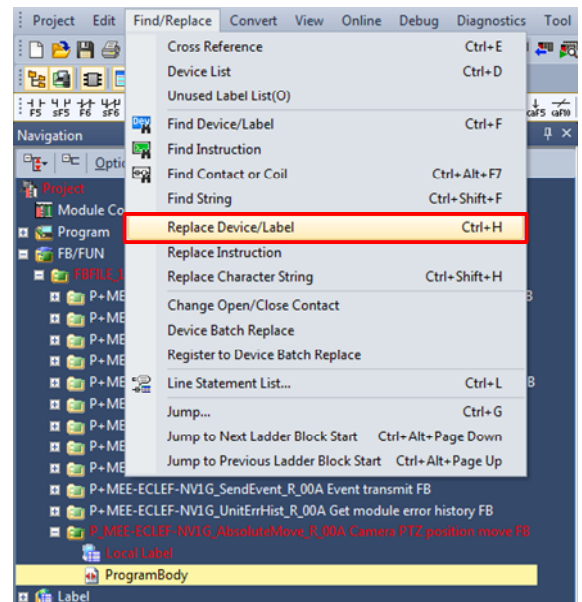
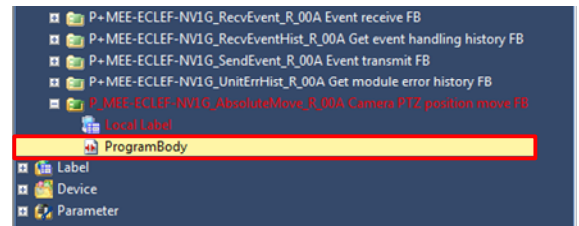
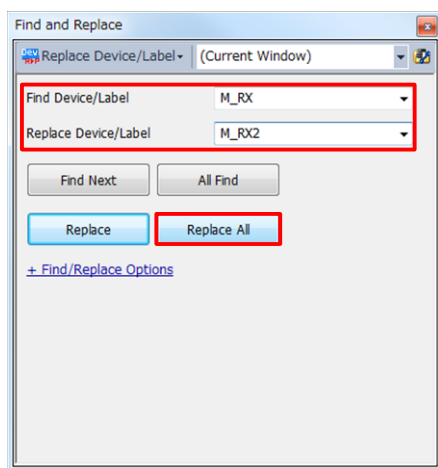


Appendix 2.5. Device Replacement

Open the “main program” of the added FB, select “Find / Replace” in the menu bar, select “Replace Device / Label”, and a “Find and Replace” window will be displayed.

Specify “Replace Device / Label” as “(Current window)”, “Find Device / Label” as “M_RX”, “Replace Device / Label” as “M_RX2”, and select “Replace All”.

Similarly, replace all “M_RY”, “M_RWw” and “M_RWr” devices with “M_RY2”, “M_RWw2” and “M_RWr2”.



The FB will become usable in the second gateway module with the above procedure.

[Note]

1. If there are duplicate FBs used in the second gateway module, the procedures in Appendix 2.4 and 2.5 should be repeated.
2. In cases where an FB is used in 2 or more master / local modules, set the “Global labels” being set, the “pasted data names” when pasting an FB, and the “replaced devices” when replacing devices, so that they are not duplicated with names being used in other master / local modules.

[Precautions]

When there are updates to the MELSOFT Library, the FB of the MELSOFT Library can be updated by importing the Library again, however, even if the FB which is to be used in 2 or more devices and created using the procedures in this section was imported again, updates will not be performed automatically.

Therefore, when updating FBs created using the procedures in this section, an update must be performed by redoing the operations in this section after the MELSOFT Library has been updated.

