



HITACHI
S10 α SERIES

SOFTWARE MANUAL
OPTION

IR.LINK
For Windows[®]

S10mini
SERIES

Applicable to :
S10mini model S
S10mini model H
S10mini model F
S10mini model D

NOTE

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- Read this manual thoroughly and follow all the safety precautions and instructions given in this manual before operations such as system configuration and program creation.
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“RUN/STOP” SWITCH CAUTION

The “RUN/STOP” switch only stops execution of the ladder logic program or HI-FLOW program. Digital and analog outputs are left in the active state when execution stops, unless the optional rungs described in the CPU manual have been added. The “RUN/STOP” switch does not affect the operation of C-language or FA-BASIC language programs. Outputs can still be produced in response to C-language or FA-BASIC programs, or by the action of programmers typing in commands in these languages, while the “RUN/STOP” switch is in the “STOP” position.

DO NOT DEPEND ON THE STOP SWITCH TO STOP MOVING PARTS OR TO PREVENT UNEXPECTED MOTION OR ENERGIZATION. USE HARDWIRED SAFETY DISCONNECT AND LOCK OUT POWER AND CONTROL VOLTAGES BEFORE WORKING ON ELECTRICAL CIRCUITS OR PARTS THAT CAN MOVE.

PREFACE

We greatly appreciate your purchase of this IR.LINK system.

This system runs on a personal computer and carries out various setup operations for the IR.LINK module.

This manual describes the operation of the IR.LINK system.

This manual is applicable to the following system versions.

System name/version
IR.LINK SYSTEM For Windows® 07-02

For the IR.LINK module, refer to the following manual supplied with the module.

<Related manuals>

- S10mini HARDWARE MANUAL OPTION IR.LINK (Manual number SME-1-117)
- S10mini HARDWARE MANUAL IR.STATION (Manual number SME-1-118)

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Systems Supported by Windows® 2000 and Windows® XP

The systems supported by Microsoft® Windows® 2000 operating system (hereafter abbreviated as Windows® 2000) and Microsoft® Windows® XP operating system (hereafter abbreviated as Windows® XP) are shown in the following table.

Systems of earlier versions than those shown in the following table are not supported by Windows® 2000 and Windows® XP but supported by only Microsoft® Windows® 95 operating system (hereafter abbreviated as Windows® 95) and Microsoft® Windows® 98 operating system (hereafter abbreviated as Windows® 98). (The system names in the following table are hereafter abbreviated as each system.)

<Table of Systems Supported by Windows® 2000 and Windows® XP>

No.	System name	Type	Version	Windows® 2000	Windows® XP
1	S10Tools SYSTEM	S-7890-01	07-05	√	√
2	LADDER CHART SYSTEM	S-7890-02	07-05	√	√
3	HI-FLOW SYSTEM	S-7890-03	07-02	√	√
4	CPMS LOADING SYSTEM	S-7890-04	07-04	√	√
5	CPMSE LOADING SYSTEM	S-7890-05	07-04	√	√
6	CPMS DEBUGGER SYSTEM	S-7890-06	07-02	√	√
7	CPMSE DEBUGGER SYSTEM	S-7890-07	07-02	√	√
8	GP-IB LOADING SYSTEM	S-7890-08	07-01	√	√
9	BACKUP RESTORE SYSTEM	S-7890-09	08-01	√	√
10	RPDP/S10 SYSTEM	S-7891-10	03-03	√ (*2)	ns (*1)
11	NX/Tools-S10 SYSTEM	S-7890-13	07-02	√	√
12	4α LADDER CHART SYSTEM	S-7890-17	07-05	√	√
13	4αH LADDER CHART SYSTEM	S-7890-18	07-05	√	√
14	LADDER COMMENT CONVERTER SYS	S-7890-19	06-01	√	√
15	HIGH SPEED REMOTE I/O SYSTEM	S-7890-21	07-01	√	√
16	CPU LINK SYSTEM	S-7890-22	07-01	√	√
17	4ch ANALOG PULSE COUNTER SYS	S-7890-23	07-01	√	√
18	EXTERNAL SERIAL LINK SYSTEM	S-7890-24	07-02	√	√
19	S10ET LINK SYSTEM	S-7890-25	07-02	√	√
20	J.NET SYSTEM	S-7890-27	07-02	√	√
21	OD.RING/SD.LINK SYSTEM	S-7890-28	07-03	√	√
22	ET.NET SYSTEM	S-7890-29	07-01	√	√
23	FL.NET SYSTEM	S-7890-30	07-03	√	√
24	D.NET SYSTEM	S-7890-31	07-04	√	√
25	LADDER CHART MONITOR SYSTEM	S-7890-34	07-04	√	√
26	HI-FLOW MONITOR SYSTEM	S-7890-35	07-01	√	√
27	IR.LINK SYSTEM	S-7890-36	07-02	√	√
28	Crossing C compiler (manufactured by Mentor graphics company)	MCP68K	5.3	√ (*2)	ns (*1)

√: Supported ns: Not supported

(*1) Crossing C compiler (No.28) is not supported by Windows® XP. Use it on Windows® 2000.

(*2) Crossing C compiler (No.28) must be a version supported by Windows® 2000 (later than version 5.3) as a premise.

<Definitions of Terms>

- N coil: A ladder program converted into a form that can be run on the PCs by pasting a symbol on the sheet displayed on a PC.
- Process: A HI-FLOW program converted into a form that can be run on the PCs by pasting a symbol on the sheet displayed on a PC.
- Compile: To convert an application program such as a ladder chart and HI-FLOW into a form (N coil, process, etc.) that can be run on the PCs.
- Build: To compile only a corrected application program.
- Rebuild: To compile every existing application program.
- Sheet: Paper to prepare an application program of ladder chart and HI-FLOW, etc. This paper is controlled on a PC.
- PCs: An abbreviation of Programmable Controllers.
This is a general term for PLC such as the S10 α and S10mini series.
- PLC: An abbreviation of Programmable Logic Controller.
This is an industrial electronic device to exert sequence control, having an incorporated program.
The S10 α and S10mini series come under this PLC.

<Note for storage capacity calculations>

- Memory capacities and requirements, file size and storage requirements, etc. must be calculated according to the formula 2^n . The following examples show the results of such calculations by 2^n (to the right of the equals signs).
1 KB (kilobyte) = 1024 bytes
1 MB (megabyte) = 1,048,576 bytes
1 GB (gigabyte) = 1,073,741,824 bytes
- As for disk capacities, they must be calculated using the formula 10^n . Listed below are the results of calculating the above example capacities using 10^n in place of 2^n .
1 KB (kilobyte) = 1000 bytes
1 MB (megabyte) = 1000^2 bytes
1 GB (gigabyte) = 1000^3 bytes

CONTENTS

1	BEFORE USE	1
1.1	System Overview	2
1.2	Hardware and Software Requirements.....	2
2	INSTALLATION.....	5
2.1	Installing the System.....	6
2.2	Uninstalling the System	7
2.3	Starting Up the System	8
2.4	Terminating the System	9
3	COMMANDS.....	11
3.1	Command System	12
3.2	Editing Module Information	13
3.3	F/D Function	19
3.3.1	Saving module information.....	20
3.3.2	Sending	22
3.3.3	Comparing.....	24
3.4	Registering Interrupt Task.....	25
3.5	Monitoring Refresh Cycle.....	26
3.6	Displaying Error Information.....	27
3.6.1	Module error	28
3.6.2	Station error	29
3.6.3	Error multiple counter.....	30
3.7	Changing Connected PCs.....	31

FIGURES

Figure 2-1	[IR.LINK SYSTEM] Window	9
Figure 3-1	[Edit information] Window	13
Figure 3-2	[Edit station information] Window	15
Figure 3-3	[Set slot information] Window	18
Figure 3-4	[F/D function] Window	19
Figure 3-5	[Save As] Window	20
Figure 3-6	[Receive file] Window (System Information Receive in Progress)	21
Figure 3-7	[IR.LINK] Dialog Box (System Information Receive Completion)	21
Figure 3-8	[Open] Window	22
Figure 3-9	[Send file] Window (System Information Transmission in Progress)	23
Figure 3-10	[IR.LINK] Dialog Box (System Transmission Completion)	23
Figure 3-11	[Enter interrupt task] Window	25
Figure 3-12	[Refresh cycle monitor] Window	26
Figure 3-13	[Error information] Window	27
Figure 3-14	[Module error] Window	28
Figure 3-15	[Station error] Window	29
Figure 3-16	[Error multiple counter] Window	30
Figure 3-17	[Communication type] Window (PCs Connection Change)	31
Figure 3-18	[Communication type] Window (RS-232C Port Selection)	31
Figure 3-19	[Communication type] Window (Ethernet Connection)	32

TABLES

Table 3-1	Registrable Status Table Addresses.....	14
Table 3-2	Specifiable I/O Area Address and Redirecting Address.....	17

1 BEFORE USE

1 BEFORE USE

This manual is intended for personal computer programmers using the Windows®.

