PASOLINK NEO/a
6-38 GHz PDH/SDH DIGITAL RADIO SYSTEM

Section V OPERATION TERMINAL

CONTENTS

DOCUMENT WARRANTY

1 The information contained in this document is subject to change without prior notice.

2 The PNMS/PNMT screens in this manual are only examples. Screens will vary according to equipment configurations, equipment operation modes, setting parameters, PNMS/PNMT application program version, etc. Screens contained in this manual are current at the moment of publishing; however, they may differ slightly from the actual screens on your PNMS/ PNMT.

3 This manual is written on the assumption that you already understand the restrictions, limitations and precautions necessary to operate the equipment properly. Refer to the respective equipment manual for details.

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1. GETTING STARTED

1.1 Introduction

The PNMT is a computer-based PASOLINK Network Management Terminal system developed by NEC for management of NEC's PASOLINK wireless transmission network. The PNMT is a scaled down version of PASOLINK Network Management System (PNMS) that is designed as a maintenance tool for field engineers to locally and remotely monitor alarms, control points, generate reports, and archive data, all within a familiar graphical user interface, and all in real time. Throughout this manual, "the PNMT" generally refers to the mobile laptop computer in which the NEC PNMT software package (that interfaces and controls NEC PASOLINK series short haul wireless equipment) is installed in.

This software package remotely monitors and controls the status and configuration of an entire PASOLINK network with associated equipment as well as the performance of the actual microwave radio links.

1.2 Conventions Used in This Manual

Font	What the Font Represents	Example
Italic	For manual titles or related document names.	Please refer to *PASOLINK Operation Manual* for details.
Hostname Bold	Items on the user interface. Items on the computer display. File and directory names.	The **Overall** window
[Button]	Buttons in the user interface.	Click **[OK]** button to continue Click **[Execute]** button to send command.
Menu Items	A menu name followed by a colon (:) means that you must select the menu and then the item. When the item is followed by an arrow (→), a cascading menu follows.	Select System → Login/Logout
<username>	A command variable where the user must make the appropriate entry. This is also commonly used when asking for a password.	<password>
Keycap	Keyboard keys.	Press Enter key.

1.3 PNMT Communication Interfaces

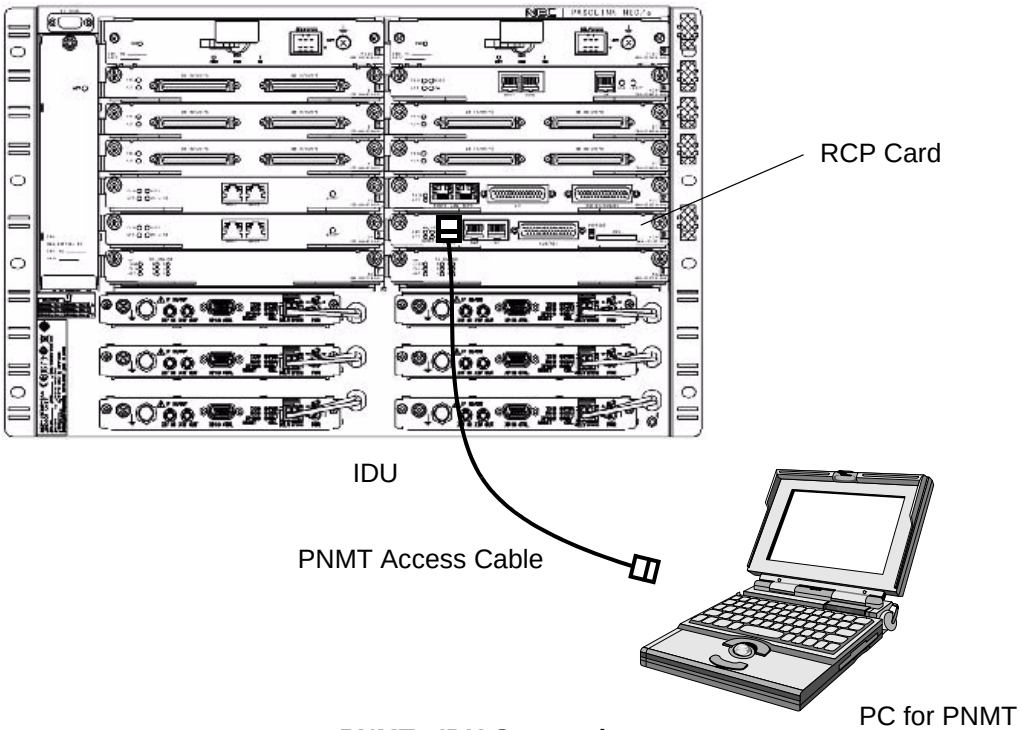
1.3.1 Communications

Communications between the PNMT and the wireless network equipment is possible.

- via the **LOCAL** port of the equipment.

1.3.2 LOCAL Port Interface

The LOCAL port is located on the front of the equipment.



PNMT - IDU Connection

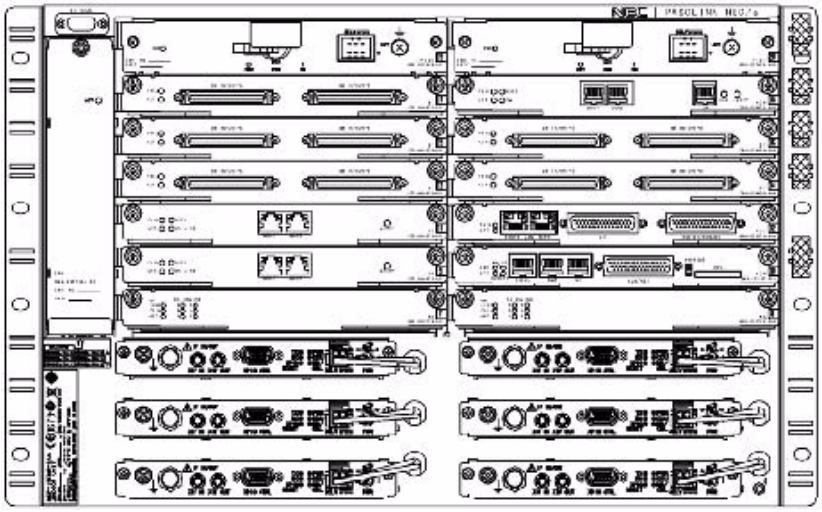
The PNMT and the RCP card mounted in the IDU must be connected using LAN cable.

The LOCAL port has the following specifications:

- 10BASE-T
- Connector type: RJ-45

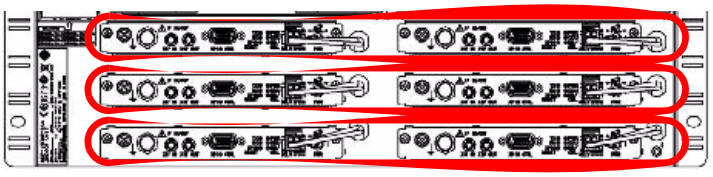
1.4 Equipment Configuration of PASOLINK NEO/a

The PASOLINK NEO/a IDU has 9 functions (MODEM, RA, AP, CS, MCP, RCP, PINF, AUX and FAN).



IDU (Fully Equipped)

Six (6) MODEMs in the IDU are grouped into three (3) Switch groups as shown below. The relations of MODEM switch groups and unprotected/ protected/XPIC configurations are also given below.



- Unprotected without XPIC: (1+0) or 2(1+0) within one SW Group.
- Protected without XPIC: (1+1) within one SW Group.
- Unprotected with XPIC: 2(1+0) within one SW Group.
- Protected with XPIC: 2(1+1) protected within one SW Group and XPIC application between SW Group1 and SW Group2.

The Radio Access card (RA) is the signal converter between MODEM and AP/CS cards. The Application card (AP) is provided for PDH, SDH and LAN interface. The Cross connect Switch card (CS) provides PDH, SDH and LAN signal cross connect. The RCP and MCP are control cards for radio portion and for baseband portion, respectively.

The Auxiliary (AUX) panel provides the DSC/WS/EOW channels. The PINF is power line input and power distribution to each unit. Four (4) fans are installed in the FAN unit.

Hardware Requirements
Recommended configuration of PNMT mobile computer

- CPU: Pentium M 1.60 GHz (or equivalent)
- RAM: 512 MB or more
- HD: 40 GB or more
- Display: color LCD (1,024 768) or more
- FD drive
- CD-ROM drive
- Serial port (RS-232C)
- 10/100BASE-T(X) LAN port
- Internal sound system with speaker

1.5 Software Requirements

- OS: Windows XP Professional (English version) with SP2 or higher
  Windows Vista Business Edition (English version) with SP1 or higher

- Adobe Reader ver 7.0/8.0 or higher
- PNMT Application software (including ADM Management Tool)

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2. CONFIGURATION OF PNMT

This section provides information on how to configure the PASOLINK NEO/a Nodal radio using the PNMT. PASOLINK NEO/a can communicate with up to 6 radio branches and SDH/PDH tributary signals through a digital cross connect unit. The system provides a combination of PDH, SDH and Fast Ethernet interfaces.

The PASOLINK NEO/a, has up to 5 Application interface cards (AP Card), each having multiple interface ports and up to 6 MODEMs. The connections between the Application interfaces and the MODEMs are facilitated through the redundant cross connect switches.

RA unit provides proper inter-connection between the CS and the MODEM units and converts the cross connect signals for each radio direction in to the respective radio frames.

The handling of DSC/WS/EOW communications is performed by the AUX card.

The functional block diagram of the PASOLINK NEO/a is shown in Fig. 2-1.

The Radio Control Processor (RCP) and the Main Control Processor (MCP) perform the monitor and control functions of the cards in NEO/a. The RCP handle the radio portion and the MCP handles the baseband portion. The RCP and MCP communicate with each other. The RCP also provides the communication interface for the Local (PNMT) and Remote Network Management Systems.

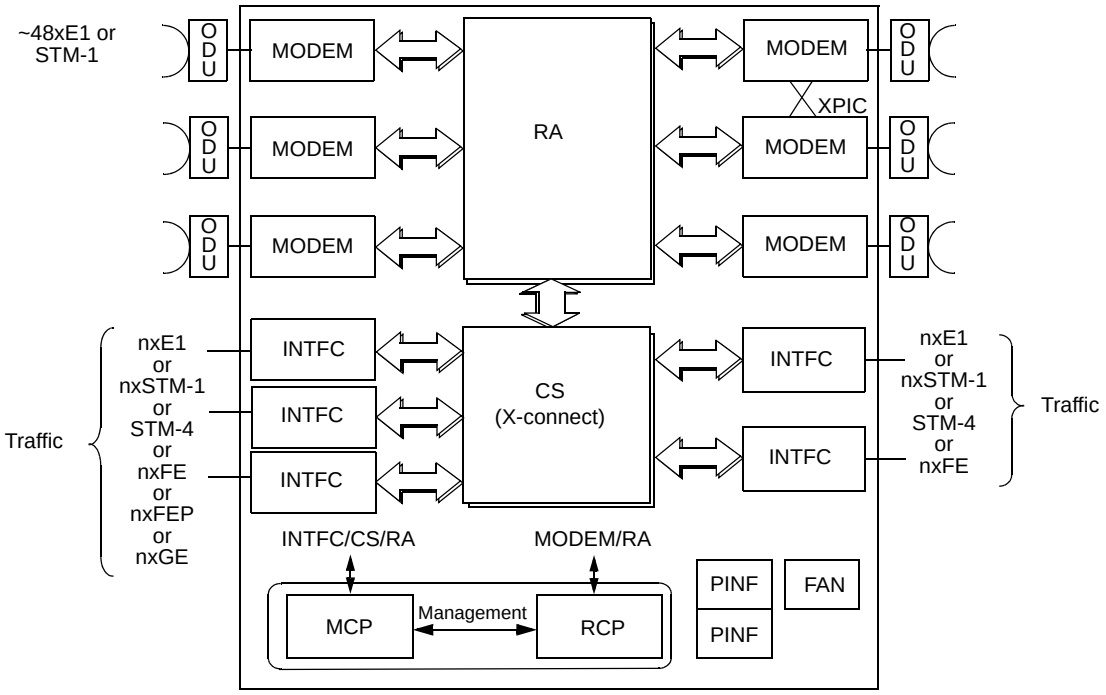

Fig. 2-1 Functional Block Diagram of PASOLINK NEO/a

ADM Management Tool is provided in the PNMT for configuring, operation and maintenance of the cards in the baseband portion.

ADM Management Tool can be accessed only after the radio portion is configured from the PNMT.

Brief description of PNMT operation is described below.

Operation of PNMT radio portion:

1 Start PNMT Program.

2 Login as admin.

3 From the PNMT Main window perform Equipment Setup of the cards in the Radio portion.

4 Perform the provisioning function for the cards in the radio portion.

5 Perform monitor and control functions of the cards in the radio portion.

Operation of the ADM Management Tool

1 To access the ADM Management Tool, click on any card in the baseband portion of the NEO/a block diagram on PNMT main window.

2 From the ADM Management Tool Main window perform NE setup for the baseband portion (This can be carried out using the Setup wizard).

3 Perform Provisioning of the baseband portion.

4 Perform Monitor and Control functions of the cards in Baseband portion.

The relationship between the PNMT and ADM Management Tool is shown in Fig. 2-2.

ADM Management Tool which handles baseband portion is part of PNMT. When card in baseband portion is clicked, ADM Management Tool is executed automatically.

Section 3 and Section 4 of this manual provides detail descriptions of the operation of PNMT and ADM Management Tool.

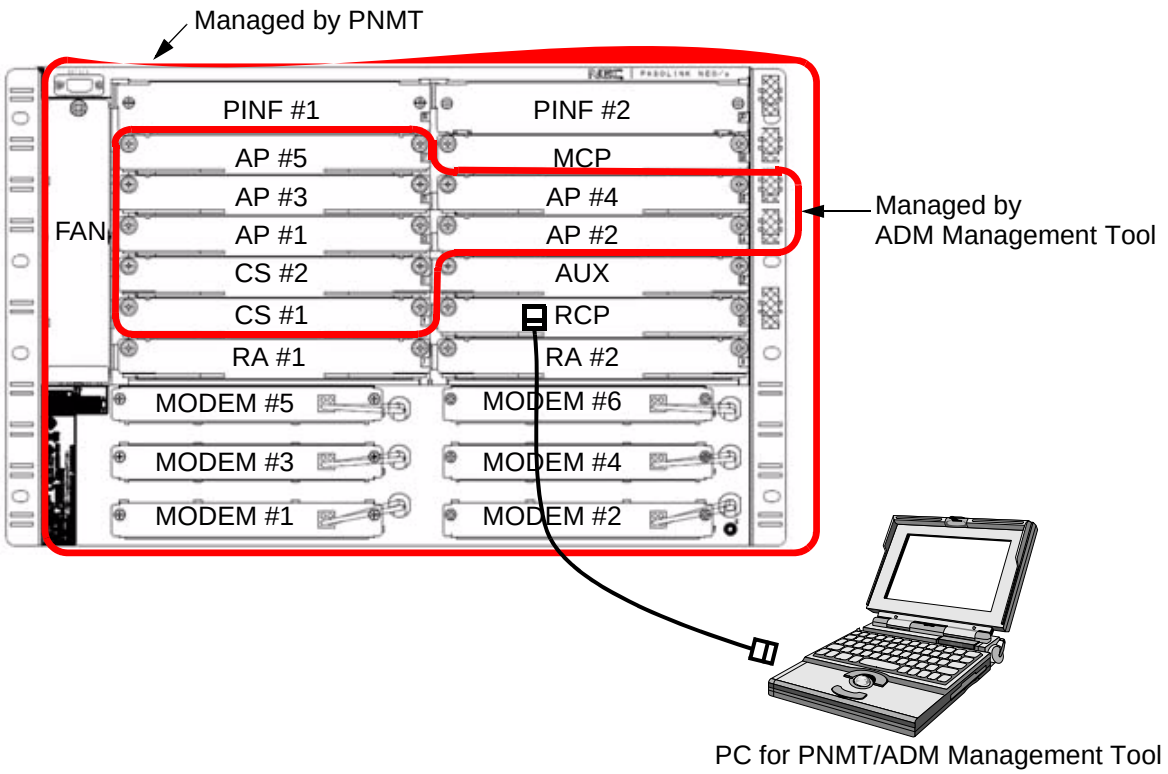

Fig. 2-2 ADM Management Tool

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3. SYSTEM OPERATION & MAINTENANCE WITH PNMT FOR RADIO PORTION1

This chapter explains the menu structure and procedures for operating the PNMT. The explanation uses typical PNMT screens to illustrate the hierarchy of menu.

3.1 The PNMT Screen

The PNMT window comprises the following main parts (Refer to Fig. 3-1-1).

- **Title Bar**

  The title bar of the window is used to indicate its title.

- **Common Menu Bar**

  The common menu bar of the window presents the **System** and **Help** options, illustrates the commands that can be executed from the various options. The **Help** function also can display an operation manual.

- **NE-specific Menu Bar**

  This menu is a list of tasks that can be performed to the specific network element (NE) displayed in the PNMT. Configuration, Event Log, and Link Performance Monitor functions can be executed in the NE-specific menu bar.

- **Block Diagram**

  The block diagram illustrates the equipment/part of the PASOLINK wireless system. Its main purpose in the window is to display the current summary alarm state of the equipment. You can click a specific block to display the status of equipment in the Data Window.

- **Overall Status Window**

  The Overall Status Window shows a snapshot of all important parameters/settings for the NE. This window only displays current settings; control functions cannot be performed here.

- **Data Window**

  This window displays in detail the status and alarm items of specific equipment/parts of the NE. You can select the tab or the block of the specific equipment/part which you want to monitor in the Data Window.

- **Tabs**

  To view the status and alarms in the specific part of the NE, click on the tab at the bottom of the Data Window.

- **Command Button**

  The command button is used to enter the data selected in the pop-up window into the computer.

- **Text Box**

  This is a standard Windows dialog box where the user inputs the desired value.

- **Login User**

  Denotes the user currently logged-in to the PNMT.

- **Background color attribute for each alarm and status**

  The respective Background color for each alarm and status is as follows:
  normal: Green, major alarm: Red, minor alarm: Pink,
  status value: White, disabled: Gray, maintenance: Yellow

- **IDU Tabs**

  Tabs are displayed for the number of IDUs configured for the Station.

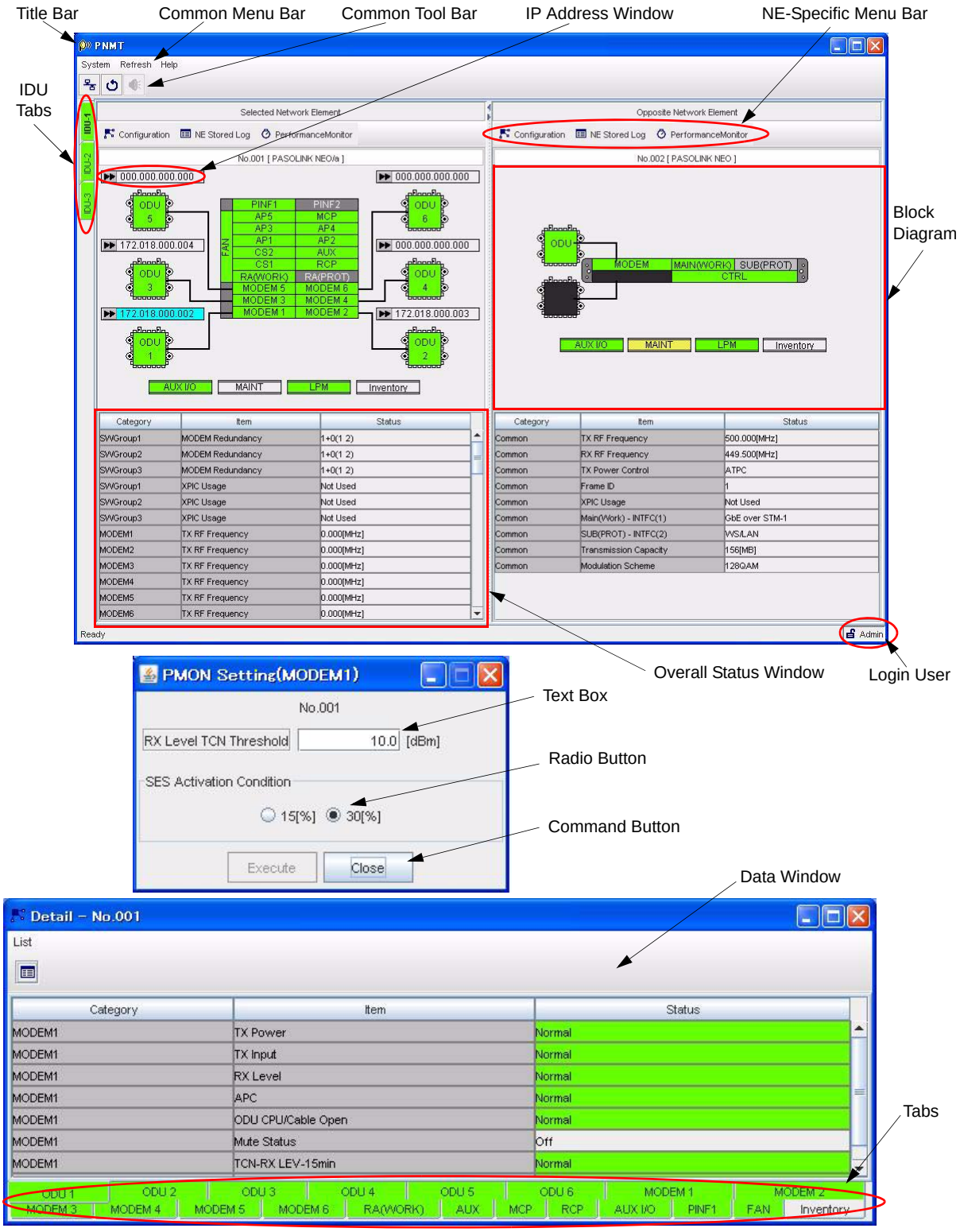


Fig. 3-1-1 Standard components of PNMT Window

3.2 Launching the PNMT Application

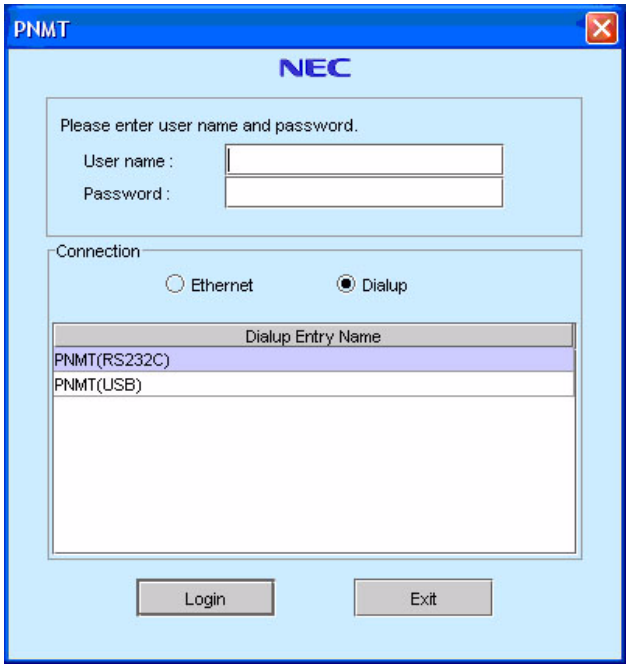
To start PNMT:

1 Turn ON the computer.

Note: Connect the PNMT cable 30 seconds after IDU's power is ON making sure that the PNMT cable is connected between LAN port of the PNMT computer and the PNMT port of the IDU.

2 Login to Windows OS.

3 Click **Start** → **Programs** → **PNMTj** → **Pnmt**, then continue to the login window.



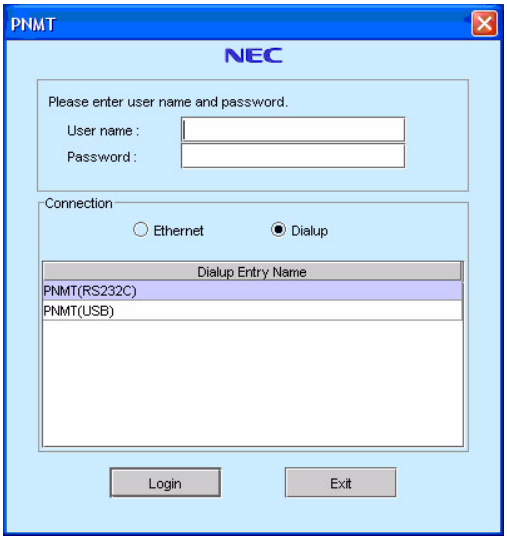
Note: Please do not change the clock settings of your computer once PNMT has started.

3.3 Login

Users are registered by means of login name and password.

To protect the network and network management system from unauthorized access or unauthorized modifications, five levels (refer to the table shown in Section 3.3.1 User Access Privilege Levels) of users are defined with different privileges. The functions available in the window depend on the user's access level. Therefore, some of the functions may or may not be carried out.

The highest or administrator level (Admin) has full access to the network and network management system.To login:



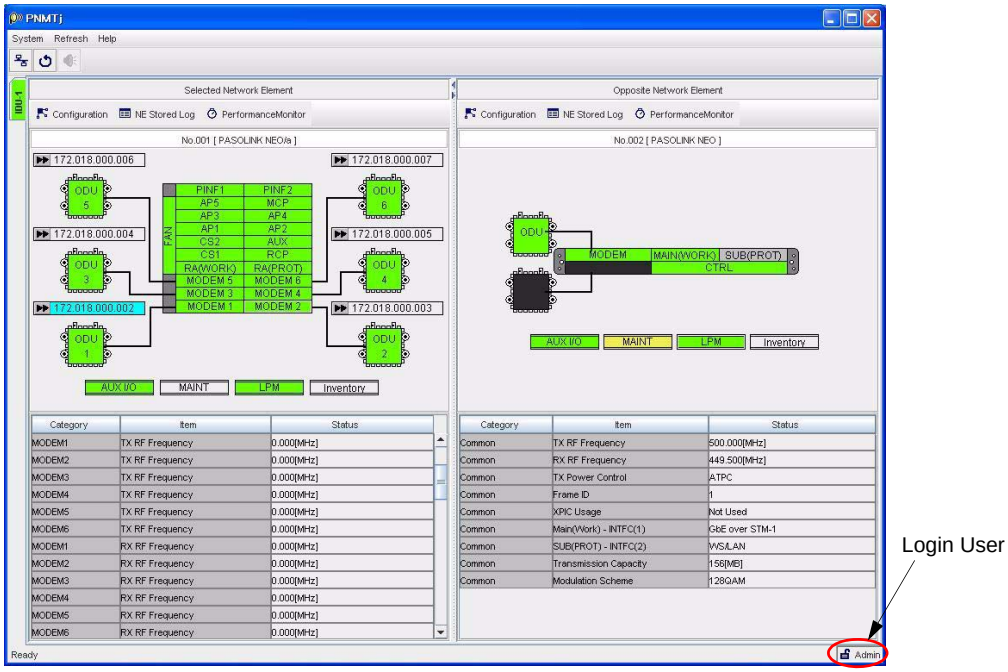
1 Start PNMT, and then Login window appears.

2 Enter the <user name>.

3 Enter the valid <password> for the respective user.

4 For Connection select Ethernet.

5 Click the **[Login]** button. If you wish to exit the program, click the **[Exit]** button.



3.3.1 User Access Privilege Levels

√: Available,: –: Not available

Functions			User Name and Accessible Functions				
Category		Item	Monitor	User	Local	Remote	Admin
SYTEM		ALARM BUZZER	–	√	√	√	√
		CONNECT (Remote Login)	–	–	–	√	√
EQUIPMENT SETUP		(Wizard Setting)	–	–	√	√	√
		NE NAME	–	–	√	√	√
		NOTE	–	√	√	√	√
PROVISIONING	AIS SETTING	AIS ACTIVATION CONDITION	–	–	√	√	√
	BER THRESHOLD SETTING	HIGH BER THRESHOLD	–	–	√	√	√
		LOW BER THRESHOLD	–	–	√	√	√
	SC ASSIGNMENT	RS-232C-1	–	–	√	√	√
		RS-232C-2	–	–	√	√	√
		RS-232C-3	–	–	√	√	√
		V11-1	–	–	√	√	√
		V11-2	–	–	√	√	√
		V11-3	–	–	√	√	√
		SC LAN1	–	–	√	√	√
		SC LAN2	–	–	√	√	√
		SC LAN3	–	–	√	√	√
		SC LAN4	–	–	√	√	√
		SC LAN5	–	–	√	√	√
		SC LAN6	–	–	√	√	√
		MODEM1 SCx	–	–	√	√	√
		MODEM2 SCx	–	–	√	√	√
		MODEM3 SCx	–	–	√	√	√
		MODEM4 SCx	–	–	√	√	√
		MODEM5 SCx	–	–	√	√	√
		MODEM6 SCx	–	–	√	√	√
		V11-1 DIRECTION SETTING	–	–	√	√	√
		V11-2 DIRECTION SETTING	–	–	√	√	√
		V11-3 DIRECTION SETTING	–	–	√	√	√
	LAN PORT SETTING	LAN PORTx USAGE	–	–	√	√	√
		SPEED & DUPLEX PORTx	–	–	√	√	√
		FLOW CONTROL PORTx	–	–	√	√	√
		COLLISION REPORT PORTx	–	–	√	√	√
	MEMBERSHIP SETTING	LANx TRANSPARENT USAGE	–	–	√	√	√
		WANx TRANSPARENT USAGE	–	–	√	√	√
	COMM ALARM MODE SETTING	COMM ALARM MODE	–	–	√	√	√
	TX POWER CTRL	MTPC TX POWER	–	–	√	√	√
		ATPC THRESHOLD LEVEL	–	–	√	√	√
		ADDITIONAL ATT	–	–	√	√	√
		ATPC RANGE (MAX)	–	–	√	√	√
		ATPC RANGE (MIN)	–	–	√	√	√
		ATPC POWER MODE	–	–	√	√	√
	CONDITION for TX/RX SW	TX SW PRIORITY	–	–	√	√	√
		RX SW PRIORITY	–	–	√	√	√
		RX SW MAINTENANCE MODE	–	–	√	√	√
		RX SW CONDITION-EARLY WARNING	–	–	√	√	√
		TX SW LOCK IN USAGE	–	–	√	√	√
	RELAY CONFIGURATION	RELAY CONFIGURATION	–	–	√	√	√
		CLUSTER INPUT	–	–	√	√	√
		CLUSTER OUTPUT	–	–	√	√	√
	TCN THRESHOLD	TCN THRESHOLD (PMON Threshold)	–	–	√	√	√
	XPIC CONDITION-LOCAL FAIL	XPIC CONDITION-LOCAL FAIL	–	–	√	√	√
	EOW EXTERNAL SETTING	EOWx EXTERNAL SETTING	–	–	√	√	√
	EOW DSC USAGE	EOW DSC USAGE	–	–	√	√	√
	EOW SOH USAGE	EOW SOH USAGE	–	–	√	√	√
	EOW 4WIRE USAGE	EOW 4WIRE USAGE	–	–	√	√	√

Functions			User Name and Accessible Functions				
Category		Item	Monitor	User	Local	Remote	Admin
PROVISIONING	WS PORT SETTING	WS USAGE	–	–	√	√	√
		WS IMPEDANCE	–	–	√	√	√
		WS AIS GENERATED REPORT	–	–	√	√	√
		WS AIS RECEIVED REPORT	–	–	√	√	√
	PMON SETTING	RX LEV TCN THRESHOLD	–	–	√	√	√
		SES ACTIVATION CONDITION	–	–	√	√	√
	ALARM CORRELATION	ALARM CORRELATION CAPABILITY	–	–	√	√	√
MAINTENANCE		MAINTENANCE	–	√	√	√	√
		TX SW MANUAL CONTROL	–	–	√	√	√
		RX SW MANUAL CONTROL	–	–	√	√	√
		ATPC MANUAL CONTROL	–	–	√	√	√
		ATPC MANUAL POWER	–	–	√	√	√
		TX MUTE CONTROL	–	–	√	√	√
		TX MUTE OFF TIMER	–	–	√	√	√
		CW CONTROL	–	–	√	√	√
		IF LOOPBACK	–	–	√	√	√
		MAIN CH LOOPBACK-2	–	–	√	√	√
		MAIN LOOPBACK-2	–	–	√	√	√
		DADE ADJUST	–	–	√	√	√
		XPIC CONTROL	–	–	√	√	√
		RF SETTING	–	–	√	√	√
		ANTENNA ALIGNMENT MODE	–	–	√	√	√
		LAN DEVICE RESET	–	–	√	√	√
AUX I/O		INPUT	–	√	√	√	√
		OUTPUT	–	√	√	√	√
INVENTORY	PINF	PINF1	–	–	√	√	√
		PINF2	–	–	√	√	√
	FAN	FAN	–	–	√	√	√
PMON	PMON	ALL DATA CLEAR	–	√	√	√	√
		SAVE TO DISK	–	√	√	√	√
EVENT LOG		SAVE TO DISK	–	√	√	√	√
RCP	CONTROL	DATE/TIME	–	–	√	√	√
	DOWNLOAD	CONFIGURATION FILE	–	–	–	–	√
		PROGRAM FILE	–	–	–	–	√
		EQUIPMENT CONFIG. FILE	–	–	–	–	√
		FPGA FILE	–	–	–	–	√
	UPLOAD	CONFIGURATION FILE	–	–	–	–	√
		EQUIPMENT CONFIG. FILE	–	–	–	–	√
	EQUIPMENT NETWORK SETTING	EQUIPMENT NETWORK SETTING	–	–	–	–	√
	CPU RESET	RESET	–	–	√	√	√
	FPGA RESET	RESET	–	–	–	–	√

Note: Admin: Enabled to access all Network Elements.

Remote: Enabled to access all Network Elements. (Disabled from changing network configuration and changing/downloading programs)

Local: Enabled to access directly connected Network Elements. (Disabled from changing network configuration and changing/downloading programs)

User: Enabled only to access items that do not affect the equipment.

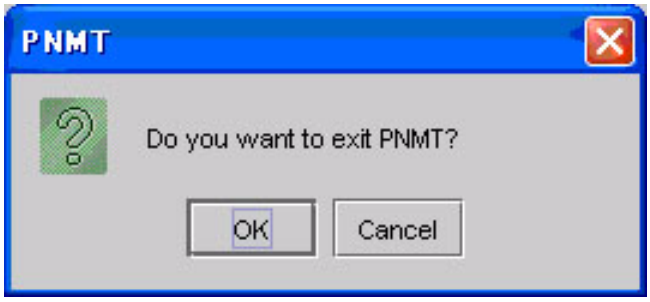
Enabled only to monitor (disabled from control).

3.4 Shutting Down the PNMT

To close the PNMT application:

1 Click **System** → **Exit** in the menu bar of the PNMT main window.

2 Click the **[OK]** button in the confirmation message window to close the application.

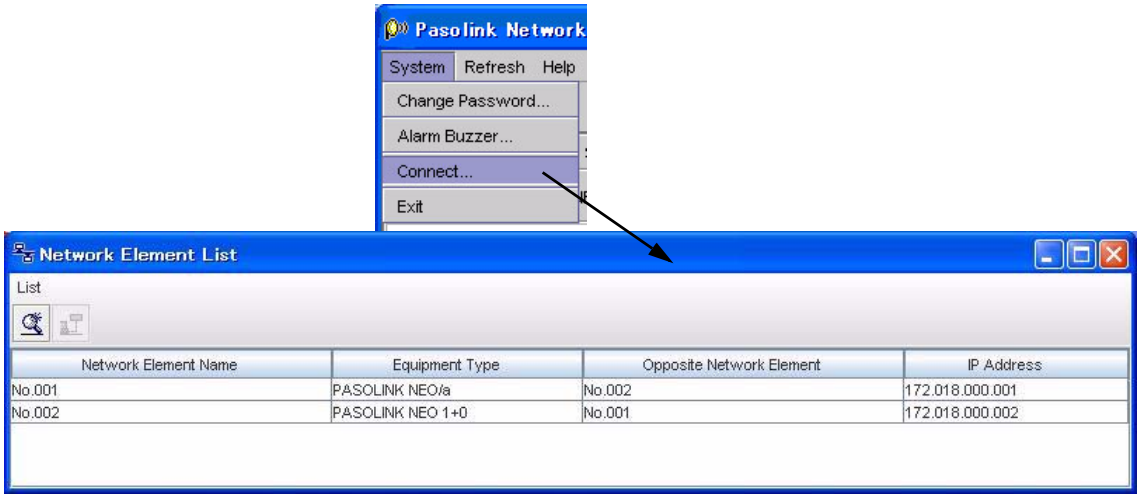


3.5 Searching for Network Elements and Connecting to Selected NE

The summary description (NE Name, Equipment Type, Opposite NE, etc.) of the current NE where PNMT is connected can be displayed using this function. Summary description of the opposite NE belonging to that link is also displayed.

To search for, or connect to, NE in the network:

1. Click **System** → **Connect** in menu bar of PNMT main window.



Note: Initially only the current NE physically connected to the PNMT and its opposite NE will be shown in the Network Element List.

