

MITSUBISHI



GRAPHIC OPERATION TERMINAL

GOT1000

GOT1000 Series Gateway Functions Manual



● SAFETY PRECAUTIONS ●

(Always read these instructions before using this equipment.)

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

The precautions given in this manual are concerned with this product.

In this manual, the safety precautions are ranked as "DANGER" and "CAUTION".



DANGER

Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.



CAUTION

Indicates that incorrect handling may cause hazardous conditions, resulting in medium or slight personal injury or physical damage.

Note that the  caution level may lead to a serious accident according to the circumstances. Always follow the instructions of both levels because they are important to personal safety.

Please save this manual to make it accessible when required and always forward it to the end user.

[Precautions for test operation]



DANGER

- Before starting the test operation for the system monitor or ladder monitor (bit device ON/OFF, word device present value changing, timer/counter set value/present value changing, buffer memory present value changing), please read the manual carefully to fully understand the operation methods.

For devices that perform significant operations for the system, never perform test operation to change data.

Doing so can cause accidents due to false outputs or malfunctions.

REVISIONS

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

Print Date	* Manual Number	Revision
Mar., 2005	SH(NA)-080545ENG-A	First edition
Oct., 2005	SH(NA)-080545ENG-B	Compatible with the GT Designer2 Version 2.18U. <div style="border: 1px solid black; padding: 2px;">Partial corrections</div> Chapter 1, Section 1.1, 2.2, 2.3, Chapter 3, Section 4.1.1, 4.1.3, 4.1.4, 4.2.2, 4.3, 4.5, 5.4, 5.5, 7.1, 7.2, 7.3.2, Chapter 6 to 7 <div style="border: 1px solid black; padding: 2px;">Additions</div> Section 1.3, Chapter 6, Section 7.5, App. 1
Jun., 2006	SH(NA)-080545ENG-C	Compatible with the GT Designer2 Version 2.32J. <div style="border: 1px solid black; padding: 2px;">Partial corrections</div> Section 2.2, Chapter 3, Section 4.1.4, Chapter 7, Section 7.3 <div style="border: 1px solid black; padding: 2px;">Partial additions</div> Section 1.3, 6.3.2, App. 1
Nov., 2006	SH(NA)-080545ENG-D	Compatible with the GT Designer2 Version 2.43V <div style="border: 1px solid black; padding: 2px;">Partial additions</div> Section 2.2, 4.1.4, 6.3.2
Feb., 2007	SH(NA)-080545ENG-E	Compatible with the GT Designer2 Version 2.47Z <div style="border: 1px solid black; padding: 2px;">Partial corrections</div> Section 2.2
May, 2007	SH(NA)-080545ENG-F	Compatible with the GT Designer2 Version 2.58L <div style="border: 1px solid black; padding: 2px;">Partial corrections</div> Section 4.1.4
Aug., 2007	SH(NA)-080545ENG-G	Compatible with the GT Designer2 Version 2.63R <div style="border: 1px solid black; padding: 2px;">Partial corrections</div> Section 2.2
Dec., 2007	SH(NA)-080545ENG-H	Compatible with the GT Designer2 Version 2.73B <div style="border: 1px solid black; padding: 2px;">Partial corrections</div> Section 2.2, 4.1.4
Feb., 2008	SH(NA)-080545ENG-I	Compatible with the GT Designer2 Version 2.77F <div style="border: 1px solid black; padding: 2px;">Partial corrections</div> Section 2.2, 4.1.4
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(Continued to next page)

Print Date	* Manual Number	Revision
Oct., 2010	SH(NA)-080545ENG-K	<div data-bbox="625 221 836 255" style="border: 1px solid black; padding: 2px;">Partial corrections</div> ABOUT MANUALS

Japanese Manual Version SH-080542-M

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INTRODUCTION

Thank you for choosing the Mitsubishi Graphic Operation Terminal (Mitsubishi GOT).

Read this manual and make sure you understand the functions and performance of the GOT thoroughly in advance to ensure correct use.

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ABOUT MANUALS

The following manuals are also related to this product.
If necessary, order them by quoting the details in the table below.

Related Manuals

Manual Name	Manual Number (Model Code)
GT Designer2 Version2 Basic Operation/Data Transfer Manual (For GOT1000 Series) Describes methods of the GT Designer2 installation operation, basic operation for drawing and transmitting data to GOT1000 series. (Sold separately) *1	SH-080529ENG (1D7M24)
GT Designer2 Version2 Screen Design Manual (For GOT1000 Series) 1/3 GT Designer2 Version2 Screen Design Manual (For GOT1000 Series) 2/3 GT Designer2 Version2 Screen Design Manual (For GOT1000 Series) 3/3 Describes specifications and settings of the object functions used in GT Designer2. (Sold separately) *1	SH-080530ENG (1D7M25)
GOT1000 Series Connection Manual 1/3 GOT1000 Series Connection Manual 2/3 GOT1000 Series Connection Manual 3/3 Describes system configurations of the connection method applicable to GOT1000 series and cable creation method. (Sold separately) *1	SH-080532ENG (1D7M26)
GT16 User's Manual (Hardware) Describes the GT16 hardware-relevant contents, including the specifications, part names, mounting, power supply wiring, external dimensions, and option devices. (Sold separately) *1	SH-080928ENG (1D7MD3)
GT16 User's Manual (Basic Utility) Describes the GT16 utility-relevant contents, including the screen settings, operation method settings, program/data management, and self check function. (Sold separately) *1	SH-080929ENG (1D7MD4)
GT15 User's Manual Describes the GT15 hardware-relevant content such as part names, external dimensions, mounting, power supply wiring, specifications, and introduction to option devices. (Sold separately) *1	SH-080528ENG (1D7M23)
MX Component Version 3 Operating Manual Describes the setting and operation methods of each utility on MX Component. (Sold separately)	SH-080271 (13JU32)
MX Component Version 3 Programming Manual Describes the programming procedures, details and error codes for ACT control. (Sold separately)	SH-080272 (13JF66)

*1 The manual in PDF-format is included in the GT Works2 and GT Designer2 products.

ABBREVIATIONS AND GENERIC TERMS

Abbreviations and generic terms used in this manual are as follows:

■ GOT

Abbreviations and generic terms		Description	
	GT SoftGOT1000	Abbreviation of GT SoftGOT1000	
	GT1695	GT1695M-X	Abbreviation of GT1695M-XTBA, GT1695M-XTBD
	GT1685	GT1685M-S	Abbreviation of GT1685M-STBA, GT1685M-STBD
	GT16□□, GT16	Abbreviation of GT1695, GT1685	
	GT1595	GT1595-X	Abbreviation of GT1595-XTBA, GT1595-XTBD
GOT1000 Series	GT1585	GT1585V-S	Abbreviation of GT1585V-STBA, GT1585V-STBD
		GT1585-S	Abbreviation of GT1585-STBA, GT1585-STBD
	GT157□	GT1575V-S	Abbreviation of GT1575V-STBA, GT1575V-STBD
		GT1575-S	Abbreviation of GT1575-STBA, GT1575-STBD
		GT1575-V	Abbreviation of GT1575-VTBA, GT1575-VTBD
		GT1575-VN	Abbreviation of GT1575-VNBA, GT1575-VNBD
	GT156□	GT1572-VN	Abbreviation of GT1572-VNBA, GT1572-VNBD
		GT1565-V	Abbreviation of GT1565-VTBA, GT1565-VTBD
	GT156□	GT1562-VN	Abbreviation of GT1562-VNBA, GT1562-VNBD
		GT155□	GT1555-V
	GT1555-Q		Abbreviation of GT1555-QTBD, GT1555-QSBD
	GT1550-Q		Abbreviation of GT1550-QLBD
	GT15□□, GT15		Abbreviation of GT1595, GT1585, GT157□, GT156□, GT155□
	GT115□	GT1155-Q	Abbreviation of GT1155-QTBDQ, GT1155-QSBDQ, GT1155-QTBDA, GT1155-QSBDA, GT1155-QTBD, GT1155-QSBD
		GT1150-Q	Abbreviation of GT1150-QLBDQ, GT1150-QLBDA, GT1150-QLBD
	GT11 Handy GOT	GT1155HS-Q	Abbreviation of GT1155HS-QSBD
		GT1150HS-Q	Abbreviation of GT1150HS-QLBD
	GT11□□, GT11		Abbreviation of GT115□, GT11 Handy GOT
	GT105□	GT1055-Q	Abbreviation of GT1055-QSBD
		GT1050-Q	Abbreviation of GT1050-QBBD
GT1030		Abbreviation of GT1030-LBD, GT1030-LBD2, GT1030-LBDW, GT1030-LBDW2	
GT1020		Abbreviation of GT1020-LBD, GT1020-LBD2, GT1020-LBL, GT1020-LBDW, GT1020-LBDW2, GT1020-LBLW	
GT10□□, GT10		Abbreviation of GT105□, GT1030, GT1020	
GOT900 Series		Abbreviation of GOT-A900 series, GOT-F900 series	
GOT800 Series		Abbreviation of GOT-800 series	

■ Communication unit

Abbreviations and generic terms	Description
Bus connection unit	GT15-QBUS, GT15-QBUS2, GT15-ABUS, GT15-ABUS2, GT15-75QBUSL, GT15-75QBUS2L, GT15-75ABUSL, GT15-75ABUS2L
Serial communication unit	GT15-RS2-9P, GT15-RS4-9S, GT15-RS4-TE
RS-422 conversion unit	GT15-RS2T4-9P, GT15-RS2T4-25P
Ethernet communication unit	GT15-J71E71-100
MELSECNET/H communication unit	GT15-J71LP23-25, GT15-J71BR13
MELSECNET/10 communication unit	GT15-75J71LP23-Z ^{*1} , GT15-75J71BR13-Z ^{*2}
CC-Link IE controller network communication unit	GT15-J71GP23-SX
CC-Link communication unit	GT15-J61BT13, GT15-75J61BT13-Z ^{*3}
Interface converter unit	GT15-75IF900

*1 A9GT-QJ71LP23 + GT15-75IF900 set

*2 A9GT-QJ71BR13 + GT15-75IF900 set

*3 A8GT-J61BT13 + GT15-75IF900 set

■ Option unit

Abbreviations and generic terms	Description	
Printer unit	GT15-PRN	
Video/RGB unit	Video input unit	GT16M-V4, GT15V-75V4
	RGB input unit	GT16M-R2, GT15V-75R1
	Video/RGB input unit	GT16M-V4R1, GT15V-75V4R1
	RGB output unit	GT16M-ROUT, GT15V-75ROUT
Multimedia unit	GT16M-MMR	
CF card unit	GT15-CFCD	
CF card extension unit ^{*1}	GT15-CFEX-C08SET	
External I/O unit	GT15-DIO, GT15-DIOR	
Sound output unit	GT15-SOUT	

*1 GT15-CFEX + GT15-CFEXIF + GT15-C08CF set.

Option

Abbreviations and generic terms		Description			
Memory card	CF card	GT05-MEM-16MC, GT05-MEM-256MC	GT05-MEM-32MC,	GT05-MEM-64MC,	GT05-MEM-128MC,
Memory card adaptor		GT05-MEM-ADPC			
Option function board		GT16-MESB, GT15-QFNB32M,	GT15-FNB, GT15-QFNB48M,	GT15-QFNB, GT15-MESB48M,	GT15-QFNB16M, GT11-50FNB
Battery		GT15-BAT,	GT11-50BAT		
Protective Sheet		GT16-90PSCB,	GT16-90PSGB,	GT16-90PSCW,	GT16-90PSGW,
		GT16-80PSCB,	GT16-80PSGB,	GT16-80PSCW,	GT16-80PSGW,
		GT15-90PSCB,	GT15-90PSGB,	GT15-90PSCW,	GT15-90PSGW,
		GT15-80PSCB,	GT15-80PSGB,	GT15-80PSCW,	GT15-80PSGW,
		GT15-70PSCB,	GT15-70PSGB,	GT15-70PSCW,	GT15-70PSGW,
		GT15-60PSCB,	GT15-60PSGB,	GT15-60PSCW,	GT15-60PSGW,
		GT15-50PSCB,	GT15-50PSGB,	GT15-50PSCW,	GT15-50PSGW,
		GT11-50PSCB,	GT11-50PSGB,	GT11-50PSCW,	GT11-50PSGW,
		GT11H-50PSC,			
GT10-50PSCB,	GT10-50PSGB,	GT10-50PSCW,	GT10-50PSGW,		
GT10-30PSCB,	GT10-30PSGB,	GT10-30PSCW,	GT10-30PSGW,		
GT10-20PSCB,	GT10-20PSGB,	GT10-20PSCW,	GT10-20PSGW		
Protective cover for oil		GT05-90PCO, GT05-50PCO	GT05-80PCO,	GT05-70PCO,	GT05-60PCO,
USB environmental protection cover		GT16-UCOV,	GT15-UCOV,	GT11-50UCOV	
Stand		GT15-90STAND, GT05-50STAND	GT15-80STAND,	GT15-70STAND,	A9GT-50STAND,
Attachment		GT15-70ATT-98, GT15-60ATT-87,	GT15-70ATT-87, GT15-60ATT-77,	GT15-60ATT-97, GT15-50ATT-95W,	GT15-60ATT-96, GT15-50ATT-85
Backlight		GT16-90XLTT, GT15-70SLTT, GT15-60VLTN	GT16-80SLTT, GT15-70VLTT,	GT15-90XLTT, GT15-70VLTN,	GT15-80SLTT, GT15-60VLTT,
Multi-color display board		GT15-XHNB,	GT15-VHNB		
Connector conversion box		GT11H-CNB-37S			
Emergency stop sw guard cover		GT11H-50ESCOV			
Memory loader		GT10-LDR			
Memory board		GT10-50FMB			

Software

Abbreviations and generic terms	Description
GT Works2 Version□	SW□D5C-GTWK2-E, SW□D5C-GTWK2-EV
GT Designer2 Version□	SW□D5C-GTD2-E, SW□D5C-GTD2-EV
GT Designer2	Abbreviation of screen drawing software GT Designer2 for GOT1000/GOT900 series
GT Converter2	Abbreviation of data conversion software GT Converter2 for GOT1000/GOT900 series
GT Simulator2	Abbreviation of screen simulator GT Simulator 2 for GOT1000 / GOT900 series
GT SoftGOT1000	Abbreviation of monitoring software GT SoftGOT1000
GT SoftGOT2	Abbreviation of monitoring software GT SoftGOT2
GX Developer	Abbreviation of SW□D5C-GPPW-E(-EV)/SW□D5F-GPPW-E type software package
GX Simulator	Abbreviation of SW□D5C-LLT-E(-EV) type ladder logic test tool function software packages (SW5D5C-LLT (-EV) or later versions)
Document Converter	Abbreviation of document data conversion software Document Converter for GOT1000 series
PX Developer	Abbreviation of SW□D5C-FBDQ-E type FBD software package for process control

■ License key (for GT SoftGOT1000)

Abbreviations and generic terms	Description
License	GT15-SGTKEY-U, GT15-SGTKEY-P

■ License key (for GT SoftGOT2)

Abbreviations and generic terms	Description
License key	A9GTSOFT-LKEY-P (For DOS/V PC)
License key FD	SW5D5F-SGLKEY-J (For PC CPU module)

■ Others

Abbreviations and generic terms	Description	
OMRON PLC	Abbreviation of PLC manufactured by OMRON Corporation	
KEYENCE PLC	Abbreviation of PLC manufactured by KEYENCE CORPORATION	
KOYO EI PLC	Abbreviation of PLC manufactured by KOYO ELECTRONICS INDUSTRIES CO., LTD.	
SHARP PLC	Abbreviation of PLC manufactured by Sharp Corporation	
JTEKT PLC	Abbreviation of PLC manufactured by JTEKT Corporation	
TOSHIBA PLC	Abbreviation of PLC manufactured by TOSHIBA CORPORATION	
TOSHIBA MACHINE PLC	Abbreviation of PLC manufactured by TOSHIBA MACHINE CO., LTD.	
HITACHI IES PLC	Abbreviation of PLC manufactured by Hitachi Industrial Equipment Systems Co., Ltd.	
HITACHI PLC	Abbreviation of PLC manufactured by Hitachi, Ltd.	
FUJI FA PLC	Abbreviation of PLC manufactured by Fuji Electric FA Components & Systems Co., Ltd.	
MATSUSHITA PLC	Abbreviation of PLC manufactured by Matsushita Electric Works, Ltd.	
YASKAWA PLC	Abbreviation of PLC manufactured by YASKAWA Electric Corporation	
YOKOGAWA PLC	Abbreviation of PLC manufactured by Yokogawa Electric Corporation	
ALLEN-BRADLEY PLC	Abbreviation of Allen-Bradley PLC manufactured by Rockwell Automation, Inc.	
GE FANUC PLC	Abbreviation of PLC manufactured by GE Fanuc Automation Corporation	
LS IS PLC	Abbreviation of PLC manufactured by LS Industrial Systems Co., Ltd.	
SCHNEIDER PLC	Abbreviation of PLC manufactured by Schneider Electric SA	
SIEMENS PLC	Abbreviation of PLC manufactured by Siemens AG	
Temperature controller	OMRON temperature controller	Abbreviation of temperature controller manufactured by OMRON Corporation
	SHINKO indicating controller	Abbreviation of temperature controller manufactured by Shinko Technos Co., Ltd.
	CHINO controller	Abbreviation of temperature controller manufactured by CHINO CORPORATION
	FUJI SYS temperature controller	Abbreviation of temperature controller manufactured by Fuji Electric Systems Co., Ltd.
	YAMATAKE temperature controller	Abbreviation of temperature controller manufactured by Yamatake Corporation
	YOKOGAWA temperature controller	Abbreviation of temperature controller manufactured by Yokogawa Electric Corporation
	RKC temperature controller	Abbreviation of temperature controller manufactured by RKC INSTRUMENT INC.
PC CPU module	Abbreviation of PC CPU Unit manufactured by CONTEC CO., LTD	
GOT (server)	Abbreviation of GOTs that use the server function	
GOT (client)	Abbreviation of GOTs that use the client function	
Windows® font	Abbreviation of TrueType font and OpenType font available for Windows® (Differs from the True Type fonts settable with GT Designer2)	
Intelligent function module	Indicates the modules other than the PLC CPU, power supply module and I/O module that are mounted to the base unit.	
MODBUS® /TCP	Generic term for the protocol designed to use MODBUS® protocol messages on a TCP/IP network.	

HOW TO READ THIS MANUAL

Following symbols are used in this manual.

4.3 Setting Method

To use the server function, perform server setting (☞ 1 Server setting in this section).
 To use the client function, perform client setting (☞ 2 Client setting in this section).

1 Server setting
 In the server setting, set the gateway device to be used by the GOT (server) and the controller device to be assigned to that gateway device.

(1) Server function setting method
 (a) Operation procedure
 When either of the operations below is performed, the Gateway Server dialog box opens.

- Choose the [Common] → [Gateway] → [Server] menu.
- Double-click (Gateway Server) in the workspace.

(b) Gateway Server dialog box

Indicates the items in which the detailed explanation is described (manual, chapter, section, item of the manual).

Menu and items are differentiated with parentheses.

- [] : refers to menu in menu barrefers, dialog box item or GOT utility menu.
- : refers to dialog box buttons or PC keyboard.

Hint! To further increase efficiency
 By reserving together in advance the PLC devices to be used for the server and client functions in the system design stage as shown in (a) below, the number of times the GOT (server) accesses the PLC is reduced to improve the processing speed.

(a) When PLC devices are assigned together

Gateway Server				
EG Device Layout				
	EG Device	Type	PLC Device	Points
1	EG 0	Word	D200	100

The GOT access the PLC once to read/write the whole 100 points.

- 1 Change the station No.
- 2 The value displayed at the GOT (server) is updated according to the changing of the station No.
- 3 Since the changing of the station No. is not reflected to the assignment of gateway devices, the script function reads out the value at EG0 of PLC (station No. 0) to D100.
- 4 Changing of the station No. is disregarded and the value displayed at the GOT (client) is not updated.

4 - 21 4.5 Precautions

Point Refers to the information required.

Hint! Refers to information useful for operation.

Remark Refers to the supplementary explanations for reference.

1 → 2 → 3 ...

Indicates the operation steps.

*Since the above page was created for explanation purpose, it differs from the actual page.

ARROW SYMBOLS USED IN ILLUSTRATIONS

Arrow symbols used in the illustrations in this manual indicate the type of communications as below:

Symbol	Description
	Indicates communications in which a GOT monitors the controllers.
	Indicates communications in the communication format of individual PLC makers.
	Indicates communications that uses the server and client functions.

1. OVERVIEW

This manual explains the gateway functions that can be performed on the GT16 or GT15.

The gateway functions include the functions below to support remote monitoring and remote maintenance of the production site from the office.