1.1 System Overview

IR.LINK for Windows® (hereinafter simply referred to as IR.LINK system) is used to edit the module information retained by the S10mini series IR.LINK module, monitor a refresh cycle, and to register interrupt tasks through operations similar to those used by Windows® application users.

1.2 Hardware and Software Requirements

Using each system requires the following hardware and software.

<Personal Computers (hereafter abbreviated as PC)>

Item \ OS	Windows® 95 (*1)	Windows® 2000 (*1)	Windows® XP (*1)
	Windows® 98 (*1)		(*2)
CPU	Pentium 133 MHz or more		Pentium 300 MHz or more
Memory (RAM)	32 MB or more	64 MB or more	128 MB or more
Free hard disk capacity (*3)	20 MB or more/system (However, 10 MB or more/system for OS loading and option module support software)		
Floppy disk drive	1 unit or more (required to install software by FD)		
CD-ROM drive	1 unit or more (required to install software by CD-ROM)		
Ethernet (10BASE-T)	1 port or more (required to connect a PC with the ET.NET module)		
Serial (D-sub 9-pin)	1 port or more (required to connect the PCs with a PC by RS-232C or set an IP address for the ET.NET module)		
PC card (conforming to the PC Card Standard (JEITA V4.2) TYPE II or TYPE III)	1 slot or more (required to connect a PC with the parallel interface module (LWZ400). At this time, the following GP-IB card is also required.) GP-IB card: PCMCIA-GPIB (Model: 777438-02) (manufactured by National Instruments Corporation)		
Display	Resolution of 800 × 600 pixels or more		
Microsoft® Internet Explorer	Version 4.01 or later		

(*1) For the OS service pack, refer to the attached reference materials for software.

(*2) No.10 and No.28 in <Table of Systems Supported by Windows® 2000 and Windows® XP> in “PREFACE” are excepted.

(*3) This is a capacity required to install each system. A free capacity to save user programs is also required.

<Hardware other than PC>

- CPU module for S10mini series
- Power supply for S10mini series
- Backboard for S10mini series
- Connection cable between the personal computer and PCs
- Remote I/O stations, other power supplies and backboards, cards, and wiring as required

NOTICE

Users of this product require knowledge of the Windows® environment and user interface. The IR.LINK system conforms to the Windows® standard. This manual is intended for users who have mastered the basic usage of Windows®.

NOTE FOR PERSONAL COMPUTER SETTING

When you use a personal computer with the suspend function, disable the function. The personal computer may malfunction if the suspend function remains enabled during execution of the IR.LINK system.

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2 INSTALLATION

2 INSTALLATION

2.1 Installing the System (*)

First, check if your CD is correct.

To install each system, double-click the Setup.exe file saved in the DISK1 folder of the system CD. After installing it, an installed program window is not displayed.

To install each system, install Microsoft® Internet Explorer 4.01 or later. If it is not installed, install each system after installing it.

NOTE

- To operate each system, install Microsoft® Internet Explorer 4.01 or later. If it is not installed, each system does not operate normally.
- Before installing each system, be sure to terminate such a program residing in the memory as virus monitoring software. If each system is installed without terminating the program, an error may occur. In this case, uninstall the system by referring to “2.2 Uninstalling the System” and terminate all Windows® programs. Then, install each system once again.
- To install and uninstall each system by using Windows® 2000, set “Administrator” or “Member of Administrators” as the user account to be logged on.
- To install and uninstall each system by using Windows® XP, set “Computer administrator” as the user account to be logged on. If “Account with limitations” is set, each system does not operate normally.

(*) No.10 and No.28 in <Table of Systems Supported by Windows® 2000 and Windows® XP> in “PREFACE” are excepted.

2.2 Uninstalling the System (*)

To uninstall each system for version-up, observe the following procedure.

(1) Uninstalling from Windows® 95 or Windows® 98

Open [Settings] in the [Start] menu – [Control Panel]. Double-click [Add/Remove Programs], select “Each System” by the [Install/Uninstall] tab, and click the button. When the [Confirm File Deletion] window is displayed, click the button.

(2) Uninstalling from Windows® 2000

Open [Settings] in the [Start] menu – [Control Panel]. Double-click [Add/Remove Programs], click [Change or Remove Programs], select “Each System,” and click the button. When the [Confirm File Deletion] window is displayed, click the button.

(3) Uninstalling from Windows® XP

Open ([Settings] –) [Control Panel] in the [Start] menu. Double-click [Add or Remove Programs], click [Change or Remove Programs], select “Each System,” and click the button. When the [Confirm File Deletion] window is displayed, click the button.

When a shortcut of each system executable file has been created on the desktop, etc. delete this shortcut.

NOTE

- When the [Remove Shared File?] window is displayed while each system is uninstalled on Windows®, click not to delete the shared file.
- To install and uninstall each system by using Windows® 2000, set “Administrator” or “Member of Administrators” as the user account to be logged on.
- To install and uninstall each system by using Windows® XP, set “Computer administrator” as the user account to be logged on.
- If the [Add/Remove Programs] window is locked (inoperable) when each system is uninstalled by using Windows® 2000, log off from [Shut Down] in the [Start] menu of Windows®, and then log on again on the [Log On to Windows] window.

(*) No.10 and No.28 in <Table of Systems Supported by Windows® 2000 and Windows® XP> in “PREFACE” are excepted.

2 INSTALLATION

2.3 Starting Up the System (*)

- (1) The system to be installed by each system is automatically registered in the [Start] menu of Windows®. From this [Start] menu, select [Programs (All Programs)] – [Hitachi S10] – “Each System” to start the system.

If the logged-on user name in installing each system is different from the user name in starting each system, each system is not displayed in the [Start] menu. In this case, create a shortcut of the executable file (extension .exe) for each system shown below and then double-click this shortcut to start each system.