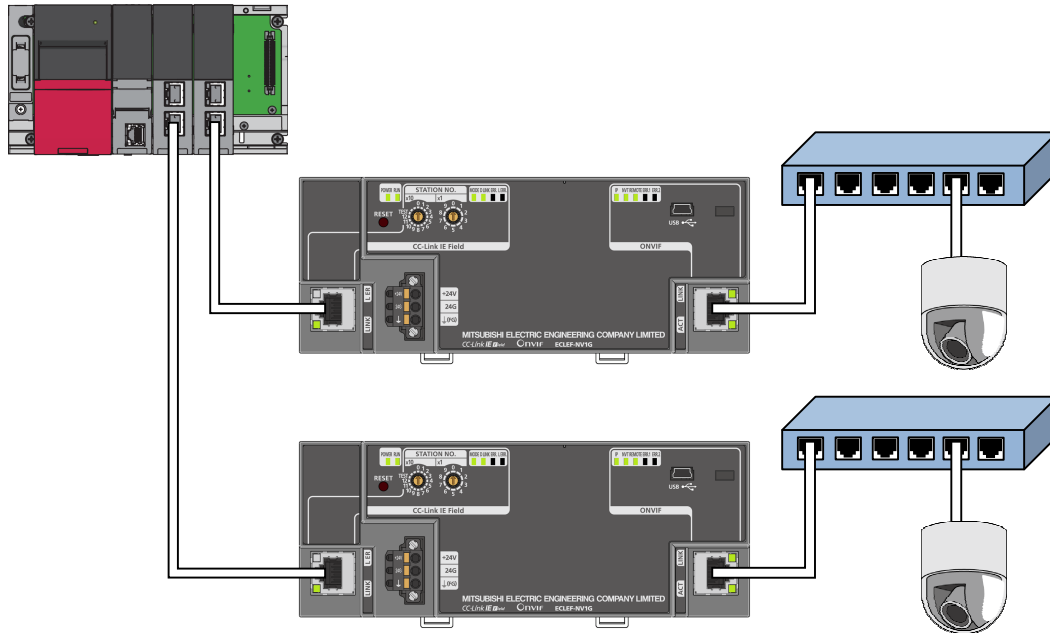


Appendix 3. How to Use FBs for Gateway Modules

Which Has Been Connected to 2 Separate Master / Local Modules

This section explains a case in which each of the Gateway Modules is connected to 2 separate CC-Link IE Field Network master / local modules.

2x Master / local modules



When using 2 or more CC-Link IE Field Network master / local modules, it is necessary to set unique “Global labels” and “Devices” which will be handled by the FB being used by each master / local module.

Therefore, internal FB devices should be replaced, and the following 5 steps must be performed.

- 1) Required Settings
- 2) Basic Settings
- 3) Global Label Setting
- 4) Library Duplication (Copy)
- 5) Device Replacement

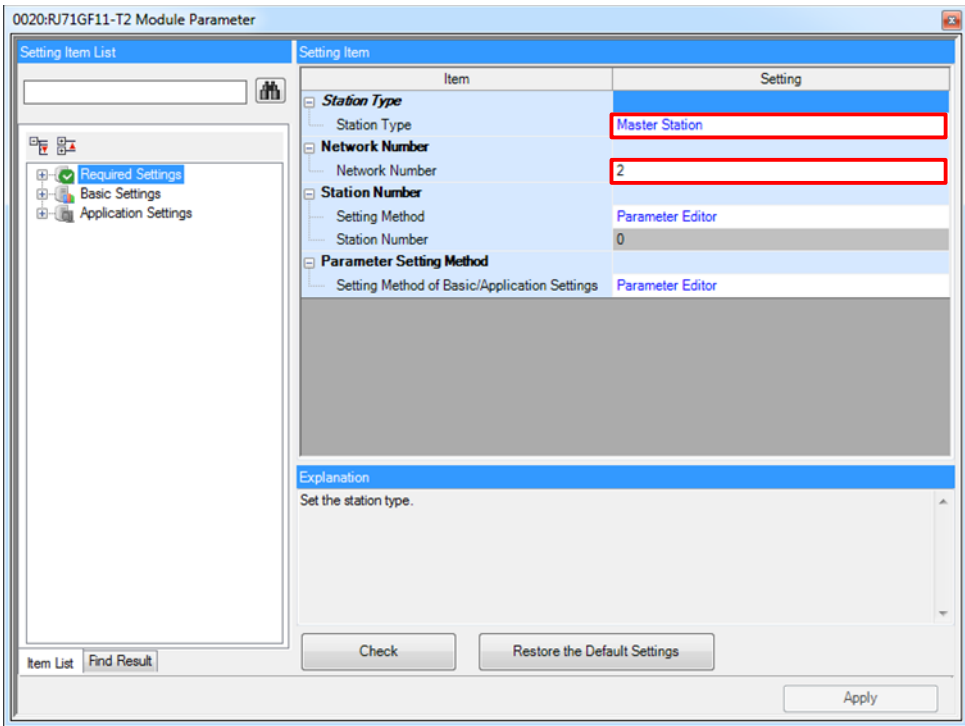
The examples in this section explain a case in which 2 Gateway Modules are connected to 2 different CC-Link IE Field Network master / local modules.