2. Click on icon in the tool bar or **List** → **Search for Network Element** in the menu bar of the Network Element List window to display all connectable Network Elements in the network.

3. Select and highlight the Network Element to be viewed.

4. Click on icon in the tool bar or **List** → **Connect to Network Element** in the menu bar of the Network Element List window. The PNMT main window for both the selected, and its opposite, Network Element will be displayed.

Notes: Simultaneous connection from multiple PNMT to the same NE is possible:

1 : Local connection
PNMT is directly connected to the NE

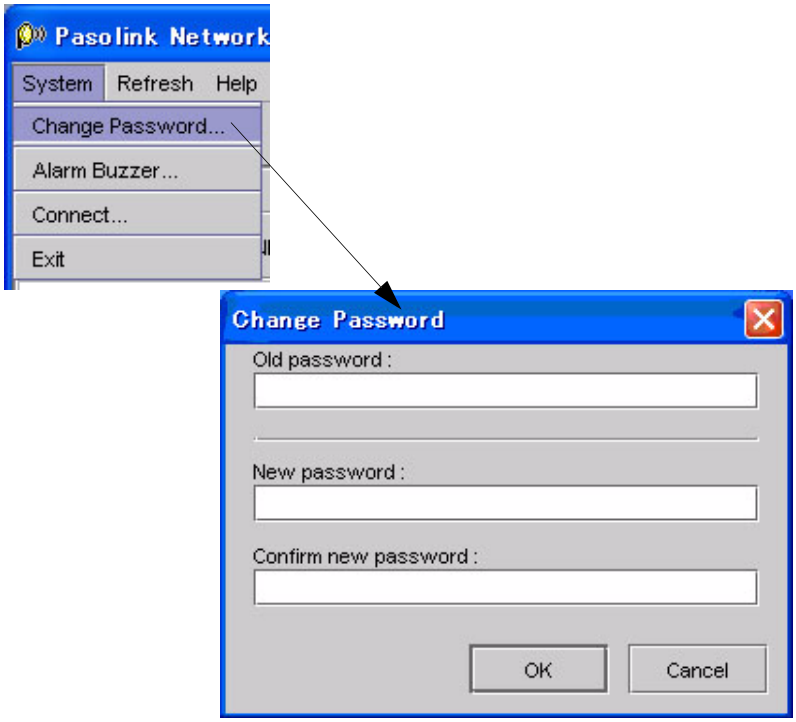
2 : Opposite connection
PNMT is connected to opposite NE (of the local network)

3 : Remote connection
PNMT is connected to the NE via remote access.

3.6 Change Password

To change the password:

1 Click **System** → **Change Password** in the menu bar of the PNMT main window.



2 Enter the old <password>.

3 Enter new <password>.

4 Re-enter the new <password> in the **Confirm New Password** box to confirm.

5 Click the **[OK]** button.

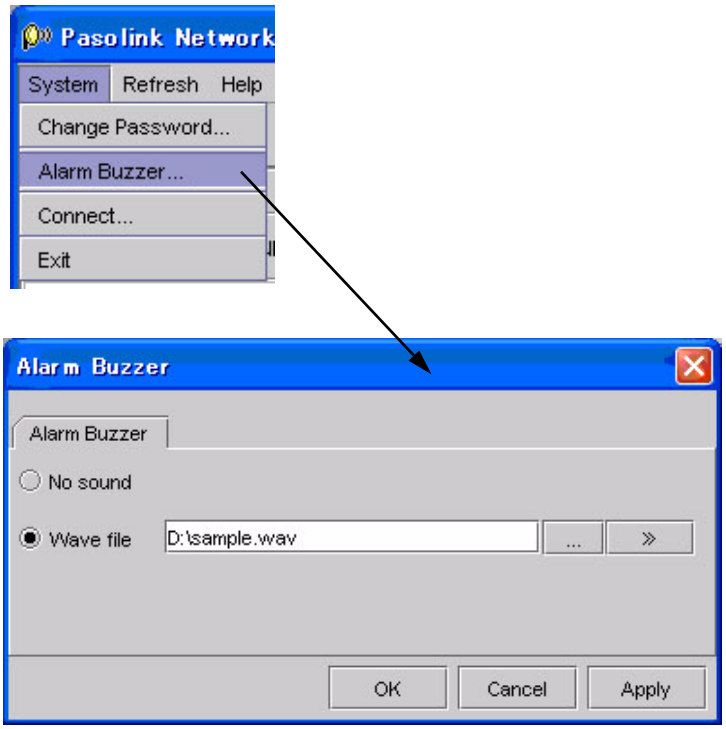
Note: For details on initial user name and password, please refer to the PNMT Installation Manual.

3.7 Alarm Buzzer Setting

This feature is used to activate and set the Alarm Buzzer. The desired sound scheme can also be set using this function.

To set the Alarm Buzzer:

1 Click **System** → **Alarm Buzzer** in the menu bar of the PNMT main window.



2 Select the **Wave file** to activate the buzzer. **No sound** is the factory setting of the PNMT.

3 If you select the **Wave file** box, enter the location of the sound file (*.wav) Otherwise; click the browse ... button to locate the desired file. You can also preview the *.wav file by clicking on the arrow » button next to the browse button.

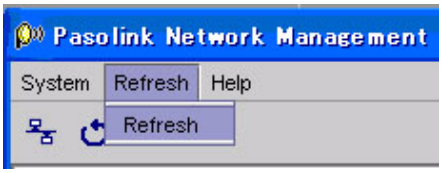
4 Click the **[OK]** button to activate the new setting.

3.8 Refresh

This function is supported only by PNMT. This function enables PNMT to manually obtain metering and alarm status, as well as to update equipment information.

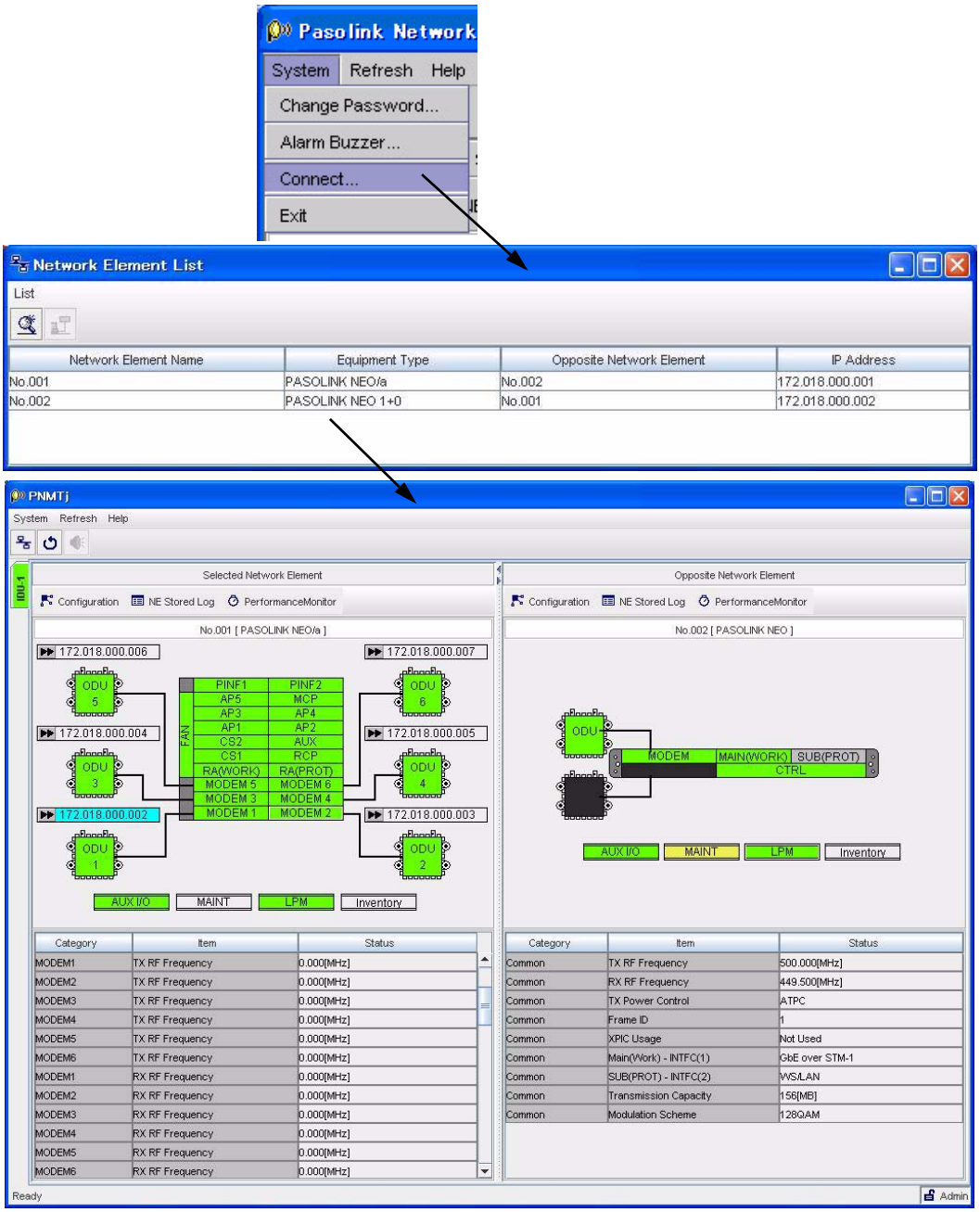
To Refresh:

1 Click **Refresh** → **Refresh** in the menu bar or click on the refresh icon in the tool bar.



3.9 Remote Viewing Using PNMT Main Window

You can view a target link underlying the one Root NE in the managed network by searching the connectable NEs and then connecting to the target NE. Please refer to **Section 3.5 Searching for Network Elements and Connecting to Selected NE**. This feature allows remote connection to any NE in the network.



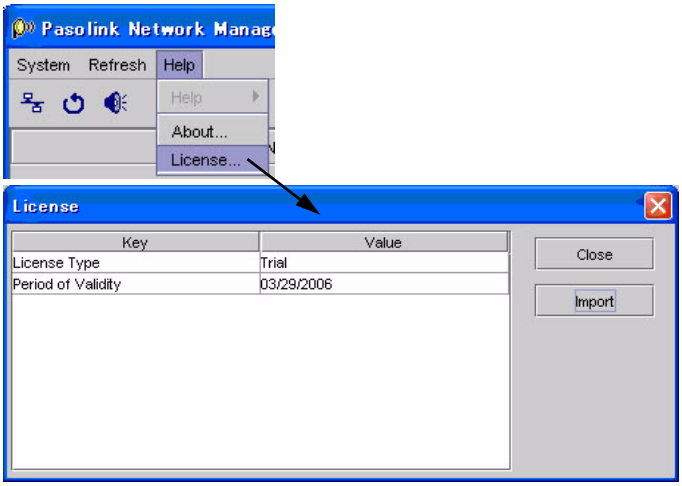
PNMT Main Window

3.10 License

To protect PNMT functions, the PNMT application includes the relevant license files.

To display the current license status:

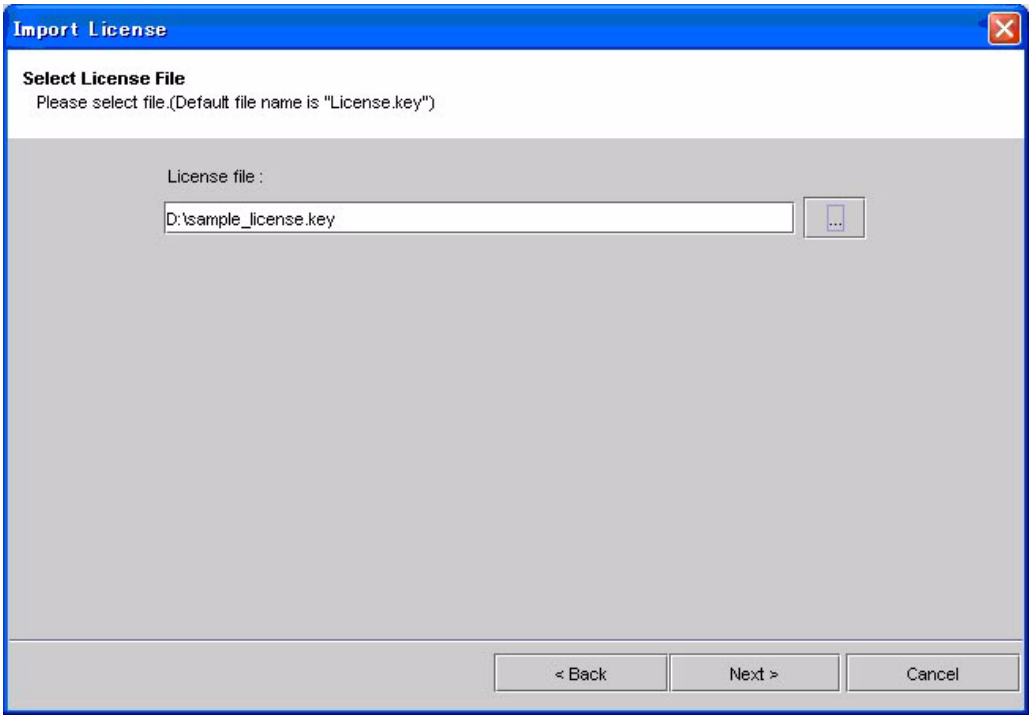
1 Click **Help** → **License** in the main window.



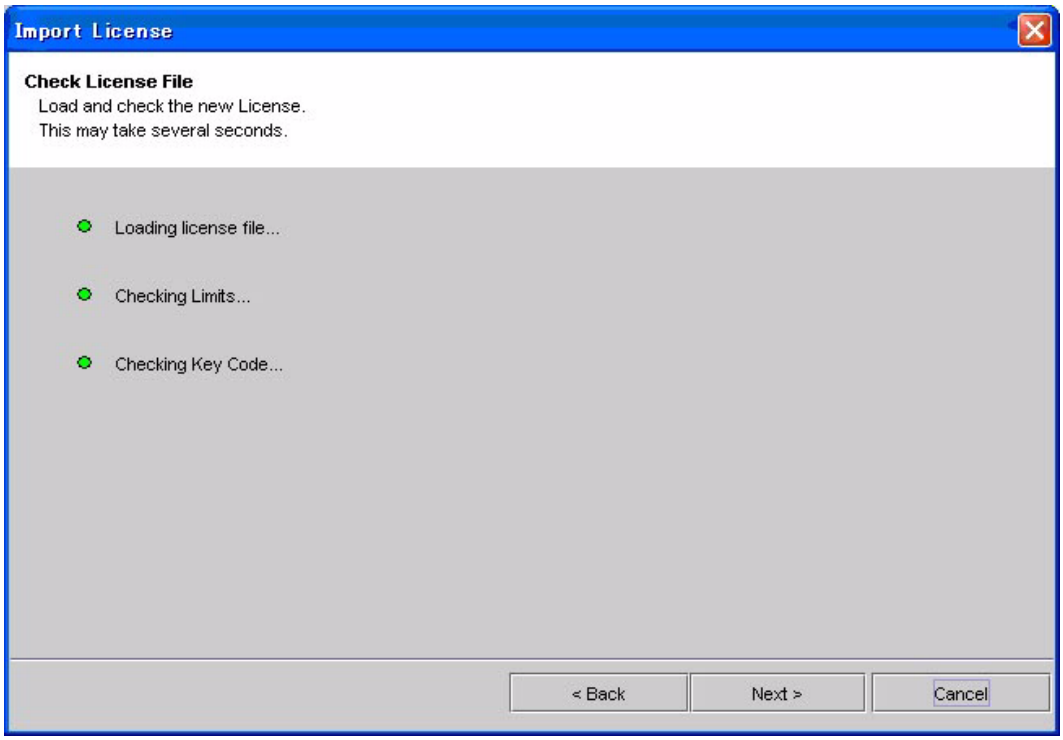
2 Click **[Close]** to shut this screen. If you exchanging the license file, click **[Import]**, and advance the following procedure.

3 Click **[Next]** to continue.

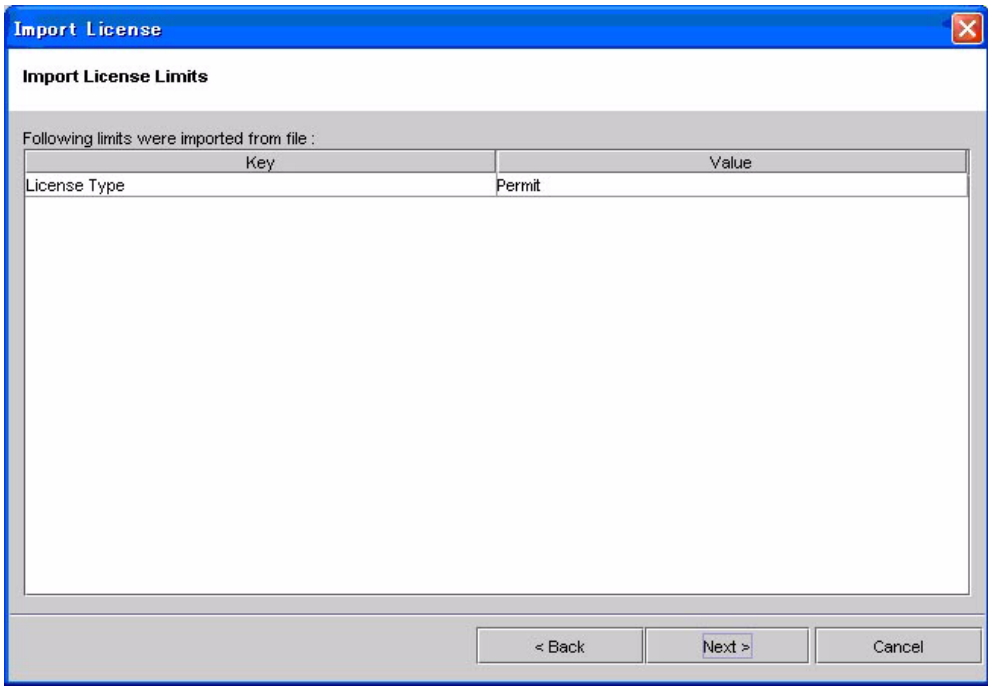
4 Specify the License.Key file if one is available. Click **[Next]**.



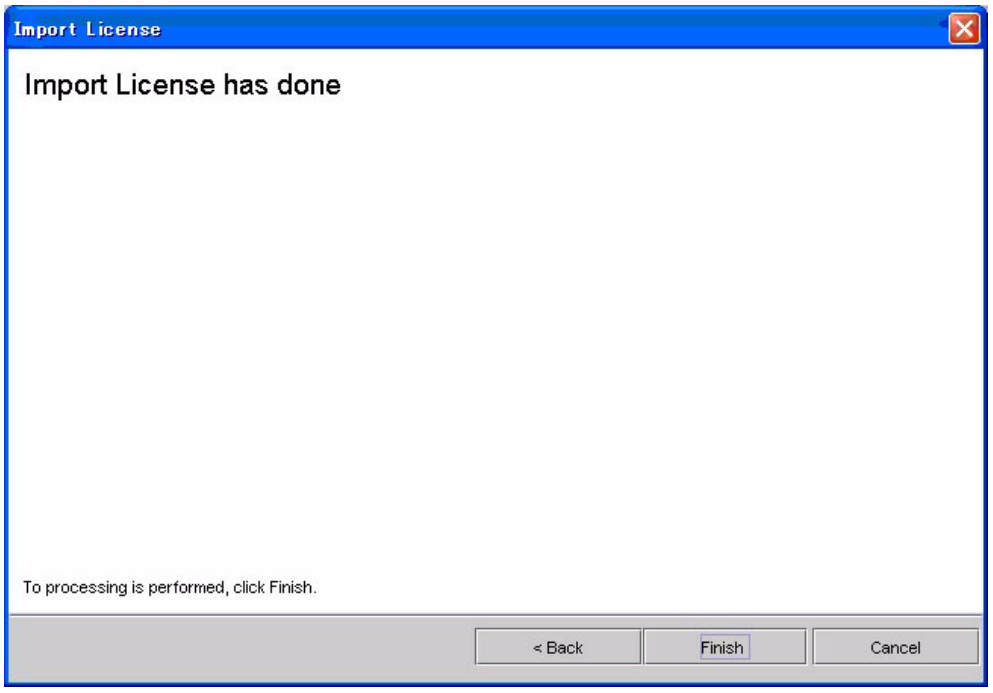
5 The progress of **Check License File** will be displayed. If no error is encountered when importing license file, click **[Next]** as soon as the button becomes available.



6 Confirm the type of license Imported, and click **[Next]**.



7 Click **[Finish]** in ensuing window to end **Import License Wizard**.



3.11 Overall Status Window (PDH and SDH)

This window is displayed during startup. The Overall Status Window provides a snapshot of the most significant monitored items in the NE.

Overall Status Window

Category	Item	Status
SWGroup1	MODEM Redundancy	1+0(1 2)
SWGroup2	MODEM Redundancy	1+0(1 2)
SWGroup3	MODEM Redundancy	1+0(1 2)
MODEM1	TX RF Frequency	14000.000[MHz]
MODEM2	TX RF Frequency	14200.000[MHz]
MODEM3	TX RF Frequency	14300.000[MHz]
MODEM4	TX RF Frequency	14400.000[MHz]
MODEM5	TX RF Frequency	14500.000[MHz]
MODEM6	TX RF Frequency	14600.000[MHz]
MODEM1	RX RF Frequency	15000.000[MHz]
MODEM2	RX RF Frequency	15200.000[MHz]
MODEM3	RX RF Frequency	15300.000[MHz]
MODEM4	RX RF Frequency	15400.000[MHz]
MODEM5	RX RF Frequency	15500.000[MHz]
MODEM6	RX RF Frequency	15600.000[MHz]
MODEM1	TX Power Control	ATPC
MODEM2	TX Power Control	ATPC
MODEM3	TX Power Control	ATPC
MODEM4	TX Power Control	ATPC
MODEM5	TX Power Control	ATPC
MODEM6	TX Power Control	ATPC
MODEM1	Frame ID	1
MODEM2	Frame ID	1
MODEM3	Frame ID	1
MODEM4	Frame ID	1
MODEM5	Frame ID	1
MODEM6	Frame ID	1
MODEM1	Architecture	PDH
MODEM2	Architecture	PDH
MODEM3	Architecture	PDH
MODEM4	Architecture	PDH
MODEM5	Architecture	PDH
MODEM6	Architecture	PDH
MODEM1	Transmission Capacity	10[MB]
MODEM2	Transmission Capacity	10[MB]
MODEM3	Transmission Capacity	10[MB]
MODEM4	Transmission Capacity	10[MB]
MODEM5	Transmission Capacity	10[MB]
MODEM6	Transmission Capacity	10[MB]
MODEM1	Modulation Scheme	QPSK
MODEM2	Modulation Scheme	QPSK
MODEM3	Modulation Scheme	QPSK
MODEM4	Modulation Scheme	QPSK
MODEM5	Modulation Scheme	QPSK
MODEM6	Modulation Scheme	QPSK
Common	RA Redundancy	1+1
Common	PINF Registration	PINF1 PINF2 Used
Common	Number of IDUs	3
Common	IDU ID	1

The Overall Status Window shows a snapshot of all important parameters/ settings for the NE. This window only displays current settings; control functions cannot be performed here.

The following items are displayed in this window:

PNMT Category	Item	Description
SWGroup*1	MODEM REDUNDANCY	currently used MODEM configuration
SWGroup*1	XPIC USAGE	currently used XPIC status
SWGroup*1	TX SW STATUS	currently used TX SW status
SWGroup*1	RX SW STATUS	currently used RX SW status
MODEM*2	TX RF FREQUENCY [MHz]	currently setting of TX frequency
MODEM*2	RX RF FREQUENCY [MHz]	currently setting of RX frequency
MODEM*2	TX POWER CONTROL	TX power control mode
MODEM*2	MTPC TX POWER [dB]	current setting of MTPC TX POWER
MODEM*2	FRAME ID	currently used FRAME ID
MODEM*2	ARCHITECTURE	currently used Architecture (PDH/SDH)
MODEM*2	TRANSMISSION CAPACITY	currently setting of Transmission capacity
MODEM*2	MODULATION SCHEME	currently used Modulation scheme
Common	RA REDUNDANCY	currently used RA redundacy configuration
Common	AUX REGISTRATION	currently setting of AUX
Common	PINF REGISTRATION	currently mounted PINF redundancy configuration
Common	NUMBER OF IDUS	currently setting of “NUMBER OF IDUS”
Common	IDU ID	currently setting of “IDU ID”

**1: SW Group 1, 2 or 3*
**2: MODEM 1 through 6*

3.12 ODU Tab

The ODU tab displays the status of the monitored ODU items. This window only displays current settings and no control functions are available here.

To set the ODU parameters, see the Sections on Equipment Setup and Provisioning.

To view the alarm/status display of the ODU:

1 Click the respective **ODU** field in the **PNMT main window** of the target NE.

Overview and Description of the Items Monitored in the ODU.
(These monitored items are identical for PDH and SDH)

Item/Feature	Description	Specific Conditions for it to be Displayed/Configured
ODU Type Mismatch	In NEO/c ODU (CPV) connection mode, this alarm is issued when the Modulation Scheme setting is not QPSK/16QAM.	None
TX Power	Indicates the status of the transmitter in the ODU; it is issued when the transmission level decreases 3 dB or more from the preset minimum ATPC level.	None
TX Input	Indicates the status of the ODU input signal from the IDU; it is issued when the input signal from the IDU is lost.	None
RX Level	Indicates the status of the received RF signal level of the ODU; it is issued when the RF signal drops below the RX threshold.	None
APC	Indicates the status of the synthesizer in the ODU; it is issued when an anomaly occurs in the synthesizer.	None
ODU CPU/ Cable Open	Indicates the status of the CPU in the ODU; it is issued when an anomaly occurs during CPU operation.	None
Mute Status	On: transmitter output is muted (off) Off: transmitter output is normal (on)	None
LO REF	Indicates the status of the LO reference signal used for V/H signal synchronization. When the reference signal in the ODU falls below the threshold, this alarm is issued.	for XPIC

Overview and Description of the Items Monitored in the ODU.
(These monitored items are identical for PDH and SDH)

Item/Feature	Description	Specific Conditions for it to be Displayed/Configured
TX SW Lock in Status	Indicates the status of lock for TX SW; locked or unlocked.	For 1+1 hot standby and when "TX SW Priority" = "Priority No.1" and "TX SW Lock in Usage" = "Used"
TCN-RX LEV-15min	The (lower) Threshold Crossing Notice level for 15 min alarm.	None
TCN-RX LEV-1day	The (lower) Threshold Crossing Notice level for 1 day alarm.	None
TX SW Status	Indicates the modem-ODU configuration currently used for transmitting signals.	Only for 1+1 hot standby
RX SW Status	Indicates the MODEM-ODU configuration currently used for receiving signals.	Only for 1+1 hot standby or twinpath

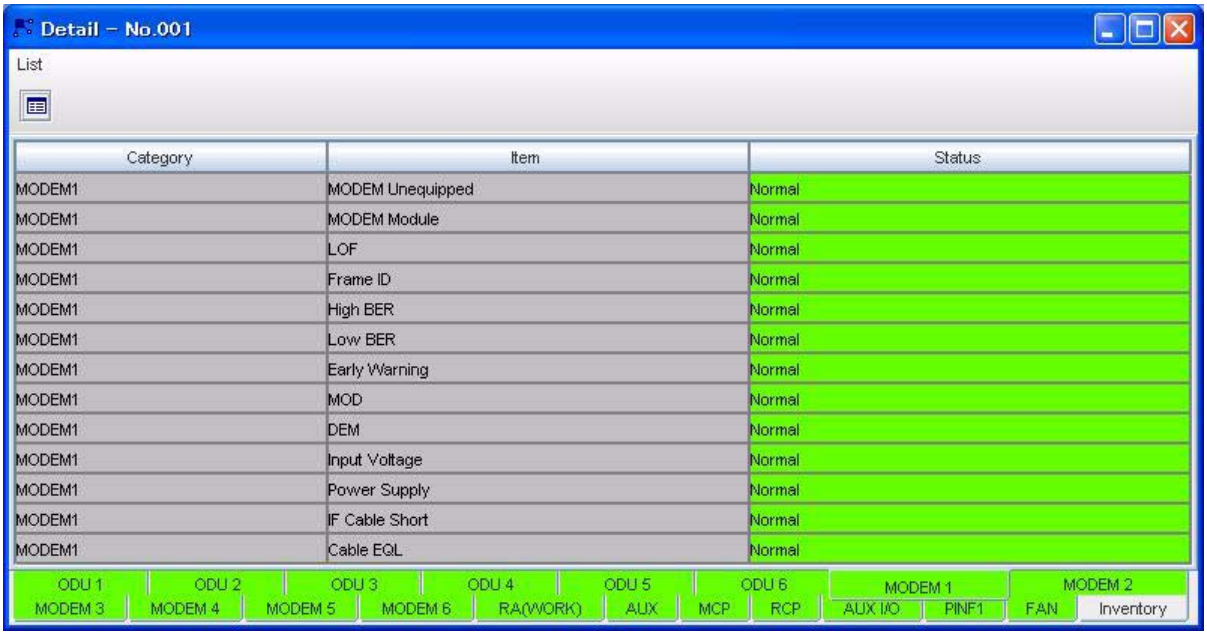
3.13 MODEM Tab

The MODEM tab displays the status of the monitored items of the MODEM. This window only displays current settings and no control functions are available here.

To set the MODEM parameters, see the Sections on Equipment Setup and Provisioning.

To view the alarms and status of the MODEM:

Select the MODEM tab in the PNMT main window of the target NE.



Overview and Description of the Alarm and Status Items/Features of the MODEM

Item/Feature	Description	Specific Conditions for it to be Displayed/Configured
MODEM Module	Indicates the status of the modulator-demodulator. This alarm is issued when an anomaly occurs in the modulator-demodulator.	None
MODEM Unequipped	Indicates whether a MODEM is properly mounted. If the MODEM contact is unplugged or if none is mounted (in accordance with the “Equipment Setup”), this alarm is issued.	None
LOF	Indicates the frame synchronization status. If the synchronization with DMR is lost, this alarm is issued.	None
Frame ID	Indicates that the frame ID numbers of an NE and its opposite are out of sync.	None
High BER	Indicates severe quality deterioration status. If the signal deteriorates below the preset threshold level, this alarm is issued and the RX-Hitless Switch is operated. The selectable threshold levels are 1E-3, 1E-4 and 1E-5.	None

Item/Feature	Description	Specific Conditions for it to be Displayed/Configured
Low BER	Indicates low to moderate quality deterioration status between radio sections. When the signal deteriorates below the present threshold value, this alarm is issued and the RX-Hitless Switch is activated. The selectable threshold values are: 1E-6, 1E-7, 1E-8 and 1E-9.	None
Early Warning	Indicates quality deterioration status. If the signal deteriorates beyond the present threshold level, this alarm is issued and the RX-Hitless Switch is activated. The present threshold is a BER of 1E-9.	None
MOD	Indicates the operating status of the MOD. If any anomaly occurs in the modulator, this alarm is issued.	None
DEM	Indicates the operating status of the DEM. If any anomaly occurs in the demodulator, this alarm is issued.	None
Input Voltage	Indicates the operating status of the input power voltage. When there is an anomaly in the input voltage, this alarm is issued.	None
Power Supply	Indicates the operating status of the power supply. When there is an anomaly in the power supply, this alarm is issued.	None
IF Cable Short	Indicates the status of IF cable between IDU and ODU. If a short circuit is caused between ODU and the IDU, this alarm is issued.	None
Cable EQL	Indicates the status of the IF cable equalizer. This alarm is issued when the equalizer function does not kick in.	None
XIF	Indicates the status of the XIF input signal of the Main Master MODEM and Sub Master MODEM. When the XIF input signal falls below the threshold, this alarm is issued and the XPIC function is reset.	for XPIC
XCTRL	When XPIC Usage is selected as “Used” and the control signal between Main Master and Sub Master MODEM is lost; this alarm is issued.	for XPIC
XPIC Status	Indicates the status of XPIC operation. When the XPIC function is reset, “Reset” is indicated and the “Reset” LED on the front panel is lit.	for XPIC
XREF	Indicates the status of the CLK reference signal used for V/H signal synchronization. When there is an anomaly in the reference OSC in the MODEM, this alarm is issued.	for XPIC
Linearizer Function	Indicates the status of linearizer function. OPR: When the linearizer function is used. NO OPR: When the linearizer function is not used.In this case, TX output power decreases approx. 4 dBm from a standard value. N/A: When the ODU is used without linearizer function.	Not available in QPSK modulation Scheme. Not displayed in NEO/c ODU (CPV) connection mode.
Linearizer	Indicates the linearizer operating status; this alarm is issued when the linearizer is not properly operating in the OPR state.	Not available in QPSK modulation Scheme. Not displayed in NEO/c ODU (CPV) connection mode.
ATPC Power Mode	Indicates the operating status of the ATPC. If the ATPC is not properly functioning, stop the control and maintain the TX output level at HOLD/MIN (selectable).	Only when ATPC is used.

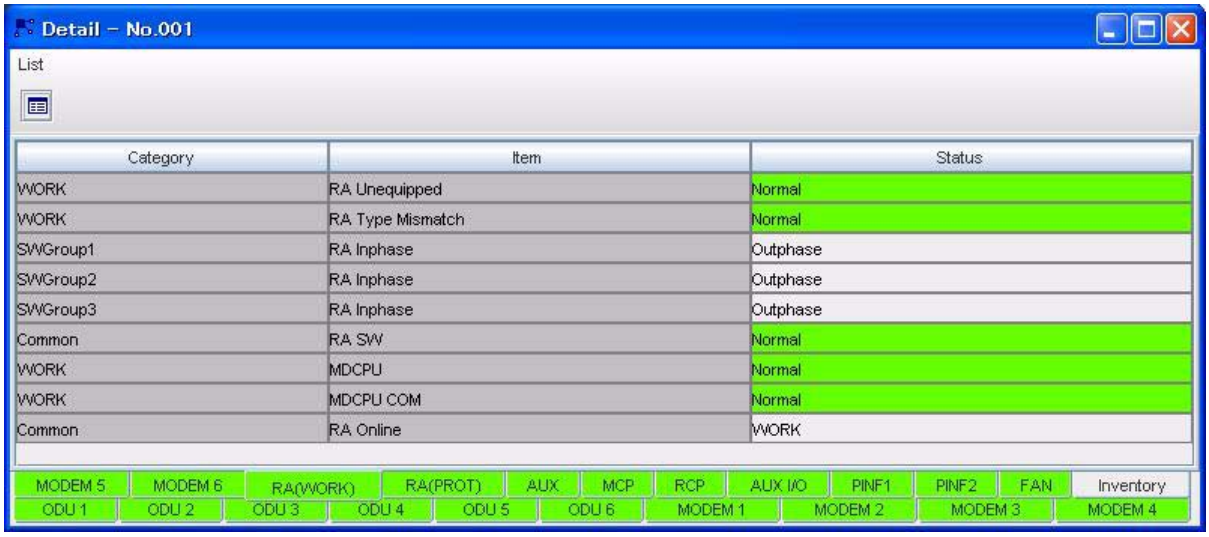
3.14 RA (WORK) Tab

The RA (WORK) tab displays the status of the monitored items for the RA (WORK). This window only displays current settings and no control functions are available here.

To set the RA (WORK) parameters, see the Sections on Equipment Setup and Provisioning.

To view the alarms and status of the RA (WORK):

Select the RA (WORK) tab in the PNMT main window of the target NE.



Overview and Description of the Monitored Items for the RA (WORK)

Common Items

Item/Feature	Description	Specific Conditions for it to be Displayed/Configured
RA Type Mismatch	When this alarm is issued, it indicates that RA does not correspond to the inventory list.	None
RA Unequipped	Indicates whether there is any RA. If there is no RA, this alarm is issued.	None
RA Inphase	If the received signal delay time at the hitless switch is out of the permissible range, “Out Phase” is indicated.	None
RA SW	When the RA is switched, the corresponding RA selecting switch operation in the MODEM is abnormal, “Alarm” is issued.	None
MDCPU	When MDCPU operation in the RA is abnormal, “Alarm” is issued.	None
MDCPU COM	When communication failure occurs between the RCP and the MDCPU in the RA, “Alarm” is issued.	None
RA Online	Indicates the online status of redundant RA units.	None

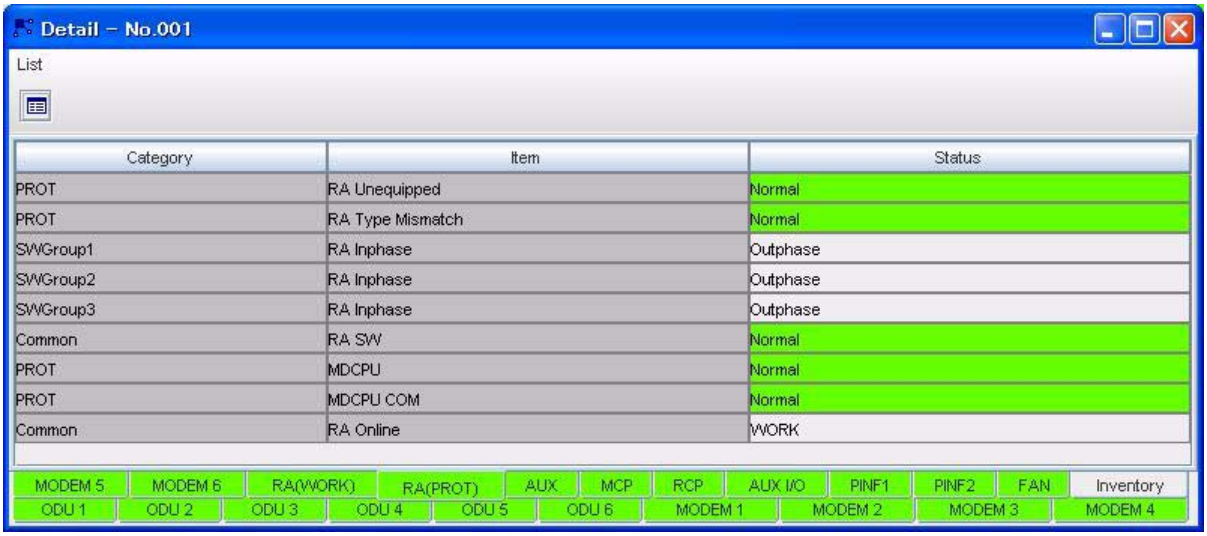
3.15 RA (PROT) Tab

The RA (PROT) tab displays the status of the monitored items for the RA (PROT). This window only displays current settings and no control functions are available here.