<Executable File Storage Directory Table>

No.	System name	Type	Executable file storage directory (*1)	Executable file name
1	S10Tools SYSTEM	S-7890-01	C:\Hitachi\S10	S10Ladder.exe
				S10Tool.exe
2	LADDER CHART SYSTEM	S-7890-02	C:\Hitachi\S10\2ALDC	S10Ladder.exe
3	HI-FLOW SYSTEM	S-7890-03	C:\Hitachi\S10\HF	S10Tool.exe
4	CPMS LOADING SYSTEM	S-7890-04	C:\Hitachi\S10\CPMS	Cpms.exe
5	CPMSE LOADING SYSTEM	S-7890-05	C:\Hitachi\S10\CPMSE	Cpmse.exe
6	CPMS DEBUGGER SYSTEM	S-7890-06	C:\Hitachi\S10\DEBUG	Debugger.exe
7	CPMSE DEBUGGER SYSTEM	S-7890-07	C:\Hitachi\S10\DEBUGE	DebuggerE.exe
8	GP-IB LOADING SYSTEM	S-7890-08	C:\Hitachi\S10\GPIB	Gpib.exe
9	BACKUP RESTORE SYSTEM	S-7890-09	C:\Hitachi\S10\BACKUP	SysAllSaveLoad.exe
10	NX/Tools-S10 SYSTEM	S-7890-13	C:\Hitachi\S10\NX	NXTool.exe
11	4α LADDER CHART SYSTEM	S-7890-17	C:\Hitachi\S10\4ALDC	S10Ladder_4A.exe
12	4αH LADDER CHART SYSTEM	S-7890-18	C:\Hitachi\S10\4AHLDC	S10Ladder_4AH.exe
13	LADDER COMMENT CONVERTER SYS	S-7890-19	C:\Hitachi\S10\CFCONV	Cfconv.exe
14	HIGH SPEED REMOTE I/O SYSTEM	S-7890-21	C:\Hitachi\S10\HISRIO	HiSpeedRIO.exe
15	CPU LINK SYSTEM	S-7890-22	C:\Hitachi\S10\CPULINK	CpuLink.exe
16	4ch ANALOG PULSE COUNTER SYS	S-7890-23	C:\Hitachi\S10\ANALOG	AnalogPuls.exe
17	EXTERNAL SERIAL LINK SYSTEM	S-7890-24	C:\Hitachi\S10\EXLINK	ExLink.exe
18	S10ET LINK SYSTEM	S-7890-25	C:\Hitachi\S10\ETLINK	EtherNet.exe
19	J.NET SYSTEM	S-7890-27	C:\Hitachi\S10\JNET	JNet.exe
20	OD.RING/SD.LINK SYSTEM	S-7890-28	C:\Hitachi\S10\ODRING-SDLINK	ODRing.exe
21	ET.NET SYSTEM	S-7890-29	C:\Hitachi\S10\ETNET	Et_Net.exe
22	FL.NET SYSTEM	S-7890-30	C:\Hitachi\S10\FLNET	FLnet.exe
23	D.NET SYSTEM	S-7890-31	C:\Hitachi\S10\DNET	DNet.exe
24	LADDER CHART MONITOR SYSTEM	S-7890-34	C:\Hitachi\S10\2ALDCM	S10LadderM.exe
25	HI-FLOW MONITOR SYSTEM	S-7890-35	C:\Hitachi\S10\HFM	S10ToolM.exe
26	IR.LINK SYSTEM	S-7890-36	C:\Hitachi\S10\IRLINK	IrLink.exe

(*1) Directory name when “C” is the drive name of installing destination.

(*) No.10 and No.28 in <Table of Systems Supported by Windows® 2000 and Windows® XP> in “PREFACE” are excepted.

- (2) The [IR.LINK SYSTEM] window is displayed, showing that IR.LINK system has been started up.

Click the desired command (See “3 COMMANDS”) button.

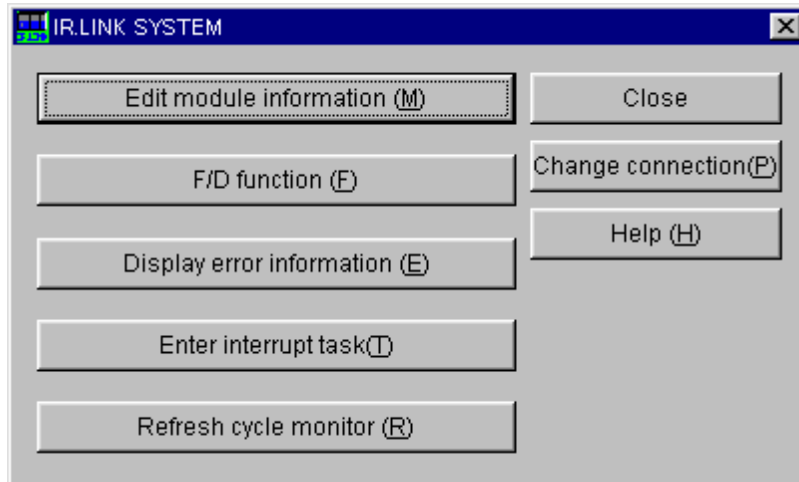


Figure 2-1 [IR.LINK SYSTEM] Window

2.4 Terminating the System

IR.LINK system can be terminated by clicking the or button on the [IR.LINK SYSTEM] window shown in Figure 2-1.

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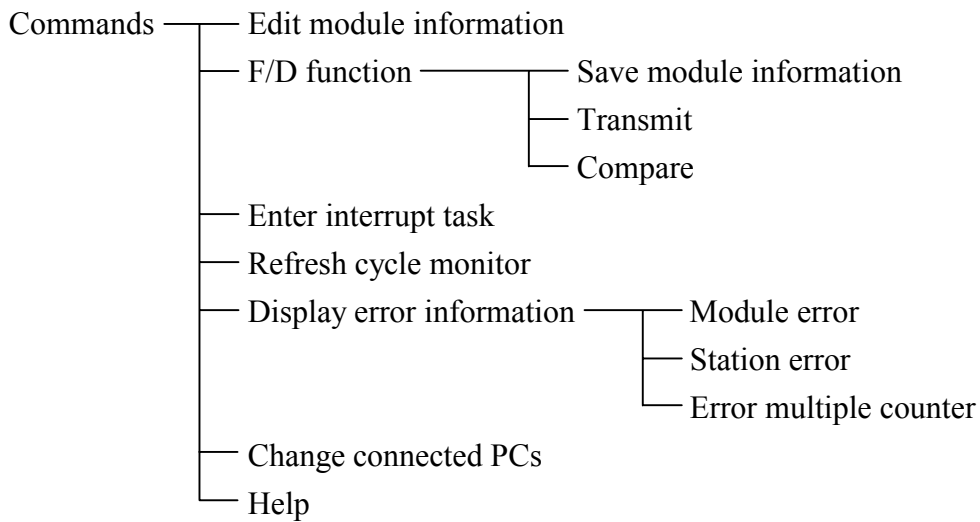
3 COMMANDS

3 COMMANDS

3.1 Command System

The command system of the IR.LINK system is shown below.

Each of these commands is described in Section 3.2 and later. For details on each command, refer to Help.



3.2 Editing Module Information

Function: Edits the information of the IR.LINK module and write the edited information into PCs.

Operation: See the operation procedure below.

- (1) Click on the Edit module information button in the [IR.LINK SYSTEM] window (Figure 2-1).
- (2) The [Edit information] window is displayed.

