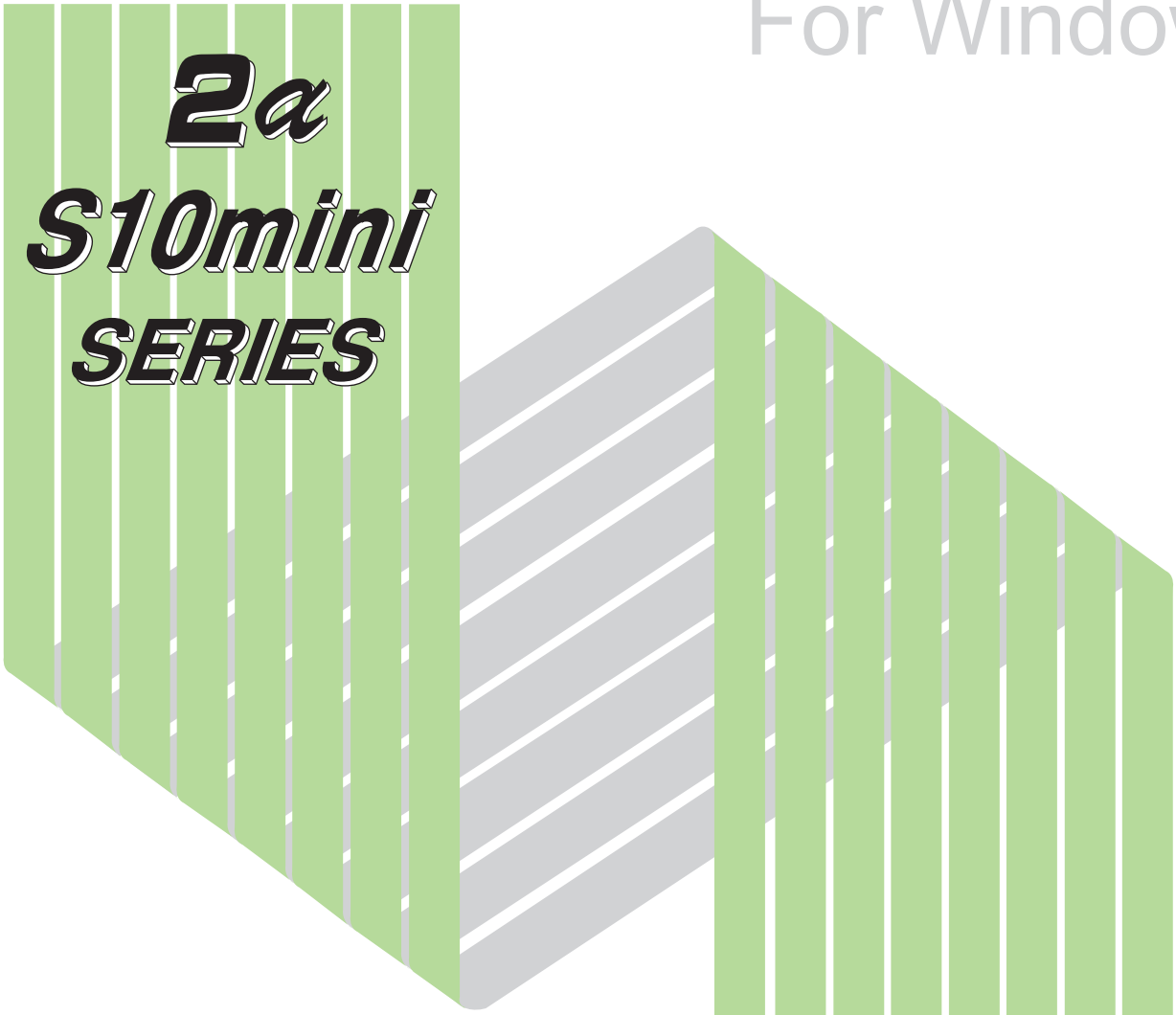
HITACHI
S10α SERIES

SOFTWARE MANUAL
OPERATION

NX/Tools-S10
For Windows®

2α
S10mini
SERIES



Applicable to :

HITACHI-S10/2α	NESP-S25E
HITACHI-S10/2α E	NESP-2α E
HITACHI-S10/2α H	NESP-2α H
HITACHI-S10/2α Hf	NESP-2α Hf
S10mini model S	
S10mini model H	
S10mini model F	
S10mini model D	

SAE-3-137 (C)

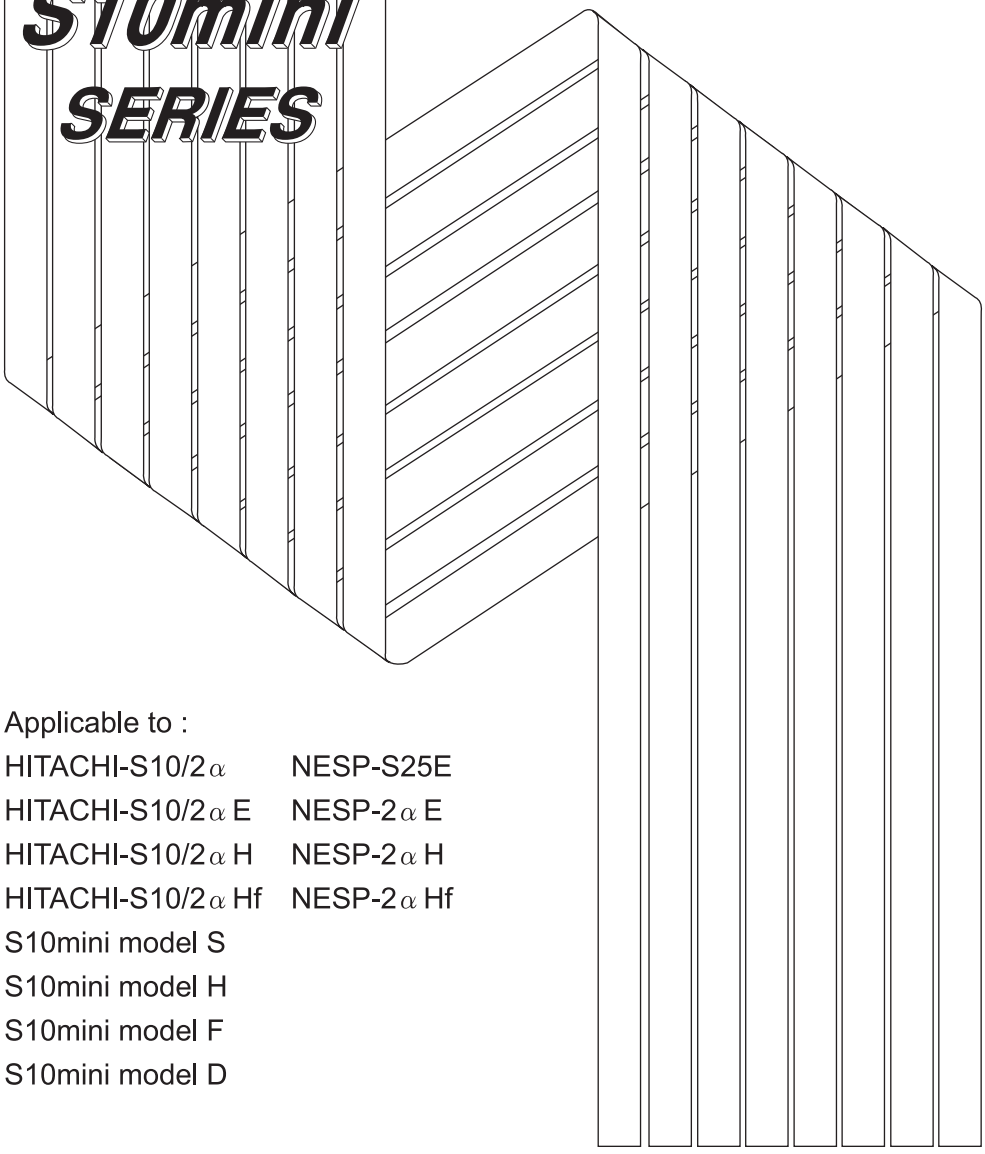
HITACHI

HITACHI
S10α SERIES

2α
S10mini
SERIES

SOFTWARE MANUAL
OPERATION

NX/Tools-S10
For Windows®



Applicable to :

HITACHI-S10/2α	NESP-S25E
HITACHI-S10/2α E	NESP-2α E
HITACHI-S10/2α H	NESP-2α H
HITACHI-S10/2α Hf	NESP-2α Hf
S10mini model S	
S10mini model H	
S10mini model F	
S10mini model D	

HITACHI

NOTE

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- Furnish protective circuits externally and make a system design in a way that ensures safety in system operations and provides adequate safeguards to prevent personal injury and death and serious property damage even if the product should become faulty or malfunction or if an employed program is defective.
- If an emergency stop circuit, interlock circuit, or similar circuit is to be formulated, it must be positioned external to the programmable controller. If you do not observe this precaution, equipment damage or accident may occur when the programmable controller becomes defective.
- Before changing the program, generating a forced output, or performing the RUN, STOP, or like procedure during an operation, thoroughly verify the safety because the use of an incorrect procedure may cause equipment damage or other accident.

"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 NX/Tools-S10 system and NX/HOST-S10 system.

This NX/Tools-S10 system runs on a personal computer and performs setups required for it and those for the NX/HOST-S10 system.

This manual describes operating procedures for the NX/Tools-S10 system and programming procedures for NX/HOST-S10.

This manual is applicable to the following system versions.

System name/version
NX/Tools-S10 For Windows®　07-02

For the ET.NET module, refer to the following manuals that are supplied with the module.

<Related manuals>
HARDWARE MANUAL　OPTION　ET.NET
(Manual number SAE-2-124 (For 2α series))
(Manual number SAE-1-103 (For S10mini series))

See the following list when you use the NESP (Nissan Electronic Sequence Processor) series.

【HITACHI-S10α series】		【NESP series】
HITACHI-S10/2α	·····	NESP-S25E
HITACHI-S10/2αE	·····	NESP-2αE
HITACHI-S10/2αH	·····	NESP-2αH
HITACHI-S10/2αHf	·····	NESP-2αHf

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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 S10α 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 S10α and S10mini series come under this PLC.

<Note for storage capacity calculations>

- Memory capacities and requirements, file sizes 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

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1 BEFORE USE

This manual is intended for users who create programs for use with Windows® personal computers.

1.1 System Overview

NX/Tools-S10 For Windows® (hereinafter referred to as NX/Tools-S10) transfers NX/HOST-S10 system programs, which run on HITACHI-S10/2α series or S10mini equipment, and applies setting changes, additions, and deletions to the transferred system program. These transfer and setting change/addition/deletion operations can be completed by performing procedures similar to those for general Windows® applications.

1.2 Hardware and Software Requirements

Using each system requires the following hardware and software.

<Personal Computers (hereafter abbreviated as PC)>

OS / Item	Windows® 95 (*1) Windows® 98 (*1)	Windows® 2000 (*1)	Windows® XP (*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 for HITACHI-S10 series (2α, 2αE, 2αH, 2αHF, S10mini)
- 1 MB or more of extension memory (not required when the memory is built in the CPU)
- Power supply for HITACHI-S10 series
- Backboard for HITACHI-S10 series
- Connection cable between the personal computer and PCs
- Remote I/O stations, other power supplies and backboards, cards (printed circuit boards), and wiring as required

NOTICE

Users of this product require knowledge of the Windows® environment and user interface. The NX/Tools-S10 system conforms to the Windows® standard. This manual is intended for users who have mastered the basic usage of Windows®.

NOTES FOR PERSONAL COMPUTER SETTING

When operating the system, select RS-232C, Ethernet, or GP-IB as the communications interface with the PCs. (GP-IB cannot be used with the S10mini.) 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 NX/Tools-S10 system.

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2 SUMMARY

2.1 NX/HOST-S10 Communication Specifications

NX/Tools-S10 is the software for transferring NX/HOST-S10 system programs and applying setting changes, additions, and deletions to the transferred system program. These transfer and setting change/addition/deletion operations can be completed by performing procedures similar to those for general Windows® applications.

NX/HOST-S10 is an autonomous decentralizing online software package for the ladder program interface that runs on the HITACHI-S10/2α series. It combines the functions of the preceding models named NX/ACP-S10 and NX/Ladder-S10.

Table 2-1 shows the main communication specification for the NX/HOST-S10.

Table 2-1 Communication Specification

Item	Specification
Network	Ethernet (main module only)
Communications protocol	UDP/IP
Message size	1408 bytes maximum

This product automatically occupies the memory areas listed below. These areas are used by NX/HOST-S10 during communication and must not be used by the users.

Table 2-2 Occupied Memory Areas

Item	Specification
Extension memory	0x120000 to 0x15D7FF (246 KB): For Type 1 0x120000 to 0x162DFF (268 KB): For Type 2 0x120000 to 0x17FFFF (384 KB): For Type 3 0x120000 to 0x163FFF (272 KB): For Type 4 0x120000 to 0x16E7FF (314 KB): For Type 5 0x120000 to 0x1957FF (470 KB): For Type 6
Task	Task numbers 103 thru 105 and 109 thru 114: Used by NX tasks
User mathematical/logical functions	Registration numbers E and F: Used by sat() and acp().
FW registers	FWBFD thru FWBFF; registers to hold error information

2.2 Software Structure

Figure 2-1 shows the positioning and software structure of this system in the entire networked-computer system. Prerequisite software is as indicated below.

- HITACHI-S10/2α ladder chart (ladder system)
- HITACHI-S10/2α CPMS (E) (real-time monitor system; 2α series only, S10mini not required)
- HITACHI-S10/2α ET.NET (Ethernet driver)

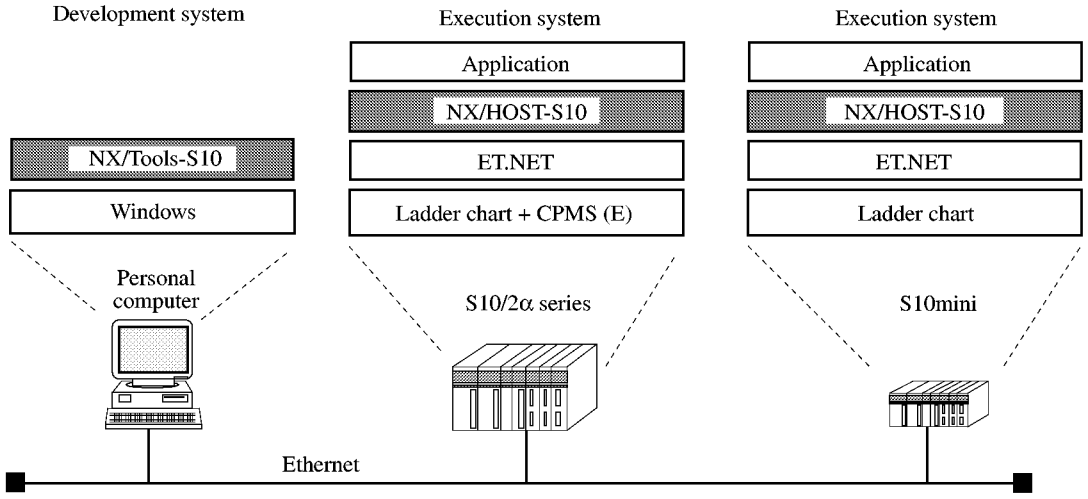

Figure 2-1 Software Structure

The following table shows the system names, versions, and revisions required for the NX/HOST-S10 and NX/Tools-S10 systems.