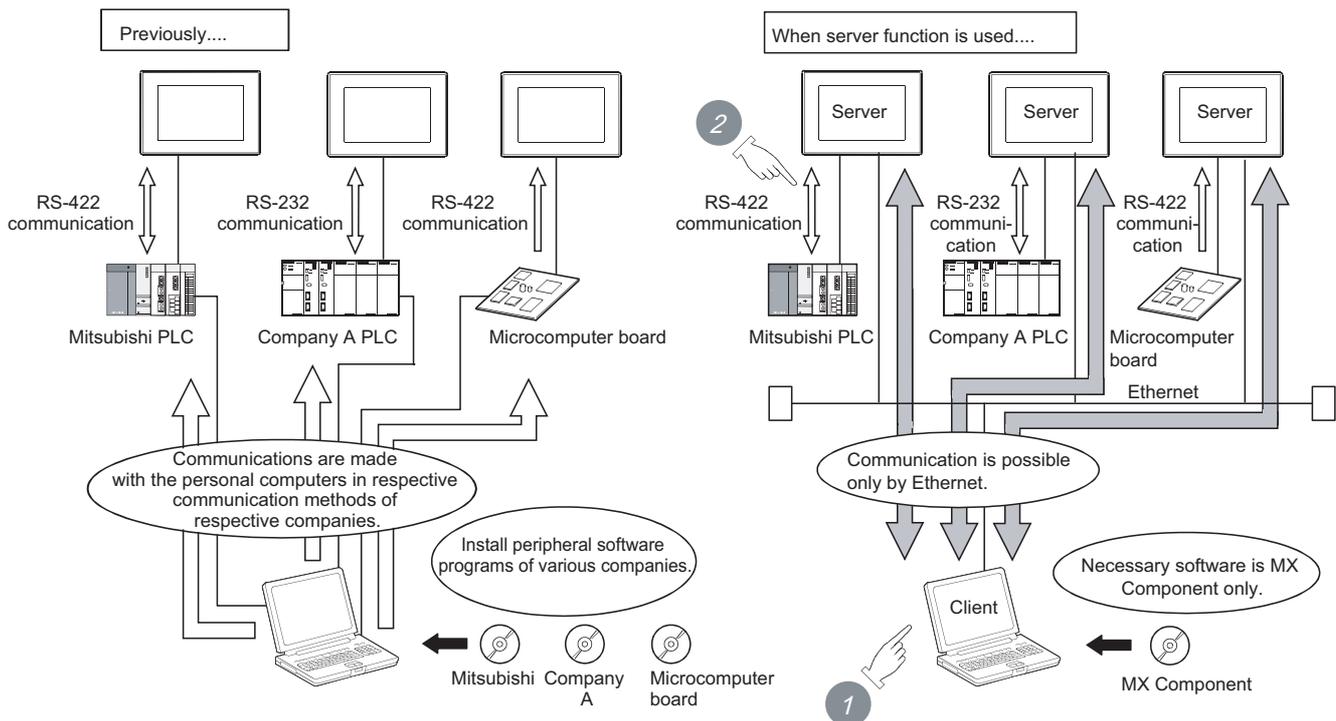
- Server function
- Client function
- Mail send function
- FTP server function

1.1 Features of Server and Client Functions

1 Collection of data by personal computer (server)

By monitoring the GOTs (server), the personal computer (MX Component) can indirectly read/write data from/to the devices of the controllers being monitored by the GOTs.

The server function enables data to be read/written with only the MX Component even if the controller of a different maker is monitored, and the communication method is standardized to Ethernet.



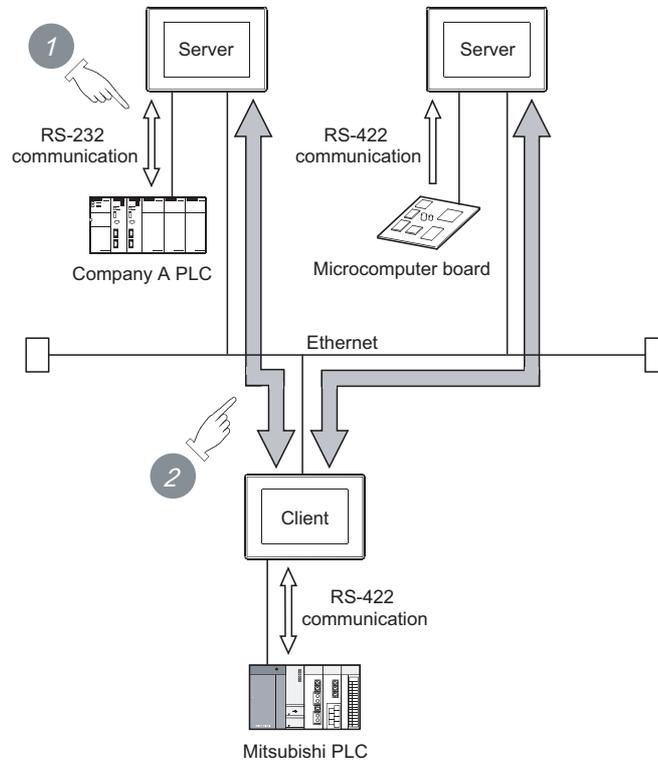
<Processing when writing data from a personal computer to controller devices>

- 1 Data is written to the gateway device of the GOT (server) by running the user program, which is created by MX Component.
- 2 The data is then written to the controller device assigned to the gateway device.

2 Monitoring of other GOTs from client GOT (server and client)

By monitoring the GOTs (server), the GOT (client) can indirectly read/write data from/to the devices of the controllers being monitored by the GOTs (server).

Use of the client function enables data to be read/written indirectly from/to the PLC CPUs of various makers that are different from the maker of the controller connected to the GOT (client).

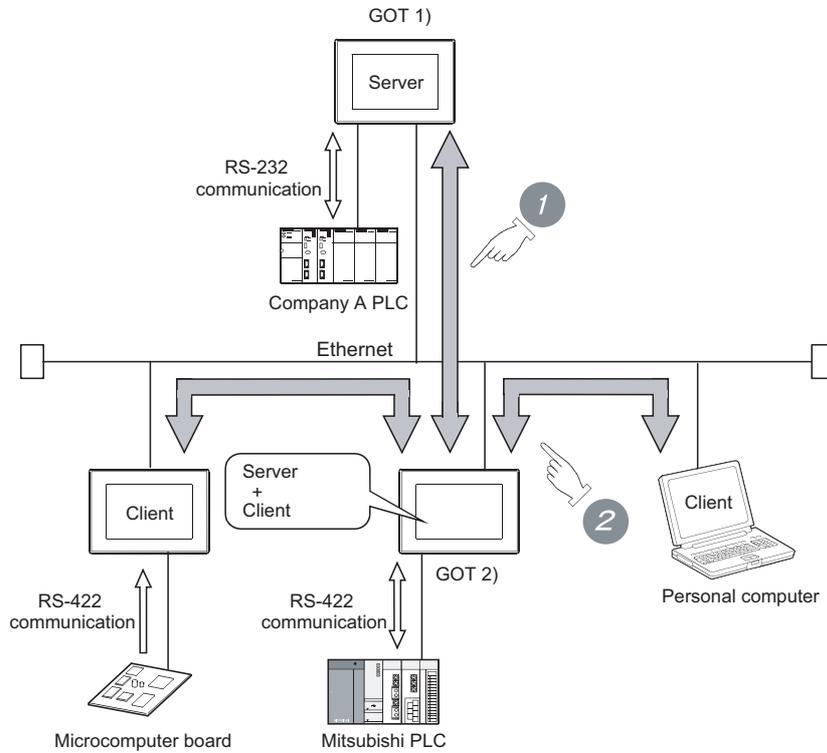


<Processing when reading data by GOT (client) from controller devices>

- 1 The GOT (server) monitors the devices of controller.
- 2 The GOT (client) can indirectly read data from the devices of the controller, monitored as explained in 1, by monitoring the gateway device of the GOT (server).

3 Simultaneous use of the server and client functions

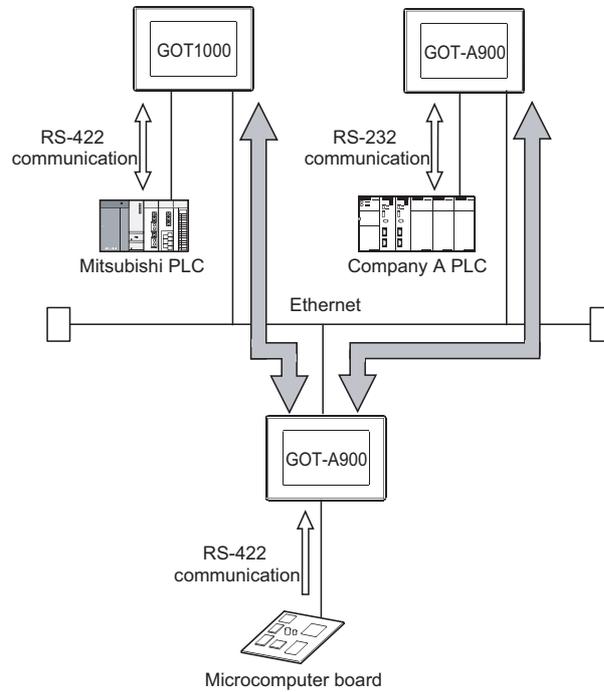
Setting of the server and client functions to a single GOT enables the GOT to send data to the personal computer (client) while collecting data from other GOT (server).



- 1 Using the client function, GOT 2) collects data from GOT 1).
- 2 The client GOT or the personal computer sends read/write request to GOT 2) (server).

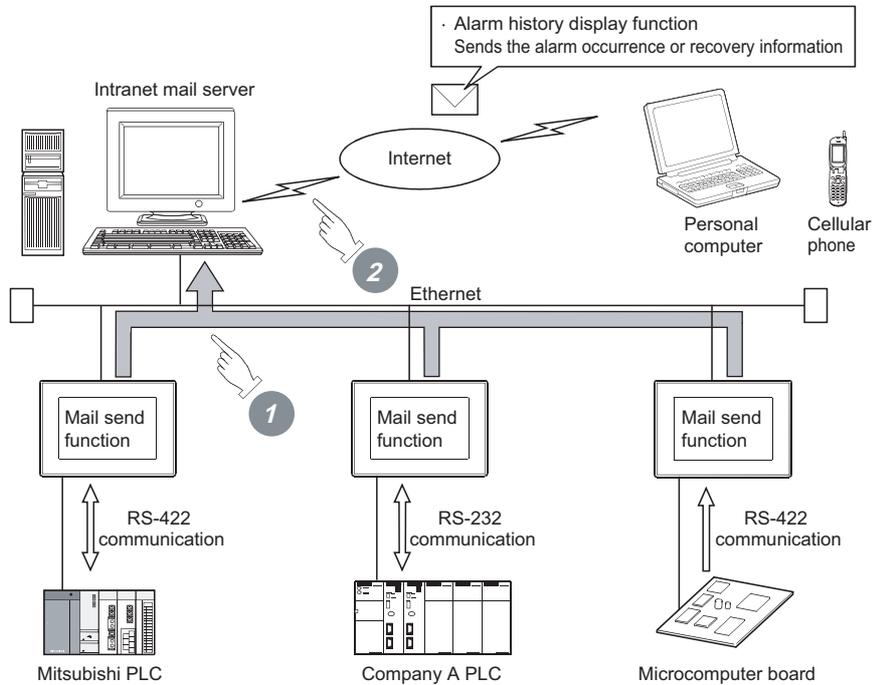
4 Communication enabled between GOT1000 and GOT-A900

In the system configured using GOT-A900s, it is possible to add a GOT1000 to the system or also replace a GOT-A900 with a GOT1000.



1.2 Features of Mail Send Function

Using the alarm history display function, you can send the occurrence or recovery information of an error to a computer or cellular phone by mail at the time of the occurrence or the recovery from an error.

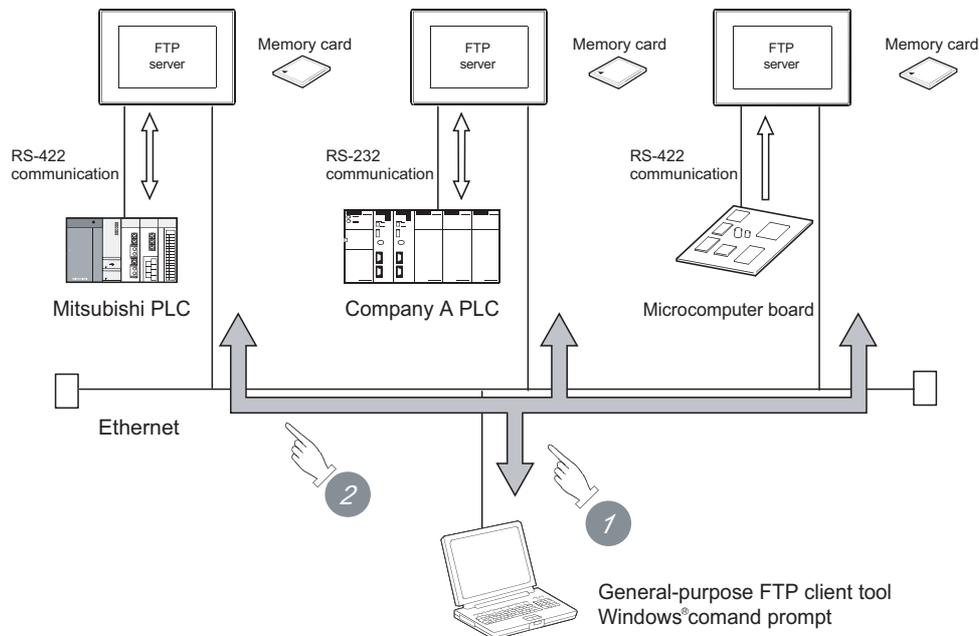


- 1 The GOT sends the mail send request to the intranet mail server using the alarm history display function.
- 2 In response to the request sent from the GOT, the intranet mail server sends mail to a computer or cellular phone.

1.3 Features of FTP Server Function

1 Transferring files

Saved files (recipe data, alarm history data, image data, and binary format files) can be transferred between a personal computer and the GOT.



- 1 Read recipe data (CSV files), alarm history data (CSV files) and image data (BMP/JPEG files) to a personal computer.

By using gateway common control (GS400.b8), binary format files (*.G1 □) can be read to a personal computer.

Note that reading of the following files is not allowed.

- *.G1
- *.G1D

For gateway common control (GS400), refer to the following.

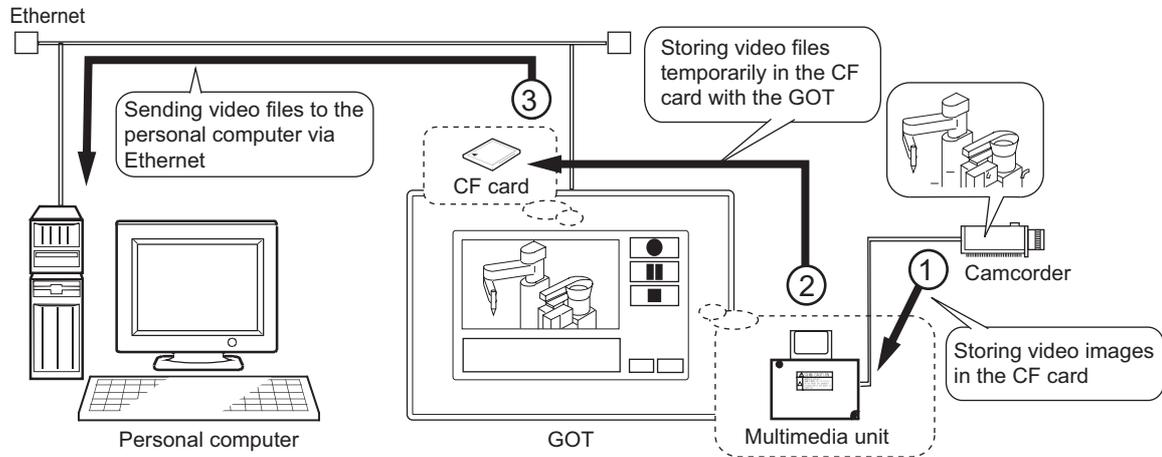
6.3.2 (4) Extensions

7.2 (2) Write device

- 2 Write recipe data (CSV files) and image data (BMP/JPEG files) to the GOT.

2 Connecting with multimedia interaction tool

With the multimedia interaction tool installed on the personal computer, the personal computer can receive video files or alarm log files sent from the GOT using the FTP server function.



For details of the multimedia interaction tool, refer to the following manuals.

- For how to use the multimedia interaction tool

☞ GT Designer 2 Version □ Screen Design Manual

- For connection with the multimedia interaction tool

☞ GOT1000 Series Connection Manual

2. SYSTEM CONFIGURATION

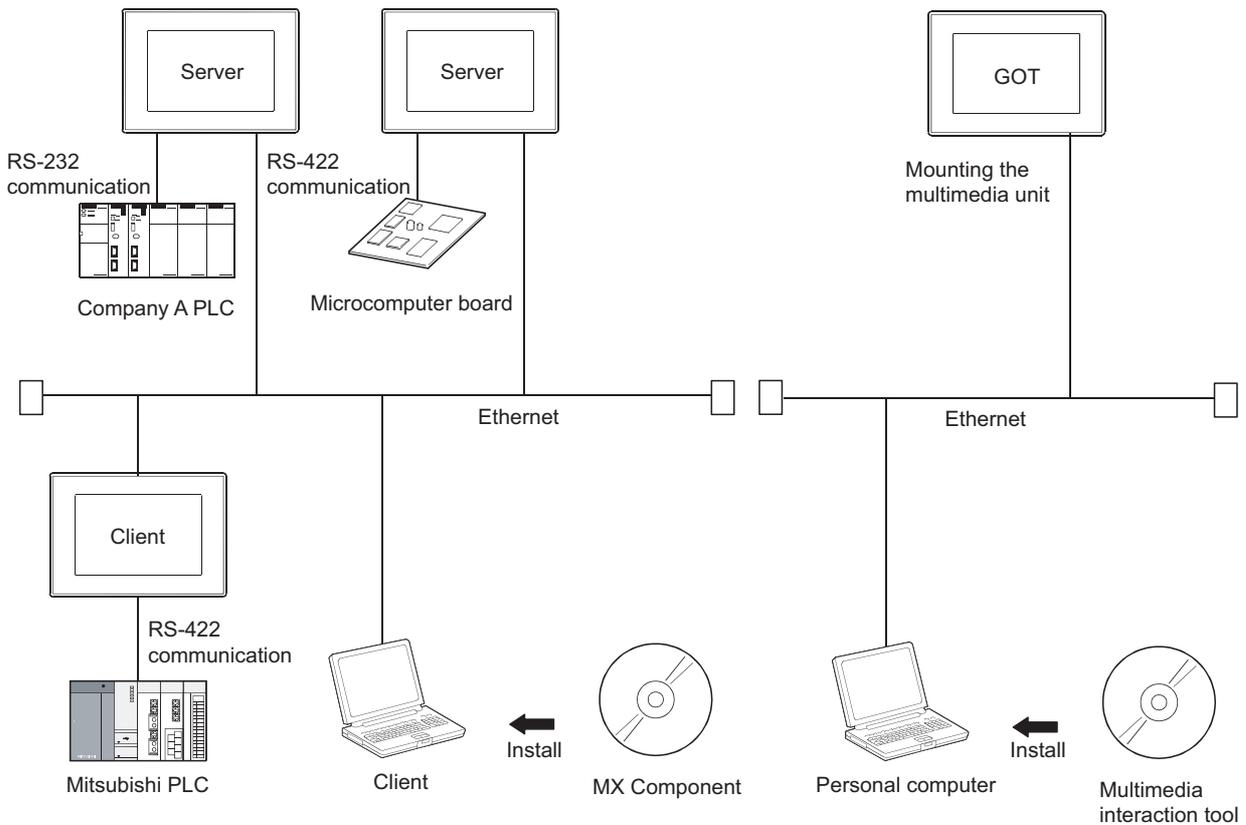
This chapter describes the system configuration of the gateway system.

2.1 System Configuration of Gateway Functions

The illustration below shows how the system is configured when the gateway function is used.

(1) FTP server function

(2) Multimedia interaction tool



Refer to the following manual for details of connections between a GOT and controller or personal computer.

 GOT1000 Series Connection Manual

Point

(1) Available connections for the gateway function

The gateway function cannot be used depending on connection type. Refer to the following manual for connection forms which is available / N/A for the gateway function.

 2.2 Types of Controller to GOT Connection

(2) Data accessing method using the server/client function

The server/client function allows the GOT (client) or personal computer (MX Component) to indirectly access the data (device) of the PLC or the GOT (client) by accessing the gateway device of the GOT (server).

2.2 Types of Controller to GOT Connection

GOTs that can use the gateway functions are indicated below based on connection forms.

Refer to the following manuals for information about the system configuration when using gateway functions.

 GOT1000 Series Connection Manual

○: Usable △: Usable under some restrictions ✕: Unusable

Connection		GT16/GT15
MITSUBISHI PLC connection*4	Bus connection	○
	Direct CPU connection	○
	Computer link connection	○
	MELSECNET/H connection (PLC to PLC network)	○
	MELSECNET/10 connection (PLC to PLC network)	△*1
	CC-Link IE controller network connection	○
	CC-Link connection (Intelligent device station)	△*2*3
	CC-Link connection (Via G4)	○
	Ethernet connection	○
Third party PLC connection	Serial connection	△*4
	Ethernet connection	○
	MODBUS®/TCP connection	○
Microcomputer connection	○	
Temperature controller connection	△*4	
Inverter connection	✕	
Servo amplifier connection	✕	
Robot controller connection*6	○	
CNC connection*7	Direct CPU connection	○
	MELSECNET/H connection (PLC to PLC network)	✕
	MELSECNET/10 connection (PLC to PLC network)	△*1
	CC-Link connection (Intelligent device station)	△*2
	Ethernet connection	○

*1 When using the MELSECNET/10 connection, use a MELSECNET/H communication unit. The MELSECNET/10 communication unit is inapplicable.

*2 When using the CC-Link communication, use a CC-Link communication unit (GT15-J61BT13). The CC-Link communication unit (GT15-75J61BR13-Z) is inapplicable.

*3 The GT16 is applicable to the CC-Link (ID) Ver.2 only.

*4 When connected to either of the following equipment, the server function and client function cannot be used.
 ・ JTEKT PLC ・ SHINKO indicating controller

*5 Including connection to the motion controller CPU (Q series and A series), CNC C70, and CRnQ-700

*6 Applicable to the CRnD-700 only. For the CRnQ-700, refer to the above Mitsubishi PLC connection.

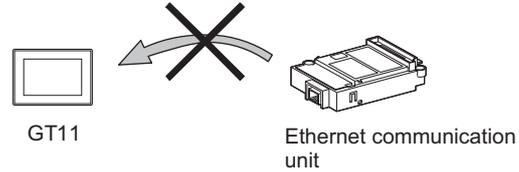
*7 Applicable to the MELDAS C6/C64 only. For the CNC C70, refer to the above Mitsubishi PLC connection.

Remark

Examples of connections that do not allow the use of the gateway functions

(Example 1) When using GT11

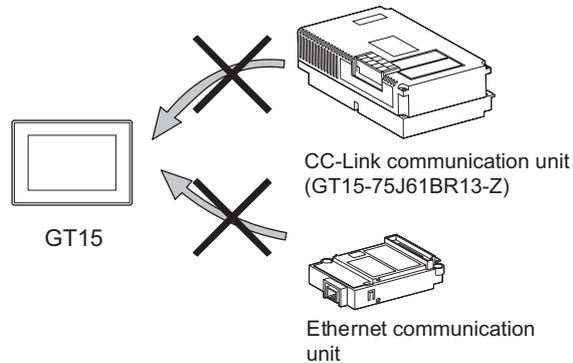
Since the Ethernet communication unit cannot be mounted, the gateway functions cannot be used.