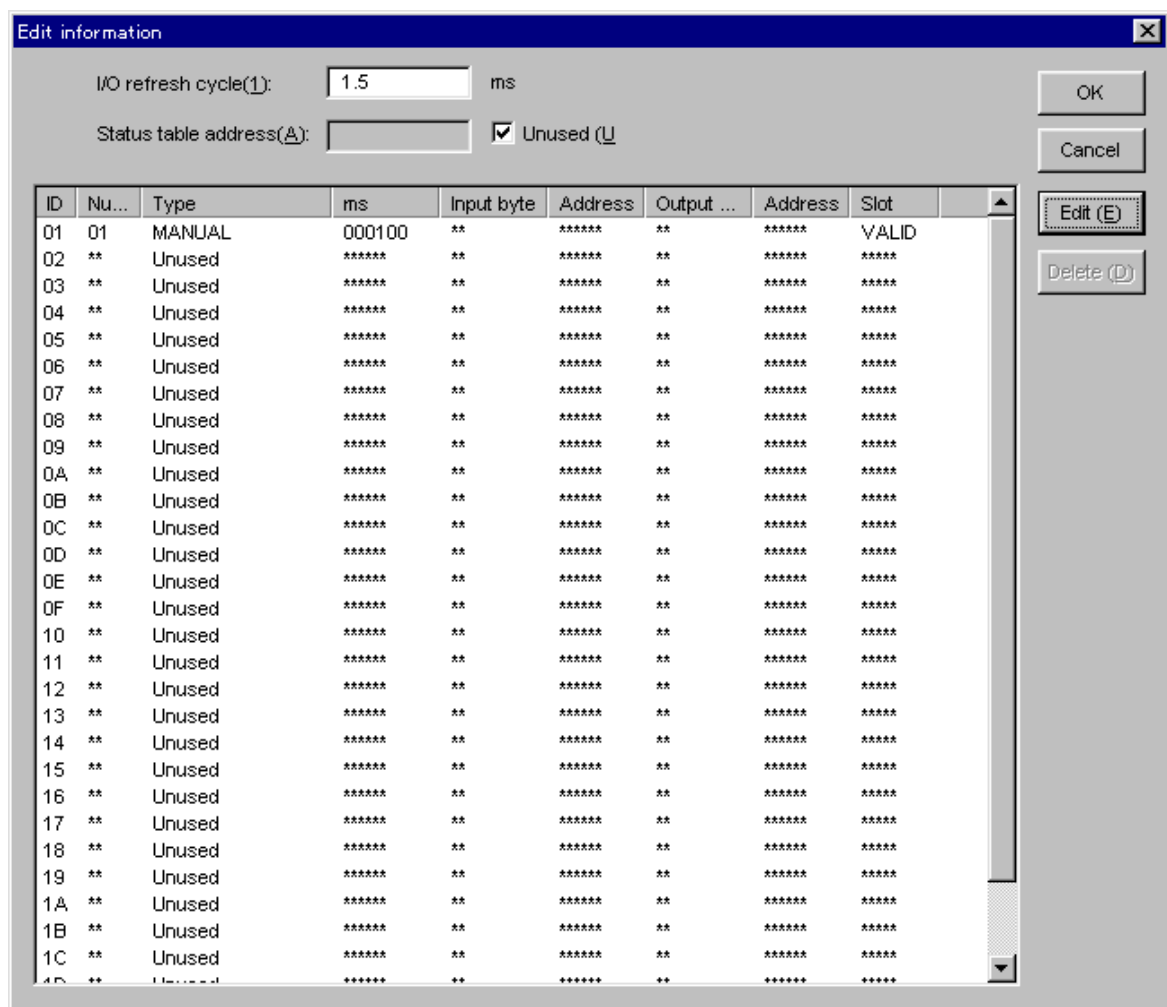


Figure 3-1 [Edit information] Window

- (3) Enter a value of “I/O refresh cycle” ranging from 1.5, 2, 2.5, 3 to 3000 ms. If values other than set is entered, the “The refresh cycle time is out of range (1.5, 2, 2.5, 3 to 3000)” message dialog box is displayed.

3 COMMANDS

- (4) To use the status table, click off (no check) the check box provided and enter “Status table address.” (When the “Unused” check box is ON, the “Status table address” cannot be entered.) When the status table is not in use, click the “Unused” check box ON. The list of assignable starting addresses is shown in Table 3-1. For details of how to use the status table (NET status), refer to the “S10mini HARDWARE MANUAL OPTION IR.LINK (Manual number SME-1-117).”

Table 3-1 Registrable Status Table Addresses

Registerable Area		Assignable address range	
Address with symbols	Address	Address with symbols	Address
X000 to XFFF	/0A0000 to /0A1FFE	X000 to XFFF	/0A0000 to /0A1FFE
J000 to JFFF	/0A2000 to /0A3FFE	J000 to JFFF	/0A2000 to /0A3FFE
Y000 to YFFF	/0A4000 to /0A5FFE	Y000 to YFFF	/0A4000 to /0A5FFE
Q000 to QFFF	/0A6000 to /0A7FFE	Q000 to QFFF	/0A6000 to /0A7FFE
G000 to GFFF	/0A8000 to /0A9FFE	G000 to GF80	/0A8000 to /0A9F00
R000 to RFFF	/0AC000 to /0ADFFE	R000 to RFFF	/0AC000 to /0ADFFE
M000 to MFFF	/0AE000 to /0AFFFE	M000 to MF80	/0AE000 to /0AFF00
E400 to EFFF	/0BC800 to /0BDFFE	E400 to EF80	/0BC800 to /0BDF00

For the use of the status information, 128 points are unconditionally withdrawn from the indicated address of the status table. Therefore, the maximum address that can be assigned for G, M and E area is (G/M/E)F80 instead of (G/M/E)FFF.

- (5) To define input/output between each station, highlight the “ID” (see Figure 3-1) to be edited then click the button.
- (6) The [Edit station information] window is displayed.

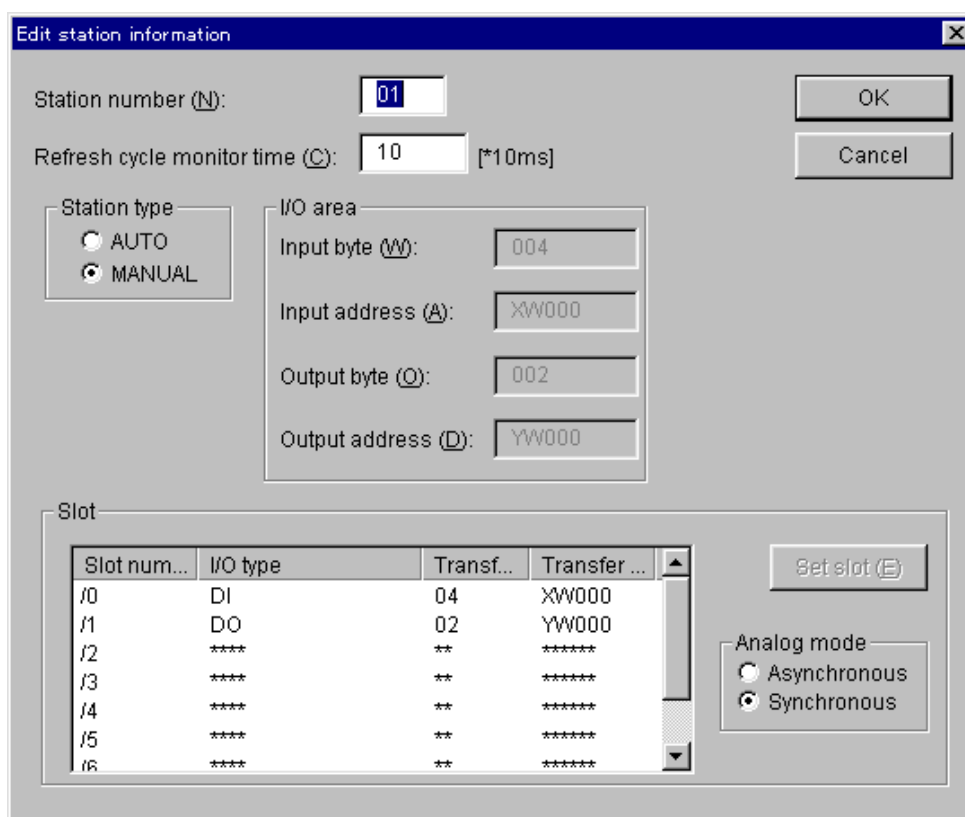


Figure 3-2 [Edit station information] Window

As default, existing information of the station will appear if it already exists. If the information does not exist (station information unregistered), the following will be displayed.

<Default value of the station ID of unregistered station information>

Station number: 00
 Refresh cycle monitor time: 0 ms
 Station type: Not selected
 I/O area: Entry disabled
 Slot: Entry disable status
 Analog mode: Not selectable

To edit or to make a new registration, click the button in the [Edit station information] window, when completed. Simply click on the button if you do not wish to save any changes. The range of values to be entered in each box in the [Edit station information] window is listed in the following page.

