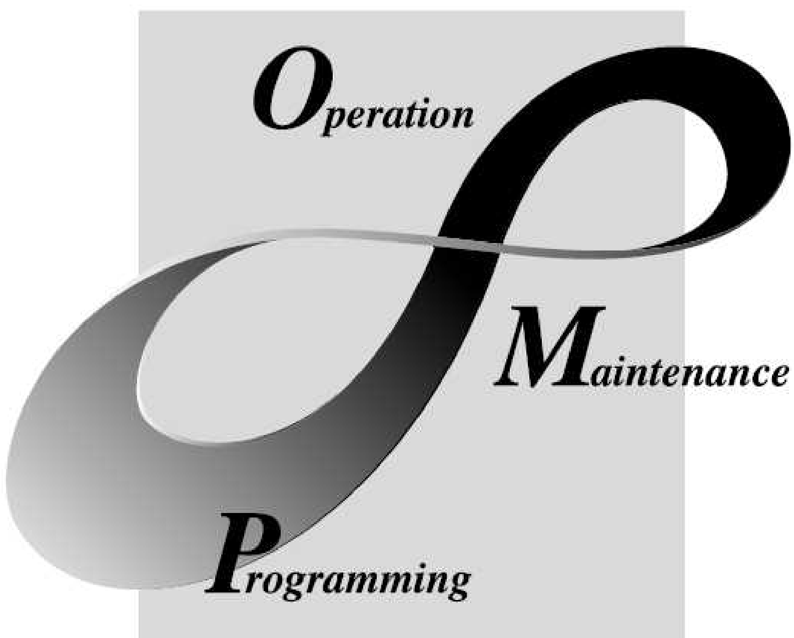
GX Configurator-ST Version 1.06G

Operating Manual

MITSUBISHI

MELSoft



MELSOFT

Integrated FA Software

SW1D5C-STPB-E

GX Configurator ST

Printed: April 2008

INTRODUCTION

Thank you for choosing the Mitsubishi MELSOFT Series Integrated FA software.
Read this manual and make sure you understand the functions and performance of MELSOFT series thoroughly in advance to ensure correct use.

CONTENTS

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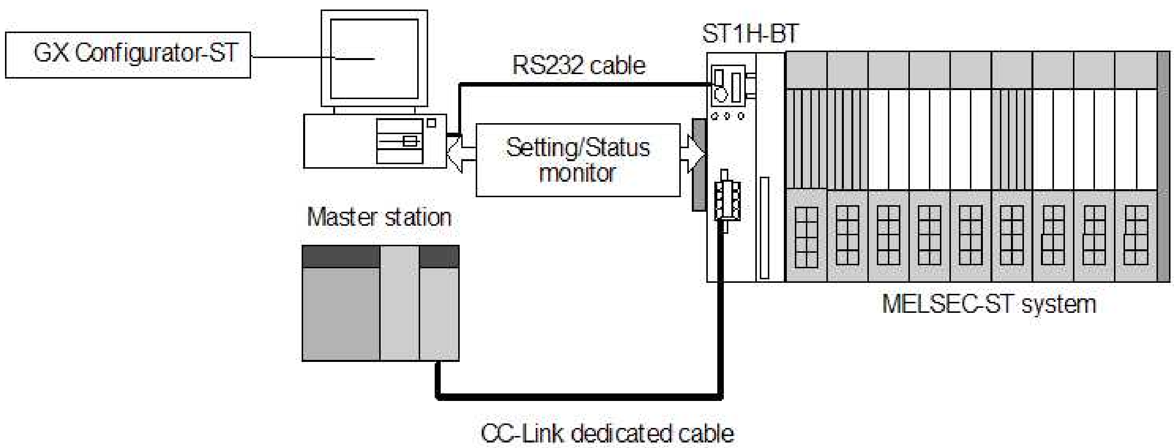
1 Introduction

GX Configurator-ST is used for the configuration and diagnosis of SLICE systems.

MELSEC-ST systems consist of a head module (ST1H-PB for PROFIBUS-DP systems or ST1H-BT for CC-Link systems) and a number of power supply or I/O modules assembled in a rack.

These systems provide an easy and modular way to add I/O to a PROFIBUS-DP or CC-Link system, without having to install separate wiring to many separate I/O modules. The I/O from each module is grouped into individual data input/output areas for transmission to/from the network master station.

GX Configurator-ST connects to the communication port of the ST1H-PB or ST1H-BT head module using an appropriate programming cable. The head module will independently act as a slave station on a PROFIBUS-DP or CC-Link network.



Example CC-link system

1.1 Safety Precautions

● SAFETY PRECAUTIONS ●

(Read these precautions before using.)

When using Mitsubishi equipment, thoroughly read this manual and the associated manuals introduced in this manual. Also pay careful attention to safety and handle the module properly.
The precautions given in this manual are concerned with this product. Refer to the user's manual of the network system to use for a description of the network system safety precautions.
These SAFETY PRECAUTIONS classify the safety precautions into two categories: "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.

Depending on circumstances, procedures indicated by CAUTION may also be linked to serious results.
In any case, it is important to follow the directions for usage.

Store this manual in a safe place so that you can take it out and read it whenever necessary. Always forward it to the end user.

[Design Instructions]

DANGER

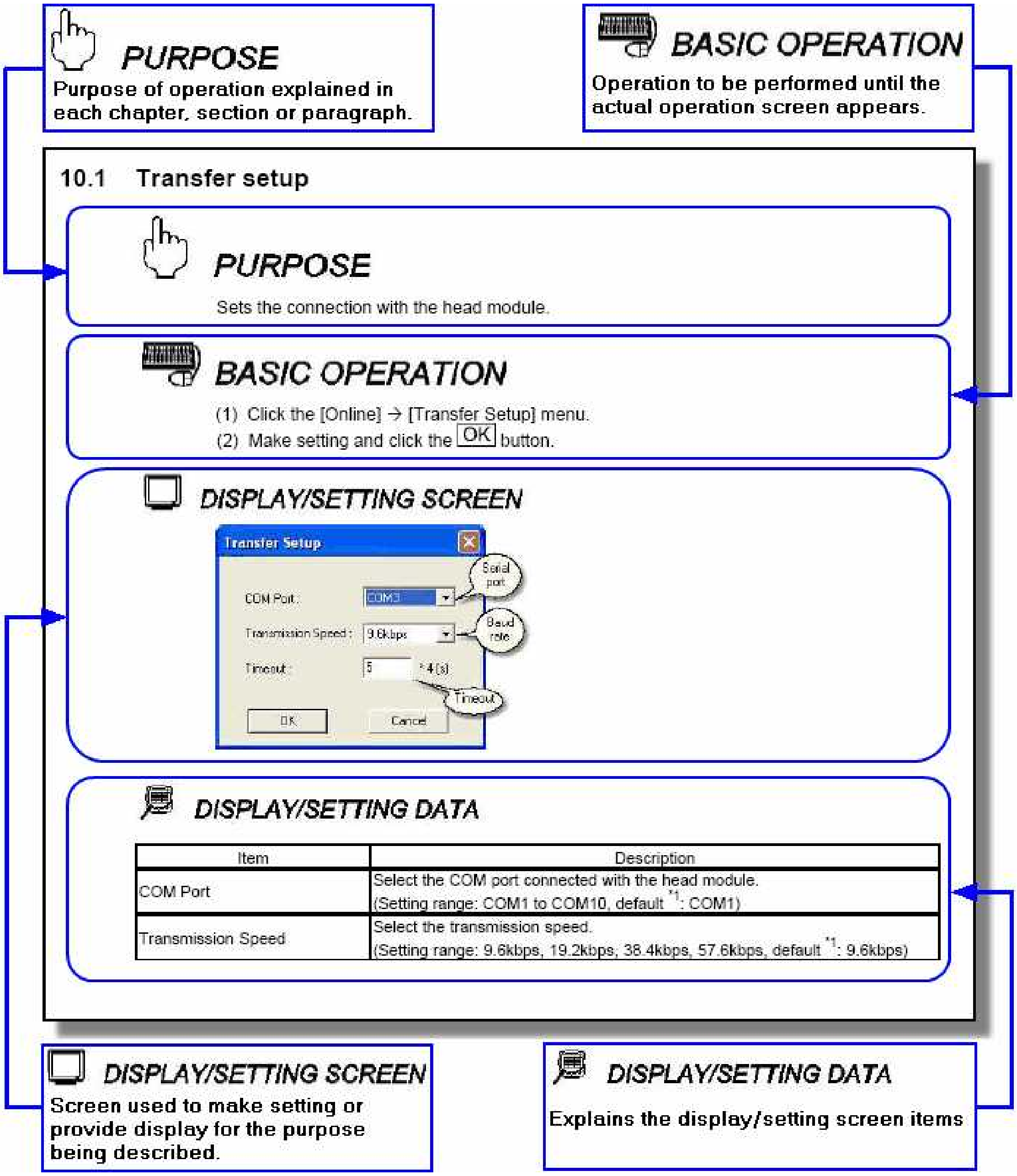
- For data change and status control made to the MELSEC-ST system which is running from a Personal computer, configure the interlock circuit externally so that the system safety is ensured. The action to be taken for the system at the occurrence of communication errors caused by such as loose cable connection must be determined for online operation of MELSEC-ST system from Personal computers.

CAUTION

- Be sure to read the manual careful and exercise an appropriate amount of caution connecting to MELSEC-ST system and performing online operations (head module resetting, forced output test, etc.) while the personal computer is operating.
- When replacing the module online, make sure to observe the procedure specified for the module.
  For I/O module, refer to the chapter of online module change in the head module user's manual; for each intelligent function module, refer to the same chapter in the corresponding intelligent function module user's manual.

1.2 Documentation layout

Each topic is divided in sections as shown below.



In addition, there are also the following explanations.

HELPFUL OPERATION

Describes application operation if there are multiple purposes and the basic operation and display/setting data do not provide enough information.

Point

Provides information relevant to that page, e.g. the items you should be careful of and the functions you should know.

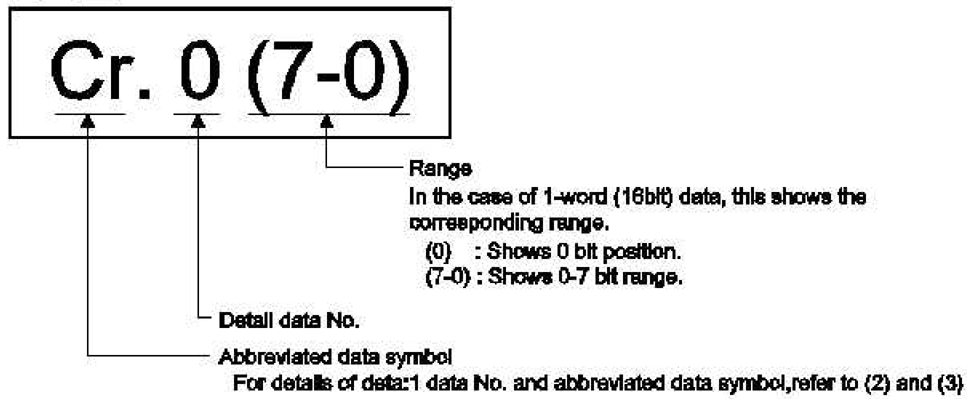
The following table lists the symbols used in this manual and their definitions.

Symbol	Description
[ ]	Represents the menu name of the menu bar. [ ] → [ ] indicates a drop-down menu. Example: [File] → [New] menu
( )	Represents the tool button on the toolbar corresponding to the drop-down menu. Example: [File] → [Save] menu ( )
" "	Represents the item name in the dialog box. Example: "File name"
☐	Represents a button. Example: OK button
<< >>	Represents the tab in the dialog box. Example: <<Verify All Modules>> tab

How to read manual (For CC-Link)

(1) Data symbol

<Example : Cr Command result area>



(2) Head Module → Master Station

(a) Remote input (RX)

Data symbol		Area name	Unit	Detail data No. notation
Br	Br.00 to Br.n	Bit input area	1 bit / symbol	Hexadecimal

(b) Remote register (RWr)

Data symbol		Area name	Unit	Detail data No. notation
Wr	Wr.00 to Wr.n	Word input area	1 word / symbol	Hexadecimal

(c) Message transmission

Data symbol		Area name	Unit	Detail data No. notation
Cr	Cr.0 to Cr.n	Command result area	1 word / symbol	Decimal

(3) Master station → Head module

(a) Remote output (RY)

Data symbol		Area name	Unit	Detail data No. notation
Bw	Bw.00 to Bw.n	Bit output area	1 bit / symbol	Hexadecimal

(b) Remote register (RWw)

Data symbol		Area name	Unit	Detail data No. notation
Ww	Ww.00 to Ww.n	Word output area	1 word / symbol	Hexadecimal

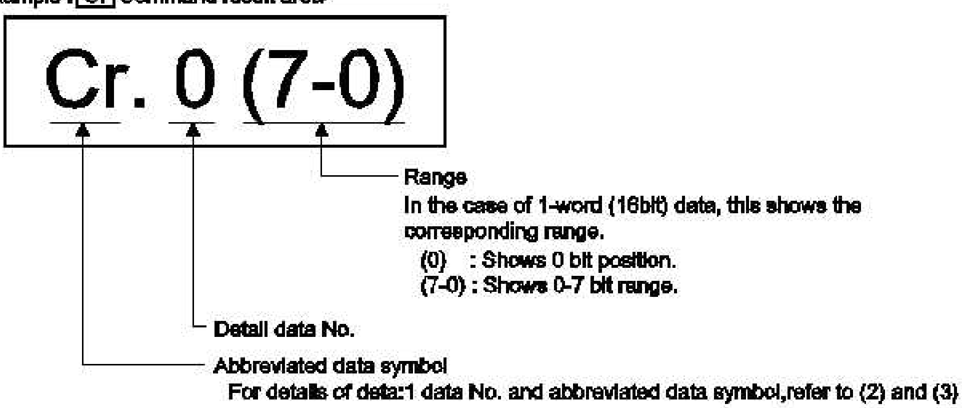
(c) Message transmission

Data symbol		Area name	Unit	Detail data No. notation
Cw	Cw.0 to Cw.n	Command execution area	1 word / symbol	Decimal

How to read manual (For PROFIBUS-DP)

(1) Data symbol

<Example : Cr Command result area>



(2) Input send data

Data symbol		Area	Unit	Detail data No. notation
Br	Br.00 to Br.FF	Bit Input Area	1 bit / symbol	Hexadecimal
Er	Er.00 to Er.FF	Error Information Area	1 bit / symbol	Hexadecimal
Mr	Mr.0 to Mr.127	Module Status Area	1 bit / symbol	Decimal
Cr	*1	Command Result Area	1 word / symbol	Decimal
Wr	Wr.00 to Wr.33	Word Input Area	1 word / symbol	Hexadecimal

*1: The detailed area of the command result area uses the following symbols.

Data symbol		Area
Cr.0	Cr.0 (15-8)	Command Execution Result
	Cr.0 (7-0)	Start Slice No. of Execution Target
Cr.1		Executed Command No.
Cr.2		Response Data 1
Cr.3		Response Data 2

(3) Output receive data

Data symbol		Area	Unit	Detail data No. notation
Bw	Bw.00 to Bw.FF	Bit Output Area	1 bit / symbol	Hexadecimal
Ew	Ew.00 to Ew.FF	Error Clear Area	1 bit / symbol	Hexadecimal
Sw	Sw.0 to Sw.7	System Area	1 word /symbol	Decimal
Cw	*1	Command Execution Area	1 word / symbol	Decimal
Ww	Ww.00 to Ww.33	Word Output Area	1 word / symbol	Hexadecimal

*1: Following shows the data symbols and the corresponding detail areas within the command execution area.

Data symbol	Area
Cw.0	Start Slice No. of Execution Target
Cw.1	Command No. to be executed
Cw.2	Argument 1
Cw.3	Argument 2

1.3 Terms and Abbreviations

Unless otherwise specified, this documentation uses the following terms and abbreviations to explain the head module.

Term/Abbreviation	Description
Head module	Generic term for the ST1H-PB MELSEC-ST PROFIBUS-DP head module, ST1H-BT MELSEC-ST CC-Link head module.
PROFIBUS-DP	Abbreviation for PROFIBUS-DP network.
CC-Link	Abbreviation for Control & Communication Link system.
Master module	Abbreviation for the QJ61BT11N used as a master station.
RDMSG	Generic term for G.RDMSG and GP.RDMSG.
Bus refreshing module	Module that distributes external system power and auxiliary power to the head module and slice modules.
Power feeding module	Module that distributes external auxiliary power to slice modules.
Power distribution module	Generic term for the bus refreshing module and power feeding module.
Base module	Generic term for a module that transfers data between the head module and slice modules, and between the slice modules and external devices (including wiring).
Input module	Generic term for modules that handle input data in units of bits.
Output module	Generic term for modules that handle output data in units of bits.
Intelligent function module	Generic term for modules that handle input/output data in units of words.
I/O module	Generic term for input modules and output modules.
Slice module	Generic term for power distribution modules, I/O modules, and intelligent function modules that can be mounted on base modules.
MELSEC-ST system	Generic term for a system that is that is composed of a head module, slice modules, an end plate and end brackets.
External power supply	Generic term for external system power and auxiliary power.
GX Configurator-ST	Generic product name for SWnD5C-STPB-E. (“n” denotes Version 1 or later.)
Configuration software	Software used to set slave parameters for head modules and slice modules in PROFIBUS-DP. (e.g. GX Configurator-DP).

Term definition for CC-Link

The following explains the meanings and definitions of the terms used in this documentation when using CC-Link.

Term/Abbreviation	Description
Cyclic transmission	A communication method by which remote I/O data and remote register data are transferred periodically.
Master station	This station controls the entire data link system. One master station is required for one system.
Local station	A station that has a programmable controller CPU and can communicate with the master station and other local stations.
Remote I/O station	A remote station that can only use bit data. (Input from or output to external devices) (AJ65BTB1-16D, AJ65SBTB1-16D or others).
Remote device station	A remote station that can use both bit and word data. (Input from or output to external devices, analog data conversion) (ST1H-BT, AJ65BT-64AD, AJ65BT-64DAV, AJ65BT-64DAI or others)
Remote station	Generic term for remote I/O stations and remote device stations. Controlled by the master station.
SB	Link special relay (for CC-Link). Bit data that indicate the module operating status and data link status of the master/local station.
SW	Link special register (for CC-Link). Data in units of 16 bits, which indicate the module operating status and data link status of master/local station.
RX	Remote input (for CC-Link). Bit data that are input from remote stations to the master station.
RY	Remote output (for CC-Link). Bit data that are output from the master station to remote stations.
RWr	Remote register (Read area for CC-Link). Data in units of 16 bits, which are input from remote device stations to the master stations.
RWw	Remote register (Write area for CC-Link). Data in units of 16 bits, which are output from the master station to remote device stations.
Remote net Ver. 1 mode	Select this mode when extended cyclic setting is not needed or when the QJ61BT11 is replaced with the QJ61BT11N.
Remote net Ver. 2 mode	Select this mode when creating a new system with extended cyclic setting.
I/O data	Data transferred between the head module and the master station.
$\boxed{\text{Br.n}}$ Bit input area	Bit input data of each module. Input data are sent from the head module to the master station through remote input (RX).
$\boxed{\text{Bw.n}}$ Bit output area	Bit output data of each module. Output data are received from the master station to the head module through remote output (RY).
$\boxed{\text{Wr.n}}$ Word input area	Word (16-bit) input data of an intelligent function module. Input data are sent from the head module to the master station through remote register (RWr).
$\boxed{\text{Ww.n}}$ Word output area	Word (16-bit) output data of an intelligent function module. Output data are received from the master station to the head module through remote register (RWw).
$\boxed{\text{Cr.n}}$ Command result area	Information that indicates a command result. This information is stored in Setting data (area starting from (D1) + 1) of the RDMSG instruction of the master station.

Term/Abbreviation	Description
Cw.n Command execution area	Information for executing a command. This information is stored in Setting data (area starting from (S2) + 1) of the RDMSG instruction of the master station.
Number of occupied I/O points	The area, which is equivalent to the occupied I/O points, is occupied in Br Bit input area / Bw Bit output area.
Slice No.	The number assigned to every 2 occupied I/O points of each module. The numbers are assigned in ascending order, starting from “0” of the head module. (The maximum value is 127.) This is used for specifying a command execution target.
Slice position No.	The number that shows where the slice module is physically installed. The numbers are assigned in ascending order, starting from “0” of the head module. (The maximum value is 63.) This is used for specifying a command execution target.
Start slice No.	The start slice No. assigned to the head module and slice modules.
Command	Generic term for requests that are executed by the master station for reading each module’s operation status, setting intelligent function module command parameters or various controls.
Command parameter	Generic term for parameter set in commands or GX Configurator-ST. All of the parameters set for the head module and slice modules are command parameters.
ST bus cycle time	Processing time for the head module to refresh the input or output status of each slice module.

Term definition for PROFIBUS-DP

The following explains the meanings and definitions of the terms used in this documentation when using PROFIBUS-DP.

Term/Abbreviation	Description
QJ71PB92V	Abbreviation for the QJ71PB92V PROFIBUS-DP master module.
QJ71PB92D	Abbreviation for the QJ71PB92D PROFIBUS-DP interface module.
A1SJ71PB92D	Abbreviation for the A1SJ71PB92D PROFIBUS-DP interface module.
AJ71PB92D	Abbreviation for the AJ71PB92D PROFIBUS-DP interface module.
PROFIBUS-DPV0	A basic version of PROFIBUS-DP. The following functions are executable: · I/O data exchange · Diagnostic information notification etc.
PROFIBUS-DPV1	A PROFIBUS-DP version for which the following functions have been added to the basic functionality of PROFIBUS-DPV0 · Acyclic communication · Alarm function etc.
PROFIBUS-DPV2	A PROFIBUS-DP version for which the following functions have been added to the PROFIBUS-DPV1 functionality · Time stamping etc.
GX Configurator-DP	SWnD5C-PROFID-E type products. ("n" means version 4 or later.)
Master station	Class 1 master station that communicates I/O data with slave stations.
Slave station	A device that exchanges I/O data with a DP-Master (Class 1). (ST1H-PB, etc)
Repeater	Device that connects PROFIBUS-DP segments.
Bus terminator	Terminator that is connected to both ends of each PROFIBUS-DP segment
FDL address	Address assigned to the master station/slave station. The FDL address is set within the range from 0 to 99.
Extended diagnostic information	Diagnostic information specific to each DP-Slave Each of DP-Slaves notifies of it to the DP-Master when an error is detected.
Slave parameter	The slave station parameter (including user parameter) set by the master station. The setting items are described in the GSD file.
GSD file	The electronic file that includes description of the slave station parameter. The file is used when setting slave parameters by configuration software, which is supported by the master station.
Input data	Data sent from the head module to the master station. The data consists of the following areas. · Br Bit Input Area · Information Area Er Error Information Area Mr Module Status Area Cr Command Result Area · Wr Word Input Area

Term/Abbreviation	Description
Output data	Data that the head module receives from the master station. The data consists of the following areas. · $\boxed{\text{Bw}}$ Bit Output Area · Request Area $\boxed{\text{Ew}}$ Error Clear Area $\boxed{\text{Sw}}$ System Area $\boxed{\text{Cw}}$ Command Execution Area · $\boxed{\text{Ww}}$ Word Output Area
I/O data	Data (input data, output data) transferred between the head module and the master station.
Global control	This function enables synchronization command transmission for I/O data from a DP-Master (Class 1) to DP-Slaves.
$\boxed{\text{Br.n}}$ Bit input area	Bit input data of each module.
$\boxed{\text{Bw.n}}$ Bit output area	Bit output data of each module
$\boxed{\text{Wr.n}}$ Word input area	Word (16-bit) input data of an intelligent function module. In the case of analog input module, the digital output data value is stored.
$\boxed{\text{Ww.n}}$ Word output area	Word (16-bit) output data of an intelligent function module. In the case of analog output module, the digital setting data value is stored.
Information area	Bit/Word input data for checking each module status and command execution results.
Request area	Bit/Word output data for requesting each module to clear errors/to execute commands.
Number of occupied I/O points	The area, that is equivalent to the occupied I/O points, is occupied in $\boxed{\text{Br}}$ Bit Input Area/ $\boxed{\text{Bw}}$ Bit Output Area.
Slice No.	No. assigned to every 2 occupied I/O points of each module. This numbering starts by assigning "0" to the head module and then proceeds in ascending order. (The maximum value No. is 127). The No. is used for specifying the execution target.
Command	Requesting from the master station in order to read the module status, to set/control the intelligent function module command parameters.
ST bus cycle time	Processing time for the head module to refresh the input/output status of each slice module.
Bus cycle time	PROFIBUS-DP processing time for the master station to perform cyclic transfer with each slave station.

1.4 What's new in version 1.06G?

Version 1.06G introduces a number of new features to improve the functionality and usability of GX Configurator-ST, such as:

- Support for the ST1H-BT head module for CC-Link networks as well as the ST1H-PB head module for PROFIBUS-DP systems. Configurations can easily be changed from one head module type to the other.
- A new 'wizard' interface to guide you through the configuration of the system. Graphical display of modules to be added reduces the chance of accidentally adding the wrong type of module.
- A new graphical display of the rack configuration showing how the configured system will look, making it possible to see instantly that the configuration matches the hardware, and allowing modules to be rearranged using 'drag and drop'.
- Usability improvements - for example, when configuring PROFIBUS-DP systems, the point mode can be changed automatically when the number of I/O points for the current mode is exceeded, instead of having to select the next point mode manually.
- Instant feedback on configuration errors such as higher power consumption than the configured power supply modules can provide, by showing modules with errors with a red background in the module list and displaying the error description in the right mouse button context menu for the module.

1.5 Notes for upgrading users

If you have upgraded from the previous version of GX Configurator-ST, you can still reuse the files that you created with the last version. These files can be opened normally, and will be upgraded automatically when they are saved.

Point

Although PROFIBUS-DP files created in this version can be reopened in the last version of the software, it is generally advisable not to switch between versions of the software when configuring a file. After saving a file once in the current version of GX Configurator-ST, opening it in earlier versions is not recommended.

The user interface is very similar to the versions that you have used before, but now when you start the application you will be taken through the first configuration steps with a 'wizard' interface. In the main configuration display, the module list from the previous version is now just the bottom left section of a larger 'module configuration' window, which also shows a graphical display of the configured system, a list of modules for addition and details of the module selected to be added.

To read more about these features, see the sections shown below:

Feature	**PROFIBUS-DP description**
First steps using the wizard	Creating a new project 55
The module configuration window	Screen layout and display switching 42

If you are stuck while using the application, press F1 to show the relevant section of the help file.

2 Overview

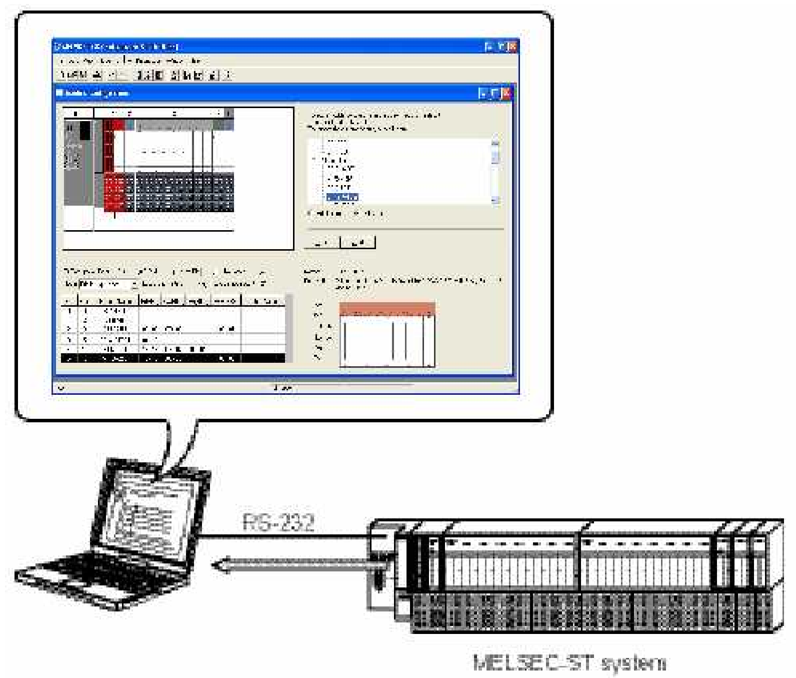
GX Configurator-ST is the configuration software dedicated to the MELSEC-ST system.

2.1 Features

(1) Project creation of MELSEC-ST system

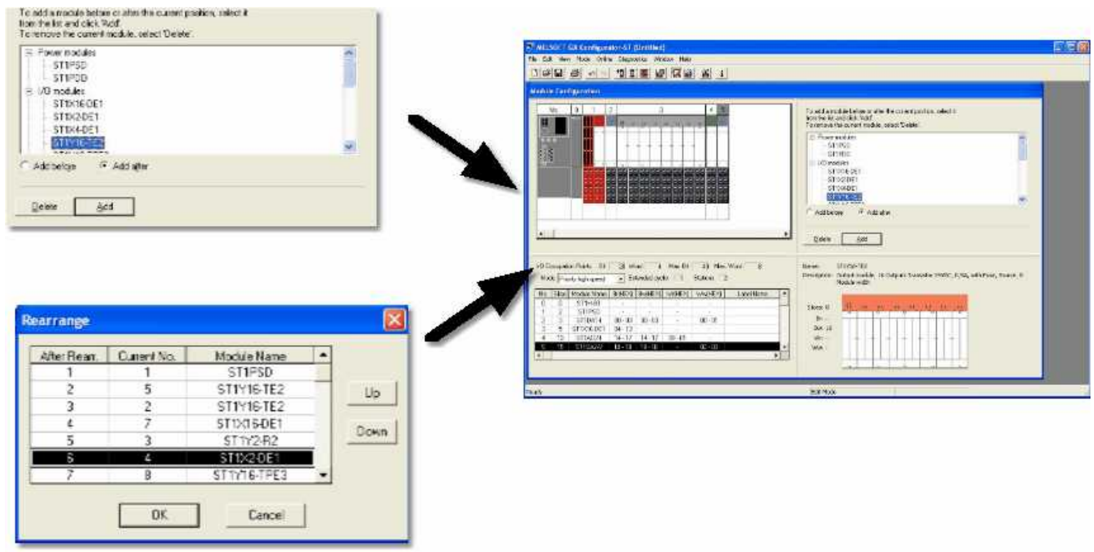
(a) Uploading module data to create project

A project can be created easily by uploading the system configuration and parameters from the MELSEC-ST system.



(b) Changing system configuration to edit project

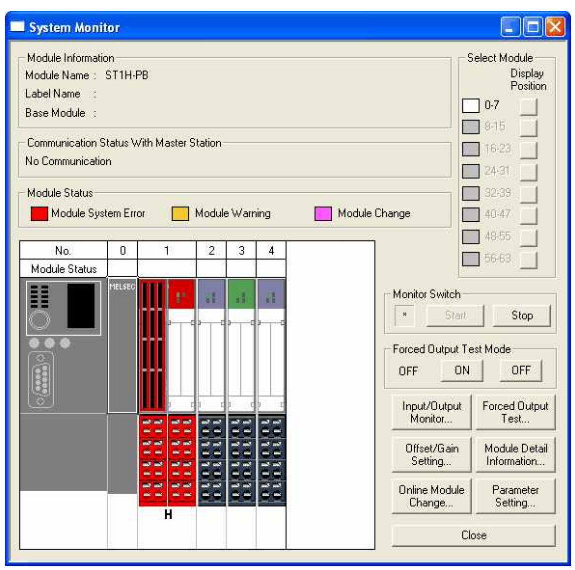
A project can be edited by changing the system configuration, e.g. adding or rearranging modules.



(2) Monitoring MELSEC-ST system

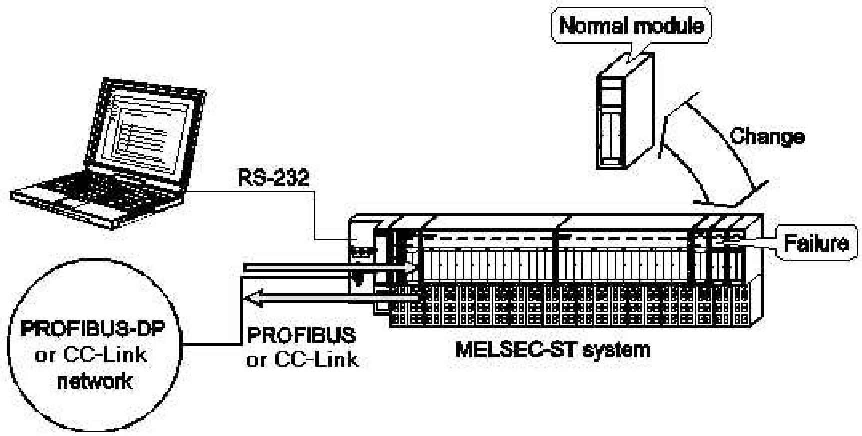
(a) MELSEC-ST system status can be easily checked.

GX Configurator-ST provides an image to show the statuses of the head/slice modules that comprise the MELSEC-ST system on the “System Monitor” screen. Therefore, these module statuses can be checked easily.



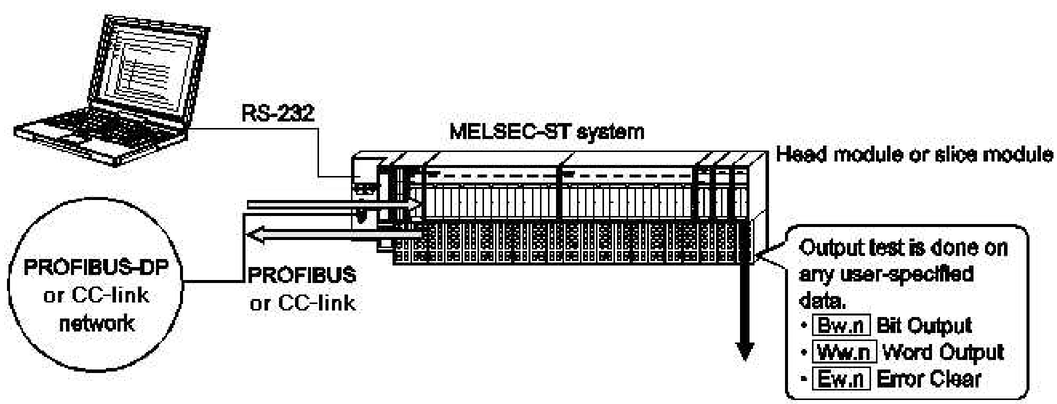
(b) I/O module or intelligent function module can be changed online from GX Configurator-ST

By using online module change, the faulty I/O module or intelligent function module can be changed with normal module without the PROFIBUS-DP or CC-Link network being stopped. GX Configurator-ST allows online module change to be made easily by screen-guided operation without operation of the head module switches.



(c) Output test can be done without affecting PROFIBUS-DP or CC-Link network

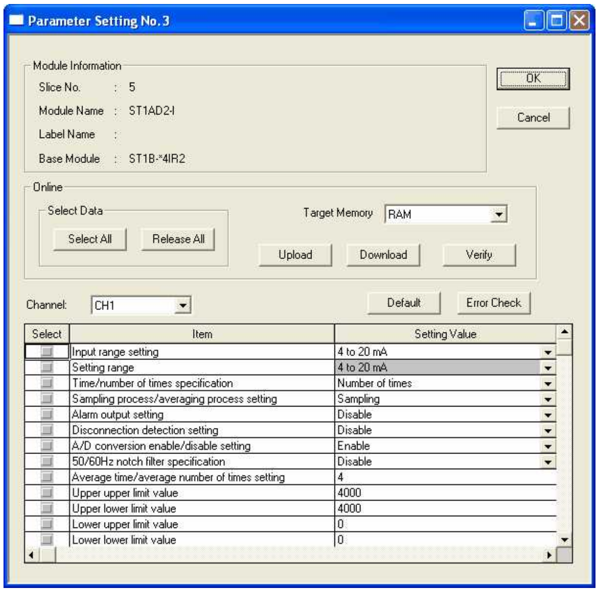
In a forced output test, outputs can be tested using the Bw.n Bit Output, Ww.n Word Output and Ew.n Error Clear of the head module or slice module (Ew.n Error Clear bits are available for PROFIBUS-DP only).
The user can specify any Bw.n Bit Output, Ww.n Word Output and Ew.n Error Clear.
As only the Bw.n Bit Output, Ww.n Word Output and Ew.n Error Clear are used for the forced output test, output data not used in the test are not affected.
In the forced output test, therefore, an output test can be conducted without affecting the PROFIBUS-DP or CC-Link network.