Table 2-3 System Names, Versions, and Revisions

Applicable PCs	System name, version, and revision	
S10/2α	LADDER CHART SYSTEM	03-00 or later (S-7890-02)
	CPMS LOADING SYSTEM	03-00 or later (S-7890-04)
	ET.NET SYSTEM	03-00 or later (S-7890-29)
	NX/Tools-S10 SYSTEM	06-00 or later (S-7891-13)
	NX/HOST-S10 SYSTEM	06-00 or later (S-7891-14)
S10/2αH S10/2αHf	LADDER CHART SYSTEM	03-00 or later (S-7890-02)
	CPMSE LOADING SYSTEM	03-00 or later (S-7890-05)
	ET.NET SYSTEM	03-00 or later (S-7890-29)
	NX/TOOLS-S10 SYSTEM	06-00 or later (S-7891-13)
	NX/HOST-S10 SYSTEM	06-00 or later (S-7891-14)
S10mini	LADDER CHART SYSTEM	03-00 or later (S-7890-02)
	ET.NET SYSTEM	03-00 or later (S-7890-29)
	NX/Tools-S10 SYSTEM	06-00 or later (S-7891-13)
	NX/HOST-S10 SYSTEM	06-00 or later (S-7891-14)

2.3 Multicast Communication Function

This multicast communication function uses the NX/ACP-S10 to exchange TCD-attached messages with the other nodes via the ladder program interface.

The multicast communication method forms the base of the NX protocol and offers the following advantages:

- Enhanced transmission efficiency is achieved because the same message can be simultaneously sent to more than one node.
- Increased ease of use is provided because message transmissions and receptions are irrelevant to node interdependence and there is no need to perform a connection establishment procedure.

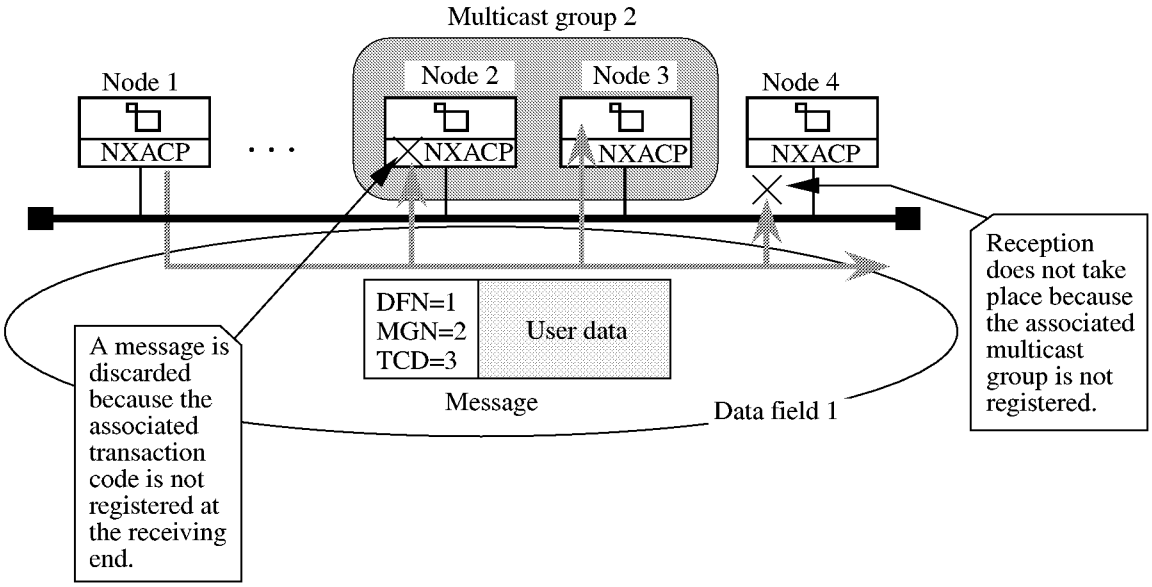

Figure 2-2 Multicast Communication

Supplement:

Before using multicast communication, the user must register the programs offered by the NX/HOST-S10 as user mathematical/logical functions.

The transmitting end sends the destination data field number, transaction code, and other data as parameters. Nodes at the receiving end autonomously receive required messages only. Therefore, there is no need to recognize or achieve synchronism with the stations to communicate with. As a result, the independence of individual devices and user programs is enhanced so as to increase the system extensibility.

2.4 Transaction Management

In the transaction management provided by this system, a set of one register and one buffer correlates to one transaction code.

A register is like a switch that reports the completion of a data transmission or a data reception. In other words, when the system transmits data in compliance with a user's request for data transmission, the switch is turned ON. When the data transmitted by a remote node is received, it is written into a reception buffer and then the switch is turned ON. Therefore, the user can receive data from the buffer.

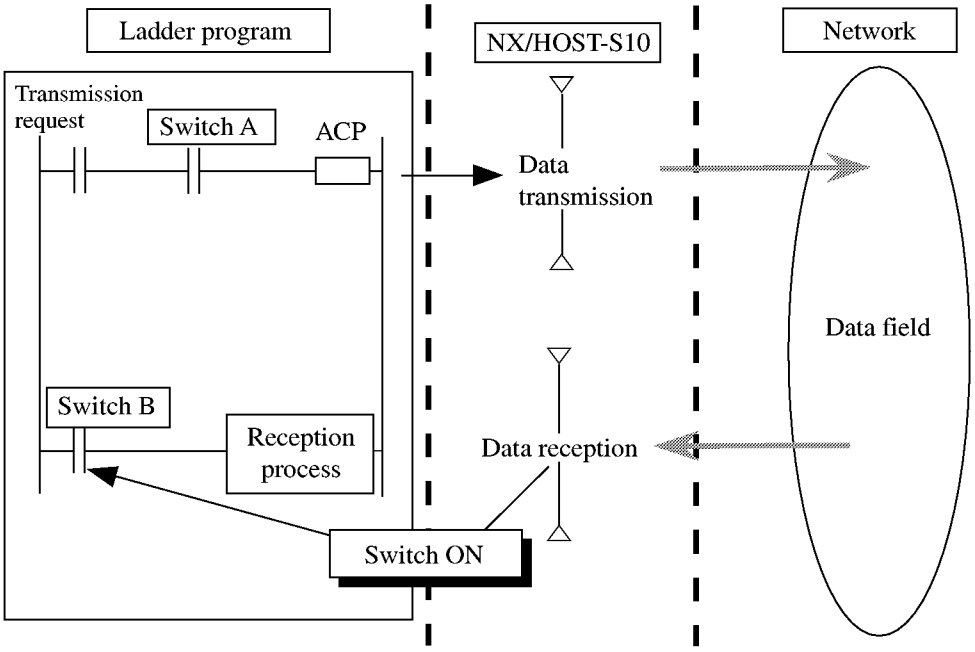

Figure 2-3 Transaction Management

Supplement:

Register number setup must be completed when the user establishes the ladder interface.

2.5 User Mathematical/Logical Function

NX/HOST-S10 offers the following two user mathematical/logical functions.

(1) sat() function

This function performs an initialization process. Execute this function only once at ladder startup.

(2) acp() function

This function performs a data transmission process in compliance with a user's request for transmission.

3 USAGE GUIDE

3.1 Ladder Sequence Creation Procedure

Before using the NX/HOST-S10, the initial setup procedure for the ladder chart system/ladder program is explained below. The sections that follow explain about the "Initialization Process Creation," "Transmission Process Creation," and "Reception Process Creation" that are mentioned in the figure below.

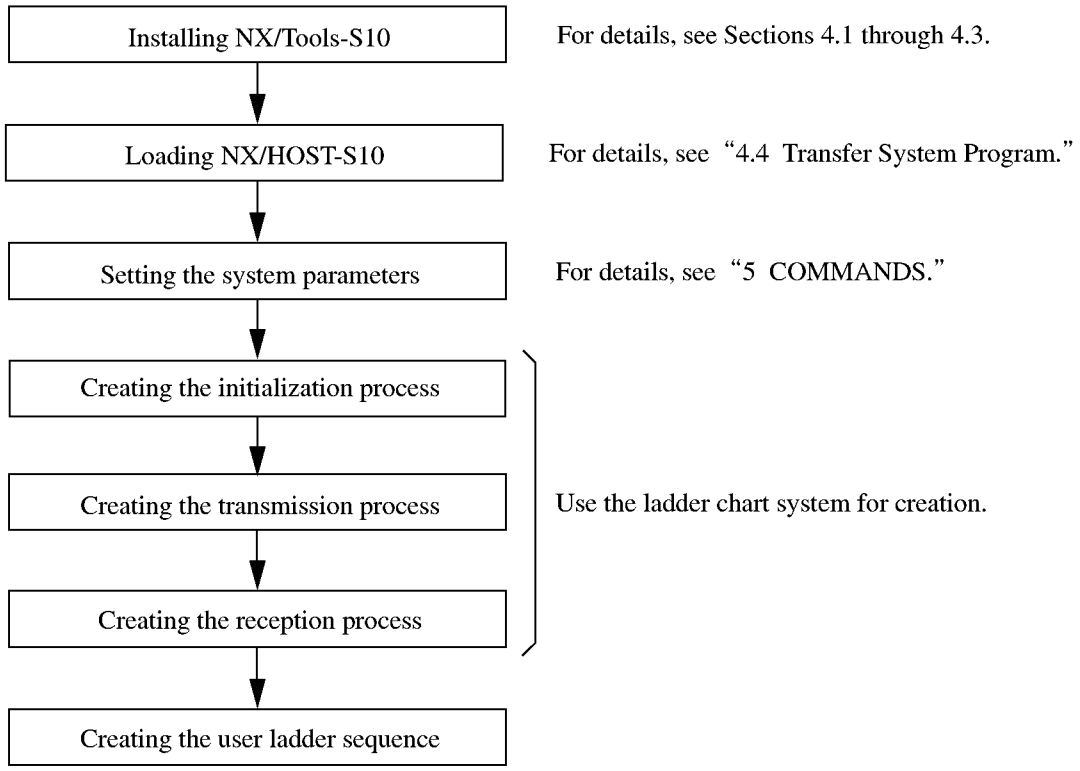

Figure 3-1 Ladder Sequence Creation Procedure

NOTE

Before creating the initialization process subsequently to system parameter setup, receive the environment from the PCs in online state and create a ladder program. If a created ladder program is transmitted to the PCs without receiving the environment from the PCs, the user mathematical/logical function registration for NX/HOST-S10 is deleted. If such deletion occurs, register the following table again with the ladder chart system's UFET function ([Utility] menu – [UFET]):

Number	Name	Address
0E	SAT	131C80
0F	ACP	132400

3.2 Initialization Process Creation

The user mathematical/logical function sat() initializes and starts NX. Execute sat() only once after the PCs is turned OFF and then back ON again or reset. Ensure that the sat() parameter is fixed at "0." Figure 3-2 shows a circuit example (where the V contacts are to be executed only once).

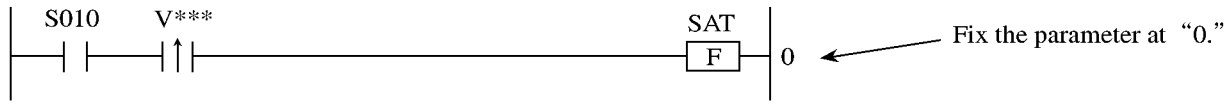

Figure 3-2 Program Example for sat() Function

3.3 Transmission Process Creation

The user mathematical/logical function acp() makes it possible to transmit a specified number of transmission bytes of data, as counted from the selected transmission address, in accordance with the settings entered from the TCD Set window shown in "5 COMMANDS." Before calling the acp() function, set up user data and then verify that the "During-Send Register" is OFF. Clear the transmission request immediately after function call. Ensure that the acp() parameter consists of eight decimal digits. Use the low-order five digits to specify the TCD number and the high-order three digits to specify the transmission destination DF (data field) number. Be sure that the TCD number and DF number agree with the contents of the DF setup window, which is described in "5 COMMANDS."

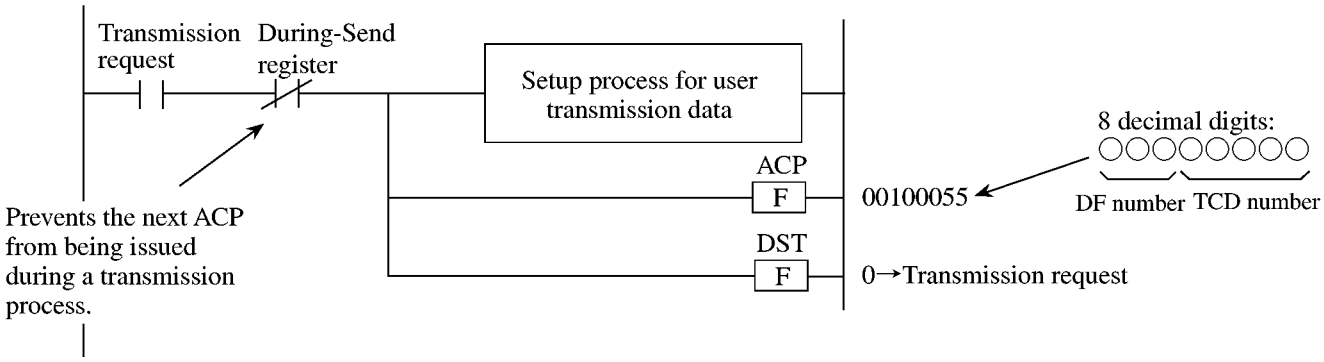

Figure 3-3 Program Example for acp() Function

Note 1: The transmission request must be such that acp() starts when a latch is formed by the V contacts closed. Immediately after execution, set acp() to "0." If not, successive calls occur (see the example on the next page).

Note 2: A register set by NX/Tools-S10 must be designated as the During-Send register. The ACP function is then prevented from being called during the transmission process.

Example: A transmission occurs each time X000 turns ON.