3 COMMANDS

<Effective range of station information>

- Station number: 1 to 7F (in decimal). For details about station numbers, refer to the “S10mini HARDWARE MANUAL OPTION IR.LINK (Manual number SME-1-117).”
- Refresh cycle monitor time: 0 to 65535 (in decimal). 10 ms is the unit of measure. When 0 is chosen, no refresh cycle monitor will be performed.
- Station type: Select either “AUTO” or “MANUAL.” When “AUTO” is selected, the “I/O area” must be set. (“Slot” section does not need to be set.) When “MANUAL” is selected, “Slot” section must be set. (The “I/O area” does not need to be set.)
- I/O area: Either input or output byte can be set to 0, but not both simultaneously. Make sure that the addition of both input and output bytes do not exceed /100. Redundancy of the I/O area is not allowed between each station.
- Input byte: Specifies the number of bytes of the input module. The setting range is from /0 to /100 (in hexadecimal, “/” is not necessary).
- Input address: Specify the starting address to be assigned to the input module. Refer to Table 3-2 for the addresses that can be specified.
- Output byte: Specifies the number of bytes of the output module. The setting range is from /0 to /100 (in hexadecimal, “/” is not necessary).
- Output address: Specify the starting address to be assigned to the output module. Refer to Table 3-2 for the addresses that can be specified.
- Analog mode: Select either “Asynchronous” or “Synchronous.” When “Synchronous” is selected, input/output process of the analog value will be performed in accordance with the timing requested by the station side (IR.STATION). When “Asynchronous” is selected, the process will be performed regardless of the timing requested by the master side (processed according to the idle time of the station side).

Table 3-2 Specifiable I/O Area Address and Redirecting Address

Registrable area		Specifiable address range	
Address with symbol	Address	Address with symbol	Address
XW000 to XWFF0	/0E0000 to /0E01FE	XW000 to (*)	/0E0000 to (*)
JW000 to JWFF0	/0E0200 to /0E03FE	JW000 to (*)	/0E0200 to (*)
YW000 to YWFF0	/0E0400 to /0E05FE	YW000 to (*)	/0E0400 to (*)
QW000 to QWFF0	/0E0600 to /0E07FE	QW000 to (*)	/0E0600 to (*)
GW000 to GWFF0	/0E0800 to /0E09FE	GW000 to (*)	/0E0800 to (*)
RW000 to RWFF0	/0E0C00 to /0E0DFE	RW000 to (*)	/0E0C00 to (*)
MW000 to MWFF0	/0E0E00 to /0E0FFE	MW000 to (*)	/0E0E00 to (*)
EW400 to EWFF0	/0E1C80 to /0E1DFE	EW400 to (*)	/0E1C80 to (*)
FW000 to FWBFF	/0E2000 to /0E37FE	FW000 to (*)	/0E2000 to (*)
— — —	/100000 to /4FFFFFFE	— — —	/100000 to (*)

(*) The specifiable addresses dynamically change depending on the number of bytes input or output.

Last address of the registrable area \leq Specified address + Number of bytes input or output (transfer)

3 COMMANDS

(7) Selecting “MANUAL” as the “Station type” enables “Slot” setting.

When the unknown value “****” appear in the “I/O type” of “Slot” section, the slot information of “Slot number” is not yet registered. Click an optional “Slot number” (/0 to /7) and click the button.

When the [Set slot information] window is displayed, enter values for each item. When slot information entry is completed, click the button to set the information. If you want to cancel the entry, click the button.

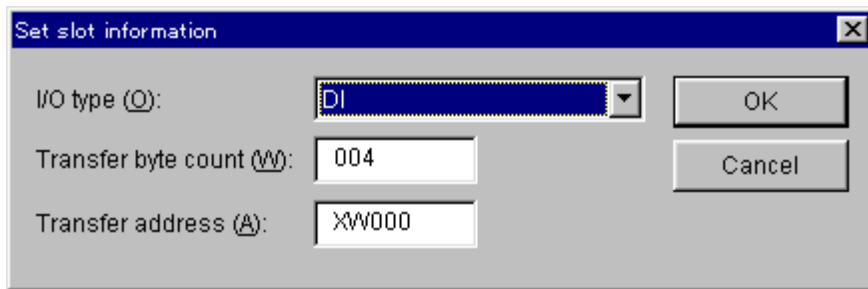


Figure 3-3 [Set slot information] Window

<Items in the [Set slot information] window>

- I/O type: Select from 7 choices shown below in accordance with the I/O module mounted in each slot. At new registration, the default of I/O type is “Delete.”
- Delete: Select “I/O module not mounted” to delete the registered I/O module.
- DI: Select this when the mounted module is a digital input.
- DO: Select this when the mounted module is digital output.
- AI: Select this when the mounted module is an analog input and the module mode is set to 1.
- AO: Select this when the mounted module is an analog output and the module mode is set to 1.
- S10 AI (4ch): Select this when the mounted module is an analog input and the module mode is set to 2.
- S10 AO (4ch): Select this when the mounted module is an analog output and the module mode is set to 2.
- S10 PCT (pulse counter): Select this when the mounted module is a pulse counter.
- Transfer byte count: Specify the number of bytes to be transferred from range of /1 to /10 (in hexadecimal without “/”). If any value other than /1 to /10 is selected, the “The transfer byte is out of range (/01 to /10)” message dialog box is displayed.
- Transfer address: Specify the starting address of the transfer area. The specifiable area is shown in Table 3-2.

- (8) After completing the entire setting, click on the **OK** button on the [Edit information] window (Figure 3-1). Click the **Cancel** button if there is no change. When the **OK** button is clicked, the information edited on the [Edit information] window, [Edit station information] window (Figure 3-2), and [Set slot information] window (Figure 3-3) will be written into the memory of the IR.LINK module of PCs. If the **Cancel** button is clicked, [Edit information] window will be closed without information being saved.

3.3 F/D Function

Function: Saves the given information to the IR.LINK module, sends such information to the PCs, and compares the existing system information between IR.LINK system and the PCs.

Operation: See the operation procedure below.

- (1) Click the **F/D function** button on the [IR.LINK SYSTEM] window.
- (2) The [F/D function] window is displayed.

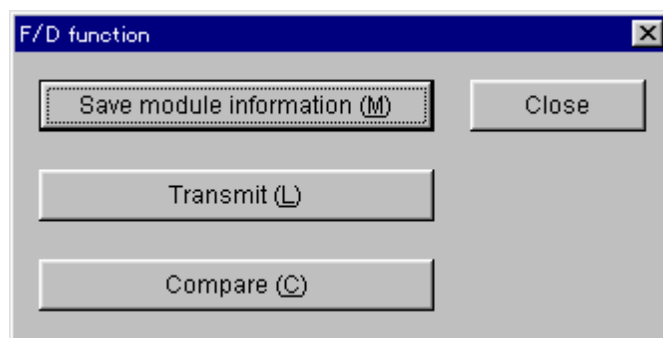


Figure 3-4 [F/D function] Window

3 COMMANDS

3.3.1 Saving module information

Function: Saves the given system information to the IR.LINK module.

Operation: See the operation procedure below.

- (1) Click the Save module information button on the [F/D function] window (Figure 3-4).
- (2) The [Save As] window is displayed.