(Example 2) When using GT15

Since the CC-Link communication unit (GT15-75J61BR13-Z) cannot be mounted to a GOT together with the Ethernet communication unit, the gateway functions cannot be used.

When using CC-Link and Ethernet communication units together, use a CC-Link communication unit (GT15-J61BT13).



2.3 Required Devices, Software and Option OS

1 Required devices and software

GOT devices and software necessary for using the gateway functions are indicated below:

(1) GT16

Application	Required Device / Software	Model
To execute the gateway functions with GOT	None	-
To connect GOT to the Ethernet system	Built-in Ethernet interface	-
To connect GOT to controller	 GOT1000 Series Connection Manual	
To set the gateway functions	Server, Client, Mail	GT Designer2 Version2.07H or later -
	FTP	GT Designer2 Version2.17T or later -
		CF card *1

*1 This is required when transferring data from the CF card.

*2 Certain models whose operations have been confirmed can be used.

See the "List of valid devices applicable for GOT1000series" (T10-0039) for information about models whose operations have been confirmed.

The Technical News above is available as a reference at the Information site for Mitsubishi industrial automation products. (MELFANSweb website:http://wwwf2.mitsubishielectric.co.jp/english/index_html)

Refer to the following manual for details of mounting and connection of the required devices.

 GOT1000 Series Connection Manual

(2) GT15

Application	Required Device / Software	Model
To execute the gateway functions with GOT	Optional function board	GT15-FNB, GT15-QFNB, GT15-QFNB16M, GT15-QFNB32M, GT15-QFNB48M, GT15-MESB48M
To connect GOT to the Ethernet system	Ethernet communication unit	GT15-J71E71-100
To connect GOT to controller	 GOT1000 Series Connection Manual	
To set the gateway functions	Server, Client, Mail	GT Designer2 Version2.07H or later -
	FTP	GT Designer2 Version2.17T or later -
		CF card *1

*1 This is required when transferring data from a CF card.

*2 Certain models whose operations have been confirmed can be used.

See the "List of valid devices applicable for GOT1000series" (T10-0039) for information about models whose operations have been confirmed.

The Technical News above is available as a reference at the Information site for Mitsubishi industrial automation products. (MELFANSweb website:http://wwwf2.mitsubishielectric.co.jp/english/index_html)

Refer to the following manual for details of mounting and connection of the required devices.

 GOT1000 Series Connection Manual

2 Required option OS

The option OSs necessary for using the gateway functions are indicated below:

Application	OS Name
Server / client function	Gateway functions (server and client)
Mail send function	Gateway functions (mail)
FTP server function	Gateway functions (FTP)

Refer to the following manual for the procedure for installing option OS.

 GT Designer 2 Version Basic Operation / Data Transfer Manual
(Chapter 8 TRANSFERRING DATA)

2.4 Precautions for System Configuration

1 Connection to the intranet

To secure the safety of the system against illegal access when connecting the system to the intranet, consult the network access provider or network administrator (person who does network planning, IP address management, etc.).

We have no liability for any system problems that occur at the time of connection to the intranet.

2 Access delay measures

Connection of multiple pieces of network equipment (including GOTs) to the same segment may degrade the performance of communications between a GOT and a PLC CPU due to increased network load.

Communication performance may be improved by taking the measures below.

- Using a switching hub
- Decreasing the number of device monitored by the GOT

3 Use of firewalls

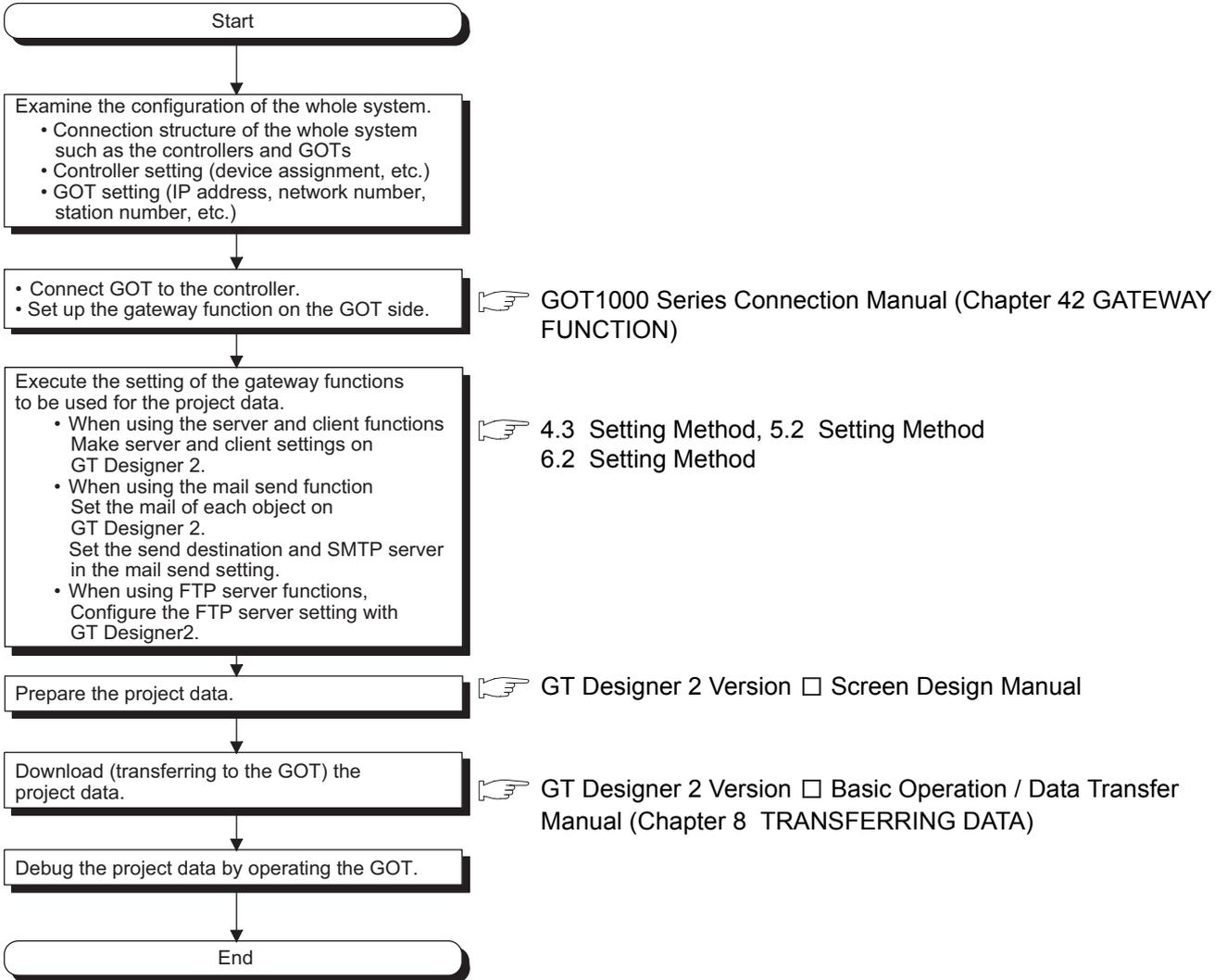
If the firewall shuts off communication of the gateway function, it is necessary to change the port No. of the firewall.

To secure the safety of the system against illegal access when changing the port No. of the firewall, consult the network access provider or network administrator (person who does network planning, IP address management, etc.).

We have no liability for any system problems that occur at the time of changing the port No.

3. OPERATION SEQUENCE

This chapter describes the general procedure to be followed for using the gateway functions.



4. SERVER AND CLIENT FUNCTIONS

This chapter describes the server and client functions.

Before using the example programs described in this chapter in an actual system, please verify that the program has no problems in the control of the target system.

4.1 Gateway Devices

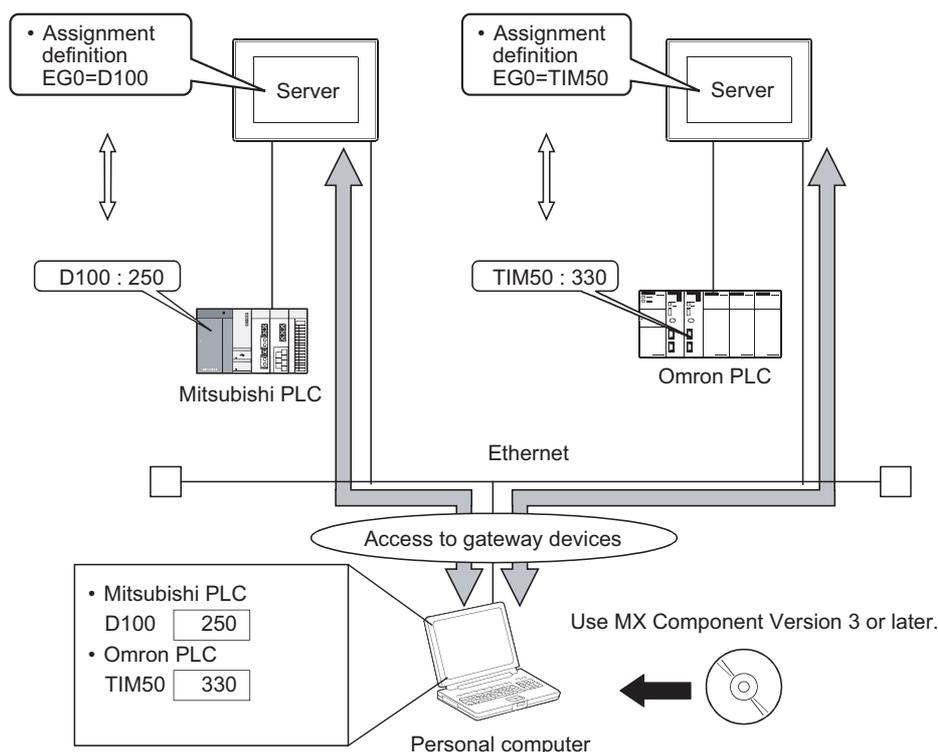
4.1.1 What are the gateway devices?

The gateway devices are virtual devices designed exclusively to perform the server and client functions on a GOT.

They are used by assigning the controller devices and the internal devices of a GOT.

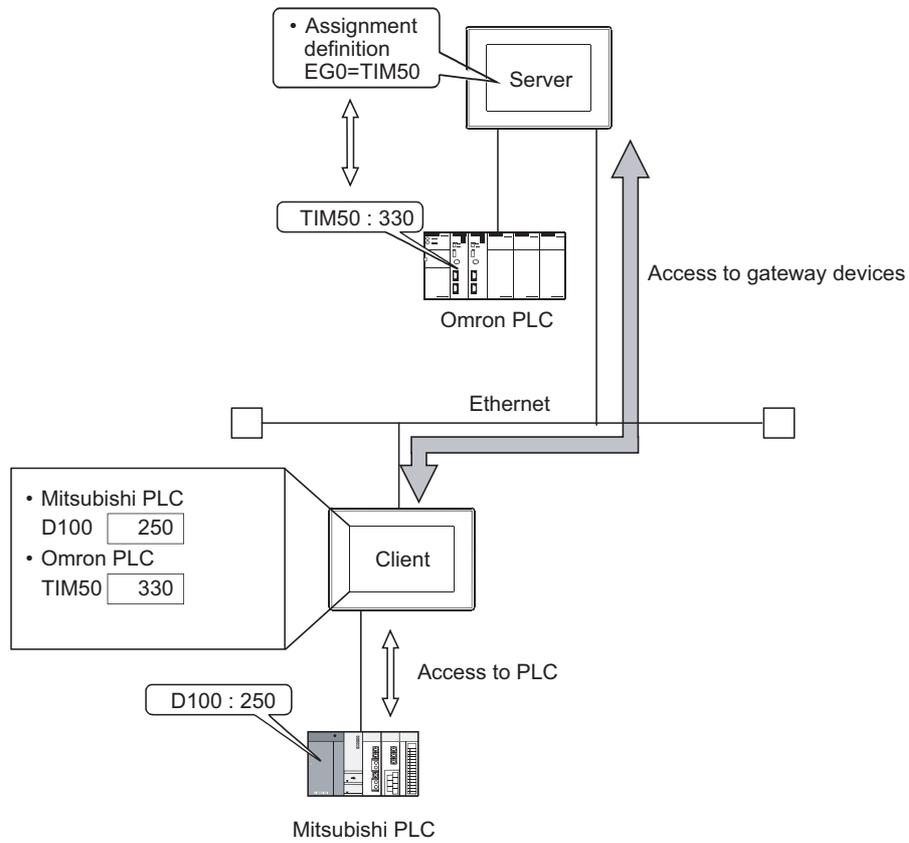
1 When accessing PLCs from a personal computer via a GOT

A personal computer can indirectly access the controller devices by accessing the gateway devices of GOTs (server).



2 When monitoring PLCs of difference makers from one GOT

A GOT (client) can indirectly access the controller devices by accessing the gateway devices of a GOT (server).



4.1.2 Usable gateway devices

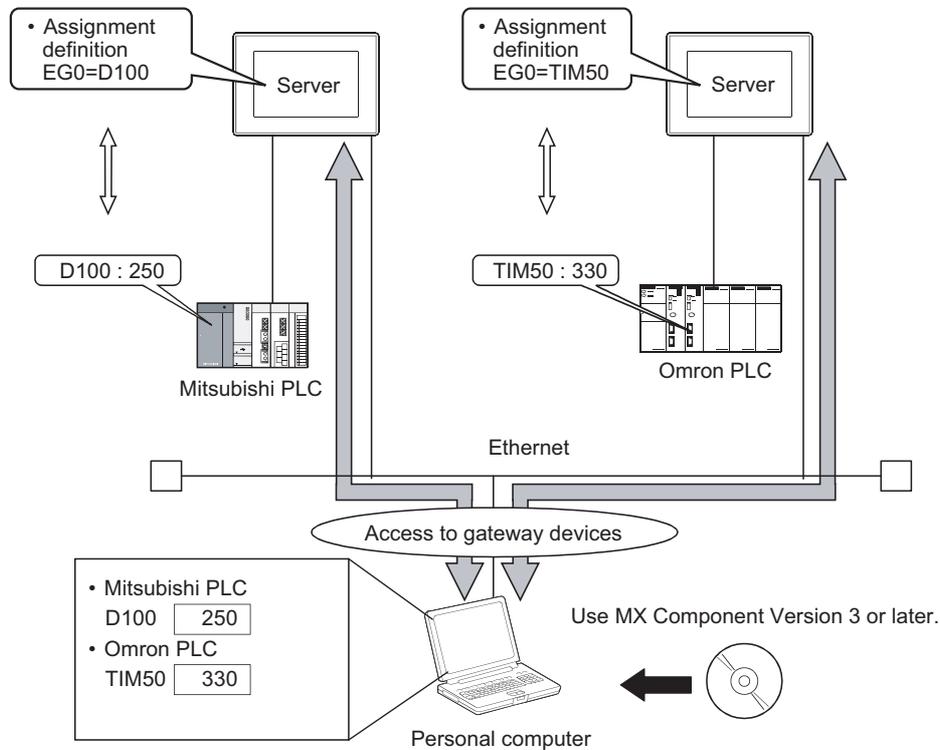
The usable gateway devices are indicated below:

Device Name		Device Range	Device Number Representation
Word device	EG	EG0 to EG32767	Decimal
Bit device	EG	Specified bits of word devices indicated above	Decimal

4.1.3 How to monitor the gateway devices

1 When accessing gateway devices from a personal computer

Access gateway devices of a GOT using the functions of MX Component.



Refer to the following manuals for the operation method and programming procedure of the MX Component.

- ☞ MX Component Version 3 Operating Manual
- MX Component Version 3 Programming Manual

The table below shows the MX Component functions that are compatible with the GOT:

Item	Description
Open	Opens the communication line (starts communication with the GOT).
Close	Closes the communication line (ends communication with the GOT).
ReadDeviceBlock	Batch-reads data from devices.
ReadDeviceBlock2	
WriteDeviceBlock	Batch-writes data to devices.
WriteDeviceBlock2	
ReadDeviceRandom	Randomly reads data from devices.
ReadDeviceRandom2	
WriteDeviceRandom	Randomly writes data to devices.
WriteDeviceRandom2	
EntryDeviceStatus	Registers device status watching.
FreeDeviceStatus	Cancels registering device status watching.
OnDeviceStatus	Announces event.
SetDevice	Changes the device data values.
SetDevice2	
GetDevice	Gets the device data values.
GetDevice2	
GetCpuType	Gets the GOT model.

2 When accessing gateway devices from the GOT

Gateway devices cannot be assigned to the object functions.

For this reason, use Project script and Screen script to monitor.

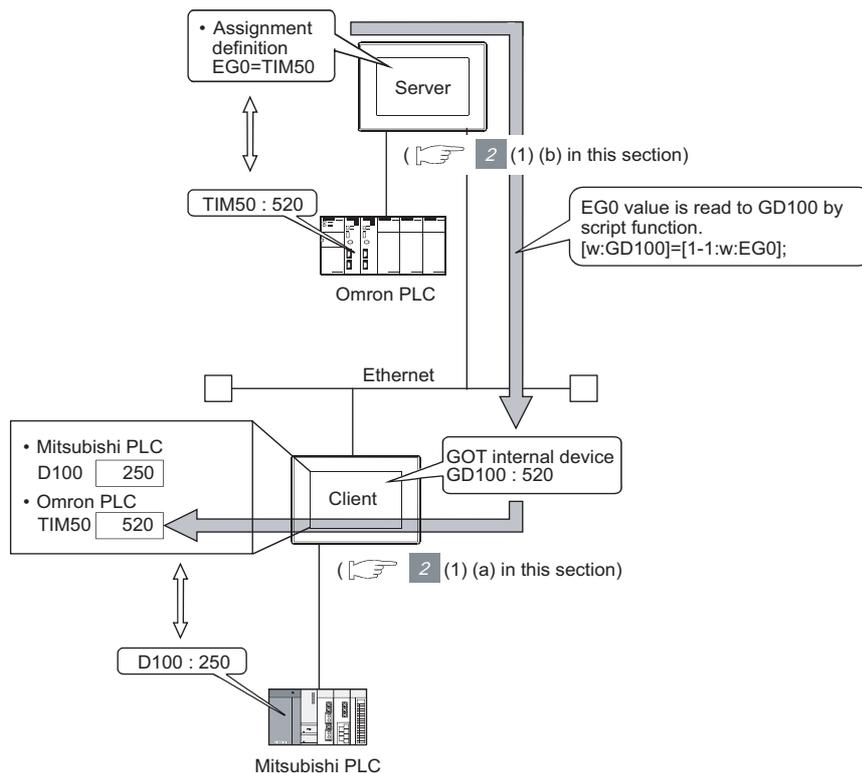
Object script cannot be used.

The following explains the setting example for accessing gateway devices from a GOT.

(1) When reading a gateway device value

Read the value of a gateway device of the GOT (server) to an internal device of the GOT (client) using the script function.

By monitoring the value read to the internal device using the numerical value display function or the like, the GOT (client) can monitor the same value as the gateway device value of the GOT (server).



Remark

Read destination of the script function

A device of Mitsubishi Electric PLC CPU may be specified as the destination for reading out a value by the script function.

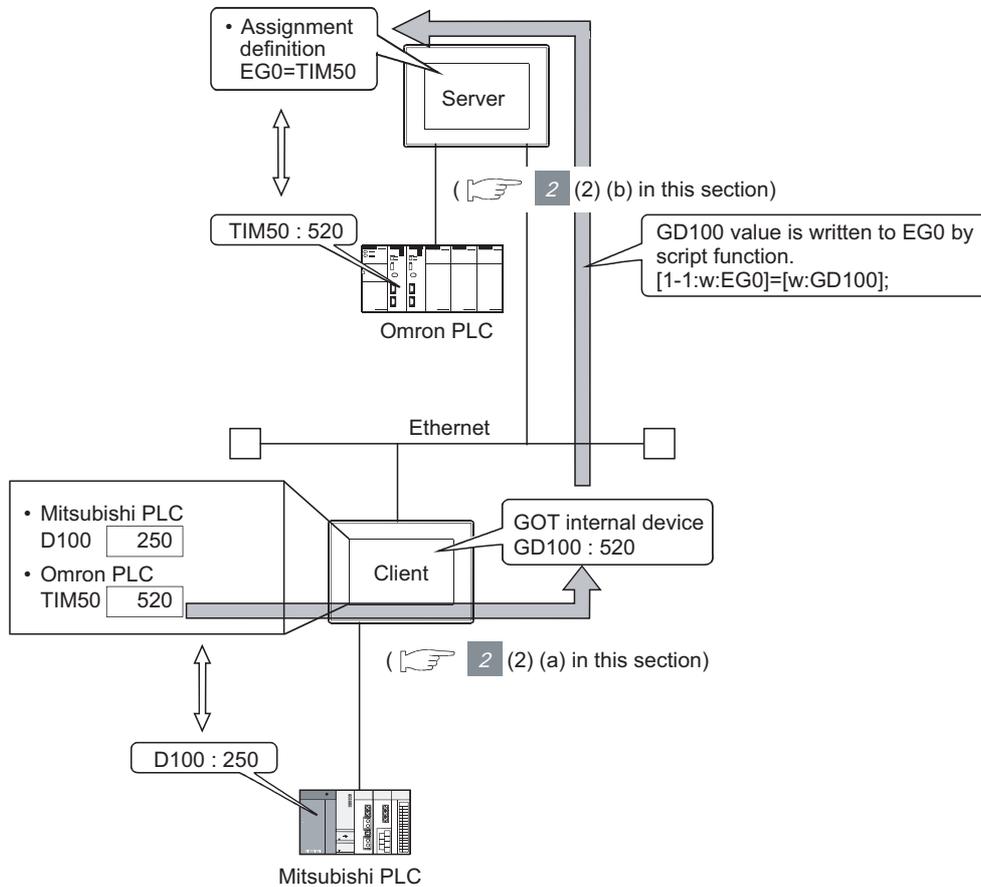
(a) Setting items of the GOT (client)

- Script function..... Make setting to read the gateway device value of the GOT (server) to the internal device of the GOT (client).
- Client setting..... Register the GOT (server) whose device value should be read.
- Numerical display 1 function... Make setting to display the device value of a Mitsubishi Electric PLC CPU.
- Numerical display 2 function... Make setting to display the internal device value of the GOT (client).