Appendix 3.1. Required Settings

Set the first master / local module, according to section “1.4. CC-Link IE Field Network Master / Local Module Settings”.
The second master / local module should be set as shown below.

Items	Details
Station Type	Select “Master Station”.
Network No.	Set the network number of the master / local module. Set to “2” for this example.



Appendix 3.2. Basic Settings

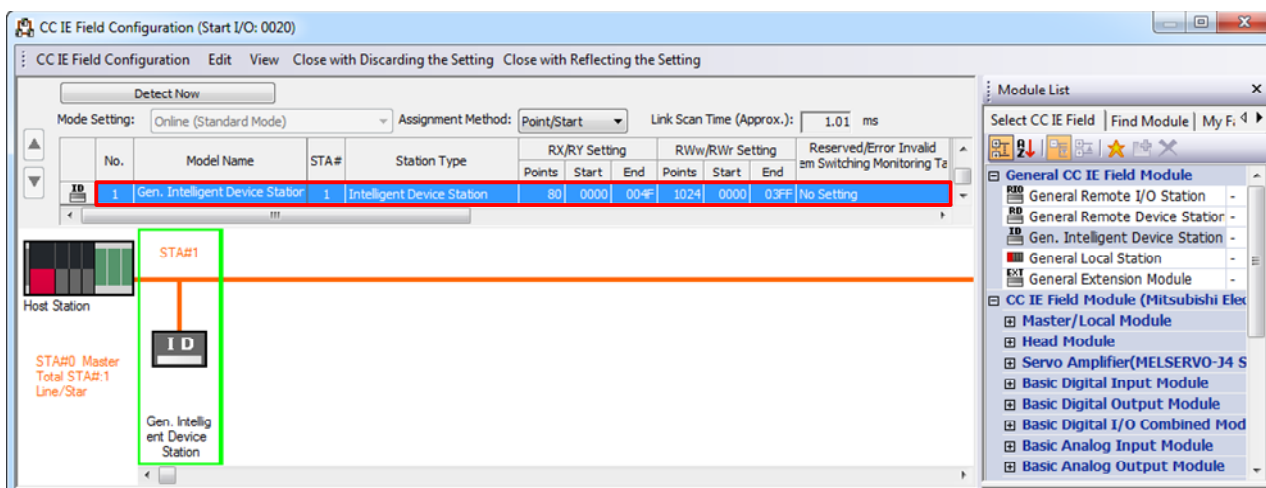
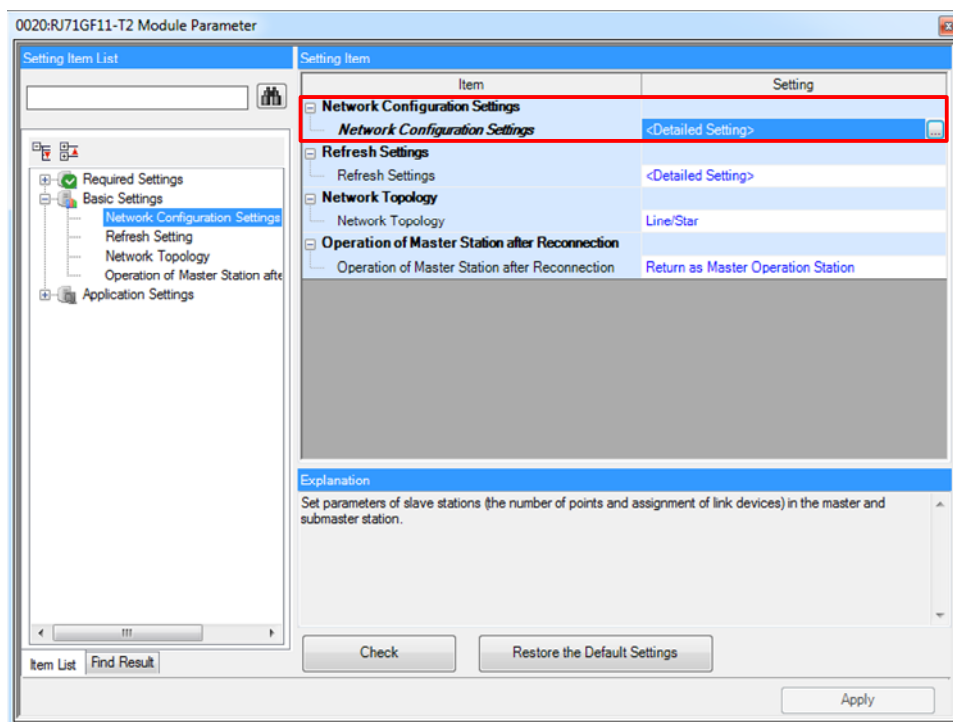
(1) Network Configuration Settings