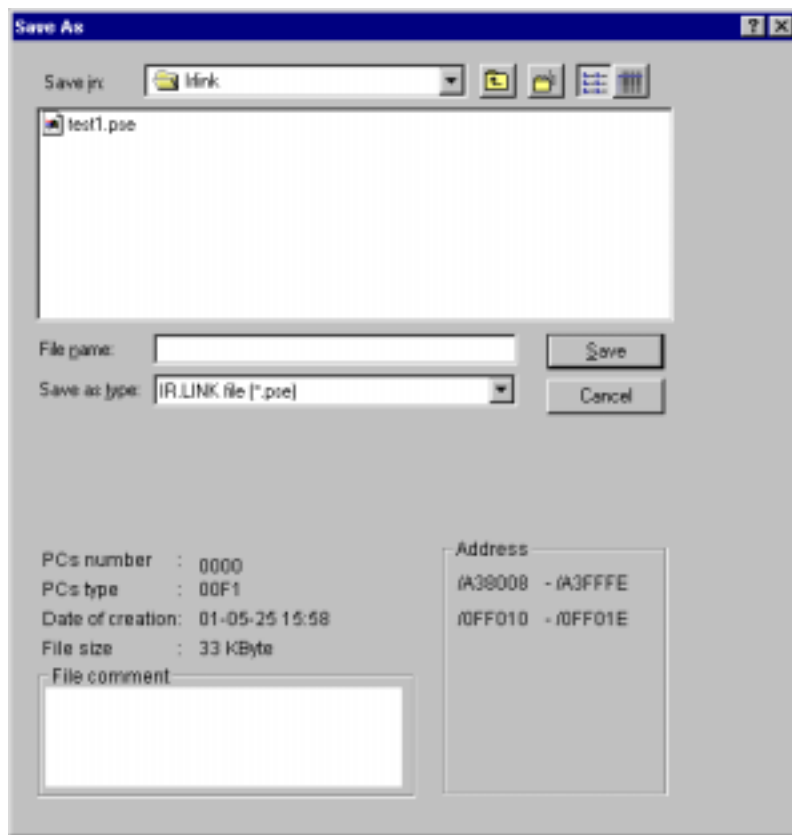


Figure 3-5 [Save As] Window

Enter a “File name” for the file that contains system information to be saved. When an existing file is selected instead of giving a name to the new file, new information will overwrite the existing content of the selected file.

You may enter a comment for the file up to 128 characters as an option. “Save as type,” “PCs number,” “Date of creation,” “File size” (file size after saving), and “Address” (area of the IR.LINK module to be saved) are automatically displayed. The address varies depending on the setting (Main/Sub) of the IR.LINK module address. For module setting, refer to the “S10mini HARDWARE MANUAL OPTION IR.LINK (Manual number SME-1-117).”

Addresses where the information is saved when the module Main is selected:

/A38008 to /A3FFFE

/0FF010 to /0FF01E

Address where the information is saved when the module Sub is selected:

/AB8008 to /ABFFFE

/0FF030 to /FF03E

- (3) Click the button (This will start saving the system information of the IR.LINK module) when the setting is completed. [Receive file] window (Figure 3-6) is displayed while saving. Upon completion of the saving, [IR.LINK] dialog box (Figure 3-7) that informs you of the completion is displayed. Click button to close it. If you do not wish to save the information, click button on the [Save As] window.

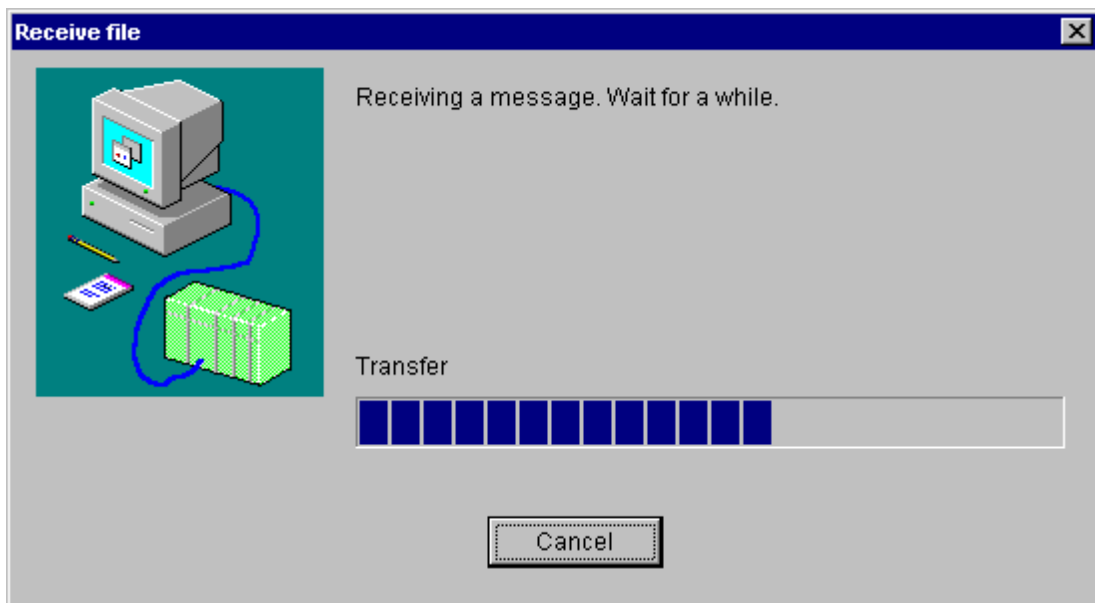


Figure 3-6 [Receive file] Window (System Information Receive in Progress)



Figure 3-7 [IR.LINK] Dialog Box (System Information Receive Completion)

3 COMMANDS

3.3.2 Sending

Function: Transmit the IR.LINK system information saved by the function described in “3.3.1 Saving module information” to PCs.

Operation: See the operation procedure below.

- (1) Click the Transmit button on the [F/D function] window (Figure 3-4).
- (2) [Open] window is displayed. Either enter in the “File name” or click the file to be sent. Only when the file is selected, “PCs number,” “PCs type,” “Date of creation,” “File size,” “File comment,” and “Address” of the IR.LINK system information (file) to be sent will be displayed.



Figure 3-8 [Open] Window

Prior to the transmission, confirm that the address of the IR.LINK system information to be sent and that of the recipient are identical. The setting of the recipient IR.LINK must be set as “Main” when a file saved with module setting set as “Main” is to be transmitted.

- (3) When the file name to be sent is determined, click the button. (The IR.LINK system information is sent.) During transmission, the window shown in Figure 3-9 will be displayed. Upon completion of the transmission, the dialog box shown in Figure 3-10 is displayed. Click the button to close it. If you do not wish to send the file, click the button in the [Open] window.

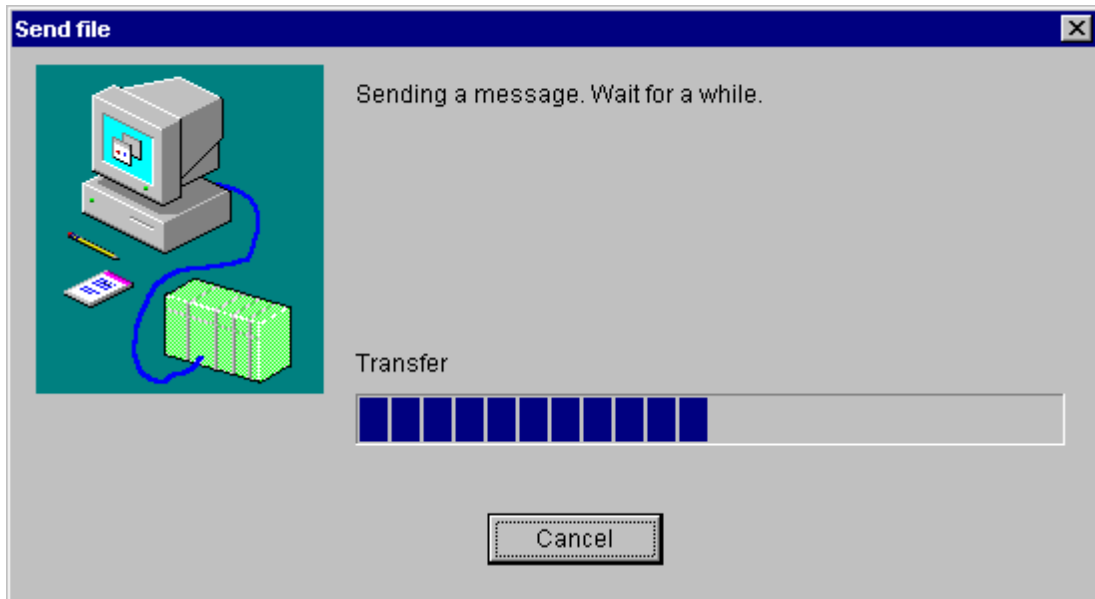


Figure 3-9 [Send file] Window (System Information Transmission in Progress)



Figure 3-10 [IR.LINK] Dialog Box (System Transmission Completion)

Note: Do not click the button during the transmission of IR.LINK system information. If it is clicked for some reason, it is necessary to reset the PCs or turn it OFF and then back ON again.