(3) Parameter setting of slice module

(a) Parameter setting of intelligent function module

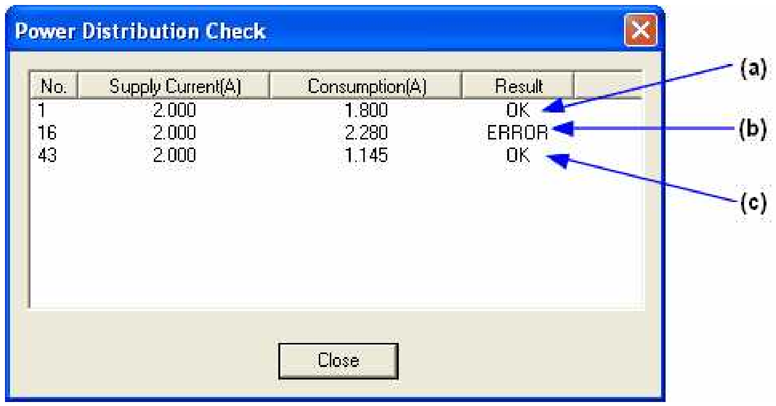
The "Parameter Setting" screen displays a list of module parameters.
Parameter setting can be made on this list.
As it includes functions to upload and verify data, and to check the setting errors, the parameters can be confirmed easily.



(4) Power supply capacity check

A check can be made to see if the sum of 5VDC internal current consumption required by each module is within the 5VDC maximum rated output current of the bus refreshing module.

A power supply capacity check example is shown below.



(a) The check result is "OK" since the sum 1.800A of 5VDC internal current consumption required by the head module No. 0 and slice modules No. 2 to 15 is not greater than the 5VDC maximum rated output current 2.000A of the bus refreshing module.

(b) The check result is "ERROR" since the sum 2.280A of 5VDC internal current consumption required by the slice modules No. 17 to 42 is greater than the 5VDC maximum rated output current 2.000A of the bus refreshing module.

(c) The check result is "OK" since the sum 1.145A of 5VDC internal current consumption required by the slice modules No. 44 and later is not greater than the 5VDC maximum rated output current 2.000A of the bus refreshing module.

2.2 How do I ... ?

This section will list things that you may wish to achieve with the software, and the different ways in which these can be done. There may be several ways to get the same result, for example modules can be added or deleted using several different methods.

How do I...?	**Instructions**
Create a new system	Creating a new project 55
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Rearrange the open windows	Display switching and window rearranging operations 43
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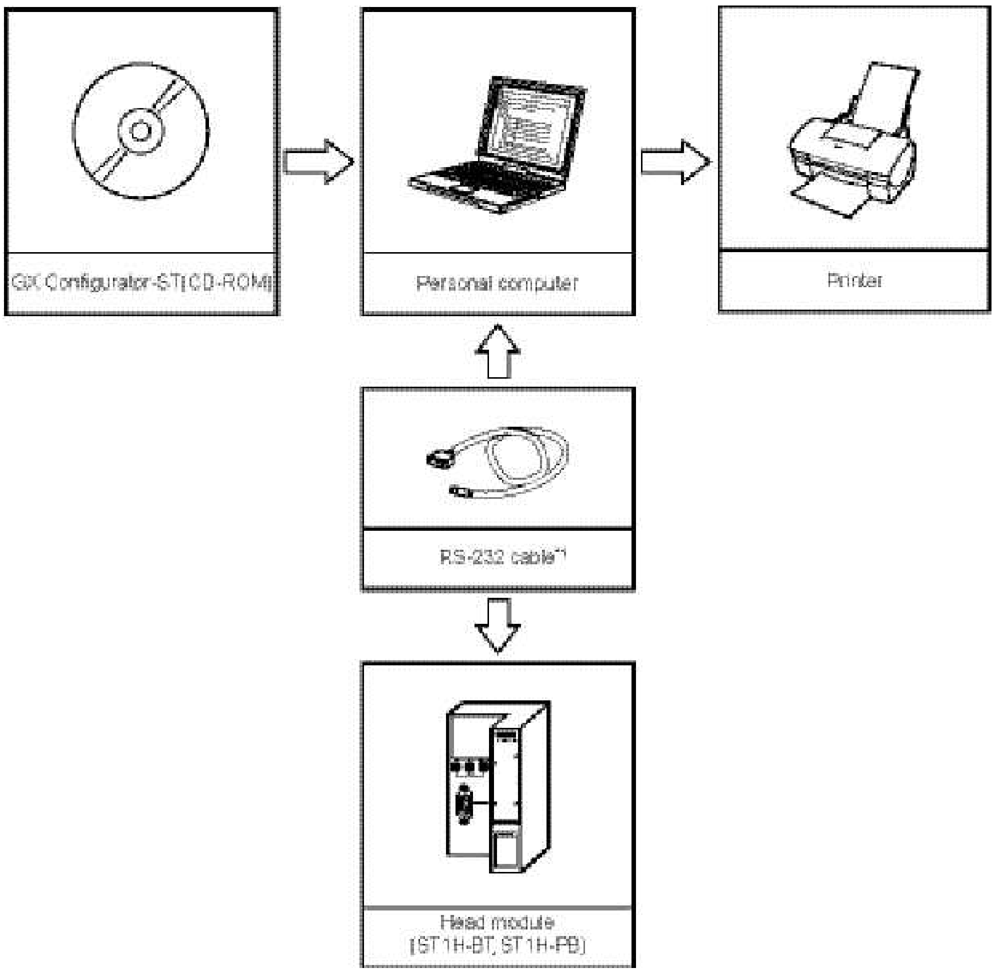
3 System Configuration

3.1 System Configuration

The following shows the configuration where a personal computer is connected to the MELSEC-ST system.



*1 : Use either of the following cables as the RS-232 cable.

Manufacturer name	Model name
Mitsubishi Electric	QC30R2
Beijer ELECTRONICS	SC-Q QC30R2

3.2 Operating Environment

The operating environment of GX Configurator-ST is indicated below.

Item		Description
Computer main unit		Refer to the following table "Used operating system and performance required for personal computer".
	CPU	
	Required memory	
Hard disk free space		60MB or more*2
Disk drive		CD-ROM disk drive
Display		800 × 600 dot or more resolution*3
Operating system		Microsoft® Windows® 95 Operating System (English version) Microsoft® Windows® 98 Operating System (English version) Microsoft® Windows® Millennium Edition Operating System (English version) Microsoft® Windows NT® Workstation Operating System Version 4.0 (English version) *4 Microsoft® Windows® 2000 Professional Operating System (English version) Microsoft® Windows® XP Professional Operating System (English version) *1 Microsoft® Windows® XP Home Edition Operating System (English version) *1 Microsoft® Windows Vista® Home Basic Operating System (English version) Microsoft® Windows Vista® Home Premium Operating System (English version) Microsoft® Windows Vista® Business Operating System (English version) Microsoft® Windows Vista® Ultimate Operating System (English version) Microsoft® Windows Vista® Enterprise Operating System (English version)

*1: "XP compatibility mode" and "Fast user switching" are not supported.
*2: Free space of at least 15GB is needed for use of Windows Vista®.
*3: For Windows Vista®, resolution 1024 x 768 dots or more is recommended.
*4: Service Pack 4 or later is needed for use of Windows NT® Workstation 4.0.

Used operating system and performance required for personal computer

<table>
<tr><th colspan="2" rowspan="2">Operating system</th><th colspan="2">Performance Required for Personal Computer</th></tr>
<tr><th>CPU</th><th>Required memory</th></tr>
<tr><td colspan="2">Windows® 95</td><td>Pentium® 133MHz or more</td><td>32MB or more</td></tr>
<tr><td colspan="2">Windows® 98</td><td>Pentium® 133MHz or more</td><td>32MB or more</td></tr>
<tr><td colspan="2">Windows® Me</td><td>Pentium® 150MHz or more</td><td>32MB or more</td></tr>
<tr><td colspan="2">Windows NT® Workstation 4.0 (Service Pack 4 or more)</td><td>Pentium® 133MHz or more</td><td>64MB or more</td></tr>
<tr><td colspan="2">Windows® 2000 Professional</td><td>Pentium® 133MHz or more</td><td>64MB or more</td></tr>
<tr><td>Windows® XP Professional</td><td rowspan="2">"XP compatibility mode" and "Fast user switching" are not supported.</td><td>Pentium® 300MHz or more</td><td>128MB or more</td></tr>
<tr><td>Windows® XP Home Edition</td><td>Pentium® 300MHz or more</td><td>128MB or more</td></tr>
<tr><td colspan="2">Windows Vista® Home Edition</td><td>Pentium® 1GHz or more</td><td>1GB or more</td></tr>
<tr><td colspan="2">Windows Vista® Home Premium</td><td>Pentium® 1GHz or more</td><td>1GB or more</td></tr>
<tr><td colspan="2">Windows Vista® Business</td><td>Pentium® 1GHz or more</td><td>1GB or more</td></tr>
<tr><td colspan="2">Windows Vista® Ultimate</td><td>Pentium® 1GHz or more</td><td>1GB or more</td></tr>
<tr><td colspan="2">Windows Vista® Enterprise</td><td>Pentium® 1GHz or more</td><td>1GB or more</td></tr>
</table>

Point

- The following features are not available for use with Windows® XP and Windows Vista®. If used, this product may not function normally.

  Application startup in Windows® compatibility mode
  Fast user switching
  Remote desktop
  Large fonts (detailed setting in Screen properties)
  Note that 64-bit version Windows® XP and Windows Vista® are not supported.

- On Windows Vista®, authority of USER or higher level must be used.

4 Function list

4.1 Function list

The functions of GX Configurator-ST are indicated below.

Function	Description	Reference Section
System configuration setting	Registers modules into the system by model name.	'Editing the project' 77
Parameter Setting	Sets the parameters to the intelligent function module.	'Parameter setting' 92
Option Settings	Sets the label name, base module etc. for the module.	'Option setting' 99
Power Distribution Check	Checks whether the 5VDC internal current consumption of the bus refreshing module is sufficient.	'Power distribution check' 102
System Monitor	Monitors the statuses of the head and slice modules.	'System monitor' 116
Module configuration, parameter upload/download	Uploads/downloads the module configuration and parameters.	'Downloading and uploading the parameters' 106
Input/Output Monitor	Monitors the input data and output data.	'Input/Output monitor' 124
Forced Output Test	Tests the Bw.n Bit Output, Ww.n Word Output and Ew.n Error Clear of the head module or slice module without stopping the PROFIBUS-DP or CC-Link network (Ew.n Error Clear bits are available for PROFIBUS-DP only).	'Forced output test' 127
Offset/Gain Setting	Sets the offset and gain values of the intelligent function modules (ST1AD2-V, etc.).	'Offset/Gain setting of intelligent function modules' 113
Reset Head Module	Resets the head module.	'Reset head module' 138
Change head module type	Changes the head module type (in edit mode).	'Change head module type' 104
Module Detail Information	Shows the module detail information and monitors the corresponding module error status.	'Module detail information' 120
Online Module Change	Changes the I/O module or intelligent function module online from GX Configurator-ST.	'Online module change' 139
PROFIBUS-DP Network Parameter Monitor	Monitors the slave parameters and PROFIBUS-DP network parameters sent from the master station of PROFIBUS-DP to the MELSEC-ST system to show the results for confirmation.	'PROFIBUS-DP network parameter monitor' 134
Master Station Data Communication Monitor	Monitors I/O data between the master station and head module.	'Master station data communication monitor' 130

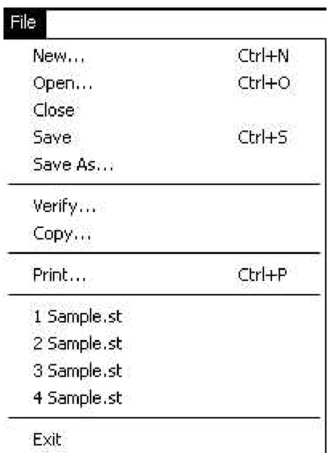
4.2 Menu list

This section explains the menus of GX Configurator-ST.

Point

The menu screens in this section are different from the actual ones.
Actually, some menu items are not selectable depending on the operation status of GX Configurator-ST.
For the purpose of explanation, all the menu items are shown as selectable.

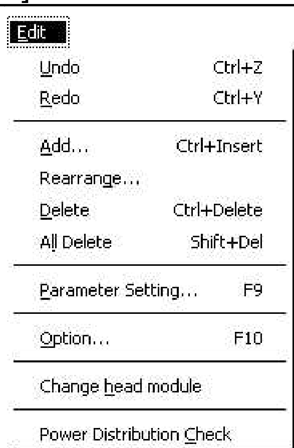
[File] menu



The [File] menu includes project file operation, print and other functions. For more information, refer to the following sections:

New 55 - create a new project
Open 56 - open an existing project
Close 57 - close the project
Save 58 - save the project
Save as 59 - save the project with another name
Verify 60 - compare modules with another project
Copy 85 - copy module information from another project
Print 67 - print the project data
Recent files - open a recently-used project
Exit 40 - close GX Configurator-ST

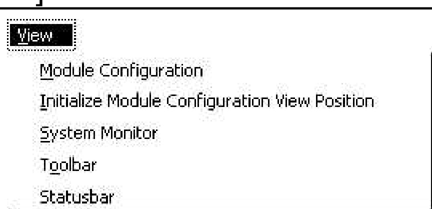
[Edit] menu



The [Edit] menu includes the functions for module configuration setting and parameter setting. For more information, refer to the following sections:

Undo 87 - reverse the last edit operation
Redo 88 - reverse the last undo operation
Add 77 - add a module to the configuration
Rearrange 88 - change the order of modules
Delete 84 - delete a module
All delete 85 - delete all modules
Parameter setting 92 - change module parameter settings
Option 99 - change module options
Change head module 104 - change head module type
Power distribution check 102 - test power consumption

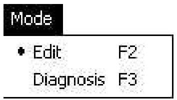
[View] menu



The [View] menu includes the function to display/hide each screen.

Refer to 'Display switching and window rearranging operations' 43 for details of each menu item.

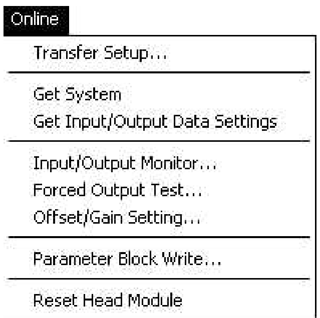
[Mode] menu



The [Mode] menu includes the functions to switch between the edit mode and diagnosis mode.

Refer to 'Edit mode operation procedure' 29 for details of the [Edit] menu item.
Refer to 'Diagnosis mode operation procedure' 30 for details of the [Diagnosis] menu item.

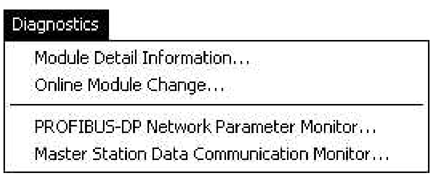
[Online] menu



The [Online] menu includes the functions for connection to the head module and online operation of the head module. For more information, refer to the following sections:

Transfer setup 106 - select communication port to use
Get system 108 - read configuration from connected MELSEC-ST system
Get input/output data settings 110 - read input/output data settings from MELSEC-ST system (PROFIBUS-DP only)
Input/Output monitor 124 - monitor module input/output data
Forced output test 127 - test outputs / error clear
Offset/Gain setting 113 - change offset/gain settings
Parameter block write 111 - download parameters as a batch
Reset the head module 138 - restart the head module

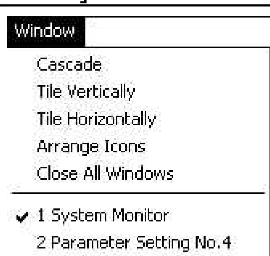
[Diagnostics] menu



The [Diagnostics] menu includes the functions to diagnose the system. For more information, refer to the following sections:

Module detail information 120 - show more details of a module
'Online module change' 139 - swap out a module
'PROFIBUS-DP network parameter monitor' 134 - view or export network parameter data
'Master station data communication monitor' 130 - view head module data areas

[Window] menu



The [Window] menu includes the functions to change the screen layout of GX Configurator-ST.

Refer to 'Display switching and window rearranging operations' 43 for details of each menu item.

[Help] menu

The [Help] menu includes the functions to show the online help, operate the GX Configurator-ST keys and confirm the software version.

Contents	Shows the help file starting at the contents page.
Key Operation List	Shows the key operation list 147 page.
About	Shows the version number, copyright and licence information.

5 Operation Procedures

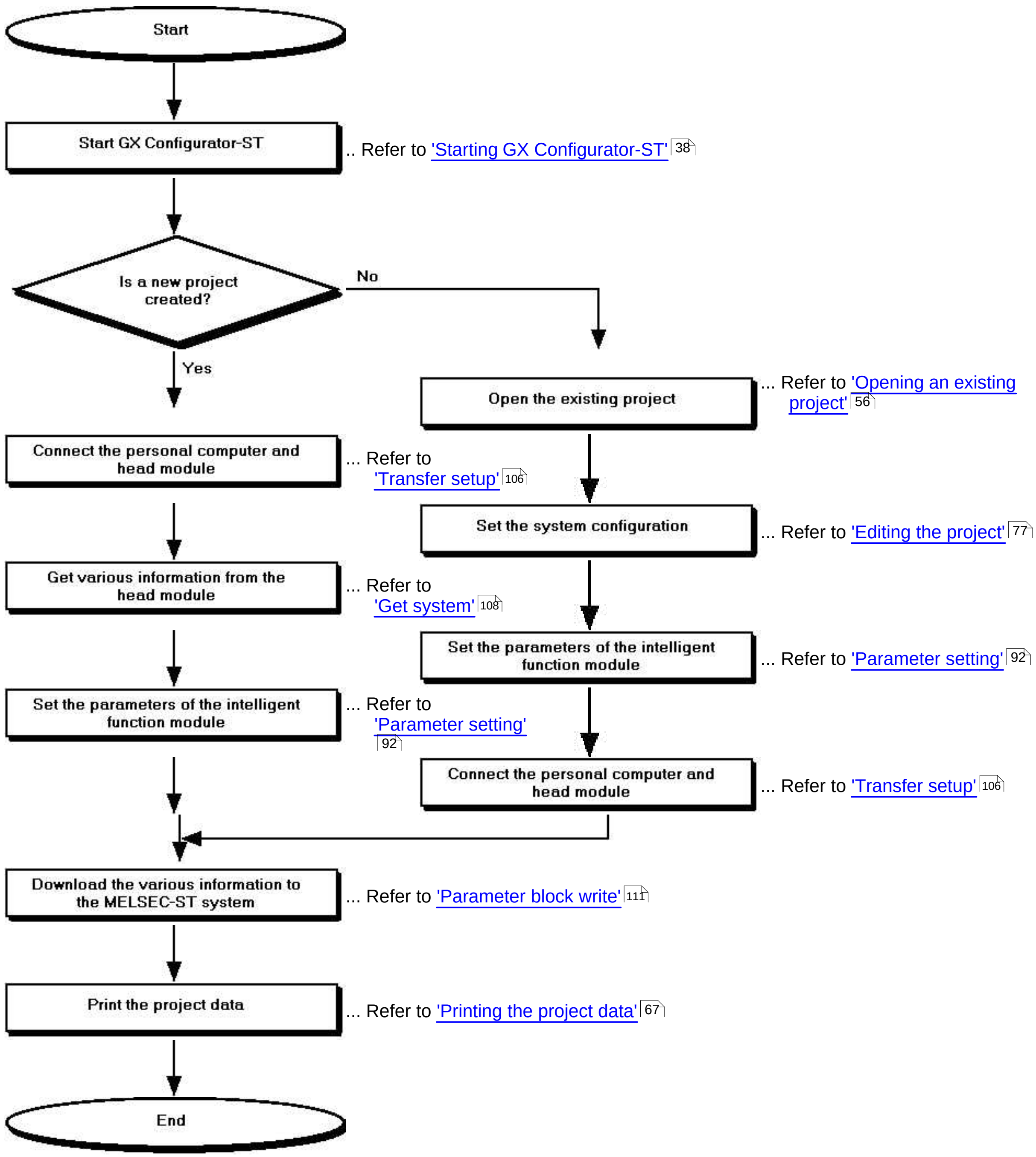
5.1 Precautions when using GX Configurator-ST

This section provides precautions when using GX Configurator-ST.

(1) A communication error may occur if communication is made with the MELSEC-ST system after setting of the resume function, suspend setting, power-saving function or standby mode of the personal computer.
For this reason, do not set any of these functions before starting communication with the MELSEC-ST system.

5.2 Edit mode operation procedure

Create a new project, and edit and download it to the MELSEC-ST system.



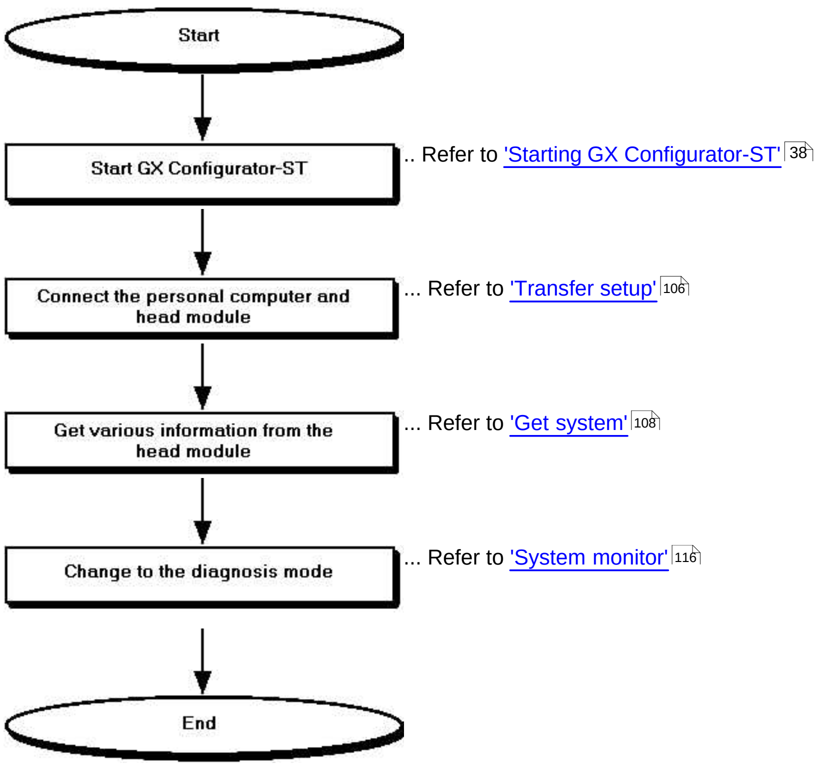
29

5.3 Diagnosis mode operation procedure

Confirm the error status and take corrective action, or perform the monitor/test, etc. of I/O data.

(1) Preparations for diagnosis mode

Make preparations for operation in the diagnosis mode.
Perform the following operation before starting operation in the diagnosis mode.



(2) Diagnosis mode operation procedure

Perform the operation explained in the reference section for each purpose of use.
Before starting the diagnosis mode operation, perform the operation in (1) of this section.

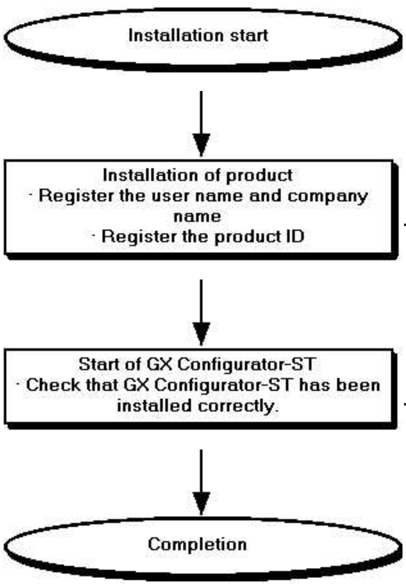
Purpose of use	Reference section
To monitor the MELSEC-ST system. To confirm the module where an error occurred.	'System monitor' 116
To confirm the error definition.	'Module detail information' 120
To set the offset and gain values.	'Offset/Gain setting of intelligent function modules' 113
To confirm the I/O data.	'Input/Output monitor' 124
To conduct the forced output test.	'Forced output test' 127
To monitor the master station data communication.	'Master station data communication monitor' 130
To monitor the PROFIBUS-DP Network Parameters.	'PROFIBUS-DP network parameter monitor' 134
To reset the head module.	'Reset head module' 138
To change the module online.	'Online module change' 139

6 Installation and uninstallation

This chapter explains how to install and uninstall GX Configurator-ST.

6.1 Installation

6.1.1 Installation procedure



.. Refer to 'Installing GX Configurator-ST' 32

.. Refer to 'Starting GX Configurator-ST' 38

31

6.1.2 Installing GX Configurator-ST

The following indicates how to install GX Configurator-ST.
Microsoft® Windows® XP Professional Operating System is used for explanation in this section.

Point

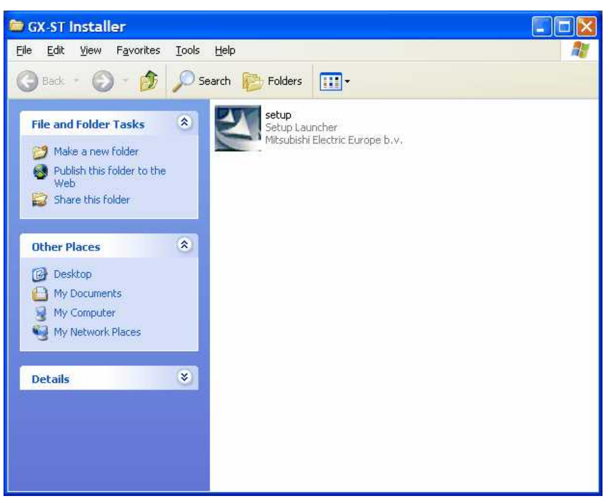
(1) Before starting installation, exit all other applications operating on Windows®.

(2) The installer may not work normally because the update program of the operating system or another companies software such as Windows® Update and Java Update may start automatically. Please install the driver after changing the settings of the update program not to start automatically.

(3) When installing GX Configurator-ST on any of the following operating systems, log on using an administrator account (computer manager).
- Microsoft® Windows NT® Workstation Operating System Version 4.0
- Microsoft® Windows® 2000 Professional Operating System
- Microsoft® Windows® XP Professional Operating System
- Microsoft® Windows® XP Home Edition Operating System
- Microsoft® Windows Vista® Home Basic Operating System
- Microsoft® Windows Vista® Home Premium Operating System
- Microsoft® Windows Vista® Business Operating System
- Microsoft® Windows Vista® Ultimate Operating System
- Microsoft® Windows Vista® Enterprise Operating System

(4) Check whether or not GX Configurator-ST has been installed on the personal computer. If it has already been installed, uninstall it, restart the personal computer, and then install this software.

(1) Installing GX Configurator-ST

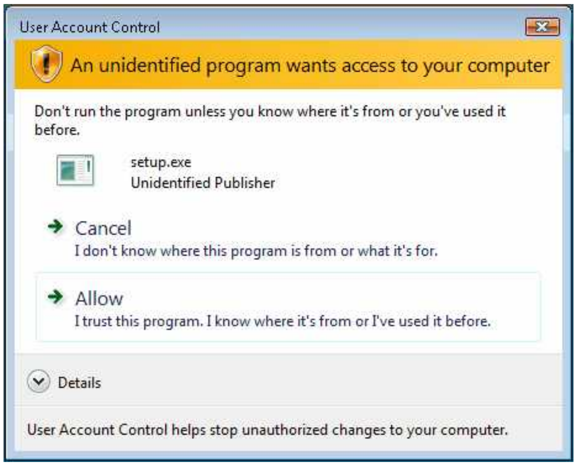


1) After powering on the personal computer, start Windows®.

2) Start Windows® Explorer and click the drive where the disk is inserted. Double-click "Setup.exe" ().
To display Windows® Explorer, choose [Start] → [All Programs] → [Windows Explorer].

(To the next page)

(From the previous page)



3) (When using Windows Vista®)
When the screen on the left is displayed, click “Allow”.

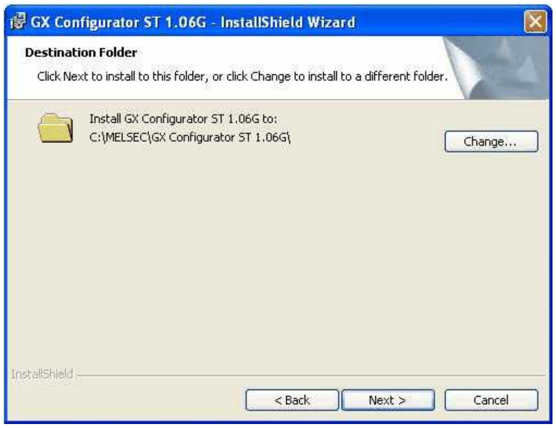
4) On the left screen, click the Next button.

5) Enter a user name, a company name, and serial number, and click the Next button.

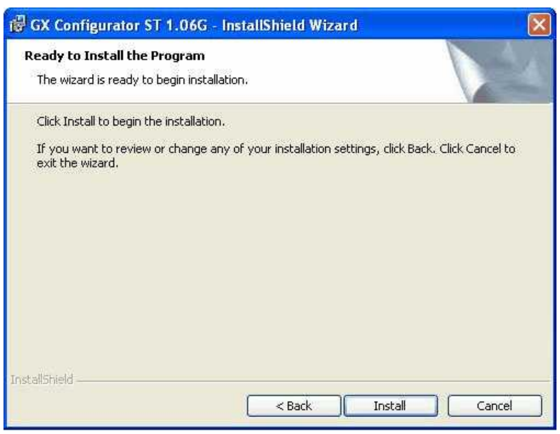
(To the next page)

33

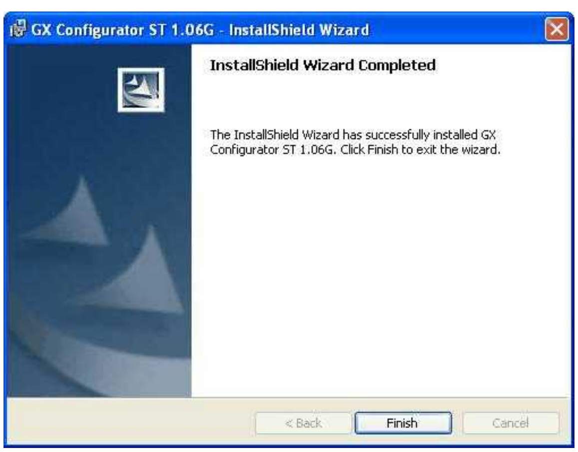
(From the previous page)



6) Specify an installation destination folder.
Then, click the Next button.
The default is set to "C:\MELSEC\GX Configurator ST 1.**". ("**" represents a version number.)
To change the default setting, click the Change button and specify a preferred drive and folder.



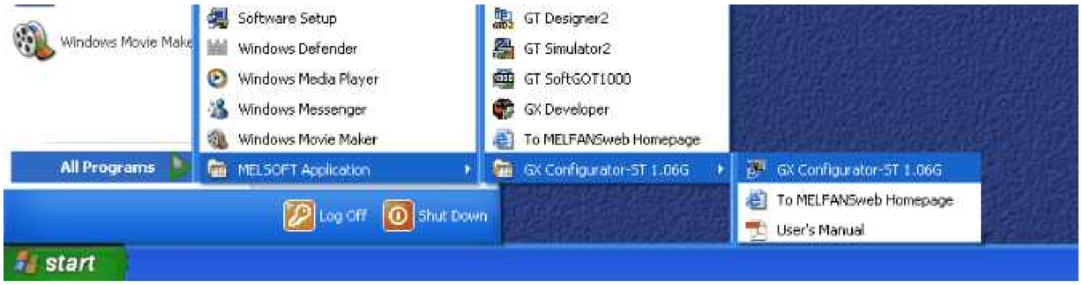
7) Clicking the Install button will start installation.



8) The left screen indicates that the installation is completed.
Click the Finish button.

(Completion)

Installing GX Configurator-ST registers the icon as shown below.

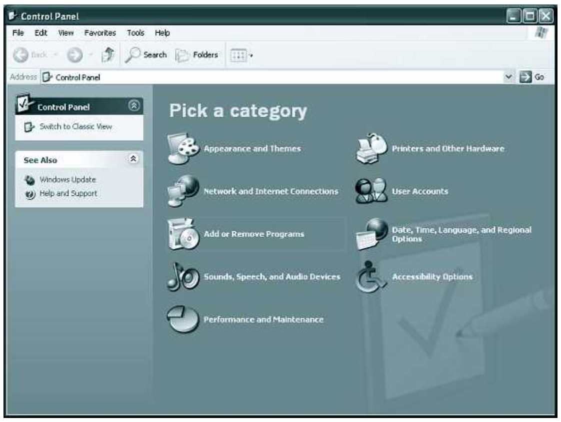


REMARK

When any of the following operating systems is used, the registered icon is placed in the menu that appears by selecting [Start] → [Programs] → [MELSOFT Application].
• Microsoft® Windows® 95 Operating System
• Microsoft® Windows® 98 Operating System
• Microsoft® Windows® Millennium Edition Operating System
• Microsoft® Windows NT® Workstation Operating System Version 4.0
• Microsoft® Windows® 2000 Professional Operating System

6.2 Uninstallation

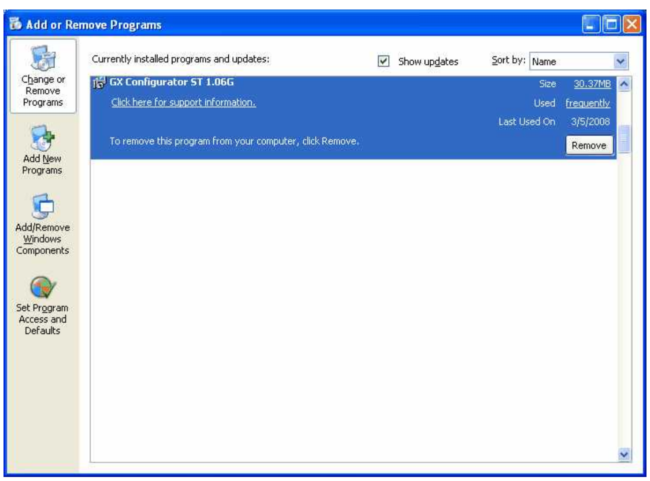
This section explains the operation for removing GX Configurator-ST from the hard disk.
The screens used for explanation in this section are those of Windows® XP Professional.
Though they differ slightly from the screens of Windows® 2000 Professional or like, refer to **REMARKS** and perform installation.



1) Double-click "Add or Remove Programs" on the Control Panel.
   To display the Control Panel, choose [Start] → [Control Panel].

REMARKS
When using any of the following operating systems, double-click "Add or Remove Programs". To display the control panel, choose [Start] → [Settings] → [Control Panel].
- Windows® 95
- Windows® 98
- Windows® Me
- Windows NT® Workstation 4.0
- Windows® 2000 Professional

For Windows Vista®, click "Uninstall a program" on the Control Panel. To display the Control Panel, select [Start] → [Control Panel].



2) Choose "Change or Remove Programs" and then "GX Configurator ST Version 1.**" ("**" represents a version number).
   After selection, click the Remove button.