(b) Setting items of the GOT (server)

- Server setting Make setting to assign a device of Omron PLC to a gateway device.

- (2) When writing a value to the gateway device
 Use numerical input function or the like to write a value to the internal device of the GOT (client).
 Use the script function to write the value of the internal device of the GOT (client) to the gateway device of the GOT (server).



Remark

Destination of writing by the script function

An internal device of the GOT (server) may be specified as the destination of writing by the script function.

- (a) Setting items of the GOT (client)
- Script function.....Make setting to write the internal device value of the GOT (client) to the gateway device of the GOT (server).
 - Client setting.....Register the GOT (server) where the value will be written.
 - Numerical input 1 function.....Make setting to input a value to the device of Mitsubishi Electric PLC CPU.
 - Numerical input 2 function.....Make setting to input a value to the internal device of the GOT (client).
- (b) Setting items of the GOT (server)
- Server settingMake setting to assign a device of Omron PLC to a gateway device.



Details about the script function

Refer to the following manual for details of the script function.

 GT Designer 2 Version □ Screen Design Manual (Chapter 16 SCRIPT FUNCTION)

For examples of using the script function, refer to Section 4.4 of this manual.

4.1.4 Controller devices that can be assigned

1 Controller devices that can be assigned

The controller devices that can be monitored by a GOT and the GOT internal devices can be assigned to the gateway devices.

Refer to the following manual for the devices that can be monitored by a GOT.

 GT Designer 2 Version □ Screen Design Manual (Section 2.9 Support Devices)

2 Precautions for monitoring the gateway devices

When the following controller devices are assigned to the gateway devices, there are cases monitoring is not possible depending on the used script function commands or MX Component functions.

To monitor such unusable devices, change them to other devices of the controller and access those devices from a GOT.

The restricted commands / functions are indicated below by controller models:

○: No restrictions △: Some devices cannot be used (unusable device names are indicated in parentheses) ×: Cannot be used

Maker Name		Restricted Script Function Commands			Restricted MX Component Functions		
		bmov, fmov instruction	Device specified as word	Device specified as bit	Read Device Block	Read Device Random Write Device Random	
						Device specified as word	Device specified as bit
Mitsubishi Electric	Q / QnACPU	△ (TT, TC, CT, CC, SC, SS)	△ (TT, TC, CT, CC, SC, SS)	△ (TN, CN, SN, Z, BM)	△ (TT, TC, CT, CC, SC, SS)	△ (TT, TC, CT, CC, SC, SS)	△ (TN, CN, SN, Z, BM)
	ACPU	△ (TT, TC, CT, CC)	△ (TT, TC, CT, CC)	△ (Z, V, BM)	△ (TT, TC, CT, CC)	△ (TT, TC, CT, CC)	△ (Z, V, BM)
	FXCPU	△ (TC, CS)	△ (T, C)	△ (TC, CS)	△ (TS, CS)	△ (T, C)	△ (TS, CS)
OMRON PLC		○	○	○	○	○	○
KEYENCE PLC		△ (VB, T, C, CTC, TC, TS, CC, CS, CTH, CTC, DZ, TRM)	△ (..., MR, LR, CR, B, VB, T, C, TC, TS, CC, CS, CTH, CTC, DZ, TRM)	△ (T, C, CTC, TC, TS, CC, CS, CTH, CTC, CM, TM, VM, Z, DZ, TRM)	△ (VB, T, C, CTC, TC, TS, CC, CS, CTH, CTC, DZ, TRM)	△ (..., MR, LR, CR, B, VB, T, C, TC, TS, CC, CS, CTH, CTC, DZ, TRM)	△ (T, C, CTC, TC, TS, CC, CS, CTH, CTC, CM, TM, VM, Z, DZ, TRM)
KOYO EI PLC		○	○	×	○	○	×
SHARP PLC		△*1 (T, C)	△ (T, C)	△ (T, C)	△*1 (T, C)	△ (T, C)	△ (T, C)
JTEKT PLC		△ (TCS)	△ (TCS)	△ (EB, TCS)	△ (TCS)	△ (TCS)	△ (EB, TCS)
TOSHIBA PLC		○	△ (Z, T, C)	○	○	△ (Z, T, C)	○
TOSHIBA MACHINE PLC		○	△ (X, I, Y, O, R, GR, H, J, K, T, C, S, L, E, A)	△ (XW, IW, YW, OW, RW, GW, HW, JW, KW, TW, CW, SW, LW, EW, AW, D, B, U, M, Q, P, V)	○	△ (X, I, Y, O, R, C, S, L, E, A)	△ (XW, IW, YW, OW, RW, GW, HW, JW, KW, TW, CW, SW, LW, EW, AW, D, B, U, M, Q, P, V)

(Continued to next page)

Maker Name		Restricted Script Function Commands			Restricted MX Component Functions		
		bmov, fmov instruction	Device specified as word	Device specified as bit	Read Device Block	Read Device Random Write Device Random	
						Device specified as word	Device specified as bit
HITACHI IES PLC		○	△ (X, Y, L, L1, M, D, SS, WDT, MS, TMR, CU, RCU, CT, R, DIF, DFN)	○	○	△ (X, Y, L, L1, M, D, SS, WDT, MS, TMR, CU, RCU, CT, R, DIF, DFN)	○
HITACHI PLC		△ (LLL, LML, LF, LG)	△ (X, Y, R, M, A, K, T, U, C, GL, E, S, J, Q, LLL, LML, LF, LG)	△ (XW, YW, RW, MW, AW, KW, TW, UW, CW, GW, EW, SW, JW, QW, TC, TS, UC, US, CC, CS, LLL, LML, LF, LG)	△ (LLL, LML, LF, LG)	△ (X, Y, R, M, A, K, T, U, C, GL, E, S, J, Q, LLL, LML, LF, LG)	△ (XW, YW, RW, MW, AW, KW, TW, UW, CW, GW, EW, SW, JW, QW, TC, TS, UC, US, CC, CS, LLL, LML, LF, LG)
FUJI FA PLC		△ (BD, TS, TR, W9, CS, CR)	△ (B, M, K, F, A, D, L, T, C, BD, TS, TR, W9, CS, CR)	△ (WB, WM, WK, WF, WA, WD, WL, BD, TS, TR, W9, CS, CR)	△ (BD, TS, TR, W9, CS, CR)	△ (B, M, K, F, A, D, L, T, C, BD, TS, TR, W9, CS, CR)	△ (WB, WM, WK, WF, WA, WD, WL, BD, TS, TR, W9, CS, CR)
MATSUSHITA PLC		○	△ (T, C)	○	○	△ (T, C)	○
YASKAWA PLC		○	○	○	○	○	○
YOKOGAWA PLC		△ (M, Z)	△ (M, TU, CU, Z)	△ (M, TP, TS, CP, CS, Z)	△ (M, Z)	△ (M, TU, CU, Z)	△ (M, TP, TS, CP, CS, Z)
ALLEN-BRADLEY PLC	SLC500	△ (T, C)	△ (T, C)	△ (T, C)	△ (T, C)	△ (T, C)	△ (T, C)
	MicroLogix 1000/1200/1500 series	△ (T, C, L)	△ (T, C, L)	△ (T, C, L)	△ (T, C, L)	△ (T, C, L)	△ (T, C, L)
	Control/CompactLogix	△ (DINT, REAL)	△ (BOOL, DINT, REAL)	△ (DINT, REAL)	△ (DINT, REAL)	△ (BOOL, DINT, REAL)	△ (DINT, REAL)
GE FANUC PLC		○	○	△ (I, Q, M, T, S, SA, SB, SC, G)	○	○	△ (I, Q, M, T, S, SA, SB, SC, G)
SIEMENS PLC	S7-300/400 series	○	△ (I, Q, M)	△ (IW, QW, MW)	○	△ (I, Q, M)	△ (IW, QW, MW)
	S7-200 series	△ (T, C, HC)	△ (V, I, Q, M, SM, T, C, S, HC)	△ (VW, IW, QW, AIW, AQW, MW, SMW, T, C, SW, HC)	△ (T, C, HC)	△ (V, I, Q, M, SM, T, C, S, HC)	△ (VW, IW, QW, AIW, AQW, MW, SMW, T, C, SW, HC)
MODBUS®/ TCP CONNECTION	SCHNEIDER PLC	△ (6)	△ (0, 1)	△ (6)	△ (6)	△ (0, 1)	△ (6)
	YOKOGAWA PLC	△ (6)	△ (0, 1)	△ (6)	△ (6)	△ (0, 1)	△ (6)

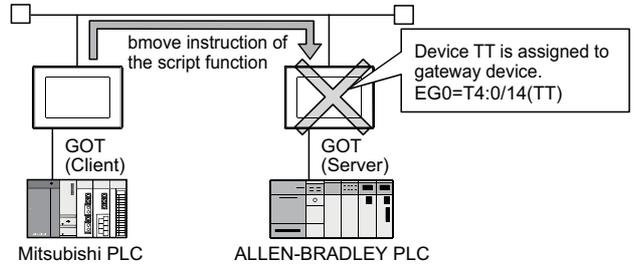
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Maker Name		Restricted Script Function Commands			Restricted MX Component Functions		
		bmov, fmov instruction	Device specified as word	Device specified as bit	Read Device Block	Read Device Random Write Device Random	
						Device specified as word	Device specified as bit
Temperature controller	OMRON temperature controller	△ (A, C0, C1, C3)	×	△ (A, C0, C1, C3)	△ (A, C0, C1, C3)	×	△ (A, C0, C1, C3)
	SHINKO indicating controller	×	×	×	×	×	×
	CHINO controller	○	△ (0, 1)	○	○	△ (0, 1)	○
	FUJI SYS temperature controller	○	△ (0, 1)	○	○	△ (0, 1)	○
	YAMATAKE temperature controller	○	○	○	○	○	○
	YOKOGAWA temperature controller	○	○	○	○	○	○
	RKC temperature controller	○	△ (0, 1)	○	○	△ (0, 1)	○
CNC		△ (TN, CN, SN, Z, BN)	△ (TT, TC, CT, CC, SC, SS)	△ (TN, CN, SN, Z, BN)	△ (TN, CN, SN, Z, BN)	△ (TT, TC, CT, CC, SC, SS)	△ (TN, CN, SN, Z, BN)

*1 For registers (09 to E7) and file registers (1 to 7), do not make a setting that spans two blocks. Otherwise monitoring will be disabled.

(Example) When the bmov instruction is used with the script function
 The gateway device to which TT (ALLEN-BRADLEY PLC device) is assigned cannot be monitored.

- The devices not indicated in the table in the previous page can be monitored.
- Monitoring is possible with the commands specified a device as a bit.



Remark

Restricted script function commands

The commands specified a device as a word or bit device may not be executed correctly with a wrong device specified.
 When a gateway device is used, write the script correctly so that designation of the device is correct.

Commands specified a device as a word or bit device are indicated below:

- Commands specified a device as a word

Item	Description	
Function	Applied arithmetic operation	sin, cos, tan, asin, acos, atan, abs, log, log10, exp, ldexp, sqrt

1 OVERVIEW
 2 SYSTEM CONFIGURATION
 3 OPERATION SEQUENCE
 4 SERVER AND CLIENT FUNCTIONS
 5 MAIL SEND FUNCTION
 6 FTP SERVER FUNCTION
 7 TROUBLESHOOTING
 APPENDICES
 INDEX

- Commands specified a device as a bit

Item	Description	
Operator	Bit device	&, , ~, ^, <<, >>, >>>
	Substitution	=
	Device operation	set, rst, alt

Refer to the following manual for details of commands.

 GT Designer 2 Version □ Screen Design Manual (Section 16.2.2 Control Structure)

4.2 Specifications

4.2.1 Specifications

The specifications of the server and client functions are given below:

Item		Specifications	Setting Method
Port number	Server function	5011	Fixed
	Client function	5012, 5013	
Max. number of nodes		Recommended: Total number of the following nodes is 64. <ul style="list-style-type: none"> • GOT (server) • GOT (client) • Personal computer that communicates with a GOT 	-
Number of clients (GOT, personal computer) that can access a server (GOT) simultaneously		Max. 5 units ^{*1}	-
Other node designation		IP address designation, max. 128 nodes	GT Designer2
Gateway device		32768 points of word devices: EG0 to 32767	
Compatible MX Component		MX Component Version 3 (SW3DC5-ACT(-A)) or later	-
Memory space used by GOT (bytes)	Server function	20 + 20 × (Number of assigned gateway devices)	GT Designer2
	Client function	16 + 20 × (Preset number of GOTs (server))	

*1 If six or more clients (GOT, personal computer) make simultaneous access to the server (GOT), processing of the script at a client may stop.

4.2.2 Access range that can be monitored

When the monitoring of a controller is required via a GOT, it is possible by monitoring controller devices that are assigned to gateway devices. (The devices of the controller on the network can be monitored by assigning the devices to gateway devices.)

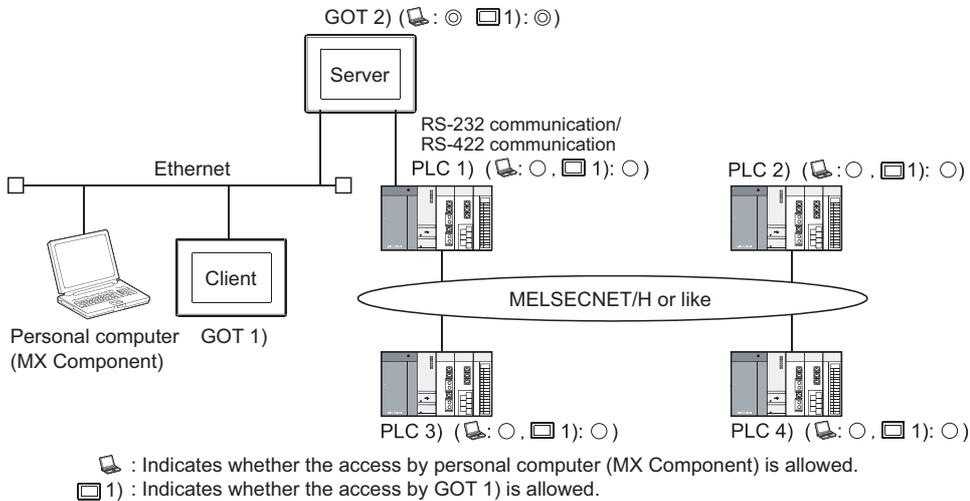
The access range that can be monitored is the same the GOT does.

Refer to the following manual for the range that a GOT can monitor.

 GT Designer 2 Version □ Screen Design Manual (Section 2.7 controller that can be monitored and accessible range)

The accessible range of a PLC CPU from a GOT 1) (client) or a personal computer (MX Component) is indicated below:

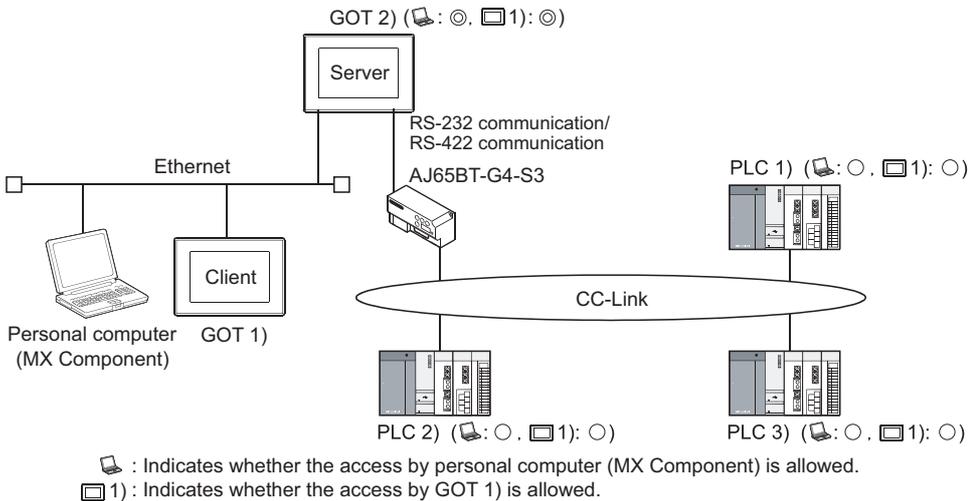
1 When GOT 2) (server) and a PLC 1) are connected in the direct CPU connection or computer link connection



Access Source	Access Destination	
	GOT 2) (server)	PLC 1), PLC 2), PLC 3), PLC 4)
Personal computer (MX Component), GOT 1) (client)	🖥️	○

- 🖥️ : Can monitor a gateway device or a controller device from a personal computer (MX Component) or a GOT 1) (client).
- : Can monitor a controller device that is assigned to a gateway device of GOT 2) from a personal computer (MX Component) or a GOT 1) (client).

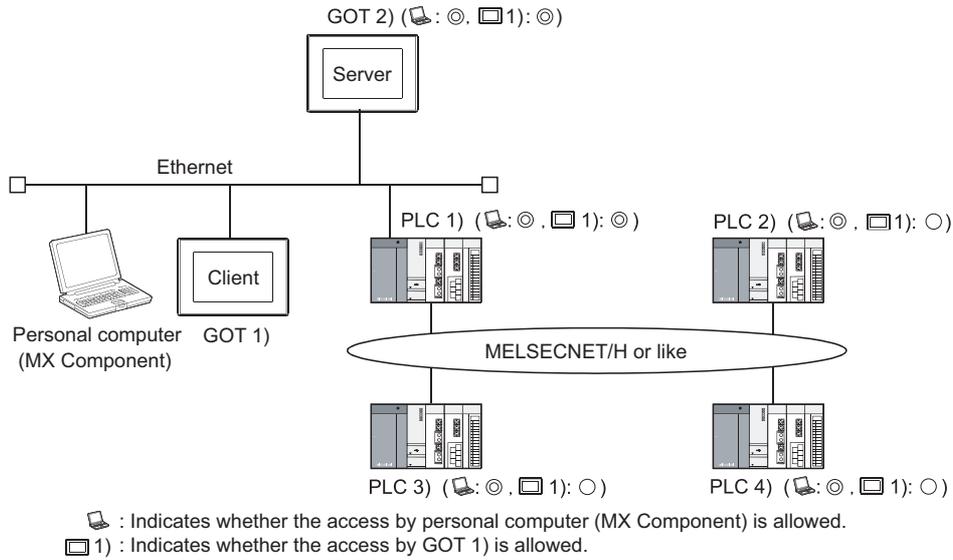
2 When GOT 2) (server) and a PLC are connected in the CC-Link connection (via G4)



Access Source	Access Destination	
	GOT 2) (server)	PLC 1), PLC 2), PLC 3)
Computer (MX Component), GOT 1) (client)	🖥️	○

- 🖥️ : Can monitor a gateway device or a controller device from a personal computer (MX Component) or a GOT 1) (client).
- : Can monitor a controller device that is assigned to a gateway device of GOT 2) from a personal computer (MX Component) or a GOT 1) (client).

3 When GOT 2) (server) and a PLC are connected in the Ethernet connection

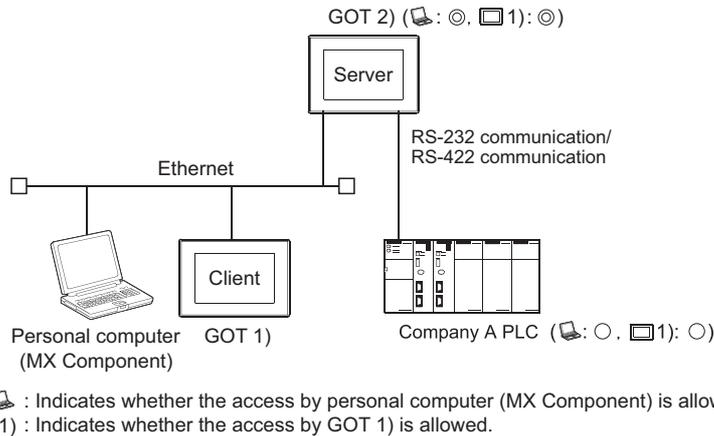


Access Source	Access Destination		
	GOT 2) (server)	PLC 1)	PLC 2), PLC 3), PLC 4)
Personal computer (MX Component)	⊙		⊙
GOT 1) (client)			○

⊙: Can monitor a gateway device or a controller device from a personal computer (MX Component) or a GOT 1) (client).

○: Can monitor a controller device that is assigned to a gateway device of GOT 2) from a personal computer (MX Component) or a GOT 1) (client).

4 When GOT 2) (server) and a PLC/Temperature controller are connected in the third party PLC connection



Access Source	Access Destination	
	GOT 2) (server)	PLC/Temperature controller
Personal Computer (MX Component), GOT 1) (client)	⊙	○

⊙: Can monitor a gateway device or a controller device from a personal computer (MX Component) or a GOT 1) (client).

○: Can monitor a controller device that is assigned to a gateway device of GOT 2) from a personal computer (MX Component) or a GOT 1) (client).

4.3 Setting Method

To use the server function, perform server setting (☞ 1 Server setting in this section).

To use the client function, perform client setting (☞ 2 Client setting in this section).

1 Server setting

In the server setting, set the gateway device to be used by the GOT (server) and the controller device to be assigned to that gateway device.

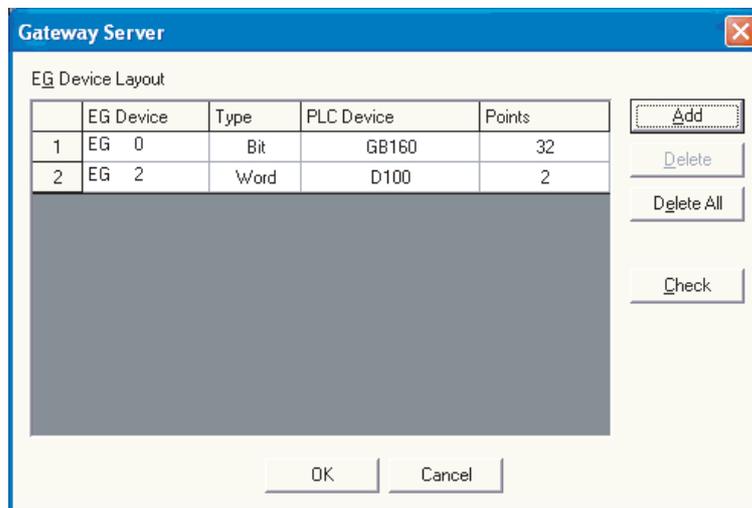
(1) Server function setting method

(a) Operation procedure

When either of the operations below is performed, the Gateway Server dialog box opens.