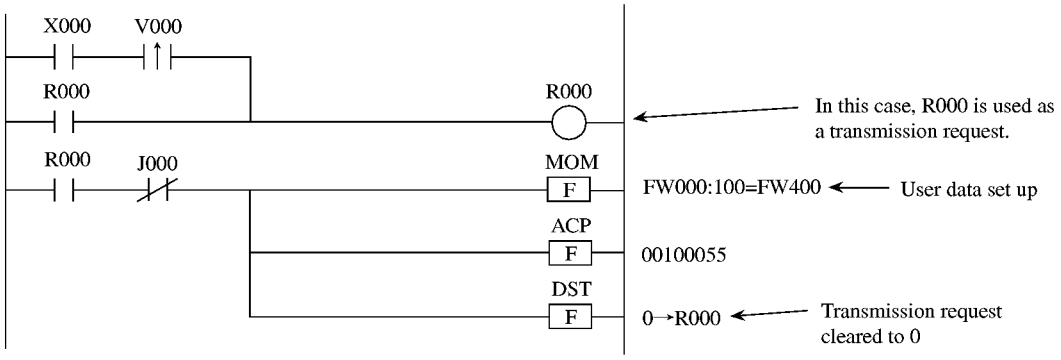

Figure 3-4 Transmission Ladder Circuit Example

3.4 Reception Process Creation

When data is received, as many reception bytes of received data as specified are transferred to the reception address specified from the [TCD Set] window (Figure 5-4), and then the receive completion register is turned ON. If the number of reception bytes specified is exceeded by that of actually received bytes, the trailing portion of the data is discarded as appropriate. Read out the resulting user data while the receive completion register is ON, and then clear the receive completion register.

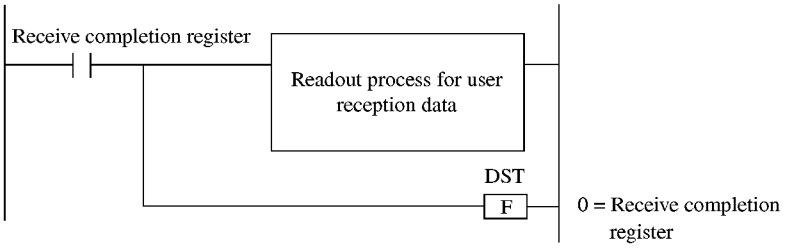

Figure 3-5 Program Example for Received Data Readout

Note: A register selected as stated in "5 COMMANDS," must be designated as the receive completion register.

Example:

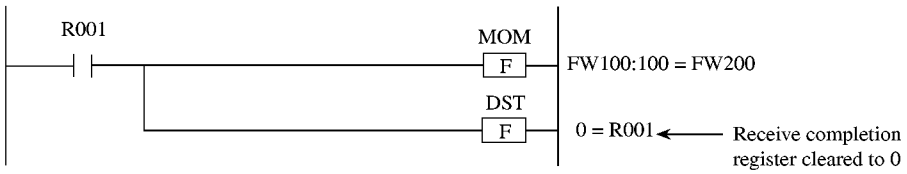

Figure 3-6 Program Example for Received Data Readout

4 INSTALLATION

4.1 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.

4.2 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 [Change/Remove] button. When the [Confirm File Deletion] window is displayed, click the [Yes] 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 [Change/Remove] button. When the [Confirm File Deletion] window is displayed, click the [Yes] 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 [Change/Remove] button. When the [Confirm File Deletion] window is displayed, click the [Yes] 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 [No] 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.

4.3 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 [NX/Tools-S10] window is displayed.

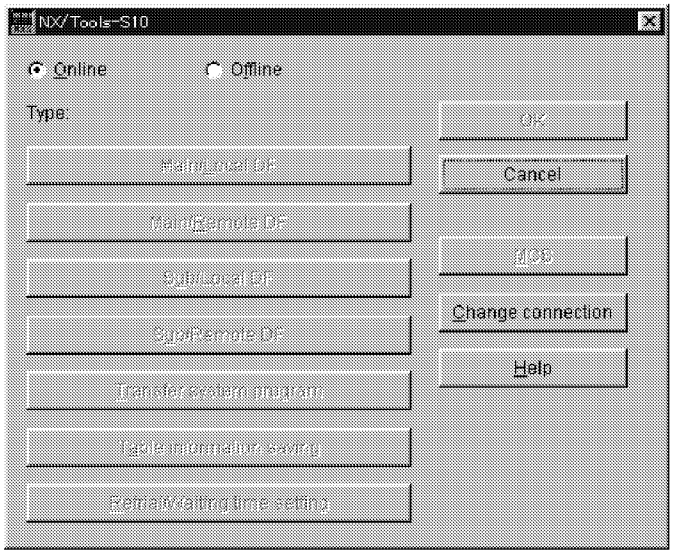

Figure 4-1 [NX/Tools-S10] Window

(3) On the [NX/Tools-S10] window, click the Change connection button to display the [Communication type] window. Select the communication type to be used, and then click the OK button. (See "5.6 Change Connection.")
If you intend to use the previously made settings again, click the Cancel button.

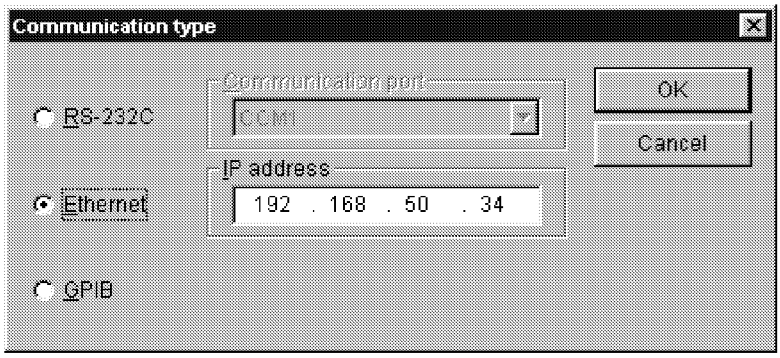

Figure 4-2 [Communication type] Window

(4) While the window shown in Figure 4-3 or 4-4 is open, NX/Tools-S10 is running. From now on, you can click the button for a desired command. However, if the system program is not transferred (Figure 4-3), transfer it by clicking the Transfer system program button.

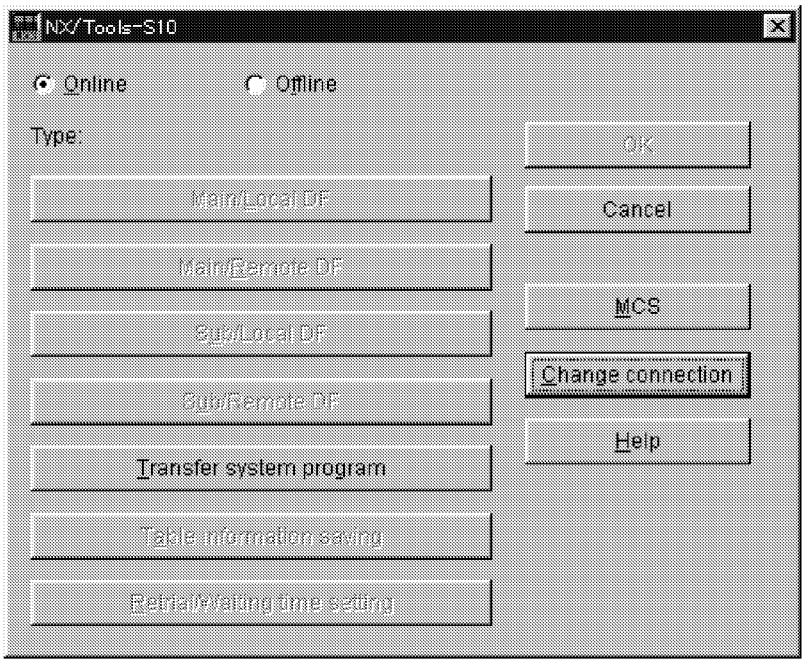

Figure 4-3 [NX/Tools-S10] Window (System Program Transfer Not Completed)

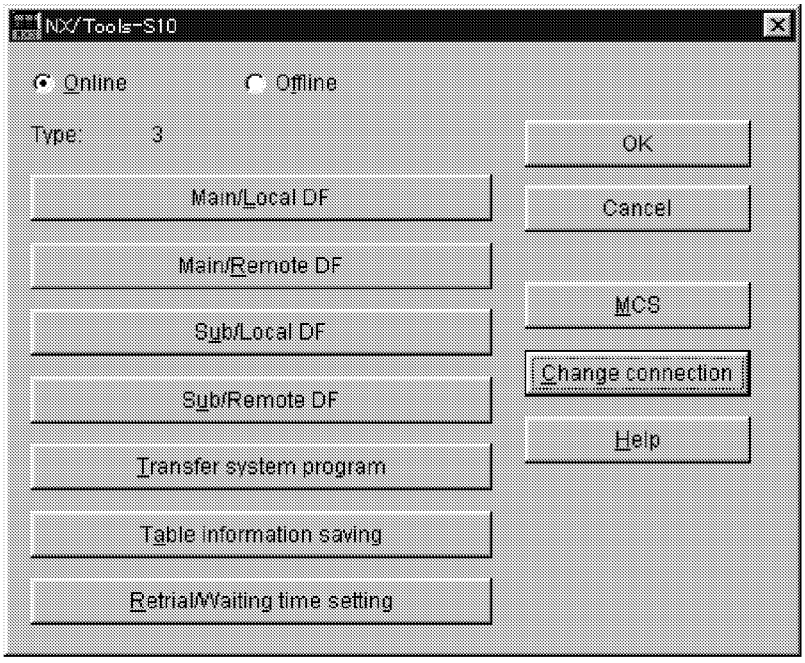

Figure 4-4 [NX/Tools-S10] Window (System Program Transfer Completed)

4.4 Transfer System Program

When you click the [Transfer system program] button, the [NX/Tools-S10 SYSTEM] window (system program transfer) is displayed as shown in Figure 4-5.

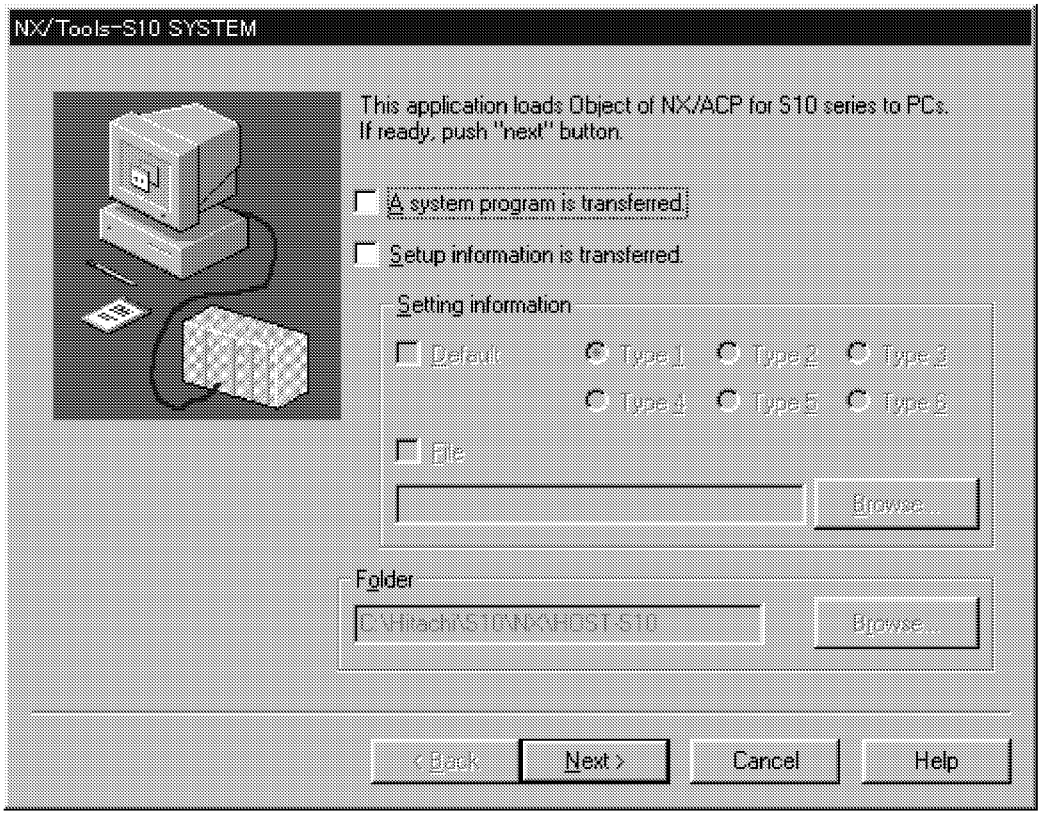

Figure 4-5 [NX/Tools-S10 SYSTEM] Window (System Program Transfer)

Use the system program transfer window for the following purposes.

- Completing a system program transfer
- Changing only the system program for software upgrade or like purposes
- Loading the NX setup information that was edited offline
- Loading the NX setup information that was saved by remote PCs

4.4.1 Completing a system program transfer

(1) Check the "A system program is transferred." and "Setup information is transferred." check boxes. In the "Setting information" group box, check either the "Default" check box or "File" check box.

(2) When transferring a sample NX setup information file offered by the "NX/HOST-S10 SYSTEM" (Type: S-7890-14), check the "Default" check box and select a type (from among Types 1 through 6). For details on the types, see "5.1 Command System."

(3) When transferring a user-created NX setup information file, check the "File" check box and specify the file.

(4) Select a folder in which the NX/HOST system program is contained. When loading from a floppy disk, insert the "NX/HOST-S10 SYSTEM" (Type: S-7890-14) floppy disk into the drive and specify "a:\nxhost-s10." If the NX/HOST-S10 system program is already saved on a personal computer's hard disk or other storage medium, specify that folder on the hard disk or other storage medium.

(5) When the above preparations are completed, click the [Next] button.

(6) When you are prompted to perform a reset or turn the power OFF and then back ON again, reset the S10 CPU unit or turn the power OFF and then back ON. The system program transfer process then begins.