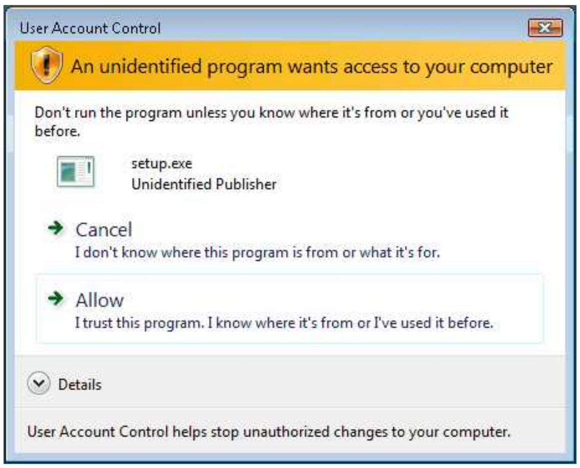
REMARKS
(a) When using any of the following operating systems, choose "Install/Uninstall" and then "GX Configurator-ST Version 1.**" ("**" represents a version number)".
After selection, click the [Add/Remove] button.
- Windows® 95
- Windows® 98
- Windows® Me
- Windows NT® Workstation 4.0

(b) When using Windows® 2000 Professional, choose "Change or Remove Programs" and then "GX Configurator-ST Version 1.**" ("**" represents a version number).
After selection, click the Remove button.

(To the next page)

(From the previous page)

3) Confirm that the files have been removed.
Clicking the Yes button starts uninstallation.
Clicking the No button stops uninstallation.

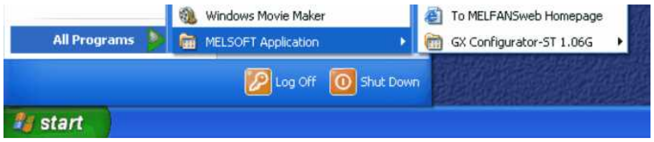


4) (When using Windows Vista®)
When the screen on the left is displayed, click "Allow".

(Completion)

6.3 Starting GX Configurator-ST

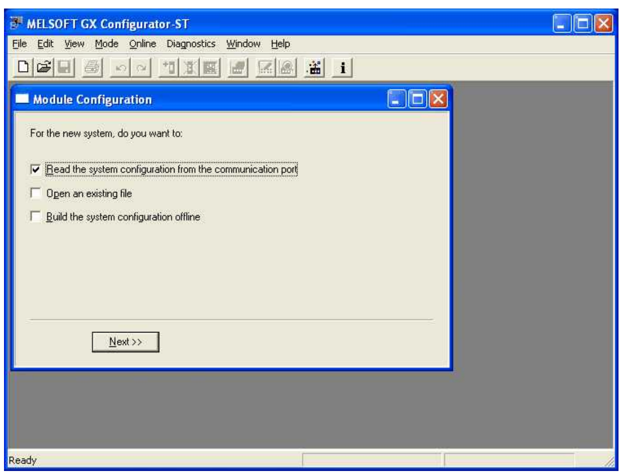
This section explains how to start GX Configurator-ST from the start menu.



1) Move the cursor from [Start] → [All Programs [*1]] → [MELSOFT Application].

*1: [Programs] is displayed when any of the following operating systems is used.
- Windows® 95
- Windows® 98
- Windows® Me
- Windows NT® Workstation 4.0
- Windows® 2000 Professional

2) Click [GX Configurator ST **] ("**" represents a version number).



3) GX Configurator-ST starts.

REMARK

Multiple GX Configurators-ST can be started to use.
Since different projects can be opened on multiple GX Configurators-ST, multiple projects can be browsed simultaneously.
The same project cannot be opened from multiple GX Configurators-ST.

When multiple GX Configurators-ST are started, GX Configurators-ST started second and later have the following restrictions.

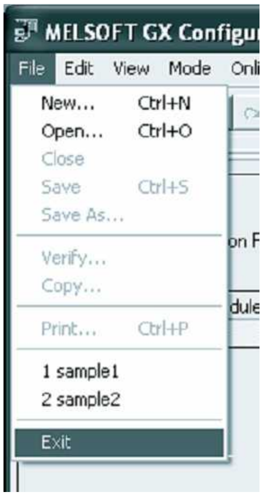
1) The diagnosis mode cannot be used.
   The [Mode] → [Diagnosis] menu () cannot be clicked.
2) Get System cannot be executed.
   The [Online] → [Get System] menu () cannot be clicked.
3) Parameter Block Write cannot be executed.
   The [Online] → [Parameter Block Write] menu cannot be clicked.
4) Parameter upload, download and verify cannot be executed on the Parameter Setting screen.
   The Upload, Download and Verify buttons cannot be clicked.

GX Configurator-ST started first can perform the following operation since the above restrictions do not apply.
Even when GX Configurator-ST started first is exited, the above restrictions still apply to all GX Configurator-ST instances that have started.
To remove the restrictions, restart GX Configurator-ST after exiting all the remaining GX Configurator-ST instances.

6.4 Exiting GX Configurator-ST

This section describes how to exit GX Configurator-ST.

(1) From menu



Click the [File] → [Exit] menu.
GX Configurator-ST ends.

(2) From "Titlebar"

Click and choose [Close].

Alternatively, click at the right end of the "Titlebar".

Point

(1) While the print preview 74 is displayed, GX Configurator-ST cannot be exited.
Exit GX Configurator-ST after closing the print preview.

(2) Do not restart or shut down your personal computer during GX Configurator-ST operation.
Exit GX Configurator-ST before restarting or shutting down the personal computer.

REMARK

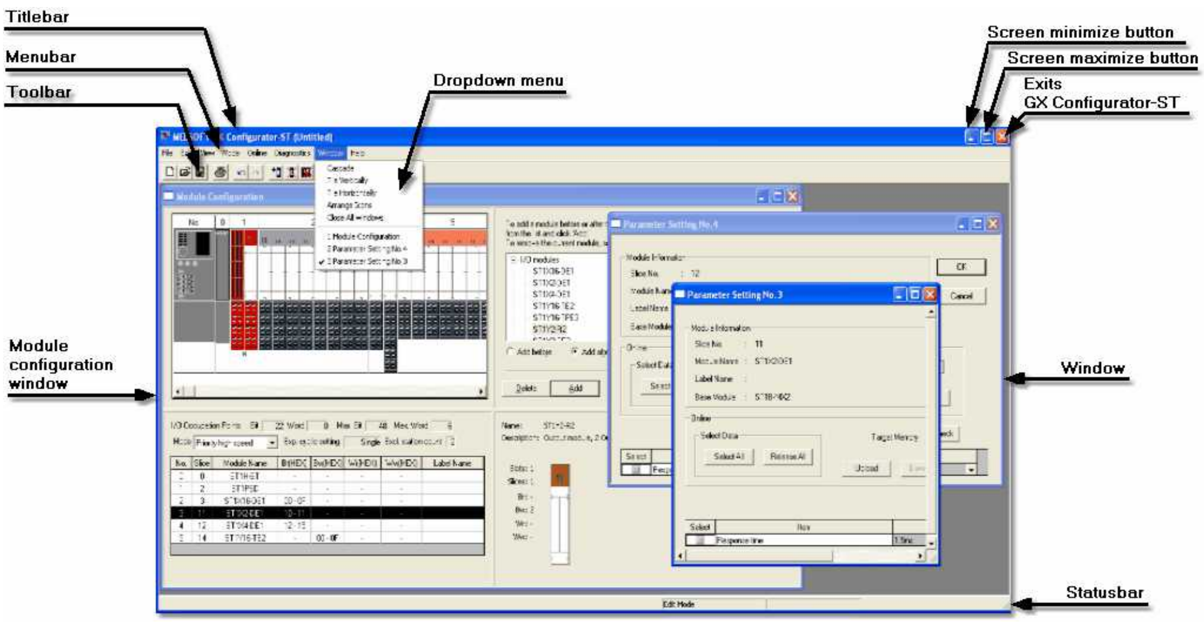
When a project is newly created, or modified but not yet saved, a dialog box appears asking whether the project will be saved or not.
When not saving it, click the No button.
When saving it, click the Yes button.
When saving a new project, name the project.
Refer to 'Save as' 59 for details.

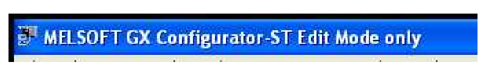
7 Screen layout and display switching

This chapter explains the screen layout of GX Configurator-ST and the display switching of each area.

7.1 Screen layout

The screen layout of GX Configurator-ST is shown below.



<table>
<tr><th>Name</th><th>Description</th></tr>
<tr><td>Titlebar</td><td>Displays the file name of the open project.
When two or more GX Configurator-STs have been started, "Edit Mode only" is displayed before each file name of the second and later ones.


When "Window" on GX Configurator-ST is maximized, the name of that "Window" is displayed.

</td></tr>
<tr><td>Menubar</td><td rowspan="2">Clicking each menu opens the corresponding "Dropdown menu". Then clicking a "Dropdown menu" item will execute the corresponding function of GX Configurator-ST.
Refer to 'Menu list' 26 for details.</td></tr>
<tr><td>Dropdown menu</td></tr>
<tr><td>Toolbar</td><td>Click any of the buttons to execute the corresponding function of GX Configurator-ST.
Refer to 'Details of toolbar' 44 for more information.</td></tr>
<tr><td>Screen minimize button</td><td>Click this button to minimize GX Configurator-ST.</td></tr>
<tr><td>Screen maxmize button</td><td>Click this button to maximize GX Configurator-ST.</td></tr>
<tr><td>Exits
GX Configurator-ST</td><td>Click this button to exit GX Configurator-ST.</td></tr>
</table>

Name	Description
Module configuration window	This initially shows a configuration wizard. Once a configuration is being edited it will display a list of modules registered to the project, graphically and as a list. Double-click a module to set the parameters. Right-click the module to display the menu, and select a menu item to execute the corresponding function. Use ‘drag and drop’ in the graphical display to rearrange modules. Use the ‘Wizard’ area to add modules. Refer to 'Details of module configuration window' 45 for more information.
Window	Displays the "Parameter Setting" screen, "Result Verify" screen, etc. Use Ctrl+F6 to switch to the next window, or Shift+Ctrl+F6 to switch to the previous window.
Statusbar	When the mouse pointer is moved over each "Dropdown menu" item, the corresponding explanation is displayed. The following information is also displayed. • Current mode of GX Configurator-ST • Station number or FDL address of the connected head module in the diagnosis mode 

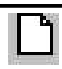
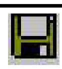
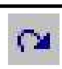
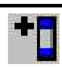
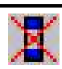
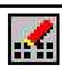
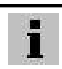
7.2 Display switching and window rearranging operations

The following table shows how to display/hide bars and how to arrange windows.

Operation	Description
[View] → [Module Configuration Window]	Displays or hides the "Module Configuration Window" screen. This operation can be performed in the edit mode only.
[View] → [Initialize Module Configuration View Position]	Returns the display position of the "Module Configuration Window" screen to the initial status. This operation can be performed in the edit mode only.
[View] → [System Monitor]	Displays or hides the "System Monitor" screen. This operation can be performed in the diagnosis mode only.
[View] → [Toolbar]	Displays or hides the "Toolbar" 44.
[View] → [Statusbar]	Displays or hides the "Statusbar" 43.
[Window] → [Cascade]	Overlays multiple "Windows" opened on GX Configurator-ST.
[Window] → [Tile Vertically]	Displays multiple "Windows" vertically.
[Window] → [Tile Horizontally]	Displays multiple "Windows" horizontally.
[Window] → [Arrange Icons]	Arranges the icons to which windows have been minimized.
[Window] → [Close All Windows]	Closes all "Windows". When a "Window" is being edited, a confirmation message is displayed.

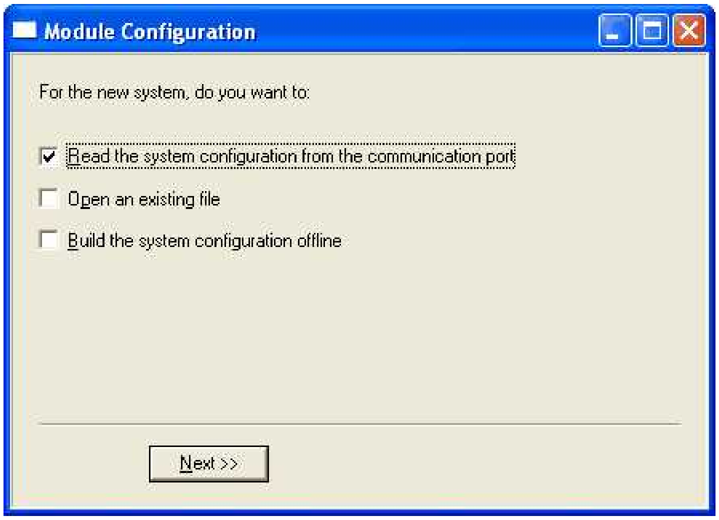
7.3 Details of toolbar

The buttons included in the Toolbar will be explained.

Button	Name	Description	Reference Section
	New	Creates a new project.	'Creating a new project' 55
	Open	Opens the existing project.	'Opening an existing project' 56
	Save	Saves the open project, whether it is new or existed previously.	'Save' 58
	Print	Prints the module configuration, module information list, and module detail information of the open project.	'Printing the project data' 67
	Undo	Restores to the status prior to the last operation.	'Undo' 87
	Redo	Restores to the status prior to the "Undo" operation.	'Redo' 88
	Add	Adds a slice module to the project.	'Adding the module' 77
	Delete	Deletes the slice module from the project.	'Deleting a module' 84
	All Delete	Deletes all slice modules from the project.	'Deleting all modules' 85
	Parameter Setting	Sets the parameters of the intelligent function module.	'Parameter setting' 92
	Edit	Switches to the edit mode.	—
	Diagnosis	Switches to the diagnosis mode.	—
	Get System	Uploads the system configuration and the parameters of each module from the head module.	'Get system' 108
	About	Displays the software version of GX Configurator-ST.	—

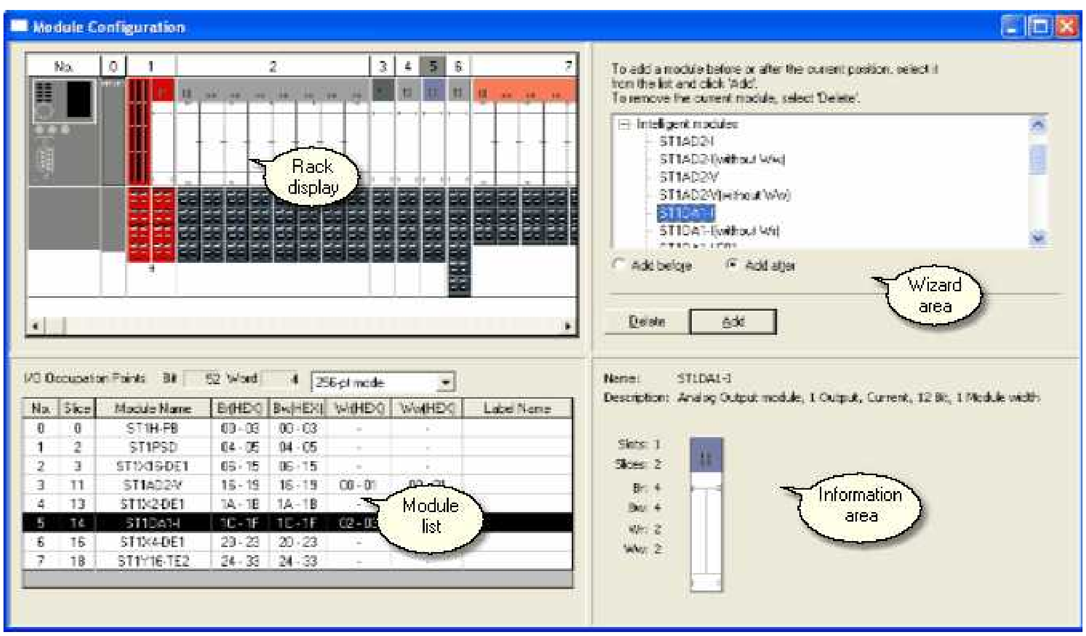
7.4 Details of module configuration window

The module configuration window provides a ‘wizard’ to guide the user through the system configuration. When GX Configurator-ST is first started, this will show the options for creating a system:



Creating a new configuration is described in 'Creating a new project' 55.

When the configuration is being edited, the window changes to show four separate panes:



Name	Description
Rack display	Displays a graphical representation of the assembled system. It can be used to edit module details or rearrange modules using drag and drop. The display items are described in 'Details of rack display' 47.
Module list	Shows the details of the modules, with the address ranges that they will use and any label names assigned to them. The display items are described in 'Details of module list' 48.
Wizard area	This is a continuation of the wizard screen shown when GX Configurator-ST first starts, and can be used to add or delete modules. For more information, see 'Details of wizard area' 52.
Information area	This shows the details of the module selected for addition in the wizard area. The display items are described in 'Details of information area' 53.

HELPFUL OPERATION

You can resize the areas by selecting the bars between them, and then clicking and dragging with the mouse. The size of each area will be saved when the application exits, and restored the next time the program starts. It can be reset from the 'View' menu 'Initialize module configuration view position' 43 item.

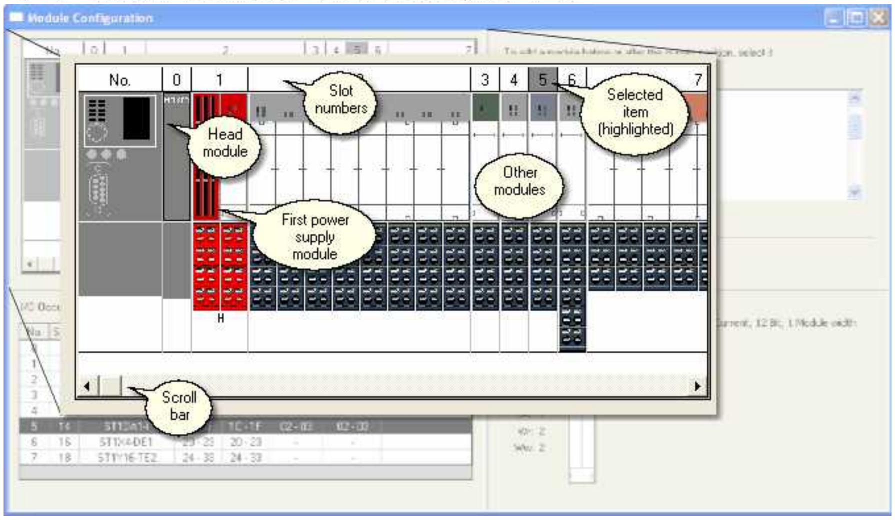
The following shortcut keys are available for use when the module configuration window is active:

Key	Description
Alt + 1	Switch to the rack display.
Alt + 2	Switch to the module list
Alt + 3	Switch to the wizard area
F6	Switch between panes, in the order: Rack display → Module list →Wizard area → Rack display
Shift + F6	Switch between panes in reverse order: Rack display → Wizard area → Module list → Rack display

7.4.1 Details of rack display

Displays a graphical representation of the assembled system. This can be useful to provide a quick visual check for errors, as the graphical display should look like the physical hardware.

DISPLAY/SETTING SCREEN



DISPLAY/SETTING DATA

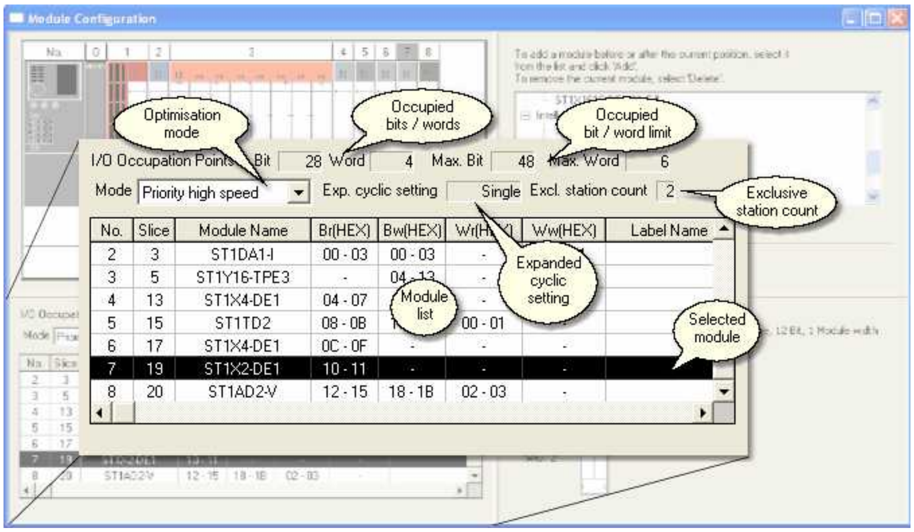
Item	Description
Modules	The rack starts at the left side with the head module, which always occupies slot number zero. This should normally be followed by an ST1PSD bus refreshing module, which is always required to provide power to the head module and the first modules immediately after it. The graphic for each module is shown in two parts; the upper half depends on the module type, and the lower half shows the 'base module' which may be different depending on the type of wiring used. Left click on a module to select it. It will automatically be selected in the module list as well. Many actions in the [Edit] menu require a module to be selected first. Right click on a module to select it and show a menu similar to the [Edit] menu – refer to 'Editing the project' 77 for details of each menu item. If the module has a configuration error (such as consuming more power than the last power supply will provide), this will be shown at the top of the menu. Clicking on the item will show help on the error.
Scroll bar	If there are more modules in the configuration than the window can display, there will be a scrollbar under the rack which can be used to view the remaining modules

7.4.2 Details of module list

This shows a list of modules in the configuration.

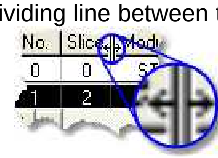
[CC-Link systems]

DISPLAY/SETTING SCREEN



DISPLAY/SETTING DATA

Item	Description
I/O Occupation Points (Bit)	The total number of bits used by all the modules in the configuration.
I/O Occupation Points (Word)	The total number of words used by all the modules in the configuration.
Max. Bit	The limit on the number of input/output bits with the current optimisation mode, extended cyclic and stations settings.
Max. Word	The limit on the number of input/output words with the current optimization mode, extended cyclic and stations settings.
Mode	This gives the optimization mode currently selected, either 'priority high speed' (use more stations so data is read faster) or 'priority min. stations' (reduce the number of stations used at the cost of reading the data more slowly). This can only be changed for the SLICE system by setting a DIP switch on the head module itself, although the selection can be changed here to see what the effect of switching mode would be. When you switch to diagnostics mode, the current DIP switch setting will be read from the SLICE hardware.
Exp. cyclic setting	By increasing the number of cycles taken to read the data, the number of stations used can be reduced, however this means that the data will take longer to read in total. This value is calculated based on the optimization mode setting.
Excl. station count	The number of stations used for communications. Using more stations increases the speed at which data is read, but reduces the number of other devices that can be used on the CC-Link bus. This value is calculated based on the optimization mode setting.

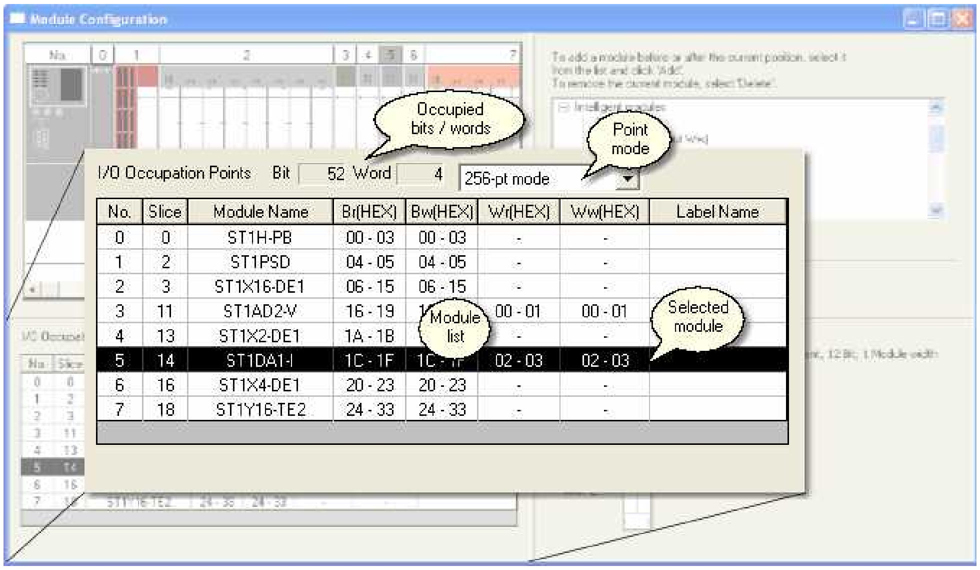
Item		Description
List area		This shows a list of modules in the configuration. Double click on a module to edit its parameter settings (see 'Parameter setting' 92 for more details). Left click on a module to select it – the same module will automatically be selected in the rack display as well. Many actions in the [Edit] menu require a module to be selected first. Right click on a module to select it and show a menu similar to the [Edit] menu – refer to 'Editing the project' 77 for details of each menu item. If the module has a configuration error (such as consuming more power than the last power supply will provide), this will be shown at the top of the menu. Clicking on the item will show help on the error. You can alter the widths of columns in the module list by moving the mouse pointer over the dividing line between two column headings:  When the cursor changes to a vertical double line with arrows on each side, click and hold the left mouse button, then drag the column divider to its new position and release the mouse button. The changes you make to the column widths will be remembered and reapplied each time the application is started.
	No.	the position number for the module, starting with the head module at position 0 and the first ST1PSD power supply at position 1.
	Slice	The Slice position of the module. Some modules can occupy more than one slice, so this does not always match the number.
	Module Name	The type of module, for example ST1PSD.
	Br(HEX)	The input bit range used by the module
	Bw(HEX)	The output bit range used by the module
	Wr(HEX)	The input word range used by the module
	Ww(HEX)	The output word range used by the module
	Label Name	A user-defined label for the module. This can be useful to identify modules when there are several modules of the same type in the system. For example, two similar input/output modules could be labelled 'Cabinet 1 wiring' and 'Cabinet 2 wiring' to tell them apart.

Point

In CC-link systems, the address ranges are sometimes referred to differently. CClink's 'RX' and 'RY' ranges are equivalent to the 'Br' and 'Bw' ranges shown in GX Configurator-ST and CC-link's 'RWr' and 'RWw' ranges are equivalent to 'Wr' and 'Ww'.

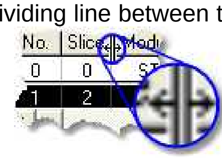
[PROFIBUS-DP systems]

DISPLAY/SETTING SCREEN



DISPLAY/SETTING DATA

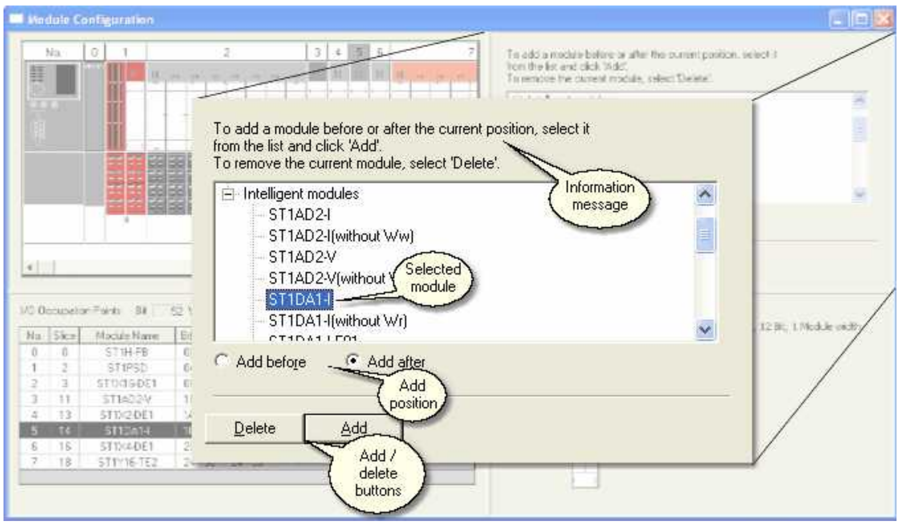
Item	Description
I/O Occupation Points (Bit)	The total number of bits used by all the modules in the configuration. This cannot be more than the point mode limit (see 'Option setting' 99).
I/O Occupation Points (Word)	The total number of words used by all the modules in the configuration. The limit on the number of words used varies depending on the point mode.
Point mode	This gives the number of points read when communicating with the PROFIBUS-DP master station. Lower numbers mean that the data is read more frequently, but less data can be read in total. Larger numbers allow more data to be read, but not as often.

Item		Description
List area		This shows a list of modules in the configuration. Double click on a module to edit its parameter settings (see 'Parameter setting' 92 for more details). Left click on a module to select it – the same module will automatically be selected in the rack display as well. Many actions in the [Edit] menu require a module to be selected first. Right click on a module to select it and show a menu similar to the [Edit] menu – refer to 'Editing the project' 77 for details of each menu item. If the module has a configuration error (such as consuming more power than the last power supply will provide), this will be shown at the top of the menu. Clicking on the item will show help on the error. You can alter the widths of columns in the module list by moving the mouse pointer over the dividing line between two column headings:  When the cursor changes to a vertical double line with arrows on each side, click and hold the left mouse button, then drag the column divider to its new position and release the mouse button. The changes you make to the column widths will be remembered and reapplied each time the application is started.
	No.	The position number for the module, starting with the head module at position 0 and the first ST1PSD power supply at position 1.
	Slice	The Slice position of the module. Some modules can occupy more than one slice, so this does not always match the number.
	Module Name	The type of module, for example ST1PSD.
	Br(HEX)	The input bit range used by the module
	Bw(HEX)	The output bit range used by the module
	Wr(HEX)	The input word range used by the module
	Ww(HEX)	The output word range used by the module
	Label Name	A user-defined label for the module. This can be useful to identify modules when there are several modules of the same type in the system. For example, two similar input/output modules could be labelled 'Cabinet 1 wiring' and 'Cabinet 2 wiring' to tell them apart.

7.4.3 Details of wizard area

The wizard area is a continuation of the wizard page which is shown when GX Configurator-ST first starts. It can be used to add or delete modules.

DISPLAY/SETTING SCREEN



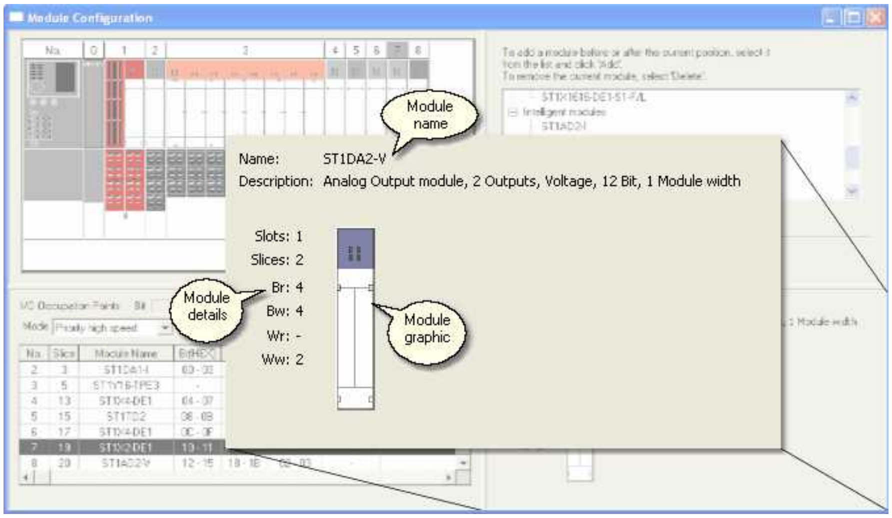
DISPLAY/SETTING DATA

Item	Description
Information message	This shows advice on the current function of the buttons.
Module tree	This shows the available modules for addition, categorised by type. When a module is selected, its details are shown in the information area – see 'Details of information area' 53.
Add before	Select this if new modules should be added *before* the currently selected module in the rack display / module list.
Add after	Select this if new modules should be added *after* the currently selected module in the rack display / module list.
Back button [not shown]	If there are no modules left other than the head module and first bus refreshing module, the Back button will allow you to return to the head module selection page of the wizard.
Delete button	This can be used to delete the module which is currently selected in the module list / rack display.
Add button	Adds a module to the configuration.

7.4.4 Details of information area

When a module is selected for addition in the wizard area tree, the information area shows the details of the module.

DISPLAY/SETTING SCREEN



DISPLAY/SETTING DATA

Item	Description
Name	The module name (type)
Description	A readable description of the module - this can be useful to identify a module when two modules have similar names
The module graphic	A graphical representation of the top part of the module as it will appear in the rack.
Slots	The number of slots that will be occupied by the module
Slices	The number of slices that will be occupied by the module
Br	The number of input bits occupied
Bw	The number of output bits occupied
Wr	The number of input words occupied
Ww	The number of output words occupied

Point

In CC-link systems, the address ranges are sometimes referred to differently. CClink's 'RX' and 'RY' ranges are equivalent to the 'Br' and 'Bw' ranges shown in GX Configurator-ST and CC-link's 'RWr' and 'RWw' ranges are equivalent to 'Wr' and 'Ww'.

8 Project creation

This chapter explains how to create the project of GX Configurator-ST.

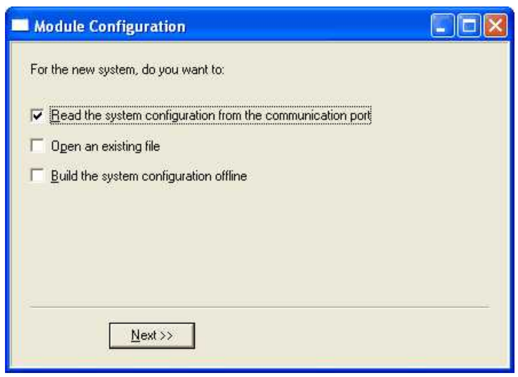
8.1 Creating a new project

PURPOSE

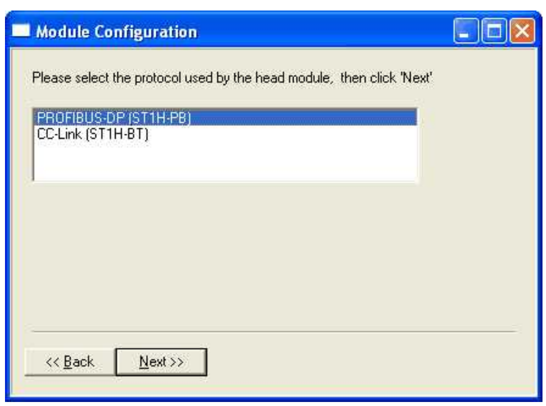
Creates a new project.

BASIC OPERATION

(1) When GX Configurator-ST is first started, a 'wizard' page is shown automatically. If you have a configuration file open, you can also return to this page by clicking the [File] → [New] menu ( ) or pressing the Ctrl + N keys on the keyboard.



(2) Select 'Build the system configuration offline' and click Next >> to show the protocol selection page.



(3) Select the protocol used by the head module then click Next >>.

This displays a new project on the "Module Configuration Window" screen.

8.2 Opening an existing project

PURPOSE

Reads a saved project.

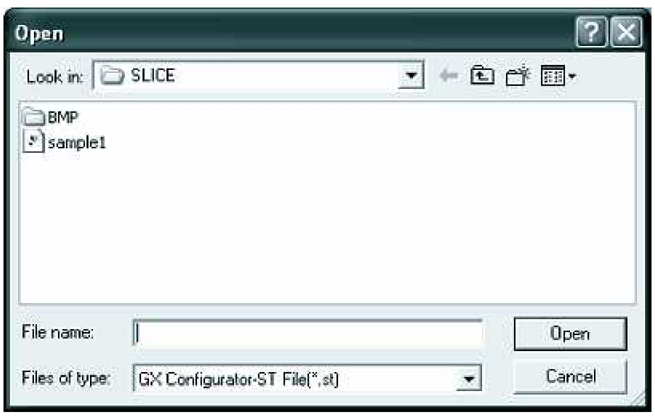
BASIC OPERATION

(1) Either:

Click the [File] → [Open] menu ( ) or press the Ctrl + O keys on the keyboard, or
At the first wizard page (normally shown when GX Configurator-ST starts), select 'Open an existing file' and click Next >>.

(2) On the opened screen, select the project to be opened, and click the Open button.
This displays the selected project on the "Module Configuration Window" screen.

DISPLAY/SETTING SCREEN



DISPLAY/SETTING DATA

Item	Description
Look in	Select the directory that stores the project to be opened.
File name	Set the file name of the project to be opened.
Open button	Opens the project specified at "File name".
Cancel button	Closes this screen without opening the project.

8.3 Closing the project

PURPOSE

Closes the currently open project.