To set the RA (PROT) parameters, see the Sections on Equipment Setup and Provisioning.

To view the alarms and status of the RA (PROT):

Select the RA (PROT) tab in the PNMT main window of the target NE.



Overview and Description of the Monitored Items for the RA (PROT)

Common Items

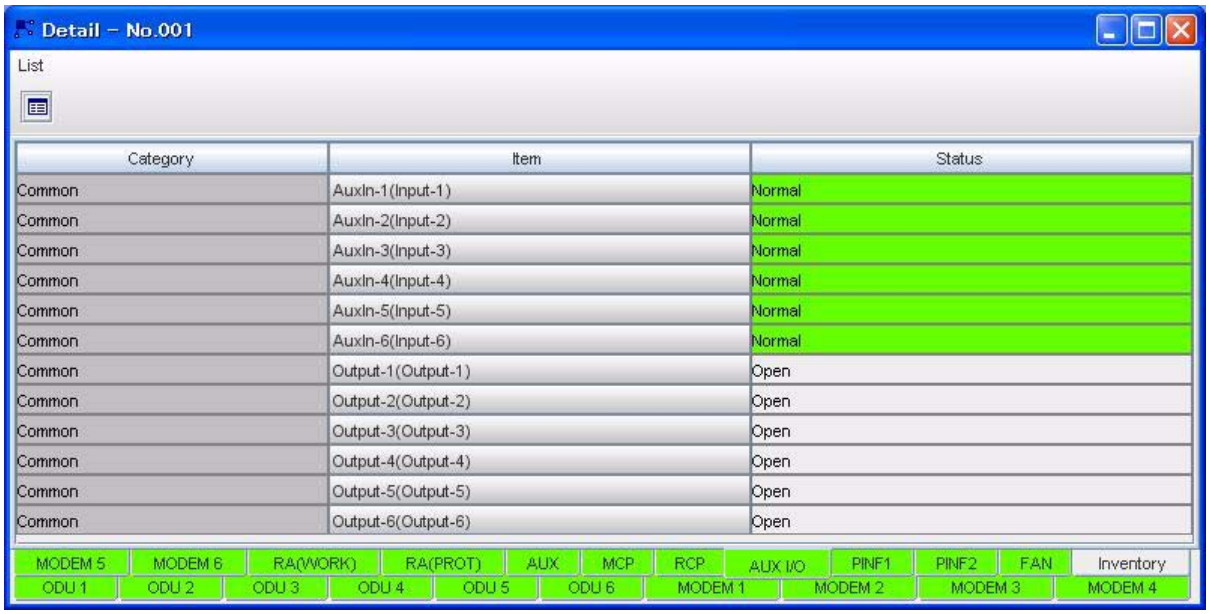
Item/Feature	Description	Specific Conditions for it to be Displayed/Configured
RA Type Mismatch	When this alarm is issued, it indicates that RA does not correspond to the inventory list.	None
RA Unequipped	Indicates whether there is any RA. If there is no RA, this alarm is issued.	None
Ra Inphase	If the received signal delay time at the hitless switch is out of the permissible range, “Out Phase” is indicated.	None
RA SW	When the RA is switched, the corresponding RA selecting switch operation in the MODEM is abnormal, “Alarm” is issued.	None
MDCPU	When MDCPU operation in the RA is abnormal, “Alarm” is issued.	None
MDCPU COM	When communication failure occurs between the RCP and the MDCPU in the RA, “Alarm” is issued.	None
Ra Online	Indicates the online status of redundant RA units.	None

3.16 Auxiliary I/O Tab

6 photocoupler input and 6-relay output settings can be selected in the IDU for external control and monitoring of alarms. The setting for each of the relay output/photocoupler inputs is available by clicking on the respective device in the Auxiliary I/O monitor window.

To monitor and set the Auxiliary I/O:

1 Select the AUX I/O tab in the PNMT main window



AUX. I/O Window

3.16.1 Monitored Items

The following items are monitored via this tab:

1 Six (6) photocoupler inputs. (Input-1 to Input-6)

2 Six (6)-relay outputs. (Output-1 to Output-6)

When Cluster ALM Setting (Input) is enabled, the following Input items can be used as Cluster ALM.

1 When Cluster1 Input is enabled, Input-6 item is used as Cluster ALM1.

2 When Cluster2 Input is enabled, Input-5 item is used as Cluster ALM2.

3 When Cluster3 Input is enabled, Input-4 item is used as Cluster ALM3.

4 When Cluster4 Input is enabled, Input-3 item is used as Cluster ALM4.

5 When Cluster5 Input is enabled, Input-2 item is used as Cluster ALM5.

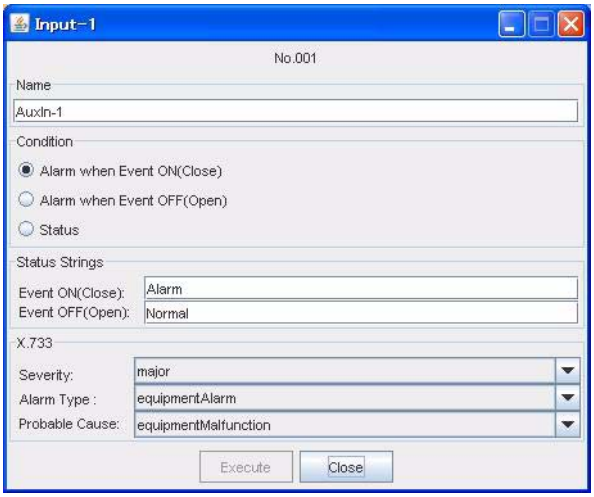
6 When Cluster6 Input is enabled, Input-1 item is used as Cluster ALM6.

3.16.2 Photocoupler Input Setting

To set the photocoupler input:

1 Click the selected **[Input-*n*]** button in **AUX. I/O** window.

2 The input properties will be displayed in the ensuing window.



3.16.2.1 Setting the Selected Input to Alarm or Status

1 Enter the desired name of the selected input in the **Name** field. A maximum of 32 characters can be used.

2 Select the desired input condition in the **Condition** section. You can select from the following three (3) choices such as “the alarm is reported when **Event ON** (the selected input terminal is closed loop condition)” or “the alarm is reported when **Event OFF** (the selected input terminal is open condition)” or “the just **Status** information is reported instead of the alarm”.

3 Enter the status strings corresponding to the input condition in the **Event ON** and **Event OFF** field in the **Status Strings** section. A maximum of 32 characters can be used.

4 The alarm input severity is defined in the ITU-T X.733 Recommendation. Select the description of the **Severity**, **Alarm Type** and **Probable Cause** fields in the **X.733** section by clicking the pull-down arrow (▼) on the right-hand side of the selection field.

5 Click the **[Execute]** button to save the selected settings of the device.

6 Click the **[Close]** button when finished.

3.16.3 Relay Output Setting

To set the relay output:

1 Click the **[Output-*n*]** button in AUX. I/O window.

2 Enter the desired name of the selected output in the **Name** field. A maximum of 32 characters can be used.

3 To select the desired output condition of the selected relay output, select the **Event ON** (the output terminal will be in closed loop condition) or the **Event OFF** button (the output terminal will be open) in the **Control** section.

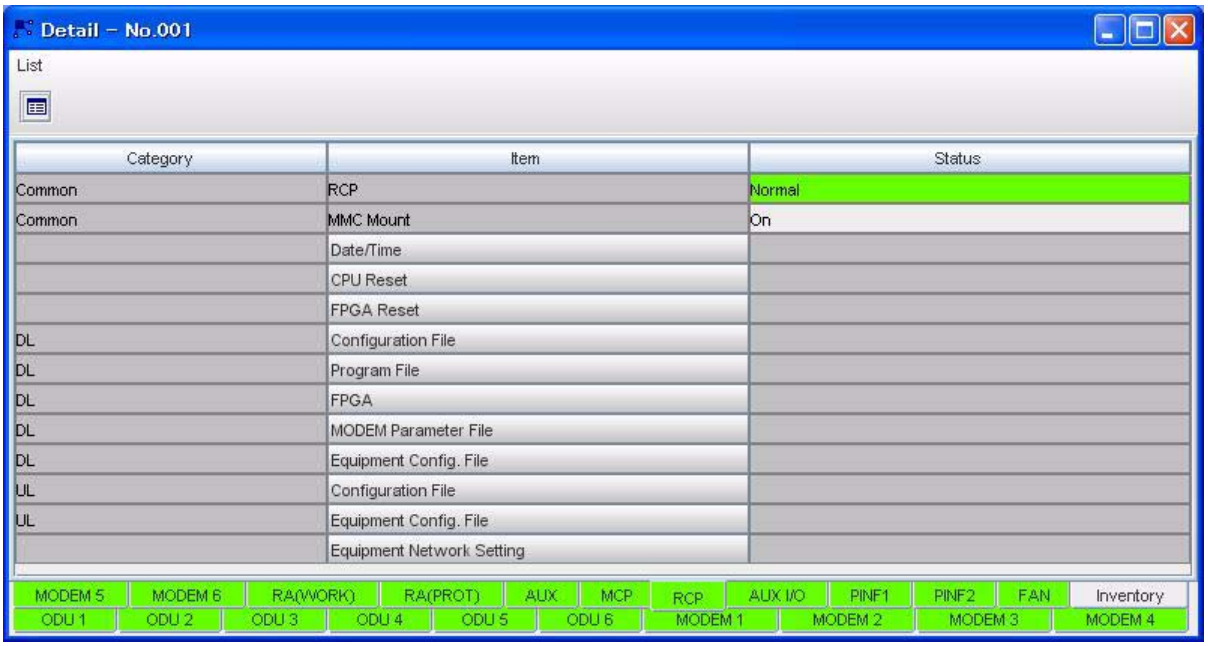
4 Enter the desired status strings for the selected relay output in the appropriate **Event ON** (the output terminal will be in closed loop condition) and **Event OFF** fields (the output terminal will be open) with the **Control** section. A maximum of 32 characters can be used.

5 Click the **[Execute]** button to implement the command.

6 Click the **[Close]** button when finished.

3.17 RCP Tab

Various RCP control parameters can be set via the RCP tab.



3.17.1 RCP Card

Select the **RCP** tab in the **PNMT main window** of the target NE.
The following items can be monitored and controlled in the **RCP window**:

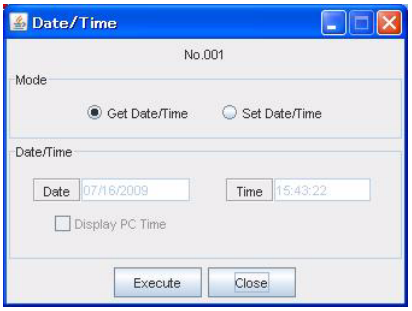
- RCP
- MMC Mount
- Date/Time
- CPU Reset
- Download: Configuration File
- Download: Program File
- Download: Equipment Configuration File
- Download: MODEM Parameter File
- Upload: Configuration File
- Upload: Equipment Configuration File
- Equipment Network Setting
- FPGA Reset
- Download: FPGA

3.17.2 Setting the Date/Time

The Date and Time stored in RCP card can be displayed and adjusted using this function.

To set the Date/Time:

1 Click the **[Date/Time]** button in the **RCP** window.



Note: To synchronize the Date and Time field values with those of the PNMT computer, click the Display PC Time box (placing a checkmark in it).

2 To check the Date and Time Settings of the RCP card:

1) Select **Get Date/Time** in the Date/Time window.
2) Click the **[Execute]** button.
3) The current date and time in the RCP card will be displayed in the **Date** and **Time** field.

3 To set the Date and Time on the RCP card:

1) Select **Set Date/Time** in the Date/Time window.
2) Click the **[Execute]** button.
3) Click the **[Close]** button when done.

3.17.3 CPU Reset

The RCP card can be reset using this function

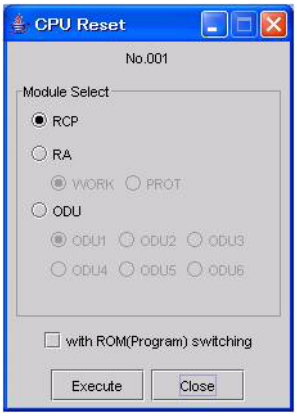
*The CPU Reset window is not available when MAINT is OFF.

Note: Resetting the RCP card will not affect traffic. The connection to

the selected NE will be lost for a few minutes but will be automatically restored.

To reset the Control function:

1 Click the **[CPU Reset]** button in **RCP** window.



2 You can select the "**with ROM (Program) Switching**" option if you want to switch to a newly downloaded Control function Program file.

3 Click the **[Execute]** button to continue the Control function reset operation.

3.17.4 Downloading the Configuration Files (Network, Mib, Equipment) to RCP Card

This function is used for downloading Configuration File (Network, Mib, Equipment) from PNMT/MMC to RCP card.

The network configuration file - **pn_network.cfg**, contains the IP address of the target NE as well as the IP address of the opposite NE and the information about the network where the target NE is located. The **pn_mib.cfg** file contains relevant information about the equipment (i.e. name, pm type, etc.).
The equipment configuration file – **pn_equip.cfg**, contains the wireless configuration data (i.e. frequency, main interface) and provisioning data (i.e. BER alarm threshold).

*Note: Above file names "**pn_network.cfg, pn_mib.cfg, pn_equip.cfg**" are examples.*

For downloading Configuration file to RCP, there are three methods as below.

(1) Download Configuration file from PC to RCP by transfering Configuration file kept in PC. (A-1, A-2)

(2) Download Configuration file from MMC to RCP by operating Protect SW at front of RCP card. (B)

(3) Download Configuration file from MMC to RCP by operating PNMT. (C-1, C-2)

Detail download procedure for each method is indicated followings.

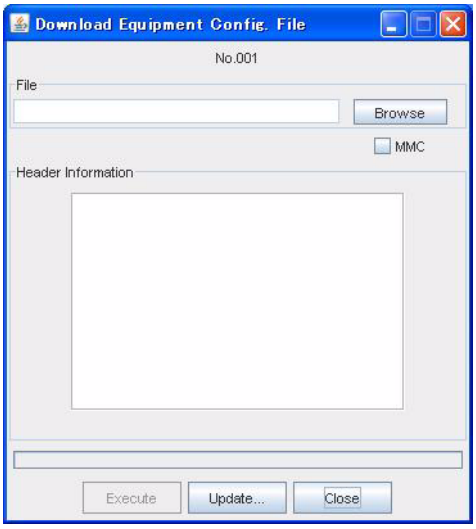
A-1 To download Configuration file (Equipent) from PC to RCP by transfering Configuration file kept in PC.

1 Be Protect SW to On status when insert RCP (MMC is not inserted).

2 When blinking LED (MAINT, Memory, IDU), connect PNMT and then Click the **[DL Equipment Config. File]** button in RCP window.

3 Click the **[Browse]** button to locate the file on the local hard disk or diskette.

Warning: Make sure that the correct equipment configuration file is downloaded to the correct RCP card. Incorrect configuration file is liable to cause RCP card or network malfunction/failure.
Do not download Equipment Configuration Data when the equipment is in factory default condition (No equipment configuration registered) as It may cause abnormal condition in the equipment. If the equipment is in abnormal condition, remove the RCP card and remount the RCP without the MMC (if MMC is available) or set the Protect sw to ON position and download the correct equiment Configuration data from the PC. Execute the procedure (3.17.4.A-1)



4 Click the **[Execute]** button to start the operation.

5 A message window indicating the status of the operation will appear. It will close automatically once the operation is finished.

Warning: Make sure that you have successfully downloaded the configuration file before executing Update. Otherwise the RCP card will switch to an empty ROM that is liable to cause RCP card malfunction/failure.

6 Click the **[Update]** button to activate the new equipment configuration file. Click the **[Execute]** button to start the ***update*** operation.

7 Click the **[Close]** button when done.

8 Change Protect SW to Off.

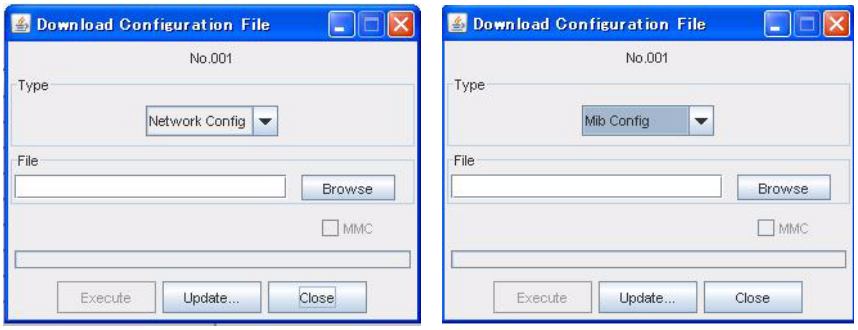
Then execute following A-2 procedure.

A-2. To download Configuration file (Network, Mib) from PC to RCP by transfering Configuration file kept in PC.

Note: This window is not available when MAINT is OFF.

1 Click the **[DL Configuration File]** button in **RCP** window.

.



2 Select the type of file to be downloaded in the **Type** list.

3 Enter the location of the configuration file in the **File** field, or click the **[Browse]** to locate the file on the local hard disk or diskette.

Warning: Make sure that the correct configuration file is downloaded to the correct RCP card. An incorrect configuration file may lead to RCP card or network malfunction/failure.

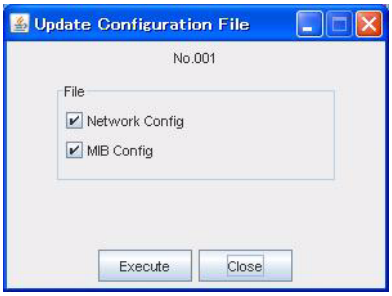
4 Click the **[Execute]** button to start the operation.

Warning: While data is being transmitted, do not remove the LAN cable connecting the IDU with the PC.

5 A message window indicating the status of the operation will appear. It will close automatically once the operation is finished.

Warning: Make sure that you have successfully downloaded the configuration file before executing Update. Otherwise the RCP card will switch to an empty ROM that may cause RCP card malfunction/failure.

6 Click the **[Update]** button to activate and save the new configuration file (s).



7 Select the appropriate box for the type of configuration file to be updated. One or more configuration file(s) can be updated by checking the selection box of the configuration file name. Click **[Execute]** to start the operation.

Note: When updating the pn_network.cfg file, NE-to-NE communication will be lost when the Control function re-initializes to the new system configuration. This WILL NOT affect the wireless link. During this time PNMT connection to the NE will be lost but will automatically be restored after the RCP card is reset.

8 Click the **[Close]** button when done.

B-1 To download the new Configuration file (Network, Mib, Equipment) from MMC to RCP by operating Protect SW at front of RCP card.

Note: This operation downloads three Configuration files at the same time.

1 With Protect SW On and MMC inserted status, insert RCP card.

2 After blinking LED (MAINT) at front of RCP card, Protect SW to Off and files **(pn_network.cfg, pn_mib.cfg, pn_equip.cfg)** are reflected to equipment, the LED light of Maintenance turns off.

Warning: Before downloading the Configuration files (Network, MIB and Equipment) from the MMC, make sure that the required files are stored in the MMC. If the files are missing it may not down load correctly.
Do not download Equipment Configuration Data when the equipment is in factory default condition (No equipment configuration registered) as It may cause abnormal condition in the equipment. If the equipment is in abnormal condition, remove the RCP card and remount the RCP without the MMC (if MMC is available) or set the Protect sw to ON position and download the correct equipment Configuration data from the PC. Execute the procedure (3.17.4.A-1)

C-1 To download Configuration file (Equipment) from MMC to RCP by operating PNMT.

1 With Protect SW On and MMC inserted status, insert RCP card.

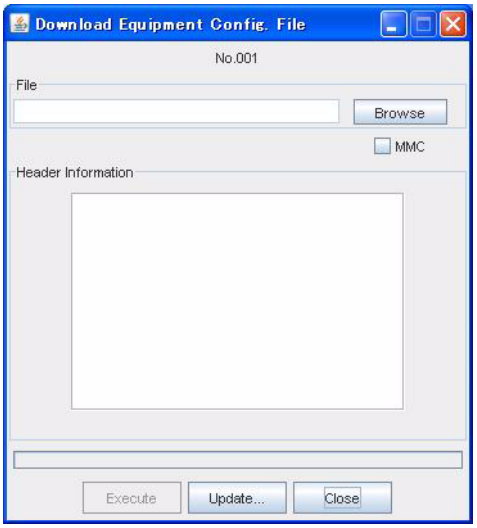
Note: When the MMC contain Upload Data form the procedure (3.17.9B) by PROTECT SW ON as well as UPLOAD DATA from the procedure (3.17.9A-2), data from the first prcedure has priority for downloading. To download the data from the second procedure follow the the procedures C-1, C-2.

2 When blinking LED (MAINT, Memory, IDU), connect PNMT and then click the **[DL Equipment Config. File]** button in RCP window.

3 Click the **[MMC]** box.

4 Click the **[Browse]** button to locate the file on the MMC.

Warning: Make sure that the correct equipment configuration file is downloaded to the correct RCP card. Incorrect configuration file is liable to cause RCP card or network malfunction/failure.



5 Click the **[Execute]** button to start the operation.

6 A message window indicating the status of the operation will appear.

Warning: Make sure that you have successfully downloaded the configuration file before executing Update. Otherwise the RCP card will switch to an empty ROM that is liable to cause RCP card malfunction/failure.

7 Click the **[Update]** button to activate the new equipment configuration file. Click the **[Execute]** button to start the ***update*** operation.

8 Click the **[Close]** button when done.

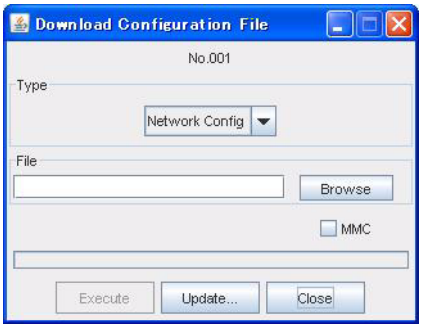
9 Change Protect SW to Off.

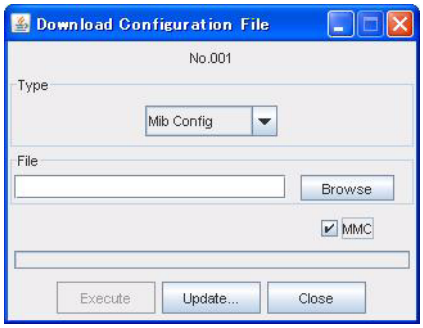
Please continue following C-2 procedure.

C-2 To download Configuration file (Network, Mib) from MMC to RCP by operating PNMT.

Note: This window is not available when MAINT is OFF.

1 When blinking LED (MAINT, Memory, IDU), connect PNMT and then click the **[DL Configuration File]** button in **RCP** window.





2 Select the type of file to be downloaded in the **Type** list.

3 Clink the **[MMC]** box.

4 Enter the location of the configuration file in the **File** field, or click the **[Browse]** to locate the file on the local hard disk or diskette.

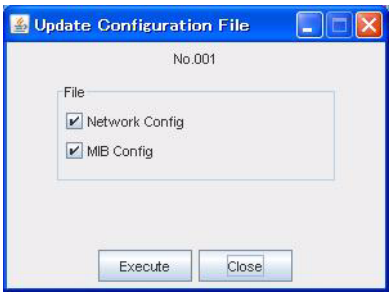
Warning: Make sure that correct configuration file is downloaded to the correct RCP card. An incorrect configuration file may lead to RCP card or network malfunction/failure.

5 Click the **[Execute]** button to start the operation.

6 A message window indicating the status of the operation will appear.

Warning: Make sure that you have successfully downloaded the configuration file before executing Updata. Otherwise the RCP card will switch to an empty ROM that may cause RCP card malfunction/failure.

7 Click the **[Update]** button to activate and save the new configuration file (s).



8 Select the appropriate box for the type of configuration file to be updated. One or more configuration file(s) can be updated by checking the selection box of the configuration file name. Click **[Execute]** to start the operation.

9 Click the **[Close]** button when done.

3.17.5 Downloading a New Program File to the RCP Card

This function is used for downloading F/Ws from PNMT PC or MMC to the targets. (RCP/ RA(WORK)/RA(PROT)/ODU1-6)

This function is used to update the application program on the RCP card. This operation only affects the NMS communication but not the wireless link, and will not disrupt communication.

Note: This window is not available when MAINT is OFF.

A. To download the new program file from PC to RCP by transfering program file kept in PC.

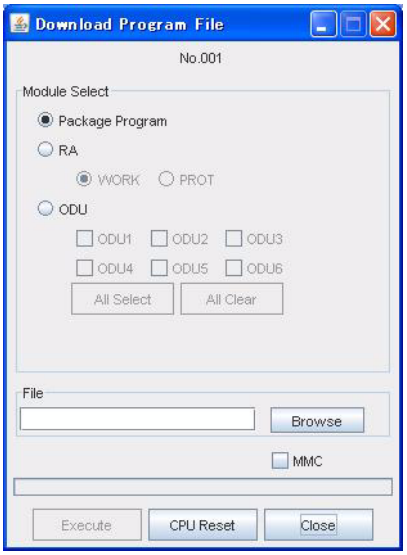
To download the program file to RCP card:

1 Click the **[DL Program File]** button in **RCP** window.

2 Select the module select button of RCP. If you tick the "**with Self Reset**" the RCP card will be reset automatically after program file download is completed. In this case, steps 6 thru 8 are not necessary.

- Program download of RCP Package: Select 'Package Program'
- Program download of RA Package: select Work or Prot of RA package.
- ODU can select 'All Select' or each ODU, from ODU1 to ODU6

3 Enter the appropriate location of the program file in the **File** field. Otherwise, click **[Browse]** to locate the file.



Warning: Make sure that the correct program file is downloaded to the RCP card. Incorrect program files are likely to cause malfunction

4 Click the **[Execute]** button to start the operation.

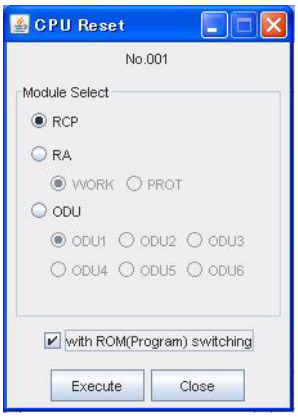
Warning: While data is being transmitted, do not remove the LAN cable connecting the IDU with the PC.

5 A message window will appear displaying the status of the operation.

Note: This operation may take several minutes depending on the program file size.

6 Click the **[CPU Reset]** button to switch to the new program file.

Note: For RA F/W DL, this process is not necessary due to executing automatic reset after the DL.



7 Check the **with ROM (Program) Switching** box.

8 Click the **[Execute]** button to complete the switch to the new program file.

Note: The connection to the selected NE will be lost for a few minutes, but will be automatically restored shortly.

B. To download the new program file from MMC to RCP by operating PNMT.

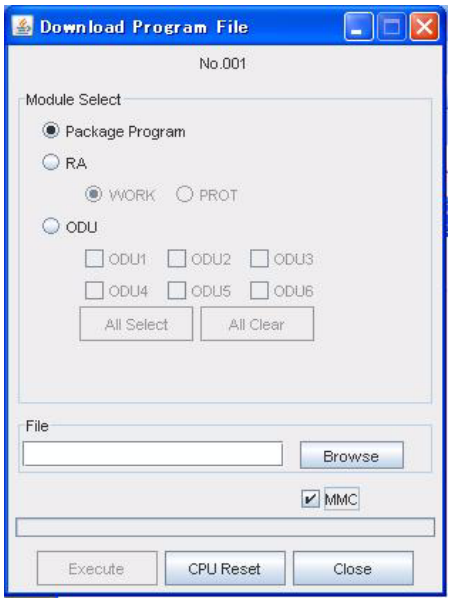
To download the program file to RCP card:

1 Click the **[DL Program File]** button in **RCP** window.

2 Select the Module select button of RCP. If you tick the "**with Self Reset**" the RA card or ODU will be reset automatically after program file download is completed. In this case, steps 7 thru 9 are not necessary.

- Program download of RCP Package: Select 'Package Program'.
- Program download of RA Package: select Work or Prot of RA package.
- ODU can select 'All Select' or each ODU, from ODU1 to ODU6.

3 Click the **[MMC]** box .



4 Enter the appropriate location of the program file in the **File** field. Otherwise, click **[Browse]** to locate the file.

Warning: Make sure that the correct program file is downloaded to the RCP card. Incorrect program files are likely to cause malfunction.

5 Click the **[Execute]** button to start the operation.

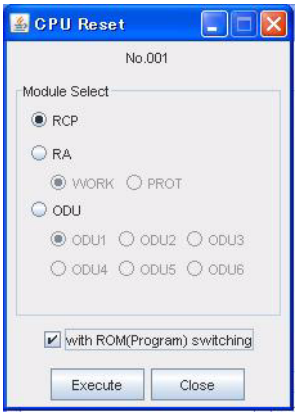
Warning: While data is being transmitted, do not remove the LAN cable connecting the IDU with the PC.

6 A message window will appear displaying the status of the operation.

Note: This operation may take several minutes depending on the program file size.

7 Click the **[CPU Reset]** button to switch to the new program file.

Note: For RA F/W DL, this process is not necessary due to executing automatic reset after the DL.



8 Check the **with ROM (Program) Switching** box.

9 Click the **[Execute]** button to complete the switch to the new program file.

Note: The connection to the selected NE will be lost for a few minutes, but will be automatically restored shortly.

3.17.6 Downloading a New FPGA to RCP/AUX/RA Card

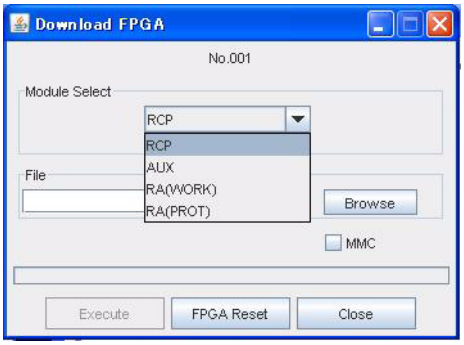
This function is used for downloading FPGA from PC or MMC to the target cards (RCP/AUX/RA(WORK)/RA(PROT))

Note: This window is not available when MAINT is OFF.

A. To download the new FPGA file from PC to RCP by transfering FPGA file kept in PC.

1 Click the **[DL FPGA]** button in **RCP** window.

2 Select target card from ‘Module Select list’ .



3 Click **[Browse]** to locate the to be downloaded file.

Warning: Make sure that the correct FPGA file is downloaded to the RCP module. Incorrect FPGA files are likely to cause malfunction.

4 Click the **[Execute]** button to start the operation.

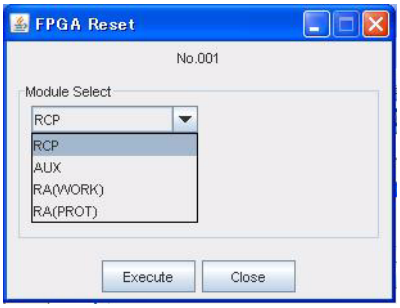
Warning: While data is being transmitted, do not remove the LAN cable connecting the IDU with the PC.

5 A message window will appear displaying the status of the operation.

Note: this operation may take several minutes depending on the FPGA size.

6 Click the **[FPGA Reset]** button to switch to the new FPGA file.

7 Select target card from ‘Module Select list’ and for RA card, also select PORT or SUB card.



8 Click the **[Execute]** button to start the operation.

Notes: 1. By resetting RCP FPGA/AUX FPGA, auxiliary signals are down during FPGA start-up.

2. By resetting RA (WORK/PROT) FPGA, main signals are down during FPGA start-up.

3. By resetting RCP FPGA, the connection to the selected NE will be lost for a few minutes, but will be automatically restored shortly.

9 When you try to execute FPGA RESET, Warning is popped up. If it’s OK, click OK button to execute the reset.

B. To download the new FPGA file from MMC to RCP by operating PNMT.

1 Click the **[DL FPGA]** button in **RCP** window.

2 Select a target card from ‘Module Select list’.

3 Click the **[MMC]** box.

4 Click **[Browse]** to locate the download files.

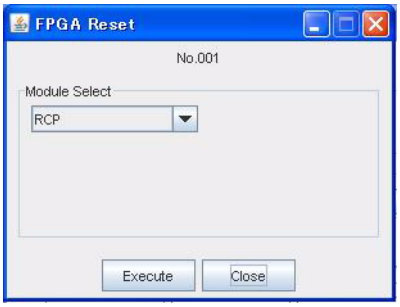
Warning: Make sure that correct configuration file is downloaded to the correct RCP card. An incorrect configuration file may lead to RCP card or network malfunction/failure.

5 Click the **[Execute]** button to start the operation.

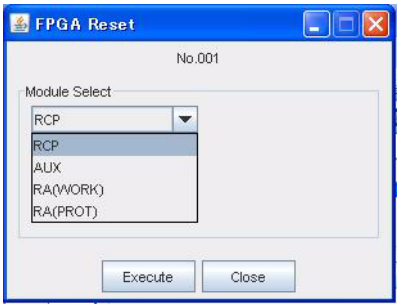
6 A message window indicating the status of the operation will appear.

Warning: Make sure that you have successfully downloaded the configuration file before executing the Update. Otherwise the RCP card will switch to an empty ROM that may cause RCP card malfunction/failure.

7 Click the **[FPGA Reset]** button to switch to the new FPGA file.



8 Select a target card from ‘Module Select list’. For RA card, also select PORT or SUB card.



9 Click the **[Execute]** button to start the operation.

Notes: 1. By resetting RCP FPGA/AUX FPGA, auxiliary signals are down during the FPGA start-up.

2. By resetting RA (WORK/PROT) FPGA, main signals are down during the FPGA start-up.

3. By resetting RCP FPGA, the connection to the selected NE will be lost for a few minutes, but will be automatically restored shortly.

10 When you try to execute FPGA RESET, Warning is popped up. If it's OK, click OK button to execute the reset.

3.17.7 Downloading a new MODEM Parameter File to the MODEM Module

This function is used to update the MODEM parameter file on the MODEM module. This operation only affects the NMS communication but not the wireless link, and will not disrupt communication.

Notes: 1. This window is not available when MAINT is OFF.

2. Only the NE with local port directly connected to PNMT is subject to this download function.

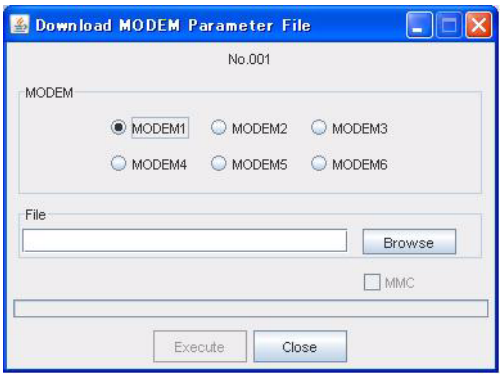
To download the MODEM parameter File to the MODEM Module:

1 Click the **[DL MODEM Parameter File]** button in RCP window.

2 Select MODEM subject to download from the "MODEM" field.

3 Enter the appropriate location of the MODEM parameter file (*.mpf) in the File field. Otherwise, click **[Browse]** to locate the file.

Note: When "MMC" check box is checked off, multimedia card set in NE will be the target of operation.



Warning: Make sure that the correct MODEM parameter file is downloaded to the MODEM Module. Incorrect MODEM parameter files are likely to cause malfunction.

4 Click the [Execute] button to start the operation.

Warning: While data is being transmitted, do not remove the LAN cable connecting the IDU with the PC. Also, do not remove MMC card when MMC is selected.

5 A message window will appear displaying the status of the operation. The message window will close automatically once the download is completed.

Note: This operation may take several minutes depending on the MODEM parameter file size.