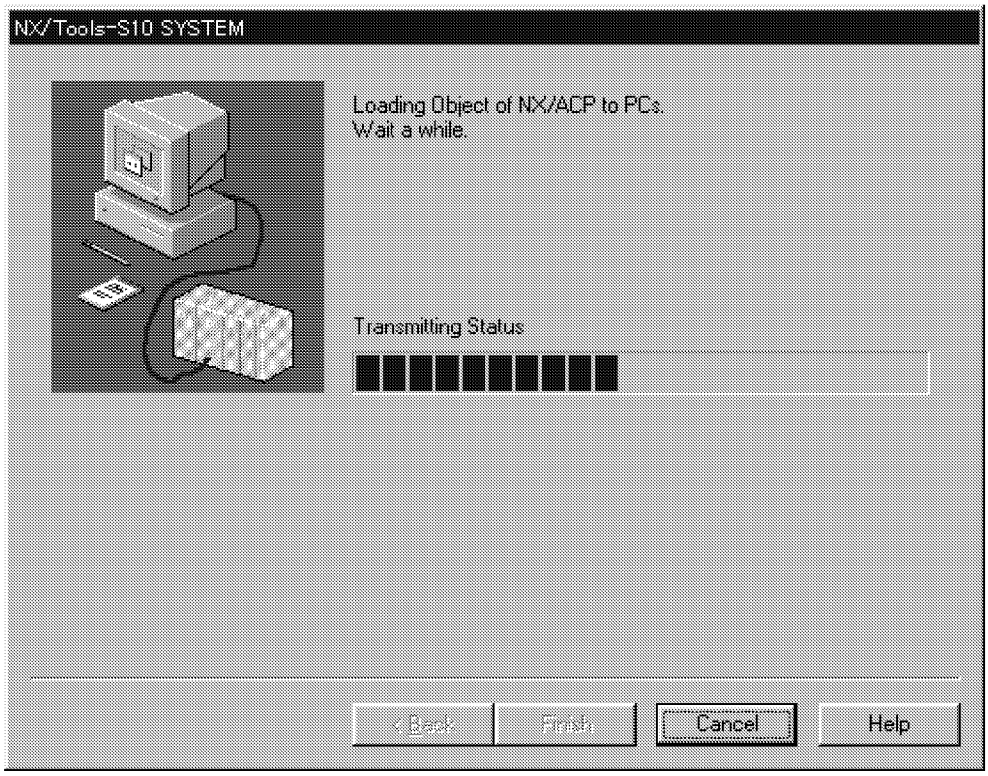

Figure 4-6 [NX/Tools-S10 SYSTEM] Window (Object Loading (Transfer in Progress))

(7) When you are prompted again to reset the S10 CPU unit or turn the power OFF and then back ON, perform a reset or turn the power OFF and then back ON again.

(8) When the transfer process is completed, click the Finish button.

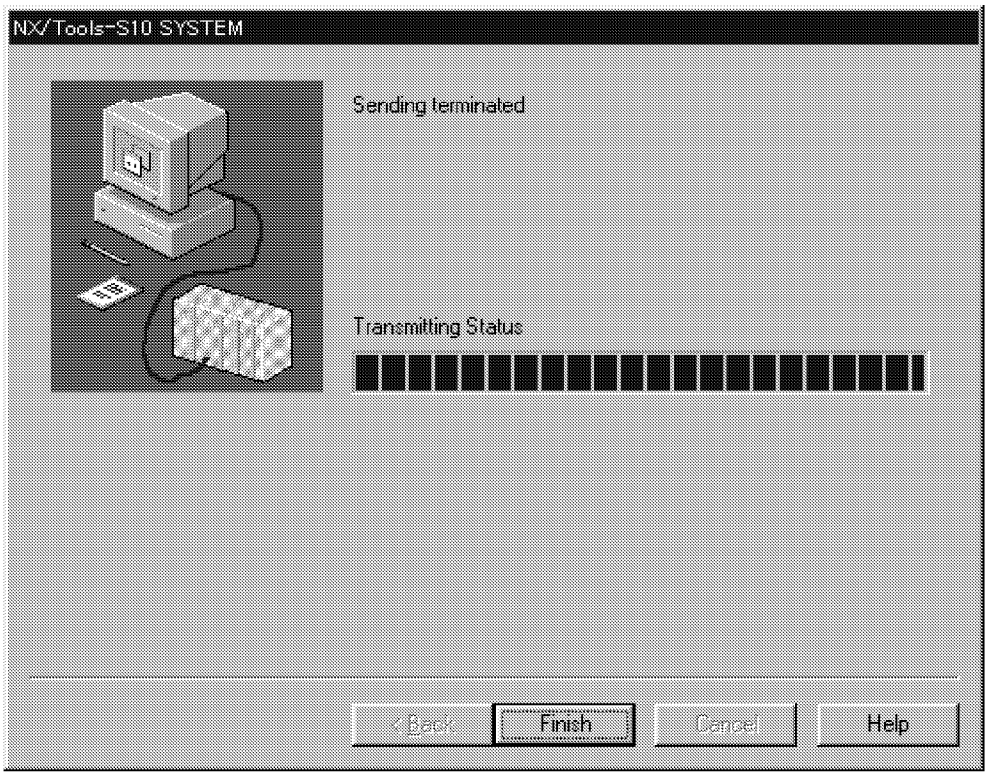

Figure 4-7 [NX/Tools-S10 SYSTEM] Window (Object Loading (Transfer Completed))

(9) You are now returned to the [NX/Tools-S10] window (Figure 4-3).

4.4.2 Changing only the system program for software upgrade or like purposes

(1) Check the "A system program is transferred." check box only. If you check the "Setup information is transferred." check box by accident, the currently selected NX setup information will be rewritten.

(2) Perform Steps (3) through (9) in "4.4.1 Completing a system program transfer."

4.4.3 Loading the NX setup information that was edited offline

(1) If the "A system program is transferred." check box is checked, uncheck it.

(2) Check the "Setup information is transferred." check box.

(3) In the "Setting information" group box, check the "File" check box.

(4) Enter the full pathname of the NX setup information file that was edited offline.

(5) Perform Steps (4) through (9) in "4.4.1 Completing a system program transfer."

4.4.4 Loading the NX setup information that was saved by remote PCs

(1) If the "A system program is transferred." check box is checked, uncheck it.

(2) Check the "Setup information is transferred." check box.

(3) In the "Setting information" group box, check the "File" check box.

(4) Enter the full pathname of the NX setup information file that was saved by the remote PCs.

(5) Perform Steps (4) through (9) in "4.4.1 Completing a system program transfer."

4.5 Terminating the System

The NX-Tools-S10 system is Terminated by clicking the [X] or [Cancel] button on the [NX-Tools-S10] window shown in Figure 4-3 or Figure 4-4.

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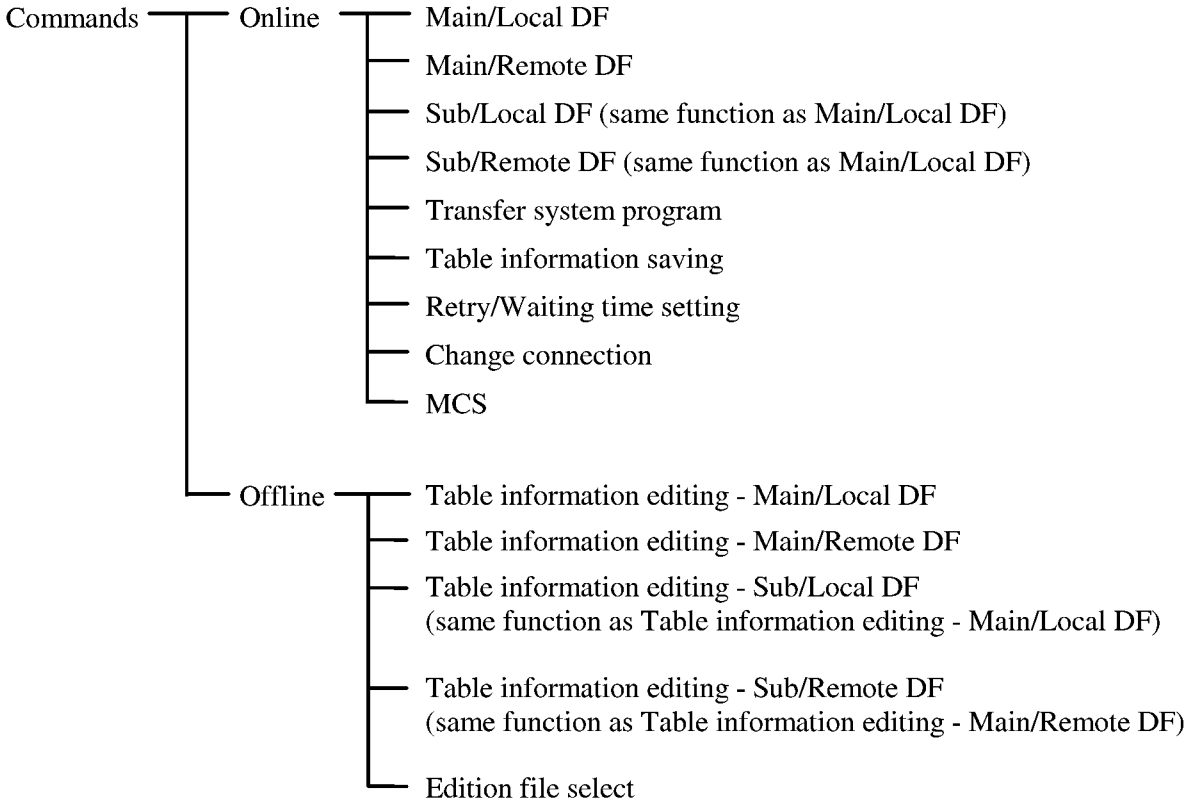
5 COMMANDS

5.1 Command System

The NX/Tools-S10 command system is shown below. The commands can be roughly divided into two types, depending on whether they are used online or offline. For details on each command, refer to Help.



The commands described in this section may not be usable depending on the type of NX system program loaded into the PCs to be set up. The relationship between NX system program types and applicable commands is described on the next page.

<Type and data field>

(1) As indicated in Figure 5-1, Types 1 through 6 must be selectively used in accordance with the network configuration and the data field to access.

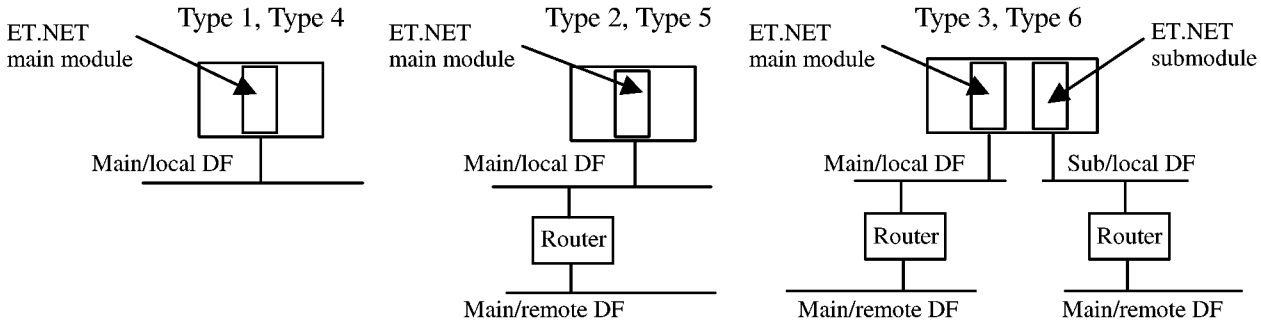


Figure 5-1 Type and Data Field

(2) Types 1 through 3 and Types 4 through 6 can be selectively used depending on the number of TCDs to be used.

- When the number of TCDs is not greater than 32: Types 1 through 3
- When the number of TCDs is not greater than 96: Types 4 through 6

When Type 1, 2, or 3 is selected, the occupied area of extension memory can be rendered smaller than that for Type 4, 5, or 6 selected. (See "Table 2-2 Occupied Memory Areas.")

For units to which an NX/HOST-S10 version/revision earlier than 07-00 is transferred, select Type 1, 2, or 3 (do not select Type 4, 5, or 6).

Table 5-1 Relationship between Types and Applicable Commands in Online State

Command	System not provided	Type1	Type2	Type3	Type4	Type5	Type6
Main/Local DF	na	√	√	√	√	√	√
Main/Remote DF	na	na	√	√	na	√	√
Sub/Local DF	na	na	na	√	na	na	√
Sub/Remote DF	na	na	na	√	na	na	√
Transfer system program	√	√	√	√	√	√	√
Table information saving	na	√	√	√	√	√	√
Retry/Waiting time setting	na	√	√	√	√	√	√
Change connection	√	√	√	√	√	√	√
MCS	√	√	√	√	√	√	√

√ : Applicable na : Not applicable

Table 5-2 Relationship between Types and Applicable Commands in Offline State

Command	No file selected	Type1	Type2	Type3	Type4	Type5	Type6
Table information editing - Main/Local DF	na	√	√	√	√	√	√
Table information editing - Main/Remote DF	na	na	√	√	na	√	√
Table information editing - Sub/Local DF	na	na	na	√	na	na	√
Table information editing - Sub/Remote DF	na	na	na	√	na	na	√
Edition file select	√	√	√	√	√	√	√

√ : Applicable na : Not applicable

5.2 Main/Local DF (Sub/Local DF)

Function: Changes the settings about main/local DF (sub/local DF) and applies changes, additions, or deletions to the settings about MCGs and TCDs possessed by a DF.

Operation: The meanings of the setup parameters and the operating procedure are described below.

(1) Open The [NX/Tools-S10] window. For the procedure, see "4.3 Starting Up the System." Click the Main/Local DF button.

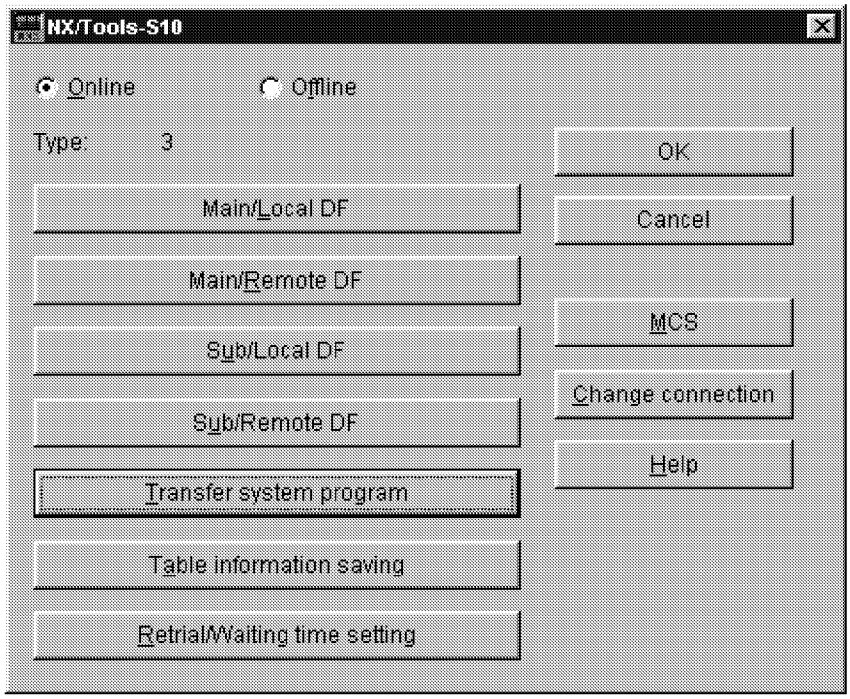


Figure 5-2 [NX/Tools-S10] Window (Online)

- Main/Local DF
  Data field that is directly connected to the main ET.NET module.
- Main/Remote DF
  Data field that is connected to the main ET.NET module via a router and gateway.
- Sub/Local DF
  Data field that is directly connected to the sub ET.NET module.
- Sub/Remote DF
  Data field that is connected to the sub ET.NET module via a router and gateway.