BASIC OPERATION

(1) Click the [File] → [Close] menu.

(2) When closing a project that includes unsaved changes, i.e., newly created project or changed existing project, a screen appears asking whether the project will be saved or not.

When not saving it, click the No button.
When saving it, click the Yes button.
When saving a new project, name the project.
Refer to 'Save as' 59 for details.

(3) When closing an unchanged existing screen, the following screen appears asking whether the project will be closed or not.

Click the Yes button to close the project.

8.4 Saving the project

8.4.1 Save

PURPOSE

Saves the open project, whether it is new or existed previously.

BASIC OPERATION

Click the [File] → [Save] menu () or press the Ctrl + S keys on the keyboard.
For a new project, name and save it.
Refer to 'Save as' 59 for details.

8.4.2 Save as

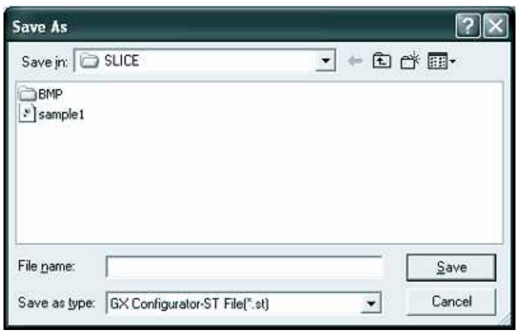
PURPOSE

To name and save the open project.

BASIC OPERATION

(1) Click the [File] → [Save As] menu.
(2) On the opened screen, select the destination directory, set the file name, and click the Save button.

DISPLAY/SETTING SCREEN



DISPLAY/SETTING DATA

Item	Description
Save in	Select the directory that stores the project.
File name	Set the file name of the project to be saved.
Save button	Saves the project with the file name specified at "File name".
Cancel button	Closes this screen without saving the project.

8.5 Verifying the projects

Verify two projects against each other to check whether the parameters are consistent or not.

There are the following two different verify methods.

(1) n:n verify

Verify all modules of the same No. between the open project and saved project.
Refer to 'n:n verify' 61 for details of the verify operation.
Refer to 'Verify result' 63 for details of the verify result.

(2) 1:n verify

Select one module from one of two projects, select multiple modules from the other project, and verify the one module of the former project against the multiple modules of the latter project.
Refer to '1:n verify' 65 for details of the verify operation.
Refer to 'Verify result' 63 for details of the verify result.

8.5.1 n:n verify

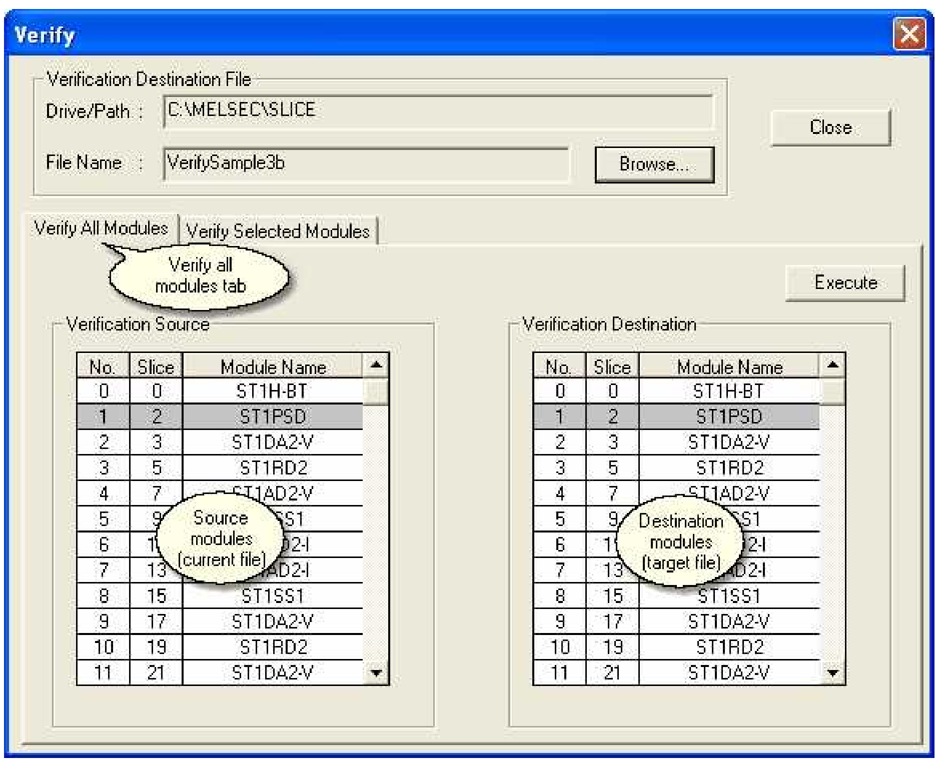
PURPOSE

Verifies all modules of the same No. between the open project and saved project.

BASIC OPERATION

(1) Clicking the [File] → [Verify] menu displays the "Verify" screen.
(2) Open the <<Verify All Modules>> tab.
(3) Click the Browse button and specify the verification destination project.
(4) Clicking the Execute button starts verify, closes this screen, and displays the result.
Refer to 'Verify result' 63 for details.

DISPLAY/SETTING SCREEN



DISPLAY/SETTING DATA

Item		Description
Verification Destination File		Specify the verification destination project.
	Drive/Path	Displays the drive and directory that stores the verification destination project specified with the Browse button.
	File Name	Displays the file name of the verification destination project specified with the Browse button.
	Browse button	Specifies the project. Operation is the same as opening the existing project. Refer to 'Opening an existing project' 56 for details.
Close button		Closes this screen without verifying the projects.
<<Verify All Modules>> tab		Performs n:n verify.
	Execute button *1	Verifies the projects, closes this screen, and displays the verify result. Refer to 'Verify result' 63 for details of the verify result.
	Verification Source *2	Displays a list of all modules of the open project.
	Verification Destination *2	Displays a list of all modules of the verification destination project.

*1: The Execute button cannot be clicked if the open project and verification destination project differ in system configuration.

*2: As this verification is conducted to check parameter inconsistency, the module without parameters is grayed out and is not verified.
The module with uploadable parameters is verified, even if the parameters are not editable.

8.5.2 Verify result

PURPOSE

Confirms the verify result displayed by n:n verify 61 or 1:n verify 65.

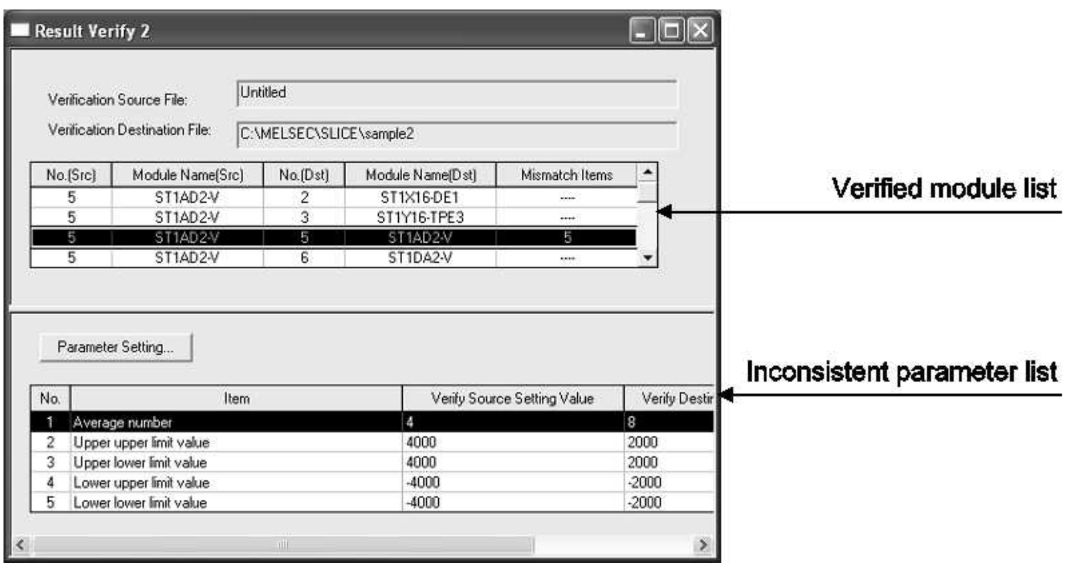
BASIC OPERATION

(1) The module having inconsistent parameters in the verify result is displayed red in the verified module list.
To display the inconsistent parameters, click the module displayed red.

(2) To change the parameters, double-click or select the corresponding module and click the Parameter Setting button.

(3) To close this screen, click the button.

DISPLAY/SETTING SCREEN



DISPLAY/SETTING DATA

Item		Description
Verification Source File		Displays the file name of the verification source project. "Untitled" is displayed when a newly created and unsaved project has been set.
Verification Destination File		Displays the file name of the verification destination project.
Verified module list		Displays a list of modules verified. The module having inconsistent parameters is displayed red. Double-click that module to change its parameters. Refer to 'Parameter setting' 92 for details.
	No. (Src)	Displays the No. of the verification source module.
	Module Name (Src)	Displays the model name of the verification source module.
	No. (Dst)	Displays the No. of the verification destination module.
	Module Name (Dst)	Displays the model name of the verification destination module.
	Mismatch Items	Displays the number of items whose verify result is inconsistent. "----" indicates that the "Module Name(Src)" and "Module Name(Dst)" are different modules.
Parameter Setting button		Changes the parameters of the module selected in the verified module list. Refer to 'Parameter setting' 92 for details. The target is an open project.
Inconsistent parameter list		Displays the parameters that were inconsistent as a result of verify in the module selected in the verified module list.
	No.	Displays the serial number.
	Item	Displays the parameter name.
	Verify Source Setting Value	Displays the parameter value of the verification source module.
	Verify Destination Setting Value	Displays the parameter value of the verification destination module.

8.5.3 1:n verify

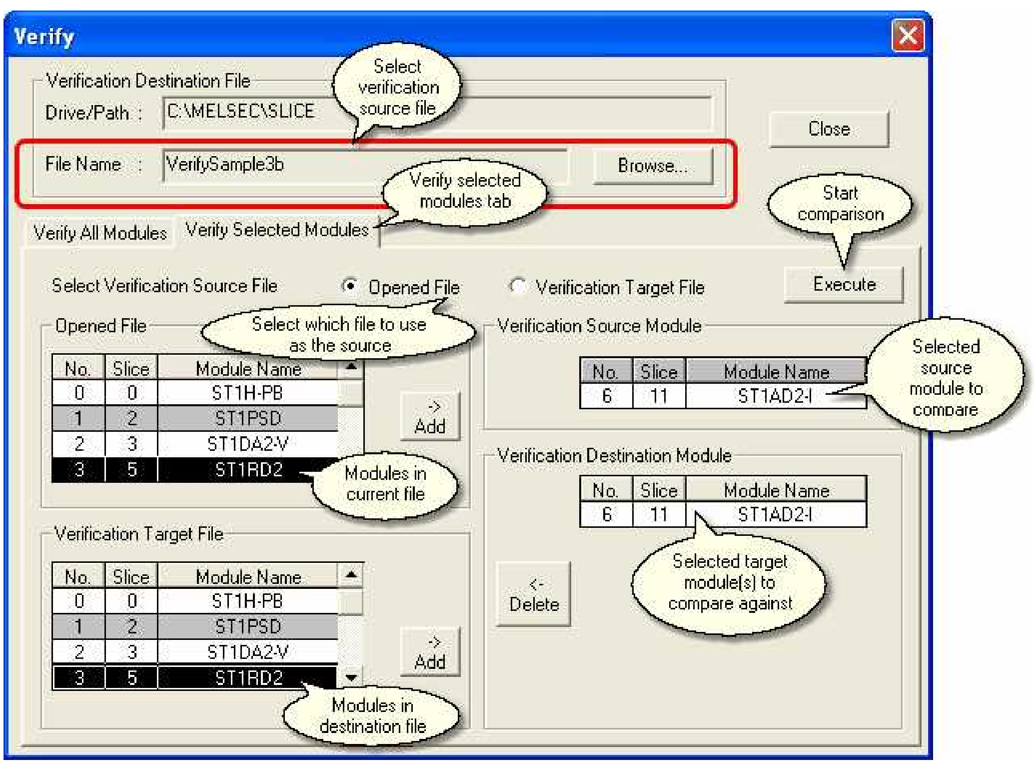
PURPOSE

Selects one module from one of two projects, selects multiple modules from the other project, and verifies the one module of the former project against the multiple modules of the latter project.

BASIC OPERATION

(1) Clicking the [File] → [Verify] menu displays the "Verify" screen.
(2) Open the <<Verify Selected Modules>> tab.
(3) With the Browse button, specify the verification destination project.
(4) With the "Select Verification Source File" radio button, select the project that includes the verification source module.
(5) With the Add button, select the verification source module.
(6) With the Add / Delete button, select the verification target module.
(7) Clicking the Execute button starts verify, closes this screen, and displays the result.
Refer to 'Verify result' 63 for details.

DISPLAY/SETTING SCREEN



DISPLAY/SETTING DATA

Item	Description
Verification Destination File	Specify the verification destination project. Operation is the same as performing n:n verify. Refer to 'n:n verify' 61 for details.
Close button	Closes this screen without verifying the projects.
<<Verify Selected Modules>> tab	Performs 1:n verify.
Select Verification Source File	Select the project that includes the verify source module. • When "Opened File" is selected, select the verification source module from the open project. • When "Verification Target File" is selected, select the verification source module from the project specified at "Verification Destination File".
Execute button	Verifies the projects, closes this screen, and displays the verify result. Refer to 'Verify result' 63 for details of the verify result.
Opened File *1	Displays a list of all modules of the open project.
Add button	Adds the selected module to the "Verification Source Module" or "Verification Destination Module". The addition destination changes depending on the selection of "Select Verification Source File". • When "Opened File" is selected, the selected module is added to "Verification Source Module". • When "Verification Target File" is selected, the selected module is added to "Verification Destination Module".

*1: As this verification is conducted to check parameter inconsistency, the module without parameters is grayed out and is not verified.
The module with uploadable parameters is verified, even if the parameters are not editable.

Item	Description
Verify Selected Modules	—
Verification Target File *1	Displays a list of all modules of the verification destination project.
Add button	Adds the selected module to the "Verification Source Module" or "Verification Destination Module". The addition destination changes depending on the selection of "Select Verification Source File". • When "Opened File" is selected, the selected module is added to "Verification Source Module". • When "Verification Target File" is selected, the selected module is added to "Verification Destination Module".
Verification Source Module	Displays the module selected as the verification source. Only one module can be selected for this item.
Verification Destination Module	Displays the modules to be verified.
Delete button	Deletes the selected module.

*1: As this verification is conducted to check parameter inconsistency, the module without parameters is grayed out and is not verified.
The module with uploadable parameters is verified, even if the parameters are not editable.

8.6 Printing the project data

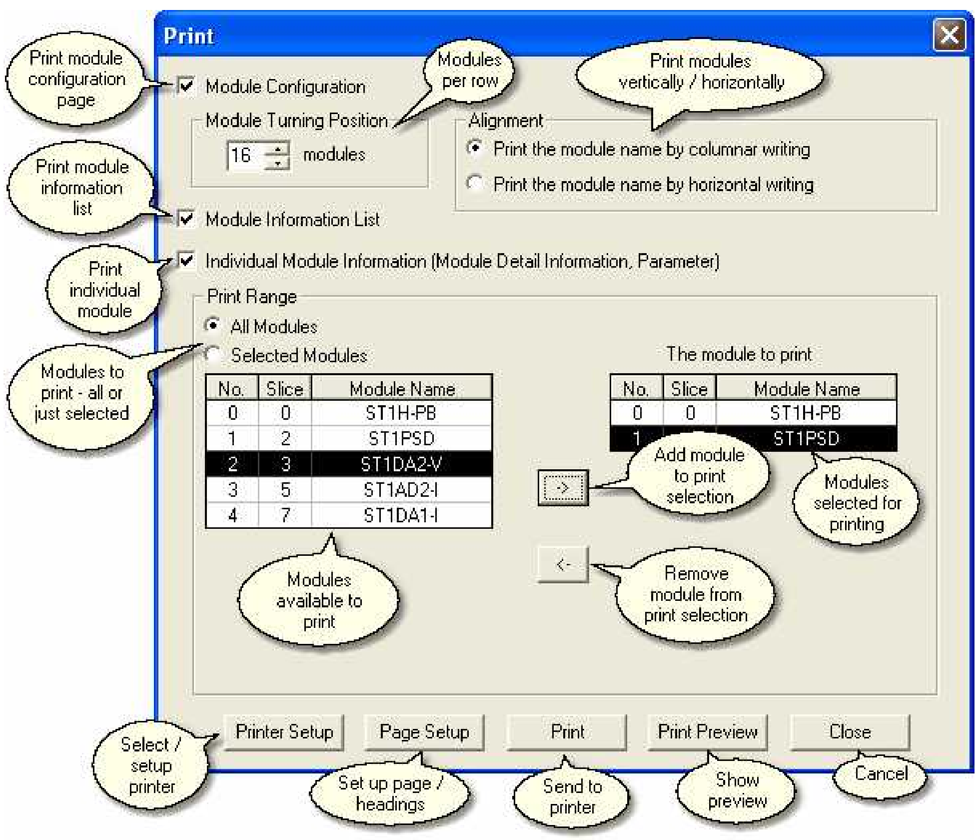
PURPOSE

Prints the module configuration, module information list and module detail information of the open project.

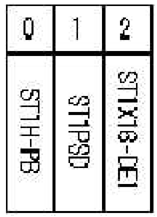
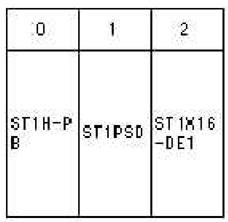
BASIC OPERATION

(1) Click the [File] → [Print] menu ( ) or press the Ctrl + P keys on the keyboard.
(2) Make settings on the opened screen, e.g. select the printing details (Module Configuration, Module Information List or Individual Module Information (Module Detail Information, Parameter)).
(3) Click the Print button to start printing.
Refer to 'Print examples' 75 for the printing result.

DISPLAY/SETTING SCREEN



DISPLAY/SETTING DATA

Item		Description
Module Configuration		Check this item to print the module configuration.
Module Turning Position		Set the number of modules to be arranged horizontally when the module configuration is to be printed. This item is available only when the "Module Configuration" is checked.
Module Information List		Check this item to print the module information list.
Individual Module Information (Module Detail Information, Parameter)		Check this item to print the detail information of the modules specified at "Print Range".
Alignment		Select the print orientation for the module names.
	Print the module name by columnar writing	Prints the module names vertically. 
	Print the module name by horizontal writing	Prints the module names horizontally. 
Print Range		Set the modules to be printed when the detail information of individual modules is to be printed. This item is available only when the "Individual Module Information" is checked.
	All Modules	Prints the detail information of all modules.
	Selected Modules	Prints the detail information of the modules displayed in "The module to print".
	-> button	Adds the module selected in the left side list to the end of "The module to print" as the module to be printed.
	<- button	Withdraws the module selected in "The module to print" from the modules to be printed, and deletes it from "The module to print".
Printer Setup button		Sets the printer. Refer to 'Setting up the printer' 69 for details.
Page Setup button		Sets the page layout. Refer to 'Setting a page layout' 71 for details.
Print button		Starts printing.
Print Preview button		Closes this screen and displays a print image. Refer to 'Previewing a print image' 74 for details.
Close button		Closes this screen without printing.

8.6.1 Setting up the printer

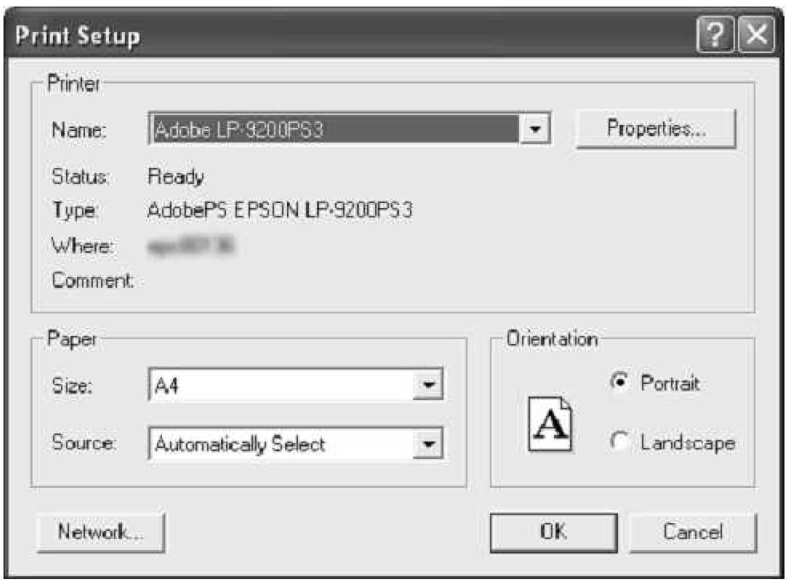
PURPOSE

Selects a printer for printing and sets the paper size, the printing orientation, and other printing format-related items.

BASIC OPERATION

(1) Click the Printer Setup button on the "Print" screen to display this screen.
(2) Select the printer for printing, and set the paper size, print orientation, etc.
(3) To close this screen, click the OK button.

DISPLAY/SETTING SCREEN



DISPLAY/SETTING DATA

Item		Description
Printer		Selects a printer for printing.
	Properties button	Clicking this button displays the properties dialog box. The printer property option is used to make the basic settings of the printer.
Paper		Sets the size of the paper for printing and the paper feed method of the printer. The setting range depends on the printer.
Orientation		—
	Portrait	Characters will be printed along the paper feed direction.
	Landscape	Characters will be printed across the paper feed direction.
Network button		Click this button when connecting to the shared network folder. This item is displayed only when any of the following operating systems is used. • Microsoft® Windows® 2000 Professional Operating System • Microsoft® Windows® XP Professional Operating System • Microsoft® Windows® XP Home Edition Operating System • Microsoft® Windows Vista® Home Basic Operating System • Microsoft® Windows Vista® Home Premium Operating System • Microsoft® Windows Vista® Business Operating System • Microsoft® Windows Vista® Ultimate Operating System • Microsoft® Windows Vista® Enterprise Operating System
OK button		Click this button after the printer setting is completed.
Cancel button		Cancels the settings and closes this screen.

Point

For the property setting of the printer, please read the manual of the used printer carefully since the setting changes depending on the printer maker and model.

8.6.2 Setting a page layout

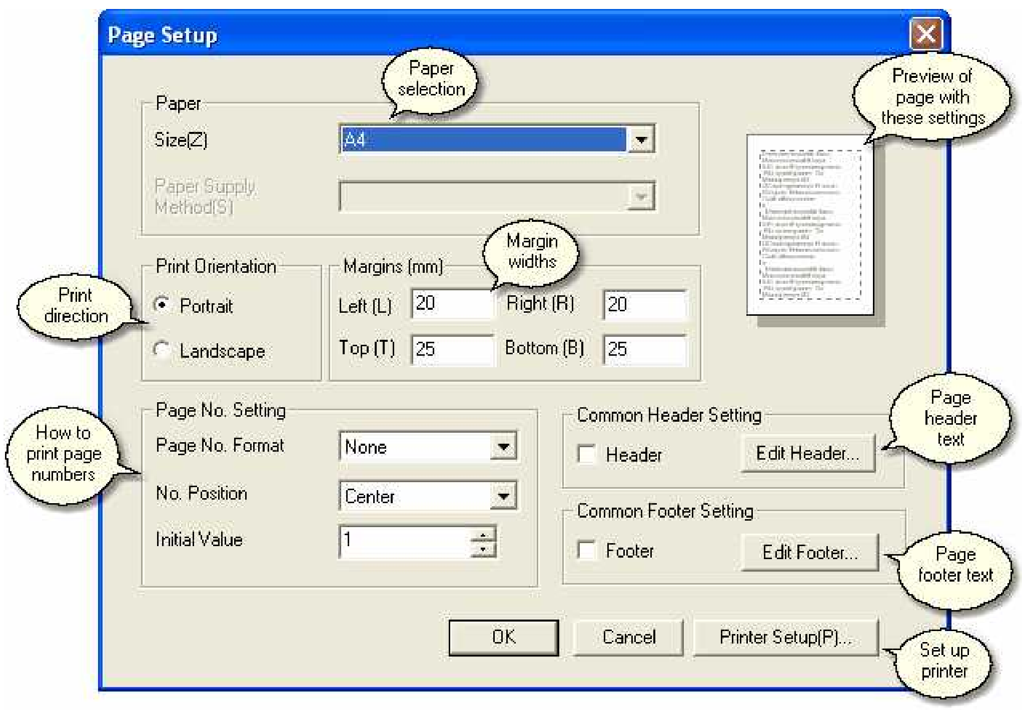
PURPOSE

Makes settings related paper, page number, header, and so on.

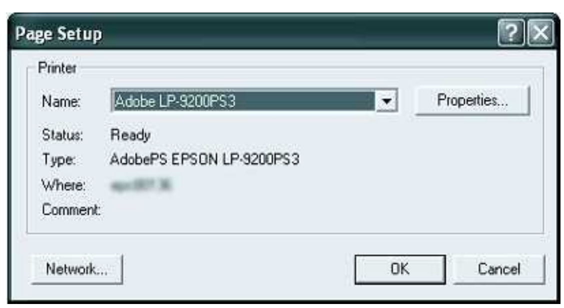
BASIC OPERATION

(1) Click the Page Setup button on the "Print" screen to display this screen.
(2) Set the paper, page number, header, etc.
(3) To close this screen, click the OK button.

DISPLAY/SETTING SCREEN



DISPLAY/SETTING DATA

Item		Description
Paper		Sets paper size and paper feed method.
Print Orientation		Sets the orientation of printing on paper.
Margins		Sets the margins of the page.
Page No. Setting		Set the page number.
	Page No. Format	Select the page number format. • "-**-" indicates that a page number will printed on pages, starting from the initial value. • "-**/**-" indicates that a page number and the total number of pages will be printed. • Set "None" to print no page numbers.
	No. Position	Sets the position of page numbers.
	Initial Value	Sets the page number to be printed on the first page. This can be useful if you are printing the configuration as an appendix to another document.
Common Header Setting/ Common Footer Setting		By checking the check box, a header will be printed on each page. Click the Edit header button, and the "Header Edit" dialog box as shown below will be displayed.  Alternatively, clicking the Edit header button displays the "Footer Edit" dialog box like the Header Edit dialog box. The header (or footer) can be edited within the range of 64 characters x seven lines. Lines and images cannot be edited, and characters cannot be decorated.
Preview		This shows a graphical representation of how the page will look using the current settings such as landscape / portrait, margins, etc.
OK button		Click this button after the page setting is completed.
Cancel button		Cancels the settings and closes this screen.
Printer Setup button		By clicking this button, the printer dialog box will be displayed. Select the printer for printing and click the OK button. 

Point

- If the print characters are small, reduce the value of margin setting.
- When the mouse button is clicked while the shape of the mouse pointer is , the window zooms in.
  When the mouse button is clicked while the shape of the mouse pointer is , the data is displayed in the standard scale.

8.6.3 Previewing a print image

PURPOSE

The image of the entire page when it is printed will be displayed.

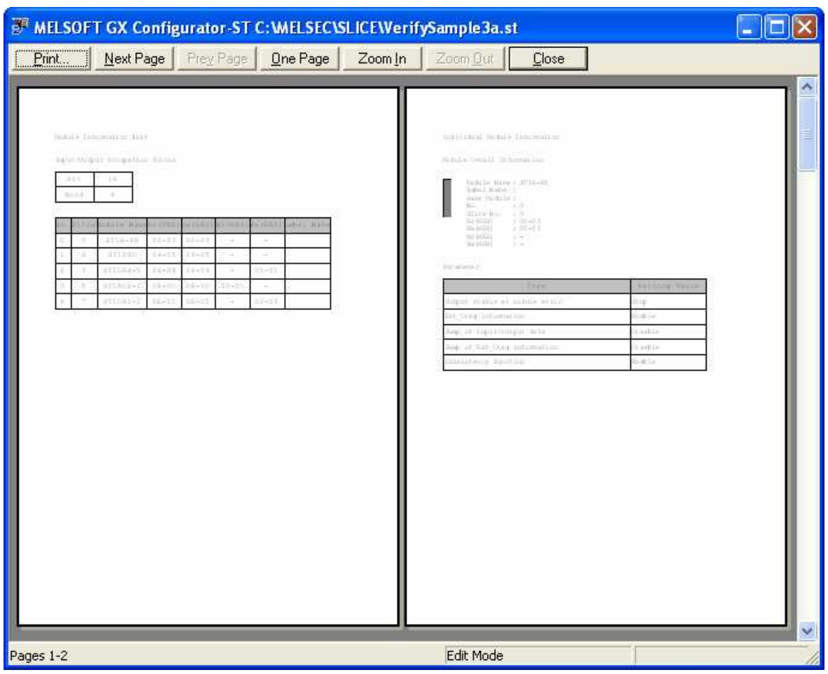
BASIC OPERATION

(1) Clicking the **Print Preview** button on the "Print" screen displays the print image of the entire page.

(2) To return to the "Print" screen, click the **Print** button.

(3) To end the image display, click the **Close** button.

DISPLAY/SETTING SCREEN



DISPLAY/SETTING DATA

Item	Description
Print button	Ends the image display and starts the print.
Zoom In button	The displayed image will be enlarged by clicking this button. Data will be displayed in three different scales.
Zoom Out button	The displayed image will be reduced by clicking this button.
Close button	Ends the image display.

Point

When the mouse button is clicked while the shape of the mouse pointer is 🔍, the window zooms in.

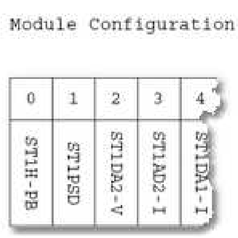
When the mouse button is clicked while the shape of the mouse pointer is ↖, the data is displayed in the standard scale.

8.6.4 Print Examples

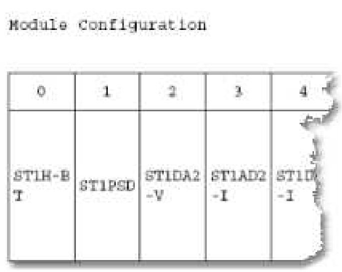
Print examples are shown below.

(1) Module Configuration

(a) When "Print the module name by columnar writing" is set



(b) When "Print the module name by horizontal writing" is set



(2) Module Information List

Module Information List

Input/Output Occupation Points

Bit	50
Word	4

No.	Slice	Module Name	Br(HEX)	Bw(HEX)	Wr(HEX)	Ww(HEX)	Label Name
0	0	ST1H-PB	00-03	00-03	-	-	
1	2	ST1PSD	04-05	04-05	-	-	

(3) Individual Module Information

Module Detail Information

Module Name : ST1H-PB
Label Name :
Base Module :
No. : 0
Slice No. : 0
Br(HEX) : 00-03
Bw(HEX) : 00-03
Wr(HEX) : -
Ww(HEX) : -

Parameter

Item	Setting Value
Output status at module error	Stop
Ext_Diag information	Enable
Swap of input/output data	Disable

9 Editing the project

This chapter explains how to edit the project of GX Configurator-ST.

Point

Always add the power distribution module to the project.

9.1 Adding the module

9.1.1 Adding the module with the "Add module" screen

PURPOSE

Adds a slice module to the project.

BASIC OPERATION

(1) Execute any of the following operations to display the "Add Module" screen.

Click the [Edit] → [Add] menu ( ).
Press the Ctrl + Insert keys on the keyboard.
In the “Module Configuration Window”, right-click the list in the "Module list" or “rack display” area, and click [Add] from the menu.

(2) Set the adding position and model name of the module on the "Add Module" screen, and click the Add button.

(3) To close the "Add Module" screen, click the Close button.

Point

Perform the operation with the "Module Configuration Window" screen open.

To display the "Module Configuration Window" screen, choose the [View] → [Module Configuration] menu.

Point

If adding the module would cause the power consumption to be exceeded for the power supply module which serves the new module, you will be shown a warning message which provides an opportunity to cancel the addition.

This warning is only shown once – it will not be shown if the power supply module was already overloaded before the module was added.

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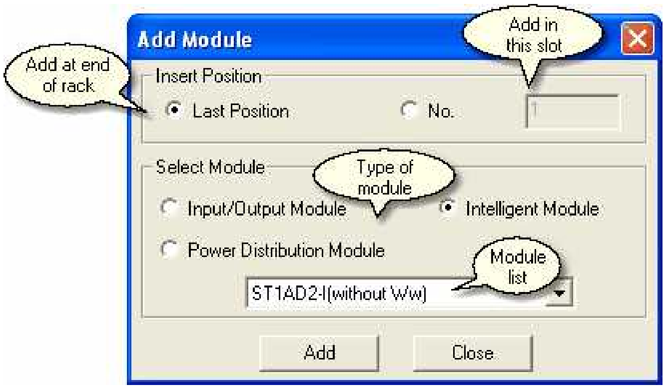
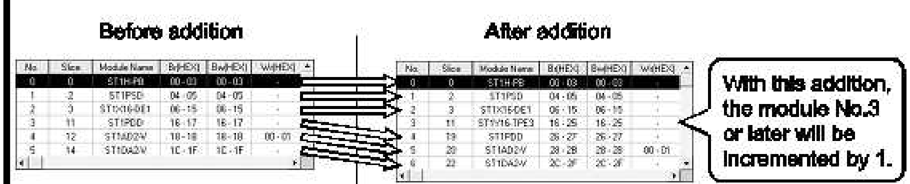
DISPLAY/SETTING SCREEN



DISPLAY/SETTING DATA

Item		Description
Insert Position		Set the position where the slice module will be inserted.
	Last Position	Sets the inserting position to the last line. Example: When the module is added to the last line. 
	No.	Select the "No." radio button and specify the inserting position with "No.". Example: When the module (ST1Y16-TPE3) is added to No. 3 
Select Module		Select the model name of the slice module to be added in the pull-down menu.
	Input/Output Module	Displays the input/output modules in the pull-down menu to enable selection.
	Intelligent Module	Displays the intelligent function modules in the pull-down menu to enable selection.
	Power Distribution Module	Displays the power distribution modules in the pull-down menu to enable selection.
Add button *1		Adds the slice module to the project.
Close button		Closes this screen without adding the slice module.

*1: The slice module cannot be added in excess of the Maximum Input/Output points of the head module.
Refer to 'Option setting' 99 for the Maximum Input/Output points.

9.1.2 Adding the module with the "Wizard area"

PURPOSE

Adds a slice module to the project.

BASIC OPERATION

(1) Ensure that a module has been selected in the “rack display” / “module list” area – left clicking on a module will select it.

(2) Select the type of module to be added from the tree in the "wizard area" of the “Module Configuration Window” screen. When you have selected a module, its details will be shown in the “information area” of the “Module configuration window”.

(3) Select either “Add before” or “Add after” to determine where the module will be inserted relative to the selected module.

(4) Click the Add button in the “wizard area”.

Point

Perform the operation with the "Module Configuration Window" screen open.

To display the "Module Configuration Window" screen, choose the [View] → [Module Configuration] menu.

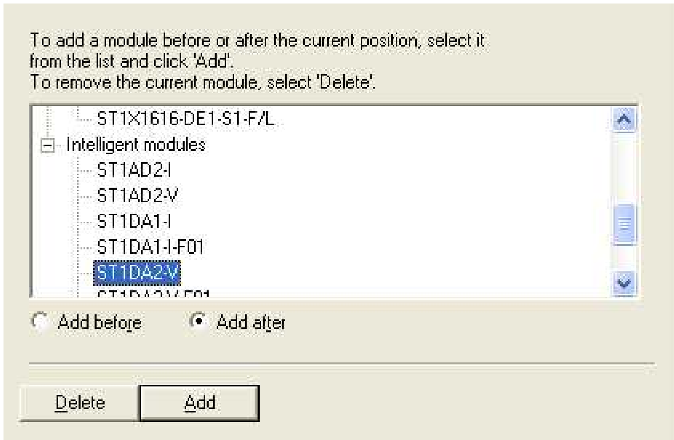
Point

If adding the module would cause the power consumption to be exceeded for the power supply module which serves the new module, you will be shown a warning message which provides an opportunity to cancel the addition.