6 Upon completion of Download, turn off and on the switch of MODEM subject to download and restart the power.

3.17.8 Uploading Configuration File (Network, Mib, Equipment) to PC/MMC.

For uploading Configuration file from RCP, there are three methods as below.

(1) Upload Configuration file from RCP to PC by operating PNMT. (A-1, A-2)

(2) Upload Configuration file from RCP to MMC by operating Protect SW at front of RCP card. (B)

(3) Upload Configuration file from RCP to MMC by operating PNMT. (C-1, C-2)

Three kinds of Configuration files are:

(1) Equipment Configuration file

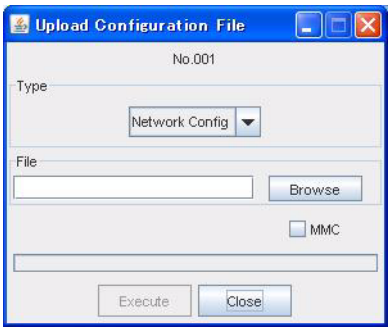
(2) Network Configuration file

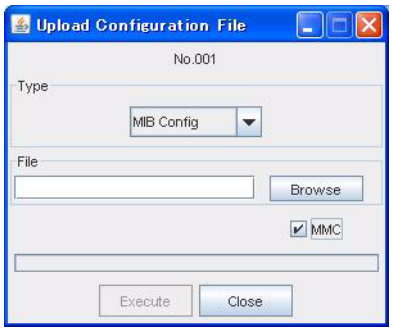
(3) Mib Configuration file

Upload procedure is followings:

A-1 To upload Configuration file (Network, Mib) from RCP to PC by operating PNMT.

1 Click the **[UL Configuration File]** button in **RCP** window.





2 Select the type of file to be uploaded on the **Type** field.

3 Select **[Browse]** button and enter the desired file name for the uploaded file. Then select the directory where the uploaded file is to be saved.

4 Click the **[Execute]** button to start the operation.

5 A message window indicating the status of the operation will appear.

6 After the upload is finished, click the **[Close]** button.

7 Verify that the file was uploaded to the specified directory.

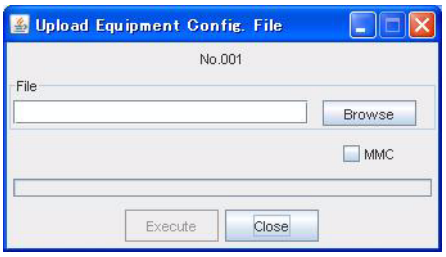
8 Finally, change Protect SW to Off for returning to operational status.

Continue following A-2 procudure:

A-2 To upload Configuration file (Equipment) from RCP to PC by operating PNMT.

Note: Need to change Protect SW, at front of RCP card to ON for uploading Equipment Configuration file.

1 Click the **[UL Equipment Config. File]** button in RCP window.



2 Select **[Browse]** button and enter the desired name for the uploaded file, then select the directory where the uploaded file is to be saved.

3 Click the **[Execute]** button to start the operation.

Note: Set the PROTECT SW to be ON in case of EQ UL.

4 After the upload is finished, click the **[Close]** button.

5 Verify that the file was uploaded on the specified directory.

6 Finally, change Protect SW to Off for returning to operational status.

Warning: Do not UPLOAD Equipment Configuration file when the equipment is in factory default condition (no equipment configuration registered). The equipment may go to abnormal condition is this file is used to Download the equipment configuration to the equipment.

B. To upload Configuration file (Network, Mib, Equipment) from RCP to MMC by operating Protect SW at front of RCP card.

1 After inserting MMC, change Protect SW to ON.

*Note: This operation can download three Configuration files **(pn_network.cfg, pn_mib.cfg, pn_equip.cfg)** to MMC at the same time.*

2 Finally, change Protect SW to Off for returning to operational status.

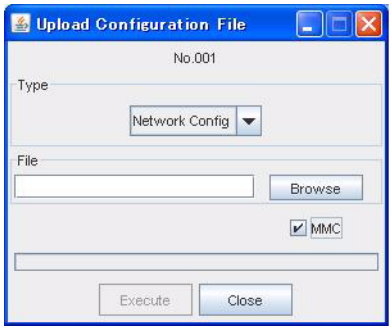
Warning: Do not UPLOAD Equipment Configuration file when the equipment is in factory default condition (no equipment Configuration registered). The equipment may go to abnormal condition is this file is used to Download the equipment configuration to the equipment.

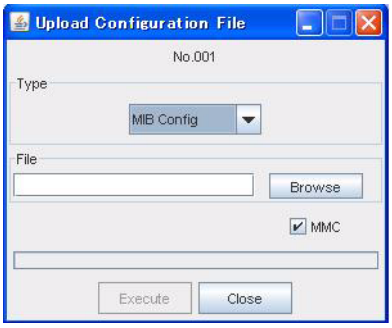
C-1 To upload Configuration file (Network, Mib) from RCP to MMC by operating PNMT.

1 Insert MMC.

2 Click the **[UL Configuration File]** button in RCP window.

3 Select the type of file to be downloaded in the **Type** list.





4 Click the **[MMC]** box.

5 Select **[Browse]** button and enter the desired file name for the uploaded file. Then select and the directory where the uploaded file is to be saved.

6 Click the **[Execute]** button to start the operation.

7 After the upload is finished, click the **[Close]** button.

8 Verify that the file was uploaded on the specified directory.

9 Remove MMC.

Note: If one of three Configuration files is not ready, LED (MAINT/ Memory/IDU) of RCP card blinks.

Continue following C-2 procedure:

C-2 To upload Configuration file (Equipment) from RCP to MMC by operating PNMT.

1 After changing Protect SW to On, insert MMC. MAINT LED (Memory/IDU) blinks.

2 Click the **[UL Equipment Config File]** button in RCP window.

3 Click the **[MMC]** box.

4 Select **[Browse]** button and enter the desired name for the uploaded file and select the directory where the uploaded file is to be saved.

5 Click the **[Execute]** button to start the operation.

6 After the upload is finished, click the **[Close]** button.

7 Verify that the file was uploaded on the specified directory.

8 When blinking MAINT LED, change Protect SW to Off for returning to operational status.

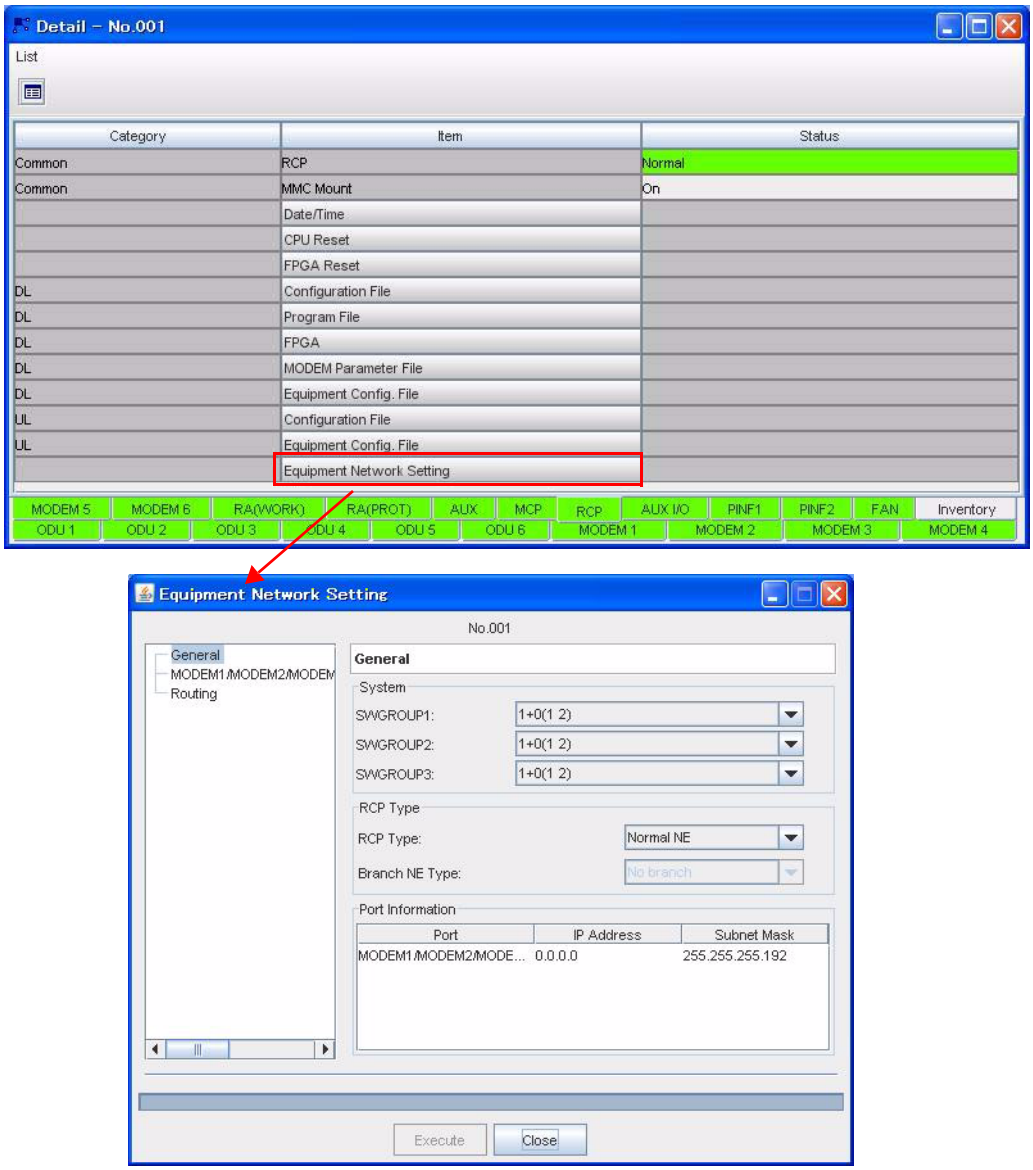
Note: When three Configuration files are ready, MAINT LED blinks and the Upload is completed.

Warning: Do not UPLOAD Equipment Configuration file when the equipment is in factory default condition (no equipment Configuration registered). The equipment may go to abnormal condition is this file is used to Download the equipment configuration to the equipment.

3.17.9 Configuring the Equipment Network Settings

In order to operate Auto Discovery and Network function respectively to PNMS and PNMT it is necessary to first, connect PNMT to all equipment to configure Network data.

This function is used to configure the equipment network settings (i.e. IP and routing addresses, subnet masks) using the tags in the lefthand field of the Equipment Network Settings window of the selected NE for the PNMT PC.



For details, refer to **Appendix A**.

3.17.10 FPGA Reset

The FPGA can be reset using this function

* The FPGA Reset window is not available when MAINT is OFF.

Note: Resetting the RCP FPGA will not affect traffic. The connection to the selected NE will be lost for a few minutes but will be automatically restored.

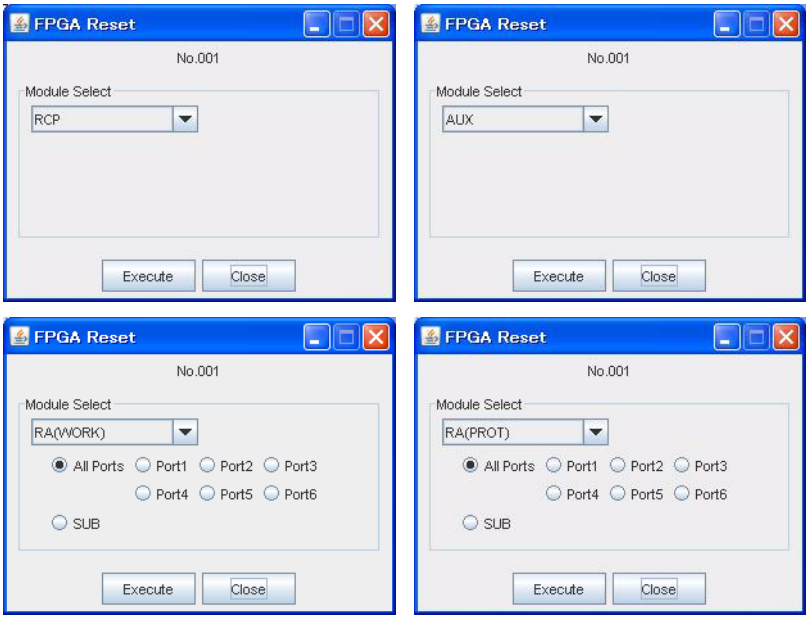
Note: Resetting the AUX FPGA will not affect traffic and connection to the selected NE.

To reset the Control function:

1 Click the **[FPGA Reset]** button in RCP window.

2 Select desired object to download from “Module Select” combo box.

3 Click the **[Execute]** button to continue the Control function reset operation.



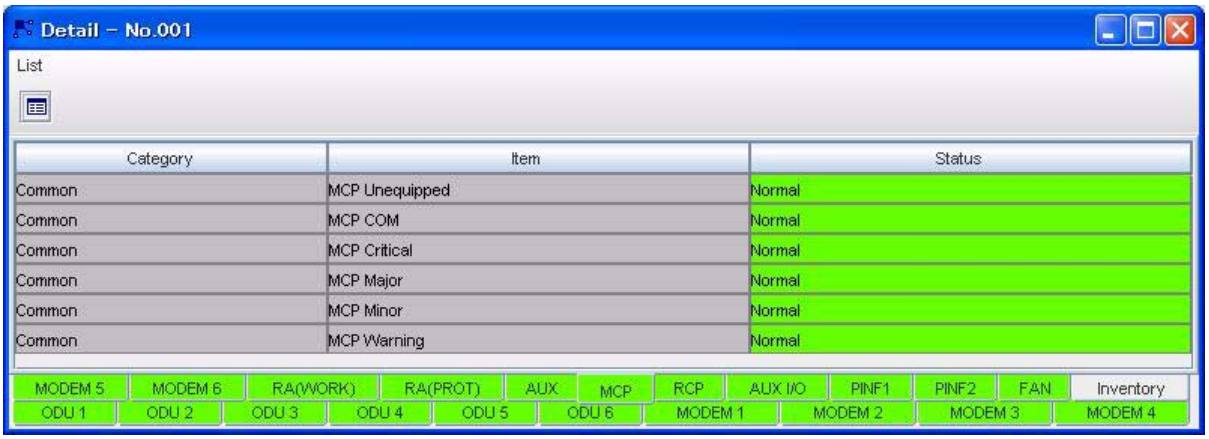
3.18 MCP Tab

The MCP tab displays the status of the monitored items for the MCP. This window only displays current settings and no control functions are available here.

To set the MCP parameters see the Sections on *Equipment Setup and Provisioning*.

To view the alarms and status of the MCP:

Select the MCP tab in the PNMT main window of the target NE.



Overview and Description of the Alarm and Status Items/Features of the MCP

Item/Feature	Description	Specific conditions for it to be displayed/configured
MCP Unequipped	Indicate whether MCP unit is mounted or not. When the MCP unit is loose contact or it is not mounted according to the "Equipment Setup", "Alarm" is issued.	None
MCP COM	Indicate the status of communication between the RCP and the MCP in the IDU. When communication failure occurs (No Response) "Alarm" is issued.	None
MCP Critical	Indicates the ADM portion Summary Alarm (Critical)	None
MCP Major	Indicates the ADM portion Summary Alarm (Major)	None
MCP Minor	Indicates the ADM portion Summary Alarm (Minor)	None
MCP Warning	Indicates the ADM portion Summary Alarm (Warning)	None

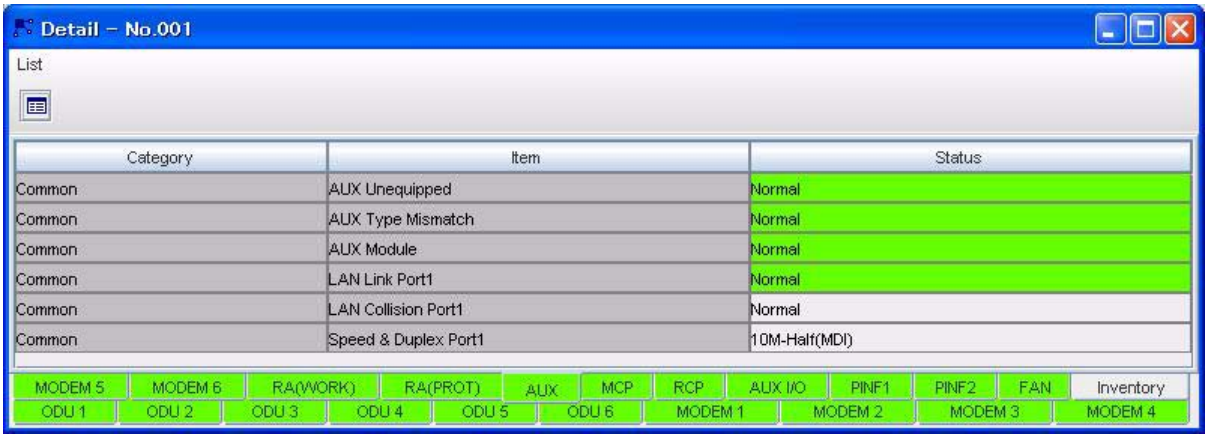
3.19 AUX Tab

The AUX tab displays the status of the monitored items for the AUX. This window only displays current settings and no control functions are available here.

To set the AUX parameters see the Sections on *Equipment Setup and Provisioning*.

To view the alarms and status of the AUX:

Select the AUX tab in the PNMT main window of the target NE.



Overview and Description of the Alarm and Status Items/Features of the AUX

Item/Feature	Description	Specific conditions for it to be displayed/configured
AUX Unequipped	Indicate whether AUX unit is mounted or not. When the AUX unit is loose contact or it is not mounted according to the "Equipment Setup", "Alarm" is issued.	When AUX Registration = "Used"
AUX Type Mismatch	Indicate a mismatch of the unit mounted in the IDU AUX slot. When a unit other than AUX unit is mounted "Alarm" is issued.	When AUX Registration = "Used"
AUX Module	Indicate the status of the AUX operation. When AUX operation is abnormal, "Alarm" is issued.	When AUX Registration = "Used"
LAN Link Port (1-2)	Indicates the LAN Link Port status: an alarm occurs when the link fails for the respective ports.	The respective Port Usage must be set at "used"
LAN Collision Port (1-2)	Indicates the status of any collision for the respective ports.	The respective Port Collision Report function must be enabled (set to "report")
Speed & Duplex Port (1-2)	Indicates the status of Speed & Duplex for the respective ports.	The respective Port Usage must be set at "used"
WS AIS Generated	Indicate the output status of the wayside channel. When AIS is inserted to the WS output, "Alarm" is issued	When Architectre = SDH and WS Usage = "WS E1 Used"
E1 Input LOS	Indicate the input status of the wayside channel. When the WS input is lost "Alarm" is issued.	When Architectre = SDH and WS Usage = "WS E1 Used"
E1 AIS	Indicate the AIS received status at the input of the WS channel. When AIS is detected "Alarm" is issued.	When Architectre = SDH and WS Usage = "WS E1 Used"

3.20 Maintenance

There are several maintenance control items that can be set during Maintenance Mode.

The function of each control is as follows. (These windows are not available when MAINT is OFF. "Switch to Maintenance mode first" is displayed).

NOTE: After power on, MODEM takes twenty seconds to boot as a maximum during which, not performing any maintenances.

Common to PDH/SDH

Maintenance:	To switch Maintenance mode ON
TX SW Manual Control:	To control the TX switch manually (Only during hot-standby)
RX SW Manual Control:	To control the RX switch manually (Only for 1+1 systems)
ATPC Manual Control:	Allows optional transmitting power when ATPC is in operation
ATPC Manual Power:	
TX Mute Control*1:	To set TX Mute Control
TX Mute off Timer:	
CW Control*1:	To turn on the Carrier Wave for measurements
IF Loopback*1:	To pinpoint faulty sections causing signal interruption
DADE Adjust	Select the DADE for Hot-Standby/Twinpath configuration to bring INTFC status back in phase
RF Setting*1	To change the ODU sub band for the wireless link according to the RF frequency allocation
Antenna Alignment Mode*1:	To turn on Antenna Alignment Mode (only available for specific ODU type)
LAN Device Reset:	Resets LAN INTFC ports (when LAN Port setting is “used”)

**1 - Only possible for NE directly connected to PNMT*

Only for PDH

Main CH Loopback-2 (CH01-48)	Allows the pinpointing of faulty sections causing signal interruption

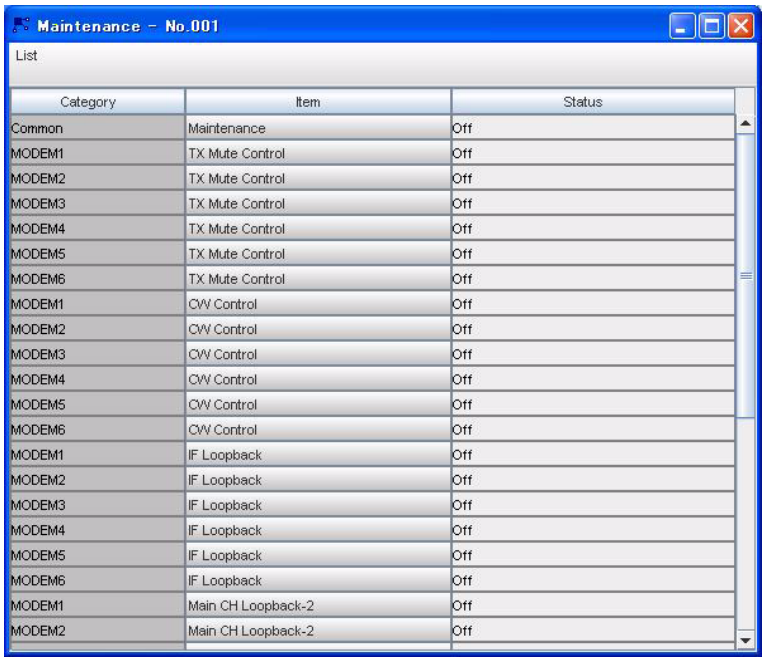
Only for SDH

Main Loopback-2	Allows the pinpointing of signal interruption faults
XPIC Control:	To temporarily interrupt XPIC (when XPIC is available)

3.20.1 Selecting Maintenance

To open the Maintenance window:

1 Select **Configuration** → **Maintenance** in the NE-specific menu bar.



This window contains the setup information for MAINT and several maintenance control items that need to be set during *Maintenance Mode*. The **Maintenance** window is shown below.

3.20.2 Mode

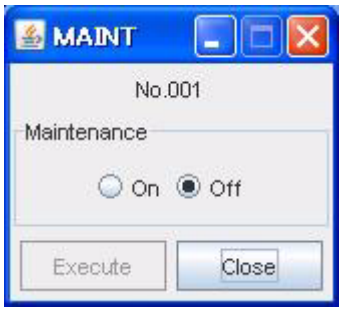
To switch the NE to maintenance mode:

1 Click the **[MAINT]** button in **Maintenance** window.

2 Select on **ON/OFF** depending on desired state.

3 Click the **[Execute]** button to implement the command.

4 Click the **[Close]** button when finished.



3.20.3 TX SW Manual Control (for Hot Stand-by System Only)

To control the TX switch manually:

1 Click the **[TX SW Manual Control]** button in **Maintenance** window.

2 Select the TX system that you want to use.
The default setting is Auto.

3 Click the **[Execute]** button to switch to the selected TX system.

Caution: When TX SW Manual Control is changed from the default setting (Auto) to either No.1 or No.2, this confirmation message appears.

If the TX SW Manual Control has been manually switched to either No.1 or No.2, the confirmation message will NOT appear. However, this operation still may affect the radio link.

4 Click the **[Close]** button when finished.

3.20.4 RX SW Manual Control (for 1+1 System Only)

To control the RX switch manually:

1 Click the **[RX SW Manual Control]** button in **Maintenance** window.

2 Select the desired RX wireless system. The default setting is Auto.

3 Click the **[Execute]** button to switch to the RX selected system.

4 Click the **[Close]** button when finished.

3.20.5 ATPC Manual Control

Use when an optional transmitting power is required during ATPC operation.

To set the ATPC Manual:

1 Click the **[ATPC Manual Control]** button in **Maintenance** window.

2 Select whether to manually turn ON (or OFF) ATPC manual power and the desired decibel value.

3 Click the **[Execute]** button to activate the new setting.

4 Click the **[Close]** button when finished.

3.20.6 TX Mute Control

TX power of the ODU is switched off when TX Mute is ON.
This should be OFF in normal operation

To change the TX Mute status:

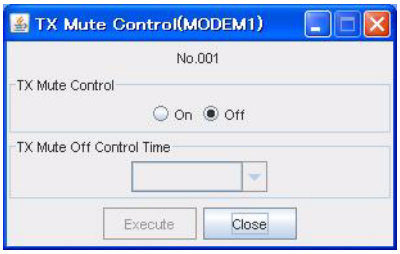
1 Click the **[TX Mute Conrtol]** button in **Maintenance** window.

2 Select **ON/OFF** depending on the desired state.

3 When setting the opposite NE, also select **TX Release Time** in the **TX Mute Release Time** list.

4 Click the **[Execute]** button to implement the command.

5 Click the **[Close]** button when finished.



3.20.7 CW Control

When conducting frequency measurements, the CW should be turned ON to have an un-modulated signal. During normal operation, this status should be OFF.

To change the CW (MOD Carrier) status:

1 Click the **[CW Control]** button in **Maintenance** window.

2 Select **ON/OFF** depending on desired state.

3 Click the **[Execute]** button to implement the operation.

4 Click the **[Close]** button when finished.

3.20.8 IF Loopback

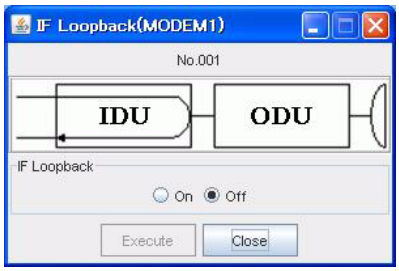
ODU or IDU faults can be pinpointed by looping back the MUX signal at the IF.

1 Click the **[IF Loopback]** button in the **Maintenance** window.

2 Select ON to activate the loopback.

3 Click the **[Execute]** button to activate the loopback.

4 Click the **[Close]** button when finished.



3.20.9 DADE Adjust

DADE adjustment is necessary when the IF cable is to be replaced or RA card is to be added/replaced. (At initial start-up the offset memory can be used to minimize the delay, but it may interrupt traffic when the delay is substantial).

To conduct DADE adjustment:

1 Click the **[DADE Adjust]** button in **Maintenance** window.

2 Select (click) the desired state: “DADE”, “Offset DADE”, or “DADE off”.

3 Click the **[Execute]** button to activate the command.

4 Click the **[Close]** button when finished.

3.20.10 RF Setting

Sub Band of ODU can be selected.

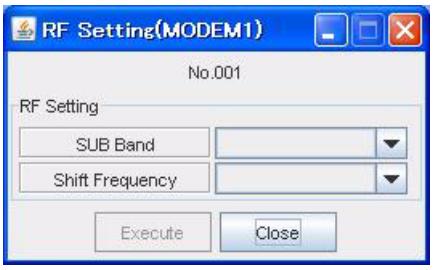
To select Sub Band:

1 Click the **[RF Setting]** button in **Maintenance** window.

2 Select the type of Sub Band in the Sub Band list.

3 Click the **[Execute]** button to implement the command.

4 Click the **[Close]** button when finished.



3.20.11 Antenna Alignment Mode (Only Available for Specific ODU Type)

The Antenna Alignment Mode is used for extending the dynamic range of the RX LEVEL MONITOR (ODU). This function is only available for a specific ODU type.

To set Antenna Alignment Mode:

1 Click the **[Antenna Alignment Mode]** button in **Maintenance** window.

2 Select ON/OFF.

3 Click the **[Execute]** button to activate the new setting.

4 Click the **[Close]** button when finished.

3.20.12 Main Loopback-2

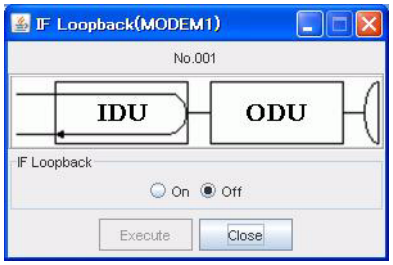
This allows the signal sent from the opposite NE to be looped back (to that NE) from your selected NE via the INTFC.

To set the loopback:

1 Click the **[Main Loopback-2]** button in the **Maintenance** window.

2 Click the **[Execute]** button to apply the loopback.

3 Click the **[Close]** button when finished.



3.20.13 LAN Device Reset

The LAN device can be reset using this function.
Select “All Ports” then click the **[Execute]** button.

3.20.14 Main CH Loopback-2 (CH01-48)

This allows the signal sent from the opposite NE to be looped back (to that NE) from your selected NE via the INTFC.

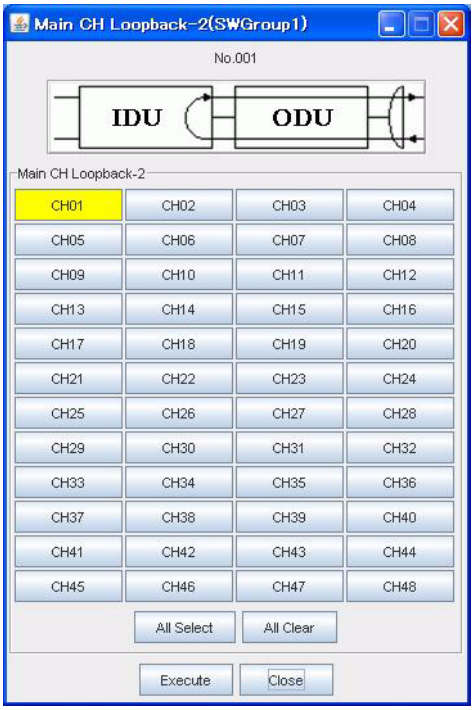
To set the loopback:

1 Click the **[Main CH Loopback-2]** button in the **Maintenance** window.

2 Select the channel (01 - 48).

3 Click the **[Execute]** button to apply the loopback.

4 Click the **[Close]** button when finished.



3.20.15 XPIC Control

This feature is used to temporarily interrupt XPIC.

To set XPIC Control:

1 Click the **[XPIC Control]** button in the **Maintenance** window.

2 Select **[Forced Reset]**.

3 Click the **[Execute]** button to activate this command.

4 Click the **[Close]** button when finished.

3.21 Equipment Setup

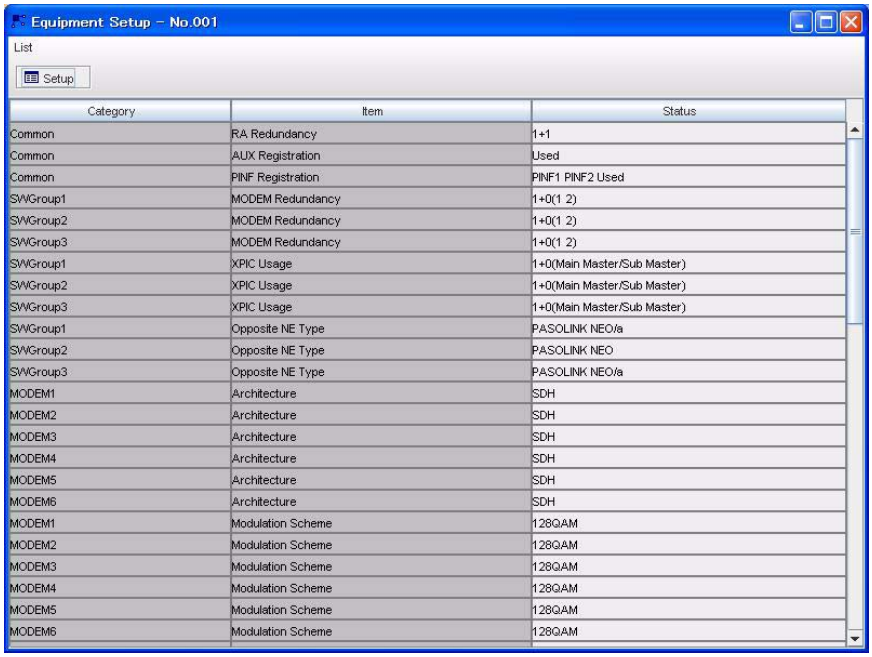
Main and Service signal, ODU and CTRL settings can be monitored as well as controlled via this window.

3.21.1 Equipment Configuration Window

To open the Equipment Configuration Monitor:

1 Select **Configuration** → **Equipment Setup** in the NE-specific menu bar.

2. This window contains the setup and control parameters for the ODU and the IDU. The **Equipment Setup** window is shown below.



Category	Item	Status
Common	RA Redundancy	1+1
Common	AUX Registration	Used
Common	PINF Registration	PINF1 PINF2 Used
SWGroup1	MODEM Redundancy	1+0(1 2)
SWGroup2	MODEM Redundancy	1+0(1 2)
SWGroup3	MODEM Redundancy	1+0(1 2)
SWGroup1	XPIC Usage	1+0(Main Master/Sub Master)
SWGroup2	XPIC Usage	1+0(Main Master/Sub Master)
SWGroup3	XPIC Usage	1+0(Main Master/Sub Master)
SWGroup1	Opposite NE Type	PASOLINK NEO/a
SWGroup2	Opposite NE Type	PASOLINK NEO
SWGroup3	Opposite NE Type	PASOLINK NEO/a
MODEM1	Architecture	SDH
MODEM2	Architecture	SDH
MODEM3	Architecture	SDH
MODEM4	Architecture	SDH
MODEM5	Architecture	SDH
MODEM6	Architecture	SDH
MODEM1	Modulation Scheme	128QAM
MODEM2	Modulation Scheme	128QAM
MODEM3	Modulation Scheme	128QAM
MODEM4	Modulation Scheme	128QAM
MODEM5	Modulation Scheme	128QAM
MODEM6	Modulation Scheme	128QAM

Equipment Setup Window

To edit the NE name:

1 Click the **[NE Name]** button in **Equipment Setup** window.

2 Enter new NE name in the **NE Name** dialog box. A maximum of 32 characters can be used.

3 Click the **[Execute]** button to change to new name.

4 Click the **[Close]** button when finished.

3.21.2 Editing the Note for RCP

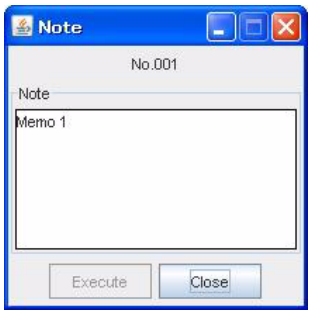
To put an optional description on the current NE:

1 Click the **[Note]** button in **Equipment Setup** window.

2 Enter the optional description for the specific NE in the **Note** dialog box.
A maximum of 100 characters can be used in this field.

3 Click the **[Execute]** button when finished.

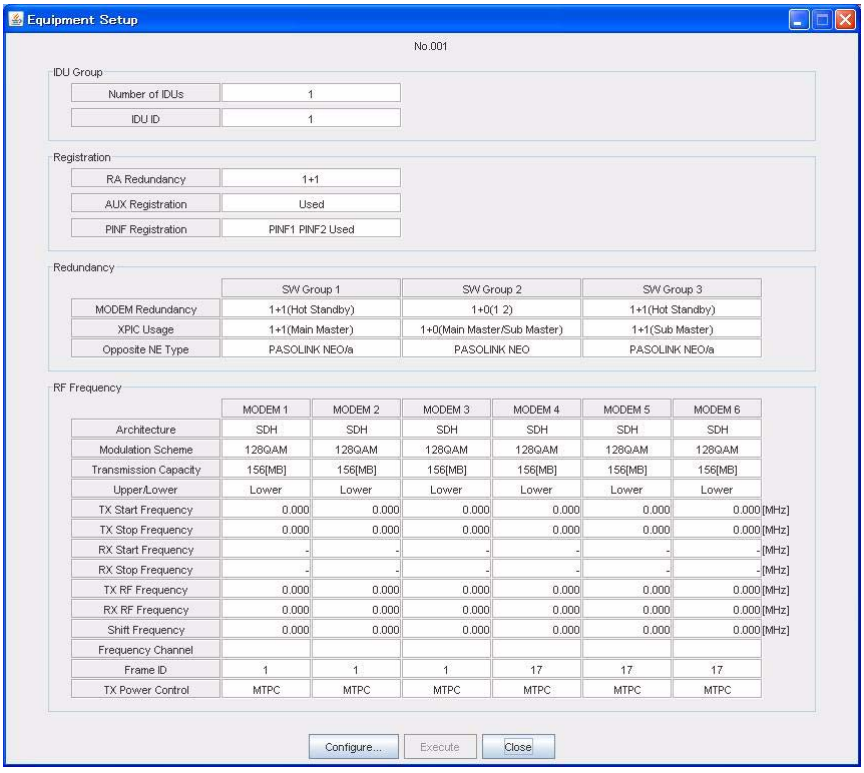
4 Click the **[Close]** button when finished.