(2) You can enter, change, or delete various setting data. Set "DF Number," "Node Name," "Logical Node Number," "Life signal time-out time," "Life signal period transmission," "Address port number," and "Send my port number" for the local DF to be set up.

(3) Five different MCGs can be registered for the local DF. Set "Send/Receive MCG" and "Port No." for each MCG.

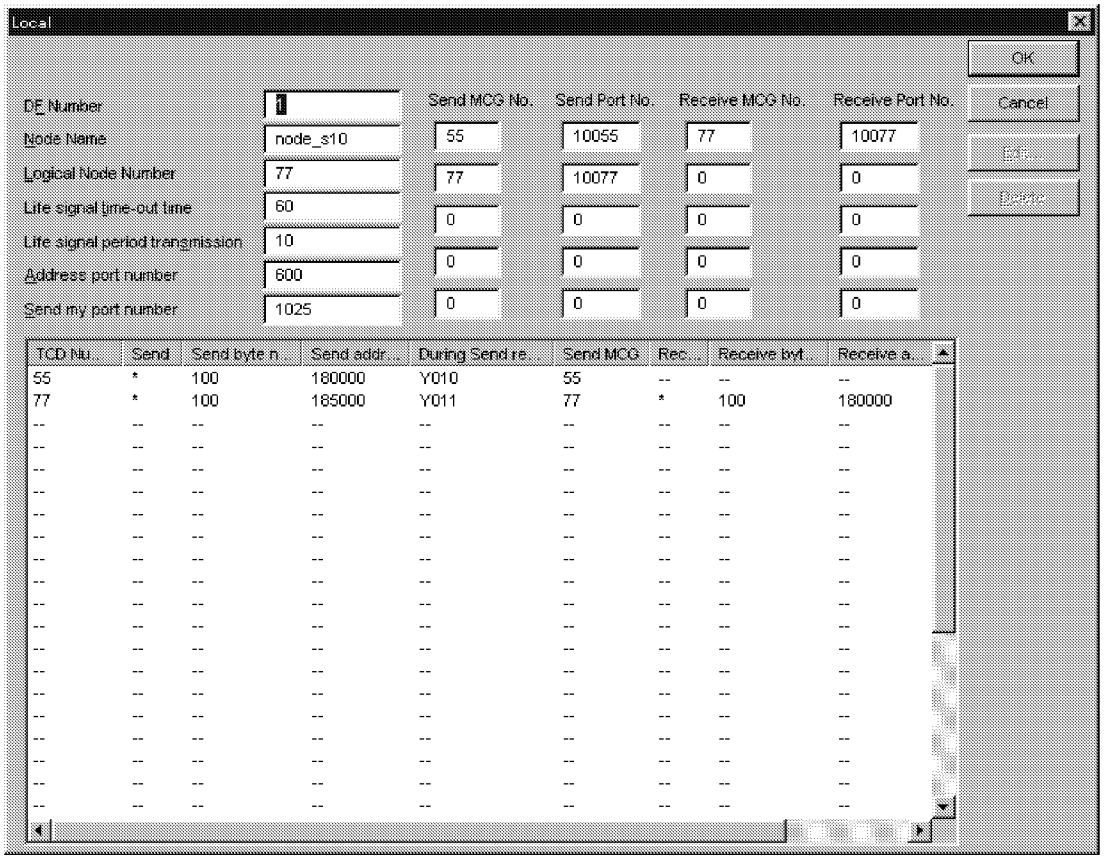


Figure 5-3 [Local] Window (DF Setup, Online)

- DF Number
  Identification number to be assigned to a data field. Set a number between 1 and 255.
- Node Name
  Name to be assigned to a local node. Set a name that consists of up to nine ASCII characters.
- Logical Node Number
  Number assigned to a device in a data field. This number is the same as the host number of an IP address. For Types 1 through 3, set a number between 1 and 128. For Types 4 through 6, set a number between 1 and 255.

- Life signal time-out time
  Time interval between the instant at which a life signal fails to arrive and the instant at which a timeout is recognized. Set a value between 1 and 43200 seconds.
- Life signal period transmission
  Time intervals at which a life signal is to be transmitted periodically. Set a value between 1 and 3600 seconds.
- Address port number
  Port number for an address to which a life signal is to be transmitted periodically. Set a value between 1 and 65535.
- Send my port number
  Local node port number for message transmission. Set a value between 1 and 65535.
- Send MCG No. (multicast group number)
  Specify the multicast group number of the destination to which a specified TCD is to be transmitted. You can enter a number between 0 and 255. To leave this number unregistered, set the value 0.
- Send Port No.
  Represents a transmission port number possessed by each node. Ensure that the multicast group number and port number combination is standardized. Set a number between 1 and 65535. Be sure that the transmission port number differs from the reception port number.
- Receive MCG No. (multicast group number)
  Represents a reception multicast group. You can enter a number between 0 and 255. To leave this number unregistered, set the value 0.
- Receive Port No.
  Ensure that the multicast group number and port number combination is standardized. Set a number between 1 and 65535. Be sure that the transmission port number differs from the reception port number.

  Notes
  - Be sure that each node has a unique port number.
  - The relationship between the Life signal period transmission and Life signal time-out time settings must be as indicated below:
    Life signal period transmission < Life signal time-out time

(4) To set the TCD information, select the TCD number area in the [Local] window (DF setup), and click the [Edit] button to display the [TCD Set] window shown below. The TCD information can be set up from this window. When the selected TCD number in the [Local] window shows a number, you can change the TCD information. If it reads "—", you can add new TCD information.

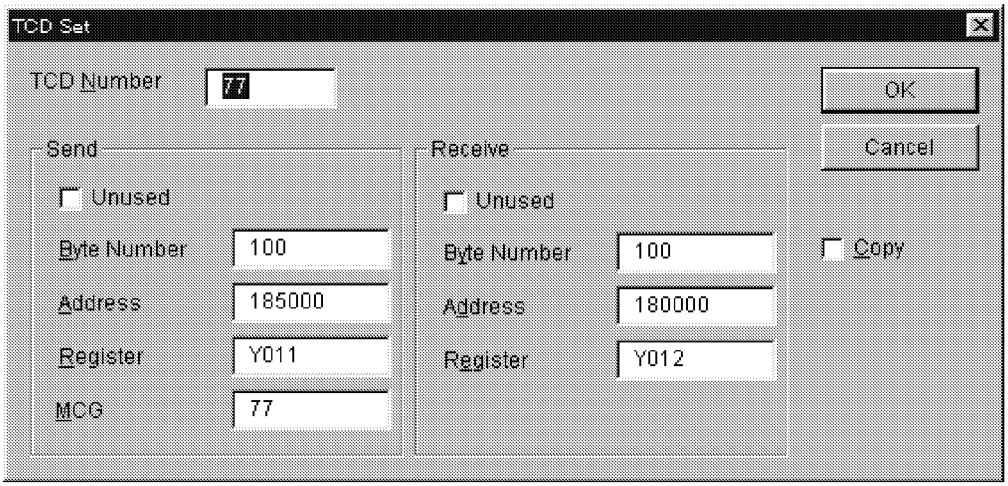


Figure 5-4 [TCD Set] Window

- TCD Number
  Set the transaction code number for transmission/reception. You can set a number between 0 and 59999. To leave this number unregistered, set the value 0.
- Unused
  When the "Unused" check box is checked, the setup information about the associated group (transmission or reception) has no effect. To make the information effective, uncheck the check box. When a TCD number is valid (1 to 59999) with the "Unused" check boxes for transmission and reception groups checked, the settings have no effect.
- Send byte number
  Specify the user data size for transmission. You can set a number between 0 and 1408.
- Send address
  Specify the starting address of the buffer that stores the user data to be transmitted. You can set one of the addresses listed below. Register inputs and address inputs are both acceptable.

Table 5-3 List of Transmission Address Settings

No.	Register setting range	Address setting range	Remarks
1	XW000 to FF0	/E0000 to /E01FE	Bit/word register
2	JW000 to FF0	/E0200 to /E03FE	Bit/word register
3	YW000 to FF0	/E0400 to /E05FE	Bit/word register
4	QW000 to FF0	/E0600 to /E07FE	Bit/word register
5	GW000 to FF0	/E0800 to /E09FE	Bit/word register
6	RW000 to FF0	/E0C00 to /E0DFE	Bit/word register
7	MW000 to FF0	/E0E00 to /E0FFE	Bit/word register
8	FW000 to BFC	/E2000 to /E37F8	Word register
9	DW000 to FFF	/61000 to /62FFE	Word register
10	—	/100000 to /******	/******: Maximum installed address

Note: When designating an extension memory address (one of /100000 onwards) as the transmission or reception address, make sure that it is not used by another application or the like. If you inadvertently select a currently used area, the system may malfunction. Also, exercise care not to select a memory area that is occupied by NX/HOST-S10. (See "Table 2-2 Occupied Memory Areas.")

- During send register

Set the "During send" register, which is used to report that NX/Tools-S10 is in a transmission process (ON) when a user data transmission request is received. When this register is ON, the ladder sequence is notified that a data transmission is in progress. The register is turned OFF upon completion of transmission. When a data transmission is not successfully done, the register is not turned ON but an error code is set in the functional work register FWBFF. The FWBFF area is overwritten as needed when an error occurs. Therefore, the user should save error codes as needed. Be sure to set this "During Send" register. If it is not set, an undefined register might be turned ON. The following table shows the selectable registers.

Table 5-4 List of "During send" Register Setting Ranges

No.	Register setting range	Remarks
1	J000 to FFF	Bit register
2	Y000 to FFF	Bit register
3	Q000 to FFF	Bit register
4	G000 to FFF	Bit register
5	R000 to FFF	Bit register
6	M000 to FFF	Bit register

- Receive byte number
  Set the size of the data to be received. The acceptable setting range is from 0 to 1408. If this setting is exceeded by the number of actually received bytes, the trailing portion of the received data is discarded.
- Receive address
  Set the address for storing received data. The acceptable setting range for the storage destination address is the same as indicated in "Table 5-3 List of Transmission Address Settings."
- Receive completion register
  Specify the register that NX/HOST-S10 turns ON upon data reception. When this register is turned ON, the ladder sequence is notified that data is received. The user must turn OFF this register immediately after data reception. If the associated register number is ON when data is received, NX/HOST-S10 discards the data. To avoid such a data rejection, you can specify the retry count and reception wait time. For details, see "5.5 Retrial/Waiting Time Setting." The acceptable setting range for the receive completion register is the same as for the registers shown in "Table 5-4 List of 'During send' Register Setting Ranges."
- Copy
  When you click the [OK] button while the "Copy" check box is checked, the TCD information is added instead of being changed. Be sure that the TCD Number, Register, and Address values are unique.

(5) After various settings are entered, return to the [NX/Tools-S10] window and then click the [OK] button. The [NX/Tools-S10 SYSTEM] dialog box (setting write confirmation) is displayed. When you click the [Yes] button, the PCs writes the settings into its memory. If you click the [No] button, on the other hand, the PCs does not write the settings into its memory.

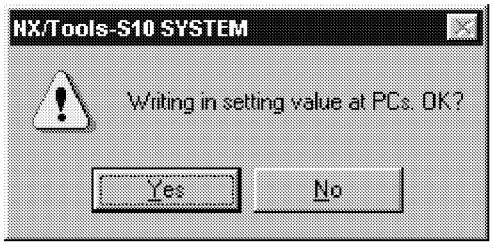


Figure 5-5 [NX/Tools-S10 SYSTEM] Dialog Box (Setting Write Confirmation)

5.3 Main/Remote DF (Sub/Remote DF)

Function: Changes the settings about Main/Remote DF (Sub/Remote DF) and applies changes, additions, or deletions to the settings about MCGs and TCDs possessed by a DF.

Operation: See the operating procedure below.

(1) Open the [NX/Tools-S10] window. For the procedure, see "4.3 Starting Up the System." Click the [Main/Remote DF] button.

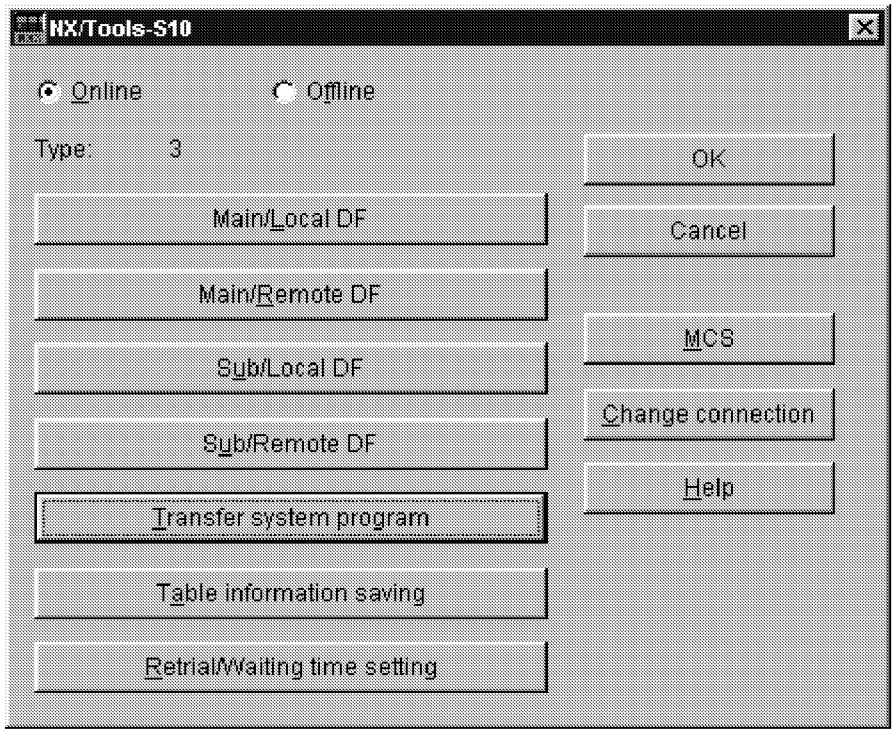


Figure 5-6 [NX/Tools-S10] Window (Online)

(2) You can enter, change, or delete various setting data.