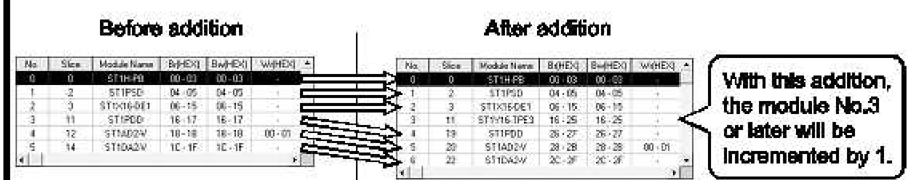
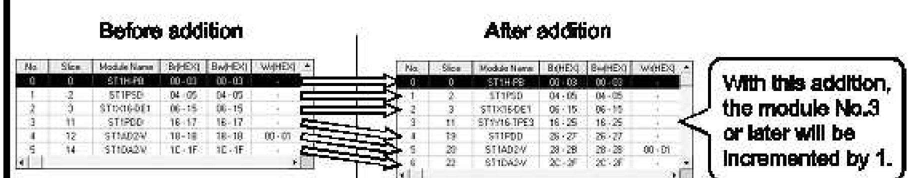
This warning is only shown once – it will not be shown if the power supply module was already overloaded before the module was added.

[CC-Link systems]

DISPLAY/SETTING SCREEN



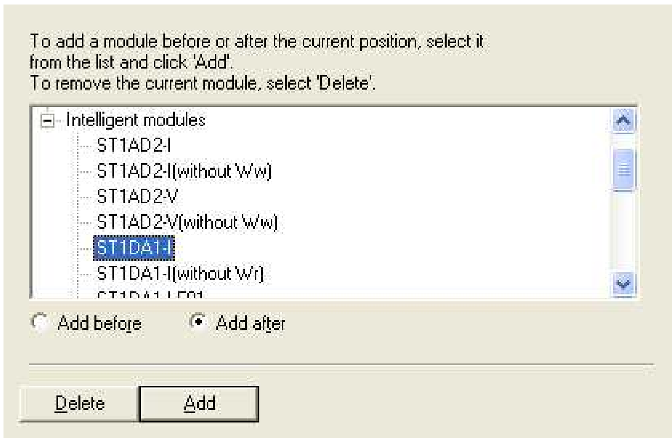
DISPLAY/SETTING DATA

Item		Description
Insert Position		Set the position where the slice module will be inserted.
	Add before	Inserts just before the currently selected module (to the *left* in the rack display). Example: When the module ST1Y16-TPE3 is added *before* slot No. 4.  Note: You cannot insert a module before the head module. A valid configuration must always start with a head module followed by an ST1PSD bus refreshing module.
	Add after	Inserts just after the currently selected module (to the *right* in the rack display). Example: When the module (ST1Y16-TPE3) is added *after* slot No. 2. 
Select Module		Select the model name of the slice module to be added from the tree.
	I/O module	Expand this heading to show input/output modules.
	Intelligent module	Expand this heading to display the intelligent function modules in the tree.
	Power module	Expand this heading to display the power distribution modules to enable selection.
Add button *1		Adds the slice module to the project.

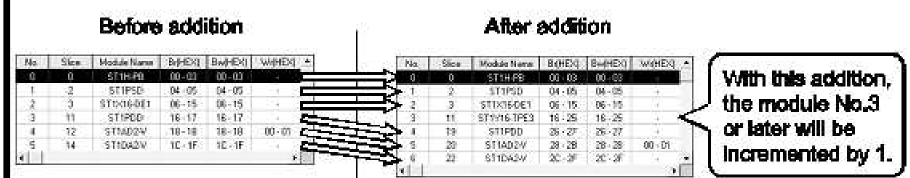
*1: The slice module cannot be added in excess of the Maximum Input/Output points of the head module.
Refer to 'Option setting' 99 for the Maximum Input/Output points.

[PROFIBUS-DP systems]

DISPLAY/SETTING SCREEN



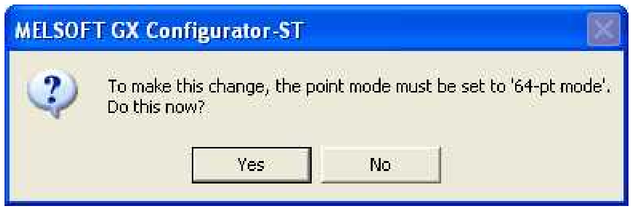
DISPLAY/SETTING DATA

Item	Description
Insert Position	Set the position where the slice module will be inserted.
Add before	Inserts just before the currently selected module (to the *left* in the rack display). Example: When the module ST1Y16-TPE3 is added *before* slot No. 4.  Note: You cannot insert a module before the head module. A valid configuration must always start with a head module followed by an ST1PSD bus refreshing module.
Add after	Inserts just after the currently selected module (to the *right* in the rack display). Example: When the module (ST1Y16-TPE3) is added *after* slot No. 2. 
Select Module	Select the model name of the slice module to be added from the tree.
I/O module	Expand this heading to show input/output modules.
Intelligent module	Expand this heading to display the intelligent function modules in the tree. In PROFIBUS-DP systems, some intelligent modules can be selected with the 'Wr' or 'Ww' range switched off. These modules will have an extra entry followed by either "without Wr" or "without Ww".
Power module	Expand this heading to display the power distribution modules to enable selection.
Add button *1	Adds the slice module to the project.

*1: The slice module cannot be added in excess of the Maximum Input/Output points of the head module.
Refer to 'Option setting' 99 for the Maximum Input/Output points.

Point

If the module cannot be added because the resulting number of I/O bits, words or intelligent modules would exceed the limits of the current point mode, the system will check if there is another mode that would be suitable. For example, if more than 32 input/output bits are used in 32-point mode, it might still be possible to add the module by switching to 64-point mode. If there is another suitable mode, a warning will be shown:



Answer Yes to switch to the recommended mode and add the module, or No to cancel the addition of the module.

9.2 Deleting a module

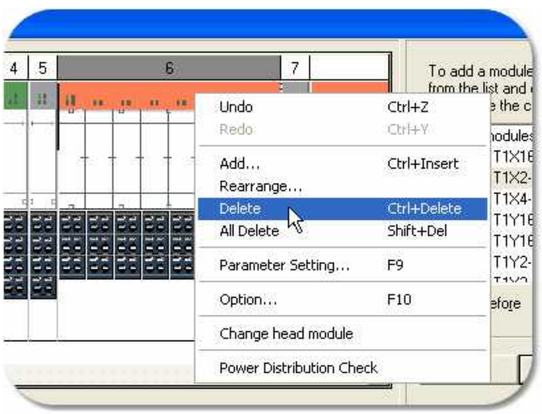
PURPOSE

Deletes the selected slice module from the project.

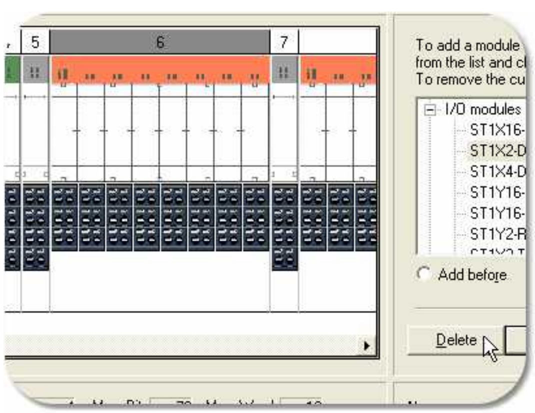
BASIC OPERATION

(1) Select the module to be deleted on the "Module Information List" screen.
(2) Execute any of the following operations.

- Click the [Edit] → [Delete] menu ( ).
- Press the Ctrl + Delete keys on the keyboard.
- Right-click the module to be deleted on the "Module Configuration Window" screen "Module list" or "Rack display", and click [Delete] from the menu:



- Click the Delete button in the “wizard area”:



(3) On the opened screen, confirm the slice module to be deleted, and click the Yes button. This deletes the module.
The module Nos. greater than the deleted module No. are decremented by 1.

9.3 Deleting all modules

PURPOSE

Deletes all slice modules from the project.

BASIC OPERATION

(1) Execute any of the following operations.

- Click the [Edit] → [All Delete] menu ( ).
- Press the Shift + Delete keys on the keyboard.
- Right-click the list of the "Module Information List" screen, and click [All Delete] from the menu.

(2) On the opened screen, click the Yes button.

Point

Perform the operation with the "Module Configuration Window" screen open.
To display the "Module Configuration Window" screen, choose the [View] → [Module Configuration] menu.

9.4 Copying the module information

PURPOSE

Copies the slice module from the saved project to the open project.
At this time, the parameters are also copied to the copied slice module.

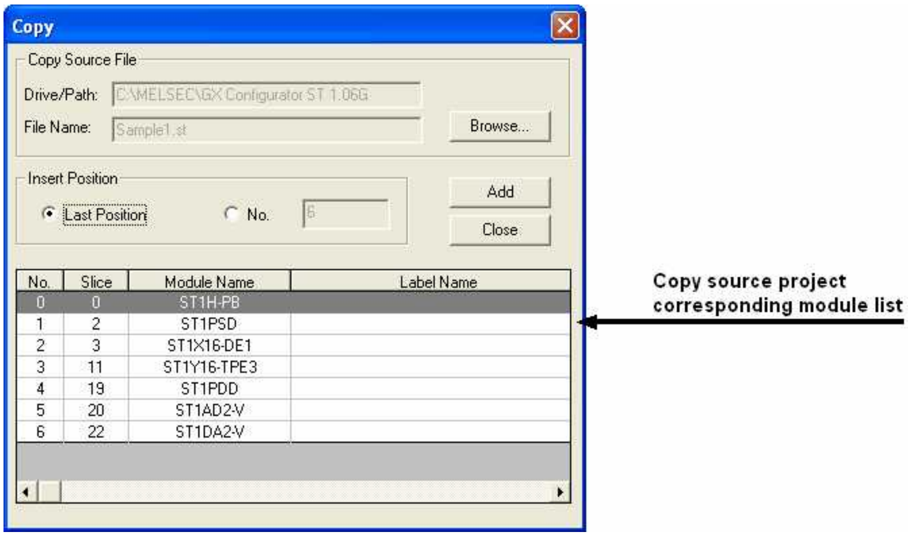
BASIC OPERATION

(1) Click the [File] → [Copy] menu.
(2) Specify the copy source project with the Browse button.
(3) Select the slice module to be copied, set the inserting position at the "Insert Position" section, and click the Add button.
(4) To close this screen, click the Close button.

Point

Perform the operation with the "Module Configuration Window" screen open.
To display the "Module Configuration Window" screen, choose the [View] → [Module Configuration] menu.

DISPLAY/SETTING SCREEN



DISPLAY/SETTING DATA

Item	Description
Copy Source File	Specify the copy source project.
Drive/Path	Displays the drive and directory of the project.
File Name	Displays the file name of the project.
Browse button	Specifies the project. The operation is the same as opening the existing project. Refer to 'Opening an existing project' 56 for details. When the project is specified, the modules of the copy source project are displayed in the "Copy source project corresponding module list".
Insert Position	Set the position where the slice module will be inserted into the open project.
Last Position	Sets the inserting position to the last line.
No.	Select the "No." radio button and specify the inserting position with "No.".
Add button	Copies the slice module selected in the "Copy source project corresponding module list". Copy is not executed when no slice module is selected.
Close button	Closes this screen.
Copy source project corresponding module list	Select the slice module to be copied.

9.5 Undo

PURPOSE

Returns the following operations to the status prior to execution.
• Adding the module
• Deleting the module
• Deleting all modules
• Copying the module information
• Get System

BASIC OPERATION

Executing any of the following operations returns to the status prior to the last operation.

• Click the [Edit] → [Undo] menu ( ).
• Press the Ctrl + Z keys on the keyboard.
• Right-click the list of the "Module list" or “Rack display” areas of the “Module Configuration Window”, and click [Undo] from the menu.

Repeating this operation returns to the status of up to the tenth preceding operation.

Point

- Perform the operation with the "Module Configuration Window" screen displayed. The "Module Configuration Window" screen is displayed when the [View] → [Module Configuration] menu is selected.
- The operation history is erased when the project is closed. When the project is closed, the operation performed before closing the project cannot be returned to the previous status.

9.6 Redo

PURPOSE

Returns to the status prior to the "Undo" processing in 'Undo' 87.

BASIC OPERATION

Execute any of the following operations.

• Click the [Edit] → [Redo] menu ().
• Press the Ctrl + Y keys on the keyboard.
• Right-click the list of the "Module list" or "Rack display" areas of the "Module Configuration Window", and click [Redo] from the menu.

Point

Perform the operation with the "Module Configuration Window" screen open.
To display the "Module Configuration Window" screen, choose the [View] → [Module Configuration] menu.

9.7 Rearranging the modules

9.7.1 Rearranging the modules with the Rearrange dialog

PURPOSE

Rearranges the slice modules of the project.

Point

The head module cannot be rearranged.

BASIC OPERATION

(1) Execute either of the following operations.
- Click the [Edit] → [Rearrange] menu.
- Right-click the list of the "Module Configuration Window" screen “Rack display” or “Module list” area, and click [Rearrange] from the menu.

(2) On the opened screen, select the slice module to be moved from among the slice modules displayed in the list, and move it using the Up / Down button.

(3) To close this screen, click the OK button.

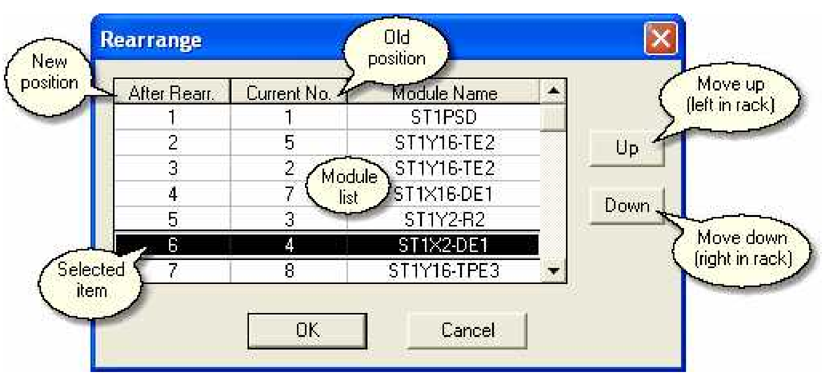
Point

Perform the operation with the "Module Configuration Window" screen open.
To display the "Module Configuration Window" screen, choose the [View] → [Module Configuration] menu.

Point

A valid system will always have an ST1PSD module immediately after the head module. If the modules are rearranged in such a way as to leave another module type in the slot after the head module, you will be prompted to rearrange the modules again.

DISPLAY/SETTING SCREEN



DISPLAY/SETTING DATA

Item	Description
After Rearr.	Displays the No. of the slice module after rearrangement.
Current No.	Displays the No. of the slice module before rearrangement.
Module Name	Displays the product model name of the slice module after rearrangement.
Up button	Changes the positions of the selected slice module with the one above that. When the selected slice module is at the top of the list, its position is not changed.
Down button	Changes the positions of the selected slice module with the one below that. When the selected slice module is at the bottom of the list, its position is not changed.
OK button	Validates the rearrangement and closes this screen.
Cancel button	Cancels the rearrangement and closes this screen.

9.7.2 Rearranging the modules with drag and drop

In addition to the rearrange dialog, modules can be rearranged by dragging and dropping them directly from the “Rack display” area of the “Module Configuration Window”.

PURPOSE

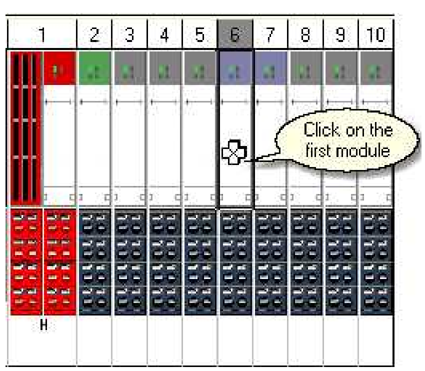
Rearranges the slice modules of the project. Using this method allows several modules to be moved at once.

Point

The head module cannot be rearranged.

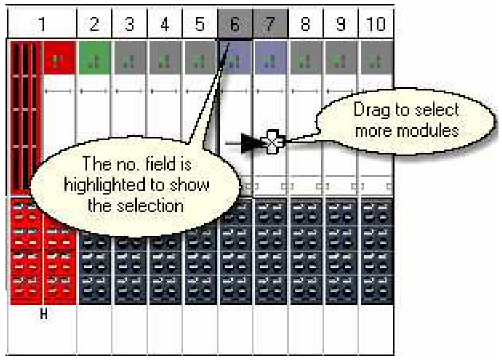
BASIC OPERATION

1. Click on the first module to be moved. If more than one module needs to be moved, keep the left button held down.



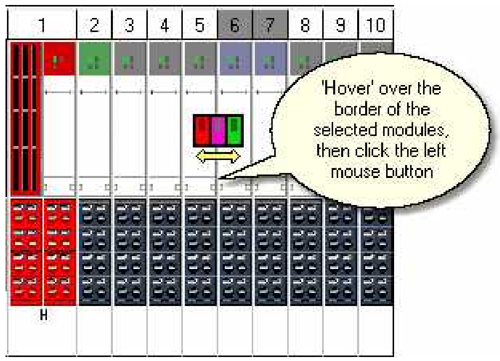
2. If you want to move a block of modules, keep the left mouse button held down and drag to the last module in the block.

The number field is highlighted to show the range of modules that are currently selected.



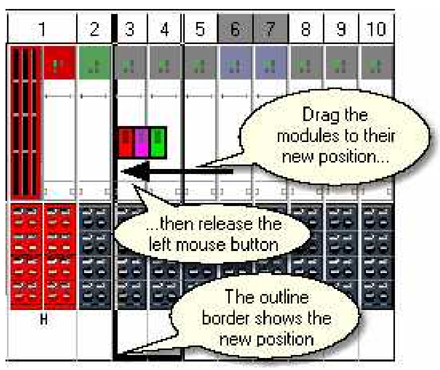
3. Now all the modules are selected, they can be moved. Move the mouse pointer over one of the borders of the selected modules, so that the mouse pointer changes to a picture of a rack with an arrow underneath it, as shown.

Click and hold the left mouse button - the arrow will disappear.



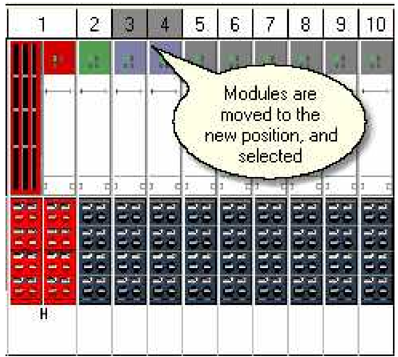
4. With the left mouse button still held down, drag the modules to their new position. An outline border is drawn around the position where the modules will be placed.

If the target position is not visible, you can drag the mouse pointer near to the left or right edge of the rack display to scroll the display.



5. When the left mouse button is released, the modules will be moved to the new position.

   They will be automatically selected again, so that if the target position was 'missed', they can be quickly dragged again into the right position.



Point

If you try to drag one or more modules to the left of the the head module or first power supply module, the drag action will automatically be cancelled. A valid system must always start with a head module and a power supply module.

9.8 Parameter setting

The following table shows the reference section for each parameter-related operation.
The operation can be performed on the "Parameter Setting" screen.
Refer to '"Parameter setting" screen' 93 for the operation to display the "Parameter Setting" screen.

Operation	Reference Section
To set the parameters.	'Setting the parameters' 94
To upload the parameters. To download the parameters. To verify the parameters being edited and the parameters within the module.	'Uploading / downloading / verifying' 96
To check the parameters being edited for errors and identify the parameter errors.	'Checking the parameters' 98

9.8.1 "Parameter setting" screen displaying operation

BASIC OPERATION

The "Parameter Setting" screen displaying operation differs among the following (1) to (3).

(1) In the edit mode

(a) When the "Module Configuration Window" screen is not displayed, choose the [View] → [Module Configuration] menu to display the "Module Configuration Window" screen.
(b) On the "Module Configuration Window" screen “Rack display” or “Module list” area, select the module whose parameters will be set.
(c) Execute any of the following operations to display the "Parameter Setting" screen.

- Click the [Edit] → [Parameter Setting] menu ( ).
- Press the F9 key on the keyboard.
- On the "Module Configuration Window" screen “Rack display” or “Module list” area, right-click the module whose parameters will be set, and click [Parameter Setting] from the menu.
- On the "Module Configuration Window" screen “Rack display” or “Module list” area, double-click the module whose parameters will be set.

(2) In the diagnosis mode

(a) When the "System Monitor" screen is not displayed, choose the [View] → [System Monitor] menu to display the "System Monitor" screen.
(b) On the "System Monitor" screen, select the module whose parameters will be set.
(c) Execute any of the following operations to display the "Parameter Setting" screen.

- Click the [Edit] → [Parameter Setting] menu ( ).
- Press the F9 key on the keyboard.
- On the "System Monitor" screen, right-click the module whose parameters will be set, and click [Parameter Setting] from the menu.
- On the "System Monitor" screen, select the module whose parameters will be set, and click the Parameter Setting button.

(3) When the "Result Verify" screen is open after project verify

Execute either of the following operations to display the "Parameter Setting" screen.

- On the "Result Verify" screen, double-click the module whose parameters will be set.
- On the "Result Verify" screen, select the module whose parameters will be set, and click the Parameter Setting button.

9.8.2 Setting the parameters

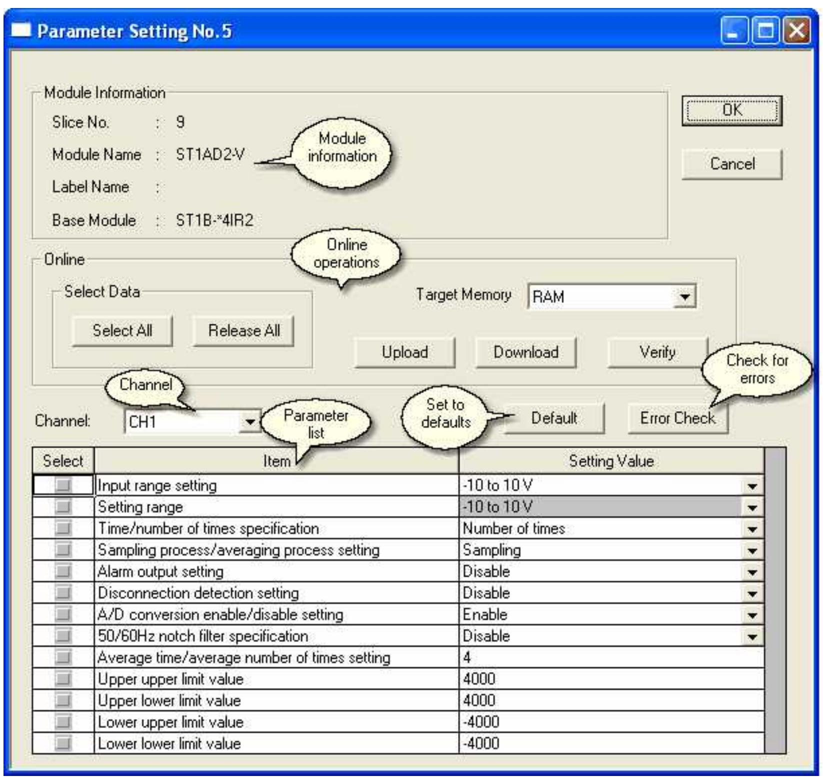
PURPOSE

Sets the parameters of the intelligent function module.

BASIC OPERATION

(1) When the module has the same parameters on multiple channels, select the channel whose parameters will be set at "Channel".
(2) Set the parameters in the "Parameter list".
(3) Click the OK button to close this screen.

DISPLAY/SETTING SCREEN



DISPLAY/SETTING DATA

Item		Description
Module Information		Displays the information (start slice No., module name, label name, base module name) of the target intelligent function module.
OK button		Validates the settings and closes this screen.
Cancel button		Cancels the settings and closes this screen.
Channel		Specify the channel of the parameters to be displayed in the parameter list. Only when the intelligent function module has the same parameters on multiple channels, this item is available.
Default button		Returns the parameters in the "Parameter list" to the default values. Only when the module has the parameters that can be changed, this item is available.
Parameter list		A list of the parameters of the intelligent function module is displayed and can be edited. For the types and applications of the parameters of the module, refer to the manual of the corresponding intelligent function module.
	Item	Displays the parameter name.
	Setting Value	Edit the parameter. The parameter that cannot be edited is grayed out.

9.8.3 Uploading/downloading the parameters or verifying the parameters being edited and parameters within module

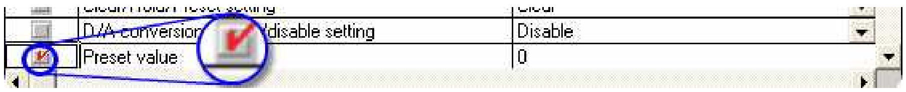
PURPOSE

Uploads/downloads the parameters, or verifies the parameters being edited and parameters within module.

BASIC OPERATION

(1) When the module has the same parameters on multiple channels, select the channel, whose parameters will be uploaded, downloaded or verified, at "Channel".

(2) Select the parameters to be uploaded, downloaded or verified.
To make selection, mark the "Select" check box in the "Parameter list":



(3) At "Target Memory", select the memory as the target of upload, download or verify.

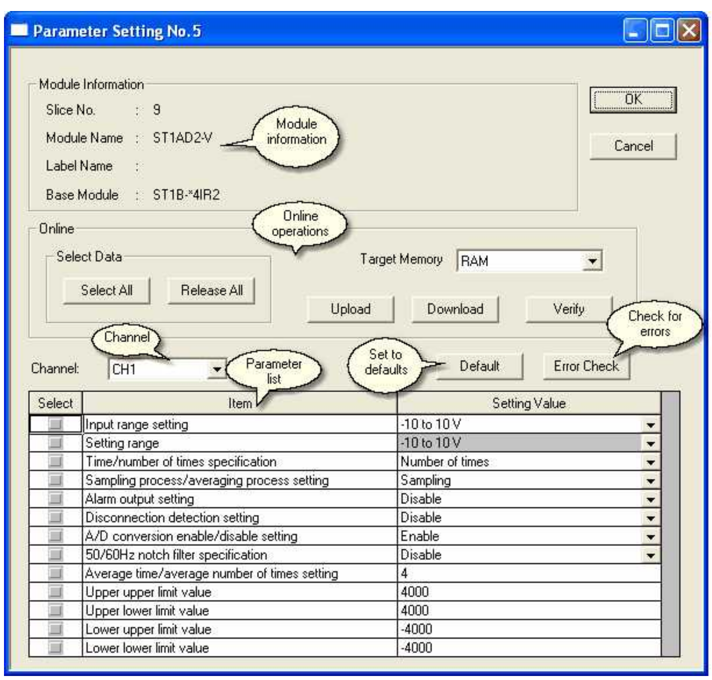
(4) To upload the parameters, click the [Upload] button.

(5) To download the parameters, click the [Download] button.

(6) To verify the parameters, click the [Verify] button.

(7) Click the [OK] button to close this screen.

DISPLAY/SETTING SCREEN



DISPLAY/SETTING DATA

Item			Description
Module Information			Displays the information (start slice No., module name, label name, base module name) of the target module.
OK button			Closes this screen.
Online			Perform operation for the target module.
	Select Data		Select the parameters to be uploaded, downloaded or verified.
		Select All button	Checks all "Select" check boxes in the "Parameter list".
		Release All button	Unchecks all "Select" check boxes in the "Parameter list".
	Target Memory		Select the memory as the target of upload, download or verify.
	Upload button		Uploads the parameters of the target module from the memory selected at "Target Memory". When the module has the same parameters on multiple channels, the parameters of the channel selected at "Channel" are uploaded. The uploaded parameters are displayed in the "Parameter list".
	Download button		Checks the parameters for incorrect settings, and when they are correct, downloads the parameters to the memory selected at "Target Memory". When the module has the same parameters on multiple channels, the parameters of the channel selected at "Channel" are downloaded. If any parameter is incorrect, that parameter is not downloaded, and its name under "Item" is displayed red in the "Parameter list".
	Verify button		Verifies the parameters of the memory selected at "Target Memory" and those in the "Parameter List". When the module has the same parameters on multiple channels, the parameters of the channel selected at "Channel" are verified. If any parameter is judged as inconsistent as a result of verify, its name under "Item" is displayed red in the "Parameter list".
Channel			Specify the channel for which parameters will be uploaded, downloaded or verified. Only when the module has the same parameters on multiple channels, this item is available.
Parameter list			Displays a list of the parameters of the module. For the types and applications of the parameters of the module, refer to the manual of the corresponding module.
	Select		Select the parameters used for the operation performed at "Online".
	Item		Displays the parameter name. This item may be displayed red depending on the result of clicking the Download or Verify button. For details, refer to the description of the corresponding button.
	Setting Value		Displays the parameter value. Downloading is not allowed to the items displayed in gray, however, uploading and verification is available.

9.8.4 Checking the parameters for errors

PURPOSE

Checks the parameters for errors and identifies the parameter errors.

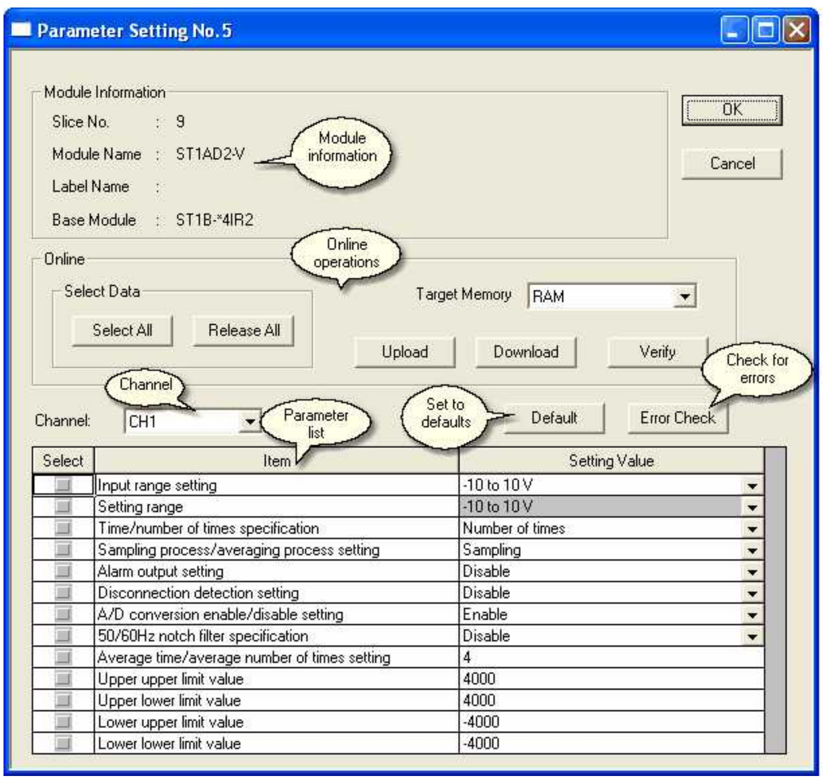
BASIC OPERATION

(1) When the module has the same parameters on multiple channels, select the channel, whose parameters will be checked for errors, at "Channel".

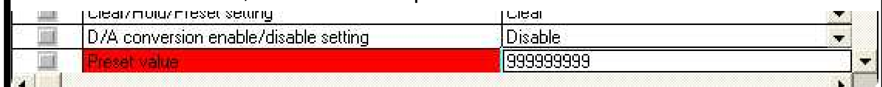
(2) Click the Error Check button to start an error check.

(3) Click the OK button to close this screen.

DISPLAY/SETTING SCREEN



DISPLAY/SETTING DATA

Item	Description
Module Information	Displays the information (start slice No., module name, label name, base module name) of the target module.
OK button	Closes this screen.
Channel	Specify the channel of the parameters to be checked for errors. Only when the module has the same parameters on multiple channels, this item is available.
Error Check button	Checks the parameters for incorrect settings. If any parameter has an incorrect setting, its name under "Item" is displayed red in the "Parameter list", as in the example below. 
Parameter list	Displays a list of the parameters of the module. For the types and applications of the parameters of the module, refer to the manual of the corresponding module.
Item	Displays the parameter name. This item may be displayed red depending on the result of clicking the Error Check button. For details, refer to the description of the Error Check button.

9.9 Option setting

PURPOSE

Sets the label name, base module, etc.

BASIC OPERATION

(1) Execute any of the following operations.
- Click the [Edit] → [Option] menu.
- Press the F10 key on the keyboard.
- On the "Module Configuration Window" screen “Rack display” or “Module list” area, right-click the module, where option settings will be made, and click [Option] from the menu.

(2) On the opened screen, make option settings and click the OK button.

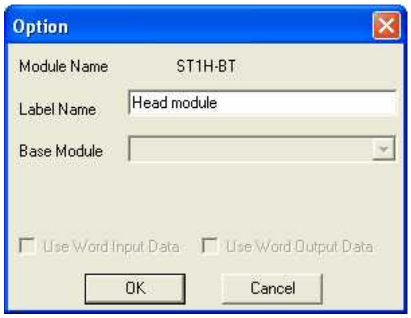
Point

Perform the operation with the "Module Configuration Window" screen open.
To display the "Module Configuration Window" screen, choose the [View] → [Module Configuration] menu.

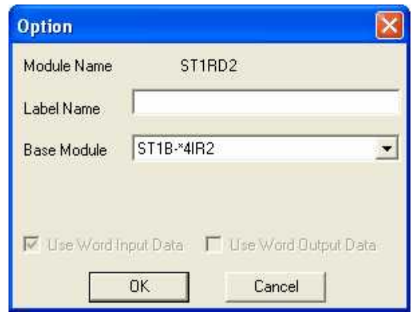
[CC-Link systems]

DISPLAY/SETTING SCREEN

For head module



For slice module



DISPLAY/SETTING DATA

Item	Description
Model Name	Displays the product model name of the module for which option settings will be made.
Label Name	Enter any character string within 32 alphanumeric characters. As the label name is displayed on the "Module Configuration Window" screen or is output for printing, it is useful for module management, etc.
Base Module *1	Select the base module for the slice module.
Use Word Input Data	When the module has Wr.n word input, this box will be checked. If the Wr.n word input data is optional for a module, it will automatically be unchecked in CC-Link systems.
Use Word Output Data	When the module has Ww.n word output, this box will be checked. If the Ww.n word output data is optional for a module, it will automatically be unchecked in CC-Link systems.
OK button	Validates the settings and closes this screen.
Cancel button	Cancels the settings and closes this screen.

*1: For applicable base modules, refer to the manual of the module used.

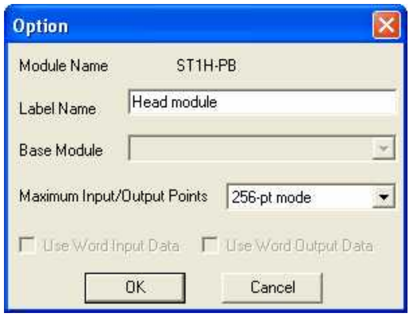
Point

Unlike PROFIBUS-DP systems, there is no selectable 'maximum input/output points' setting for CC-Link systems. The maximum number of input /output points is always fixed at 252 for CC-Link systems.

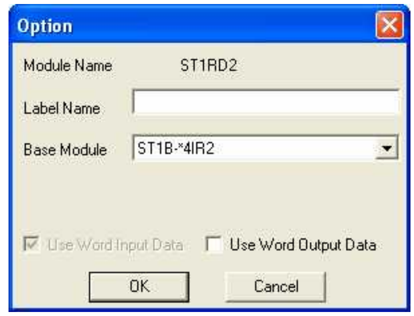
[PROFIBUS-DP systems]

DISPLAY/SETTING SCREEN

For head module



For slice module



DISPLAY/SETTING DATA

Item	Description
Model Name	Displays the product model name of the module for which option settings will be made.
Label Name	Enter any character string within 32 alphanumeric characters. As the label name is displayed on the "Module Configuration Window" screen or is output for printing, it is useful for module management, etc.
Base Module *1	Select the base module for the slice module.
Maximum Input/Output Points	Set the Maximum Input/Output points for the head module.
Use Word Input Data	When the module has Wr.n word input, check this check box to use the Wr.n word input.
Use Word Output Data	When the module has Ww.n word output, check this check box to use the Ww.n word output.
OK button	Validates the settings and closes this screen.
Cancel button	Cancels the settings and closes this screen.