3 COMMANDS

3.3.3 Comparing

Function: Compares the existing system information between IR.LINK and the PCs.

Operation: The operation procedure used for interaction with this command is the same as with the Send command.

See “3.3.2 Sending.”

Note: When a comparison is made, a conflict may occur in the areas listed below. If no other conflict is encountered, the IR.LINK system information in the saved file matches the contents of the PCs memory. If any other conflict is encountered, the contents of the saved file do not match the contents of the memory.

IR.LINK module (main) mounted: /A3BFFE

IR.LINK module (sub) mounted: /ABBFFE

3.4 Registering Interrupt Task

Function: Registers interrupt tasks. Up to 8 tasks can be registered.

Operation: See the operation procedure below.

- (1) Click the button on the [IR.LINK SYSTEM] window (Figure 2-1).
- (2) The [Enter interrupt task] window is displayed.

Enter interrupt I/O	Task number	Start factor
0	2	10
1	3	1
2		
3		
4		
5		
6		
7		

Figure 3-11 [Enter interrupt task] Window

If interrupt tasks have been already registered, the “Task number” and “Start factors” for the corresponding “Enter interrupt I/O” will be displayed. If any interrupt task is not registered, both “Task number” and “Start factor” boxes are empty. The setting range of “Task number” and “Start factor” are as follows.

<Setting range of Task numbers and Start factors>

Task number: 1 to 127 (in decimal)

Start factor: 0 to 16 (in decimal)

<Deletion of interrupt task>

To delete an interrupt task, delete all the values in the “Task number” and “Start factor” box and click the button.

3 COMMANDS

- (3) When name entry is completed, click the **OK** button to register the function. When appropriate value of a “Task number” and “Start factor” are confirmed, registration of the interrupt task is performed. If you want to cancel the entry, click the **Cancel** button.

Note: User should perform the registration of the interrupt task by using the CPMSE debugger system. Release of the interrupt task should be processed by using user program. (Program the interrupt task release process as initial task.) The task will not start unless user implements the release of the interrupt task. If an unregistered task number is specified for an interrupt task (registration from the Enter interrupt task screen only), a program error occurs.

3.5 Monitoring Refresh Cycle

Function: Monitors (measures) the time taken for I/O Refresh Cycle.

Operation: See the operation procedure below.

- (1) Click the **Refresh cycle monitor** button on the [IR.LINK SYSTEM] window (Figure 2-1).
- (2) The [Refresh cycle monitor] window is displayed.

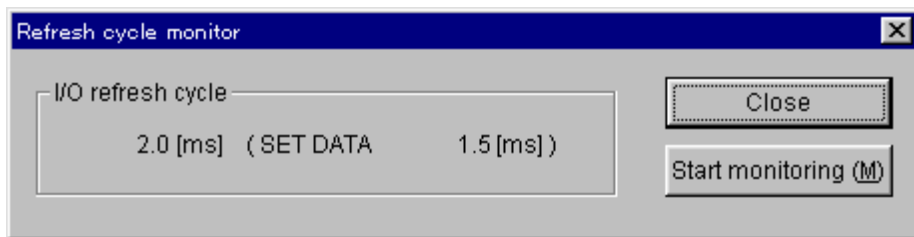


Figure 3-12 [Refresh cycle monitor] Window

- (3) To start refresh cycle monitoring, click the **Start monitoring** button. To stop refresh cycle monitoring, click the **Stop monitoring** button.
- When you want to close the [Refresh cycle monitor] window, click the **Close** button.

3.6 Displaying Error Information

Function: Selects Module error, Station error, or Error multiple counter regarding the error information display of the module.

Operation: See the operation procedure below.

- (1) Click the Display error information button on the [IR.LINK SYSTEM] window (Figure 2-1).
- (2) The [Error information] window is displayed.

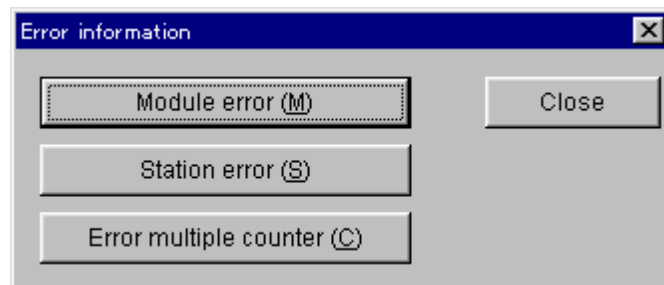


Figure 3-13 [Error information] Window

3 COMMANDS

3.6.1 Module error

Function: Display the error information retained by the IR.LINK module.

Operation: See the operation procedure below.

- (1) Click the **Module error** button on the [Error information] window (Figure 3-13).
When the module is normal, the “The module is normally operating.” message dialog box is displayed. If the module is not functioning well, the [Module error] window is displayed.

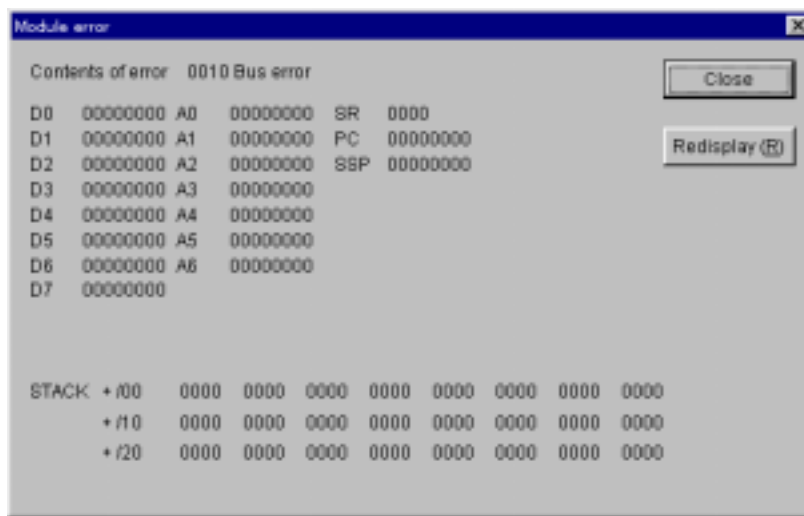


Figure 3-14 [Module error] Window

For the details of the errors, refer to the “S10mini HARDWARE MANUAL OPTION IR.LINK (Manual number SME-1-117).”

- (2) Clicking the **Redisplay** button displays the latest error information.
To close the [Module error] window, click the **Close** button.

3.6.2 Station error

Function: Displays the error information retained by each station of the IR.LINK module.

Operation: See the operation procedure below.

- (1) Click the button on the [Error information] window (Figure 3-13). Then, the [Station error] window is displayed.