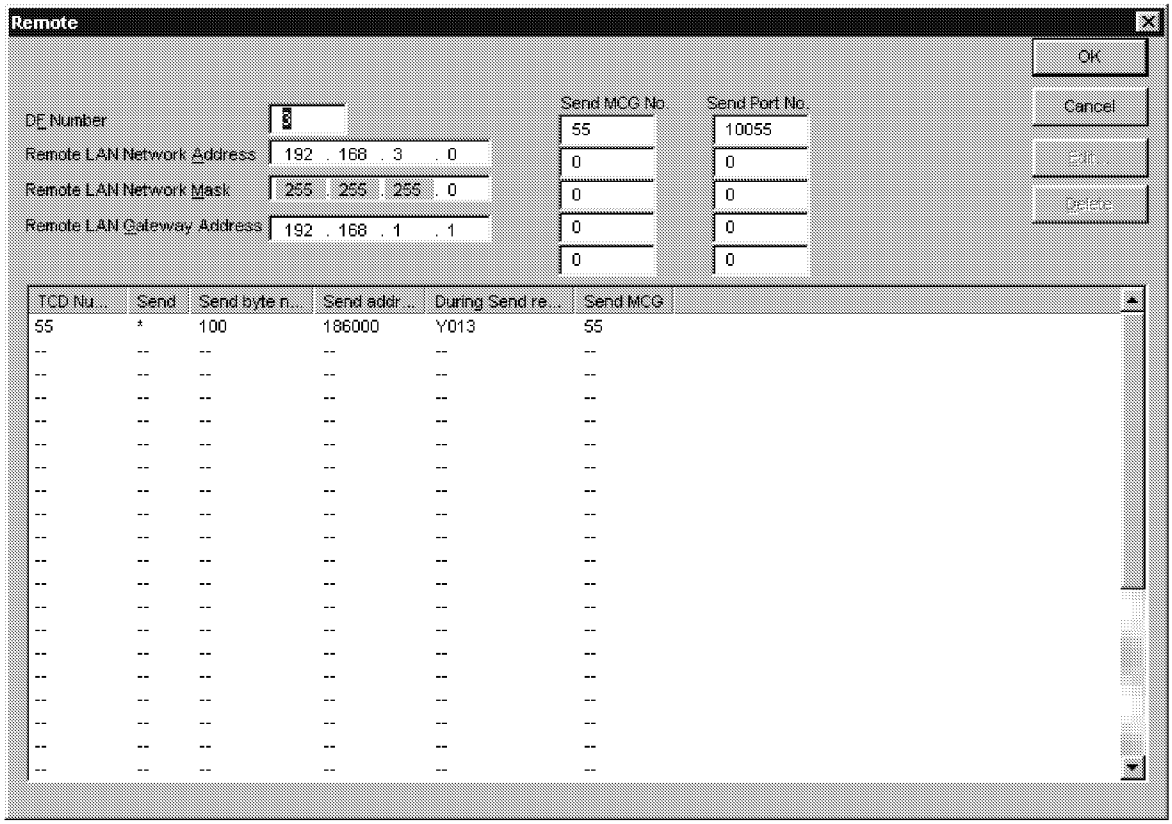


Figure 5-7 [Remote] Window (DF Setup, Online)

- Remote LAN Network Address
  Set the network address to which the station you communicate with is connected.
- Remote LAN Network Mask
  Set the subnet mask for the remote destination LAN address.
- Remote LAN Gateway Address
  Set the IP address of the gateway through which you communicate with the remote destination LAN address.

(3) To set the TCD information, select the TCD number area in the [Remote] window, and click the Edit button to open the [TCD Set] window shown below. You can set the TCD information from this window. For details on the settings to be entered from the TCD Set window, see the pages related to the [TCD Set] window in "5.2 Main/Local DF (Sub/Local DF)."

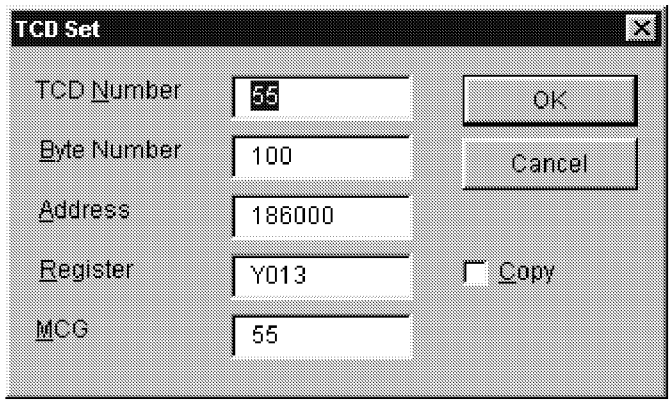


Figure 5-8 [TCD Set] Window

(4) After the settings are entered, return to the [NX/Tools-S10] window and then click the OK button to ensure that the settings are written to the PCs memory. For details, see Step (5) in "5.2 Main/Local DF (Sub/Local DF)."

5.4 Table Information Saving

Function: Accesses the memory to read the NX setup information registered in the PCs and saves it in a user-specified file. The file saved in this manner can be loaded onto the PCs with the system program transfer function (see "4.4 Transfer System Program," for details).

Operation: See the operating procedure below.

(1) Open the [NX/Tools-S10] window. For the procedure, see "4.3 Starting Up the System."
Click the Table information saving button.

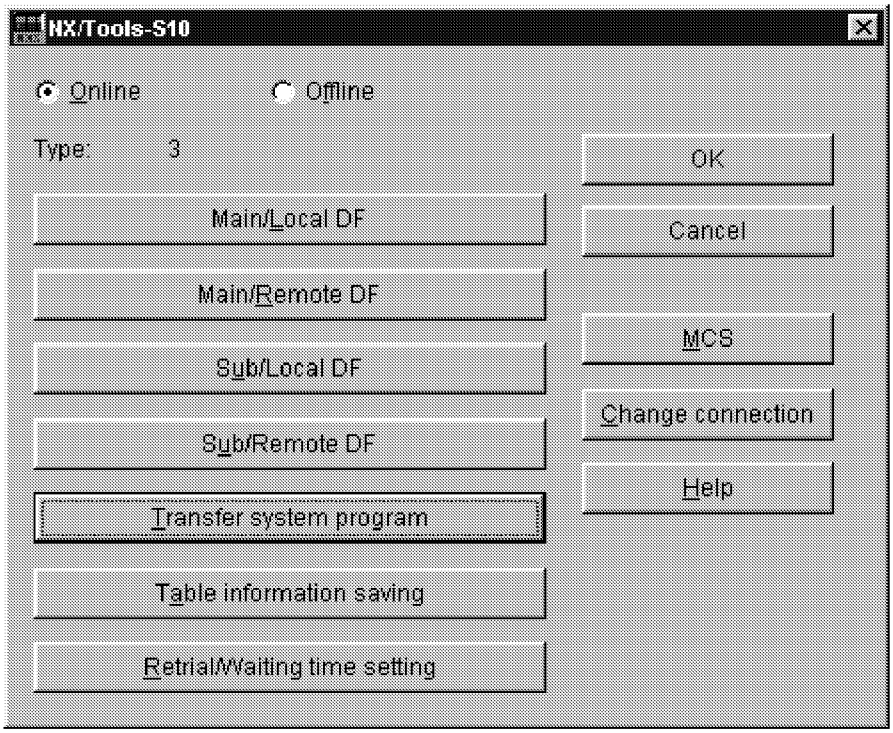


Figure 5-9 [NX/Tools-S10] Window (Online)

(2) The [Save As] window is displayed.

Figure 5-10 [Save As] Window

In the "File name" text box, enter the name of the file to be saved, and then click the Save button. If the extension ".pse" is not specified for the file name, the extension ".pse" will be automatically added to the file name.

(3) The [Receive file] window is displayed.

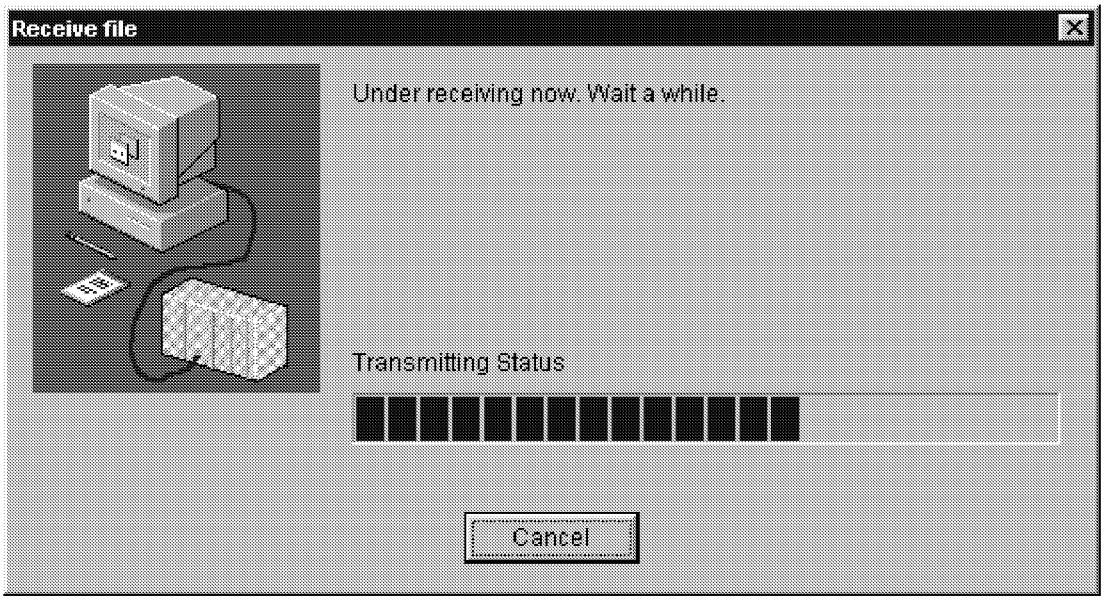


Figure 5-11 [Receive file] Window

When the file is saved normally, the following [NX/Tools-S10 SYSTEM] dialog box is displayed.

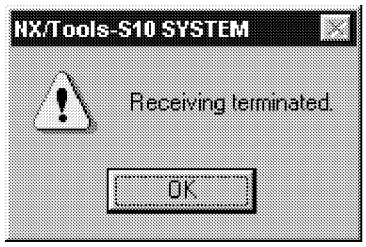


Figure 5-12 [NX/Tools-S10 SYSTEM] Dialog Box
(When the Save Process Is Ended Normally)

If you click the [Cancel] button during the above file save process, the NX setup information will not be saved. (The specified file will not be created. If the overwrite option is selected, deletion takes place.)

5.5 Retrial/Waiting Time Setting

Function: Shows or writes (changes) the retry count and retry intervals (reception wait time) settings for checking the receive completion register's OFF state. For details on the receive completion register, see, "Figure 5-4 [TCD Set] Window," and the description of the receive completion register in "5.2 Main/Local DF (Sub/Local DF)."

Operation: See the operation procedure below.

(1) Open the [NX/Tools-S10] window. For the procedure, see "4.3 Starting Up the System." Click the Retrial/Waiting time setting button.

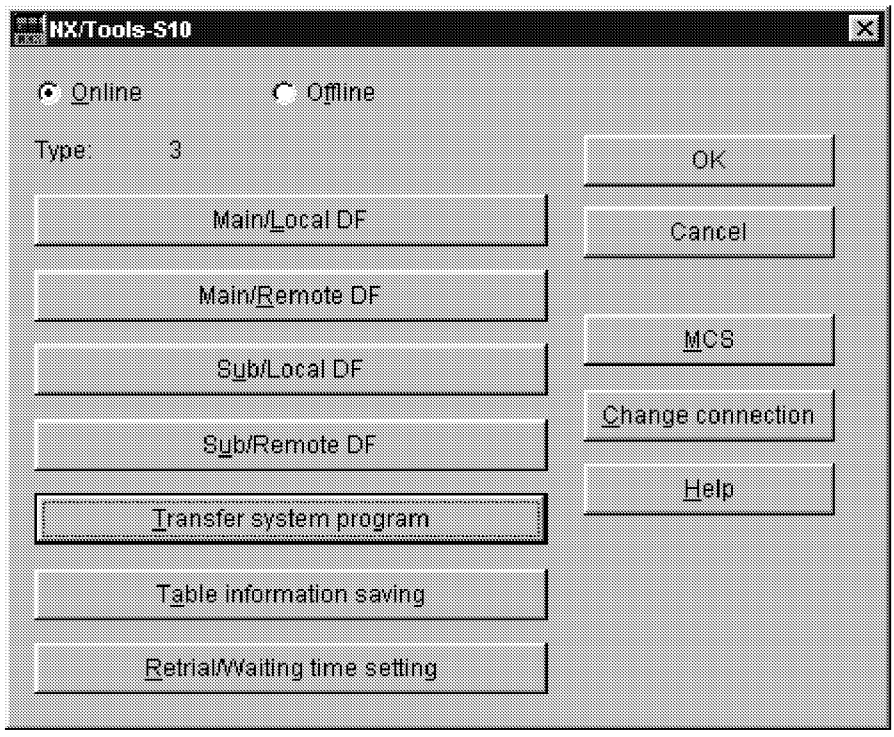


Figure 5-13 [NX/Tools-S10] Window (Online)

(2) The [Retrial number of times/receiving waiting time] window is displayed (Figure 5-14).

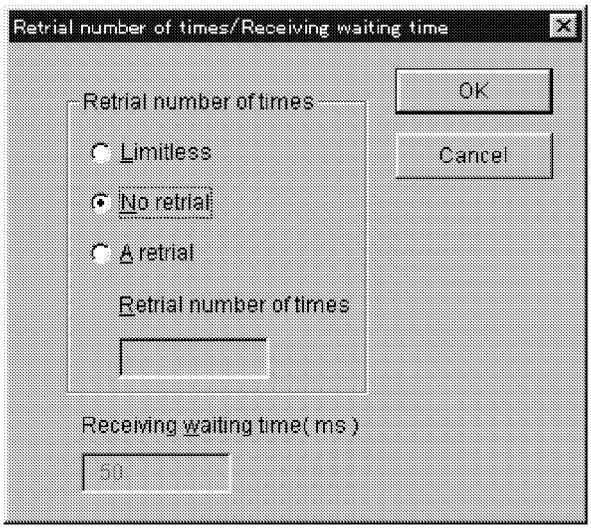


Figure 5-14 [Retrial number of times/Receiving waiting time] Window

- Retrial number of times
  Specify the number of retry operations to be performed to check whether the receive completion register is OFF. If the receive completion register is turned OFF during the retry sequence, the data received by NX/HOST-S10 will not be discarded.
  The following three retry options are available.
  - Limitless
    Checks the receive completion register status limitlessly.
  - No retrial
    Checks the receive completion register status only once.
  - A retrial
    If you select this option, you must specify the maximum retry count. Enter a maximum retry count between 1 and 2147483647.
- Receiving waiting time
  The Receiving waiting time setting takes effect only when the "A retrial" option is selected. Enter a receiving waiting time value between 10 and 1000 ms. The default is 50 ms.

(3) To update the Retrial number of times and Receiving waiting time settings, click the [OK] button. When you click the [OK] button, the "Writing in setting value at PCs, OK?" dialog box opens.
Clicking the [Yes] button writes the settings to the PCs.
If you click the [No] button, the settings will not be written to the PCs.
Clicking the [Cancel] button closes the [Retrial number of times/Receiving waiting time] window (Figure 5-14) without writing the settings to the PCs.

5.6 Change Connection

Function: Defines the type of communication between the PCs and personal computer.

Operation: See the operation procedure below.