*1: For applicable base modules, refer to the manual of the module used.

9.10 Power distribution check

PURPOSE

Checks whether the sum of 5VDC internal current consumption required by the modules is within the 5VDC maximum rated output current of the bus refreshing module.

> **Point**
>
> For details of the calculation method used for this function, refer to the MELSEC-ST System User's Manual.

BASIC OPERATION

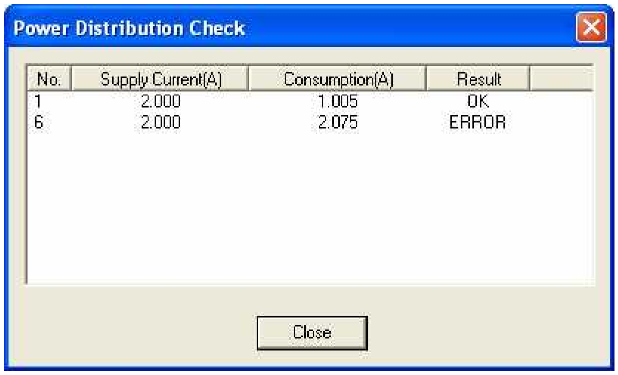
(1) Execute any of the following operations.
- Click the [Edit] → [Power Distribution Check] menu.
- On the "Module Configuration Window" screen “Rack display” or “Module list” area, right-click a menu and click [Power Distribution Check] from the menu.

(2) On the opened screen, confirm the check result.

(3) Click the Close button to close this screen.

> **Point**
>
> Perform the operation with the "Module Configuration Window" screen open.
> To display the "Module Configuration Window" screen, choose the [View] → [Module Configuration] menu.

DISPLAY/SETTING SCREEN



DISPLAY/SETTING DATA

Item	Description
No.	Displays the mounting position of the bus refreshing module.
Supply Current (A)	Displays the 5VDC maximum rated output current of the bus refreshing module.
Consumption (A)	Displays the sum of 5VDC internal current consumption of the modules powered by the bus refreshing module.
Result	Displays the check result. "OK" : The sum of 5VDC internal current consumption is not greater than the 5VDC maximum rated output current of the bus refreshing module. "ERROR" : The sum of 5VDC internal current consumption is greater than the 5VDC maximum rated output current of the bus refreshing module.
Close button	Closes this screen.

Point

To find the exact slot where the power consumption was exceeded (i.e. the slot which needs another power supply module installed just before it), look at the module list 48, where the module will be highlighted in red.

9.11 Change head module type

PURPOSE

Changes the head module type, i.e. from PROFIBUS-DP to CC-Link, or from CC-Link to PROFIBUSDP. This is not the same as 'online module change', and cannot be used to change the head module while the system is live. It only changes the configuration that is being edited.

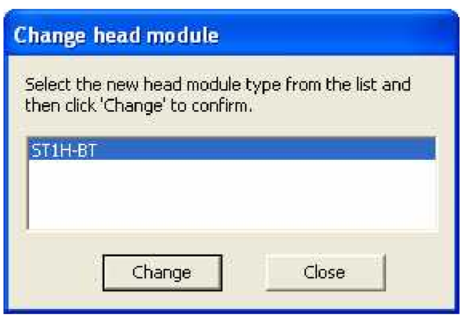
Point

An alternative way to perform this change is to simply connect to a MELSEC-ST system where the head module has already been replaced. If GX Configurator-ST detects that the connected system is identical except for the head module, you will be prompted to read the head module details from the system and continue.

BASIC OPERATION

(1) Execute any of the following operations.
- Click the [Edit] → [Change head module] menu.
- On the "Module Configuration Window" screen “Rack display” or “Module list” area, right-click a menu and click [Change head module] from the menu.

(2) In the confirmation dialog, select the new head module type from the list and then click the Change button.



(3) A warning will be shown about the Wr and Ww ranges. Read this carefully and then select either Yes to continue or No to cancel.

Point

When you change from a PROFIBUS-DP head module to a CC-Link head module, the parameter settings will be reset to defaults and all the modifiable 'without Wr' and 'without Ww' settings for intelligent modules will be reset to 'without' (as this feature is not used on CC-Link systems). This change is not reversible, so if you change back to a PROFIBUS-DP head module later, you will need to re-enter these settings.

Point

Perform the operation with the "Module Configuration Window" screen open.

To display the "Module Configuration Window" screen, choose the [View] → [Module Configuration] menu.

10 Downloading and uploading the parameters

This chapter explains how to download or upload the parameters of each module.

10.1 Transfer setup

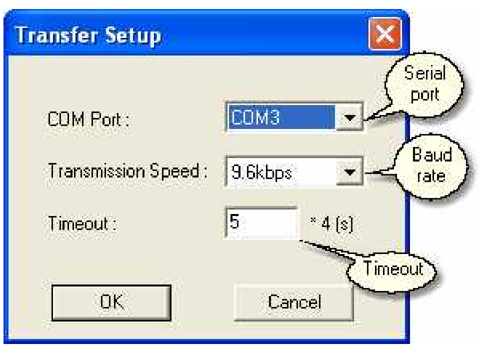
PURPOSE

Sets the connection with the head module.

BASIC OPERATION

(1) Click the [Online] → [Transfer Setup] menu.
(2) Make setting and click the OK button.

DISPLAY/SETTING SCREEN



DISPLAY/SETTING DATA

Item	Description
COM Port	Select the COM port connected with the head module. (Setting range: COM1 to COM10, default *1: COM1)
Transmission Speed	Select the transmission speed. (Setting range: 9.6kbps, 19.2kbps, 38.4kbps, 57.6kbps, default *1: 9.6kbps)
Timeout *2	When the external power supply of the MELSEC-ST system is switched off or the head module is reset during communication with the head module, it will take some time before a communication error is displayed. The monitor displays Executing until the error is displayed. The maximum time until the error is displayed can be found by the following expression. (Specified "Timeout" period) x 4 For example, when 5s was specified for "Timeout", (5s) x 4 = 20s and the error is displayed in a maximum of 20s. (Setting range: 1 to 9, default *1: 2)
OK button	Validates the settings and closes this screen.
Cancel button	Closes this screen without making settings.

*1: When this screen is used the second or later time after installation of GX Configurator-ST, the default is the value set when this screen was used the last time.
*2: If a communication error occurs during write to the ROM of each module, a maximum of 30s is required before the error is displayed.

Point

When a transmission speed of 19.2kbps or higher is set to "Transmission Speed", some personal computers may be unstable, fail the communication and display the following screen.
In this case, set a lower transmission speed.

Point

This setting only applies to communications between GX Configurator-ST and the communication port on the head module. It is independent from the transmission speed used for communications between the master device and the PROFIBUS-DP or CC-Link communication port on the head module.

10.2 Get system

PURPOSE

Uploads the module configuration and the parameters from each module. This can be useful if you have a configured SLICE system, but do not have the configuration file that was originally used to build it.

BASIC OPERATION

(1) Either:

- Click the [Online] → [Get System] menu ( ), or
- On the first wizard page (shown when GX Configurator-ST is started or after selecting [File] → [New]), select "Read the system configuration from the communication port" then click the [Next] button.

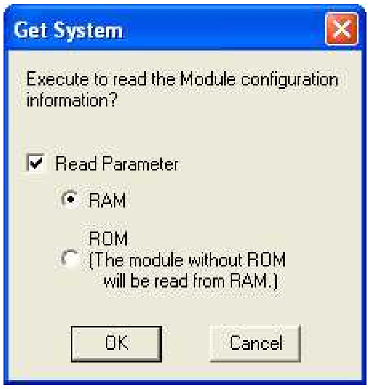
(2) When the project is open, uploading the module configuration and the parameters of each module erases the project information uploaded previously.
Hence, a screen appears asking whether data will be uploaded or not.

- Click the [Yes] button to display the "Get System" screen.
  In this case, the project information uploaded previously is erased.
- Click the [No] button to stop processing.

(3) Set the data to be uploaded on the "Get System" screen, and click the [OK] button to upload the module configuration and the parameters of each module.

(4) When upload is completed, the "Completed" message is displayed.
Click the [OK] button.

DISPLAY/SETTING SCREEN



DISPLAY/SETTING DATA

Item	Description
Read Parameter	Check this check box to upload the parameters of each module. The module configuration is uploaded regardless of the setting of this item.
RAM	Uploads the parameters from the RAM of each module. This item is available only when the "Read Parameter" check box is checked.
ROM	Uploads the parameters from the ROM of each module. When the target module does not have the ROM, the parameters are uploaded from the RAM. This item is available only when the "Read Parameter" check box is marked.
OK button	Validates the settings and closes this screen. On completion, the new configuration will be available for editing.
Cancel button	Closes this screen without making settings.

10.3 Get input / output data settings (PROFIBUS-DP only)

PURPOSE

Uploads the input/output data settings made using GX Configurator-ST from each module.
The following two different input/output data settings are uploaded.

- Maximum Input/Output points of the head module
- Setting of whether the Wr.n word input/ Ww.n word output of the intelligent function module are used or not

BASIC OPERATION

(1) Click the [Online] → [Get Input/Output Data Settings] menu.

(2) A screen appears asking whether the settings will be uploaded or not.
Click the OK button to upload the input/output data settings.

(3) When upload is completed, the "Completed" message is displayed.
Click the OK button.

10.4 Parameter block write

PURPOSE

Downloads the parameters to the modules in a block.

BASIC OPERATION

(1) Click the [Online] → [Parameter Block Write] menu to display the "Parameter Block Write" screen.

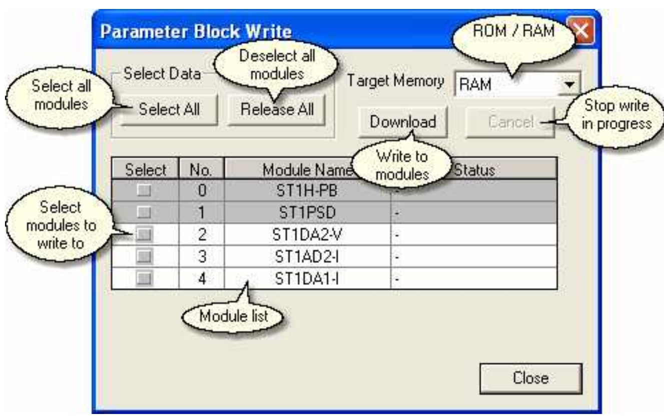
(2) Select the target memory and parameters, and click the Download button.

(3) When download is completed, the "Download Completed" message is displayed. Click the OK button.

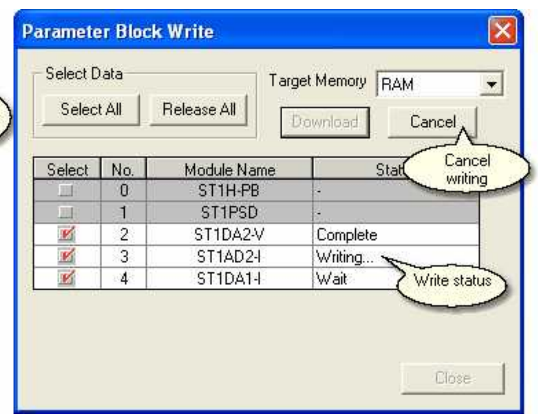
(4) To close this screen, click the Close button.

DISPLAY/SETTING SCREEN

Preparing to download



Downloading



DISPLAY/SETTING DATA

Item	Description
Select Data	Batch-select the modules whose parameters will be downloaded.
Select All button	Selects all modules.
Release All button	Deselects all modules.
Target Memory	Select the memory where the parameters will be downloaded. • When "RAM" is selected, the parameters are downloaded to the RAM of each module. • When "ROM" is selected, the parameters are downloaded to the ROM of each module. • When "RAM/ROM" is selected, the parameters are downloaded to both RAM and ROM of each module.
Download button	Downloads the parameters of the module specified at "Select". While the parameters are downloaded, this button cannot be clicked.
Cancel button	Stops download. Only while the parameters are downloaded, this button can be clicked.
Select *1	Select the module whose parameters will be downloaded, by clicking on the 'Select' button to the left of the module name, so that it appears checked: 
No. *1	Displays the module No.
Module Name *1	Displays the module name.
Status *1	Displays the download execution status. Refer to (1) in this section for details of the execution status.
Close button	Closes this screen. While the parameters are downloaded, this button cannot be clicked.

*1: For the module whose parameters cannot be edited, this item is grayed out and is not available, as parameter download is not necessary.

(1) Download execution status

Details of the download execution status are described below.

Display	Description
—	Indicates the module that does not have parameters or to which parameters are not downloaded.
Wait	Indicates the status prior to download.
Writing...	Indicates that download is in progress.
Complete	Indicates that download is completed.
Error	Indicates a failure in download.

10.5 Offset/Gain setting of intelligent function modules

Point

For details of this function, refer to the manual of the used intelligent function module.

PURPOSE

Sets the offset value or gain value of the intelligent function module*1.
*1: The following gives the examples of the intelligent function modules to which the offset or gain value can be set.

• ST1AD2-V	• ST1AD2-I
• ST1DA2-V	• ST1DA1-I
• ST1DA2-V-F01	• ST1DA1-I-F01

For details, refer to the manual of the used intelligent function module.

BASIC OPERATION

(1) On the "System Monitor" screen, select the intelligent function module for which the setting will be made.

(2) On the "System Monitor" screen, click the ON button of "Forced Output Test Mode" to change the MELSEC-ST system to the forced output test mode.
When the MELSEC-ST system is changed to the forced output test mode, the RUN LED of the head module flickers.

(3) Execute any of the following operations.
- Click the [Online] → [Offset/Gain Setting] menu.
- Right-click the module selected in (1), and click Offset/Gain Setting from the menu.
- Click the [Offset/Gain Setting] button on the "System Monitor" screen.

(4) The dialog box appears asking whether or not the MELSEC-ST system will be changed to the offset/gain setting mode.
Click the OK button to change the system to the offset/gain setting mode.
When the system changes to the offset/gain setting mode, the RUN LED of the target intelligent function module flickers (at 0.5s intervals) and the module's operation is stopped.

(5) Select the channel to be set at "Select Channel", choose the wiring method of the base module at "Connection Method", and select the value to be set from "Offset" or "Gain".

(6) Set the offset or gain value adjustment amount, and click the Set button.
Repeat the operation in Step (6) until the desired value is reached.

(7) Click the Save button to download the offset or gain value to that intelligent function module.

(8) To close this screen, click the Close button.

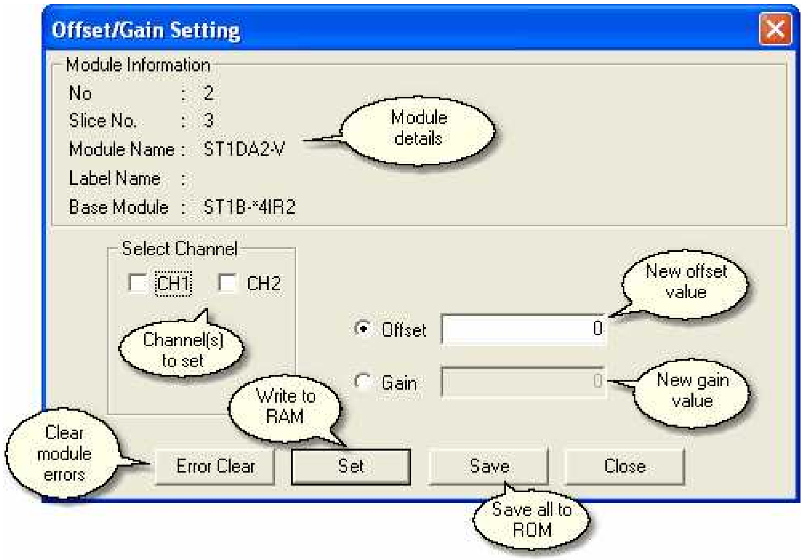
(9) The dialog box appears asking whether or not the MELSEC-ST system will be released from the offset/gain setting mode.
Click the Yes button to release the system from the offset/gain setting mode.

REMARK

(a) If the MELSEC-ST system is not in the forced output test mode after the operation in Step (3) is performed, the dialog box appears asking whether or not the MELSEC-ST system will be changed to the forced output test mode.
Click the OK button to change the system to the forced output test mode.

(b) If the MELSEC-ST system is changed to the forced output test mode in (a), the dialog box appears asking whether or not the MELSEC-ST system will be released from the forced output test mode after the operation in Step (9) is performed.
Click the Yes button when releasing the system from the forced output test mode.
Click the No button when not releasing the system from the forced output test mode.

DISPLAY/SETTING SCREEN



DISPLAY/SETTING DATA

Item	Description
Module Information	Displays the information (No., start slice No., module name, label name, base module) of the target intelligent function module.
Select Channel	Select the channel to which the offset or gain value will be set. When multiple channels are checked, the offset or gain values will be set to all the corresponding channels. The channels displayed in this item change depending on the module of the setting target. For details, refer to the manual of the used intelligent function module.
Offset	Set the offset value adjustment amount. This item is available only when the "Offset" radio button is selected. For details, refer to the manual of the used intelligent function module.
Gain	Set the gain value adjustment amount. This item is available only when the "Gain" radio button is selected. For details, refer to the manual of the used intelligent function module.
Error Clear button	Turns ON the Ew.n Error Clear to clear the error of the intelligent function module.
Set button	Applies the set value to the target module.
Save button	Validates the value set with the Set button.
Close button	Closes this screen and releases the system from the offset/gain setting mode. Releases the MELSEC-ST system from the forced output test mode if it was not in the forced output test mode when this screen was opened.

11 Monitor, Test

This chapter explains how to monitor and test the modules.

11.1 System Monitor

PURPOSE

Monitors the statuses of the head module and slice modules.

BASIC OPERATION

(1) When the "System Monitor" screen is not displayed, click the [View] → [System Monitor] menu to display the "System Monitor" screen.
This menu item is only available when the system is in “Diagnosis” mode. To switch to “Diagnosis” mode, [Mode] → [Diagnosis].
(2) Monitor starts as soon as the "System Monitor" screen is displayed.
(3) To close this screen, click the Close button.

Point

The "System Monitor" screen is not displayed if the module configuration of the MELSEC-ST system connected to the personal computer differs from that of the project.

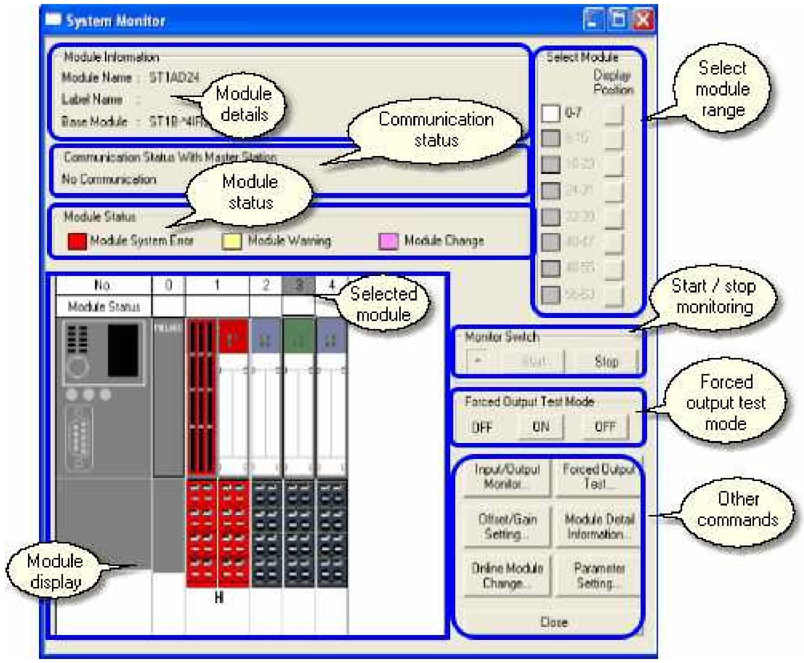
There is one exception to this - if the configurations are identical except for the head module type, a message is shown giving the option to copy the head module details from the live system and continue. This is intended to make it easier to reuse configuration projects when changing the protocol type for a MELSEC-ST system.

Display the "System Monitor" screen after confirming that their module configurations are the same.

HELPFUL OPERATION

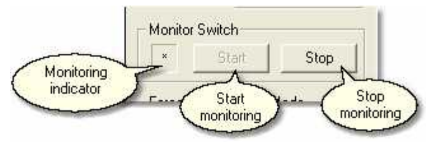
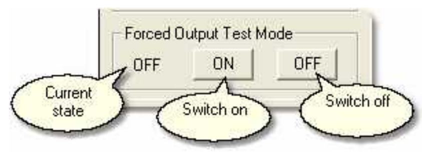
To identify the module where an error has occurred, execute the following operation on the "System Monitor" screen.
(1) At "Select Module", confirm the area displayed red or yellow.
(2) Click the Display Position button corresponding to the area confirmed in (1).
(3) The module whose "Module Status" in the "Module display" is displayed red or yellow is where the error occurred.
Scroll the "Module display" to identify the module whose "Module Status" in the "Module display" is displayed red or yellow.

DISPLAY/SETTING SCREEN



DISPLAY/SETTING DATA

Item	Description
Module Information	Displays the information (module name, label name, base module) of the module selected in the "Module display".
Communication Status With Master Station	Indicates the status of communication between the head module and master station. "Communicating" : Communicating with the master station "Communication suspended" : Communication with the master station suspended (Interruption) "No communication" : Communication with the master station stopped (No communication)
Module Status	Displays the samples of the colors displayed under "Select Modules" and under "Module Status" in the "Module display". Red : System error Yellow : Warning Purple : Module being changed online
Module display	Displays the illustrative image of the MELSEC-ST system being monitored. When using the function specific to a certain module, click and select the module from this item. At "Module Status" above the module, the operating status of the slice module is displayed. Refer to (1) in this section for details of the module status.
Selected module	The currently selected module is shown with the slot number coloured in grey. Click on a module to select it.
Select Module Range	The numerals indicate the module Nos., and the color shows the statuses of the modules in that range. The modules displayed in the "Module display" can be changed. Refer to (1) in this section for details of the module status.

Item	Description
Display Position button	The numerals on the left of this button indicates the module Nos., and the corresponding modules are displayed in the "Module display".
Monitor Switch	Starts/stops monitor.
Start button	Starts monitor. This button is usable only while monitor is at a stop. While monitor is executed, " " flickers on the left side of this button. 
Stop button	Stops monitor. This button is usable only while monitor is executed.
Forced Output Test Mode	Sets/releases the MELSEC-ST system to/from the forced output test mode, and displays the current mode status. 
ON button	Sets the MELSEC-ST system to the forced output test mode.
OFF button	Releases the MELSEC-ST system from the forced output test mode.
Input/Output Monitor button	Monitors the input data and output data of the module selected in the "Module display". Refer to 'Input/Output monitor' 124 for details. When no module has been selected, the error message is displayed and monitor cannot be executed.
Forced Output Test button	Runs a forced output test on the head module, output module or intelligent function module selected in the "Module display". Refer to 'Forced output test' 127 for details. When no module has been selected, the error message is displayed and the forced output test cannot be executed.
Offset/Gain Setting button	Sets the offset or gain value to the target intelligent function module which is selected in the "Module display". Refer to 'Offset/Gain setting of intelligent function modules' 113 for details. When no module has been selected, the error message is displayed and the offset or gain value cannot be set.
Module Detail Information button	Monitors the detail information and error status of the module selected in the "Module display". Refer to 'Module detail information' 120 for details. When no module has been selected, the error message is displayed and monitor cannot be executed.
Online Module Change button	Performs the online change of the I/O module or intelligent function module selected in the "Module display". Refer to 'Online module change' 139 for details. When no module has been selected, the error message is displayed and online module change cannot be executed.
Parameter Setting button	Sets the parameters to the head module, I/O module or intelligent function module selected in the "Module display". Refer to Section 'Parameter setting' 92 for details. When no module has been selected, the error message is displayed and parameter setting cannot be executed.

Item	Description
Close button	Closes this screen.

(1) Module status

Details of the module status are described below.

Display	Description
Red	System error occurred. For details of the error, refer to the manual of the corresponding module.
Yellow	Warning occurred. For details of the warning, refer to the manual of the corresponding module.
Purple	Module being changed online
Gray	Module not mounted Gray is displayed for "Select Module" only.
White	Operating normally

Point

If the slice module is changed for another type of module during a monitor stop on this screen and the monitor is then resumed, the items corresponding to the new module and modules of the following Nos. are displayed red in the "Module Status" section.

11.2 Module detail information

PURPOSE

Shows the module detail information, and monitors the corresponding module operation status and error status.

BASIC OPERATION

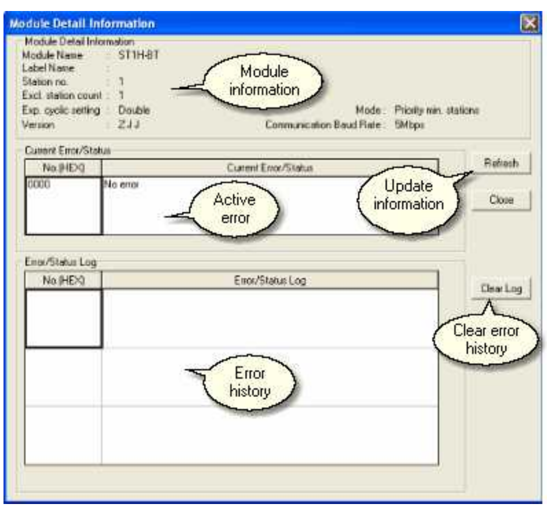
(1) On the "System Monitor" screen, select the module to be monitored.
(2) Execute any of the following operations to display the "Module Detail Information" screen and start monitor.
- Click the [Diagnostics] → [Module Detail Information] menu.
- Right-click the module selected in (1), and click [Module Detail Information] from the menu.
- Click the [Module Detail Information] button on the "System Monitor" screen.

(3) To update the operation status or error status, click the [Refresh] button.
(4) To close this screen, click the [Close] button.

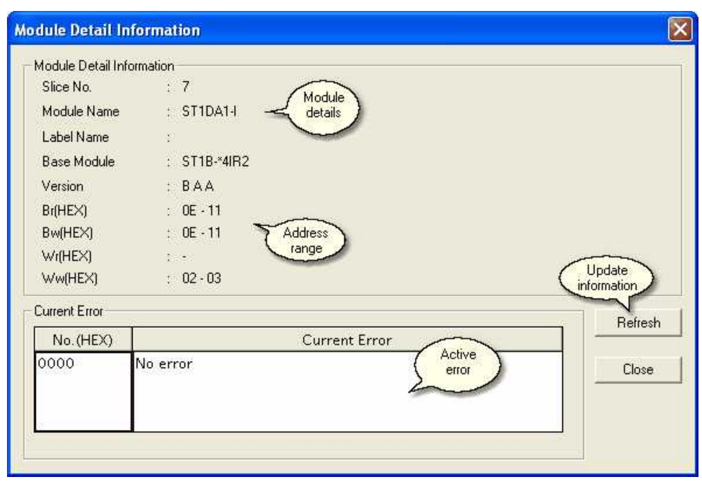
[CC-Link systems]

DISPLAY/SETTING SCREEN

For head module



For power distribution module, I/O module or intelligent function module



DISPLAY/SETTING DATA

Item	Description
Module Detail Information	Displays the information of the module to be monitored. This item includes the following information. • Start slice No. [*1] • Module name • Label name • Station No. [*2] "---" is displayed if the Station No. set with the address setting switches of the head module is outside the setting range. For details, refer to "Current Error/Status" or "Error/Status Log" on this screen. • Base module name [*1] • Excl. station count[*2] - the number of stations used for communications. • Exp. cyclic setting[*2] - the number of cycles taken to read the data. • Version The module version is displayed. If a module does not support this, "- - -" is displayed instead. • Mode [*2] • Communication baud rate [*2] "--" is shown if the MELSEC-ST system is not communicating with the master station. • Br.n Bit Input [*1]/ Bw.n Bit Output [*1]/ Wr.n Word Input [*1, *3]/ Ww.n Word Output [*1, *3]
Current Error/Status [*2, *4]	Displays the current operation status or error information of the head module.
No. (HEX)	Displays the error code in hexadecimal.
Current Error/Status	Displays the operation status or error definition.
Current Error [*1, *4]	Displays the current operation status or error information of the target module.
No. (HEX)	Displays the error code in hexadecimal.
Current Error/Status	Displays the operation status or error definition.
Error/Status Log [*2, *4]	Displays the operation status or error history of the head module. The latest log is displayed in the top line (descending order). This item displays up to five status or error logs. When information is added as the sixth status or error, the information is deleted in the order from the oldest to the newest. Switching off the external power of the MELSEC-ST system or resetting the head module erases the data of this item.
No. (HEX)	Displays the error code in hexadecimal.
Error/Status Log	Displays the operation status or error definition.
Refresh button	Updates the data of "Current Error/Status" and "Error/Status Log".
Close button	Closes this screen.
Clear Log button [*2]	Erases the data of "Error/Status Log". The data of "Current Error/Status" are not erased.

*1: This item is available for the power distribution module, I/O module or intelligent function module.
*2: This item is available for the head module.
*3: "-" is displayed for the Br.n Bit Input / Bw.n Bit Output / Wr.n Word Input / Ww.n Word Output when the target module does not occupy the corresponding area.
*4: For details of the errors, refer to the manual of the corresponding module.

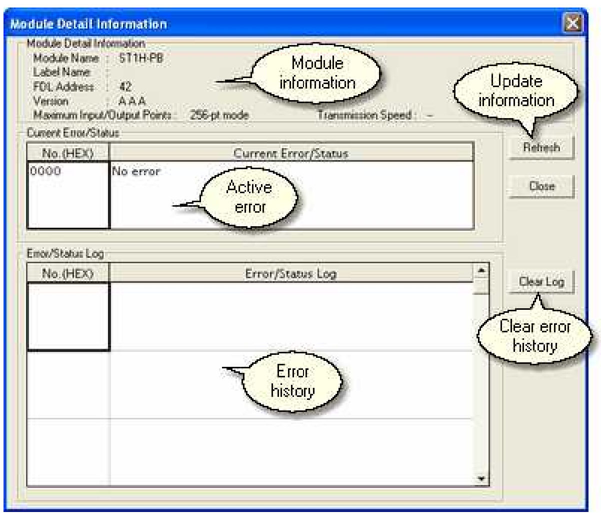
Point

In CC-link systems, the address ranges are sometimes referred to differently. CClink's 'RX' and 'RY' ranges are equivalent to the 'Br' and 'Bw' ranges shown in GX Configurator-ST and CC-link's 'RWr' and 'RWw' ranges are equivalent to 'Wr' and 'Ww'.

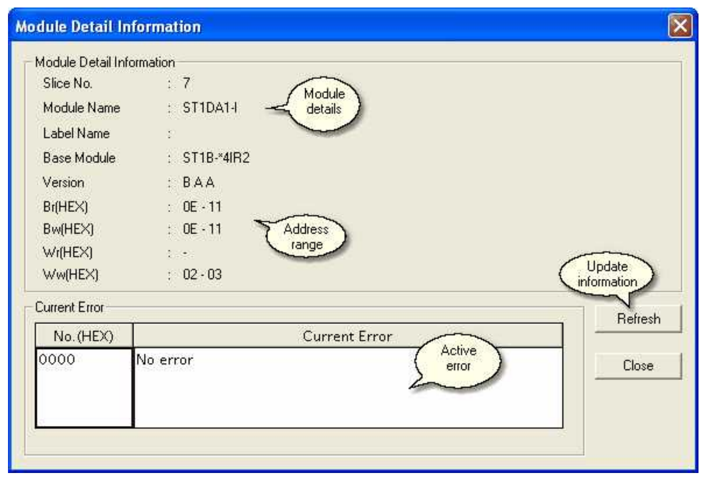
[PROFIBUS-DP systems]

DISPLAY/SETTING SCREEN

For head module



For power distribution module, I/O module or intelligent function module



DISPLAY/SETTING DATA

Item	Description
Module Detail Information	Displays the information of the module to be monitored. This item includes the following information. • Start slice No. *1 • Module name • Label name • FDL Address *2 "---" is displayed if the FDL address set with the FDL address setting switches of the head module is outside the setting range (100 or later). For details, refer to "Current Error/Status" or "Error/Status Log" on this screen. • Base module name *1 • Version The module version is displayed. If a module does not support this, "- - -" is displayed instead. • Maximum Input/Output points *2 • Transmission speed *2 "--" is displayed when the MELSEC-ST system is not communicating with the master station. • Br.n Bit Input *1/ Bw.n Bit Output *1/ Wr.n Word Input *1, *3/ Ww.n Word Output *1, *3
Current Error/Status *2, *4	Displays the current operation status or error information of the head module.
No. (HEX)	Displays the error code in hexadecimal.
Current Error/Status	Displays the operation status or error definition.
Current Error *1, *4	Displays the current operation status or error information of the target module.
No. (HEX)	Displays the error code in hexadecimal.
Current Error/Status	Displays the operation status or error definition.
Error/Status Log *2, *4	Displays the operation status or error history of the head module. The latest log is displayed in the top line (descending order). This item displays up to five status or error logs. When information is added as the sixth status or error, the information is deleted in the order from the oldest to the newest. Switching off the external power of the MELSEC-ST system or resetting the head module erases the data of this item.
No. (HEX)	Displays the error code in hexadecimal.
Error/Status Log	Displays the operation status or error definition.
Refresh button	Updates the data of "Current Error/Status" and "Error/Status Log".
Close button	Closes this screen.
Clear Log button *2	Erases the data of "Error/Status Log". The data of "Current Error/Status" are not erased.

*1: This item is available for the power distribution module, I/O module or intelligent function module.
*2: This item is available for the head module.
*3: For the Wr.n Word Input/ Ww.n Word Output, "-" is displayed when the target module does not occupy the corresponding area.
*4: For details of the errors, refer to the manual of the corresponding module.

11.3 Input/Output monitor

PURPOSE

Monitors the input data and output data of the module.

BASIC OPERATION

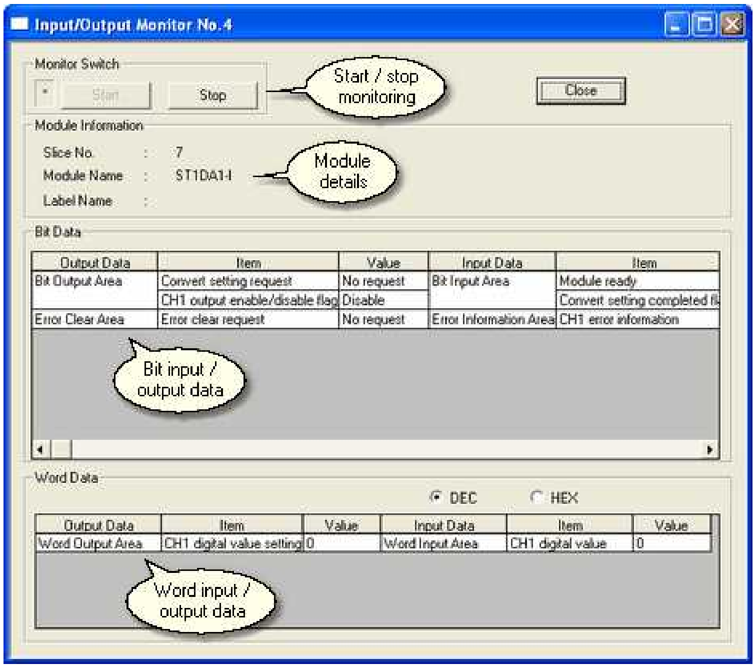
(1) On the "System Monitor" screen, select the module to be monitored.
(2) Execute any of the following operations to display the "Input/Output Monitor" screen and start monitor.
  • Click the [Online] → [Input/Output Monitor] menu.
  • Right-click the module selected in (1), and click [Input/Output Monitor] from the menu.
  • Click the [Input/Output Monitor] button on the "System Monitor" screen.
(3) To close this screen, click the [Close] button.