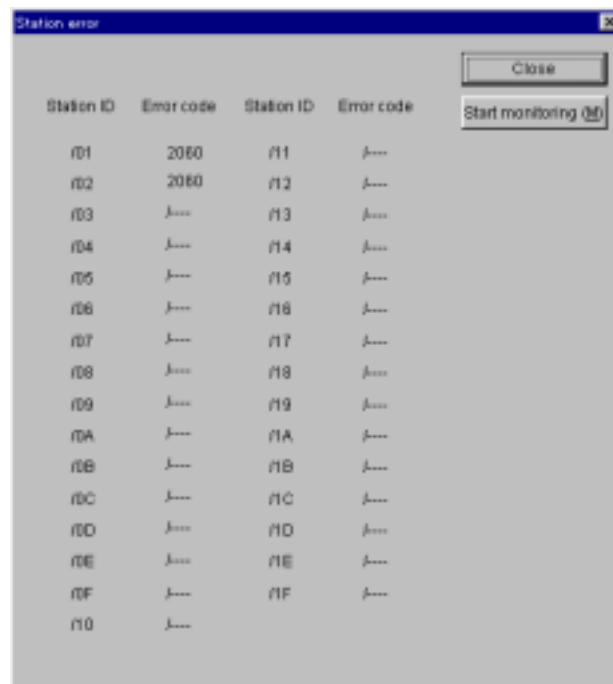


Figure 3-15 [Station error] Window

Error information is displayed corresponding to each station ID. When the station is properly functioning or has not been registered, the error code for the station ID would be “/...”. Error code other than “/...” indicates that an error has occurred in the station. For details of the error codes, refer to the “S10mini HARDWARE MANUAL OPTION IR.LINK (Manual number SME-1-117).”

- (2) To start monitoring, click the button. To stop monitoring, click the button.

To close the [Station error] window, click the button.

3 COMMANDS

3.6.3 Error multiple counter

Function: Displays the error multiple counter of each station that is under the control of the IR.LINK module.

Operation: See the operating procedure below.

- (1) Click the **Error multiple counter** button on the [Error information] window (Figure 3-13). The [Error multiple counter] window is displayed.

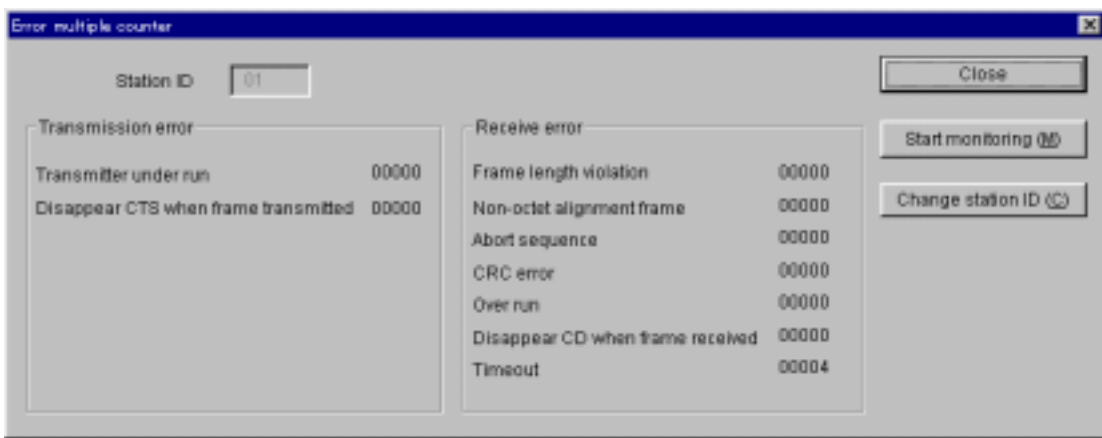


Figure 3-16 [Error multiple counter] Window

The [Error multiple counter] window is displayed per each station. “Station ID” = “01” is displayed at default. Click the **Change station ID** button to change the ID as required. When the **Change station ID** button is clicked, the **Change station ID** button transforms into the **Confirm** button. Enter a “Station ID” (/01 to /1F) and click the **Confirm** button. The [Error multiple counter] window of the station you wish to view will be displayed. If the specified station ID is invalid, the “The station ID is out of range (/01 to /1F)” message dialog box is displayed.

- (2) To start monitoring, click the **Start monitoring** button. To stop monitoring, click the **Stop monitoring** button.
To close the [Error multiple counter] window, click the **Close** button.

Note: Station IDs cannot be changed during monitoring.

3.7 Changing Connected PCs

Function: Sets a specified communication type for the PCs and personal computer.

Operation: See the operation procedure below.

- (1) Click the **Change connection** button on the [IR.LINK SYSTEM] window (Figure 2-1).
- (2) The [Communication type] window is displayed.

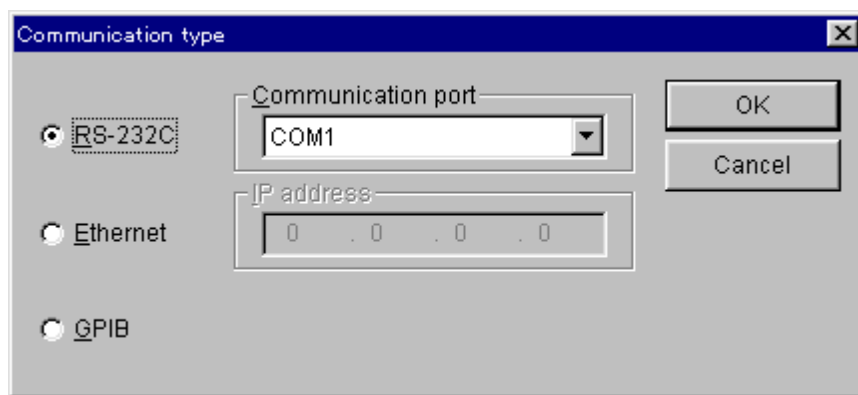


Figure 3-17 [Communication type] Window (PCs Connection Change)

- (3) If the desired communication type is RS-232C, click the “RS-232C” radio button and select a “Communication port.”

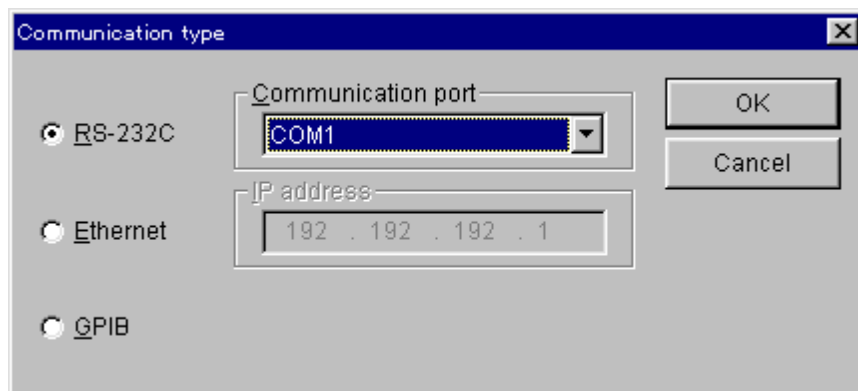


Figure 3-18 [Communication type] Window (RS-232C Port Selection)

3 COMMANDS

- (4) If it is Ethernet, click the “Ethernet” radio button and enter the “IP address” of the connection destination.

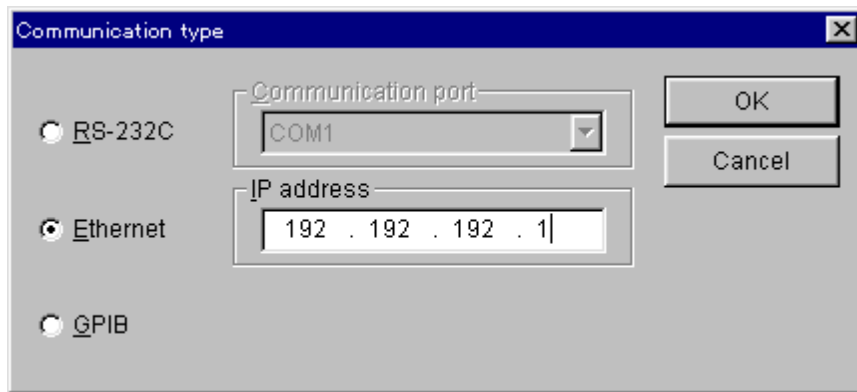


Figure 3-19 [Communication type] Window (Ethernet Connection)

- (5) When communication type selection is completed, click the **OK** button to set the selection. If you want to cancel the selection, click the **Cancel** button.

NOTE

When connecting a personal computer to the S10mini series, select RS-232C or Ethernet because the S10mini series does not support GP-IB.