(1) On the [NX/Tools-S10] window, click the [Change connection] button.

(2) The [Communication type] window is displayed.

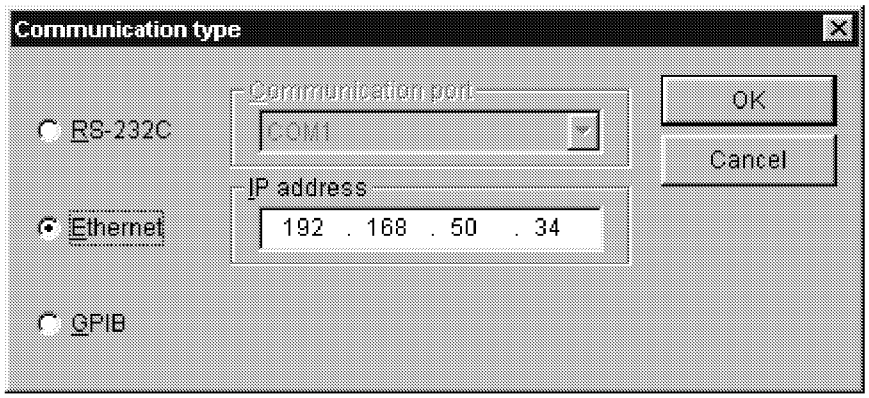


Figure 5-15 [Communication type] Window (Change Connection)

(3) To select RS-232C as the communication type, click the "RS-232C" radio button, and then select a "communication port."

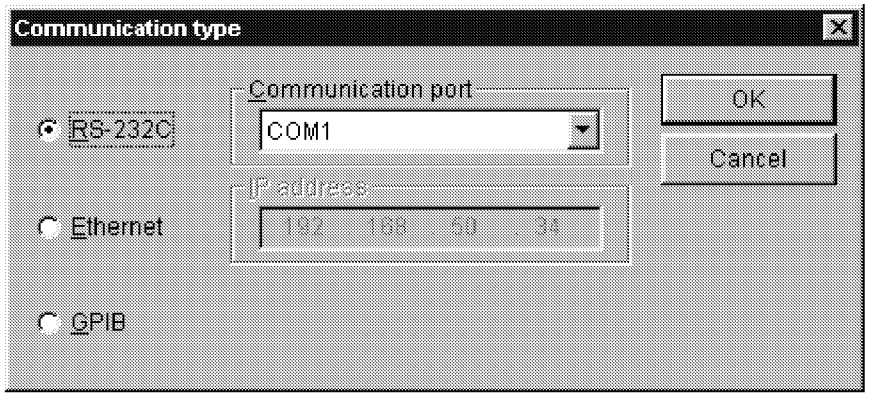


Figure 5-16 [Communication type] Window (RS-232C Port Selection)

(4) To select Ethernet as the communication type, click the "Ethernet" radio button.

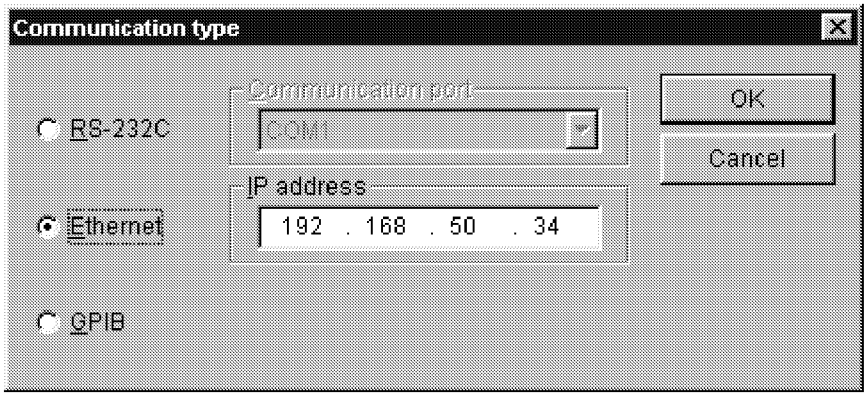


Figure 5-17 [Communication type] Window (Ethernet Connection)

(5) To select GP-IB as the communication type, click the "GPIB" radio button.

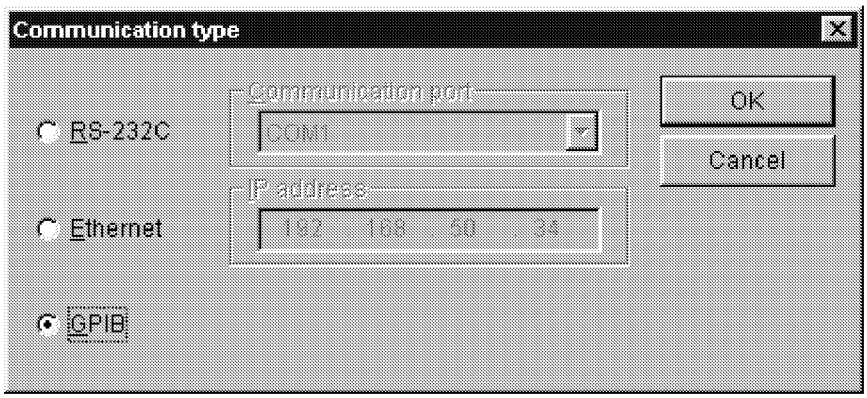


Figure 5-18 [Communication type] Window (GP-IB Connection)

5.7 MCS (Man-machine Communication System)

Function: Displays MCS.

Operation: See the operation procedure below.

(1) Click the [MCS] button on the [NX/Tools-S10] window.

(2) The [MCS] window is displayed. Select a "Method to specify," and set the "Top Address" or "PI/O" element.

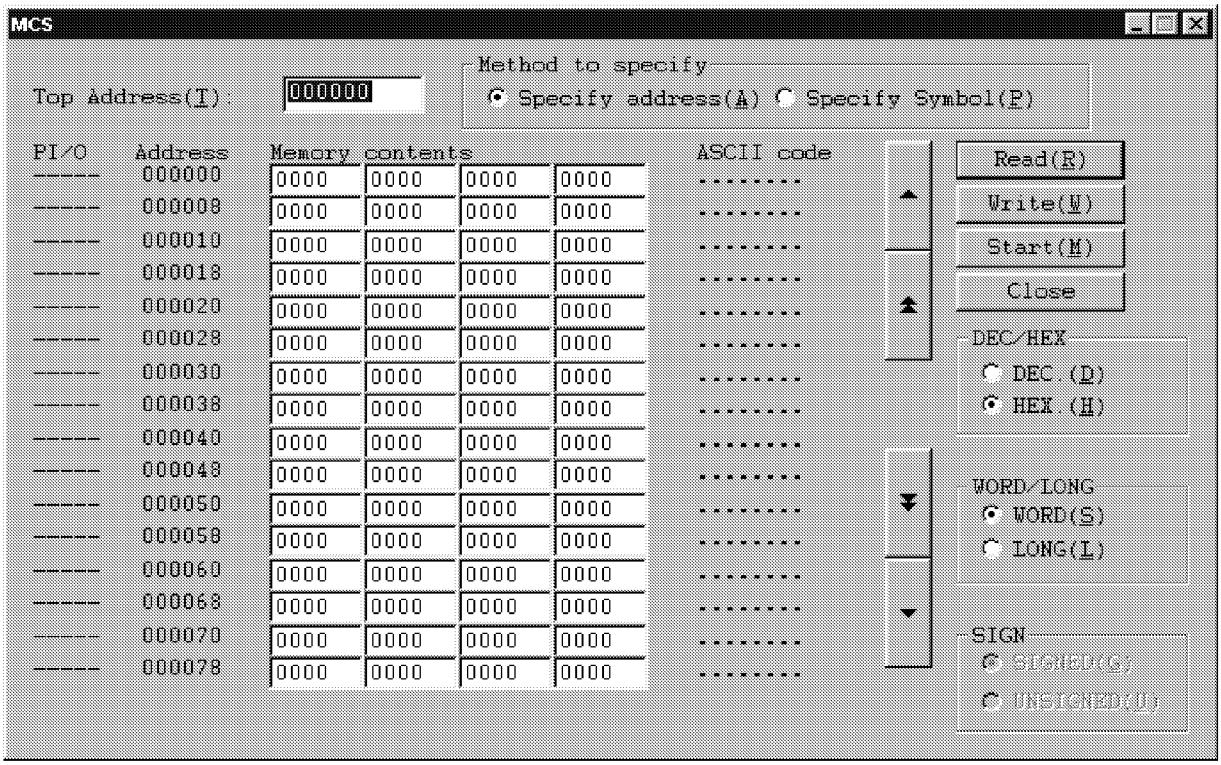


Figure 5-19 [MCS] Window

(3) To read data from the see "Top Address" or "PI/O" element, click the [Read] button.
To write data to the see "Top Address" or "PI/O" element, click the [Write] button.
To monitor the see "Top Address" or "PI/O" element, click the [Start] button.
To close the [MCS] window, click the [Close] button.

5.8 Table Information Editing - Main/Local DF (Sub/Local DF)

Function: Edits the local DF (main/sub) of the NX setup information offline.

Operation: See the operation procedure below.

(1) On the [NX/Tools-S10] window, select the "Offline" radio button. If the "Offline" radio button is already selected, skip this step.

(2) Unless you have selected the file to be edited, or if you intend to change your file selection, click the Edition file select button. If you have already selected the file to be edited or have no intention to change your file selection, skip this step. For the selection of the file to be edited, see "5.10 Edition File Select."

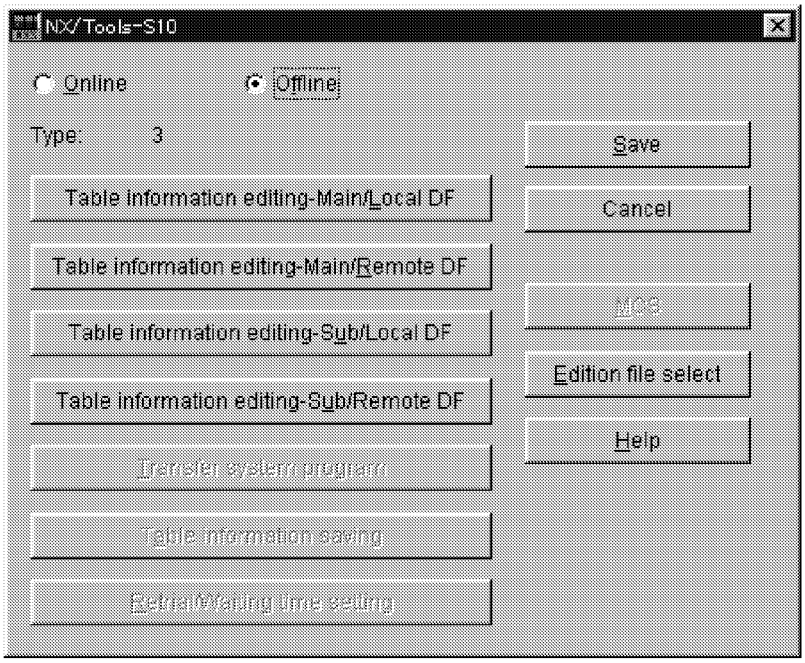


Figure 5-20 [NX/Tools-S10] Window (Offline)

(3) Click the Table information editing - Main/Local DF button.

- Table information editing - Main/Local DF
  Data field that is directly connected to the main ET.NET module.
- Table information editing - Main/Remote DF
  Data field that is connected to the main ET.NET module via a router and gateway.
- Table information editing - Sub/Local DF
  Data field that is directly connected to the sub ET.NET module.
- Table information editing - Sub/Remote DF
  Data field that is connected to the sub ET.NET module via a router and gateway.

(4) The [Local] window (DF setup, offline) as shown in Figure 5-21 opens. This window is the same as the [Local] window shown in Figure 5-3 in "5.2 Main/Local DF (Sub/Local DF)," except that a File Name and file type are displayed. Therefore, see the associated description in Section 5.2 for details.

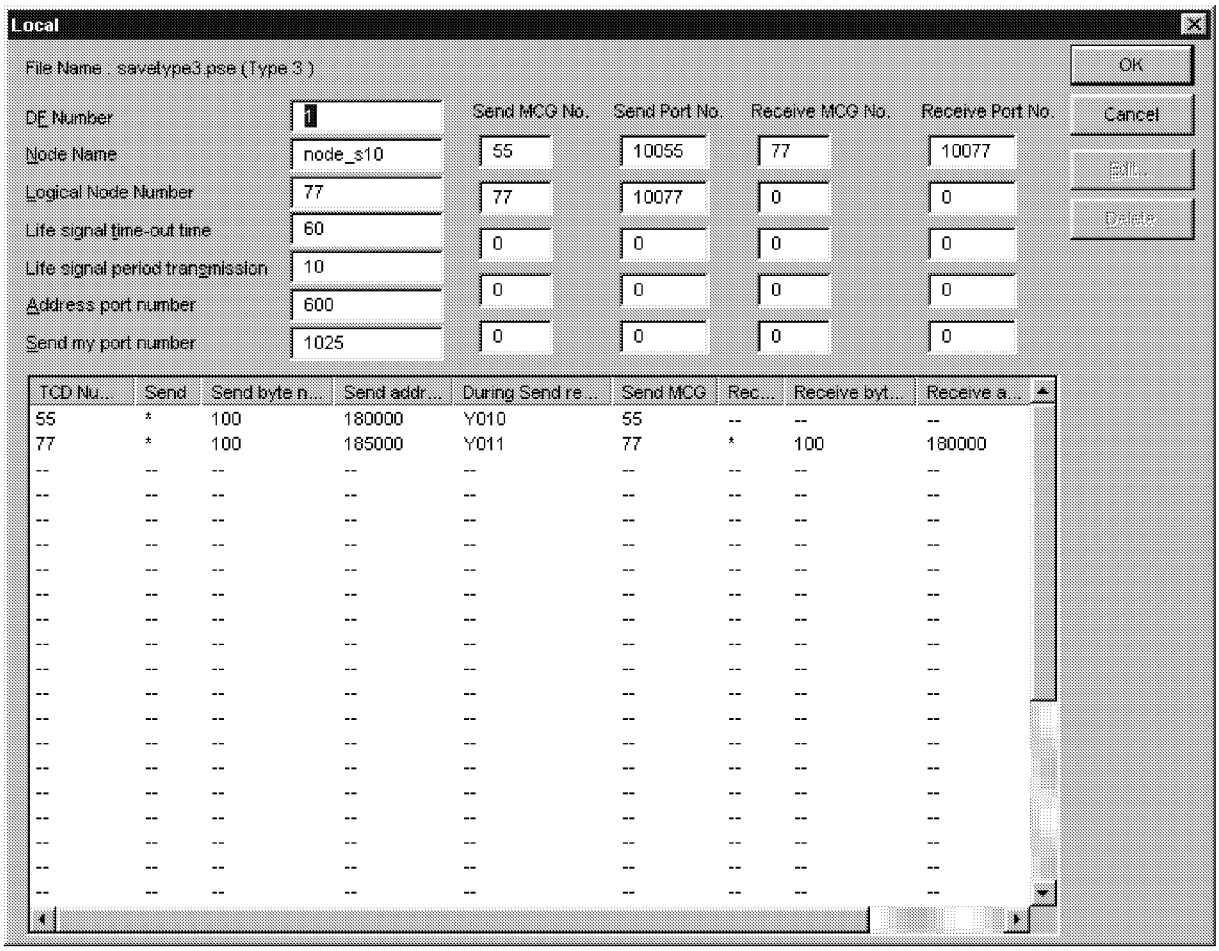


Figure 5-21 [Local] Window (DF Setup, Offline)

(5) As regards the TCD information, see the [TCD Set] window shown in Figure 5-4 in "5.2 Main/Local DF (Sub/Local DF)."