Set the following “CC IE Field Configuration”.

Items	Details
STA#	Set the station number of the slave station which is to be connected to the master station. Set “1” for this example.
Station Type	Set the station type of the slave station which is to be connected to the master station. Set “Intelligent Device Station” for this example.
RX/Ry Setting	Set the RX/Ry allocation of the slave station which is to be connected to the master station. Set “80” to the number of points, and “0000” to the start device for this example. (*1)
RWw/RWr Setting	Set the RWw/RWr allocation of the slave station which is to be connected to the master station. Set “1024” to the number of points, and “0000” to the start device for this example. (*1)
Reserved / Error Invalid Station / System Switching Monitoring Target Station.	Set “No settings”.

*1 The start device of each device setting must match the “M_RX”, “M_RY”, “M_RWr”, “M_RWw” settings given in section “Appendix 3.3. Global Label Settings”.





(2) Link Refresh Settings

Set the following “CC IE Field Configuration”.

Items	Details	Setting value
Transfer SB	Sets the link refresh span of the SB device.	Link side start device :「00000」 Link side end points :「001FF」 PLC side device name :「SB」 PLC side start device :「00200」
Transfer SW	Sets the link refresh span of the SW device.	Link side start device :「00000」 Link side end points :「001FF」 PLC side device name :「SW」 PLC side start device :「00200」
remote input (RX)	Sets the link refresh span of the RX device.	Link side device name :「RX」 Link side start device :「00000」 Link side end points :「0004F」 PLC side device name :「X」 PLC side start device :「010A0」
remote output (RY)	Sets the link refresh span of the RY device.	Link side device name :「RY」 Link side start device :「00000」 Link side end points :「0004F」 PLC side device name :「Y」 PLC side start device :「010A0」
remote register (RW _r)	Sets the link refresh span of the RW _r device.	Link side device name :「RW _r 」 Link side start device :「00000」 Link side end points :「003FF」 PLC side device name :「W」 PLC side start device :「01000」
remote register (RW _w)	Sets the link refresh span of the RW _w device.	Link side device name :「RW _w 」 Link side start device :「00000」 Link side end points :「003FF」 PLC side device name :「W」 PLC side start device :「01400」



0020:R71GF11-T2 Module Parameter

Setting Item List

Input the Setting Item to Search

- Required Settings
- Basic Settings
 - Network Configuration Settings
 - Refresh Setting**
 - Network Topology
 - Operation of Master Station after Reconnection
 - Application Settings

Setting Item

Item	Setting
Network Configuration Settings	
Network Configuration Settings	<Detailed Setting>
Refresh Settings	
Refresh Settings	<Detailed Setting>
Network Topology	
Network Topology	Line/Star
Operation of Master Station after Reconnection	
Operation of Master Station after Reconnection	Return as Master Operation Station

Explanation

Set the link refresh range.

Check Restore the Default Settings Apply

No.	Link Side					CPU Side				
	Device Name	Points	Start	End		Target	Device Name	Points	Start	End
-	SB	512	00000	001FF	↔	Specify Dev	SB	512	00200	003FF
-	SW	512	00000	001FF	↔	Specify Dev	SW	512	00200	003FF
1	RX	80	00000	0004F	↔	Specify Dev	X	80	010A0	010EF
2	RY	80	00000	0004F	↔	Specify Dev	Y	80	010A0	010EF
3	RWr	1024	00000	003FF	↔	Specify Dev	W	1024	01000	013FF
4	RWw	1024	00000	003FF	↔	Specify Dev	W	1024	01400	017FF
5					↔					

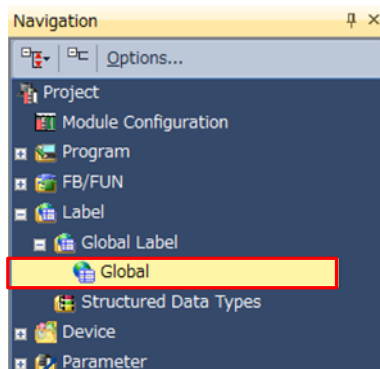


Appendix 3.3. Global Label Settings

Set the first master / local module, according to section “1.5. Global Label Settings”.