- Choose the [Common] → [Gateway] → [Server] menu.
- Double-click  (Gateway Server) in the workspace.

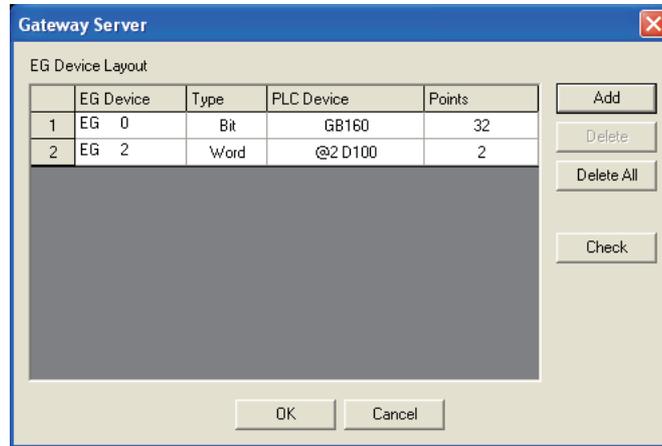
(b) Gateway Server dialog box



Item	Description
Assignment setting table	The table sets the assignment between the gateway devices and the PLC CPU devices.
EG Device	Set the gateway device.
Type	Select the type of the device to be assigned.
PLC Device	Set the controller device to be assigned to the gateway device. Refer to the following for the device setting method. ☞ GT Designer 2 Version <input type="checkbox"/> Screen Design Manual (Section 5.1 Device Setting)
Points	Set the number of points of the device to be assigned. Setting is impossible for the number of points that cannot be assigned. (☞ 1 (2) Precautions for device assignment in this section)
Add	Used to add new assignment setting.
Delete	Used to delete the selected assignment.
Delete All	Used to delete all settings.
Check	Used to check whether the settings are correct or not.

Remark

Gateway server dialog box when using the multi-channel function
Devices with channel No. 2 to 4 are displayed as "channel No." + "device".



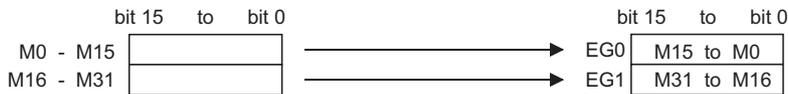
(2) Precautions for device assignment

Gateway devices are set on a two-point basis.

Hence, the number of assigned points changes depending on the controller device type to be set.

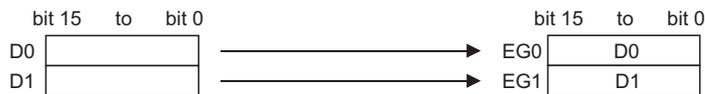
(a) When assigning bit devices to gateway devices

Bit devices are assigned in 32-point units. (As 32 points are 2 words.)



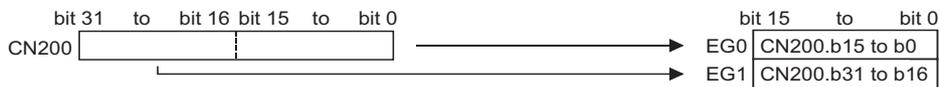
(b) When assigning word devices to gateway devices

Word devices are assigned in 2-point units. (As 2 points are 2 words.)



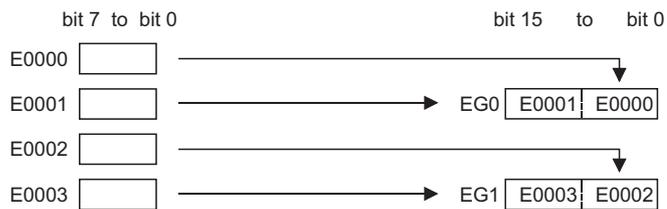
(c) When assigning double-word devices to gateway devices

Double-word devices are assigned in 1-point units. (As 1 points are 2 words.)



(d) When assigning 8-bit devices to gateway devices

8-bit devices are assigned in 4-point units. (As 4 points are 2 words.)



2 Client setting

In the client setting, register the GOT (server) to be monitored by the GOT (client).

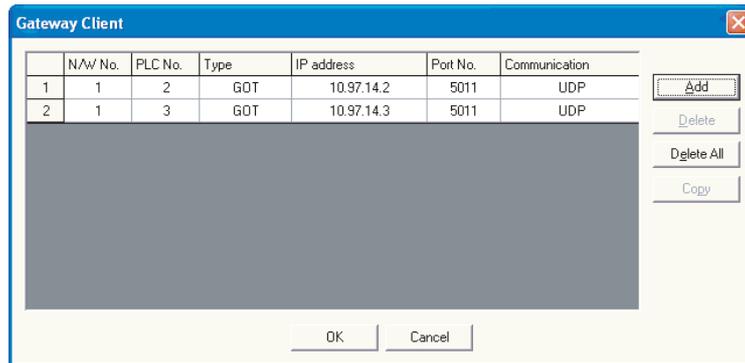
(1) Client function setting method

(a) Operation procedure

When either of the operations below is performed, the Gateway Client dialog box opens.

- Choose the [Common] → [Gateway] → [Client] menu.
- Double-click  (Gateway Client) in the workspace.

(b) Gateway Client dialog box



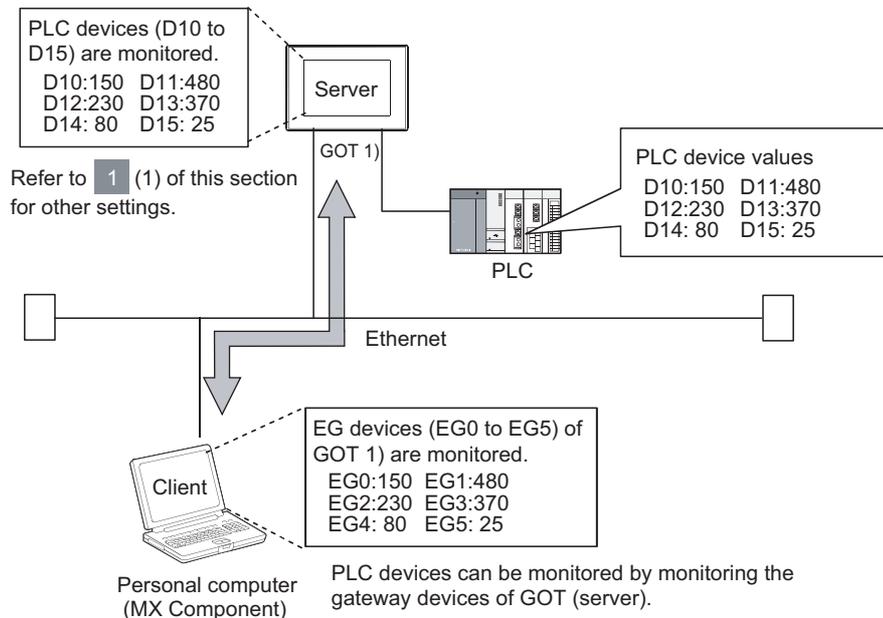
Item	Description
Server function GOT table	Register the GOTs (server) to be monitored by the GOT (client).
N/W No.	Register the network No. of the GOT.
PLC No.	Register the PLC No. (station number) of the GOT.
Type	Fixed to GOT.
IP address	Register the IP address of the GOT.
Port No.	Fixed to 5011.
Communication	Fixed to UDP.
Add	Used to add a new GOT (server).
Delete	Used to delete the selected GOT (server).
Delete All	Used to delete all GOTs (server).
Copy	Used to copy the selected GOT (server) at the end of the table.

4.4 Examples of Use

The following gives the examples of using the server and client functions.

1 Accessing the PLC from personal computer via a GOT

The personal computer (MX Component) displays the device values of EG0 to EG5 of GOT 1) (server).



(1) GOT 1) setting example

(a) Server setting

EG Device	PLC Device	Type	Points
EG0	D10	Word device	6

(b) Gateway Server dialog box

Item	Description
Device	D10 to D15
Network	Host

(2) Personal computer settings

The personal computer (MX Component) accesses GOT 1) (server).

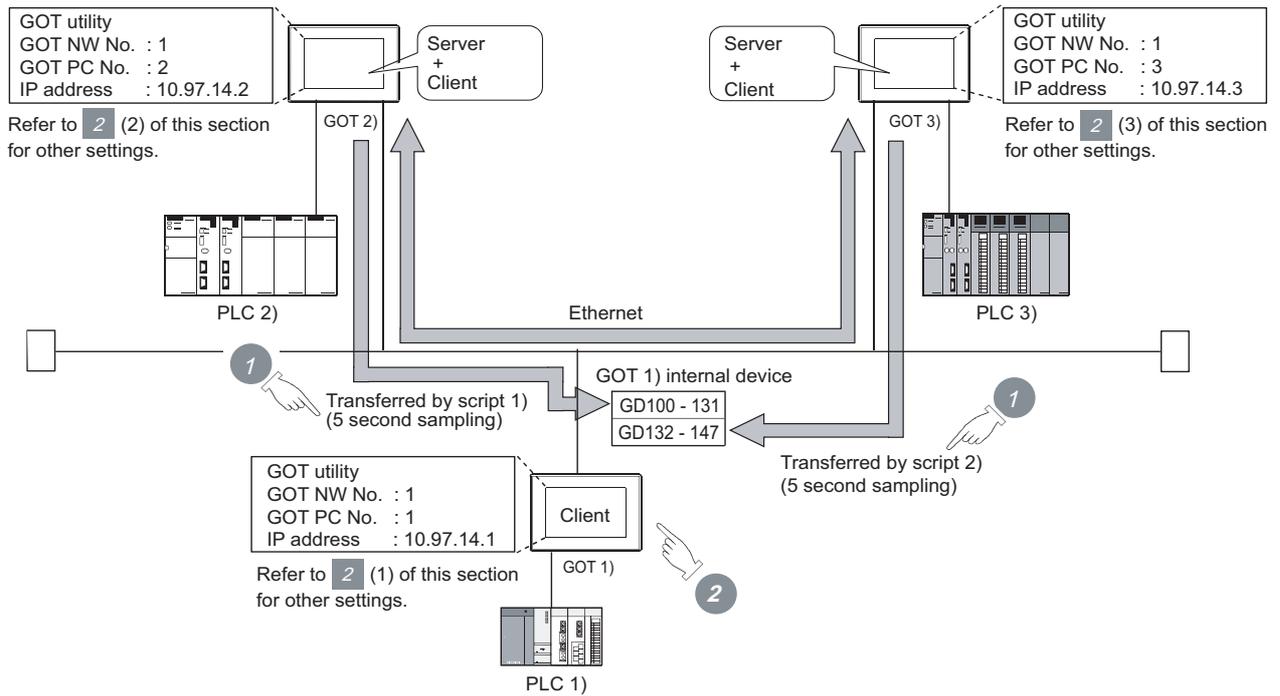
Refer to the following manuals for details of the MX Component.



MX Component Version 3 Operating Manual

MX Component Version 3 Programming Manual

2 Displaying on the GOT (client) the alarms that occurred at plural PLCs



- 1 The device values of PLC 2) and PLC 3) are transferred to the internal devices (GD100 to GD147) of GOT 1).
- 2 GOT 1) monitors its own internal devices and displays the alarm occurrence information if an alarm occurs on PLC 2) or PLC 3).

(1) GOT 1) setting example

(a) Client setting

N/W No.	PLC No.	IP address
1	2	10.97.14.2
1	3	10.97.14.3

(b) Alarm history display function *1 (for displaying alarms of GOT 2))

Item	Description
Number of device points (number of alarms)	512 points (consecutive points)
Device	GD100.b0

*1 The comment to be displayed by the alarm history display function should be set beforehand.

(c) Alarm history display function *1 (for displaying alarms of GOT 3))

Item	Description
Number of device points (number of alarms)	256 points (consecutive points)
Device	GD132.b0

*1 The comment to be displayed by the alarm history display function should be set beforehand.

(d) Script function (for displaying alarms of GOT 2))

Item	Description	
Script 1)	Type	Screen script
	Trigger Type	Sampling, 5 sec.
	Data Type	Unsigned BIN 16-bit
	Script example	<code>bmov([1-2:w:EG0],[w:GD100],32);</code> //Transfers the data of 32 points, starting from EG0, of GOT 2) to D100 and on of GOT 1).

(e) Script function (for displaying alarms of GOT 3))

Item	Description	
Script 2)	Type	Screen script
	Trigger Type	Sampling, 5 sec.
	Data Type	Unsigned BIN 16-bit
	Script example	<code>bmov([1-3:w:EG0],[w:GD132],16);</code> //Transfers the data of 16 points, starting from EG0, of GOT 3) to D132 and on of GOT 1).

(2) GOT 2) setting example

(a) Server setting

EG Device	PLC Device	Type	Points
EG0	IB200	Bit device	512

(3) GOT 3) setting example

(a) Server setting

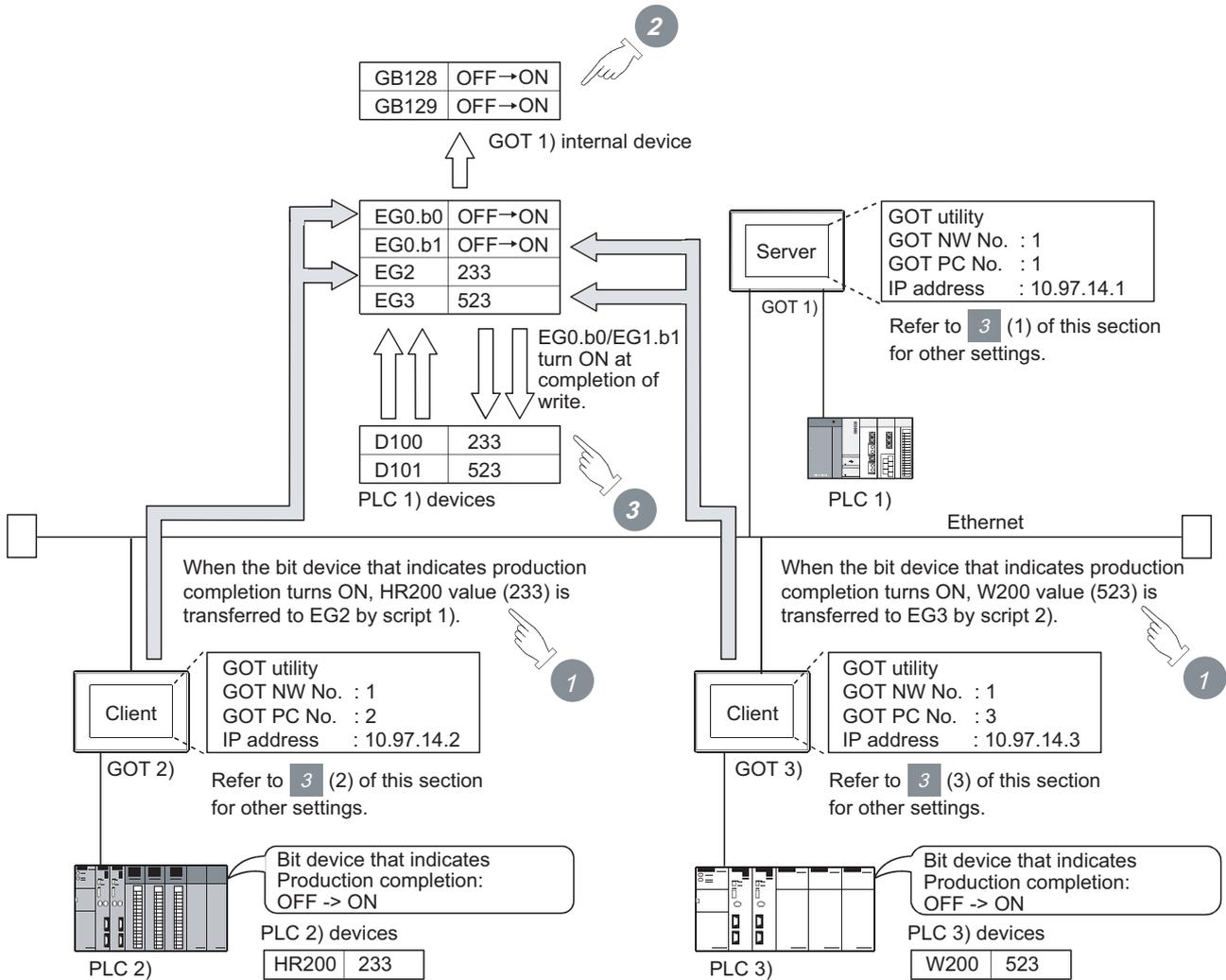
EG Device	PLC Device	Type	Points
EG0	..300	Bit device	256



About the trigger type

When setting the script function, do not set the trigger type as [Ordinary] or [Sampling, 2 sec.]. Such setting can adversely affect other monitoring operations.

3 Monitoring and controlling the production conditions of multiple PLCs with the GOT (server)



- 1 Device values of PLC 2) and PLC 3) are transferred to the EG devices (devices of PLC 1)) of GOT 1) (server).
- 2 When the values are written to PLC 1), EG devices (internal devices, GB128 and GB129, of GOT 1) of GOT 1) (server) turn ON. (Check the completion of write by the lamp display function or the like.)
- 3 GOT 1) (server) monitors the devices of PLC 1) to check the production conditions of PLC 2) and PLC 3).

(1) GOT 1) setting example

(a) Server setting

EG Device	PLC Device	Type	Points
EG0	GB128	Bit device	32
EG2	D100	Word device	2

(b) Numerical display function (setting for 2 devices)

Item	Description
Device	D100 and D101
Network	Host

(c) Lamp display function (setting for 2 devices)

Item	Description
Device	GB128 and GB129
Network	Host

(2) GOT 2) setting example

(a) Client setting

N/W No.	PLC No.	IP address
1	1	10.97.14.1

(b) Script function

Item	Description	
Script 1)	Type	Screen script
	Trigger Type	ON: Bit device that indicates the completion of production
	Data Type	Unsigned BIN 16-bit
	Script example	[1-1:w:EG2]=[w:HR200]; //Writes the production count to PLC 1). set([1-1:b:EG0.00]); //Turns ON the write completion signal.

(3) GOT 3) setting example

(a) Client setting

N/W No.	PLC No.	IP address
1	1	10.97.14.1

(b) Script function

Item	Description	
Script 2)	Type	Screen script
	Trigger Type	ON: Bit device that indicates the completion of production
	Data Type	Unsigned BIN 16-bit
	Script example	[1-1:w:EG3]=[w:W200];// Writes the production count to PLC 1). set([1-1:b:EG0.01]); //Turns ON the write completion signal.

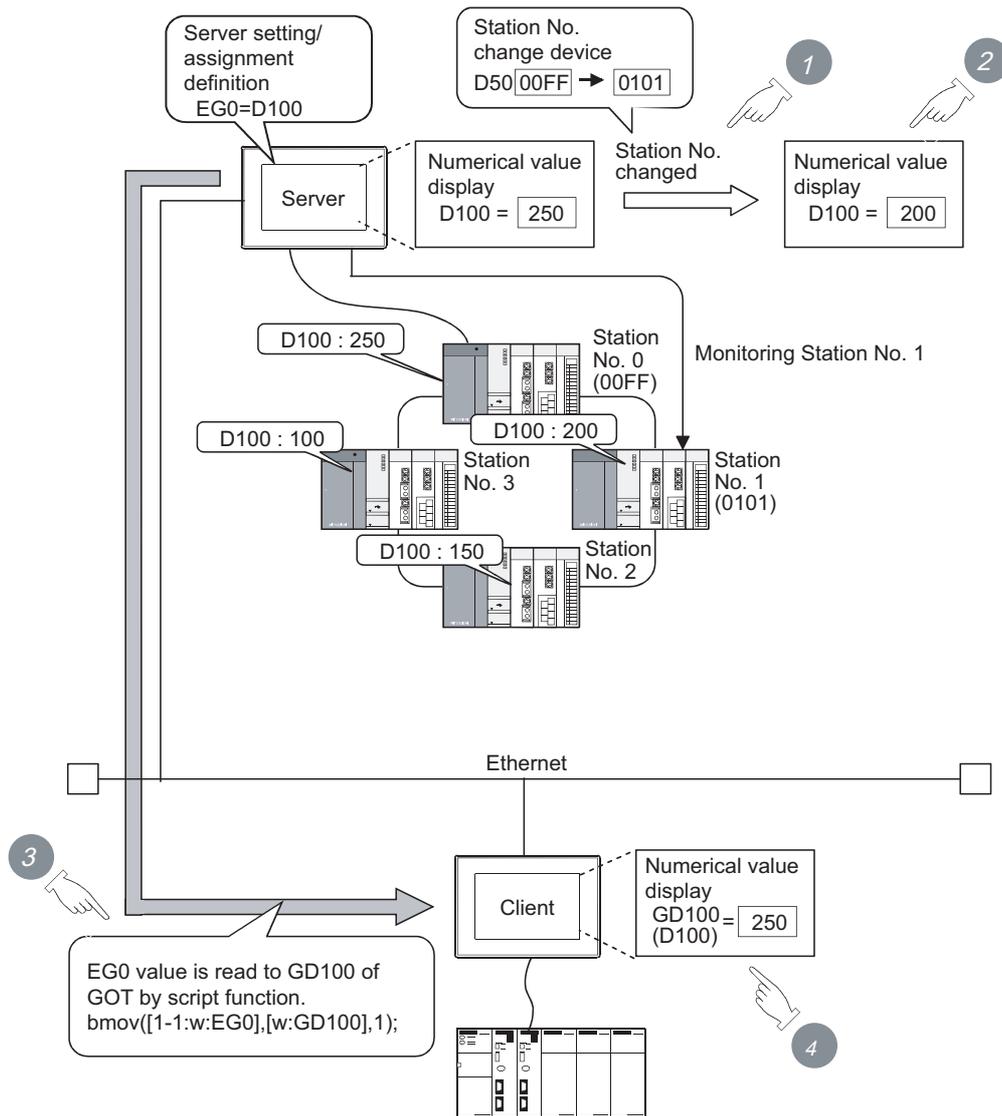
4.5 Precautions

This section provides the precautions for using the server and client functions:

1 Precautions for assigning devices in the gateway setting

If a station number is changed while monitoring gateway devices to which PLC CPU devices are assigned, this change has no effect on the devices being monitored.
Create the screen for each station.