5.9 Table Information Editing - Main/Remote DF (Sub/Remote DF)

Function: Edits the remote DF (main/sub) portion of the NX setup information offline.
Operation: See the operation procedure below.

(1) On the [NX/Tools-S10] window, select the "Offline" radio button. If the "Offline" radio button is already selected, skip this step.

(2) Unless you have selected the file to be edited, or if you intend to change your file selection, click the [Edition file select] button. If you have already selected the file to be edited or have no intention to change your file selection, skip this step. For the selection of the file to be edited, see "5.10 Edition File Select."

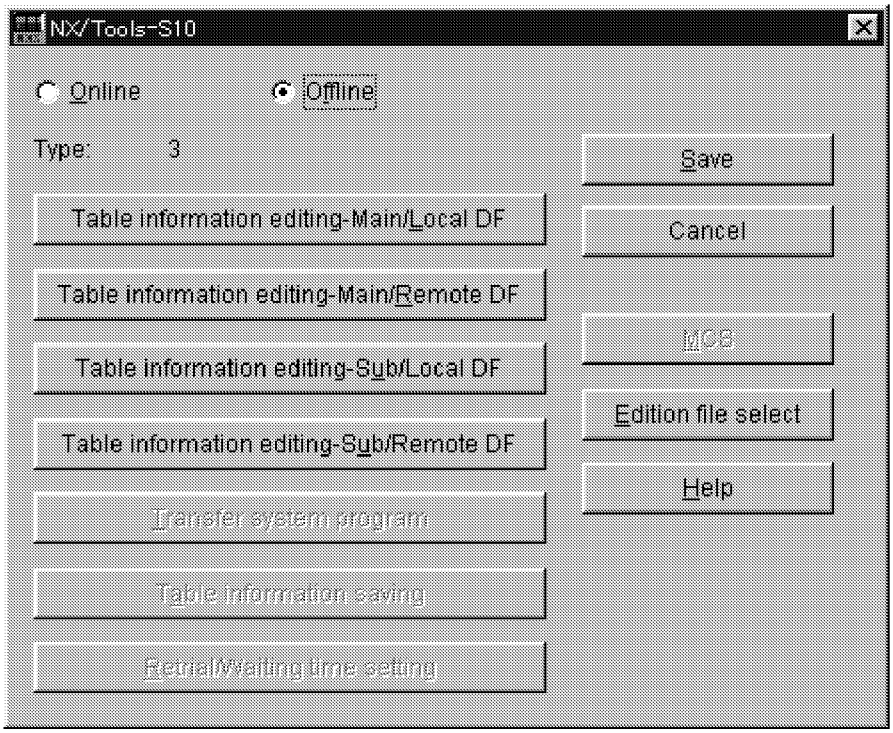


Figure 5-22 [NX/Tools-S10] Window (Offline)

(3) Click the [Table information editing - Main/Remote DF] button.

(4) The [Remote] window (DF setup, offline) opens as shown in Figure 5-23. This window is the same as the Remote window shown in Figure 5-6 in "5.3 Main/Remote DF (Sub/Remote DF)," except that a File Name and file type are displayed. Therefore, see the associated description in Section 5.3 for details.

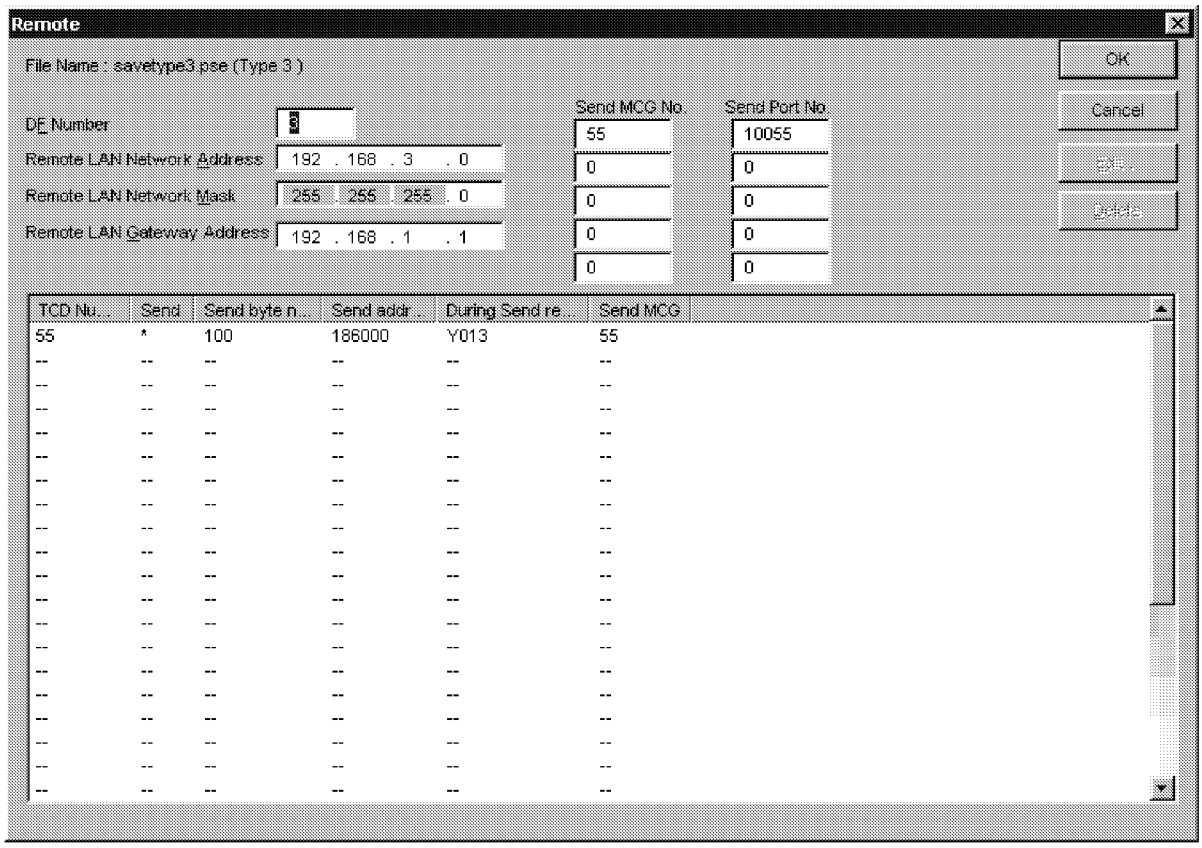


Figure 5-23 [Remote] Window (DF Setup, Offline)

(5) As regards the TCD information, see the [TCD Set] window shown in Figure 5-8 in "5.3 Main/Remote DF (Sub/Remote DF)."

5.10 Edition File Select

Function: Selects the file to be edited offline.

Operation: See the operation procedure below.

(1) On the [NX/Tools-S10] window, select the "Offline" radio button. If the "Offline" radio button is already selected, skip this step.

(2) Unless you have selected the file to be edited, or if you intend to change your file selection, click the Edition file select button. The [Open] window is displayed.

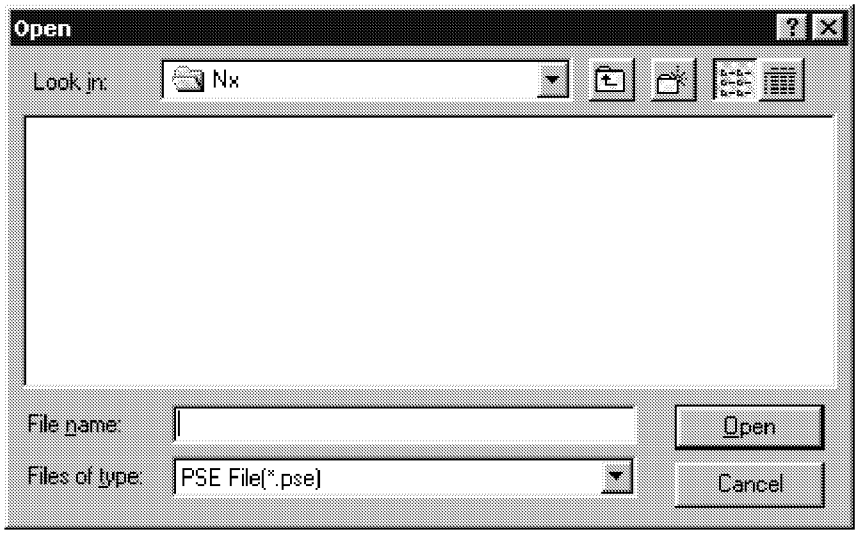


Figure 5-24 [Open] Window

(3) In the "File name" text box, enter the name of the file to be edited, and then click the Open button. If the specified file name does not exist, an error message dialog box opens. (A dialog box shown in Figure 5-25 may open when the file name 'dummy.pse' is entered.)

Figure 5-25 [Open] Error Message Dialog Box

APPENDIXES

APPENDIX A Details of Error Codes

(1) Internal receiving-task error codes are detailed below. These error codes are to be set in the FWBFF register.

Code	Meaning	Required user response
0x831	The NX management table was not found.	Download NX/HOST-S10.
0x832	The nxldsat table was not found.	Download NX/HOST-S10.
0x833	The NX table for the local Main is nonexistent.	Download NX/HOST-S10.
0x834	The local Main setup TCD defined in the nxldsat table was not for reception use.	Exercise the sat function to set the TCD for reception use.
0x835	The message previously received by the local Main was not found.	Set the reception register to OFF (0).
0x836	The local Main setup TCD was not defined in the nxldsat table.	Perform TCD setup with NX/Tools-S10.
0x83b	The NX table for the local Sub is nonexistent.	Download NX/HOST-S10.
0x83c	The local Sub setup TCD defined in the nxldsat table was not for reception use.	Exercise the sat function to set the TCD for reception use.
0x83d	The message previously received by the local Sub was not found.	Set the reception register to OFF (0).
0x83e	The local Sub setup TCD was not defined in the nxldsat table.	Use NX/Tools-S10 to set the TCD for reception use.
0x843	The entered DF number was not defined in the NX table.	Use NX/Tools-S10 to set the TCD in the DF.
0xXXX	An error was detected in an NX reception (XXX is getran's return code).	Eliminate the NX error in accordance with the return code.

(2) Internal transmitting-task error codes are detailed below. These error codes are to be set in the FWBFE register.

Code	Meaning	Required user response
0x821	The NX management table was not found.	Download NX/HOST-S10.
0x822	The nxldsat table was not found.	Download NX/HOST-S10.
0x823	The NX table for the local Main is nonexistent.	Download NX/HOST-S10.
0x824	The NX table for the remote Main is nonexistent.	Download NX/HOST-S10.
0x825	The NX table for the local Sub is nonexistent.	Download NX/HOST-S10.
0x826	The NX table for the remote Sub is nonexistent.	Download NX/HOST-S10.
0xXXX	An error was detected in an NX transmission (XXX is putran's return code).	Eliminate the NX error in accordance with the return code.

(3) Internal transmitting-task error codes are detailed below. These error codes are to be set in the FWBFE register.

- 0x801 to 0x802: sat() mathematical/logical function error
- 0x811 to 0x81f: acp() mathematical/logical function error

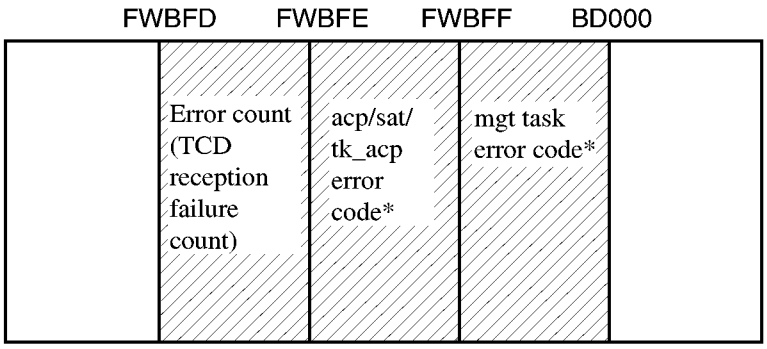
Code	Meaning	Required user response
0x801	The NX management table was not found.	Download NX/HOST-S10.
0x802	The nxldsat table was not found.	Download NX/HOST-S10.

Code	Meaning	Required user response
0x811	The NX management table was not found.	Download NX/HOST-S10.
0x812	The nxldsat table was not found.	Download NX/HOST-S10.
0x813	The NX table for the local Main is nonexistent.	Download NX/HOST-S10.
0x814	The local Main setup TCD defined in the nxldsat table was not for transmission use.	Use NX/Tools-S10 to set the TCD for transmission use.
0x815	The local Main setup TCD was not defined in the nxldsat table.	Use NX/Tools-S10 to set the TCD.
0x816	The NX table for the remote Main is nonexistent.	Download NX/HOST-S10.
0x817	The remote Main setup TCD defined in the nxldsat table was not for transmission use.	Use NX/Tools-S10 to set the TCD for transmission use.
0x818	The remote Main setup TCD was not defined in the nxldsat table.	Use NX/Tools-S10 to set the TCD.
0x819	The NX table for the local Sub is nonexistent.	Download NX/HOST-S10.
0x81a	The local Sub setup TCD defined in the nxldsat table was not for transmission use.	Use NX/Tools-S10 to set the TCD for transmission use.
0x81b	The local Sub setup TCD was not defined in the nxldsat table.	Use NX/Tools-S10 to set the TCD.
0x81c	The NX table for the remote Sub is nonexistent.	Download NX/HOST-S10.
0x81d	The remote Sub setup TCD defined in the nxldsat table was not for transmission use.	Use NX/Tools-S10 to set the TCD for transmission use.
0x81e	The remote Sub setup TCD was not defined in the nxldsat table.	Use NX/Tools-S10 to set the TCD.
0x81f	The entered DF number was not defined in the NX table.	Use NX/Tools-S10 to complete DF setup.

APPENDIX B List of Registers Used

The registers used by NX/HOST-S10 are listed below.

<Functional work registers>



* For the error codes to be set and their meanings, see "APPENDIX A Details of Error Codes."