Global labels should be defined so that any label name used in the first module is not used in the second label.

(1) Select “Global label - Global” in the Project tab of the Navigation window.



(2) Set “M_RX3” remote output (RX).

Settings	Details
Label Name	Enter “M_RX3”.
Data Type	Select “Bit”.
Class	Select “VAR_GLOBAL”.
Assign (Device / Label)	Append the index register “Z9” to the start refresh device “X10A0” which was set in “Link Refresh Settings”. Enter “X10A0Z9” for this example.

(3) Set “M_RY3” remote output (RY).

Settings	Details
Label Name	Enter “M_RY3”.
Data Type	Select “Bit”.
Class	Select “VAR_GLOBAL”.
Assign (Device / Label)	Append the index register “Z8” to the start refresh device “Y10A0” which was set in “Link Refresh Settings”. Enter “Y10A0Z8” for this example.



(4) Set “M_RWw3” remote register (RWw).

Settings	Details
Label Name	Enter “M_RWw3”.
Data Type	Select “Word [Signed]”.
Class	Select “VAR_GLOBAL”.
Assign (Device / Label)	Append the index register “Z7” to the start refresh device “W1400” which was set in “Link Refresh Settings”. Enter “W1400Z7” for this example.

(5) Set “M_RWr3” remote register (RWr).

Settings	Details
Label Name	Enter “M_RWr3”.
Data Type	Select “Word [Signed]”.
Class	Select “VAR_GLOBAL”.
Assign (Device / Label)	Append the index register “Z6” to the start refresh device “W1000” which was set in “Link Refresh Settings”. Enter “W1000Z6” for this example.

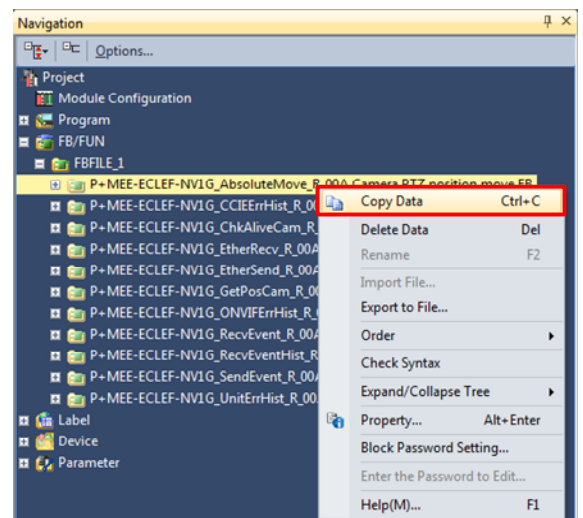
	Label Name	Data Type	Class	Assign (Device/Label)	Initial Value	Constant	Comment
1	M_RX	Bit	VAR_GLOBAL	X1000Z9			RX refresh device
2	M_RY	Bit	VAR_GLOBAL	Y1000Z8			RY refresh device
3	M_RWw	Word [Signed]	VAR_GLOBAL	W400Z7			RWw refresh device
4	M_RWr	Word [Signed]	VAR_GLOBAL	W0Z6			RWr refresh device
5	M_RX3	Bit	VAR_GLOBAL	X10A0Z9			RX3 refresh device
6	M_RY3	Bit	VAR_GLOBAL	Y10A0Z8			RY3 refresh device
7	M_RWw3	Word [Signed]	VAR_GLOBAL	W1400Z7			RWw3 refresh device
8	M_RWr3	Word [Signed]	VAR_GLOBAL	W1000Z6			RWr3 refresh device
9							



Appendix 3.4. Library Duplication (Copy)