Example) When station No. is changed for the GOT (server).



- 1 Change the station No.
- 2 The value displayed at the GOT (server) is updated according to the changing of the station No.
- 3 Since the changing of the station No. is not reflected to the assignment of gateway devices, the script function reads out the value at EG0 of PLC (station No. 0) to D100.
- 4 Changing of the station No. is disregarded and the value displayed at the GOT (client) is not updated.

2 Precautions for setting the script function

- (1) When setting the script function, do not set the trigger type as [Ordinary] or [Sampling, 2 sec.]. Such settings can adversely affect other monitoring operations.
- (2) The script function cannot be used to monitor the gateway devices of the GOT (GOT) itself where the script function is executed.
To monitor the PLC devices assigned to the gateway devices, monitor the PLC devices directly.
- (3) In the script for accessing the gateway devices, specify the network No. and the PC station No. of the access destination GOT.
Monitoring of the gateway devices is not possible even if 0-FF (host) is set for the destination of access.

3 Precautions for monitoring

- (1) If the gateway device of the GOT (server) is monitored in the state the server or client function cannot be used*1, a script execution error (error code 16) occurs at the GOT (client) and the execution of a script stops.
Refer to the following manual for errors that may occur during the execution of a script.
 GT Designer 2 Version □ Screen Design Manual (Section 16.4.3 Errors and corrective actions for script execution on GOT)
- *1 While the power is off, when the OS of the GOT is not compatible with the server/client function, when an optional function board is not fitted, etc.
- (2) When the gateway device to which the PLC device is not assigned is monitored, it is monitored as 0 (OFF if a bit device is specified).
When write is executed, the written value is invalid.
- (3) During the execution of the script that uses gateway devices, screen save time may be influenced.
 - (a) At the cancellation of the screen save function
Canceling of the screen saved state of the GOT (by a screen touch or human sensor) may take a longer time than usual.
(When the script processing time is 2 seconds, for example, the screen save function is canceled in a maximum of 2 seconds after the screen is touched.)
 - (b) At the start of the screen save function
When the automatic screen save function is set, screen save execution intervals may be longer than the specified interval.

4.6 For Efficient Use

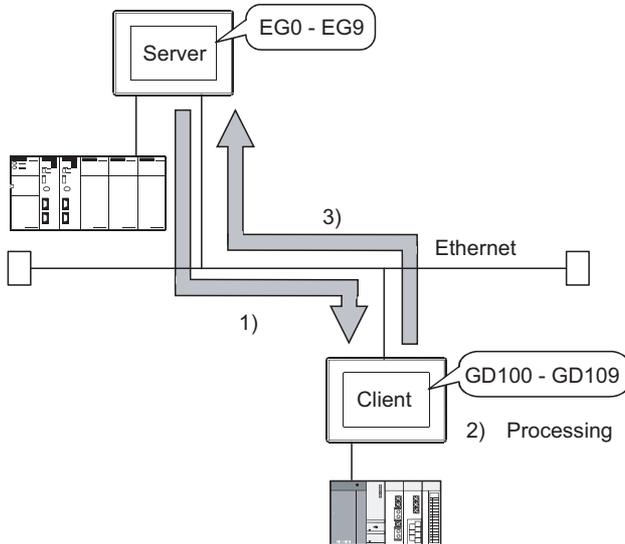
This section explains the points to be taken into consideration to use the server and client functions efficiently.

1 Script function setting

When gateway devices are used directly to execute a program, the number of times to access other GOTs increases and causing the processing to slow down.

By performing batch read from the internal devices of the GOT and performing batch write after the execution of processing as explained in (1) below, the number of access times decreases and thus improves the processing speed.

- (1) When performing batch read from the GOT internal devices (GD) and batch write to them after the execution of processing
Access to the other station GOT occurs twice (1), 3)).
When one access requires 50 ms, a total of about 100 ms is taken for two times of accessing and internal processing at access destination.

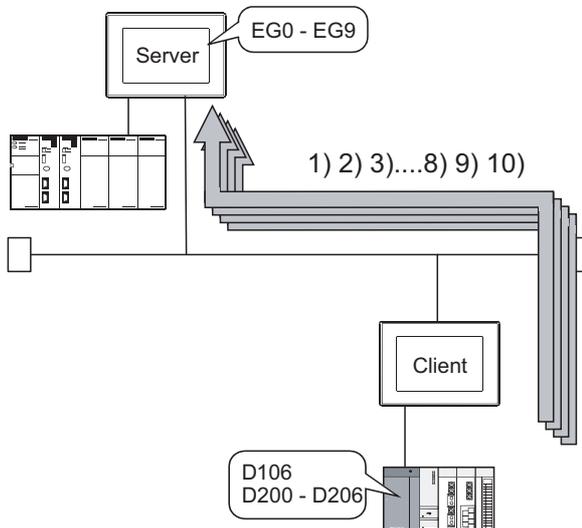


Script example

```

1) bmov([1-2:w:EG0],[w:GD100],10);
[w:D200]=[w:GD100];
[w:D201]=[w:GD101];
[w:D202]=[w:GD102];
[w:D203]=[w:GD103];
[w:D204]=[w:GD104];
2) [w:GD105]=128;
[w:GD106]=[w:D106];
[w:D205]=[w:GD107];
[w:D206]=[w:GD108];
[w:GD109]=5433;
3) bmov([w:GD100],[1-2:w:EG0],10);
    
```

- (2) When using gateway devices directly
Access to the other station GOT occurs 10 times (1) to 10))
When one access requires 50 ms, a total of about 500 ms is taken for ten times of accessing and internal processing at access destination.



Script example

```

1) [w:D200]=[1-2:w:EG0];
2) [w:D201]=[1-2:w:EG1];
3) [w:D202]=[1-2:w:EG2];
4) [w:D203]=[1-2:w:EG3];
5) [w:D204]=[1-2:w:EG4];
6) [1-2:w:EG5]=128;
7) [1-2:w:EG6]=[w:D106];
8) [w:D205]=[1-2:w:EG7];
9) [w:D206]=[1-2:w:EG8];
10) [1-2:w:EG9]=5433;
    
```

- 1 OVERVIEW
- 2 SYSTEM CONFIGURATION
- 3 OPERATION SEQUENCE
- 4 SERVER AND CLIENT FUNCTIONS
- 5 MAIL SEND FUNCTION
- 6 FTP SERVER FUNCTION
- 7 TROUBLESHOOTING
- APPENDICES
- INDEX

Point

About the values to be written

In the case of (1), explained on the previous page, the gateway devices are batch-accessed when the script execution conditions are established. Therefore, gateway device values set when the conditions are established are processed as the written values.

In the case of (2), explained on the previous page, the gateway devices are accessed one by one to execute processing. Therefore, these values may differ from the values set at the gateway devices when the conditions are established.

2 Gateway device setting

When assigning the PLC devices to the gateway devices, set the same type of devices of the same PLC together where possible.

By setting the same type of devices of the same PLC together as in (1) below, the number of access times is decreased to improve the processing speed.

- (1) Devices of host, other stations and other PLCs are set together

When the GOT (client) accesses the host devices of the GOT (server), access is possible with program 1) that reads 50 points starting from EG0.

Gateway Server				
EG Device Layout				
	EG Device	Type	PLC Device	Points
1	EG 0	Word	D100	40
2	EG 40	Word	D500	10
3	EG 50	Word	D300	40
4	EG 90	Word	D200	20
5	EG 110	Word	D600	50

Script example

```
1) bmov([W:GD100],[1-2:w:EG0],50);
```

- (2) Devices of host, other stations and other PLCs are not set together

When the GOT (client) accesses the host devices of the GOT (server), access requires two programs - program 1) that reads 40 points starting from EG0 and program 2) that reads 10 points starting from EG130.

Gateway Server				
EG Device Layout				
	EG Device	Type	PLC Device	Points
1	EG 0	Word	D100	40
2	EG 40	Word	D200	20
3	EG 60	Word	D300	40
4	EG 100	Word	D400	30
5	EG 130	Word	D500	10

Script example

```
1) bmov([W:GD100],[1-2:w:EG0],40);  
2) bmov([w:GD140],[1-2:w:EG130],10);
```



To further increase efficiency

By reserving together in advance the PLC devices to be used for the server and client functions in the system design stage as shown in (a) below, the number of times the GOT (server) accesses the PLC is reduced to improve the processing speed.

(a) When PLC devices are assigned together

Gateway Server				
EG Device Layout				
	EG Device	Type	PLC Device	Points
1	EG 0	Word	D200	100

The GOT access the PLC once to read/write the whole 100 points.

(b) When PLC devices are not assigned together

Gateway Server				
EG Device Layout				
	EG Device	Type	PLC Device	Points
1	EG 0	Word	D100	30
2	EG 30	Word	D250	20
3	EG 50	Word	D20	10
4	EG 60	Word	D360	20
5	EG 80	Word	D400	20

The GOT has to access the PLC at least 5 times to read/write all these 100 points.

3 Performance of the server / client function (reference values)

The following table indicates the performance of the server and client functions (reference values) when **1** and **2**, explained on the previous pages, are used.

The reference values of the performance assume the following conditions.

- There are one GOT (server) and one GOT (client) on the system.
- GOT (server): Numerical input (64 points) setting
- GOT (client): Numerical input (64 points) setting
- Number of assigned device points: 10 word devices

Combinations for Improving the Efficiency		Response Speed in Direct CPU connection
Improving the Script Function Efficiency	Improving the Gateway Device Setting Efficiency	
<input type="radio"/> (in the case of 1 (1) in this section)	<input type="radio"/> (in the case of 2 (1) in this section)	Approx. 260 ms
<input type="radio"/> (in the case of 1 (1) in this section)	<input type="checkbox"/> (in the case of 2 (2) in this section)	Approx. 1300 ms
<input type="checkbox"/> (in the case of 1 (2) in this section)	<input type="radio"/> (in the case of 2 (1) in this section)	
<input type="checkbox"/> (in the case of 1 (2) in this section)	<input type="checkbox"/> (in the case of 2 (2) in this section)	

When there are multiple GOTs (client), the response speed is "Response speed in the table × Number of GOTs (client)".

5. MAIL SEND FUNCTION

This chapter describes the mail send function.



- (1) About the mail software

The GOT (send source) does not require mail software.

- (2) About the system when using the mail send function

The SMTP (mail) server must be installed in the intranet to use the mail send function.

- (3) Mail send function

The function sends mail at the occurrence of, or restoration from, an alarm managed by the alarm history display function.

Refer to the following manual for details of the alarm history display function.



GT Designer 2 Version □ Screen Design Manual (Section 8.8 Alarm History Display)

5.1 Specifications

5.1.1 Specifications

The specifications of the mail send function are given below:

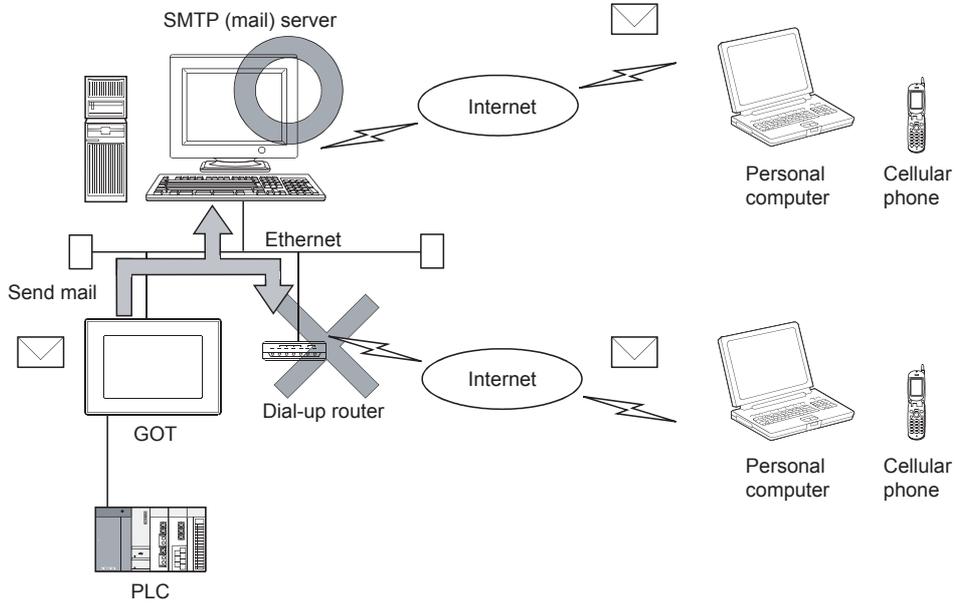
Item	Specifications	Setting Method
SMTP server	IP address setting (1 server only)	GT Designer2
	Port	25
	Server authentication	Disabled
Send destination address	To	1 to 32 (Max. 64 characters / address: Alphanumeric characters only)
	Cc	1 to 32 (Max. 64 characters / address: Alphanumeric characters only)
	Bcc	
Subject	Max. 128 characters (Alphanumeric characters only)	GT Designer2
Text data size	Can send two basic comments indicated below. Basic comment displayed as an alarm history message : Max. 512 characters (Alphanumeric characters) Basic comment displayed in the comment window, in detail display of the alarm history. : Max. 512 characters (Alphanumeric characters)	–
Attachments	Disabled	–
Encoding	No	–
Compression	No	–
Memory space used by GOT (bytes)	$20 + 4 \times (\text{Number of destinations} + 2) + 2 \times (\text{Total number of characters of destination, subject and sender})$	GT Designer2

The table below shows the mail software program for which correct operation is confirmed by Mitsubishi Electric.

Name	Maker
OutlookExpress6, Outlook2003	Microsoft Corporation

5.1.2 Mail send enabled range

Since the IP address is used to specify the SMTP server in the mail send function of a GOT, a dial-up router cannot be used to send mail. (The SMTP server of the Internet service provider cannot be used.) Install the SMTP (mail) server in the intranet.



5.2 Setting Method

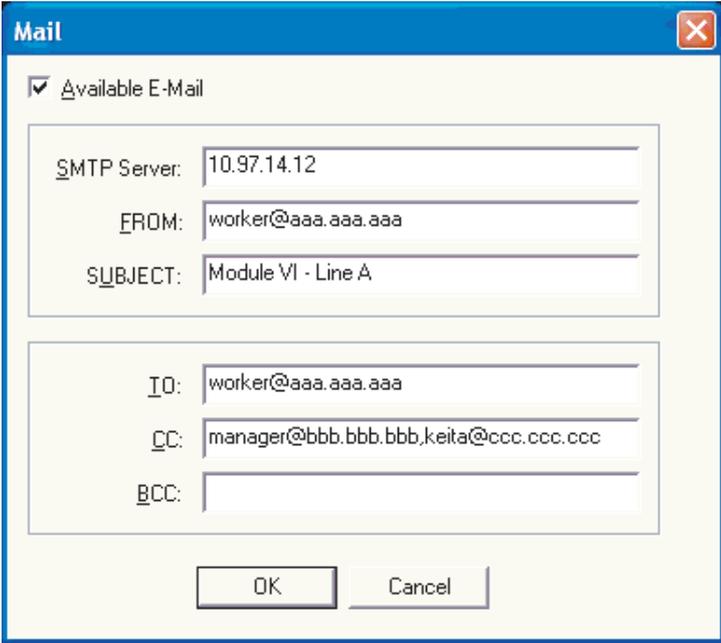
Only one mail setting can be made for one GOT.

1 Operation procedure

When either of the operations below is performed, the Mail dialog box opens.

- Choose the [Common] → [Gateway] → [Mail] menu.
- Double-click  (Mail) in the workspace.

2 Mail dialog box



Item	Description
Available E-Mail	Check this item to use the mail send function.
SMTP Server	Set the IP address of the SMTP server.
FROM	Enter the address of the mail send source. (Alphanumeric characters only) Since a GOT does not have the mail receive function, set the address where reply should be sent back in the "FROM" field. When there is no specific reply destination, set the address as set in "TO".
SUBJECT ^{*1}	Enter the title of the mail. (Alphanumeric characters only)
TO ^{*2}	Enter the address of the mail send destination.
CC	Enter the address of the mail send destination (carbon copy). (Alphanumeric characters only. Specify if required.)
BCC	Enter the address of the mail send destination (blind carbon copy). (Alphanumeric characters only. Specify if required.)

*1 Better to enter different SUBJECTs to identify the mail sending GOT from multiple GOTs.

*2 When setting multiple send destination addresses, separate them with a space or a comma.

5.3 Mail Send Examples

When mail is sent from a GOT to the target device, the message indicating that the mail has been sent from a GOT is displayed in the header of the received mail.

Example of the indication of send source in the header of the received mail

```

From:*****
To:*****
Cc:*****
Subject:Module VI - Line A
X-Mailer:GOT
  
```

Point

About sending mail

- (1) The format and contents of the display of the mail having been sent vary depending on the specifications of the mail software installed at the destination.
- (2) When mail is sent to a cellular phone, the display may vary depending on the specifications (screen size) of the cellular phone.
- (3) If more than 16 events of occurrence of or restoration from an alarm took place at the same time, only the information of the first 16 events is sent.

1 When sending mail using the alarm history display function

If an alarm occurs in a GOT, the time and information of alarm occurrence are sent to the destination. If the GOT is recovered from the alarm, the recovery time and information is sent to the destination by a mail.

Refer to the following manual for the alarm history display function setting method.

 GT Designer 2 Version □ Screen Design Manual (Section 8.8 Alarm History Display)

(1) Example of display at the destination

```

[Alarm history occurred information]
[Occur Time]
2005/02/14 09:48:15
(a) → [Occur Information]
Line A supply conveyor stopped.
(b) → [detailed Information]
X2 ON
Alarm history: A-line supply converter stopped.
Check the power source.
  
```

(At the occurrence of alarm)

```

[Alarm history repaired information]
[repair Time]
2005/02/14 10:38:23
(a) → [repair Information]
Alarm "Line A supply conveyor stopped." recovered.
Alarmhistory:detail comment nothing
  
```

(At the restration from alarm)

- (a) The comment set for the alarm history display function is displayed.
- (b) The contents of detail information ([Detail]) set for the alarm history display function is displayed.

If "Not display", "Base screen" or "Window screen" is set for the alarm history display function, specific detail information is not displayed.

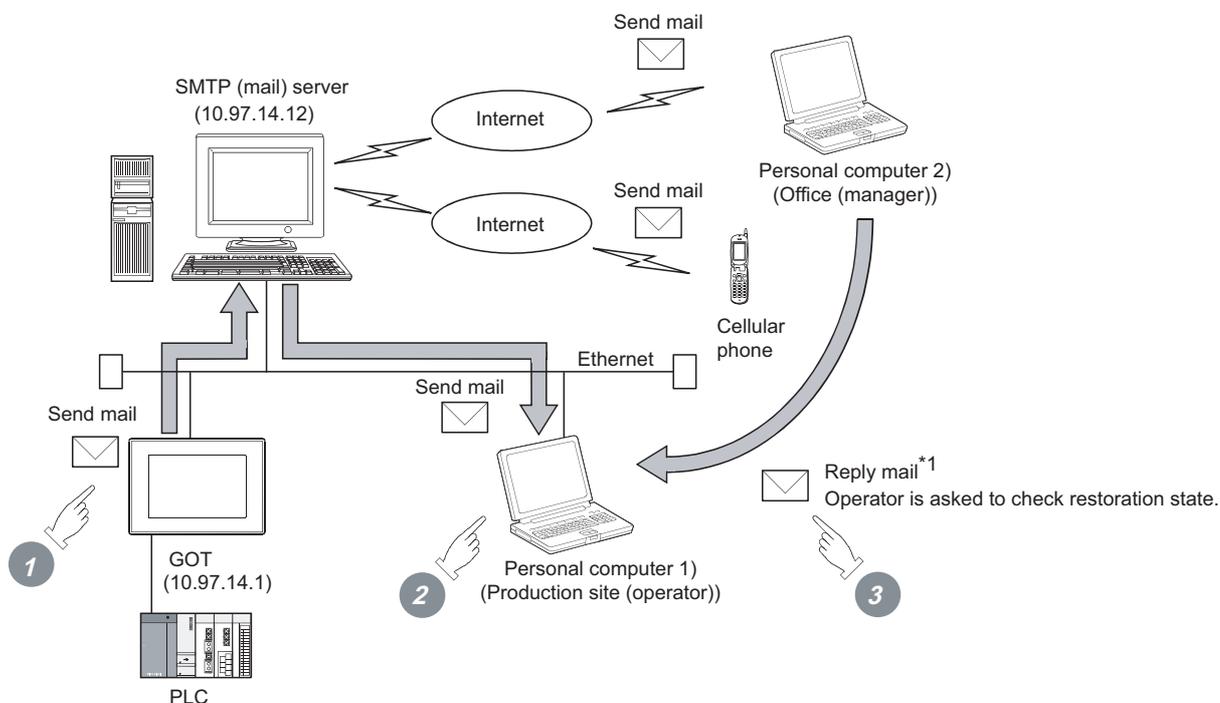
(In this case, "Alarm history: detail comment nothing" is displayed for [detailed Information].)

To display the information for [detailed Information], set the information to be displayed at the Comment window.

5.4 Examples of Use

Examples of how the mail send function is used is given below.

1 Sending the contents of the alarm that occurred in the GOT to the production site and the office by mail



*1 Since a GOT cannot receive a mail, set the mail address of the personal computer at the production site for "FROM".

Thus the manager in the office can reply a mail to the production site to get further more information.