3.21.3 Setup

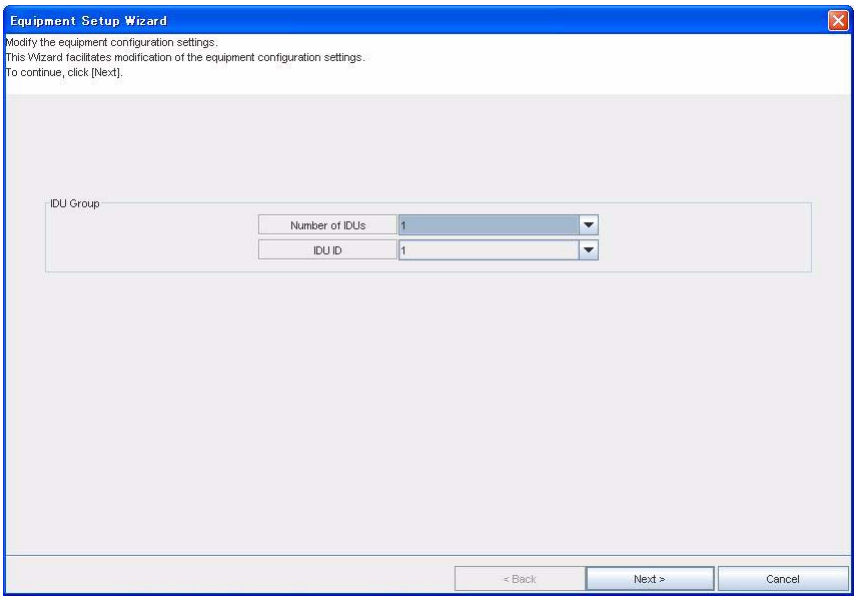
Setting the ODU and IDU parameters:

1 Click the **[Setup]** button in the **Equipment Setup** window and another **Equipment Setup** window (for verifying the settings) opens.



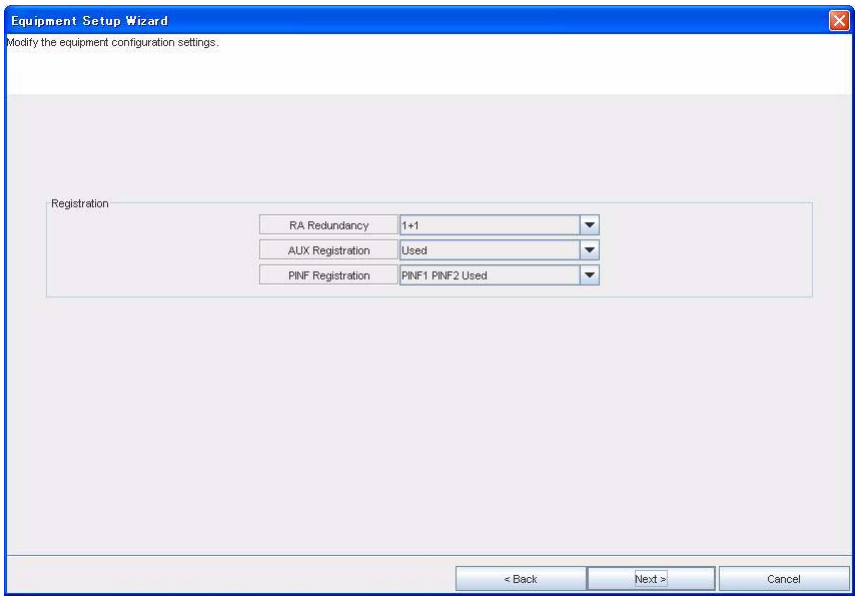
Equipment Setup Window (to verify settings)

2 Clicking **Configure** opens the **Setup Wizard**.

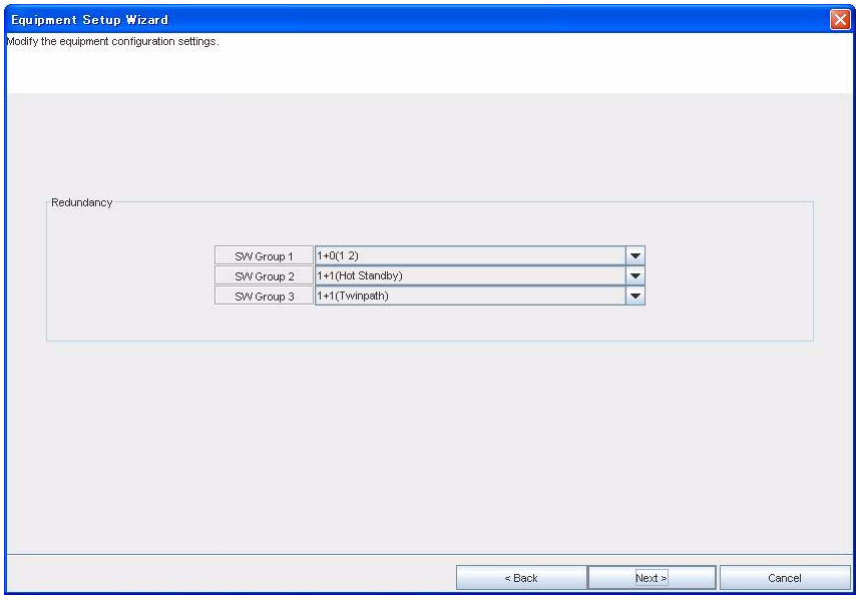


Setup Wizard

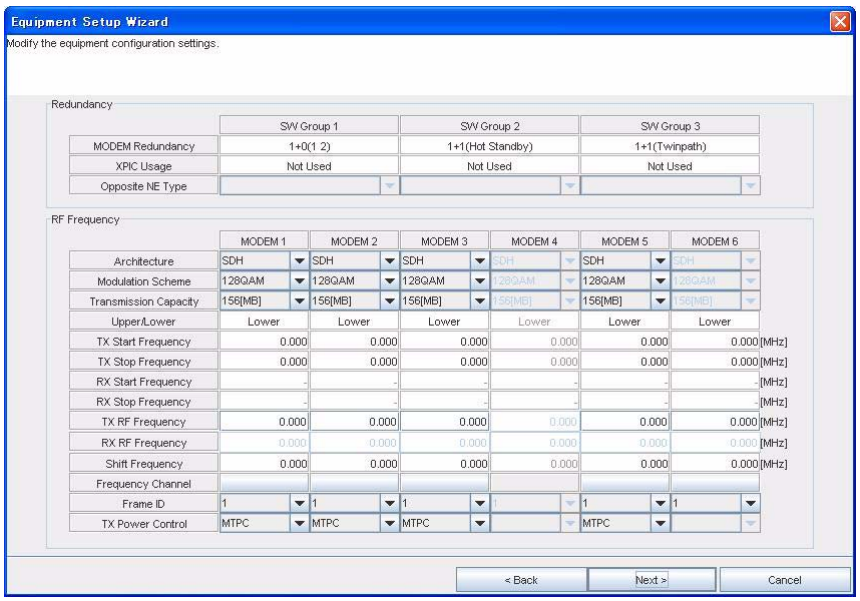
3 The settings in the window can now be configured. To continue click **[Next]**.



4 The settings in the window can now be configured. To continue click **[Next]**.



5 The settings in the window can now be configured. To continue click [Next].



6 To complete the configuration procedure, click **[Next]** and in the ensuing window click **[Finish]**.

7 This will take you back to the **Equipment Setup** window (for verifying the settings). Carefully confirm that the settings are correct and click **[Execute]** to activate them.

The following is an overview of the configurable items/parameters:

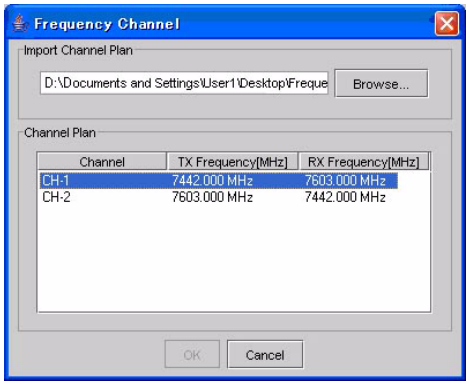
RA Redundancy:	The type of RA redundancy is set here.
AUX Registration:	The AUX mounting configuration is set here.
PINF Registration:	The PINF mounting configuration is set here.
MODEM Redundancy:	The MODEM mounting configuration in each SW group is set here.
Architecture:	The signal transmission mode (PDH/SDH) on radio link is set here.
Modulation Scheme:	The type of modulation is set here.
Transmission Capacity:	This value denotes the transmission capacity (in MB) of the selected interface and modulation type.
TX RF Frequency:	The transmission frequency can be set within the range designated by the **TX Start** and **TX Stop** frequencies.
RX RF Frequency:	The receiving frequency can be set within the range designated by the **RX Start** and **RX Stop** frequencies.
Frequency Channel:	Enables the TX and RX frequencies for the channels to be set (as described below).
Frame ID:	Identification code for the transmission frames TX Power Control: The type of power control is set here.
TX Power Control:	TX power control: TX power control mode is set here.
XPIC Usage:	To select the XPIC Usage (where supported)
Opposite NE Type:	To select the opposite NE Type (Only when XPIC Usage = Used)
Number of IDUs:	The Number of IDUs is set here.
IDU ID:	The IDU ID is set here.

3.21.4 Frequency Channel

1 Click the **[Browse]** to locate the Channel plan file on the local hard disk.

2 Select Channel and click **[OK]**, then TX and RX frequency corresponding to the channel will be set.

Frequency channel file format is **csv**, including channel name, TX frequency and RX frequency.
Examples
CH-1, 7442.000, 7603.000
CH-2, 7603.000, 7442.000



3.22 Provisioning

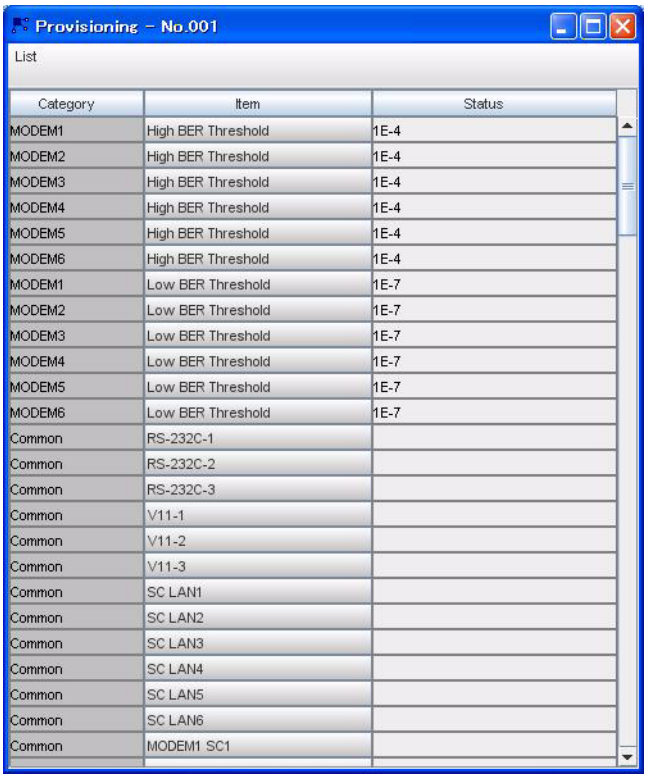
This window enables the AP card, SC Assignment, MTPC/ATPC parameters, as well as error rate and other thresholds to be set.

Provisioning window

To open the Equipment Configuration Monitor:

1 Select **Configuration** → **Provisioning** in the NE-specific menu bar.

2 This window contains the setup information of the MTPC, ATPC, BER Alarm Threshold, Cluster ALM Setting (Input), AIS Activation, Main Channel Setting, SC and Assignment. The **Provisioning** window is shown below.



Provisioning Window

Common Items

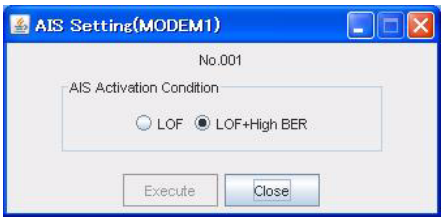
Item/Feature	Description	Specific Conditions for it to be Displayed/Configured
High/Low BER Threshold	Allows the setting of the BER value that will trigger the alarm	None
MTPC TX Power	Allows the transmission power (dB) to be set for MTPC operation.	Not available when XPIC (SUB Master) is used
ATPC Threshold Level	Allows the transmission power (dB) thresholds to be set for ATPC operation.	Not available when XPIC (SUB Master) is used
Additional ATT	For setting the additional attenuation parameters (dB)	Not available if Modulation Scheme = QPSK or 16QAM Not available when XPIC (SUB Master) is used
ATPC Range (Max / Min)	For setting the minimum and maximum ATPC transmission power (dB).	Not available when XPIC (SUB Master) is used
ATPC Power Mode	For setting the power mode (Hold: maintaining present status, MIN: minimum level).	Not available when XPIC (SUB Master) is used
COMM Alarm Mode	Select ODU output powermode when the communication failes between IDU and ODU due to some problems.	When Mute is set, the ODU output power will be muted. (Default) When Hold is set, the ODU output power will be hold. (Should consider neighboring system)
TX/RX SW Priority	Enables the respective priority to be set (pre-alarm TX / RX route or No. 1)	Only for 1+1 hot standby
TX SW Lock in Usage	For setting TX SW lock usage.	For 1+1 hot standby and when “TX SW Priority” = “Priority No.1”.
RX SW Maintenance Mode	Has two settings: “manual” for disabling the RX switch and “forced” for overriding the disabled switch.	Only for 1+1 hot standby / twinpath
RX SW Condition-Early Warning	For setting whether the EW (Early Warning) feature is to be included in the parameters.	Only for 1+1 hot standby / twinpath
Relay Configuration	The six relays in the IDU are each associated with a parallel alarm. Four can be configured and the other two (RL01 and RL02) have fixed alarms.	None
Cluster 1 - 6 Input	Allows the cluster alarm input to be enabled/ disabled.	None
Cluster 1 - 6 Output	Allows the cluster alarm output to be enabled/ disabled.	None
RX Level TCN Threshold	For setting the threshold at which the TCN is displayed	None
Alarm Correlation Capability	Allows the suppression of secondary (downstream) alarms to be turned on/off	None
SC Assignment	For setting the SC Assignment. (RS-232C/V11/SC LAN/MODEM SC/V11 DIRECTION SETTING)	None
LAN Port Setting	For setting the LAN Port usage, Speed & Duplex, Flow Control, Collision report.	None
Membership Setting	For setting the Transparent Usage of LAN and WAN.	None
EOW DSC Usage	For setting the EOW DSC Usage.	None
EOW External Setting	For setting the EOW External.	None
WS Port Setting	For setting the WS Usage, WS Impedance, WS AIS Generated report, WS AIS Received report.	None
EOW SOH Usage	For setting the EOW SOH Usage.	None
EOW 4Wire Usage	For setting the EOW 4Wire Usage.	None
XPIC Condition-Local Fail	For setting operation after Ref Local Alarm is issued.	Only when XPIC Function is “enabled”.

PDH-only Items

Item/Feature	Description	Specific Conditions for it to be Displayed/Configured
AIS Activation Condition	For setting whether the AIS signal is activated by LOF, High BER or both alarm parameters	At least one channel (CH01-CH48) must be set as used
SES Activation Condition	Enables setting of the low threshold (%) that activates SES	None

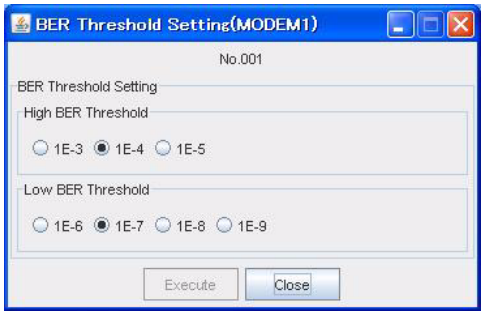
3.22.1 AIS Setting

To set the necessary channels (for the above parameters) simply click anywhere on the Provisioning window to open the following window in which you can then select/activate the various channels.



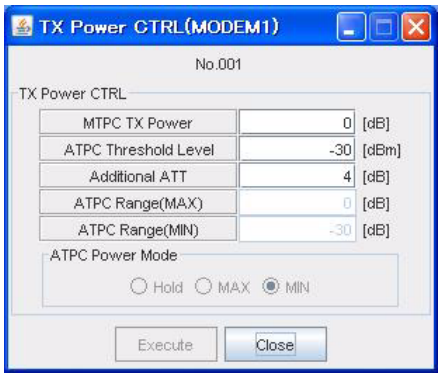
3.22.2 BER Threshold Setting

The BER thresholds throughout the system can be set in this window.

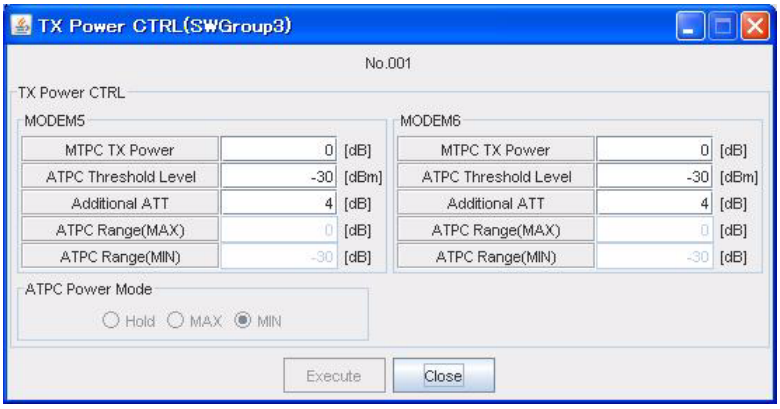


3.22.3 TX Power CTRL

The MTPC TX Power, ATPC Threshold Level, Additional ATT, ATPC Range as well as Power mode can be set in this window.

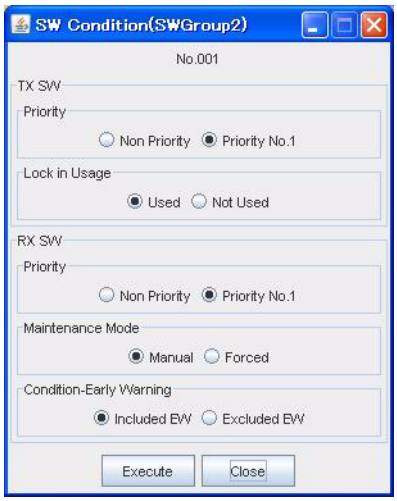


If 1+1 (TwinPath) selected as the modem protection type, the window shown below appears.



3.22.4 SW Condition

In this window, the switching (SW) parameters can be set.

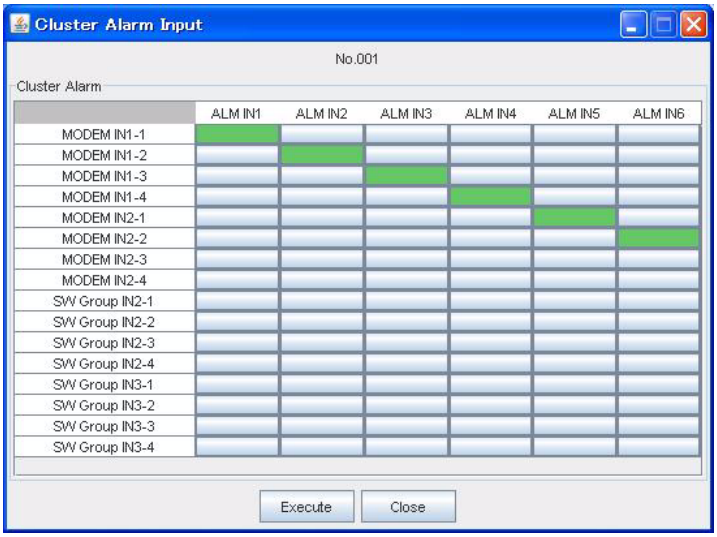


3.22.5 Relay Configuration

This window shows the six relays in the IDU (that are each associated with a parallel alarm). Four can be configured and the other two (RL01 and RL02) have fixed alarms.

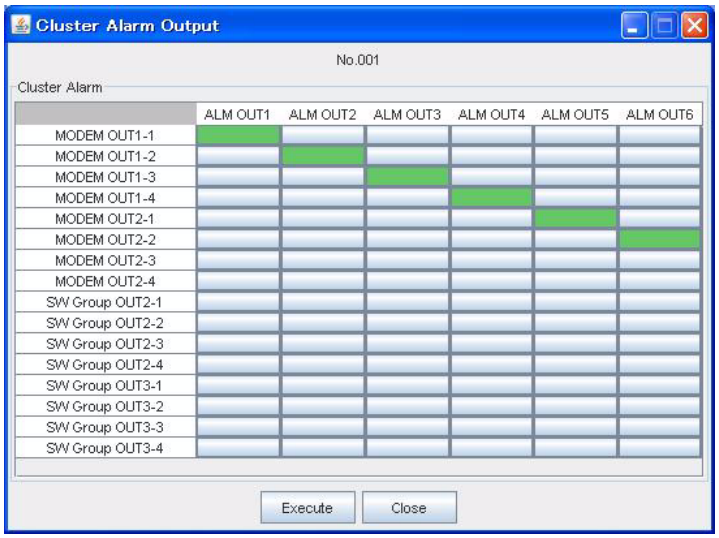
3.22.6 Cluster Alarm Input

Cluster alarm inputs can be enabled/disabled in this window.



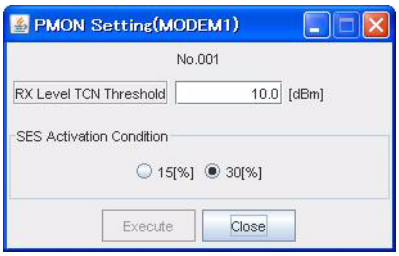
3.22.7 Cluster Alarm Output

Cluster alarm outputs can be enabled/disabled in this window.

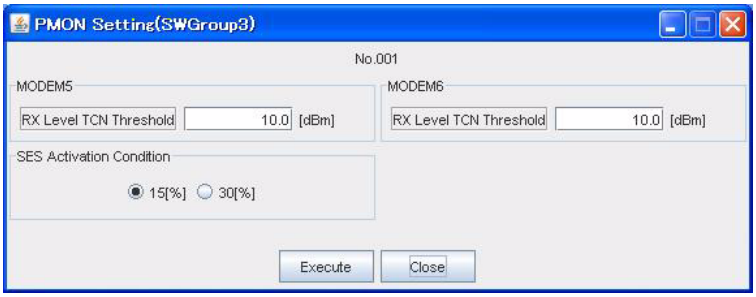


3.22.8 PMON Setting

The RX Level TCN Threshold and SES Activation percentage can be set.



If 1+1 (TwinPath) selected as the modem protection type, the window shown below appears.

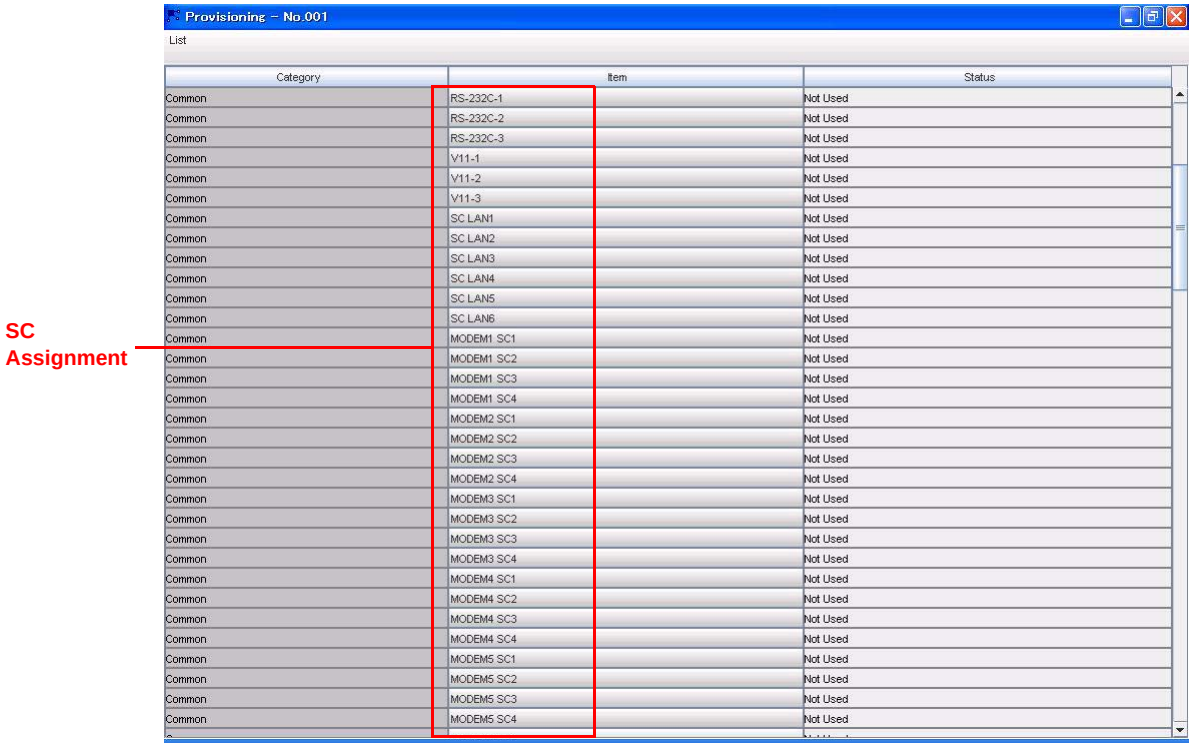


3.22.9 Alarm Correlation Capability

In this window the suppression of secondary (downstream) alarms can be turned **on/off**.

3.22.10 SC Assignment Setting

3.22.10.1Provisioning screen of SC Assignment

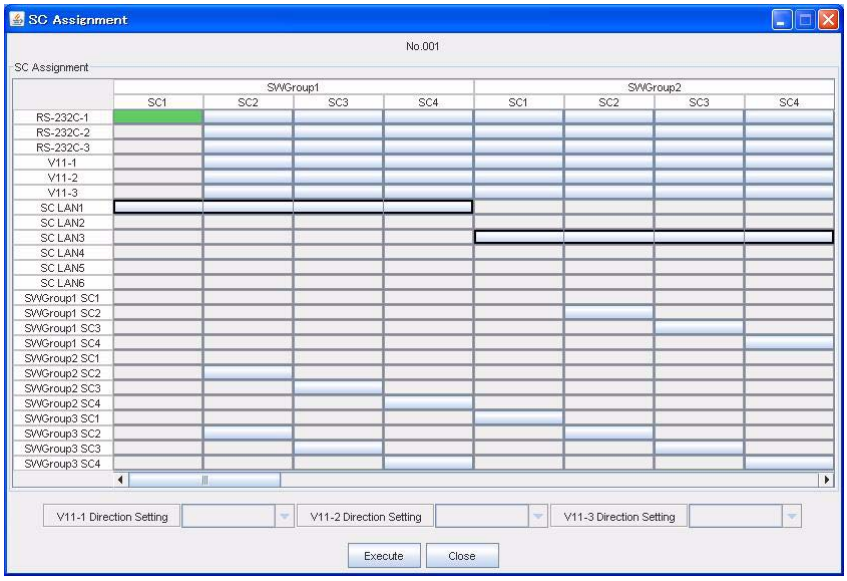


Provisioning Screen

Select following buttons of program window; RS-232C-*, V11-*, SC LAN*, and MODEM* SC* (SWGroup*SC*); then start-up SC Assignment screen.

NOTE:: indicates number.*

3.22.10.2 RS-232C Setting

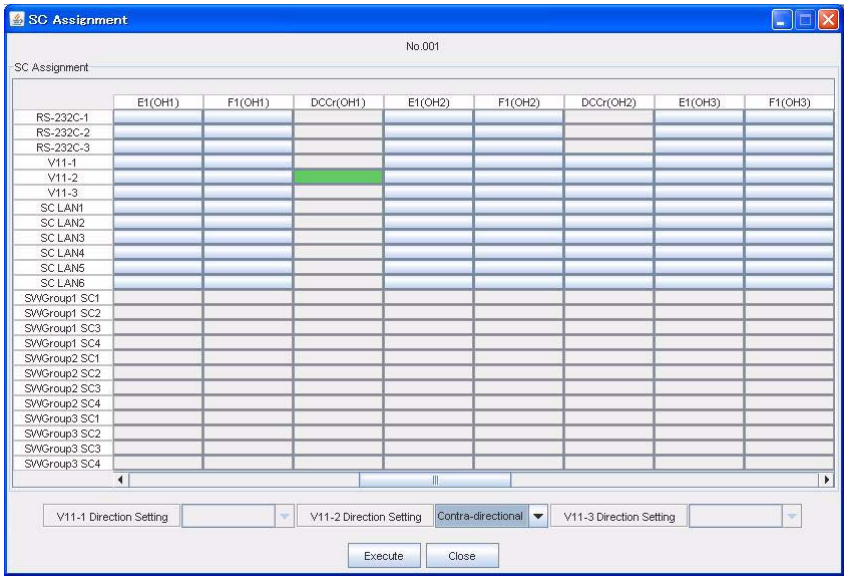


RS-232C setting Dialog BOX (Set SW Group SC1 to RS232C-1)

Select and Click buttons to set.

- RS-232C can set up to three ports.
- RS-232C can set to MODEM* (SWGroup*) SC1-4 and E1/F1 (OH1-8).

3.22.10.3 V.11 Setting



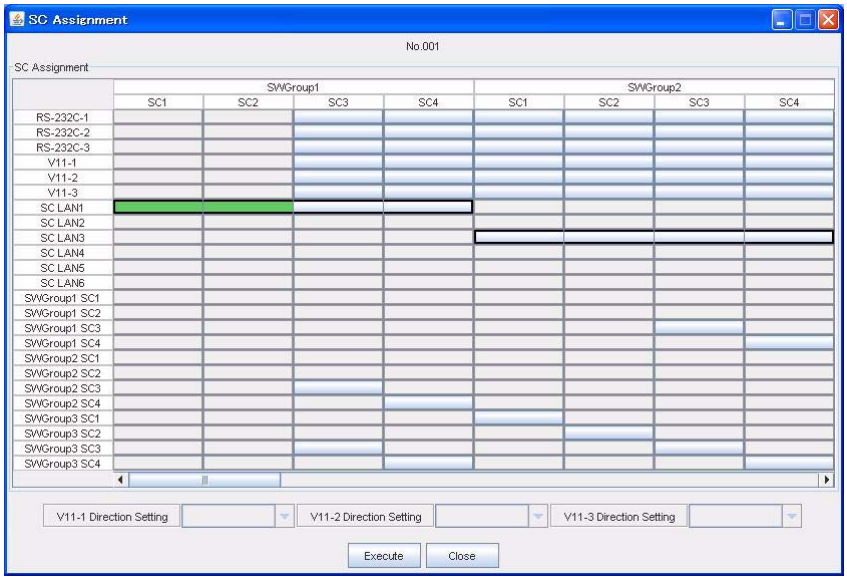
V11 setting Dialog BOX (Set DCCr (OH1) to V11-2)

Procedure

Select and Click buttons to set.

- V11 can set up to three ports.
- V11 can set to MODEM* (SWGroup*) SC1-4 and E1/F1/DCCr (OH1-8)
- For V11, need V11-* Direction Setting.
  Co-directional: Mode that sends both Clock and Data.
  Contra-directional: Mode that receives Clock and then sending Data

3.22.10.4 SC LAN Setting



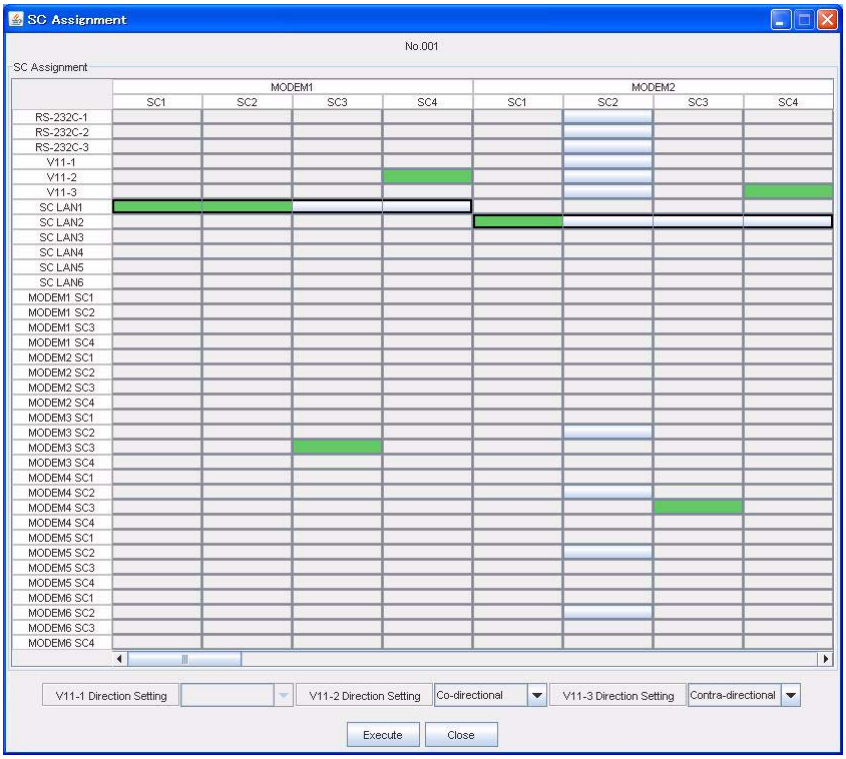
SC LAN setting Dialog BOX (Set SC1-SC2 to SC LAN)

Procedure

Select and Click buttons to set.

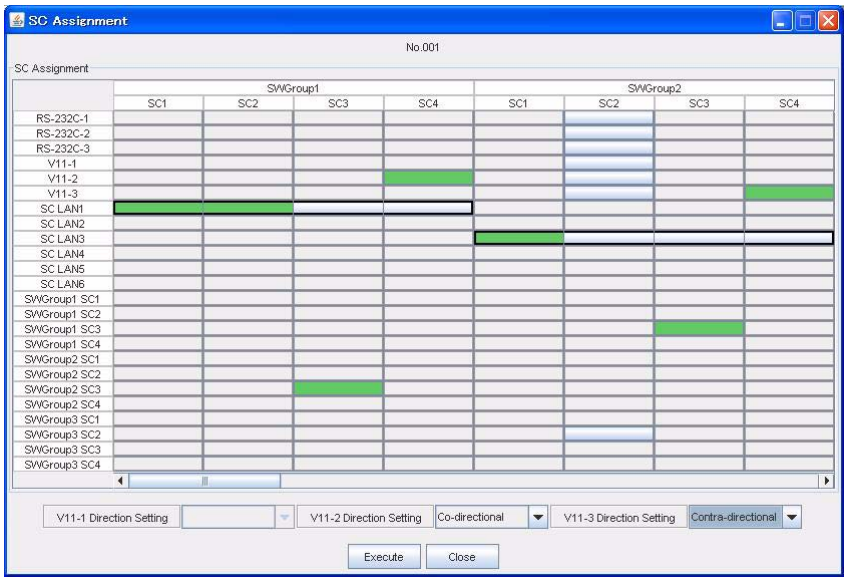
- SC LAN can set up to six ports.
- SC LAN can set to MODEM* (SWGroup*) SC1-4 and E1/F1/DCCr (OH1-8).
- When SC LAN set to MODEM* (SWGroup*) SC1-4, 64kbps (SC1), which can assign to 128kbps (SC1-SC2), 256kbps (SC1-SC4).

3.22.10.5 SC Setting



SC Setting Dialog Box (All MODEMs are 1+0 configuration.)

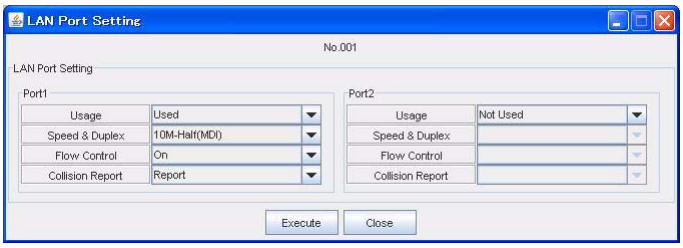
Setting items of SC are indicated in Green.



SC Setting Dialog Box (All MODEMs are 1+0 configuration.)

Setting items of SC are indicated in Green.

3.22.11 LAN Port Setting



LAN Port Setting Dialog Box

Procedure

1 Select one button among LAN Port* Usage, Speed & Duplex Port*, Flow Control Port*, Collision Report Port* in Provisioning Window.

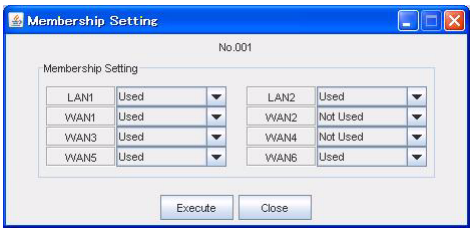
2 Usage Setting
Set LAN Port Usage to “Used” for using.