(1) Copying a library

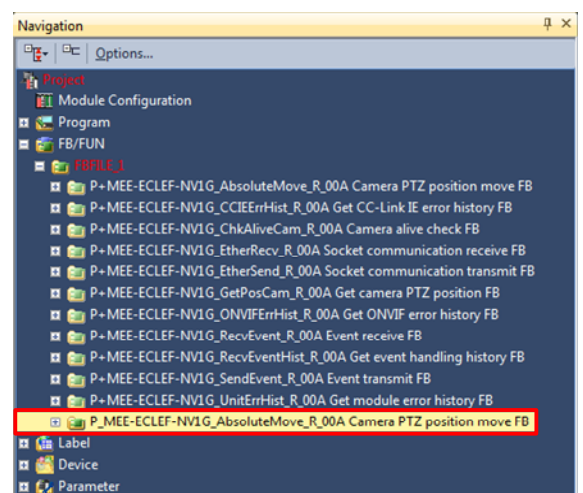
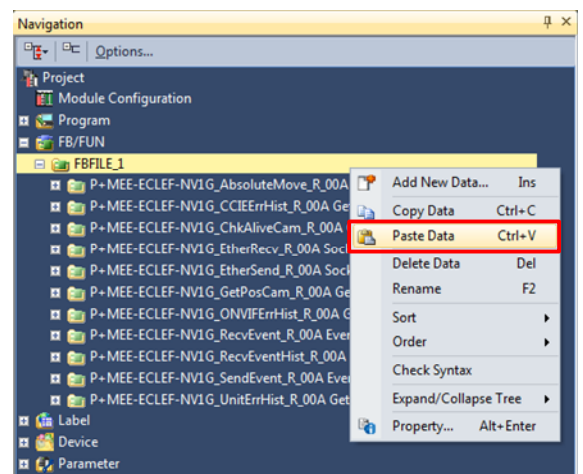
Select and copy (Copy Data) the required FB for the second master / local module in the Project tab of the Navigation window.



(2) Pasting a library

Paste the previously copied FB to "FBFILE_1" located in the Project tab of the Navigation window.

The FB name will automatically be added.



[Note]

The "+" in "P+..." string cannot be entered.

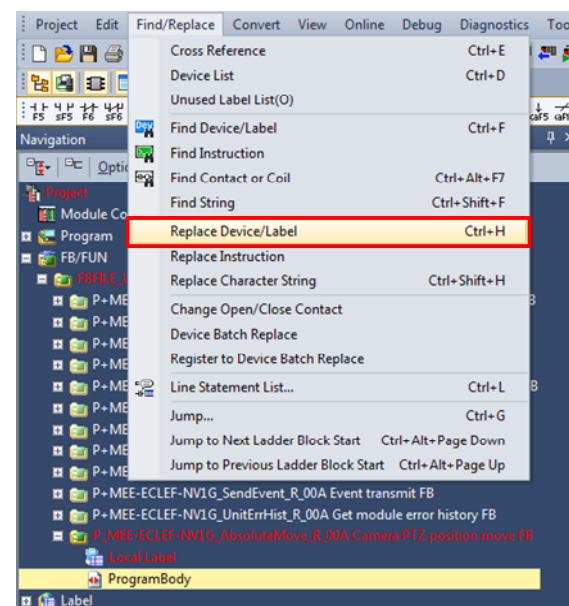
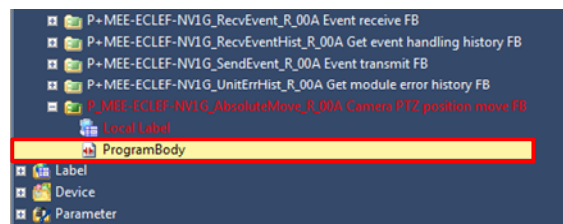
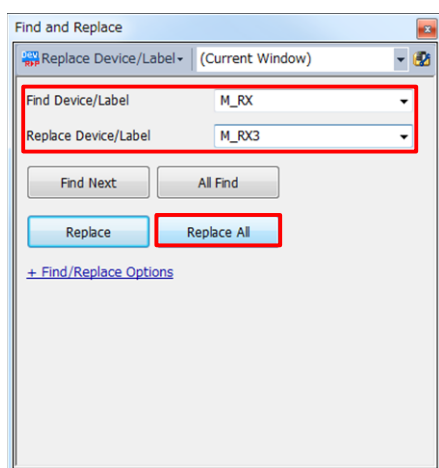


Appendix 3.5. Device Replacement

Open the “main program” of the added FB, select “Find / Replace” in the menu bar, select “Replace Device / Label”, and a “Find and Replace” window will be displayed.