- 1 If an alarm occurs in a GOT, a mail is sent to the personal computer 1) (production site (operator)), cellular phone and personal computer 2) (office (manager)).
- 2 At the production site, an operator repairs the system to recover its function.
- 3 At the office, the manager can send a mail to the production site, requesting the report on the status of restoration.

(1) GOT setting example

(a) Utility of GOT

Item	Description
GOT IP Address	10.97.14.1
Delay Time	0 (× 10 ms)
Timeout Time	3 sec.
Startup Time	3 sec.

(b) Mail setting

Item	Description
SMTP Server	10.97.14.12
FROM	Mail address of personal computer 1) (production site (operator))
TO	Mail address of personal computer 1) (production site (operator))
CC	Mail address of personal computer 2) (office (manager)) Mail address of cellular phone
SUBJECT	Module VI - Line A

(c) Alarm history display function ^{*1} (Alarm History screen)

Item	Description
Device	Controller device to be monitored
Send mail	At the occurrence of alarm / At the recovery from alarm

*1 The comment to be displayed by the alarm history display function should be set beforehand.

5.5 Precautions

The precautions for using the mail send function are described below:

- (1) The languages that can be sent by mail are Japanese and English.
Other languages, if used, are sent in the symbol of "?".
- (2) When mail is sent from multiple GOTs to the same mail address, set the subject specific to the individual GOTs so that the mail sending GOT can be identified.
If the same subject is set at multiple GOTs, it becomes difficult to find the GOT that has sent a specific mail.
- (3) Depending on the clock setting at a GOT (time setting/time notification), problems may occur including the problem that the setting of the clock data at the GOT or controller is not valid.
Refer to the following manual for clock setting of a GOT.

 GT Designer 2 Version □ Screen Design Manual (Section 2.5 Clock Function)

- (4) The date/time of the SMTP server is taken as the mail send date/time.

6. FTP SERVER FUNCTION

This chapter describes the FTP server function.

6.1 Specifications

6.1.1 Specifications

The specifications of the FTP server function are indicated below.

Item	Specifications	Setting method
FTP server function setting	Whether the function will be used or not can be set (default: Not used)	GT Designer2
User name	1 to 12 alphanumeric characters (case sensitive, use of "anonymous" is prohibited) (default: GOT1000)	GT Designer2
Password	1 to 8 alphanumeric characters (case sensitive) (default: GOT1000)	GT Designer2
Port No.	20, 21	Fixed
Number of clients that can be connected simultaneously	1 unit	Fixed
Watching timer of command input	Before login ^{*1}	1 min.
	After login ^{*2}	1 to 60 min. (default: 15 min.)
File size that can be read	Unlimited (Max. read size depends on memory card capacity.)	–
File name ^{*3}	Only alphanumeric characters	–
Access mode	Normal: Reference mode (write to memory card disabled) Write is enabled after issue of dedicated command	–
FTP client	<ul style="list-style-type: none"> • General-purpose FTP client tool can be used.^{*4} • Access can be made by FTP command from Windows[®] MS-DOS prompt or command prompt. • The passive mode is supported. 	–
Memory space used by GOT (bytes)	Total number of 12 + (2× the number of characters used for login name and password)	–

*1 The line is disconnected if a correct password and login name are not entered within 1 minute after a line connection with the GOT.

*2 The GOT disconnects the line if a command is not input from the FTP client within the time set to the watching timer of command input.

*3 Refer to the following for the file names that can be set.

 6.3.2 File specifying method

*4 The following general-purpose FTP client tools can be used.

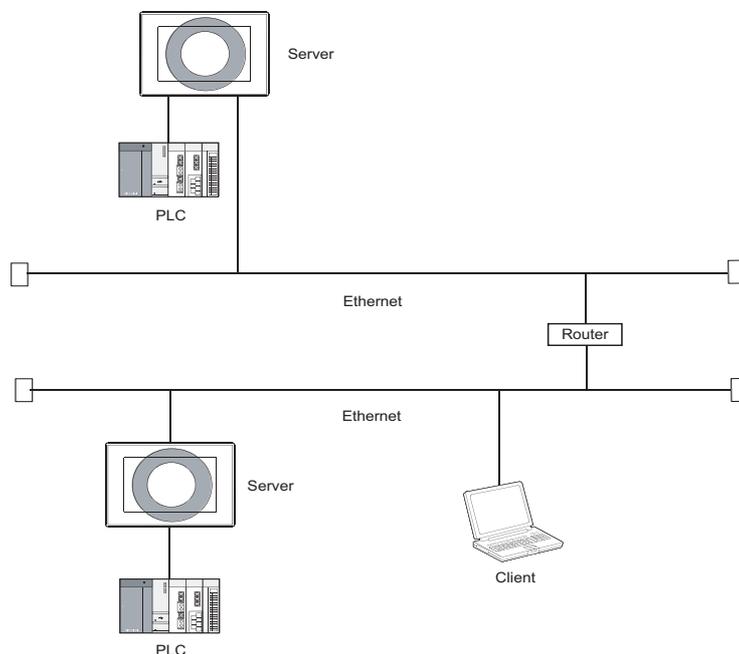
Name	Supporting OS
Microsoft [®] Internet Explorer 5 or later ^{*5}	Microsoft [®] Windows [®] 98 Operating System,
Netscape Communicator 7.1 or later ^{*5}	Microsoft [®] Windows [®] Millennium Edition Operating System,
FFFTP Ver. 1.82 or later (freeware)	Microsoft [®] Windows NT [®] Workstation 4.0 Operating System,
NextFTP Ver. 2 (shareware)	Microsoft [®] Windows [®] 2000 Professional Operating System,
	Microsoft [®] Windows [®] XP Professional Operating System,
	Microsoft [®] Windows [®] XP Home Edition Operating System

*5 GOT-dedicated commands cannot be used when using Microsoft[®] Internet Explorer or Netscape Communicator.

6.1.2 Accessible file range

The FTP server function can access the GOT within the network to which the FTP client is connected.
(Multiple clients cannot access the GOT simultaneously.)

When using a relay device such as a router, consult the network manager.



Simple determination of whether a file can be accessed or not

Whether a file can be accessed or not can be determined simply by issuing the ping command to the GOT.

Example of issuing the ping command (Windows® command prompt)

IP address of GOT: 10.97.14.10

- When a file can be accessed

```
C:\ping 10.97.14.10
pinging 10.97.14.10 with 32 byte of data:
reply from 10.97.14.10 : Fbytes=32 time<10ms ttl=128
reply from 10.97.14.10 : Fbytes=32 time<10ms ttl=128
reply from 10.97.14.10 : bytes=32 time<10ms ttl=128
C:\
```

- When a file cannot be accessed

```
C:\ping 10.97.14.10
pinging 10.97.14.10 with 32 byte of data:
request timed out.
request timed out.
request timed out.
C:\
```

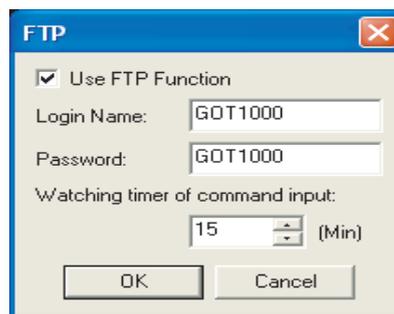
6.2 Setting Method

1 Operation procedure

When either of the following operations is performed, the FTP dialog box is displayed.

- Select [Common] → [Gateway] → [FTP] from the menu.
- Double-click  (FTP) in the workspace.

2 FTP dialog box



Item	Description
Use FTP Function	Check this item when using the FTP server function.
Login Name	Set the login name used when the FTP client connects to the GOT. Only one login name and the login name up to max. 12 characters can be set. Only alphanumeric characters (a to z, A to Z, 0 to 9) can be used. The default is GOT1000.
Password	Set the password used when the FTP client connects to the GOT. Only one password and the password up to max. 8 characters can be set. Only alphanumeric characters (a to z, A to Z, 0 to 9) can be used. The default is GOT1000.
Watching timer of command input	Set the time when the line with the GOT will be disconnected if no command is entered from the FTP client. The time can set in the range from 1 to 60 min. in 1 min. increments. Normally, use the default setting (15 min).

6.3 Operation on FTP Client Side

6.3.1 Input command at FTP client

1 General commands

The following table shows usable general commands.

The following commands may not be used depending on the specifications of the FTP client to use.

○ : Usable × : Unusable

Command name	Function	Reference mode	Write mode
append	Additionally writes a file to the GOT.	×	○
ascii	Changes the file transfer mode to the ascii mode.	○	○
binary	Changes the file transfer mode to the binary mode.	○	○
bye	Exits the FTP client tool.	○	○
cd	Changes the current directory of the GOT.	○	○
close	Disconnects the line with the GOT.	○	○
delete	Deletes a file in the GOT.	×	○
dir	Reads the file information in the GOT.	○	○
get	Reads a file from the GOT.	○	○
ls	Displays file names in the GOT.	○	○
mdelete	Deletes multiple files specified using a wild card.	×	○
mdir	Reads the file information in the GOT to the specified file.	○	○
mget	Reads multiple files specified using a wild card.	○	○
mkdir	Creates a directory in the GOT.	×	○
mls	Reads the file names in the GOT to the specified file.	○	○
mput	Writes the specified multiple files using a wild card to the GOT.	×	○
open	Connects the line with the GOT.	○	○
put	Writes a file to the GOT.	×	○
pwd	Displays the current directory of the GOT.	○	○
rename	Changes file names in the GOT.	×	○
rmdir	Deletes a directory in the GOT.	×	○
quit	Disconnects the line with the GOT and exits the FTP client tool.	○	○
quote	Used when the GOT-dedicated command is used. (Example: quote gtwr)	○	○
user	Enters the user name and password used to log in to the GOT.	○	○

2 GOT-dedicated commands

When the line with the GOT is connected, the FTP client is in the "reference mode" in which file read-only is enabled.

Before writing or deleting the file or creating a directory, change it to the "write mode".

To select the reference mode or write mode, issue a mode change command.

○ : Usable × : Unusable △ : Setting invalid (command does not result in error)

Command name*1	Function	Reference mode	Write mode
gtwr	Changes the FTP server function mode of the GOT to the write mode.	○	△
gtrd	Changes the FTP server function mode of the GOT to the reference mode.	△	○
help	Displays the general-purpose actual commands of the FTP protocol supported by the FTP server function of the GOT.	○	○
gtds	Enables access to the C drive in the GOT.	×	○

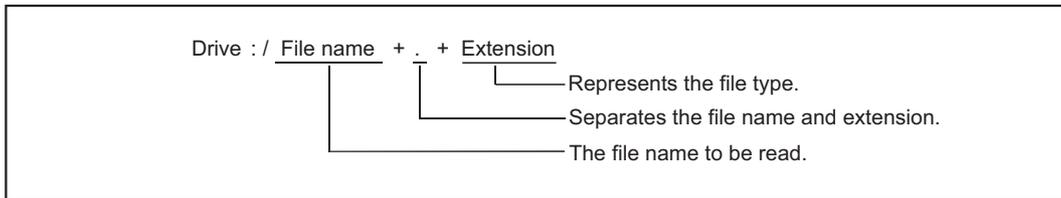
- *1 When entering the GOT-dedicated commands, use "quote".
When using a FTP client software which appends "quote" automatically, describe only the dedicated commands.
Example) When entering "gtwr" from the command prompt: quote gtwr
When entering "gtwr" from FFFTP: gtwr

6.3.2 File specifying method

There are two file specifying methods: one is to specify one file directly and the other is to specify multiple files that meet the condition.

1 Specifying the file name to read

Specify the file name of the file to be specified, period and extension.



(1) Drive

Specify the following drives.

A: Standard CF Card

B: Extended Memory Card

C: Built-in flash memory

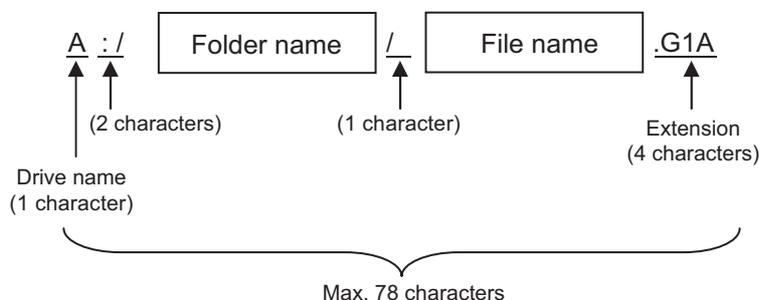
(2) Number of characters set for folder or file name

GOT recognizes the file location according to the path explained below.

Specify the folder name and file name, with the total characters of the path not exceeding 78 characters.

Only folder and file names can be set by the user.

(Information other than the folder and file names is automatically added.)



Remark

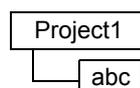
When setting a hierarchy to the folder

When setting a folder name, enter a forward slash ("/") between folder names.

(/ is counted as one character.)

(Setting example)

[Folder name]: Project1/abc



(3) Character strings that cannot be set

The following character strings cannot be used as a folder or file name (regardless of case).

- COM1 to COM9 • LPT1 to LPT9 • AUX • CON
- NUL • PRN • CLOCK\$

The following folder and file names cannot be used.

- Folder names starting with G1
- Folder or file names starting with a period (".") or forward slash ("/").
- Folder or file names ending with a period (".") or forward slash ("/").
- Folder or file names with only one or two periods (".", "..")

(4) Extensions

The FTP server function mainly uses files with the following extensions.

Extension	Application on GOT
csv	Recipe files (recipe function), advanced recipe file (advanced recipe function), advanced alarm file (advanced alarm function), alarm history file (alarm history display function)
txt	Recipe file (recipe function), advanced recipe file (advanced recipe function), advanced alarm file (advanced alarm function)
bmp	Image data (hardcopy function)
jpg	
3GP	Video files (multimedia function)



Reading binary format files

Turning on GS400.b8 (Bit position: 8) of GOT special register enables direct read of a binary format file (*.G1 □) from an FTP client.

Note that reading of the following binary format files is not allowed.

- *.G1
- *.G1D

Binary format files read to the GT Designer2 can be used as backups.

Some files can be converted with the GT Designer2.

For file conversion on the GT Designer2, refer to the following manual.

GT Designer2 Version □ Screen Design Manual

2 Specifying the files that meet the condition (wild card)

When specifying multiple files, "*" or "?" as a wild card can be used.

(Example)

- When specifying only JPEG files *.jpg
- When specifying CSV files that begin with Main Main*.csv
- When specifying files whose extensions begin with b *.b??



About accessing files

Deleting certain files may cause any malfunctions to the GOT.

To prevent the GOT from malfunctioning, do not delete any files inside of the GOT from the FTP client.

6.3.3 Checking the line connection status

The connection status of the line between the GOT and FTP client is stored in the GOT special register GS200.b2 (bit position: 2).

By referring to this bit on the GOT, check whether or not the line is connected.

Device name	ON	OFF
GS200.b2	Connected	Disconnected

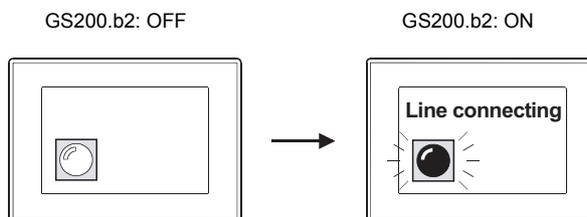
Refer to the following manual for details of the GOT special registers.

 GT Designer2 Version □ Screen Design Manual

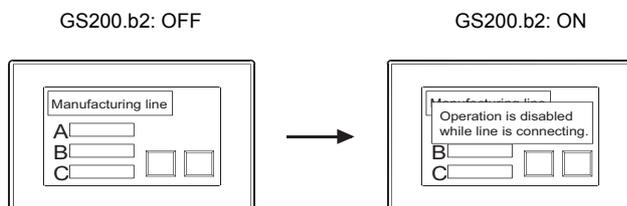


Example of using GS200.b2

- (1) Using the above device with the lamp display function, a line status confirmation indicator is available.



- (2) By setting the above device to the operation condition as a trigger using the touch switch function or numerical input function, operation (input) can be restricted while the line is connected.



Using the touch key function or numerical input function, make setting to enable input only when the device (GS200.b2) is OFF.

6.3.4 Line disconnection

There are two line disconnection methods: automatic and manual disconnection.

1 Automatic disconnection

The GOT disconnects the line automatically if no command is entered from the FTP client within the time set to the watching timer of command input in the FTP server setting.

The watching timer of command input is always set.

Refer to the following for the setting of the watching timer of command input.

 6.2 Setting Method

2 Manual disconnection (Forcibly disconnecting the line)

Using the GOT special register GS400.b2 (bit position: 2), the line is forcibly disconnected.

To disconnect the line, turn "ON" GS400.b2 (bit position: 2).

Refer to the following manual for details of the GOT special registers.

 GT Designer2 Version □ Screen Design Manual (Section 2.9.1 GOT internal devices)

Point

Precautions when using GS400.b2

After confirming that the line has been disconnected, turn "OFF" GS400.b2.

Remark

About disconnecting the line

Since the GOT cannot detect the fault status of the FTP client, it does not disconnect the line immediately if the FTP client cannot exit properly (e.g., when the personal computer is powered off while the line is connected).

However, because the watching timer of command input is set, the line is disconnected automatically in a predetermined time.

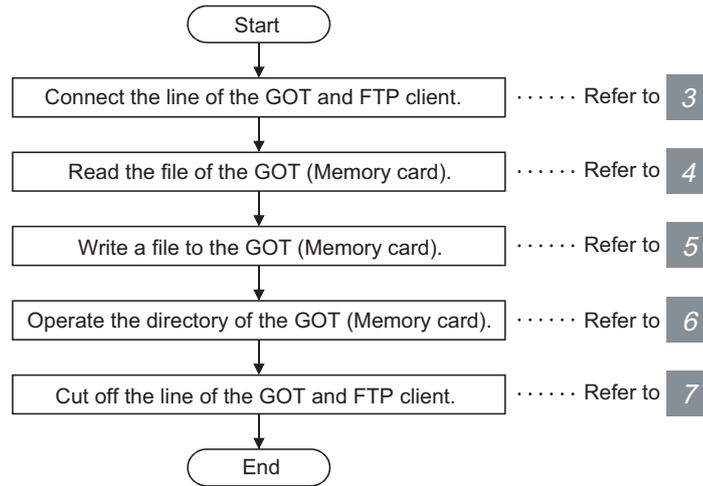
6.4 Example of Use

The following is an example of the use of the FTP server function.

In this example, the Windows® MS-DOS command prompt is used for accesses between the GOT and FTP client.

When performing operations using a commercially available FTP client tool, refer to the manual of the FTP client tool used.

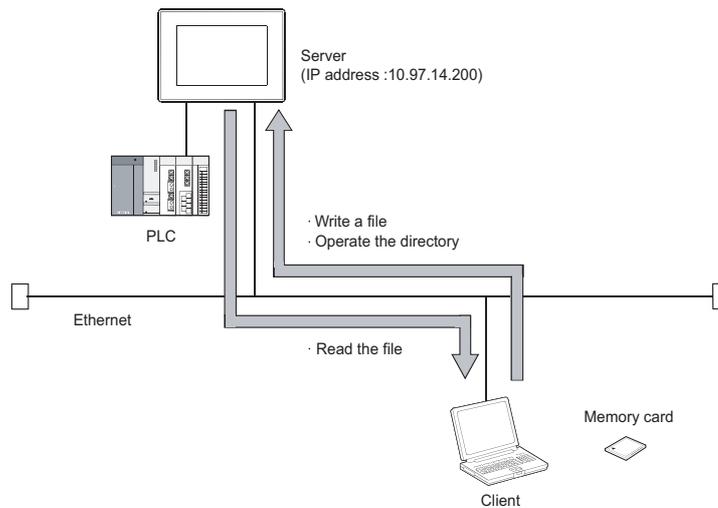
1 General procedure



Point

When writing a file to the GOT (Memory card) or operating the directory, turn on the CF card access switch of the GOT to make the memory card write-enabled.

2 System configuration example



3 Connecting the line of the GOT and FTP client.

Use the following procedure to connect the GOT and FTP client.

- 1 Starting the FTP client..... ftp
- 2 Connecting to the GOT open + GOT IP address
- 3 Inputting the login name..... Login name
- 4 Inputting the password..... Password

Login image (when the line is connected properly)

```
C:\>ftp
ftp>open 10.97.14.200
connected to 10.97.14.200
220 GOT1000 FTP server ready.
user:GOT1000
331 Password required.
Password:****
230 User logged in.
ftp>
```

Login image (when another personal computer is already connected to the GOT)

```
C:\>ftp
ftp>open 10.97.14.200
connected to 10.97.14.200
421 Session limit reached, closing control connection
user:GOT1000
connection closed by remote host
ftp>
```

Login image (when the password is incorrect)

```
C:\>ftp
ftp>open 10.97.14.200
connected to 10.97.14.200
220 GOT1000 FTP server ready.
user:GOT1000
331 Password required.
Password:****
530 Not logged in.
ftp>
```

4 Reading the file of the GOT (Memory card)

Use the following procedure to read the file.

- 1 Notifying of no file conversion binary ↵
- 2 Reading file get + file name ↵

Read image

```
ftp>binary
TYPE is now BINARY.
ftp>get SNAP0001.BMP
200 PORT command successful
150 Opening connection.
226 Closing data connection.
ftp: 63 bytes sent in 0.00 seconds 63000.00
K bytes/sec.
ftp>
```

5 Writing a file to the GOT (Memory card)

Use the following procedure to write a file.

- 1 Notifying of no file conversion binary ↵
- 2 Selecting the write mode quote gtwr ↵
- 3 Displaying the file name to check for the same file name
..... ls ↵ or dir ↵
- 4 Deleting the same file when exists delete + file name ↵
- 5 Writing file put + file name ↵

Write image

```
ftp>binary
TYPE is now BINARY.
ftp>quote gtwr
200 command successful.
ftp>ls
200 PORT command successful.
150 Opening connection.
SNAP0001.BMP
SNAP0002.BMP
226 Closing data connection.
ftp>delete SNAP.0001.BMP
File deleted Successfully.
ftp>put SNAP0001.BMP
200 PORT command successful
150 Opening connection.
226 Closing data connection.
ftp: 63 bytes sent in 0.00 seconds 63000.00
K bytes/sec.
ftp>
```

6 Operating the directory of the GOT (Memory card)

Use the following procedure to create and change the directory.