Point

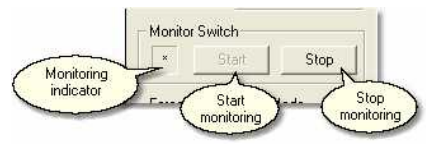
In CC-Link systems, the following areas are not available for I/O monitoring:

- [Ew.n] Error Clear area
- [Wr.n] Word Input area of intelligent output modules
- [Ww.n] Word Output area of intelligent input modules

DISPLAY/SETTING SCREEN



DISPLAY/SETTING DATA

Item	Description
Monitor Switch	Starts/stops monitor.
Start button	Starts monitor. This button is usable only while monitor is at a stop. While monitor is executed, "×" flickers on the left side of this button. 
Stop button	Stops monitor. This button is usable only while monitor is executed.
Close button	Closes this screen.
Module Information	Displays the information (start slice No., module name, label name) of the module to be monitored.
Bit Data *1	Displays the input/output data of the target module in bit unit.
Word Data *1	When the target module is the intelligent function module, displays the Wr.n Word Input values and Ww.n Word Output values. Selecting the DEC or HEX radio button displays the values displayed under "Value" in decimal or hexadecimal. DEC: Decimal HEX: Hexadecimal

*1: For details of each data, refer to the manual of the corresponding module.
*2: When the MELSEC-ST system is in the forced output mode, the values entered on the "Forced Output Test" screen are displayed.

Point

The rate at which values are updated on the "Input / Output Monitor" screen depends on the following conditions:

- Transmission speed (refer to Transfer Setup 106)
- The number of open input/output monitor windows
- The status of the system monitor

To get the best input/output monitor performance:

- Do not open several input/output monitor windows
- Stop the system monitor

11.4 Forced output test

PURPOSE

Runs an output test on the Bw.n Bit Output, Ww.n Word Output and Ew.n Error Clear bits of the head module and slice modules without stopping the PROFIBUS-DP or CC-Link network (Ew.n Error Clear bits are available for PROFIBUS-DP only).

BASIC OPERATION

(1) On the "System Monitor" screen, select the module to be monitored.

(2) On the "System Monitor" screen, click the ON button of "Forced Output Test Mode".
This displays a screen asking whether or not the MELSEC-ST system will be changed to the forced output test mode.
Click the Yes button to change the MELSEC-ST system to the forced output test mode.
When the MELSEC-ST system is changed to the forced output test mode, the RUN LED of the head module flickers.

(3) Execute any of the following operations to display the "Forced Output Test" screen.
• Click the [Online] → [Forced Output Test] menu.
• Right-click the module selected in (1), and click [Forced Output Test] from the menu.
• Click the Forced Output Test button on the "System Monitor" screen.

(4) On the "Forced Output Test" screen, select the forced output test item and set data, and click the Set button to start the forced output test.

(5) When the forced output test is completed, the "Completed" message is displayed.
Click the OK button.

(6) To close this screen, click the Close button.

(7) On the "System Monitor" screen, click the OFF button of "Forced Output Test Mode" to release the MELSEC-ST system from the forced output test mode.

Point

(1) If any of Bw.n+1 Convert setting request, Bw.n+3 , Bw.n+2 CH□ output permission ON/OFF, and Ww.n , Ww.n+1 CH□ digital value setting is changed in the forced output test, fully ensure safety before starting the test as the analog output will change.

(2) When the communication between the MELSEC-ST system and master station is disconnected, changing the Bw.n+1 Convert setting request of the intelligent function module, whose CH□ CLEAR/HOLD/PRESET setting is set to HOLD, from ON to OFF in the forced output test turns the Ww.n Word Output value to 0.
In this case, the Ww.n Word Output value will not return to the held value if the forced output test mode is canceled.

Point

In CC-Link systems, the following areas are not available for forced output tests:

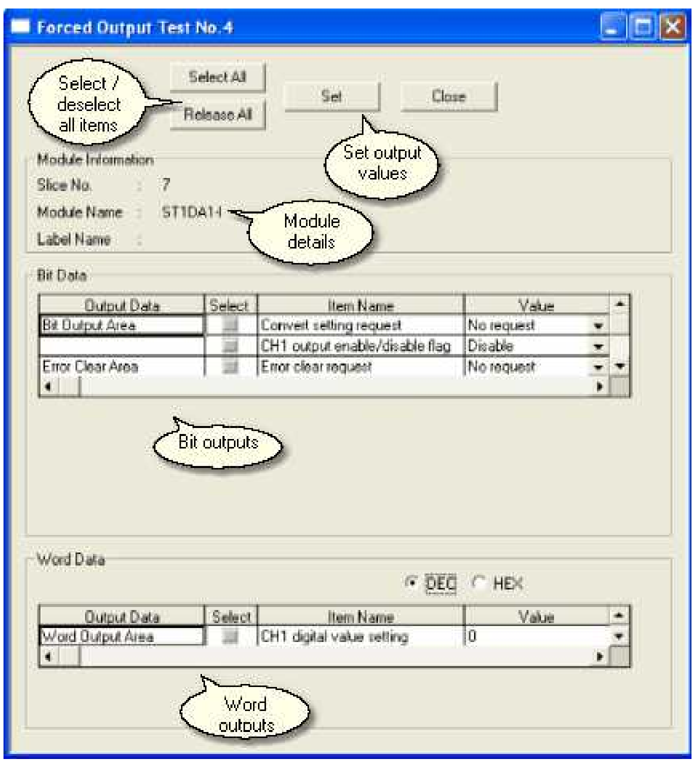
- Ew.n Error Clear area
- Ww.n Word Output area of intelligent input modules

REMARK

(a) If the MELSEC-ST system is not in the forced output test mode when the Set button is clicked in (4), a screen appears asking whether or not the MELSEC-ST system will be changed to the forced output test mode.
Click the OK button to change the system to the forced output test mode and start the forced output test.

(b) When the MELSEC-ST system was changed to the forced output test mode in (a), a screen appears asking whether or not the system will be released from the forced output test mode after the operation in Step (6) is performed.
Click the Yes button when releasing the system from the forced output test mode.
Click the No button when not releasing the system from the forced output test mode.

DISPLAY/SETTING SCREEN



DISPLAY/SETTING DATA

Item	Description
Select All button	Checks all "Select" check boxes of "Bit Data" and "Word Data". A 'tick' is shown to indicate that the parameter is selected, as shown in the picture below. 
Release All button	Unchecks all "Select" check boxes of "Bit Data" and "Word Data".
Set button	Runs a forced output test on the Bw.n Bit Output, Ww.n Word Output*2 and (in PROFIBUS-DP only) Ew.n Error Clear whose "Select" check boxes are checked. (Ew.n Error Clear bits are available for PROFIBUS-DP only) When the forced output test is completed, the "Completed" message is displayed.
Close button	Closes this screen. The screen to release the MELSEC-ST system from the forced output test mode is displayed if the system was not in the forced output test mode when this screen was opened.
Module Information	Displays the information (start slice No., module name, label name) of the module on which a forced output test will be conducted.
Bit Data *1	Select the bit data on which a forced output test will be conducted by checking the corresponding "Select" check box, and set the bit value to be output at "Value".
Word Data *1 *2	Select the word data on which a forced output test will be conducted by checking the corresponding "Select" check box, and set the word value to be output at "Value". Selecting the DEC or HEX radio button changes the input format of "Value" to decimal or hexadecimal. DEC: Decimal HEX: Hexadecimal

*1: For details of each data, refer to the manual of the corresponding module.
*2: In CC-Link systems, word output data is not available for intelligent input modules.

11.5 Master station data communication monitor

11.5.1 Master station data communication monitor

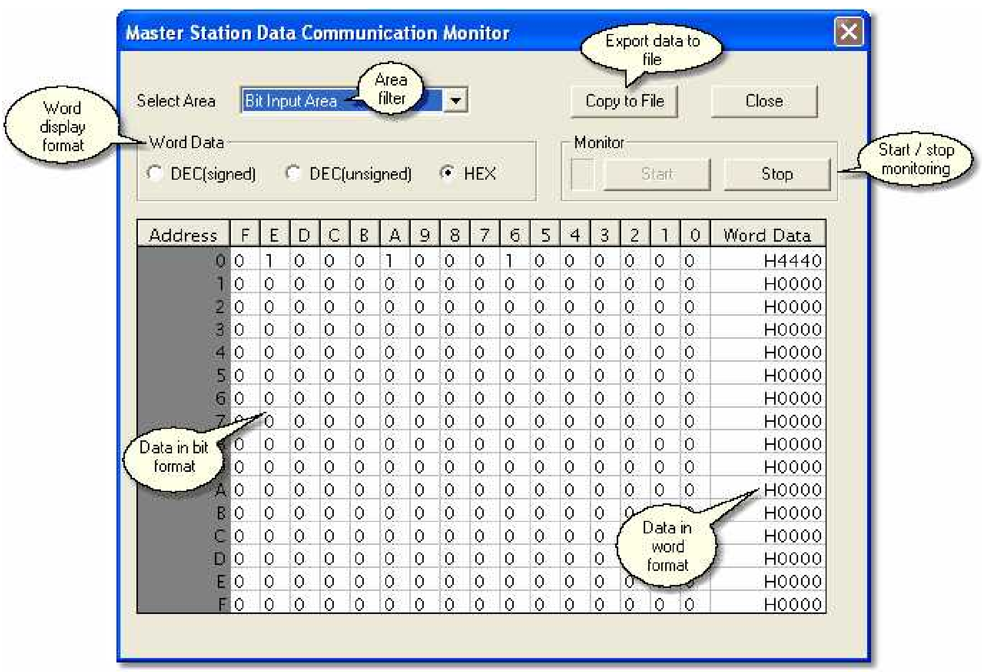
PURPOSE

Monitors the input/output data between the master station and head module of the PROFIBUS-DP or CC-Link system.

BASIC OPERATION

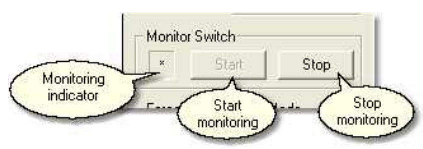
(1) Click the [Diagnostics] → [Master Station Data Communication Monitor] menu to display the "Master Station Data Communication Monitor" screen and start monitor.
(2) At "Select Area", select the I/O data to be displayed in the "Data display".
(3) To save the monitored data into a text file, click the [Stop] button to stop monitor, and click the [Copy to File] button.
Refer to 'Saving the communication data' 133 for details.
(4) To close this screen, click the [Close] button.

DISPLAY/SETTING SCREEN



[CC-Link systems]

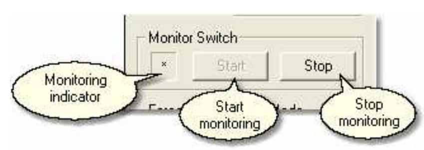
DISPLAY/SETTING DATA

Item		Description
Select Area *1		From among the following items, select the I/O data to be displayed in the "Data display". Bit Output Area : Bw Bit Output Area Word Output Area : Ww Word Output Area Bit Input Area : Br Bit Input Area Word Input Area : Wr Word Input Area
Copy to File button		Saves the monitored data into a text file. Refer to 'Saving the communication data' 133 for details. While monitor is executed, this button is not usable. Save the data after clicking the Stop button to stop monitor.
Close button		Closes this screen.
Word Data		Changes the representation of the word values in the text file to be saved with the Copy to File button and in the "Data display".
	DEC(signed)	Displays the values in signed decimal.
	DEC(unsigned)	Displays the values in unsigned decimal.
	HEX	Displays the values in hexadecimal headed by "H".
Monitor		Starts/stops monitor.
	Start button	Starts monitor. This button is usable only while monitor is at a stop. While monitor is executed, " * " flickers on the left side of this button. 
	Stop button	Stops monitor. This button is usable only while monitor is executed.
Data display *1		Displays the data in the data range selected at "Select Area". "Address" is the offset address of the data selected at "Select Area", with Address 0 set as the start address.

*1: For details of the I/O data, refer to the Head Module Manual.

[PROFIBUS-DP systems]

DISPLAY/SETTING DATA

Item		Description
Select Area *1		From among the following items, select the I/O data to be displayed in the "Data display". All Area : All I/O data Bit Output Area : Bw Bit Output Area Error Clear Area : Ew Error Clear Area System Area : Sw System Area Command Execution Area : Cw Command Execution Area Word Output Area : Ww Word Output Area Bit Input Area : Br Bit Input Area Error Information Area : Er Error Information Area Module Status Area : Mr Module Status Area Command Result Area : Cr Command Result Area Word Input Area : Wr Word Input Area
Copy to File button		Saves the monitored data into a text file. Refer to 'Saving the communication data' 133 for details. While monitor is executed, this button is not usable. Save the data after clicking the Stop button to stop monitor.
Close button		Closes this screen.
Word data		Changes the representation of the word values in the text file to be saved with the Copy to File button and in the "Data display".
	DEC(signed)	Displays the values in signed decimal.
	DEC(unsigned)	Displays the values in unsigned decimal.
	HEX	Displays the values in hexadecimal headed by "H".
Monitor		Starts/stops monitor.
	Start button	Starts monitor. This button is usable only while monitor is executed, " * " flickers on the left side of this button. 
	Stop button	Stops monitor. This button is usable only while monitor is executed.
Data display *1		Displays the data in the data range selected at "Select Area". "Address" is the offset address of the data selected at "Select Area", with Address 0 set as the start address.

*1: For details of the I/O data, refer to the Head Module Manual.

REMARK

When confirming the data for each module, use the "Input/Output Monitor" screen.
Refer to 'Input/Output monitor' 124 for details.

11.5.2 Saving the communication data

PURPOSE

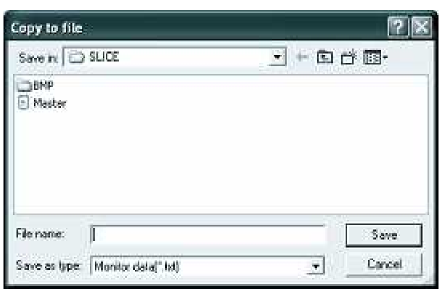
Saves the I/O data, which were monitored on the "Master Station Data Communication Monitor" screen in 'Master station data communication monitor' 130, into a text file.

BASIC OPERATION

(1) On the "Master Station Data Communication Monitor" screen, click the Stop button to stop monitor, and then click the Copy to File button.

(2) Set the destination directory and file name, and click the Save button to save the monitored data into a text file and close this screen.

DISPLAY/SETTING SCREEN

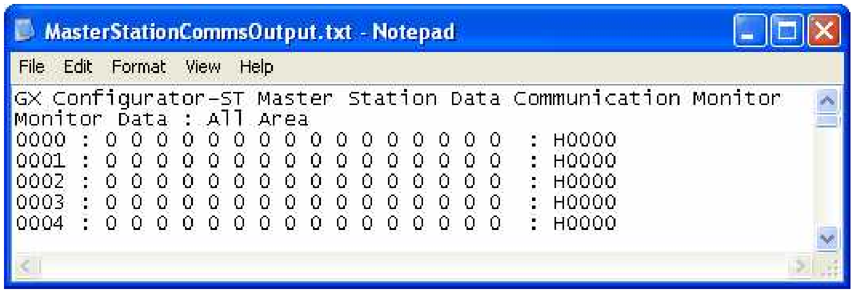


DISPLAY/SETTING DATA

Item	Description
Save in	Select the directory that stores the monitored data.
File name	Set the file name of the monitored data.
Save button	Saves the project with the file name specified at "File name".
Cancel button	Closes this screen without saving the project.

(1) Example of text file for saving data

The following shows an example of the text file for saving data.



11.6 PROFIBUS-DP Network Parameter Monitor (PROFIBUS DP only)

11.6.1 PROFIBUS-DP Network parameter monitor

PURPOSE

Confirms of the slave parameters and PROFIBUS-DP network parameters sent from the master station of PROFIBUS-DP to the MELSEC-ST system.

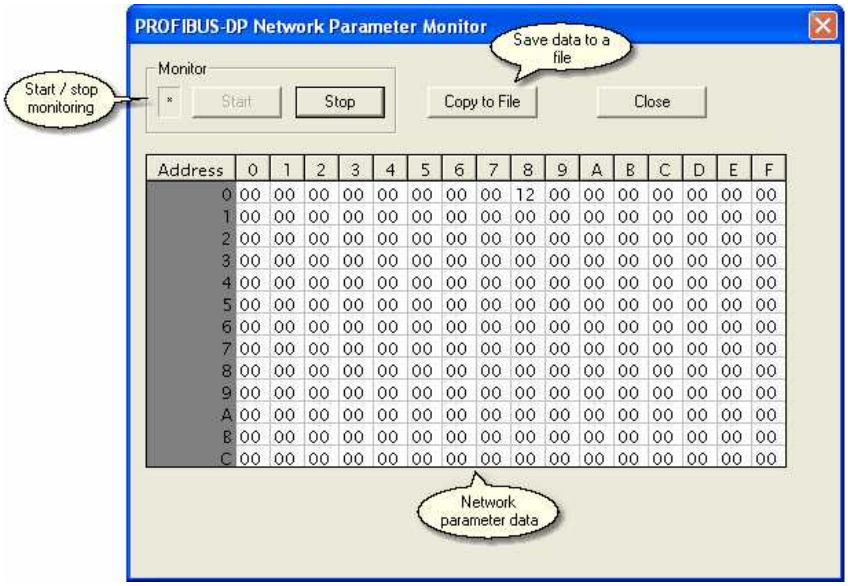
BASIC OPERATION

(1) Click the [Diagnostics] → [PROFIBUS-DP Network Parameter Monitor] menu to display the "PROFIBUS-DP Network Parameter Monitor" screen and start monitor.

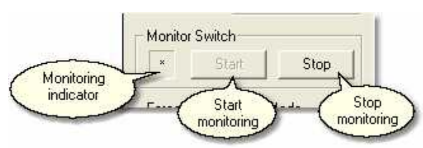
(2) To save the monitored data into a text file, click the Stop button to stop monitor, and click the Copy to File button.
Refer to 'Saving the PROFIBUS-DP network parameter data' 136 for details.

(3) To close this screen, click the Close button.

DISPLAY/SETTING SCREEN



DISPLAY/SETTING DATA

Item		Description
Monitor		Starts/stops monitor.
	Start button	Starts monitor. This button is usable only while monitor is at a stop. While monitor is executed, " * " flickers on the left side of this button. 
	Stop button	Stops monitor. This button is usable only while monitor is executed.
Copy to File button		Saves the monitored data into a text file. Refer to 'Saving the PROFIBUS-DP network parameter data' 136 for details. While monitor is executed, this button is not usable. Save the data after clicking the Stop button to stop monitor.
Close button		Closes this screen.
Data display *1		Displays the slice module parameters and PROFIBUS-DP parameters sent from the master station of PROFIBUS-DP to the MELSEC-ST system. "Address" is the offset address of the monitored parameter, with Address 0 set as the start address.

*1: For details of the data, refer to the manual of the used master station or configuration software.

11.6.2 Saving the PROFIBUS-DP network parameter data

PURPOSE

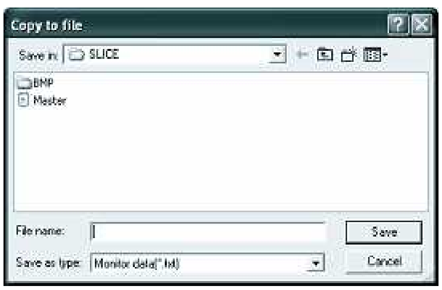
Saves the data, which were monitored on the "PROFIBUS-DP Network Parameter Monitor" screen in 'PROFIBUS-DP network parameter monitor' 134 into a text file.

BASIC OPERATION

(1) On the "PROFIBUS-DP Network Parameter Monitor" screen, click the Stop button to stop monitor, and then click the Copy to File button.

(2) Set the destination directory and file name, and click the Save button to save the monitored data into a text file and close this screen.

DISPLAY/SETTING SCREEN

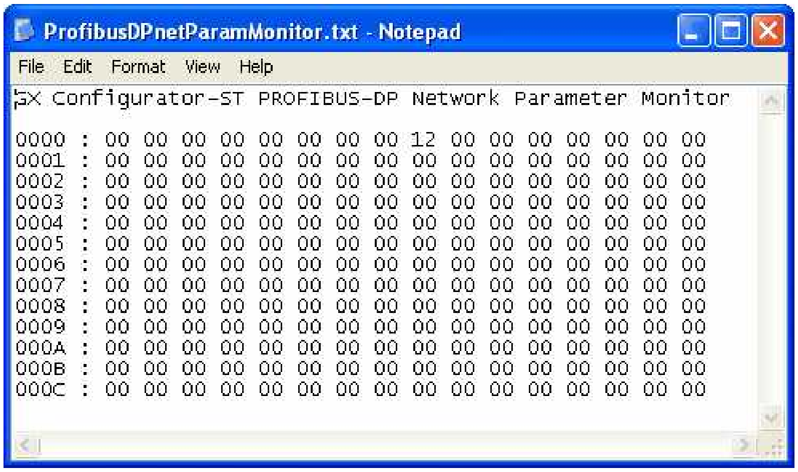


DISPLAY/SETTING DATA

Item	Description
Save in	Select the directory that stores the monitored data.
File name	Set the file name of the monitored data.
Save button	Saves the project with the file name specified at "File name".
Cancel button	Closes this screen without saving the project.

(1) Example of text file for saving data

The following shows an example of the text file for saving data.




```
GX Configurator-ST PROFIBUS-DP Network Parameter Monitor

0000 : 00 00 00 00 00 00 00 00 12 00 00 00 00 00 00 00
0001 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0002 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0003 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0004 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0005 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0006 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0007 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0008 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0009 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
000A : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
000B : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
000C : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
```

12 Online module operation

This chapter explains the functions for operating each module from GX Configurator-ST in the online mode (where the MELSEC-ST system and personal computer are connected).

12.1 Reset head module

PURPOSE

Resets the head module from GX Configurator-ST.

BASIC OPERATION

(1) Click the [Online] → [Reset Head Module] menu.

(2) When there is a window being monitored, a screen appears asking whether monitor will be stopped or not.
Click the OK button to stop monitor.

(3) A screen appears asking whether the head module will be reset or not.
Click the OK button to reset the head module, and check the LED status (on/off) to see if the head module has been reset.
While the head module is reset, all LEDs are off. When reset is completed, the LEDs turn on again.
Confirm that all LEDs turn on after they have turned off once.

(4) A screen appears asking whether a reset request has been issued to the head module or not.
Click the OK button.

(5) When monitor is stopped in Step (2), a message appears asking whether monitor will be resumed or not.
Click the Yes button to resume monitor.
Click the No button to keep monitor stopped.

12.2 Online module change

(1) Online module change function

The I/O modules (except ST1X1616-DE1-S1) and intelligent function modules can be replaced without stopping the MELSEC-ST system.
An online module change can be executed by operation of the head module buttons or from GX Configurator-ST.
This section explains how to perform an online module change from GX Configurator-ST.

12.2.1 Precautions for online module change

The precautions for the online module change are given below.

(1) To perform the online module change, the system configuration must be appropriate for execution of the online module change.
For details, refer to the MELSEC-ST System User's Manual, "3.4 Precautions for System Configuration".
Executing the online module change in an inappropriate system configuration may result in malfunction or failure.
In such a system configuration, shut off all phases of the external power supply for the MELSEC-ST system to replace a slice module.

(2) Be sure to perform an online module change in the procedure given in 'Procedures for online module change' 141.
Failure to do so can cause a malfunction or failure.

(3) Before starting an online module change, confirm that the external device connected with the slice module to be removed will not malfunction.
It is recommended to set 0 (OFF) to Bw.n Bit output and Ww.n Word output of the slice module to be replaced in advance.

(4) Only the slice modules of the same model name can be replaced online.
It is not possible to replace with/add the slice module of different model name.

(5) Only one slice module can be replaced in a single online module change.
To replace multiple slice modules, perform an online module change for each module.

(6) This function is available for I/O module (except ST1X1616-DE1-S1) and intelligent function module; not available for power distribution module and base module.
Shut off all phases of the external power supply before installing or removing the power distribution module and/or the base module.
Failure to do so may result in damage to all devices of the MELSEC-ST system.

(7) While an online module change is in execution (while the head module's REL. LED is on), no command can be executed to the slice module being replaced online.
If a command is executed to such a slice module, an error will occur.

(8) To change parameters of a slice module that is in execution of online module change (while the head module’s REL. LED is on), wait until the online module change is completed.
If any parameter setting is changed during online module change, upon completion of the online module change, the modified setting is overwritten with the parameters saved into the head module and does not take effect.

(9) During an online module change, the ERR. LED of the head module turns on only when an error related to the online module change occurs.
It will not turn on or flicker when any other error occurs.

(10) While an online module change is being executed (while the REL. LED of the head module is on), the following data of the slice module being replaced online all turn to 0 (OFF).

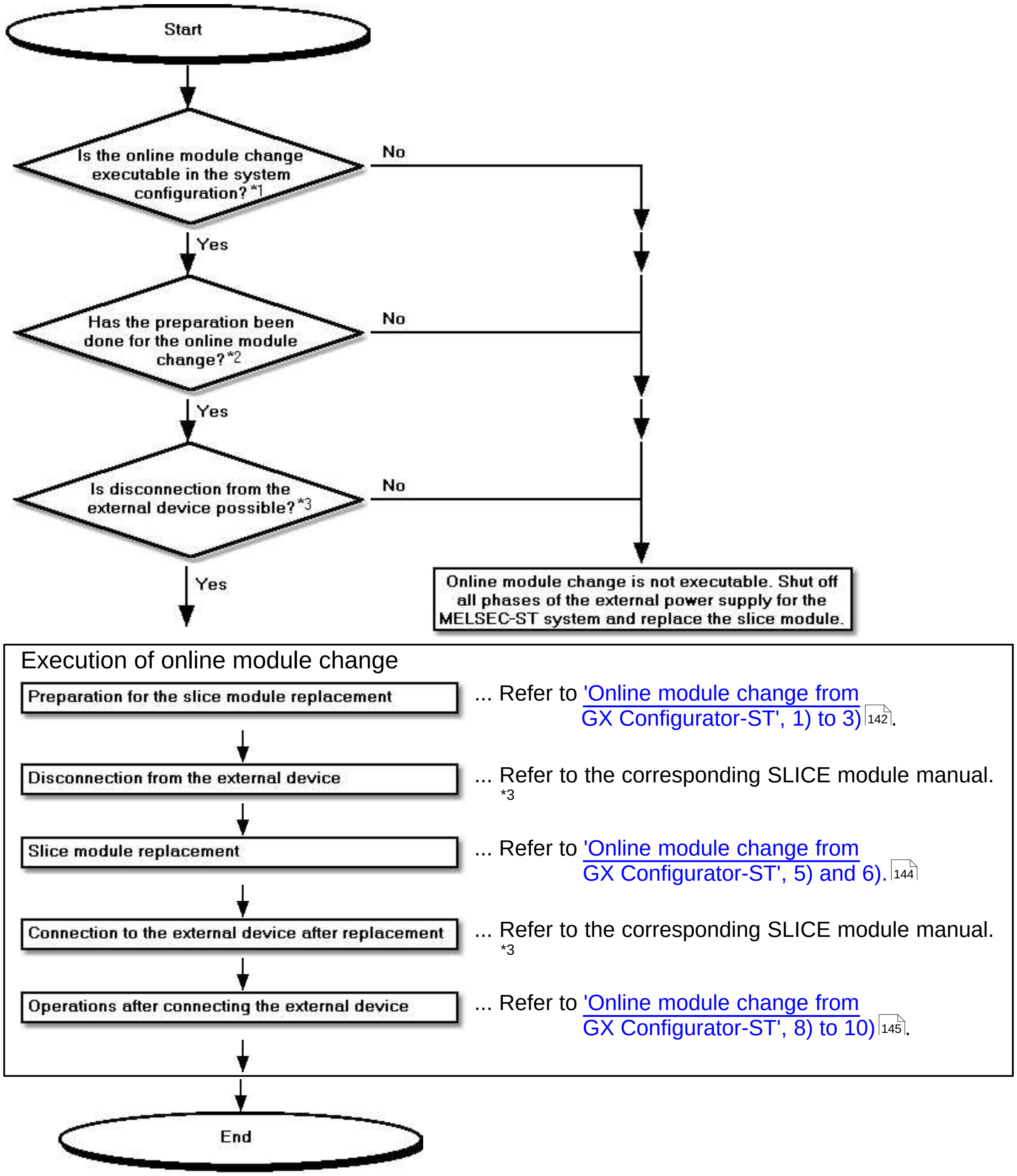
- Br.n Bit Input
- Er.n Error Information (PROFIBUS-DP only)
- Mr.n Module Status (PROFIBUS-DP only)
- Wr.n Word Input

(11) When the communication with the master station is disconnected, replacing the output module online, whose CLEAR/HOLD setting is set to HOLD, turns the Bw.n Bit Output value to 0 (OFF). After the online module change is finished, the Bw.n Bit Output value will not return to the held value.

(12) When the forced output test is executed on the slice module being replaced online, only Ew.n Error Clear can be tested (Ew.n Error Clear bits are available for PROFIBUS-DP only). Bw.n Bit Output and Ww.n Word Output cannot be tested.

12.2.2 Procedures for online module change

This section explains the procedures for the online module change.
Replace a module online as shown below.



*1: Refer to the MELSEC-ST System User's Manual, "3.4 Precautions for System Configuration".
*2: Refer to "Preparations for online module change" in the corresponding slice module manual.
*3: Refer to "External device connection and disconnection procedures for online module change".

12.2.3 Online module change from GX Configurator-ST

Here is an explanation of how to replace a module online from GX Configurator-ST.

Point

If a slice module different from the target one is selected by mistake, restart the operation as instructed below.

(1) To restart the operation at step 3)

Click the Cancel button on the screen to terminate online module change.

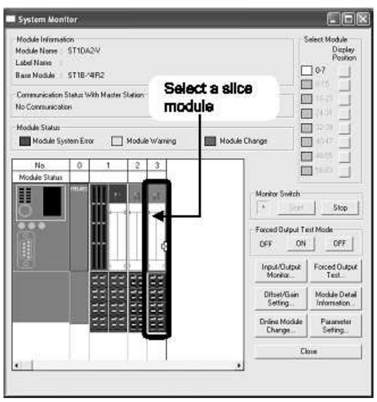
(2) To restart the operation at step 4)

Click the Next button without executing online module change, continue to step 10) and then terminate online module change.

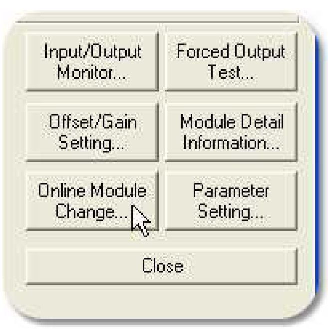
(3) To restart the operation at step 8)

Mount the removed slice module again, click the Next button, continue to step 10) and then terminate online module change.

Preparation for replacing slice module



1) Select the slice module to be replaced online on the "System Monitor" screen.



2) Click the Online Module Change button on the "System Monitor"screen.
Then, confirm that the RUN LED of the selected slice module is flashing at 0.25s intervals.

REMARKS

In addition to above, the following operations are also available.

- Select [Diagnostics] → [Online Module Change].
- Right-click the slice module selected at step 1), and click Online Module Change on the menu.

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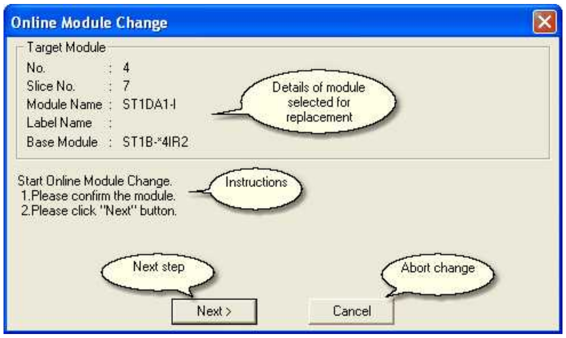

3) Confirm that the slice module displayed as "Target Module" is the slice module to be replaced and click the Next button.

(a) Clicking the Next button validates the settings and the following will be performed.
- Puts the head module into the online module change mode.
- Saves the parameters of the target slice module into the head module.

(b) After clicking the Next button, confirm the following module statuses.
- The REL. LED of the head module is on.
- The RUN LED of the target slice module is off.
- The "Module Status" indicator of the target module has turned purple ( ). This applies only when monitoring from the "System Monitor" screen.

(c) If the parameters cannot be read from the slice module, the REL. LED and ERR. LEDs of the head module will turn on, and an error message will appear on the screen at step 8). In this case, confirm the error details and take corrective action.
For how to read error codes and error code details, refer to the Head Module Manual.

When not executing online module change, click the Cancel button.

(a) Clicking the Cancel button causes the screen to show that online module change is cancelled.

Clicking the Exit button returns to the step 1).

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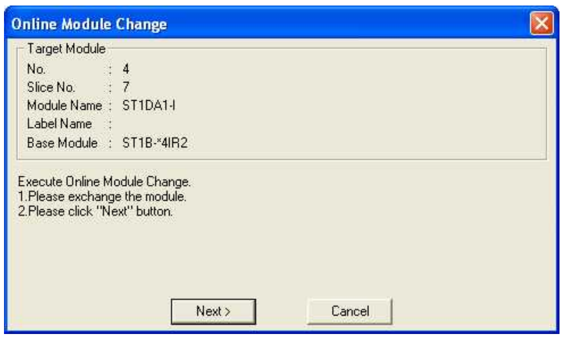
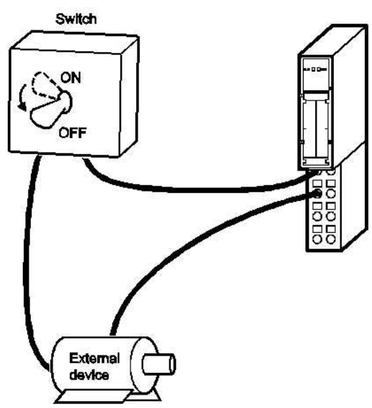
Disconnection from external device



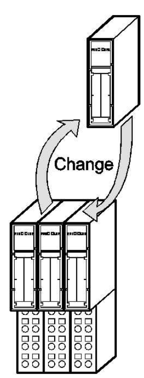


4) When the left screen appears, disconnect the external device from the slice module to be replaced online.
For details, refer to "External device connection and disconnection procedures for online module change" in the corresponding slice module manual.

Point

If the disconnection procedure given in the relevant slice module manual cannot be executed, shut off all phases of the external power supply for the MELSEC-ST system to replace the slice module.

Replacing slice module



5) Remove the slice module to be replaced from the base module.
6) Mount a new slice module with the same model name as the one of the removed.

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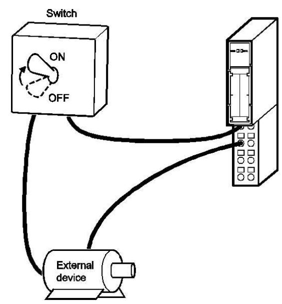
Connection to external device after replacement



7) After mounting a new slice module, connect it to the external device.
For details, refer to "External device connection and disconnection procedures for online module change".

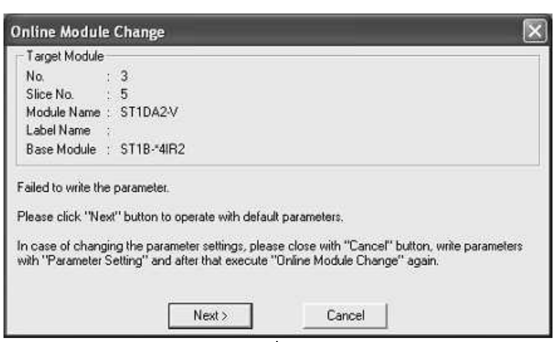
Operations after external device connection

8) After connecting the external device, click the Next button on the screen in step 4).

(a) Clicking the Next button performs the following.
- Checks whether the module name of the newly mounted slice module is the same as that of the removed one.
- Writes the parameters saved into the head module (at step 3)) to the newly mounted slice module.

(b) After clicking the Next button, confirm the following module statuses.
- The REL. LED of the head module is flashing.
- The RUN LED of the newly mounted slice module is flashing (at 0.25s intervals).