Specify “Replace Device / Label” as “(Current window)”, “Find Device / Label” as “M_RX”, “Replace Device / Label” as “M_RX3”, and select “Replace All”.

Similarly, replace all “M_RY”, “M_RWw” and “M_RWr” devices with “M_RY3”, “M_RWw3” and “M_RWr3”.



The FB will become usable in the second master/local module with the above procedure.

[Note]

1. If there are duplicate FBs used in the second master / local module, the procedures in Appendix 3.4 and 3.5 should be repeated.
2. In cases where an FB is used in 2 or more master / local modules, set the “Global labels” being set, the “pasted data names” when pasting an FB, and the “replaced devices” when replacing devices, so that they are not duplicated with names being used in other master / local modules.

[Precautions]

When there are updates to the MELSOFT Library, the FB of the MELSOFT Library can be updated by importing the Library again, however, even if the FB which is to be used in 2 or more devices and created using the procedures in this section was imported again, updates will not be performed automatically.

Therefore, when updating FBs created using the procedures in this section, an update must be performed by redoing the operations in this section after the MELSOFT Library has been updated.



Appendix 4. Error Code List

Appendix 4.1. FB Error Code List

Error code (hexadecimal)	Error details	Treatment method
H100	CC-Link IE Field Network station number setting is outside 1 to 120.	Restart the FB after verifying the setting.
H101	The CC-Link IE Field Network station number set in the FB and the CC-Link IE Field Network station number set in “Network Configuration Settings” does not match.	Verify the following settings. - Network Configuration Settings Refer to section “1.4. CC-Link IE Field Network Master / Local Module Settings” part “(2) Basic Settings”. - i_wStationNo (CC-Link IE Field Network station number) setting value
H102	Camera number is outside 1 to 16.	Restart the FB after verifying the setting.
H103	Camera PTZ position number is outside 0 to 99.	
H104	Pan / tilt speed is outside 1 to 10.	
H105	Zoom speed is outside 1 to 10.	
H106	Event transmit access code is outside H0B and H0C.	
H107	Event receive number is outside 1 to 16.	
H108	Error history read start position is outside of 1 to 50.	
H109	Error history read points is outside 1 to 50.	
H10A	The sum of the error history read start position and the error history read points exceeds 51.	
H10B	Event handling history read start position is outside 1 and 50.	
H10C	Event handling history read points is outside 1 to 25.	
H10D	The sum of the event handling history start position and the event handling history read points exceeds 51.	
H10E	The port number of the transmit destination device is outside of 1 to 32767.	



Error code (hexadecimal)	Error details	Treatment method
H10F	The transmit data size is outside of 1 to 944 words.	Restart the FB after verifying the setting.
H200	An error has occurred in the Gateway Module.	Refer to the “CC-Link IE Field Network / ONVIF Network Gateway Module ECLEF-NV1G User’s Manual (Detailed Edition)”.
H201	The Gateway Module is not READY.	<ul style="list-style-type: none"> - Execute the FB again after the Gateway Module has completed setting up after power is applied. - If the IP LED is red, the IP address cannot be acquired from the DHCP server. Network settings and connections should be verified.
H202	Camera warning is ON.	Verify the error through the maintenance screen of the Gateway Configuration Tool.
H203	The camera is in a BUSY status.	<p>Execute the FB again after a little while.</p> <p>Turn OFF the execution command of the camera PTZ position move FB which is specifying the same camera number.</p>
H204	An error has occurred in the transient transmission.	Execute the FB again after verifying the connection of the Gateway Module with the CC-Link IE Field Network (master station), and verifying the settings.
H400	<p>The FB was stopped due to i_bEN (Execution command) being turned OFF during execution.</p> <p>* Only output for 1 scan</p>	When executing the FB again, turn i_bEN (Execution command) ON after o_bOK (Normal completion) and o_bErr (Error completion) are both OFF.



Appendix 4.2. Device Error Code List

Error code (hexadecimal)	Error details	Treatment method
H300 - H341	IP address error	Refer to the “CC-Link IE Field Network / ONVIF Network Gateway Module ECLEF-NV1G User’s Manual (Detailed Edition)”.
H400 - H441	Data transmit error	
H500 - H5FF	Get NVT information error	
H600 - H6FF	Camera warning	



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