- 1 Displaying current directory pwd 
- 2 Selecting the write mode..... quote gtwr 
- 3 Creating directory..... mkdir + directory name 
- 4 Changing current directory..... cd + directory name 

Directory operation image

```
ftp>pwd
257 "A:/snapshot" is current directory.
ftp>quote gtwr
200 command successful.
ftp>mkdir bmpdata
275 MKD command successful.
ftp>cd bmpdata
250 CWD command successful.
ftp>pwd
257 "A:/snapshot/bmpdata" is current directoryftp>cd ..
250 CWD command successful.
ftp>pwd
257 "A:/snapshot" is current directory.
ftp>
```

7 Disconnecting the line of the GOT and FTP client

Use the following procedure to disconnect the GOT and FTP client.

- 1 Quit command quit 

Logout (line disconnection) image

```
ftp>quit
221 User logged out. Good-Bye.
C:\>
```

8 Error display

An error that occurs in the FTP server function is displayed on the FTP client. Refer to the following for the displayed error messages.

 7.5.1 Error codes and error messages

If an attempt is made to read a file (snap0010.bmp) that does not exist

```
ftp>get snap0010.bmp
200 PORT command successful.
550 snap0010.bmp: FNo such file or directory.
ftp>
```

6.5 Precautions

The following are precautions when using the FTP server function.

1 Precautions for system design using the FTP server function

- (1) When writing a recipe file from the FTP client to the GOT, set the format of the recipe file as set for the recipe function of the GOT.
When writing a recipe file from a remote location, confirm the operation with the field site personnel before writing.
- (2) Before using the FTP client tool, refer to the manual of the FTP client tool, confirm its functions and operation methods, and test it before starting operation.
Depending on the FTP client tool used, the GOT (FTP server) may not support some operations.
Also, depending on the FTP client tool used, the FTP server function may not be usable because the GOT cannot support the extended command (quote) and issue GOT-dedicated commands.
- (3) If a number of files are read at once under one command (e.g., mget or mput is executed by specifying a wild card), processing may be delayed by network congestion.
If processing is slow, issue commands separately to process more fast.

2 Precautions for file transfer

- (1) The GOT disconnects the line if no command is input from the FTP client for longer than the time set to the watching timer of command input.
- (2) The line is disconnected if the GOT IP address, router address or subnet mask is changed while the GOT and FTP client are connected.
- (3) The line remains connected if the GOT goes offline (e.g., the monitor screen data is downloaded) while the GOT and FTP client are connected.
- (4) When change (rewrite) the contents of the recipe file, make the recipe inactive.
If the recipe file in the memory card is deleted during recipe processing, the function will not operate properly.
If the recipe file is deleted at a time other than during recipe processing, an error (system alarm: recipe file error) will occur in the next recipe operation.

(☞ 6.3.3 Checking the line connection status)
- (5) Check that writing of the file is performed correctly when overwriting a file in the GOT using FTP.
If an error occurs during writing of the file, the file being written in the GOT is deleted.
Write the file again using FTP.
- (6) If the FTP client has become faulty (personal computer), wait until the time set to the watching timer of command input elapses or turn the forced logout signal "GS400.b2" on to disconnect the line, and log in again.
The line connection status can be checked using "GS200.b2" (bit position: 2).
- (7) Do not power the GOT off while accessing the file in the memory card of the GOT from the FTP client.
Doing so may damage the data in the memory card.

- (8) If reset or power off the GOT while the GOT and FTP client are connected, the operation of the FTP client depends on the specifications of the FTP client tool used.
Use an FTP client tool that supports the detection of FTP server faults or that can be exited properly.
- (9) Write processing (put) cannot be performed if CF card access switch of the GOT main unit is off.
- (10) Write processing (put) cannot be performed if the write protect switch of the memory card is on.
- (11) Depending on the FTP client tool used, the time stamp may differ from that of the file in the memory card of the GOT. If the time stamp differs, check the setting of the FTP client tool.

3 Precautions for FTP login

- (1) If forgot the password for FTP login, connecting to the GOT is not applicable.
Confirm the set password using GT Designer2.
- (2) Multiple FTP clients cannot login to the GOT simultaneously.
- (3) If enter an incorrect user name or password for FTP login in the FTP software, exit the FTP client and login again.
- (4) The user authentication dialog box may not be displayed when using Microsoft® Internet Explorer.
Enter the GOT address in the following format.
ftp://<user name>:<password>@<GOT address name or host name>/

Example: Default setting

ftp://GOT1000:GOT1000@192.168.0.18/

7. TROUBLESHOOTING

This chapter details the troubleshooting of the gateway functions.

7.1 Troubleshooting Common to Gateway Functions

The following troubleshooting common to the gateway functions:

Phenomenon		Definition and Cause	Corrective Action
GOT can not communicate with the controller.		Mounting of a communication unit, the OS installed to a GOT, communication setting, and the like are incorrect.	Check the mounting of a communication unit, the OS installed to the GOT, communication setting, and the like following the procedure explained in the GOT1000 Series Connection Manual.  GOT1000 Series Connection Manual)
The gateway functions do not work.	At no response for ping test while all bits of GS200 are OFF.*1,*2	Option OS of the gateway functions is not installed in the GOT.	Install the option OS of the gateway functions to the GOT.  GT Designer 2 Version <input type="checkbox"/> Basic Operation / Data Transfer Manual (Chapter 8 TRANSFERRING DATA))
		The option function board is not mounted.	Mount the option function board.
		The IP address is not set to the GOT main unit.	Check if the IP address has been set to the GOT main unit, using the utility function.
	With response for ping test while any bit of GS200 is ON.*1,*2	Port No. setting of the personal computer (MX Component) differs from the GOT port No. (5011).	Check the Port No. setting of the personal computer (MX Component) if it is identical to the GOT port No. (5011).
		–	Take the corrective action, referring to the troubleshooting of the function corresponding to the bit that is ON.  7.2 Gateway Information)

*1 Refer to the following for details of the gateway common information (GS200).

 7.2 Gateway Information

*2 Use either of the following methods to check whether or not response is given to Ping.

- Execute the Ping command from the personal computer to the GOT.
- Execute the "PING TEST" provided by GT Designer 2.

 GOT Series Connection Manual (Section 42.2.7  2 Confirming the communication state of GOT)

7.2 Gateway Information

The error information of the gateway functions is stored in the special registers (GS) of a GOT. It is possible to check the error information of the gateway functions by monitoring the GOT special registers. Refer to the following manual for details of the GOT special registers.

 GT Designer 2 Version Screen Design Manual (Section 2.9.1 GOT internal devices)

1 Gateway function error information table

(1) Read device

Device	Function	Description	
GS200	Gateway common information	 1 (1) (a) Gateway common information (GS220)	
GS201	Mail send function	Error counter	
GS202		Error code	
GS203		Date and time of occurrence	
GS204			
GS205			
GS206		Mail send destination	
GS207 to GS209		Reserved	
GS210	Server function	Error counter	
GS211		Error code	
GS212		Date and time of occurrence	
GS213			
GS214			
GS215		Request source	
GS216			
GS217 to GS219		Reserved	
GS220	Client Function	Error counter	
GS221		Error code	
GS222		Date and time of occurrence	
GS223			
GS224			
GS225		Request destination	
GS226			
GS227 to GS229		Reserved	

(a) Gateway common information (GS220)

b15	b14	b13 to b12	b11	b10 to b5	b4	b3	b2	b1	b0
-----	-----	------------	-----	-----------	----	----	----	----	----

- b0 : ON while the mail send function is ready.
- b1 : ON while the FTP server function is ready.
- b2 : Turns on when an FTP client logs in.
- b3 : ON while the server function is ready.
- b4 : ON while the client function is ready.
- b10 to b5 : Reserved
- b11 : Turns ON when an error occurs in the mail send function.
- b13 to b12 : Reserved
- b14 : Turns ON when an error occurs in the server function.
- b15 : Turns ON when an error occurs in the client function.

(b) Mail send source of mail send function (GS206)

b15 to b2	b1	b0
-----------	----	----

- b0 : Reserved
- b1 : Turns ON when an alarm occurs in the alarm history.
- b15 to b2 : Reserved

(2) Write device

Device	Function	Description
GS400	Gateway common information	 (2) (a) Gateway common control (GS400)

(a) Gateway common control (GS400)

b15	b14	b13 to b12	b11	b10 to b9	b8	b7 to b3	b2	b1 to b0
-----	-----	------------	-----	-----------	----	----------	----	----------

- b1 to b0 : Reserved
- b2 : Forcibly logs the FTP server function out. ({} areas are reserved.)
- : Forced logout
- b7 to b3 : Reserved
- b8 : Enables reading of a binary format file (*.G1) from an FTP client when this bit is turned ON.
Note that reading of the following binary format files is not allowed.
 - *.G1
 - *.G1D
- b10 to b9 : Reserved
- b11 : Clears the error (G200.b11, GS201 to GS206) of the mail send function when this bit is turned ON. ({} areas are reserved.)
- 8 : Clears the mail send function error.
- b13 to b12 : Reserved
- b14 : Clears the error (G200.b14, GS210 to GS216) of the server function when this bit is turned ON. ({} areas are reserved.)
- 4 : Clears the server function error.
- b15 : Clears the error (G200.b15, GS220 to GS226) of the client function when this bit is turned ON. ({} areas are reserved.)
- 8 : Clears the client function error.

7.3 Server and Client Functions

7.3.1 Error codes and error messages

1 GOT error code table

The following table details the error codes that are stored in the GOT special registers, GS211 (server function error codes) and GS221 (client function error codes):

Error Code*1	Definition and Cause	Corrective Action
490	Monitor the gateway device of the GOT (where a script program is running) by the script function.	1. Change the monitor destination GOT specified in the script to other GOT. 2. Monitor the PLC CPU devices directly without using the script.
491	Access a station that does not exist.	Check the network No., PLC station No. and Ethernet settings of the monitor destination.
492	A communication time error occurred.	1. Increase the value set for "Timeout time" in the utility of the GOT. 2. Check the network. (Check the presence/absence of the firewall, execution of Ping, for example.) 3. Check for cable disconnection and check the unit mounting status. 4. Check the network. (Check the presence/absence of the firewall, execution of Ping, for example.)
493	A communication error occurred.	1. Check for cable disconnection and check the unit mounting status. 2. Check the network. (Check the presence/absence of the firewall, execution of Ping, for example.)

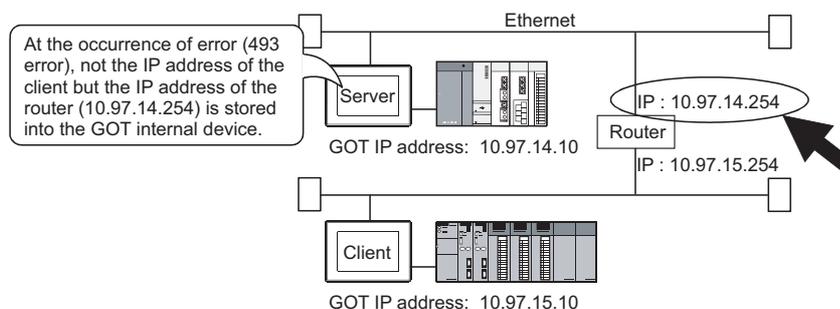
*1 In the GOT (server), only the error of error code 493 occurs.



- (1) If error code 493 occurred in the GOT (server)

This error may occur when the traffic of the network is heavy.
If no error has occurred in the target GOT (client), it poses no specific problem since normal communication is restored by the retry processing of the GOT (client).
- (2) If error code 493 occurred in the system that uses a router

If error code 493 occurred in the GOT (server), the router address is taken as the IP address of the target client.



- (3) If an error occurred in the GOT (client)
The script stops if an error occurs in the GOT (client). If an error occurred in the GOT, take the corrective action and execute the script again.
Refer to the following manual for details of the script function.

 GT Designer 2 Version □ Screen Design Manual (Chapter 16 SCRIPT FUNCTION)

- (4) If error code 492 occurred in the GOT (client)
This error may occur when there are many GOTs (client) that access the GOT (server).
Adjust the value set for "time-out time".
(As a guideline, set the value of "Present time-out time" × "Number of GOTs (client)".)
- (5) If error code 15 (script has not completed after the elapse of script monitoring time) was stored to the script error data (GS16 to GS47) when the script that used gateway devices was used
This error may occur when there are many GOTs (client) that access the GOT (server).
Adjust the value set for "script monitoring time" (GS385).
(As a guideline, set the value of "Present script monitoring time" × "Number of GOTs (client)".)
Refer to the following manual for details of the script function.

 GT Designer 2 Version □ Screen Design Manual (Chapter 16 SCRIPT FUNCTION)

2 MX Component error code table

The following table details the error codes that may occur when access is made from MX Component to a GOT:

Error Code ^{*1}	Definition and Cause	Corrective Action
0x0180840B	Time-out error Data could not be received after the elapse of time-out time.	1. Corrective action for MX Component <ul style="list-style-type: none"> Review the time-out value of the property. Set it again on the communication settings utility. Review the system, e.g. PLC CPU, module setting and cable status. Retry the method. Perform Close once and execute Open again. Exit the program and restart the IBM-PC/AT compatible.  MX Component Version3 Programming Manual 2. Corrective action for GOT <ul style="list-style-type: none"> Check if the server setting of GT Designer 2 has been made.  4.3 Setting Method)
0x010F4030	An unusable device or a device that does not exist is assigned to the accessed gateway device.	In the server setting of GT Designer 2, check if the device assignment is correct or if the set device exists.
0x010F4031	A PLC device outside the monitor range is assigned to the accessed gateway device.	In the server setting of GT Designer 2, check if the device within the monitor range is assigned.
0x010F4B00	Communication time-out occurred. The unit is not mounted correctly or the cable is not connected correctly.	1. Check for cable disconnection, and check the communication unit mounting status and the PLC status. 2. This error may occur when the PLC load increases during access to other station. If this error occurred, move the data of other station to the host PLC and monitor the data at the host. 3. If the sequence scan time is long, insert the COM instruction. 4. Check the GOT error codes of the alarm list display function (system alarm) and system information. If an error has occurred, take the corresponding corrective action. ^{*2}

*1 About MX Component error codes
If an error code other than those indicated above occurred, refer to the following manuals.

 MX Component Version 3 Operating Manual
 MX Component Version 3 Programming Manual

*2 About GOT error codes
Refer to the following manual for details of GOT error codes.

 GT15 User's Manual (Chapter 20 ERROR MESSAGE AND SYSTEM ALARM)

7.3.2 Troubleshooting

The following table details the troubleshooting for use of the server and client functions:

Phenomenon	Definition and Cause	Corrective Action
Gateway devices cannot be monitored.	In the server setting, a device that does not exist is assigned to the gateway device to be monitored.	Check the controller device assigned to the gateway device.
	In the client setting, the IP address of the GOT to be monitored is incorrect.	Check the IP address of the GOT to be monitored.
	An error occurred in the GOT of the server function or the client function.	Check the GOT special registers, GS211 and GS221, and take the corrective action.  7.3.1 Error codes and error messages
	A script function error occurred.	Check the script function error and take the corrective action.  GT Designer 2 Version □ Screen Design Manual (Section 16.4.3 Errors and corrective actions for script execution on GOT)

7.4 Mail Send Function

7.4.1 Error codes and error messages

The following table details the error codes stored in the GOT special register GS202 (mail send function error code):

Error code	Definition and Cause	Corrective Action
2	The FROM address has not been set.	Set FROM. (Mail send setting on GT Designer 2)
3	The SMTP server has not been set.	Set the SMTP server (Mail send setting on GT Designer 2)
4	The send destination address has not been set.	Set the send destination (TO). (Mail send setting on GT Designer 2)
5	The mail address is incorrect.	Check whether the mail address settings of FROM, TO, CC and BCC are correct. Check whether the double-byte is not used. (Mail send setting on GT Designer 2)
6	Alarms exceeding the limit of send processing capacity may have occurred.	Check the number of alarms that have occurred. (The maximum number of alarms that can be sent by mail at a time is 16.)
10	The SMTP server could not be connected.	1. Check whether the SMTP server is abnormal. 2. Check whether the IP address setting of the SMTP server is correct or not. (Mail send setting on GT Designer 2) 3. Ask the network administrator about the router address and subnet mask, and set them in the setup of the GOT. 4. When a firewall is installed on the network, ask the network administrator if port 25 is opened.
11	Time-out occurred when establishing connection to the SMTP server.	1. Check whether the SMTP server is normal or not. 2. Increase the value set for "Time-out time" (Utility of GOT).
12	Error notification is given from the SMTP server.	1. Check whether the SMTP server is normal or not. 2. Ask the network administrator if mail can be sent without authentication, such as POP3 authentication.

7.4.2 Troubleshooting

The following table details the troubleshooting for use of the mail send function:

Phenomenon	Definition and Cause	Corrective Action
Mail cannot be sent.	The SMTP server is not operating properly.	Ask the network administrator if the SMTP server is operating properly.
	FROM (send source) is not set correctly.	Check if the FROM is set correctly.
	An attempt was made to send 17 or more mails at a time.	Reduce the number of mails to be sent at a time to 16 or less.
The mail send time is incorrect.	The set time of the SMTP server is incorrect. (The GOT sends the mail using the clock of the SMTP server.)	Check if the clock of the SMTP server is correctly set.
Texts being sent/received by a cellular phone is broken midway.	The number of characters that can be sent/received by a cellular phone was exceeded.	Reduce the number of characters in texts to be sent by mail to within the number of characters that can be sent/received by the cellular phone to be used.
One-byte katakana cannot be displayed.	One-byte katakana cannot be used in text to be sent. It is changed to two-byte character.	The phenomenon is normal.

7.5 FTP Server Function

7.5.1 Error codes and error messages

The error codes and error messages related to the FTP server function are displayed on the FTP client side. The error displaying method changes depending on the FTP client tool used. The following tables indicate the errors that the GOT sends to the FTP client.

1 Normal codes and messages

Code	Message	Description
125	Data Connection already open; transfer starting	Transfer is starting.
150	Opening connection.	Connection for transfer has been established.
200	Command okay.	Command is normal.
	Command successful.	
	PORT command successful.	PORT command is successful.
214	The following commands are recognized.	Supported command list
	Help end.	HELP display has ended.
	Syntax: <command name>...	HELP display of corresponding command
220	GOT1000 FTP server ready.	Connection has been established.
221	User logged out. Good-Bye.	Connection has been terminated.
226	Closing data connection.	Connection for transfer has been terminated.
230	User logged in.	Login successful.
250	CWD command successful.	CWD (current directory change) command successful.
257	"/*****/* **/* **.* **" is current directory.	Current directory display
275	MKD command successful.	MKD (directory creation) command successful.
331	Password required.	Password is required.

2 Abnormal codes and messages

Error code	Error message	Description	Corrective action
426	Connection closed; transfer aborted.	Transfer error	Refer to the following for corrective action.  7.5.2 Troubleshooting
500	Syntax error, command unrecognized.	Syntax error, command cannot be recognized.	
501	NLST: Options not supported	Connection error	
510	Command not supported.	Unsupported command	
	Port open fails.	Opening of port failed.	
	File open fails.	Opening of file failed.	
530	Not logged in.	Login failed.	
550	Requested action not taken.	Command execution failed.	

7.5.2 Troubleshooting

The following table describes troubleshooting when using the FTP server function.

Phenomenon	Error contents and cause	Corrective action
Line cannot be connected.	[Use FTP Function] is not checked in the FTP server setting of GT Designer2.	Check [Use FTP Function].
	Another device has logged into the GOT.	After the other device has logged out, connect the line again.
	–	Issue the ping command to the GOT and check for a reply.
	–	Confirm with the network administrator.
Cannot login.	The login name or password is incorrect.	Enter the correct login name or password. (Case sensitive)
File cannot be written.	The file name is not recognized by the GOT.	Refer to the following manual for the file names that can be set.  6.3.2 File specifying method
	The reference mode is selected.	Change to the write mode.
	Overwrite disable or a similar setting has been made to the FTP client setting.	Review the FTP client setting.
	A file with the same name already exists.	Delete the file or change the file name to a name that does not exist.
	The memory card is write-protected.	Cancel the write protection of the memory card.
	The CF card access switch of the GOT main unit is off.	Turn the CF card access switch of the GOT main unit off.
File cannot be read.	An attempt was made to read a file that does not exist.	Check for the file using the dir or ls command.
	The CF card access switch of the GOT main unit is off.	Turn the CF card access switch of the GOT main unit on.
File cannot be deleted.	The memory card is write-protected.	Cancel the write protection of the memory card.
	The CF card access switch of the GOT main unit is off.	Turn the CF card access switch of the GOT main unit on.
GOT has been powered off during login.	–	Delete the file being transferred without using it since it may have been corrupted. (The operation of the FTP client changes depending on the specifications of the FTP client.)
FTP client software has been forcibly exited during login.	–	Login to the GOT again after the time set to the watching timer of command input in the FTP server setting has elapsed. (The GOT logs out after the time set to the command has elapsed.)

APPENDICES

App.1 List of Functions Added by Version Upgrade of Gateway Function



Version upgrades of the gateway function

The gateway function complies with the GT Designers2 version upgrade (Common settings/object functions/GOT main unit functions).

For version upgrades of GT Designer2, refer to the following manual.

 [GT Designer2 Version](#)  [Screen Design Manual](#)

1 Added function

The following functions are added to the gateway function.

Item	Description	Version of GT Designer2 Version	Version of OS
FTP server function	Function for transferring files (recipes, alarms, etc.) saved in the GOT from a personal computer.	2.18U	Option OS Gateway (FTP) [02.01.**]
	Enables transferring of binary data in the FTP function.	2.32J	Option OS Gateway (FTP) [03.00.**]
	Supporting connection with the multimedia interaction tool	2.90U	Option OS Gateway (FTP) [04.00.**]

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GRAPHIC OPERATION TERMINAL

GOT1000

GOT1000 Series Gateway Functions Manual

MODEL	GT1000-O(G)-E
MODEL CODE	1D7M33
SH(NA)-080545ENG-K(1010)MEE	

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