Clicking the Cancel button, i.e., interrupting online module change returns to step 1). In this case, select the same slice module as selected before, and complete online module change. Note that selecting different one causes an error.



If the parameters could not be read from the removed slice module in step 3), the REL. and ERR. LEDs of the head module will turn on and the left screen will appear in GX Configurator-ST.
In this case, confirm the error details and take corrective action.
For how to read error codes and error code details, refer to the Head Module Manual.
When step 10) has completed in this status, the intelligent function module starts its operation with the command parameters set as default.

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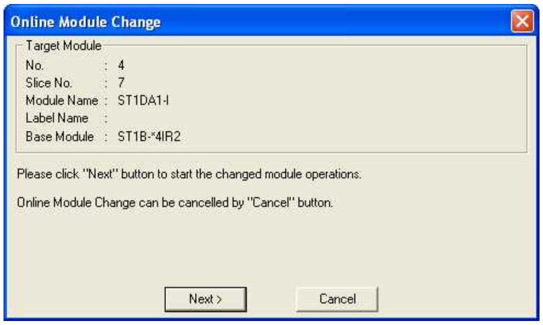


9) Clicking the Next button releases the head module from the online module change mode.

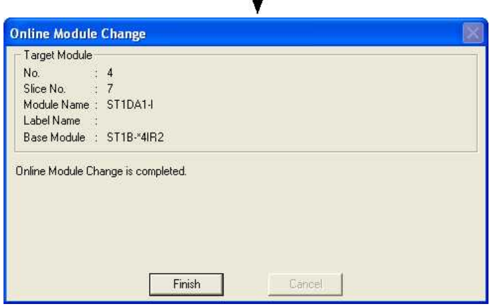
(a) Clicking the Next button performs the following.
- Releases the head module from the online module change mode.
- Restarts refreshing the I/O data, etc.

(b) After clicking the Next button, confirm the following module statuses.
- The REL. LED of the head module is off.
- The RUN LED of the newly mounted slice module is on.
- The "Module Status" indicator of the target slice module has turned white (□). This applies only when monitoring from the "System Monitor" screen.

(c) If the head module cannot be released from the online module change mode, both REL. LED and ERR. LED of the head module turn on.
In this case, confirm the error details and take corrective action.
For how to read error codes and error code details, refer to the Head Module Manual.

When interrupting online module exchange, click the Cancel button.

(a) Clicking the Cancel button, i.e., interrupting online module change returns to step 1). In this case, select the same slice module as selected before, and complete online module change. Note that selecting different one causes an error.



10) The left screen appears showing that online module change has been completed.
Click the Finish button.

(Completion)

13 Reference

13.1 Key operations list

Some of the commonly-used menu items are also available on shortcut keys, listed below.

File

Operation Contents	Key operation
New 55	Ctrl + N
Open 56	Ctrl + O
Save 58	Ctrl + S
Print 67	Ctrl + P

Edit

Operation Contents	Key operation
Undo 87	Ctrl + Z
Redo 88	Ctrl + Y
Add 77	Ctrl + Insert
Delete 84	Ctrl + Delete
All Delete 85	Shift + Del
Parameter Setting 93	F9
Option 99	F10

Mode

Operation Contents	Key operation
Edit 29	F2
Diagnosis 30	F3

13.2 Error messages

This section will list the error messages that can be shown by the program, with advice on how to prevent or fix the errors.

13.2.1 Communication errors

These errors are shown when GX Configurator-ST has problems communicating with the SLICE hardware.

Message	Cannot communicate with Head module for one of the following reasons: • Communications timeout. • The preparation of communication environment is bad. • Cable error. • Cannot communicate with the transmission speed set up now. To fix this, try: • Checking the cable and selected port number • Setting transmission speed to a lower value. • Closing other communication software applications and trying again.
Description	This message occurs when it is not possible to make a connection to the SLICE hardware.
Causes and actions	This message will be shown if the connection to the SLICE hardware cannot be opened. This could be due to a hardware or software problem: • Hardware issues may include power failure to the SLICE hardware, the cable becoming disconnected, the wrong type of cable being used, or the cable being plugged into the wrong device. • Software issues may include another program using the communication port where the cable is connected.

Message	Cannot communicate with PLC.
Description	There was a problem communicating with the SLICE hardware.
Causes and actions	• This message may be shown if the SLICE hardware does not respond within a reasonable time. Check that the SLICE hardware is powered on and that the correct cable is connected to the correct port on the intended device.

Message	Cannot communicate with Head module for one of the following reasons: • Bad connection to the head module. • The preparation of communication environment is bad. To fix this, try: • Checking the connection to the head module • Closing other communication software applications and trying again.
Description	There was an error when sending / receiving data to or from the SLICE hardware.
Causes and actions	This message will be shown if the connection to the SLICE hardware cannot be opened. This could be due to a hardware or software problem: • Hardware issues may include power failure to the SLICE hardware, the cable becoming disconnected, the wrong type of cable being used, or the cable being plugged into the wrong device. • Software issues may include another program using the communication port where the cable is connected.

Message	Set data exceeds the range. Execute again after confirming set data. The range that can be set is 1 - 9.
Description	This message is shown on the 'Transfer setup' dialog, when a timeout value outside the range 1-9 is set.
Causes and actions	• Change the timeout value to a number from 1 to 9, and try again.

Message	Cannot process because of monitoring. Please stop all monitoring and execute again.
Description	Some online operations are not possible while monitoring is in progress. This message is shown if one of these operations is initiated while monitoring is in progress.
Causes and actions	• Stop monitoring for the duration of the operation, and restart it afterwards.

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13.2.2 Diagnostic errors

The errors in this section can occur when the system is in diagnosis mode.

Message	This feature cannot be executed during monitoring. Please execute again after stop monitoring.
Description	This message is shown when the 'Copy to file' button is selected on the PROFIBUS-DP Network parameter monitor 134 or Master station data communications dialog 130, but monitoring is still active.
Causes and actions	• Stop monitoring before saving the data to a file. Monitoring can be restarted after the file has been saved.

Message	The module for the setting has not been selected. Please select the module that is to be set in the System Monitor.
Description	This error is shown on the system monitor 116 screen, when an action is selected (such as module detail information 120) without any module selected for it to work on.
Causes and actions	• Select the module to use for the action, then try again.

Message	There is no monitor data to write to the file.
Description	This error occurs when the 'Copy to file' button is selected on the PROFIBUS-DP Network parameter monitor 134 or Master station data communications 130 dialog, but there is no data available to save to the file.
Causes and actions	• Try again when there is some data available to write.

Message	Cannot monitor the Input/Output Data of the specified module.
Description	I/O monitoring was selected for a module, but the module does not support it.
Causes and actions	• The selected module may not have any I/O to monitor. Check that the correct module has been selected, then try again.

Message	The module for the setting has not been selected. Please select the module that is to be set in the System Monitor.
Description	An attempt was made to start I/O monitoring without first selecting a module.
Causes and actions	• Make sure that the correct module is selected by clicking on it in the system monitor display, then try again.

Message	The head module does not match, but the other modules are correct. Copy the head module details from the live system and continue?
Description	When attempting to switch to diagnostics mode, it was discovered that the head module type of the live system does not match the head module type in the configuration, although the remaining modules do match. This could happen if (for example) the head module in an existing SLICE system was replaced with a different type of head module.
Causes and actions	You can either: • Answer 'Yes' at the prompt, in which case the system will copy the head module details from the live system and continue - if you have replaced the head module but wish to reuse the module parameters in an old configuration file, this is the correct option. • Answer 'No' at the prompt, if (for example) a connection has been made to the wrong SLICE hardware. The 'wrong system configuration' error will be shown (as below).

Message	The module configuration differs from the mounting state. Please check the module configuration and execute again. Module No. ....
Description	This message is shown when switching to diagnostics mode, if the configuration of the attached SLICE hardware does not match the configuration being edited. The message shows the first module number which is different.
Causes and actions	• Check that the communication cable is connected to the right serial port and the right SLICE hardware - there may be a connection to a different system. 'Transfer setup' 106 can be used to change the serial port used. • Make sure that the configuration file is up to date, in case new modules have been added since the last time it was saved. • If you do not need to keep any parameters in the local file, use 'Get system' 108 to read the details of the connected system from the port.

Message	This will start monitoring of the Input/Output Monitor?
Description	When you switch from edit mode to diagnostics mode, and there are I/O monitor windows open from a previous diagnostics mode session, you will be prompted to restart monitoring.
Causes and actions	Either answer: • 'Yes' - to restart monitoring in these windows, or • 'No' - in which case monitoring will not be switched on in the open I/O monitor windows.

Message	This will stop monitoring of the Input/Output Monitor.
Description	This is a warning shown when switching from diagnostics mode to edit mode while there is an I/O monitor active.
Causes and actions	• There is no action to take - when you click 'OK', the active I/O monitors will stop monitoring.

Message	Module Detail Information cannot be executed in the specified module.
Description	This error can appear on the system monitor dialog when an attempt is made to start the 'module detail information' dialog for a module whose details cannot be shown.
Causes and actions	• Make sure that the right module is selected, by clicking on it in the system monitor dialog, then try again.

13.2.3 File errors

These errors may occur when there are problems opening or reading from a file.

Message	The file cannot be opened because the selected file is damaged.
Description	An attempt was made to open a file which appears to be corrupted.
Causes and actions	• There may be a problem reading the file from a network drive, or the file may have become corrupted. • If you have a recent backup of the file, check if the backup is readable.

Message	This file has been created in latest version of application. Cannot process it in this application.
Description	This message may be shown if you have created a file in a newer version of GX Configurator-ST than this one (1.06G), and attempted to load it into this version.
Causes and actions	• Open the file with the version of GX Configurator-ST in which it was created.

Message	The file cannot be opened because the selected file is damaged.
Description	The file was found and opened, but discovered to be corrupt.
Causes and actions	• It will not be possible to read the file - load a backup copy if you have one, or if you have access to the SLICE hardware, use the 'Get system' 108 feature to read the configuration from the hardware.

Message	The following error occurred during processing of the file. ...
Description	While processing the file, the operating system reported an error. The error description returned by the operating system is shown at the end of the message.
Causes and actions	• The message should show what the problem was, and from this it should be possible to work out the correct action to take.

Message	Cannot use the specified file because it is being write protected. Please check the attribute and try again.
Description	Permission was denied to use the file.
Causes and actions	• Make sure that the file has not been opened elsewhere • Check that the file is not write protected - files can sometimes be left write protected when (for example) they are copied from a backup CD.

Message	Cannot find the file.
Description	The file to be opened was not found.
Causes and actions	• Make sure that the file exists, and is not (for example) on an inaccessible network drive.

Message	Cannot use the specified file because it is being used by some other application.
Description	Another application has the file open, so GX Configurator-ST cannot use it.
Causes and actions	• Look for other files that may be using the file, then switch to the other application and close the file. • If the file still appears to be locked and there is no application apparently using it, rebooting the PC may fix the problem.

Message	The allowable No. of characters has been exceeded. Set to less than 150 characters.
Description	A file name was selected which is too long to use.
Causes and actions	• Enter a shorter file name, then try again.

13.2.4 Forced output / offset and gain errors

These errors can occur when using the forced output / offset and gain settings dialogs. For more information, see 'Forced output test' 127 and 'Offset/Gain setting of intelligent function module' 113.

Message	The module for the setting has not been selected. Please select the module that is to be set in the System Monitor.
Description	An attempt was made to start the forced output test dialog without first selecting a module whose outputs are to be written.
Causes and actions	• Make sure that a module is selected by clicking on it in the system monitor dialog, then try again.

Message	The selected module cannot execute the Forced Output Test function.
Description	An attempt was made to start the forced output test dialog for a module that does not support forced output tests (e.g. because it has no suitable outputs).
Causes and actions	• Select a module which does support forced output tests, by clicking on it in the system monitor dialog, then try again.

Message	Cannot change into the Forced Output Test Mode because the communication error has occurred. Please execute again. If selecting the "Cancel" button, please reset the head module because the last value may be outputted when you next execute the Forced Output Test function.
Description	This message is shown when trying to switch on the 'forced output test' mode, if there is a communication error before the operation can be completed. Pressing 'OK' will retry the connection, or pressing 'Cancel' will abandon the attempt.
Causes and actions	• Check the connections and try again. As the message suggests, if you select 'Cancel' it is advisable to reset the head module to make sure that there are no 'left over' output values the next time you switch to forced output test mode.

Message	Head module is in the status of the Forced Output Test Mode. Do you want to release the Forced Output Test Mode?
Description	This message is shown when the operating mode is about to be switched from 'diagnostics mode' to 'edit mode', while the 'forced output test' mode is active.
Causes and actions	• This is a warning message - if you wish to continue using forced output mode, cancel the change.

Message	This will release the Forced Output Test Mode. Is it OK?
Description	This prompt is shown when closing a forced output test dialog window while the test is active.
Causes and actions	Either answer: • 'Yes' - to switch off forced output test mode before returning, or • 'No' - to leave the forced output test mode active

Message	Mode setting is in the Forced Output Test Mode. Do you want to close in the Forced Output Test Mode?
Description	This message is shown when the project file is about to be closed, but the 'forced output test' mode is active.
Causes and actions	• This is just a warning message - if you wish to continue using forced output mode, use the 'cancel' option.

Message	It is possible to set Offset/Gain only during the Forced Output Test Mode. Change into the Forced Output Test Mode?
Description	This message is shown when trying to set the offset and gain settings for a module, when the system is not in forced output test mode.
Causes and actions	• Offset/gain settings can only be set in forced output mode. Answer 'Yes' at the prompt to switch to forced output test mode, or 'No' to cancel the operation.

Message	The selected module cannot set Offset/Gain.
Description	An attempt was made to change the offset/gain settings of a module which does not have offset/gain settings to change (such as the head module or a power supply module).
Causes and actions	• It is likely that the wrong module is selected - make sure that the correct module (one which has offset/gain settings) is selected, and then try again.

Message	The module to be set has not been selected. Please select a module to be set in the System Monitor.
Description	This message is shown when attempting to show the offset/gain settings dialog without first selecting a module for which the offset/gain settings should be changed.
Causes and actions	• Make sure that a module has been selected by clicking on it in the 'system monitor' dialog, then try again.

Message	The Window is closed during Offset/Gain Setting Mode. Please open the Offset/Gain Setting and close again.
Description	The offset/gain dialog window was closed unexpectedly while setting offset/ gain settings.
Causes and actions	• Open the offset/gain settings window and try the operation again.

Message	Channel has not been selected. Please select a channel.
Description	This error is shown on the offset/gain settings dialog, when trying to write the settings without first selecting one or more channels.
Causes and actions	• Select the channel(s) to which the new setting values should be applied,

Message	Please set the Offset/Gain Value.
Description	On the offset/gain settings dialog, the 'Set' button was used without entering a valid value.
Causes and actions	• Make sure that a valid number has been entered for the new offset/gain value, then try again.

Message	Value input is out of range.
Description	The value entered for the offset or gain setting is out of range, i.e. it is below the lower limit for values, or above the upper limit for values.
Causes and actions	• Enter a value which is within the limits, then try again.

Message	Please select an Output Data.
Description	On the forced output test dialog, the 'settings' button was clicked without first selecting one or more outputs.
Causes and actions	• Make sure that at least one output is selected (checked) and try again.

Message	The value besides the range is set as the setting value.
Description	This error is shown on the forced output dialog, if the output value selected is not permitted. The value may be lower than the minimum permitted, higher than the maximum permitted, or too large for the data type (e.g. when trying to store a 32-bit value in a 16-bit setting).
Causes and actions	• Enter a value within the permitted ranges, then try again.

13.2.5 Module addition and copying errors

These errors may be shown when new modules are being added to the system, or copied from another file.

Message	Cannot add the module. Modules can be added to the maximum of ....
Description	No more modules can be added to the system - the limit on the number of modules in a SLICE system has been reached.
Causes and actions	• You may be able to reduce the number of modules needed by using different types of modules. • If there is no way to reduce the number of modules needed, the only solution is to install an additional SLICE system in a new rack with a separate head module.

Message	Cannot add the module. Bit Input/Output range exceeds ... points.
Description	It is not possible to add the module, because the total number of bit I/O points in the system would exceed the limit.
Causes and actions	• In a PROFIBUS-DP system, the point mode is selectable, so you may be able to change to a higher point mode and continue. • If there is no way to reduce the number of bit input/output points used, the only solution is to install an additional SLICE system in a new rack with a separate head module.

Message	Cannot add the module. Word Input/Output range exceeds ... points.
Description	It is not possible to add the module, because the total number of word I/O points in the system would exceed the limit.
Causes and actions	• In a PROFIBUS-DP system, you may sometimes be able to switch to a lower point mode to increase the number of word I/O items that can be used. • If there is no way to reduce the number of word input/output items used, the only solution is to install an additional SLICE system in a new rack with a separate head module.

Message	Cannot add the module. Intelligent modules can be added to the maximum of ...
Description	It is not possible to add the module, because the maximum number of intelligent modules has already been reached.
Causes and actions	• In a PROFIBUS-DP system, the number of intelligent modules permitted is affected by the point mode selected. You may be able to change the point mode to allow more intelligent modules to be used. • You may be able to install different types of intelligent modules in the system to get the same results with a lower number of modules. • You may be able to install one or more non-intelligent modules in the system to get the same results. • If more intelligent modules are still needed, the only solution is to install an additional SLICE system in a new rack with a separate head module.

Message	The module could not be recognized. Module:... No...
Description	GX Configurator-ST does not recognise the module.
Causes and actions	• This message should not normally be shown. Uninstalling and reinstalling the application may solve the problem.

Message	The module isn't selected. Please select the module.
Description	In the 'Add module' dialog, 'add' was pressed before a module was selected.
Causes and actions	• Select a module from the drop-down list, then try again.

Message	It cannot add the module in the specified position.
Description	In the 'Add module' or 'Copy module' dialog, an attempt was made to add a module at an invalid slot number.
Causes and actions	• Correct the slot number and try the action again. The slot number should not be before or at the head module slot, or beyond the end of the rack.

Message	A missing number will be made. Is it OK to change the No. to ...?
Description	In the 'add module' or 'copy modules' dialog, an attempt was made to add a module after the end of the rack. For example, if the last module in the rack is in slot 8, an attempt to add a new module in slot 10 would cause this error.
Causes and actions	• Either select 'Yes' to accept the suggested alternative (normally the slot number just after the right hand end of the rack), or 'No' to cancel the addition and re-enter the slot number manually.

Message	Warning - after adding this module, the supply current is not sufficient. Supply current : ... mA, Consumption : ... mA. Select 'OK' to add the module anyway.
Description	This message is shown after adding a module in the wizard area, if there was previously sufficient power supply to the modules in the configuration, but adding the new module would cause more current to be drawn than is being supplied.
Causes and actions	• Select 'OK' to add the module anyway and fix the power supply issue later, or • Select 'Cancel' to prevent the addition, so that another power supply module (e.g. ST1PSD) can be added in the correct place.

Message	There is no file path settings. Please check it again.
Description	This occurs when trying to use the 'Add' button on the 'Copy' dialog without having selected a valid path for the source file.
Causes and actions	• Select the source file to copy from using the 'Browse' button. There are further instructions available in 'Copying the module information' 85.

Message	Cannot add the head module. Please select the other module.
Description	This error is shown when adding to use the 'Copy' dialog to copy the head module.
Causes and actions	• The wrong module may have been accidentally selected, in which case select the correct module to copy. • The head module cannot be directly copied - however you can obtain the same result by entering items such as the label name and parameters manually.

13.2.6 Module configuration errors

If a problem is detected with the module configuration, the affected module will be highlighted in red in the module list. When the context menu is shown (e.g. by clicking on the module with the right mouse button), the descriptions of the module errors will appear at the top of the context menu.

The possible errors are:

Message	Slot 1 should always contain a '...' module
Description	In a valid configuration, the first slot after the head module should always contain a power supply module of the type shown in the message. This provides power to the head module itself, as well as to the remaining modules.
Causes and actions	• The power supply module is either missing, or in the wrong place. Either move an existing power supply module to the slot immediately after the head module, or install a new power supply module after the head module.

Message	The power supply module in slot 1 should have an 'H-SET' base type
Description	The first power supply module has the wrong base type selected - for the first power supply after the head module, the base type should always be 'H-SET'. The remaining power supply modules have 'R-SET' base types.
Causes and actions	• Ensure that a power supply with 'H-SET' base type is installed immediately after the head module. You can change the base module type by right clicking on the slot and selecting 'Option' from the pop-up menu. For more information see 'Option setting' 99.

Message	The power supply module in this slot should have an 'R-SET' base type
Description	The power supply module in this slot has the wrong base type selected - for power supply modules other than the first power supply after the head module, the base type should always be 'R-SET'.
Causes and actions	• Ensure that a power supply with 'R-SET' base type is used in this slot. You can change the base module type by right clicking on the slot and selecting 'Option' from the pop-up menu. For more information see 'Option setting' 99.

Message	Power consumption exceeds supply from power supply module in slot '...'
Description	With the current configuration, there is not enough power being supplied to the module. The message shows the number of the slot containing the power supply which feeds this module.
Causes and actions	• There may not be enough power supply modules in the system. To fix this, you will need to install an additional power supply just before the first module that reports this error. • Depending on your configuration, you may be able to rearrange the other modules to make better use of the existing power supplies.

Message	ST1X1616-DE1-S1-L module required after this module
Description	The ST1X1616-DE-S1 module is presented in the software as two modules, ST1X1616-DE1-S1-F and ST1X1616-DE1-S1-L. These modules are one physical unit and so they must always appear as a pair with the ST1X1616-DE1-S1-F module followed by the ST1X1616-DE1-S1-L module. This message appears when there is a ST1X1616-DE1-S1-F module which is not followed by a ST1X1616-DE1-S1-L module.
Causes and actions	• Either add an ST1X1616-DE1-S1-L module if it is missing, or rearrange the existing modules so that the two modules are adjacent with the ST1X1616-DE1-S1-F module followed by the ST1X1616-DE1-S1-L module.

Message	ST1X1616-DE1-S1-F module required before this module
Description	The ST1X1616-DE-S1 module is presented in the software as two modules, ST1X1616-DE1-S1-F and ST1X1616-DE1-S1-L. These modules are one physical unit and so they must always appear as a pair with the ST1X1616-DE1-S1-F module followed by the ST1X1616-DE1-S1-L module. This message appears when there is a ST1X1616-DE1-S1-L module which does not have a ST1X1616-DE1-S1-F module before it.
Causes and actions	• Either add an ST1X1616-DE1-S1-F module if it is missing, or rearrange the existing modules so that the two modules are adjacent with the ST1X1616-DE1-S1-F module followed by the ST1X1616-DE1-S1-L module.

13.2.7 Module deletion errors

These errors can occur when deleting modules. For more information, see 'Deleting a module' 84 or 'Deleting all modules' 85.

Message	Cannot delete head module.
Description	An attempt was made to delete the head module.
Causes and actions	• The head module cannot be deleted - all valid systems must have a head module in the first slot. If you wish to start again and reconfigure the system with a different head module, select 'File -> New' 55. Alternatively, use the 'Edit' menu item 'Change head module' 104 to select another head module type while leaving the remaining modules in place.

Message	The module to be deleted has not been selected. Please select the module to delete in the Module Information List.
Description	The 'Delete module' action was selected, but there is no module selected for deletion.
Causes and actions	• Select a module by clicking on it, then try again.

13.2.8 Module parameter errors

These errors can occur when setting or reading parameter values.

Message	There are some errors. The following reasons may be responsible: • The invalid setting value is selected. • The value besides the range is set as the setting value.
Description	When checking the parameter settings for errors on the parameter settings screen, some of the parameters were not valid. For more information about parameter settings, see 'Checking the parameters for errors' 98.
Causes and actions	• The most likely cause is that the parameter value is out of range. For example, a number has been entered which is below the lower limit for the parameter value or above the upper limit for the parameter value.

Message	The parameter item for the corresponding Read/Write/Verify has not been selected. Please select the parameter item.
Description	In the parameter settings dialog, an action (such as upload / download / verify) was selected without first selecting the parameters to work on.
Causes and actions	• To prevent this happening, select one or more parameters from the list before selecting an action. For more information, see 'Parameter setting' 92 or 'Uploading/Downloading the parameters' 96.

Message	The setting value that cannot be changed is read only. The setting value for the read only cannot be downloaded.
Description	In the parameter settings dialog, an attempt was made to download an item which is read only.
Causes and actions	• Read only items cannot be downloaded by GX Configurator-ST. If there are other parameters to download which are not read only, deselect the read only item and try again. • In some cases, it may be possible to change the parameter by sending a command from the master station.

Message	The module differs from the mounted module.
Description	This error can occur when trying to download parameters to a module in a given slot using the parameter settings dialog. The problem is that the module in that slot in the connected SLICE system is not the same type as the module in that slot in the configuration file. For more information, see 'Parameter setting' 92.
Causes and actions	• This normally means that there is a mismatch between the configuration file and the connected hardware. Check that the PC is connected to the right hardware, i.e. that the cable is not in the wrong port on the computer or connected to a different SLICE system. • The configuration file may be out of date. If the connected system was expected to match, it may be easier to use 'Get system' to read the details from the connected hardware, and then try again.

Message	Cannot set the parameter of the specified module.
Description	An attempt was made to show the parameter settings of a module which does not have parameters (such as a power supply module).
Causes and actions	• There are no parameters for the type of module selected. • If you were expecting the module to have parameters, please check that the right module is selected.

Message	The module to be set has not been selected. Please select the module to be set in the Module Information List or the System Monitor.
Description	An attempt was made to show the parameter settings dialog without first selecting the module to view.
Causes and actions	• Select a module, and then try again.

Message	Please select modules
Description	When performing a parameter block write, no modules have been selected for download.
Causes and actions	• Select the modules whose parameters should be downloaded to the SLICE system by clicking in the 'Select' column, then try again.

Message	Download canceled.
Description	This message is shown when a parameter block write is canceled before the parameters have been downloaded for all modules.
Causes and actions	• To continue with the download, make sure that all the required modules are selected (modules whose status is marked as 'completed' have already been downloaded in full and can be deselected) and try again.

13.2.9 Module selection errors

These errors can occur when it is not possible to tell which module was selected.

Message	The Module Information List is not displayed. Please activate the Module Information List in the menu.
Description	This error is shown in edit mode when an attempt is made to use a feature that needs a selected module, but the module configuration window is not shown, or no module is selected. The module configuration window must be visible to allow modules to be selected.
Causes and actions	• Use the 'View' menu 'Module configuration' 43 item to show the window, then click on a module in the module list or rack display to select it, and try again.

Message	The module to be set has not been selected. Please select the module to be set in the Module Information List.
Description	An attempt was made to show the module option dialog without first selecting a module to work with.
Causes and actions	• Make sure that a module has been selected in the module list or rack display by clicking on it, then try again.

13.2.10 Module verify (compare) errors

These errors can occur while verifying (comparing) modules against another configuration file. For more information about this feature, see the 'Verifying the projects' 60 section.

Message	The system configuration of the file opened for verification and the file under editing is different. Cannot execute verification for all the selected modules.
Description	This error can be shown when the destination file is first opened in the verify dialog, when the 'Verify all modules' tab is active. When 'Verify all modules' is used, the source and target systems are expected to be very similar, with the same number and type of modules, and this is not the case for the selected file.
Causes and actions	• If you do not intend to use the 'Verify all modules' feature, you can ignore this message and activate the 'Verify selected modules' tab instead, as this will still work even if the configurations are different. • If you were expecting the two configurations to be comparable, check that you have opened the correct file.

Message	Is it OK to clear the selected module?
Description	This message is shown when using the 'Verify selected modules' tab to set up the list(s) of modules to compare. It appears when the source is changed after some modules have been selected, and is a warning that all the module selections will be reset if the source is changed.
Causes and actions	• Either confirm the prompt, in which case the selections will be cleared and you will have to enter them again, or • Cancel, in which case the source will not be changed.

Message	Module at the verification source has not been selected.
Description	With the 'Verify selected modules' tab active, an attempt was made to start the comparison before selecting a source module.
Causes and actions	• One source module needs to be selected before starting the comparison. This module will be compared against each of the destination modules in turn.

Message	Module at the verification destination has not been selected.
Description	With the 'Verify selected modules' tab active, an attempt was made to start the comparison before selecting any destination modules.
Causes and actions	• One or more destination modules need to be selected before starting the comparison. Each of these will be compared against the source module.

Message	The specified module does not exist.
Description	In the verify results dialog, after trying to edit the parameter settings by double clicking a module row or pressing the 'Parameter settings' button, GX Configurator-ST could not find the module whose settings should be edited.
Causes and actions	• Make sure that a valid row is selected. • Make sure that the module at the selected row has editable parameters. • Try closing the results dialog and using the module list 48 or rack display 47 to edit the parameters of the module instead.

13.2.11 Online change errors

These errors can occur during online module change. For more information about the online change procedure, see the head module documentation and the sections 'Online module change' 139 and 'Online module change from GX Configurator-ST' 142.

Message	The module for the setting has not been selected. Please select the module that is to be set in the System Monitor.
Description	The 'online change' feature was started without first selecting the module to be changed.
Causes and actions	• Select a module to change by clicking on it in the system monitor dialog, then try again.

Message	The selected module cannot execute Online Module Change.
Description	This message is shown when an attempt is made to use the online change feature on a module which does not support online change. For example, the head module and power supply modules cannot be exchanged while the system is running.
Causes and actions	• Select a module which supports online changes and try again. If you do need to replace a module that does not support online change, the only safe way is to power down the system and replace the module while the whole system is switched off.

Message	Online Module Change was stopped. This module does not operate. Please execute "Online Module Change" again.
Description	This message is shown if the online change procedure is cancelled part way through the exchange. It indicates that the selected module is not operating as a result of stopping the exchange procedure.
Causes and actions	• Go through the online change procedure again for the same module (it does not actually have to be replaced). If you try to select a different module, an error will be shown.

Message	There is some other module that is performing Online Module Change. Please execute Online Module Change for one module of at a time.
Description	An attempt was made to start an online change operation, but there is already a module part way through the online change process. This can occur if a previous online change (either from GX Configurator-ST or using the buttons on the front of the head module) has not fully completed or was cancelled part way through.
Causes and actions	• Select the module that is part way through online change (the module will have a purple ( ) status colour in the system monitor), and complete its online change procedure first. Online change can only be used for one module at a time.

13.2.12 Printing errors

The errors in this section can occur during printing. For more information, see 'Printing the project data' 67.

Message	Please close GX Configurator-ST after closing Print Preview.
Description	If the print preview dialog is open, it must be closed before trying to close GX Configurator-ST.
Causes and actions	• Close the print preview dialog, then select the 'File' menu 'Exit' 40 item to quit.

Message	Please select one or more modules.
Description	This message is shown on the print dialog, if the print range is 'selected modules' but no modules have been seleced.
Causes and actions	Either: • Select some modules by clicking on them in the list on the left, then using the '->' button to add them to the list of modules to print, or • Select the 'All modules' option for the print range instead, in which case all the modules will be included in the printout.

Message	Please specify the print item.
Description	The print dialog has three options for sections that can be included in the printout: • Module configuration • Module information list • Individual module information This error message is shown when all three options have been deselected, and there is nothing remaining to print.
Causes and actions	• Select at least one section to be printed. If you do not want to print anything, cancel the dialog.

Message	Please set the Module Turning Position within the range of 1-99.
Description	The module turning position gives the number of modules printed per row on the module configuration page of the printout. It must be a number from 1-99.
Causes and actions	• Enter a number from 1-99 for this value, then try again.

Message	The initial page value is outside the range.\nThe initial page value should be set within the range 1-32767.
Description	This error is shown on the page setup dialog, if the first page number is not within the range 1-32767.
Causes and actions	• Enter an initial page number from 1-32767 and try again.

13.2.13 System errors

These errors occur when there are other issues with the system, or problems with the installation.

Message	Insufficient memory. Please close other applications to increase memory.
Description	There is not enough free memory available to complete the current activity.
Causes and actions	• If possible, try to close other applications which you are not using, to release memory. • You may also be able to increase the amount of memory available by increasing the size of the page file, or by installing additional memory in the computer.

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Message	There is not enough memory, so the GX Configurator-ST cannot be activated. Quit other applications, then activate the GX Configurator-ST.
Description	There is not enough free memory available to start the application.
Causes and actions	• If possible, try to close other applications which you are not using, to release memory. • You may also be able to increase the amount of memory available by increasing the size of the page file, or by installing additional memory in the computer.

Message	Some of the necessary files for running the application are not found. Please reinstall.
Description	This message normally means that GX Configurator-ST did not install correctly, or some of the application files or registry settings have been damaged.
Causes and actions	• A file is missing, or part of the application failed to load or initialise. • In general, uninstalling the program (from 'Control Panel -> Add or remove programs') and then reinstalling should fix the problem.

Message	Failed to read the registry data. There is some possibility for some error in the operating environment of the application. Please do reinstall. Administrator authorization is required in case of using Windows NT® 4.0, Windows® 2000, Windows® XP and Windows Vista®.
Description	The application was unable to read settings from the system registry.
Causes and actions	• The currently logged-on user may not have Administrator rights. Log back on as a user with Administrator access. • The application may not be correctly installed, in which case it should be uninstalled (from 'Control Panel -> Add or remove programs') and then reinstalled.

Message	Cannot execute online operations in this application. Online operation is possible only in the application that started in the beginning.
Description	The system cannot make connections to the device hardware, as the connection is already in use.
Causes and actions	• This message will be shown if GX Configurator-ST is run twice. Use the instance that was started first for online operations.

Message	Failed to open the database. Please reinstall.
Description	This message normally means that GX Configurator-ST did not install correctly, or some of the application files or registry settings have been damaged.
Causes and actions	• A file is missing, or part of the application failed to load or initialise. • In general, uninstalling the program (from 'Control Panel -> Add or remove programs') and then reinstalling should fix the problem.

Message	Cannot access the database, The database may be damaged or old. Please update to the latest database.
Description	This message normally means that GX Configurator-ST did not install correctly, or some of the application files or registry settings have been damaged.
Causes and actions	• A file is missing, or part of the application failed to load or initialise. • If restarting the application or rebooting the PC does not help, uninstalling the program (from 'Control Panel -> Add or remove programs') and then reinstalling it may fix the problem.

Message	Failed to access some necessary information from database. The database may be damaged or old. Please update to the latest database.
Description	This message normally means that GX Configurator-ST did not install correctly, or some of the application files or registry settings have been damaged.
Causes and actions	• A file is missing, or part of the application failed to load or initialise. • If restarting the application or rebooting the PC does not help, uninstalling the program (from 'Control Panel -> Add or remove programs') and then reinstalling it may fix the problem.

Message	Cannot read the database because it is of an old version. Please renew the database.
Description	This message normally means that GX Configurator-ST did not install correctly, or some of the application files or registry settings have been damaged.
Causes and actions	• A file is missing, or part of the application failed to load or initialise. • In general, uninstalling the program (from 'Control Panel -> Add or remove programs') and then reinstalling should fix the problem.

Message	Cannot read the database because it is of a new version. Please update the application.
Description	This message normally means that GX Configurator-ST did not install correctly, or some of the application files or registry settings have been damaged.
Causes and actions	• In addition to trying to uninstall and reinstall GX Configurator-ST, check that there is only one version installed on the computer. This error could occur if two versions of the software are installed into the same directory.

Message	Application becomes unstable. Please restart.
Description	This message may be shown if the application is not able to load a key file.
Causes and actions	• If the message is only shown when opening a particular file, the file may be corrupt, have an invalid path, or could have been created by a much earlier or much later version of GX Configurator-ST. • If this message is shown regularly, try uninstalling and reinstalling the application.

Message	A MELSOFT application error has occurred. Please restart.
Description	This message may be shown if an unknown error occurs, i.e. an error which does not have its own error message. This is normally related to online operations or data communications.
Causes and actions	• This message may just be an unusual communications error. Make sure that the communication link is correct, and that you are connected to the right SLICE system. • Check that the configuration being edited does actually match the SLICE hardware. • Restarting the application may fix the problem. • If this message is shown regularly, try uninstalling and reinstalling the application.

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GX Configurator-ST Version 1.06G

Operating Manual

MODEL	SW1D5C-STPB-E-O-E
MODEL CODE	13JU47
SH(NA)-080439ENG-D(0804)MEE	

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