3 Speed & Duplex Setting
Setup of the operation mode of LAN Port.

4 Flow Control Setting
Setup of ON/OFF for the flow control function to each port.

5 Collision Report Setting
Setup of reported or not reported about collision conditions at each port. (In HALF-Duplex mode)

3.22.12 Membership Setting



Membership Setting Dialog Box

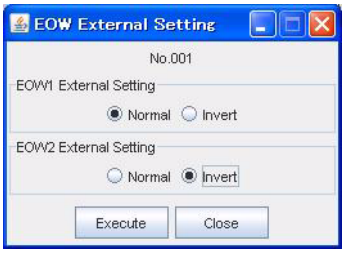
Procedure

1 Select a button of LAN* Transparent Usage or WAN* Transparent Usage in Provisioning Window.

2 Set LAN*/WAM* to “Used/Not Used” for membership setting.

- Can be set to LAN1-2 (LAN Port1-2) and WAN1-6(MODEM* WS LAN Port)
- Select “Used”, the port is established Membership setting, which enable communication of LAN signal among Membership-set Ports.

3.22.13 EOW External Setting



EOW External Setting Dialog Box

Procedure

1 Select EOW1 or EOW2 External Setting button in Provisioning Window.

2 Select “Normal/Invert” at EOW1/2.
Normal: Output EOW signal without clock inversion
Invert: Output EOW signal with Clock inversion.

3.22.14 EOW DSC Usage Setting

EOW DSC Usage(SWGroup1)

Procedure

1 Select EOW DSC Usage button of MODEM(SWGroup) in Provisioning Window.

2 Select “Usage” for EOW DSC.

Used: Use EOW DSC
Not Used: Not use EOW DSC

3.22.15 EOW SOH Usage Setting

EOW SOH Usage

Procedure

1 Select button of EOW SOH Usage in Provisioning Window.

2 Select Usage for EOW SOH.
Used: Use EOW SOH
Not Used: Not use EOW SOH

3.22.16 EOW 4WIRE Usage Setting

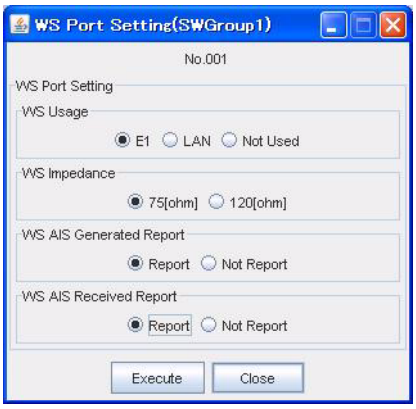
EOW 4WIRE Usage

Procedure

1 Select button of EOW 4WIRE Usage in Provisioning Window.

2 Select “Usage” for EOW 4WIRE.
Used: Use EOW 4WIRE
Not Used: Not Use EOW 4WIRE

3.22.17 WS Port Setting



WS Port Setting (SWGroup1)

Procedure

1 Select WS Port button of MODEM(SWGroup) in Provisioning Window.

2 Select Usage for WS.
E1: WS is used as E1.
LAN: WS is used as LAN.
Not Used: Not use WS.

3 Select Impedance of WS (only E1 setting)
120(ohm): Set E1's impedance to 120 (ohm)..
75(ohm): Set E1's impedance to 76 (ohm)..

4 Select AIS Generated Report of WS. (Only E1setting)
Report: Send “AIS received” signal to NE of opposite station by receiving AIS signal.
Not Report: Not send “AIS received” signal to NE of opposite station by receiving AIS signal.

5 Select AIS Received Report of WS. (Only E1setting)
Report: When receiving AIS signal from outside, extract at FPGA in AUX and report it to PNMT.
Not Report: Not report to PNMT, even receiving AIS signal from outside.

3.22.18 XPIC Condition-Local Fail

For setting operation after Ref Local Alarm is issued; the setting is switched from Ref LO to Self LO.

Click “Mute” to execute Mute.

3.22.19 COMM Alarm Mode Setting

The COMM Alarm Mode can be set in this window.

3.23 Link Performance Monitor

The following performance items can be monitored according to G.826 recommendation:

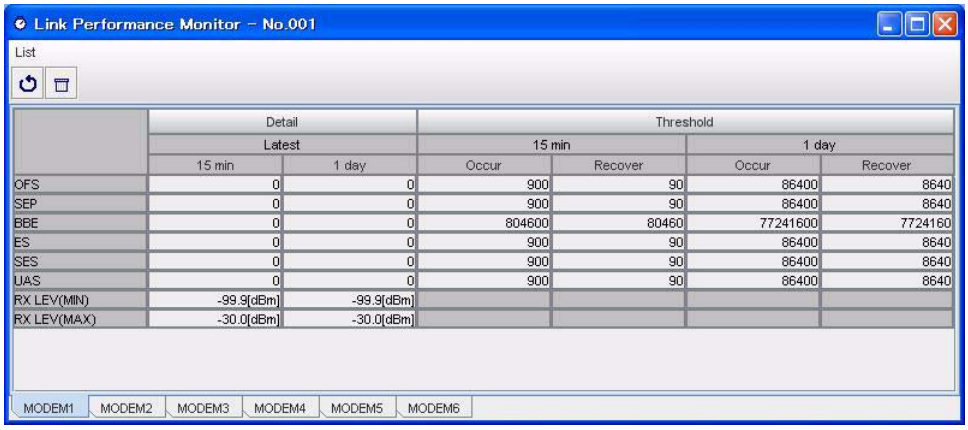
- **Out of Frame Second (OFS)** – the total number of seconds the "out of frame" condition is generated in 15 minute-blocks. (OFS is applied to the Total only).
- **Severely Errored Period (SEP)** – the cumulative time in which the BER of a one-second period exceeded 10E-3.
- **Background Block Error (BBE)** – the sum of the B1 background block error.
- **Errored Second (ES)** – the cumulative time in which more than one B1 error pulse per second was detected.
- **Severely Errored Second (SES)** – the cumulative time in which the BER of a one-second period exceeded a set percentage (15% or 30%).
- **Unavailable Second (UAS)** – the cumulative time in which the unit remained inoperative.
- **RX Level monitors** – the minimum and maximum reception level (when there are two routes it does so for No. 1 and 2 respectively).

Pink color in Performance Monitor window indicates that threshold value has been exceeded. The threshold values can be set in Threshold window. The detailed daily performance data for the last seven days can be viewed by clicking the **[Detail]** button.

3.23.1 Viewing Summary Link Performance Monitor

To view Summary Link Performance Monitor:

Click Performance **Monitor** → **Link Performance Monitor** in the **NE-specific** menu bar of the target NE that you intend to monitor (or alternatively **PNMT window** → **LPM**).



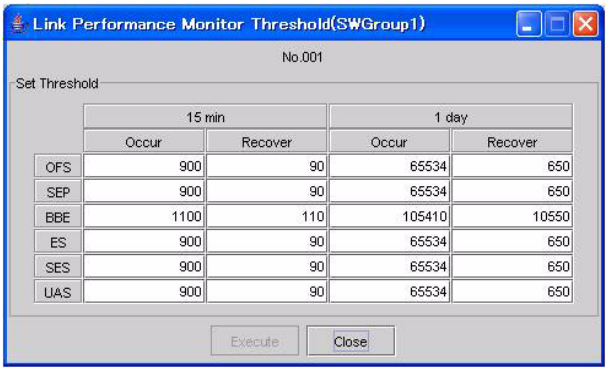
Summary Link Performance Monitor Window

In the case of SDH STM-1 with APS, the tabs on the bottom of the **LPM** window, allow ***MUX (W), MUX (P), DMR (W), DMR (P)*** to be selected, without APS, ***MUX*** and ***DMR*** can be selected.

3.23.2 Threshold Setting

To set the threshold values:

1 Click the **[Threshold]** button in the Summary Link Performance Monitor window.



Summary Link Performance Monitor Threshold

2 Select the performance item that is to be configured in the table shown above. The G.826 measure becomes available for setting when selected.

3 Set the monitoring values (the alarm **Occur** and **Recover**) in the appropriate field. The alarm status will be monitored when it reaches the ***alarm occur*** value and issue an ***alarm clear status*** when the ***recover value*** set in the threshold table is reached.

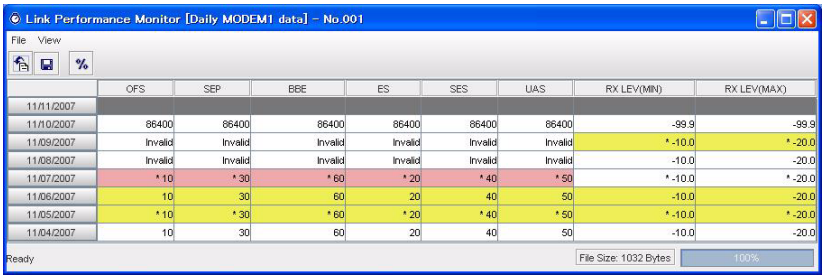
4 Click the **[Execute]** button to activate the new settings.

5 Click the **[Close]** button when finished.

3.23.3 Link Performance Monitor (1day / 15 min. Data) Window

To view the 1day Data:

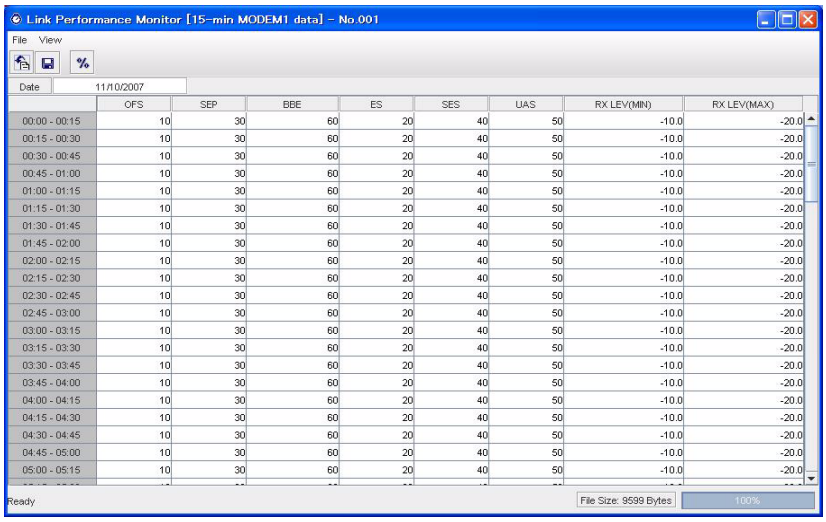
1 Click the **[Detail]** button in Summary Link Performance Monitor window.



Link Performance Monitor (1 day Data) Window

To view the 15-min. Data:

1 Click the button of the target date in Link Performance Monitor (Daily Data) window to display the detailed 15-minute performance data.



Link Performance Monitor (15-min. Data) Window

2 The data can be saved in text format by clicking on the save icon. Or it can be refreshed by clicking on the reload (refresh) icon.

Warning: While data is being updated, do not remove the LAN cable connecting the IDU with the PC.

3.24 NE Stored Log

The Event Log window displays the date/time when the event data was received, item, and status.

3.24.1 NE Stored Log Monitor

1 Click **[NE Stored Log]** in the **NE-specific** menu bar of the target NE that you intend to monitor.

2 A message window showing the progress of the uploading of the Event Log data will appear on the screen. Wait until the PNMT finishes the uploading of the data. The progress window will automatically close once the uploading is completed.

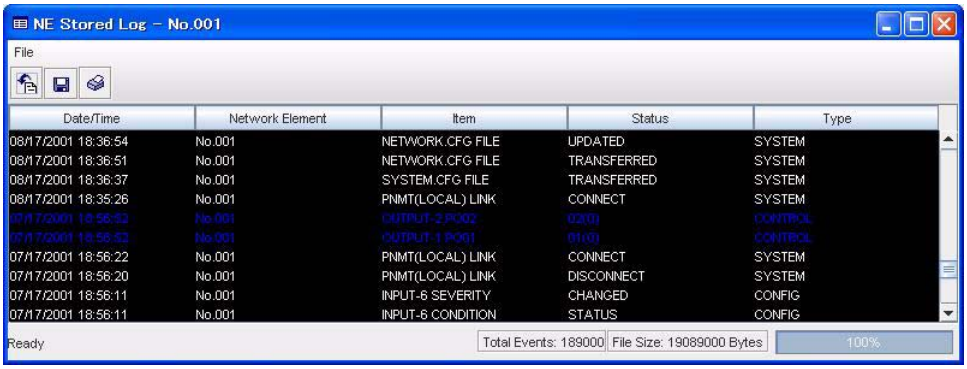
3 The **Event Log View** will be displayed. The event log is presented in a table form showing the date of the event, the item that triggered the event and the status change.

4 Sorting is possible for every column in the Event Log window.

5 The date shown in the Event Log window will be in the format of the OS.

6 The data can be refreshed by clicking on the upload (refresh) icon.

Warning: While data is being updated, do not remove the LAN cable connecting the IDU with the PC.



3.25 Inventory Tab

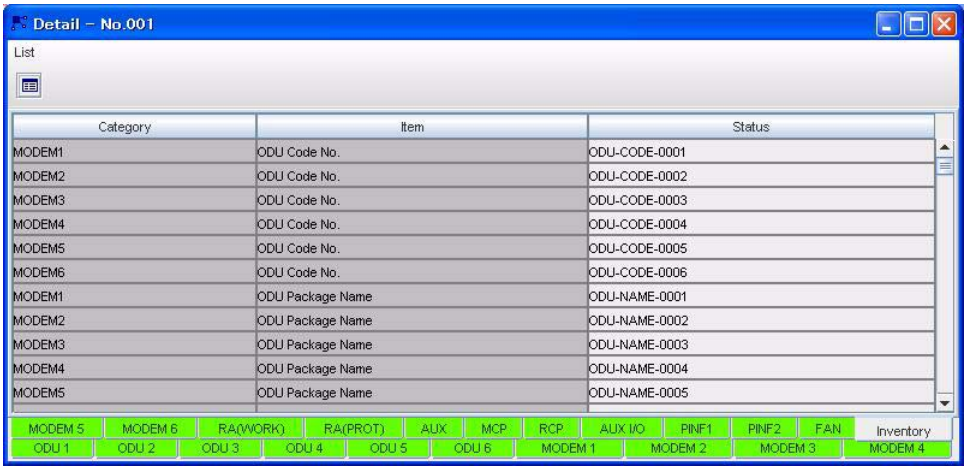
The relevant inventory information for the equipment can be viewed using this function.

3.25.1 Inventory Monitor

To display the equipment version:

1 Select the **Inventory** tab in the **PNMT main window**.

2 The Inventory window shows the Code No., Date of Manufacture, Serial No., Hardware Type and Software Version of the equipment.



3.26 Meter Reading

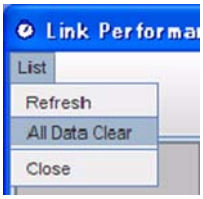
Click **Performance Monitor** → **Metering** in the **NE-specific** menu bar of the target NE that you intend to monitor.

3.27 PMON Cleaning

To clear the PMON data:

1 Click **Performance Monitor** → **Link Performance Monitor** in the **NE-specific** menu bar of the target NE.

2 Click **List** → **All Data Clear** in the menu bar or click on the All Data Clear icon in the tool bar.



Appendix A: Equipment Network Settings

In *Equipment Network Setting*, the set item of each NE is different. The set items of each NE depend on selecting RCP Type (RCP Type and Branch NE Type).

RCP Type (General)		Category		Input Item
RCP Type	Branch NE Type			
Root NE	Not selectable	General		SW GROUP1
				SW GROUP2
				SW GROUP3
		MODEM1/MODEM2/MODEM3/ MODEM4/MODEM5/MODEM6/ EM2		IP Address
				Subnet Mask
		PNMS	EM1	IP Address
				Subnet Mask
			V11	IP Address
				Subnet Mask
				Speed
		Routing		Default Gateway
				Static Routing Table
Root NE (Bridge)	Not selectable	General		SW GROUP1
				SW GROUP2
				SW GROUP3
		MODEM1/MODEM2/MODEM3/ MODEM4/MODEM5/MODEM6/ EM2/EM1		IP Address
				Subnet Mask
		Routing		Default Gateway
				Static Routing Table
Branch NE	2 Branch	General		SW GROUP1
				SW GROUP2
				SW GROUP3
		MODEM1		IP Address
				Subnet Mask
		MODEM2/MODEM3/MODEM4/ MODEM5/MODEM6/EM2/EM1		IP Address
				Subnet Mask
		Routing		Default Gateway
				Static Routing Table
	3 Branch	General		SW GROUP1
				SW GROUP2
				SW GROUP3
		MODEM1		IP Address
				Subnet Mask
		MODEM2		IP Address
				Subnet Mask

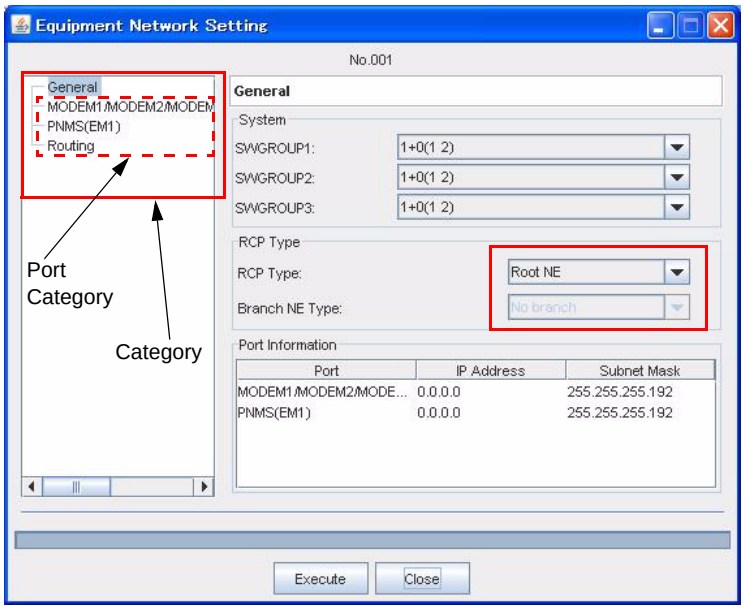
RCP Type (General)		Category	Input Item
RCP Type	Branch NE Type		
Branch NE	3 Branch	MODEM3/ MODEM4/MODEM5/MODEM6/ EM2/EM1	IP Address
			Subnet Mask
		Routing	Default Gateway
			Subnet Mask
	4 Branch	General	SW GROUP1
			SW GROUP2
			SW GROUP3
		MODEM1	IP Address
			Subnet Mask
		MODEM2	IP Address
			Subnet Mask
		MODEM3	IP Address
			Subnet Mask
		MODEM4/MODEM5/MODEM6/ EM2/EM1	IP Address
			Subnet Mask
		Routing	Default Gateway
			Subnet Mask
	5 Branch	General	SW GROUP1
			SW GROUP2
			SW GROUP3
		MODEM1	IP Address
			Subnet Mask
		MODEM2	IP Address
			Subnet Mask
		MODEM3	IP Address
			Subnet Mask
		MODEM4	IP Address
			Subnet Mask
		MODEM5/MODEM6/EM2/EM1	IP Address
			Subnet Mask
		Routing	Default Gateway
			Subnet Mask
	6 Branch	General	SW GROUP1
			SW GROUP2
			SW GROUP3
		MODEM1	IP Address
			Subnet Mask
		MODEM2	IP Address
			Subnet Mask
		MODEM3	IP Address
			Subnet Mask
		MODEM4	IP Address
			Subnet Mask
		MODEM5	IP Address
			Subnet Mask

RCP Type (General)		Category	Input Item
RCP Type	Branch NE Type		
Branch NE	6 Branch	MODEM6/EM2/EM1	IP Address
			Subnet Mask
		Routing	Default Gateway
			Subnet Mask
	7 Branch	General	SW GROUP1
			SW GROUP2
			SW GROUP3
		MODEM1	IP Address
			Subnet Mask
		MODEM2	IP Address
			Subnet Mask
		MODEM3	IP Address
			Subnet Mask
		MODEM4	IP Address
			Subnet Mask
		MODEM5	IP Address
			Subnet Mask
		MODEM6	IP Address
			Subnet Mask
		EM2/EM1	IP Address
			Subnet Mask
		Routing	Default Gateway
			Subnet Mask
	8 Branch	General	SW GROUP1
			SW GROUP2
			SW GROUP3
		MODEM1	IP Address
			Subnet Mask
		MODEM2	IP Address
			Subnet Mask
		MODEM3	IP Address
			Subnet Mask
		MODEM4	IP Address
			Subnet Mask
		MODEM5	IP Address
			Subnet Mask
		MODEM6	IP Address
			Subnet Mask
		EM2	IP Address
			Subnet Mask
		EM1	IP Address
			Subnet Mask
		Routing	Default Gateway
			Subnet Mask

RCP Type (General)		Category	Input Item
RCP Type	Branch NE Type		
Normal NE	Not selectable	General	SW GROUP1
			SW GROUP2
			SW GROUP3
		MODEM1/MODEM2/MODEM3/ MODEM4/MODEM5/MODEM6/ EM2/EM1	IP Address
			Subnet Mask
		Routing	Default Gateway
			Static Routing Table

*Note: Here **EM1/EM2** indicate IDUs front interface **NMS/NE** ports respectively.*

1 In *Category* → **General** and select there **RCP Type** (**RCP Type** and **Branch NE Type**).

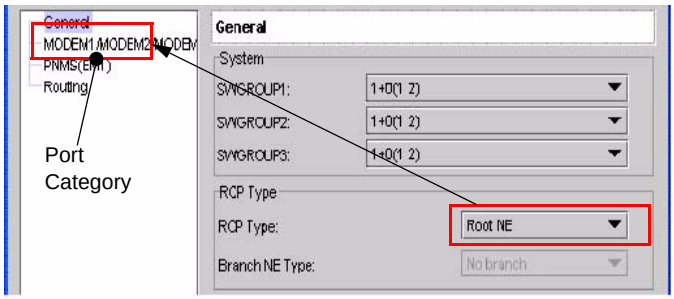


The NE will appear as follows (according to configuration).

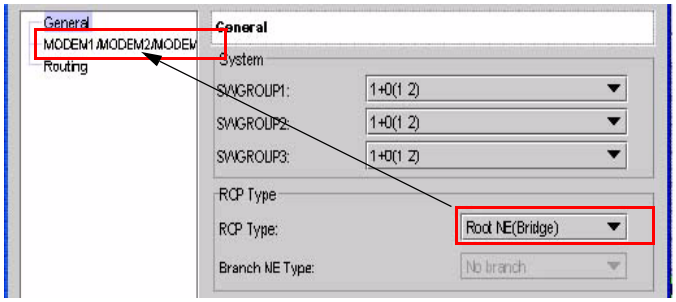
- Root NE
  The nearest NE to PNMS configure as Root NE.
- Root NE (Bridge)
  The nearest NE to PNMS configure as Root NE (Bridge)
  (One IP Address is assigned to Root NE (Bridge), and Subnet is not divided.)
- Branch NE (2 Branch)
  Subnet diverges in two ways.
- Branch NE (3 Branch)
  Subnet diverges in three ways.
- Branch NE (4 Branch)
  Subnet diverges in four ways.
- Branch NE (5 Branch)
  Subnet diverges in five ways.
- Branch NE (6 Branch)
  Subnet diverges in six ways.

- Branch NE (7 Branch)
  Subnet diverges in seven ways.
- Branch NE (8 Branch)
  Subnet diverges in eight ways.
- Normal NE
  All other NEs (except the above-mentioned ones) are simply referred to as *Normal NEs*.

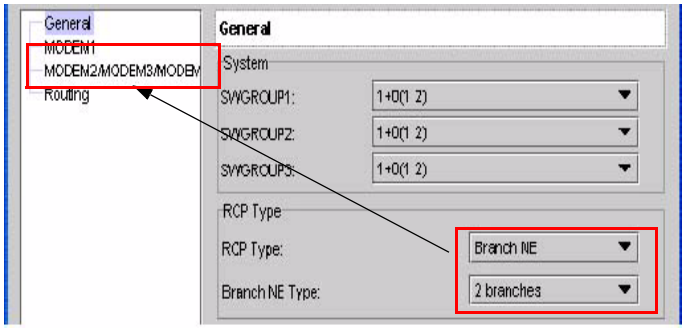
2 The **Port Category** item changes according to **RCP Type** (**RCP Type** and **Branch NE Type**).



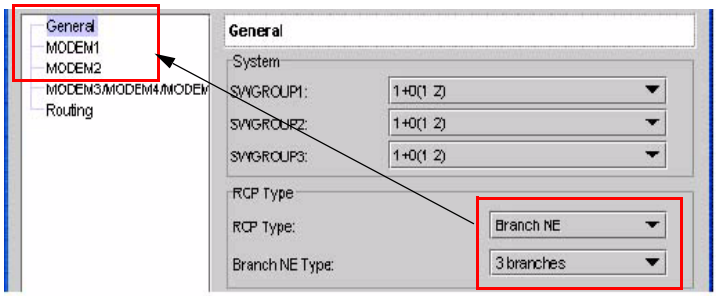
RCP Type = Root NE



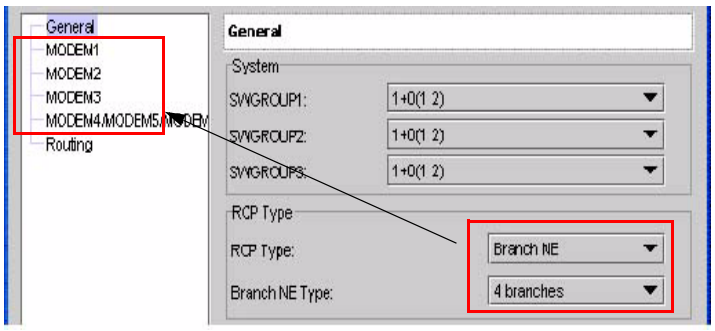
RCP Type = Root NE (Bridge)



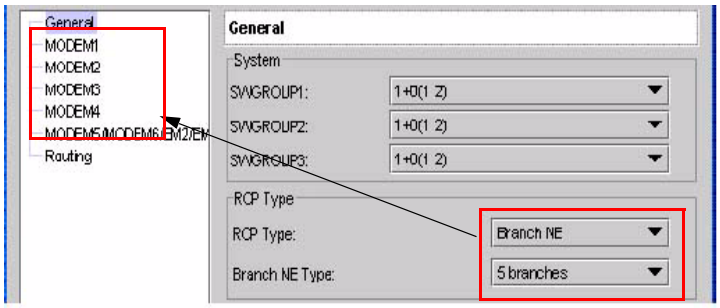
RCP Type = Branch NE or Branch NE Type = 2 Branches



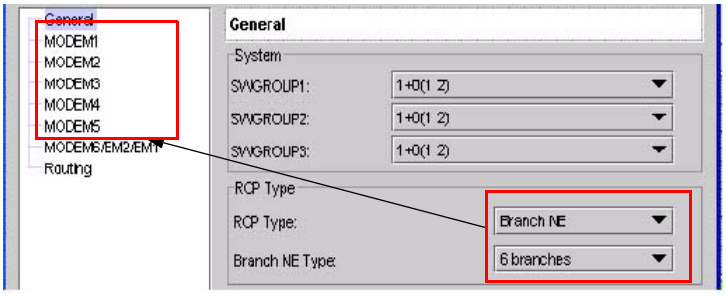
RCP Type = Branch NE or Branch NE Type = 3 Branches



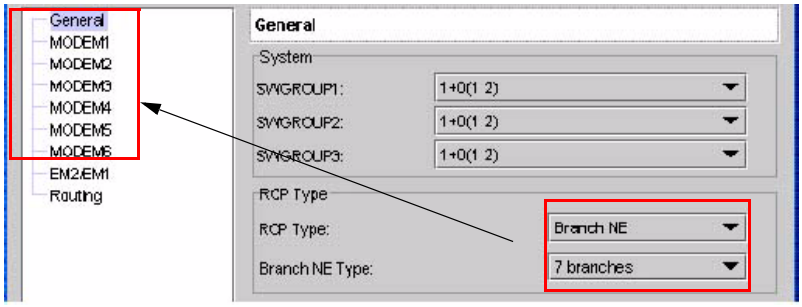
RCP Type = Branch NE or Branch NE Type = 4 Branches



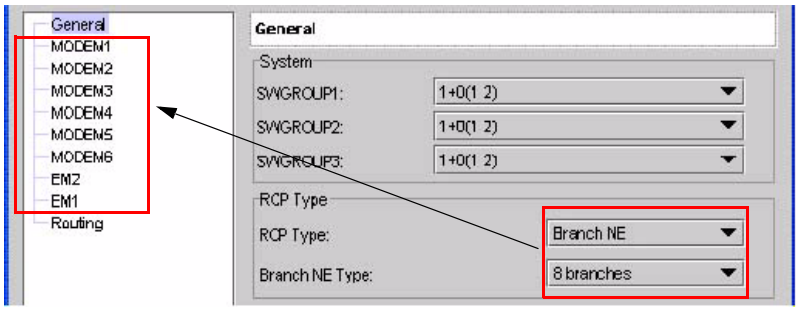
RCP Type = Branch NE or Branch NE Type = 5 Branches



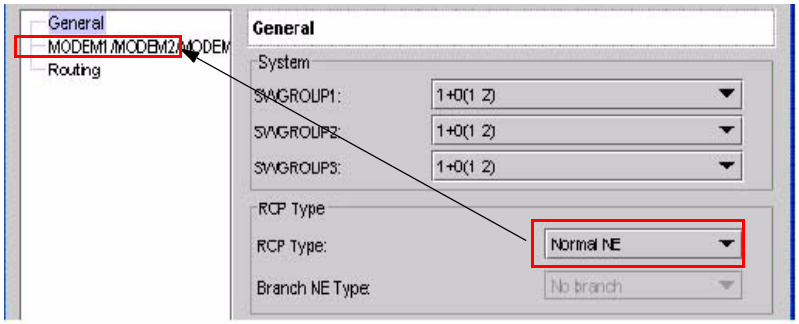
RCP Type = Branch NE or Branch NE Type = 6 Branches



RCP Type = Branch NE or Branch NE Type = 7 Branches



RCP Type = Branch NE or Branch NE Type = 8 Branches



RCP Type = Normal NE

3 Set and select **Port category** and **Routing**. The right hand screen will change according to the selected item in **Category**.

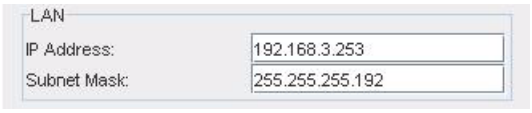
- Primary IP Address

  PNMS identify a NE with using the IP address in NE. The check can be applied only to 1 **port category** of several **Port categories** that exists in **RCP Type** when **Branch NE** is selected.

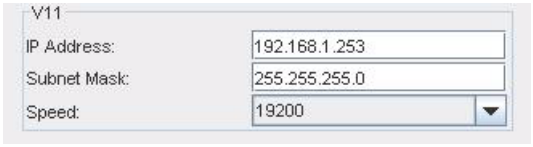
  Caution: Primary IP Address is fixed to the first shown Port Category when you use Equipment Network Settings.

- IP Address & Subnet Mask

  The following items are set to each Port.



PNMS (EM1)



PNMS (V11)

MODEM1 or MODEM2 or MODEM3 or MODEM4 or MODEM5 or MODEM6 or EM2 or EM1

- LLDP
  LLDP usage of EM2/EM1 port is selected in LLDP section.

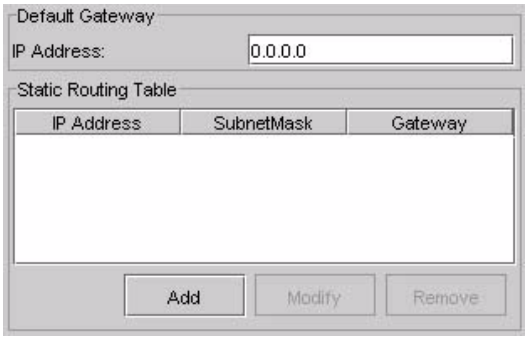
When both EM1 and EM2 are included in port category.

When only EM2 is included.

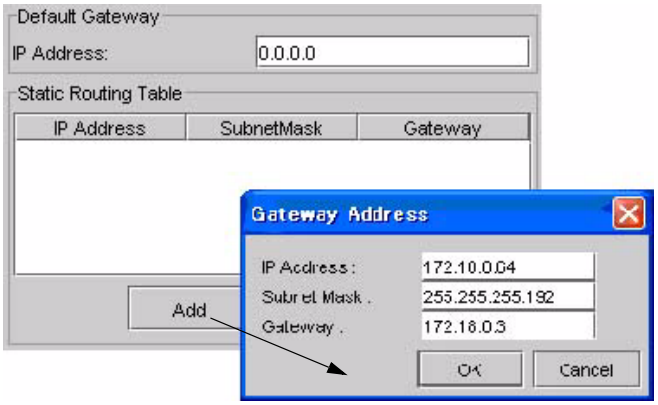
When only EM1 is included.

4 Select and set **Routing**.

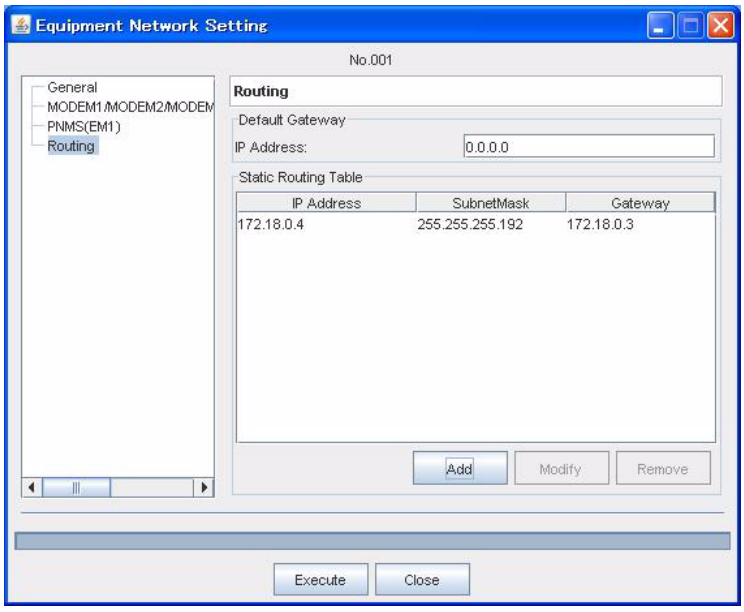
4-1 If there is not subnet in the network, **Static Routing Table** will not show any entries.



4-2 In case of several subnet in the Network click **[Add]** to entry the required value in **Static Routing Table**.



5 Click the **[OK]** button to activate the address setting.



[Modify] is clicked to correct the registered value in **Static Routing table**.

[Remove] is clicked to delete the registered value in **Static Routing table**.

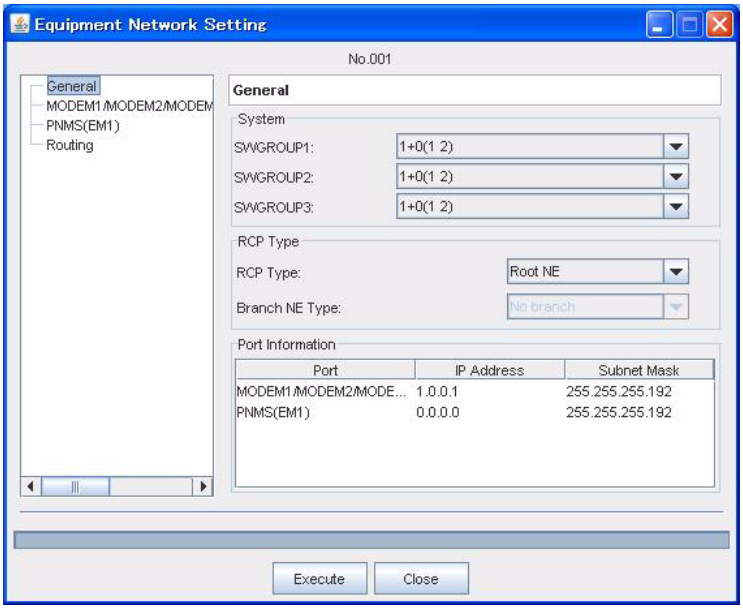
6 Click the **[Execute]** button to activate the Equipment Networking setting.

Note: When executing Equipment Network Setting communication will be lost when the Control function re-initializes to the new system configuration. This WILL NOT affect the wireless link. During this time PNMT connection to the NE will be lost but will automatically be restored after the Control function resets.

Appendix B: Equipment Network Settings (for XPIC)

Setting “General-System” section of Equipment Network Setting under XPIC configuration is explained below.

1 For 1+0 XPIC configuration



1-1 When [NEO] is the opposite:
Set applicable “SWGROUPx” relative to XPIC configuration to “1+0(1 2)”.

Note: 1 [NEO/a] (Main Master/Sub Master) against 2 [NEO] (Main Master/Sub Master) network connection is created with MODEM port on the sides of Main Master and Sub Master open.

1-2 When [NEO/a] is the opposite:
Set applicable “SWGROUPx” ralative to XPIC configuration to “1+0(1)/1+1(Hot Standby)/1+1(Twinpath)”.

Note: 1 [NEO/a] (Main Master/Sub Master) against 1 [NEO/a] (Main Master/Sub Master) network connection is created with only the Main Master side of the MODEM port open.

Note: Also set opposite [NEO/a]'s applicable “SWGROUPx” relative to XPIC configuration to “1+0(1)/1+1(Hot Standby)/1+1 (Twinpath)”.

2 For 1+1 XPIC configuration

2-1 When [NEO] is the opposite:

- Set applicable “SWGROUPx” (of Main Master) relative to XPIC configuration to “1+0(1)/1+1(Hot Standby)/1+1(Twinpath)”.
- Set applicable “SWGROUPy” (of Sub Master) relative to XPIC configuration to “1+0(1)/1+1(Hot Standby)/1+1(Twinpath)”.

Note: 1 [NEO/a] (Main Master/Sub Master) against 2 [NEO] (Main Master/Sub Master) network connection is created with odd-numbered MODEM ports of both “SWGROUPx” (Main Master side) and “SWGROUPy” (Sub Master side) kept open.

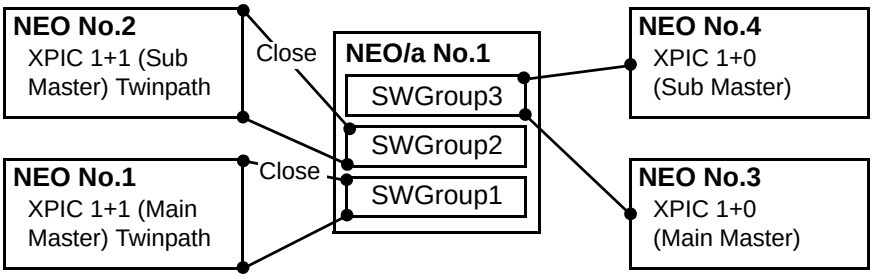
2-2 When [NEO/a] is the opposite:

- Set applicable “SWGROUPx” (of Main Master) relative to XPIC configuration to “1+0(1)/1+1(Hot Standby)/1+1(Twinpath)”.
- Set applicable “SWGROUPy” (of Sub Master) relative to XPIC configuration to “Not Used”.

Note: 1 [NEO/a] (Main Master/Sub Master) against 1 [NEO] (Main Master/Sub Master) network connection is created with only odd numbered MODEM ports of “SWGROUPx” (Main Master sides) kept open.

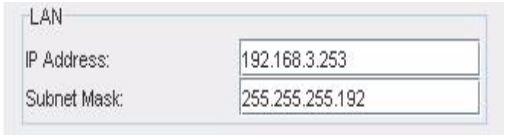
Note: Also set applicable “SWGROUPx” (Main Master side) relative to XPIC configuration of opposite [NEO/a] to “1+0(1)/1+1(Hot Standby)/1+1(Twinpath)” and “SWGROUPy” (Sub Master side) to “Not Used”.

Example 1) Opposite [NEO]

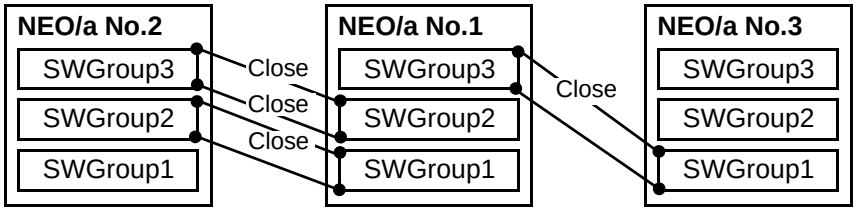


SWGroup1: XPIC 1+1 (Main Master) Twinpath
SWGroup2: XPIC 1+1 (Sub Master) Twinpath
SWGroup3: XPIC 1+0 (Main Master:MODEM5/Sub Master:MODEM6)

- *With configuration in above example, setup for NEO/a No.1 is as below.*



Example 2) Opposite [NEO/a]

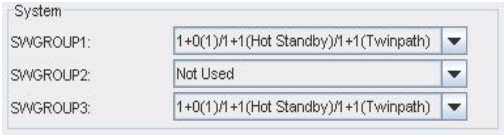


NEO/a No.2
SWGroup1: Not Used
SWGroup2: XPIC 1+1 (Main Master) Twinpath
SWGroup3: XPIC 1+1 (Sub Master) Twinpath

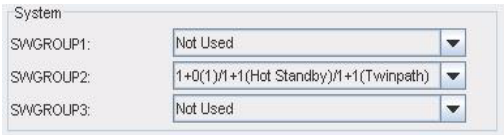
NEO/a No.1
SWGroup1: XPIC 1+1 (Main Master) Twinpath
SWGroup2: XPIC 1+1 (Sub Master) Twinpath
SWGroup3: XPIC 1+0 (Main Master:MODEM5/Sub Master:MODEM6)

NEO/a No.3
SWGroup1: XPIC 1+0 (Main Master:MODEM1/Sub Master:MODEM2)
SWGroup2: Not Used
SWGroup3: Not Used

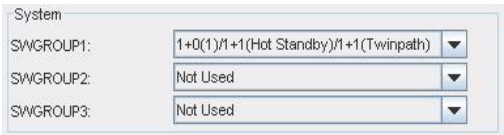
- With regards to above example, below will be the setup for NEO/a No.1.

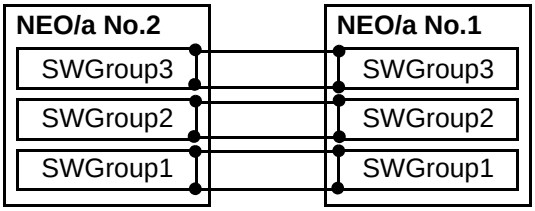


- With regards to above example, below will be the setup for NEO/a No.2.



- With regards to above example, below will be the setup for NEO/a No.3.

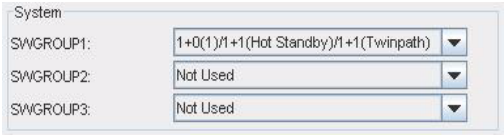


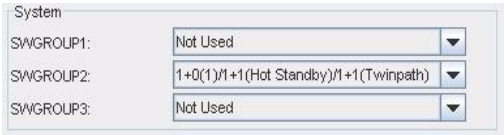


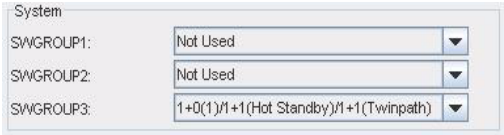
NEO/a No.2
SWGroup1: XPIC 1+0(Main Master:MODEM1/Sub Master:MODEM2)
SWGroup2: XPIC 1+0(Main Master:MODEM3/Sub Master:MODEM4)
SWGroup3: XPIC 1+0(Main Master:MODEM5/Sub Master:MODEM6)

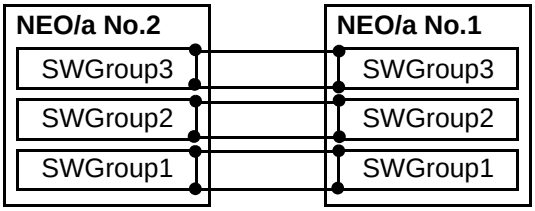
NEO/a No.1
SWGroup1: XPIC 1+0(Main Master:MODEM1/Sub Master:MODEM2)
SWGroup2: XPIC 1+0(Main Master:MODEM3/Sub Master:MODEM4)
SWGroup3: XPIC 1+0(Main Master:MODEM5/Sub Master:MODEM6)

- With configuration above, 1 out of 3 setup shown below must be selected and that same setup must be applied to both NEO/a No.1 and No.2.





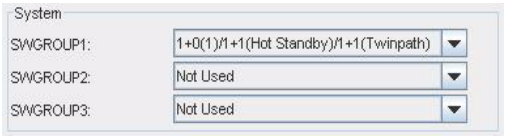


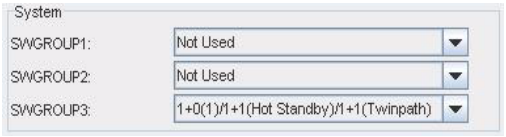


NEO/a No.2
SWGroup1: XPIC 1+1(Main Master) Hotstandby
SWGroup2: XPIC 1+1(Sub Master) Hotstandby
SWGroup3: XPIC 1+0 (Main Master:MODEM5/Sub Master:MODEM6)

NEO/a No.1
SWGroup1: XPIC 1+1(Main Master) Hotstandby
SWGroup2: XPIC 1+1(Sub Master) Hotstandby
SWGroup3: XPIC 1+0 (Main Master:MODEM5/Sub Master:MODEM6)

- With configuration above, 1 out of 2 setup shown below must be selected and that same setup must be applied to both NEO/a No.1 and No.2.





Appendix C: Sample Network Configuration

Sample Network Configurations are listed below.

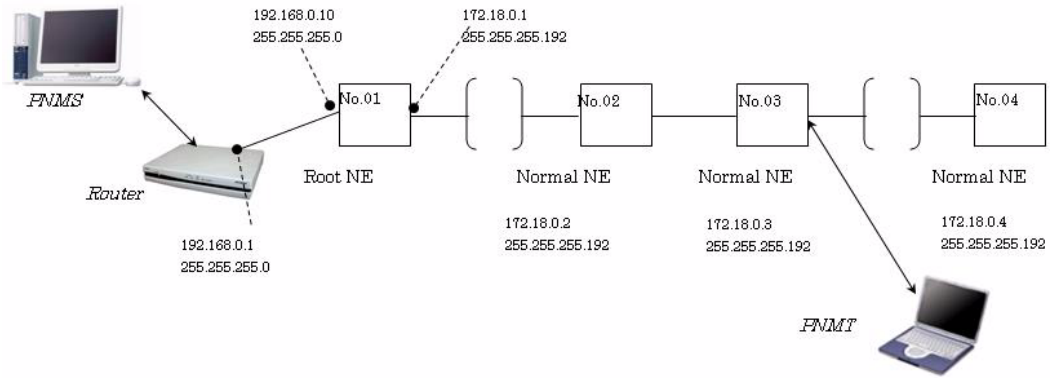
As for [NEO/a]'s wireless ports, all explanations are made based on below as the common setup with only the MODEM1 port kept open.

SW Group1: 1+0(1)/1+1(Hot Standby)/1+1(Twinpath)

SW Group2: Not Used

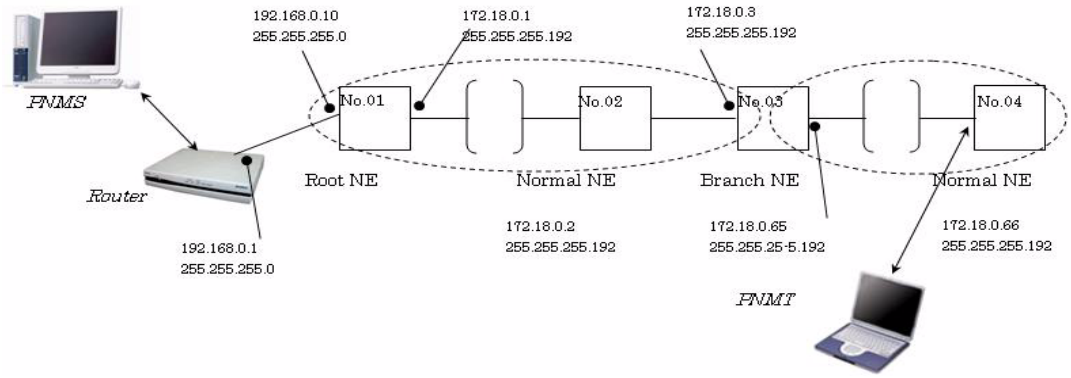
SW Group3: Not Used

1 The Network Configuration when subnet is connected.



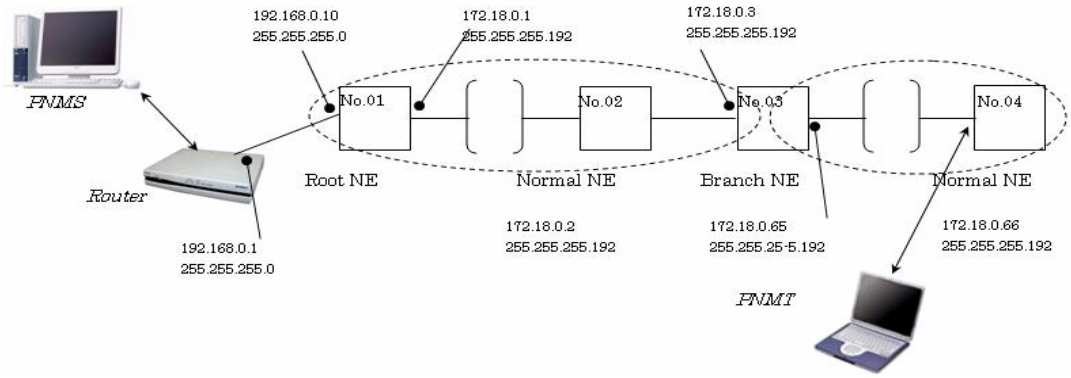
NE	General (Category)		Category	Item Name	Input data
	RCP Type	Branch NE Type			
"No.01 [NEO/a]"	Root NE	Not selectable	MODEM1/ EM2	IP Address	172.18.0.1
				Subnet Mask	255.255.255.192
			PNMS (EM1)	IP Address	192.168.0.10
				Subnet Mask	255.255.255.0
			Routing	Default Gateway	192.168.0.1
				Static Routing Table	-
"No.02 [NEO/a]"	Normal NE	Not selectable	MODEM1/ EM1/EM2	IP Address	172.18.0.2
				Subnet Mask	255.255.255.192
			Routing	Default Gateway	172.18.0.1
				Static Routing Table	-
"No.03 [NEO/a]"	Normal NE	Not selectable	MODEM1/ EM1/EM2	IP Address	172.18.0.3
				Subnet Mask	255.255.255.192
			Routing	Default Gateway	172.18.0.1
				Static Routing Table	-
"No.04 [NEO/a]"	Normal NE	Not selectable	MODEM1/ EM1/EM2	IP Address	172.18.0.4
				Subnet Mask	255.255.255.192
			Routing	Default Gateway	172.18.0.1
				Static Routing Table	-

2 The Network configuration in case of several subnets (Branch NE Type = 2 Branches)



NE	General (Category)		Category	Item Name	Input data	
	RCP Type	Branch NE Type				
"No.01 [NEO/a]"	Root NE	Not selectable	MODEM1/ EM2	IP Address	172.18.0.1	
				Subnet Mask	255.255.255.192	
			PNMS (EM1)	IP Address	192.168.0.10	
				Subnet Mask	255.255.255.0	
			Routing	Default Gateway	192.168.0.1	
				Static Routing Table	IP Address	172.18.0.64
					Subnet Mask	255.255.255.192
					Default Gateway	172.18.0.3
"No.02 [NEO/a]"	Normal NE	Not selectable	MODEM1/ EM1/EM2	IP Address	172.18.0.2	
				Subnet Mask	255.255.255.192	
			Routing	Default Gateway	172.18.0.1	
				Static Routing Table	-	
"No.03 [NEO/a]"	Branch NE	2 Branches	MODEM1	IP Address	172.18.0.65	
				Subnet Mask	255.255.255.192	
			EM1/EM2	IP Address	172.18.0.3	
				Subnet Mask	255.255.255.192	
			Routing	Default Gateway	172.18.0.1	
				Static Routing Table	-	
"No.04 [NEO/a]"	Normal NE	Not selectable	MODEM1/ EM1/EM2	IP Address	172.18.0.66	
				Subnet Mask	255.255.255.192	
			Routing	Default Gateway	172.18.0.65	
				Static Routing Table	-	

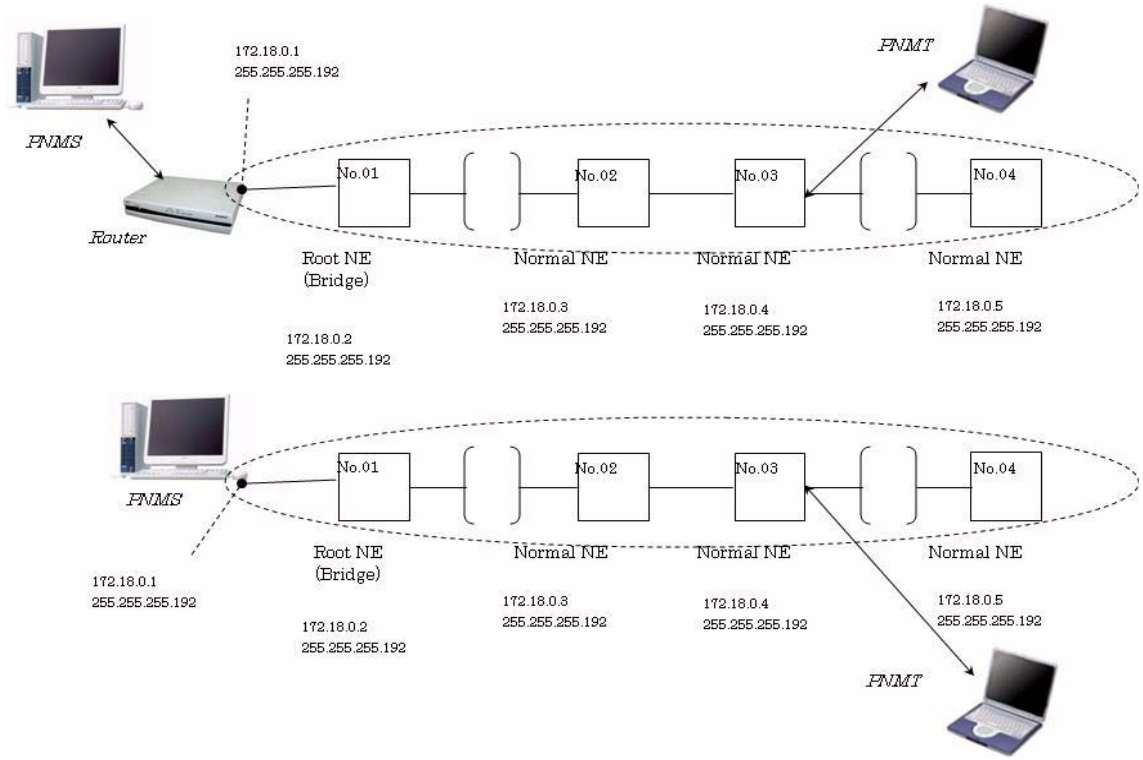
3 The Network configuration in case of several subnets (Branch NE Type = 3 Branches)



NE	General (Category)		Category	Item Name	Input data	
	RCP Type	Branch NE Type				
"No.01 [NEO/a]"	Root NE	Not selectable	MODEM1/ EM2	IP Address	172.18.0.1	
				Subnet Mask	255.255.255.192	
			PNMS (EM1)	IP Address	192.168.0.10	
				Subnet Mask	255.255.255.0	
			Routing	Default Gateway	192.168.0.1	
				Static Routing Table	IP Address	172.18.0.64
					Subnet Mask	255.255.255.192
					Default Gateway	172.18.0.3
					IP Address	172.18.0.128
					Subnet Mask	255.255.255.192
					Default Gateway	172.18.0.3
"No.02 [NEO/a]"	Normal NE	Not selectable	MODEM1/ EM1/EM2	IP Address	172.18.0.2	
				Subnet Mask	255.255.255.192	
			Routing	Default Gateway	172.18.0.1	
				Static Routing Table	-	

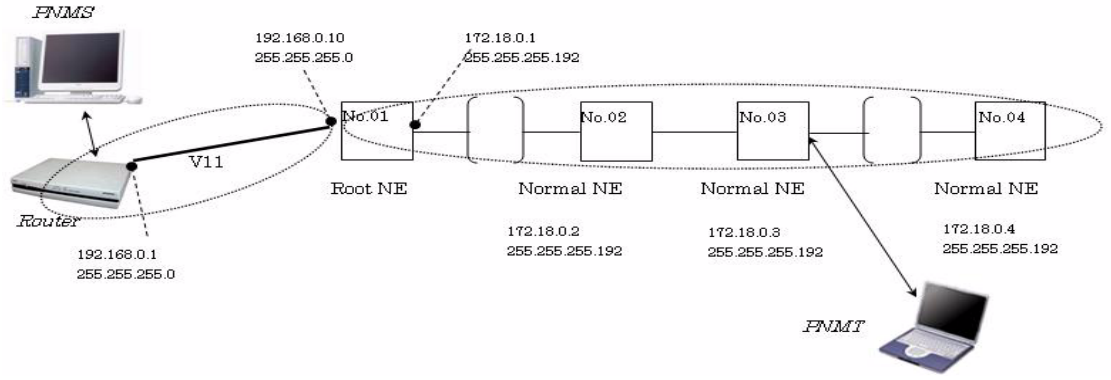
NE	General (Category)		Category	Item Name	Input data
	RCP Type	Branch NE Type			
“No.03 [NEO/a]”	Branch NE	3 Branches	MODEM1	IP Address	172.18.0.65
				Subnet Mask	255.255.255.192
			EM1	IP Address	172.18.0.3
				Subnet Mask	255.255.255.192
			EM2	IP Address	172.18.0.129
				Subnet Mask	255.255.255.192
			Routing	Default Gateway	172.18.0.1
				Static Routing Table	-
“No.04 [NEO/a]”	Normal NE	Not selectable	MODEM1/ EM1/EM2	IP Address	172.18.0.66
				Subnet Mask	255.255.255.192
			Routing	Default Gateway	172.18.0.65
				Static Routing Table	-
“No.05 [NEO/a]”	Normal NE	Not selectable	MODEM1/ EM1/EM2	IP Address	172.18.0.130
				Subnet Mask	255.255.255.192
			Routing	Default Gateway	172.18.0.129
				Static Routing Table	-
“No.06 [NEO/a]”	Normal NE	Not selectable	MODEM1/ EM1/EM2	IP Address	172.18.0.131
				Subnet Mask	255.255.255.192
			Routing	Default Gateway	172.18.0.129
				Static Routing Table	-

4 The Network Configuration when subnet is connected. (RCP Type = Root NE(Bridge))



NE	General (Category)		Category	Item Name	Input data
	RCP Type	Branch NE Type			
"No.01 [NEO/a]"	Root NE (Bridge)	Not selectable	MODEM1/ EM1/EM2	IP Address	172.18.0.2
				Subnet Mask	255.255.255.192
			Routing	Default Gateway	172.18.0.1
				Static Routing Table	-
"No.02 [NEO/a]"	Normal NE	Not selectable	MODEM1/ EM1/EM2	IP Address	172.18.0.3
				Subnet Mask	255.255.255.192
			Routing	Default Gateway	172.18.0.1
				Static Routing Table	-
"No.03 [NEO/a]"	Normal NE	Not selectable	MODEM1/ EM1/EM2	IP Address	172.18.0.4
				Subnet Mask	255.255.255.192
			Routing	Default Gateway	172.18.0.1
				Static Routing Table	-
"No.04 [NEO/a]"	Normal NE	Not selectable	MODEM1/ EM1/EM2	IP Address	172.18.0.5
				Subnet Mask	255.255.255.192
			Routing	Default Gateway	172.18.0.1
				Static Routing Table	-

5 The Network Configuration when subnet is connected.(PNMS Connection: V11)



* *V11 connection is available with only the top equipment. Other equipment is connected through LAN.*

NE	General (Category)		Category	Item Name	Input data
	RCP Type	Branch NE Type			
"No.01 [NEO/a]"	Root NE	Not Selectable	MODEM1/ EM1/EM2	IP Address	172.18.0.1
				Subnet Mask	255.255.255.192
			PNMS (V11)	IP Address	192.168.0.10
				Subnet Mask	255.255.255.0
				Speed	19200
			Routing	Default Gateway	192.168.0.1
				Static Routing Table	-
"No.02 [NEO/a]"	Normal NE	Not selectable	MODEM1/ EM1/EM2	IP Address	172.18.0.2
				Subnet Mask	255.255.255.192
			Routing	Default Gateway	172.18.0.1
				Static Routing Table	-
"No.03 [NEO/a]"	Normal NE	Not selectable	MODEM1/ EM1/EM2	IP Address	172.18.0.3
				Subnet Mask	255.255.255.192
			Routing	Default Gateway	172.18.0.1
				Static Routing Table	-
"No.04 [NEO/a]"	Normal NE	Not selectable	MODEM1/ EM1/EM2	IP Address	172.18.0.4
				Subnet Mask	255.255.255.192
			Routing	Default Gateway	172.18.0.1
				Static Routing Table	-

6 Using AutoDiscovery on [NEO/a] & [PASO+] Mixed Network.

Note: Use only program files that correspond to one of the following versions (or newer).

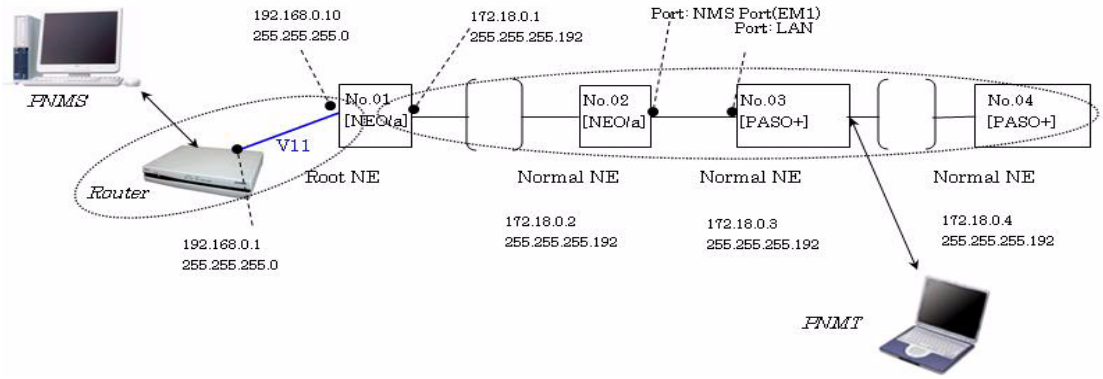
(a) STM-1: version 1.6.2 or later

(b) PDH: version 1.2.2 or later

(c) NEO/a: version 3.0.16 or later

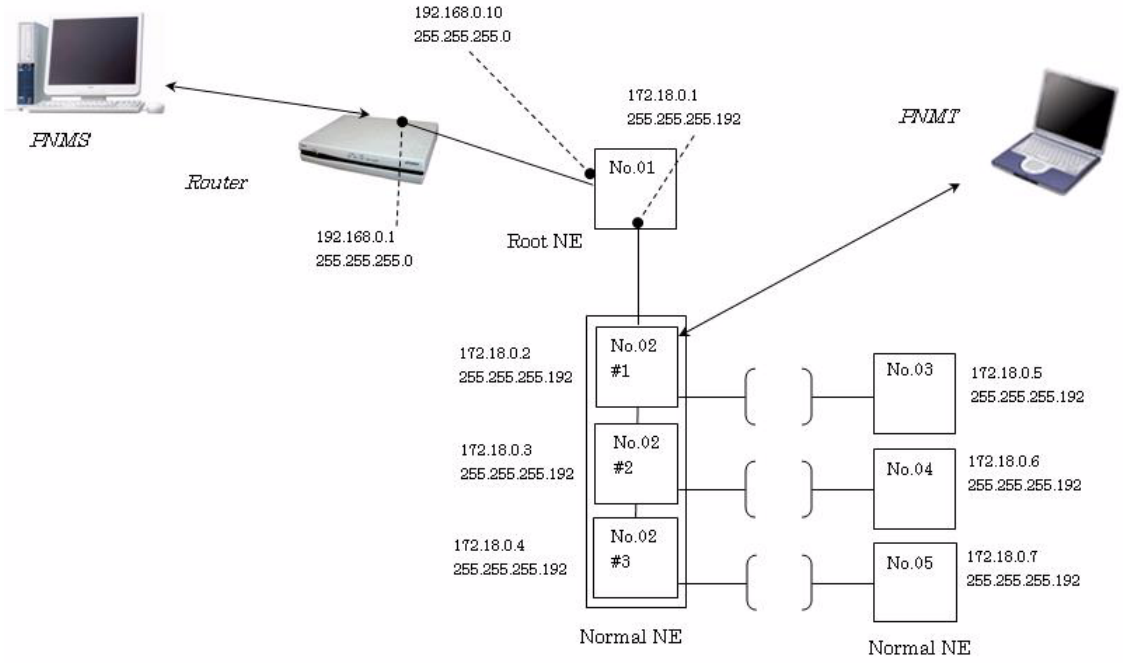
Ether EM1 or EM2 of boundary equipment with [NEO/a] / [PASO+] can be set.

[NEO/a] and [PASO+] are connected with each other through LAN.



NE	General (Category)		Category	Item Name		Input data
	RCP Type	Branch NE Type				
“No.01 [NEO/a]”	Root NE	Not selectable	MODEM1/ EM1/EM2	IP Address		172.18.0.1
				Subnet Mask		255.255.255.192
				LLDP	NE Port(EM2)	Disable
					NMS Port(EM1)	Disable
			PNMS (V11)	IP Address		192.168.0.10
				Subnet Mask		255.255.255.0
				Speed		19200
			Routing	Default Gateway		192.168.0.1
				Static Routing Table		-
“No.02 [NEO/a]”	Normal NE	Not selectable	MODEM1/ EM1/EM2	IP Address		172.18.0.2
				Subnet Mask		255.255.255.192
				LLDP	NE Port(EM2)	Disable
					NMS Port(EM1)	Enable
			Routing	Default Gateway		172.18.0.1
				Static Routing Table		-
“No.03 [PASO+]”	Normal NE	Not selectable	Radio/EM1/ EM2	IP Address		172.18.0.3
				Subnet Mask		255.255.255.192
			Routing	Default Gateway		172.18.0.1
				Static Routing Table		-
“No.04 [PASO+]”	Normal NE	Not selectable	Radio/EM1/ EM2	IP Address		172.18.0.4
				Subnet Mask		255.255.255.192
			Routing	Default Gateway		172.18.0.1

7 The Network Configuration when subnet is connected. (With 3* [NEO/a] contained.)



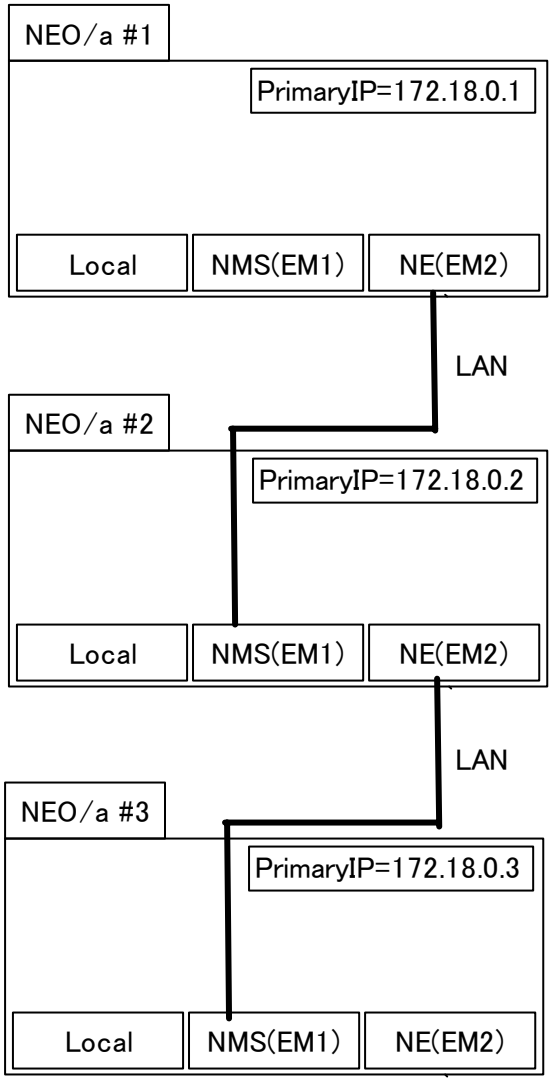
NE	General (Category)		Category		Item Name	Input data
	CTRL Type	Branch NE Type				
No.01 [NEO/a]	Root NE	Not selectable	MODEM1/EM2		IP Address	172.18.0.1
					Subnet Mask	255.255.255.192
			PNMS (EM1)		IP Address	192.168.0.10
					Subnet Mask	255.255.255.0
			Routing		Default Gateway	192.168.0.1
					Static Routing Table	-
No.02 3*[NEO/a]	Normal NE	Not selectable	#1	MODEM1/ EM2/EM1	IP Address	172.18.0.2
					Subnet Mask	255.255.255.192
				Routing	Default Gateway	172.18.0.1
					Static Routing Table	-
	Normal NE	Not selectable	#2	MODEM1/ EM2/EM1	IP Address	172.18.0.3
					Subnet Mask	255.255.255.192
				Routing	Default Gateway	172.18.0.1
					Static Routing Table	-
	Normal NE	Not selectable	#3	MODEM1/ EM2/EM1	IP Address	172.18.0.4
					Subnet Mask	255.255.255.192
				Routing	Default Gateway	172.18.0.1
					Static Routing Table	-
No.03 [NEO/a]	Normal NE	Not selectable	MODEM1/EM2/ EM1		IP Address	172.18.0.5
					Subnet Mask	255.255.255.192
			Routing		Default Gateway	172.18.0.1
					Static Routing Table	-
No.04 [NEO/a]	Normal NE	Not selectable	MODEM1/EM2/ EM1		IP Address	172.18.0.6
					Subnet Mask	255.255.255.192
			Routing		Default Gateway	172.18.0.1
					Static Routing Table	-
No.05 [NEO/a]	Normal NE	Not selectable	MODEM1/EM2/ EM1		IP Address	172.18.0.7
					Subnet Mask	255.255.255.192
			Routing		Default Gateway	172.18.0.1
					Static Routing Table	-

Appendix D: Constructing environment with n*[NEO/a] configuration

Steps to configure 3*[NEO/a], 2*[NEO/a] or 1*[NEO/a] environment with some points to keep in mind are listed below.

1. Configuring Environment

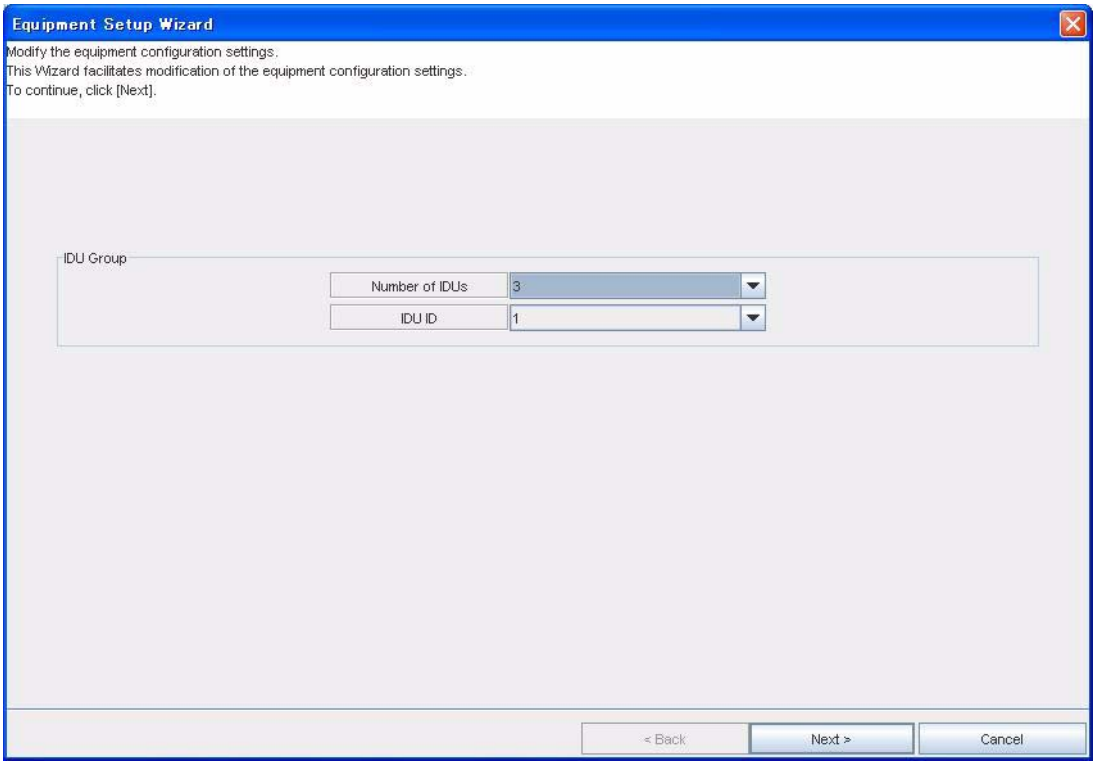
< 3*[NEO/a] sample configuration >



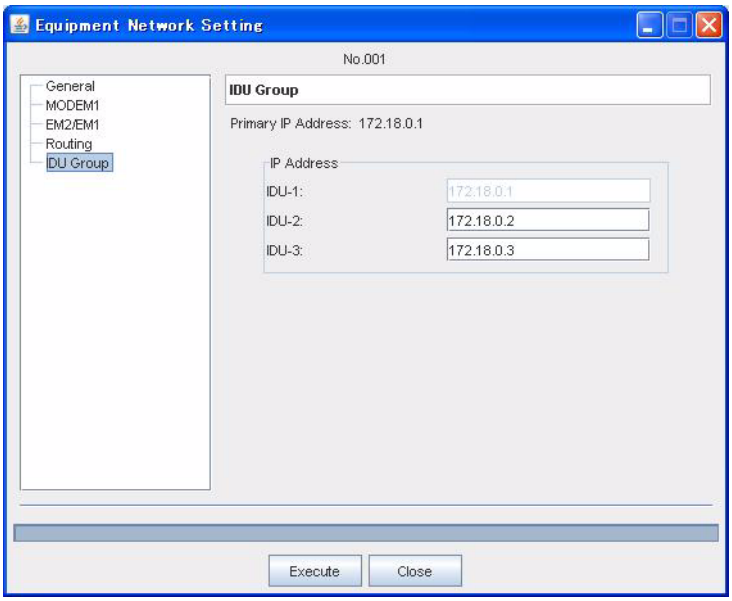
1 Connect 3 NEO/a via LAN as shown in above diagram. Assume that Primary IP Addresses are already set-up as shown above.

2 Connect PNMT to the local port of NEO/a #1.

3 Set-up following in Equipment Setup wizard window. Select 3 for Number of IDUs and 1 for IDU ID in "IDU Group".

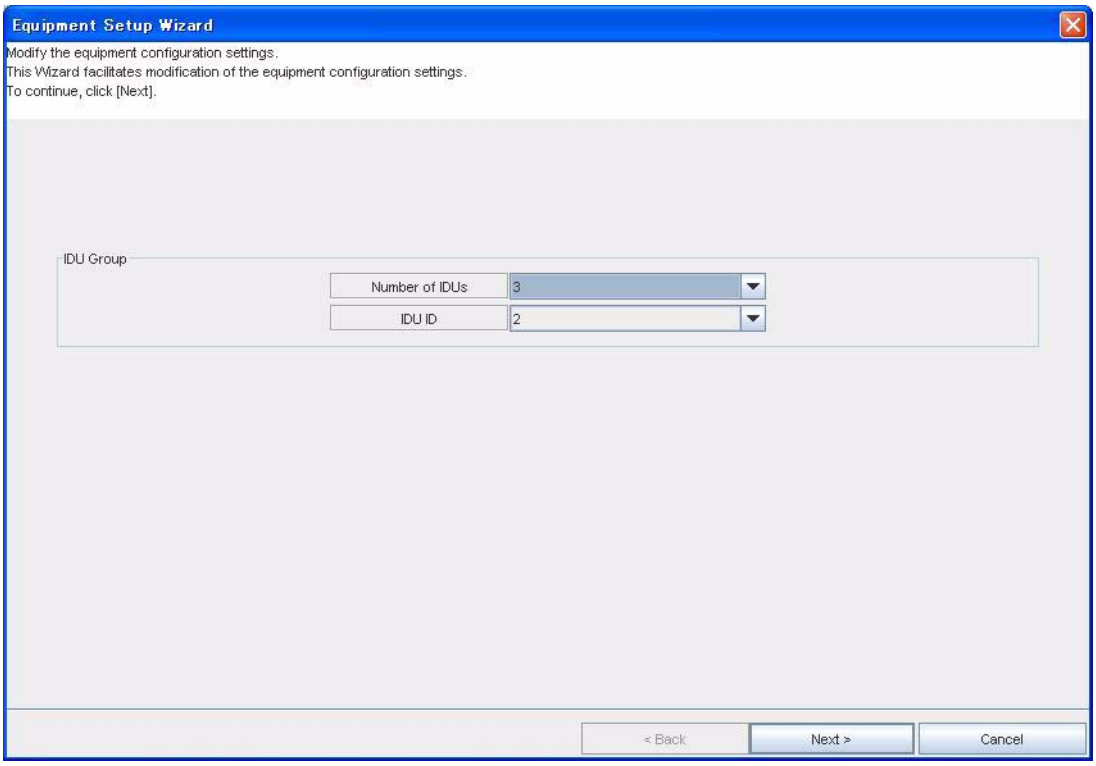


4 Set-up following in Equipment Network Setting window. Enter 172.18.0.2 for IDU-2 and 172.18.0.3 for IDU-3 as “IP Address” in IDU Group section.

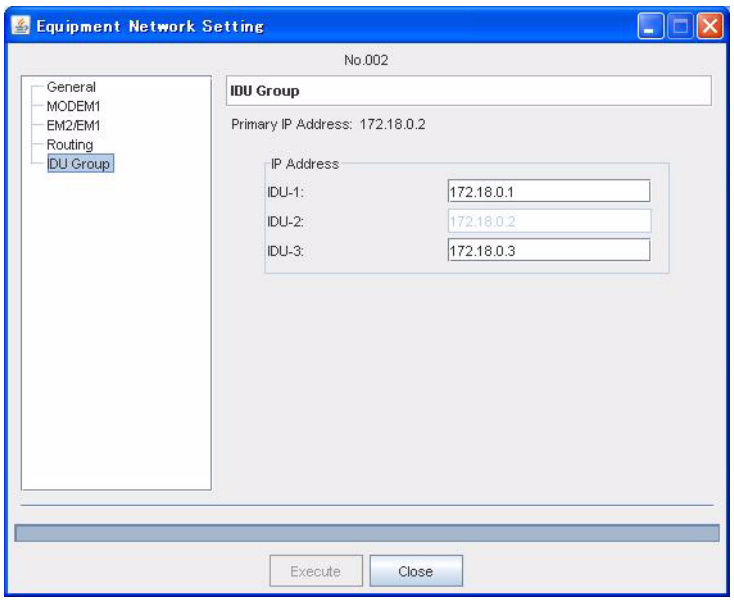


5 Connect PNMT to the local port of NEO/a #2.

6 Set-up following in Equipment Setup wizard window. Select 3 for Number of IDUs and 2 for IDU ID in "IDU Group".

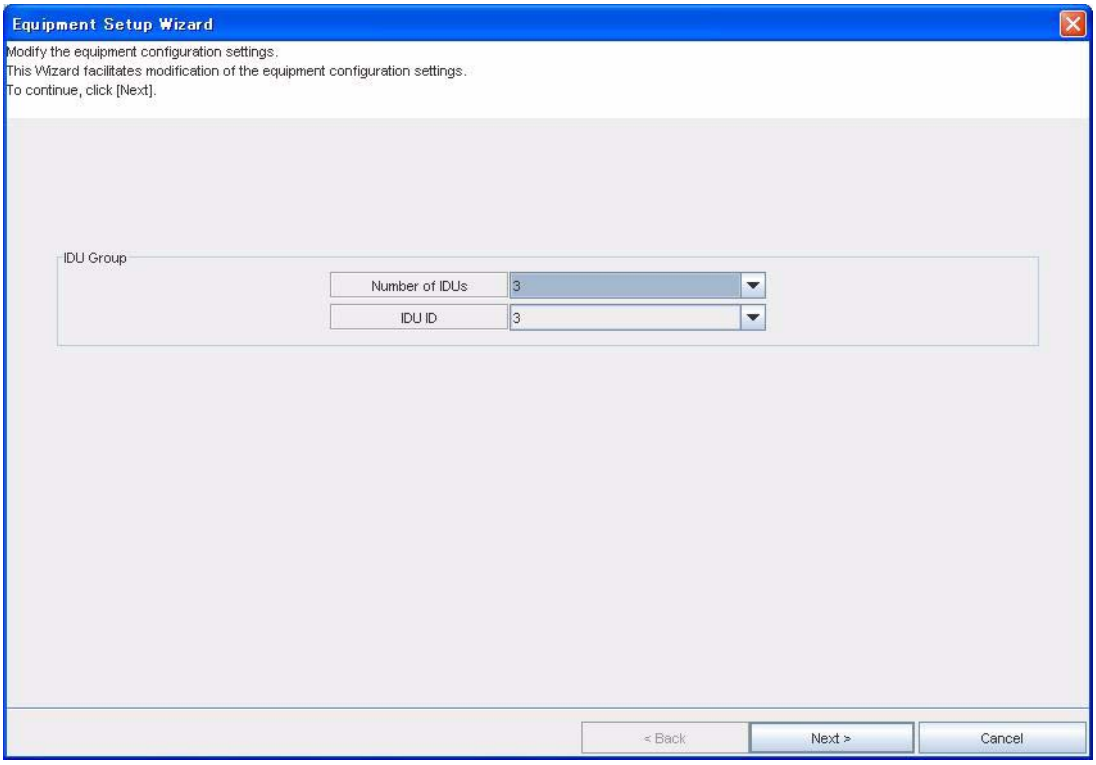


7 Set-up following in Equipment Network Setting window. Enter 172.18.0.1 for IDU-1 and 172.18.0.3 for IDU-3 as "IP Address" in IDU Group section.

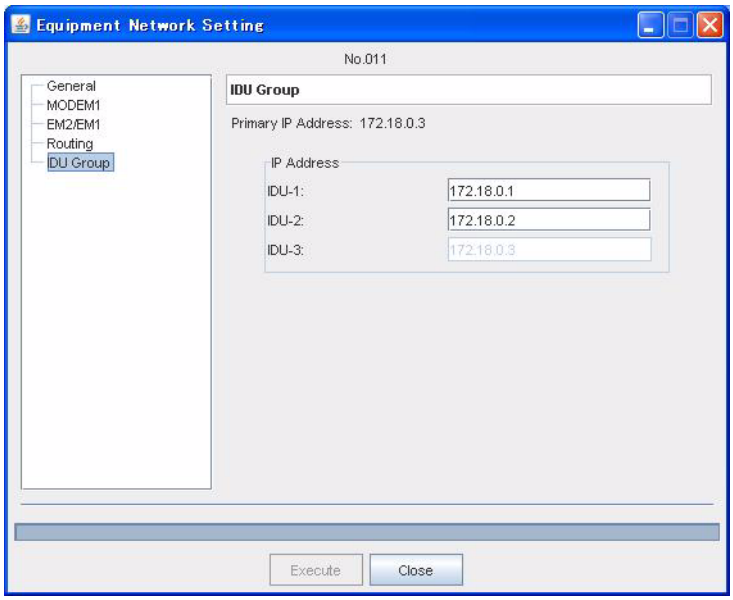


8 Connect PNMT to the local port of NEO/a #3.

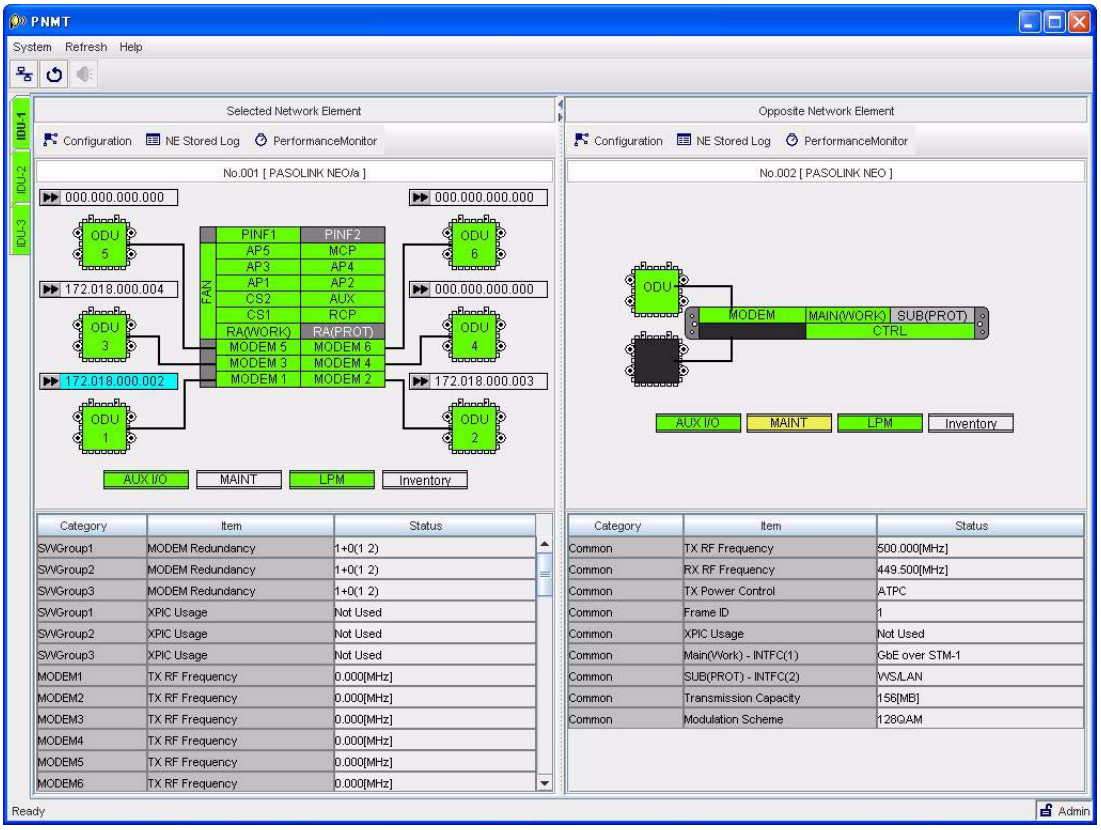
9 Set-up following in Equipment Setup wizard window. Select 3 for Number of IDUs and 3 for IDU ID in "IDU Group".



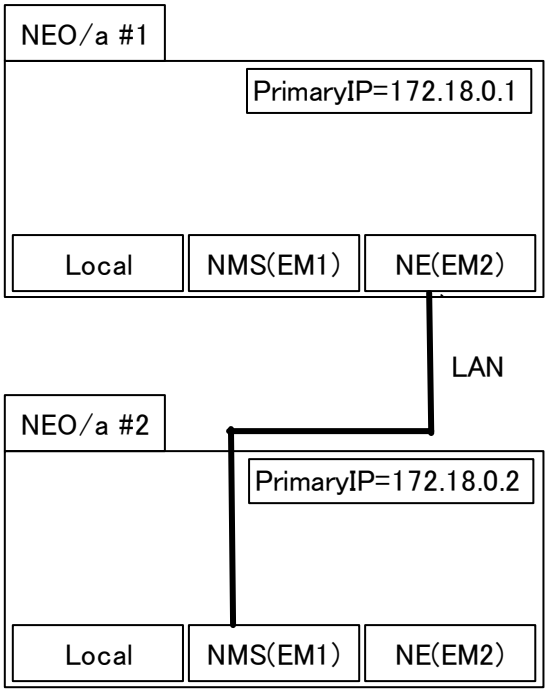
10 Set-up following in Equipment Network Setting window. Enter 172.18.0.1 for IDU-1 and 172.18.0.2 for IDU-2 as "IP Address" in IDU Group section.



11 Above completes the configuration process. By reconnecting PNMT to one of the local port of either NEO/a #1 thru #3, IDU Tabs (IDU-1, IDU-2, IDU-3) appear. With these IDU tabs, it is now possible to switch between NEs displayed in Link Summary.



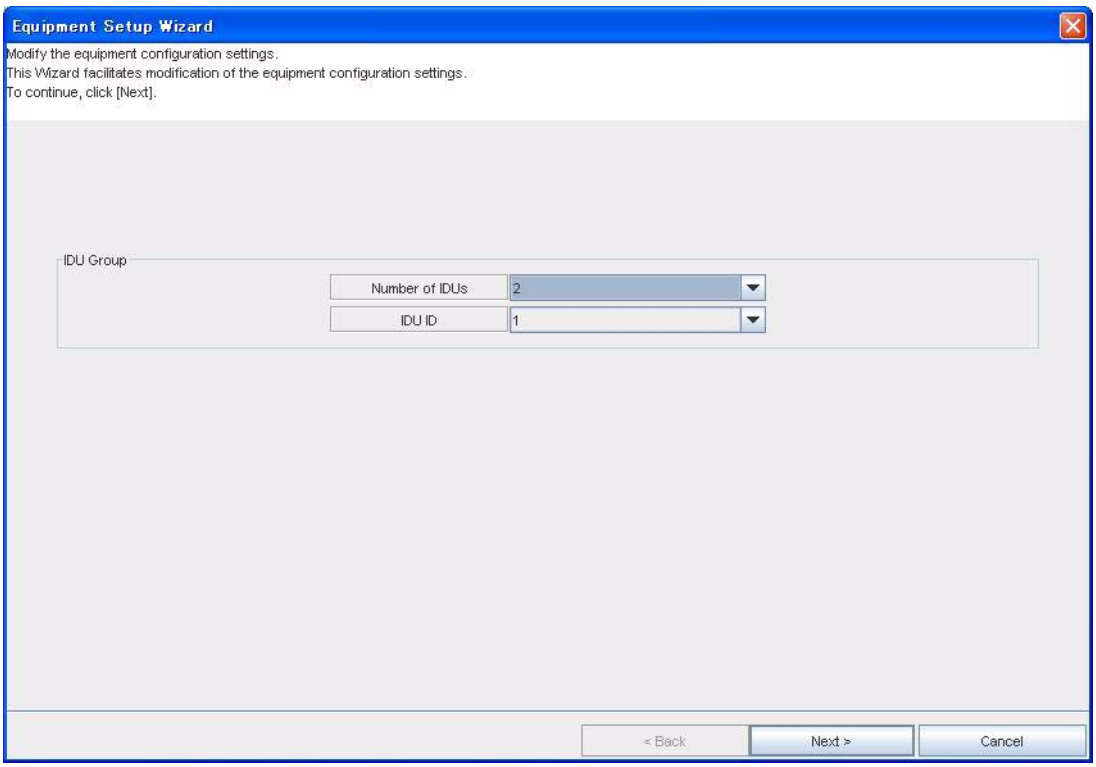
< 2*[NEO/a] sample configuration >



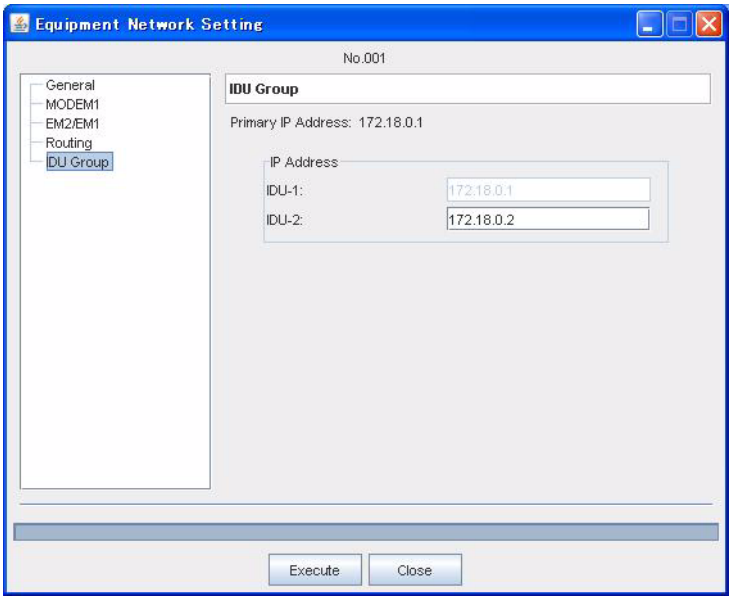
1 Connect 2 NEO/a via LAN as shown in above diagram. Assume that Primary IP Addresses are already set-up as shown above.

2 Connect PNMT to the local port of NEO/a #1

3 Set-up following in Equipment Setup wizard window. Select 2 for Number of IDUs and 1 for IDU ID in "IDU Group".

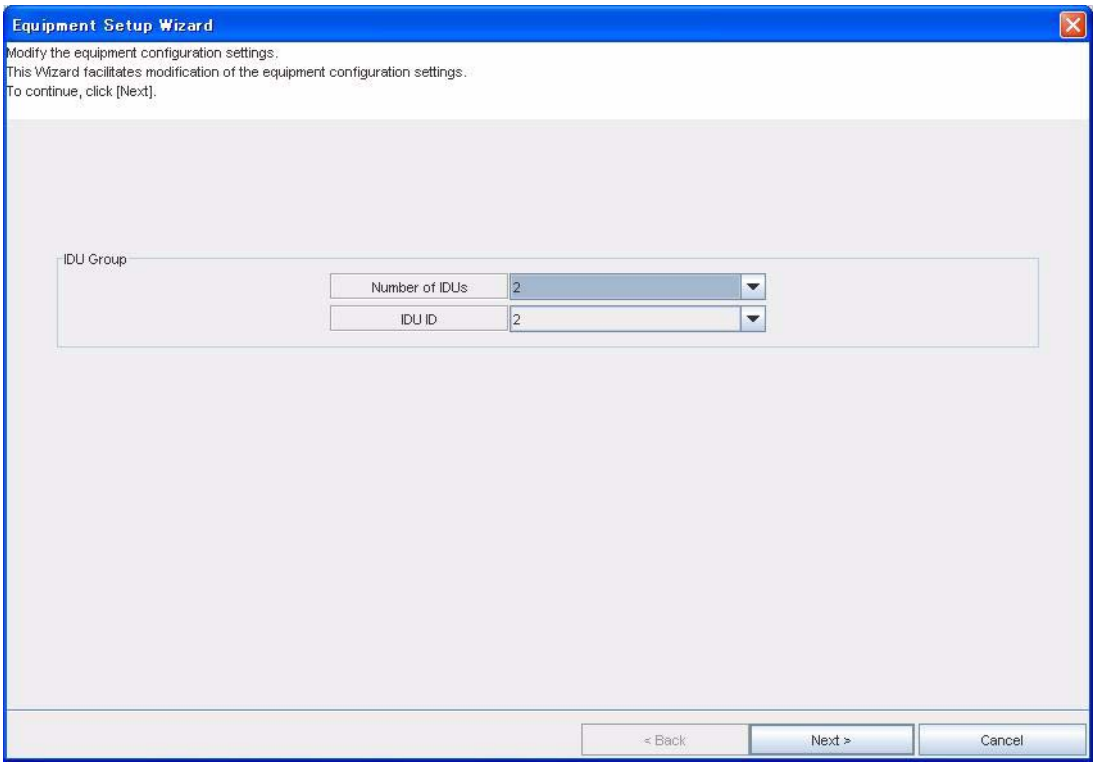


4 Set-up following in Equipment Network Setting window. Enter 172.18.0.2 for IDU-2 as "IP Address" in IDU Group section.

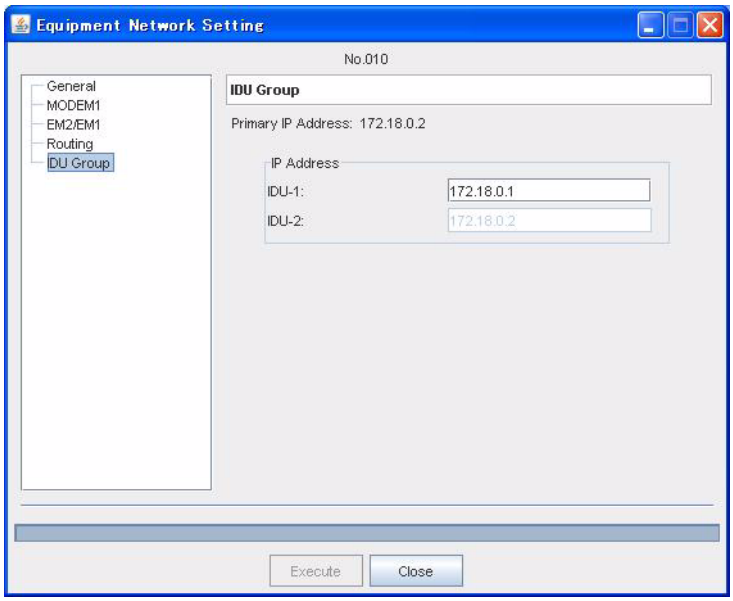


5 Connect PNMT to the local port of NEO/a #2.

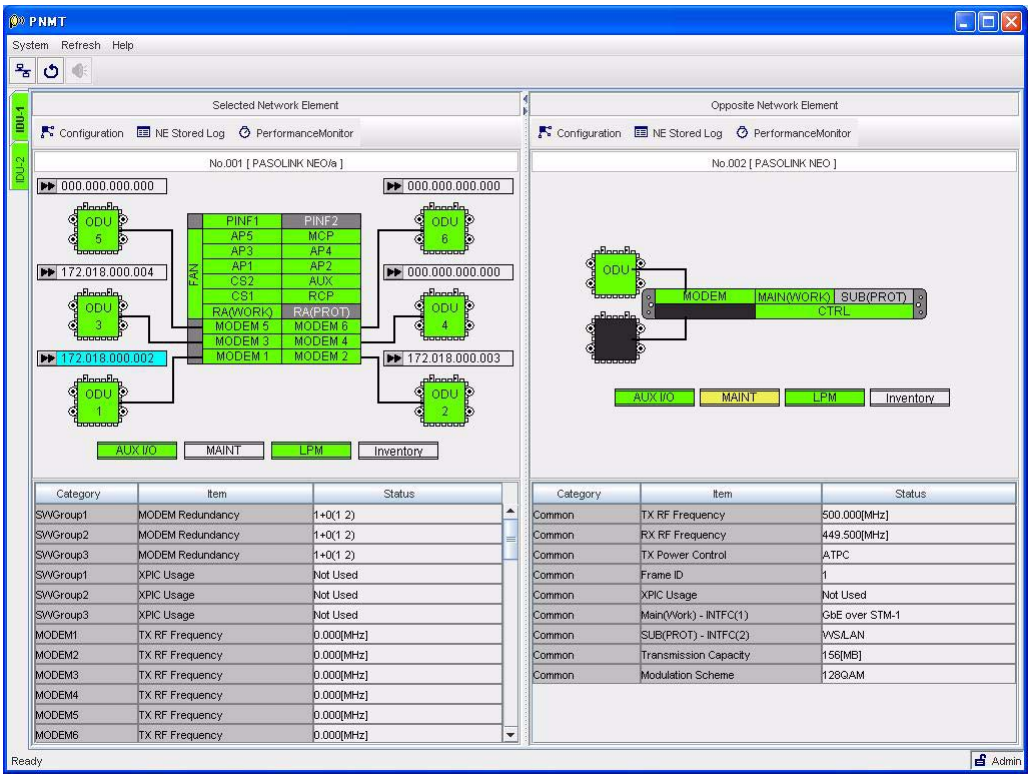
6 Set-up following in Equipment Setup wizard window. Select 2 for Number of IDUs and 2 for IDU ID in "IDU Group".



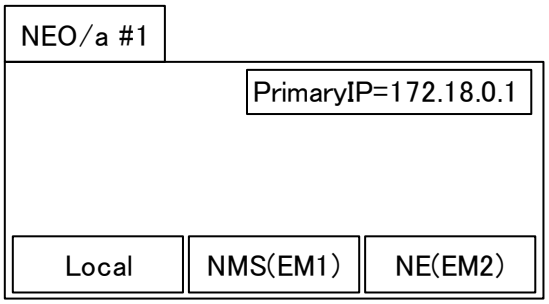
7 Set-up following in Equipment Network Setting window. Enter 172.18.0.1 for IDU-1 as "IP Address" in IDU Group section.



8 Above completes the configuration process. By reconnecting PNMT to one of the local port of either NEO/a #1 or #2, IDU Tabs (IDU-1 & IDU-2) appear. With these IDU tabs, it is now possible to switch between NEs displayed in Link Summary.

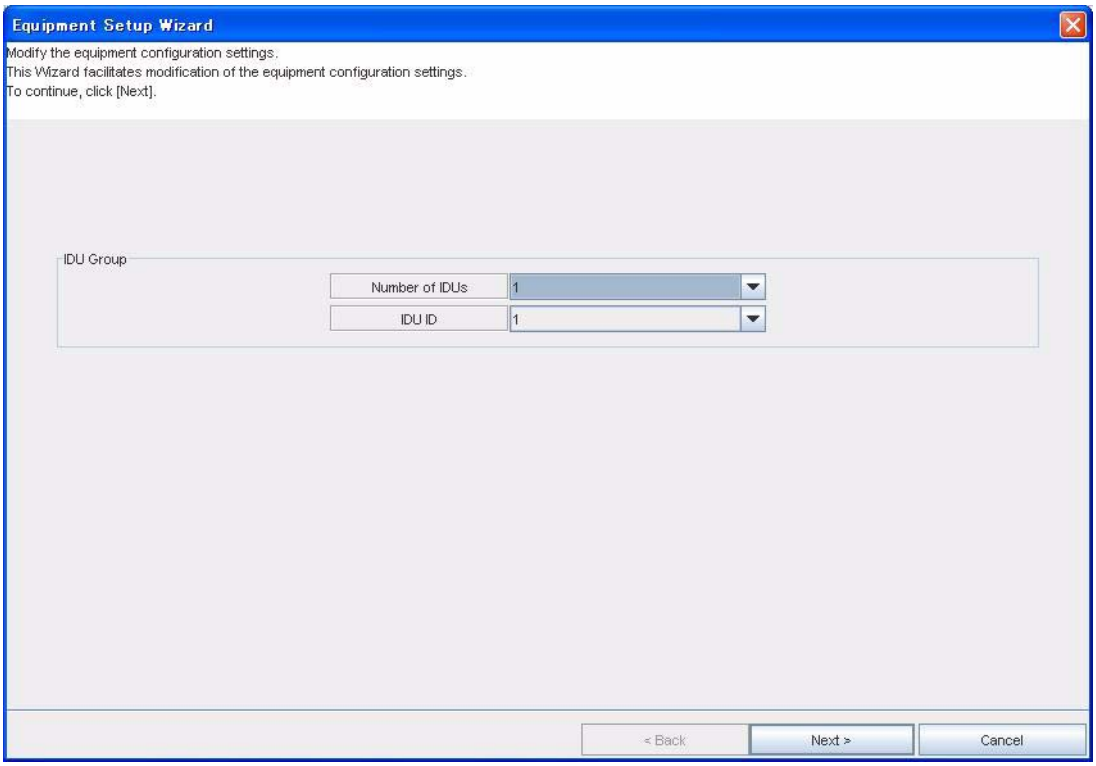


< 1*[NEO/a] sample configuration >

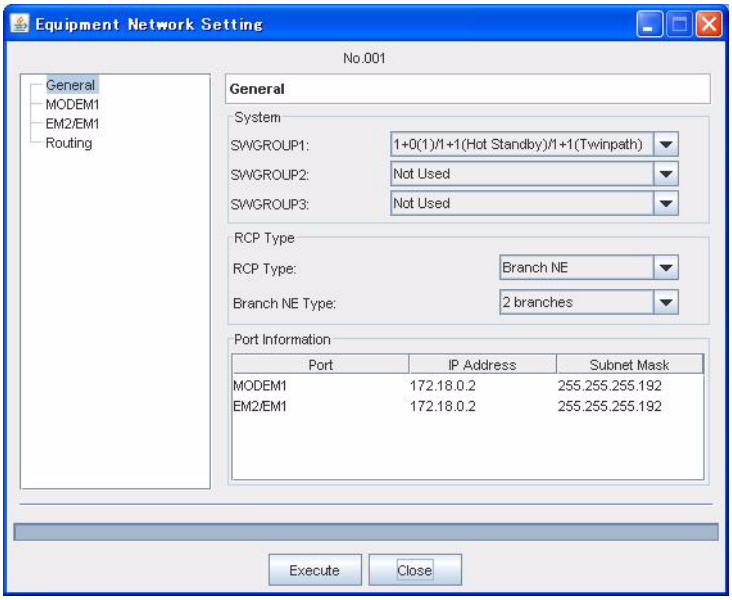


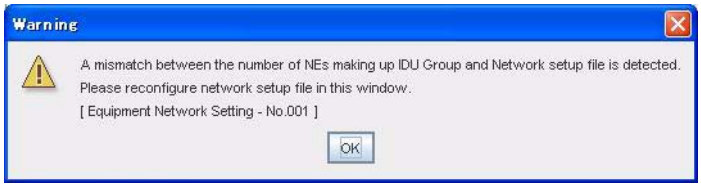
1 Connect PNMT to the local port of NEO/a #1. Assume that Primary IP Addresses are already set-up as shown above.

2 Set-up following in Equipment Setup wizard window. Select 1 for Number of IDUs and 1 for IDU ID in "IDU Group".

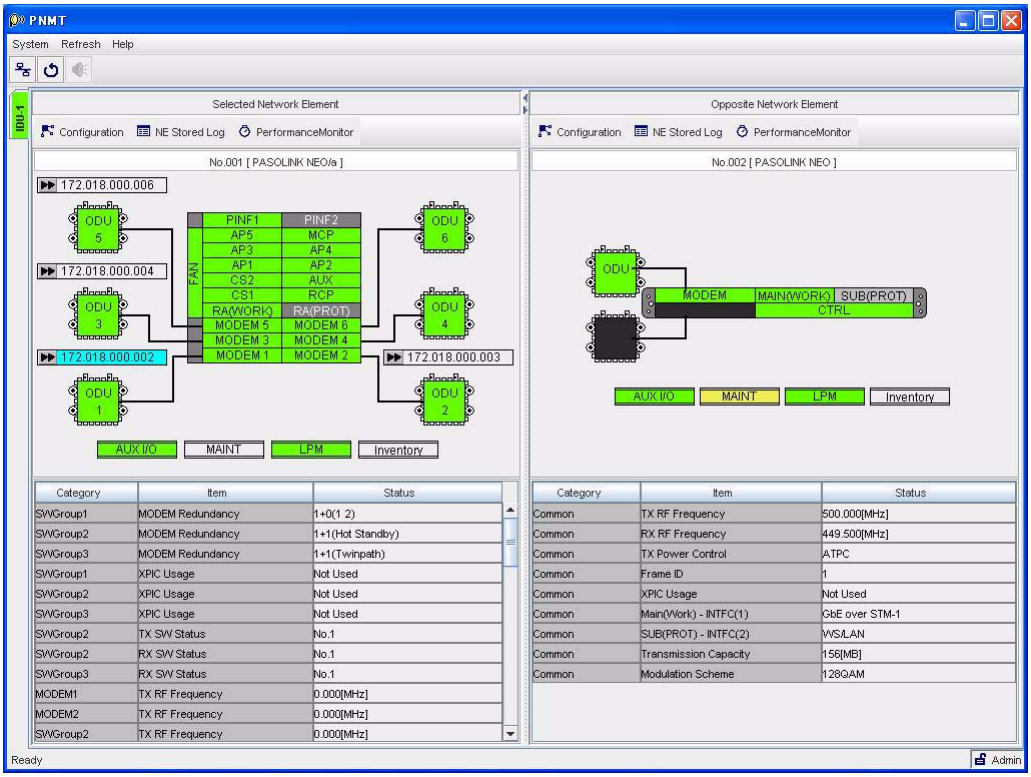


3 Set-up following in Equipment Network Setting window. Nothing needs to be set-up in IDU Group section. However, if warning dialog box shown below pops-up by opening the window, reconfiguration of network setup needs to be done. EXECUTE button will automatically be enabled so press EXECUTE button to reconfigure network setup.





4 Above completes the configuration process and IDU Tab (IDU-1) appears. Since this is a single unit structure, there are no other displays to be switched over.



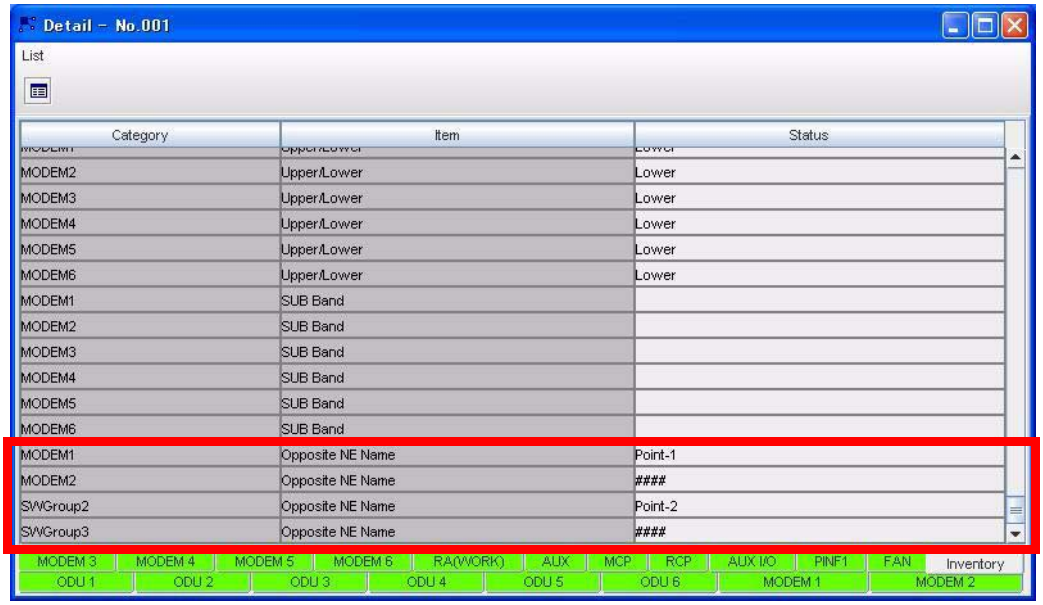
2. Points to keep in mind

- Primary IP Address setup for each NE in an IDU Group must have the same subnet address.
- LLDP need not be set for EM1 and EM2 ports used for LAN connection between each NEs with in an IDU Group.

Appendix E: Function to display opposite NE name

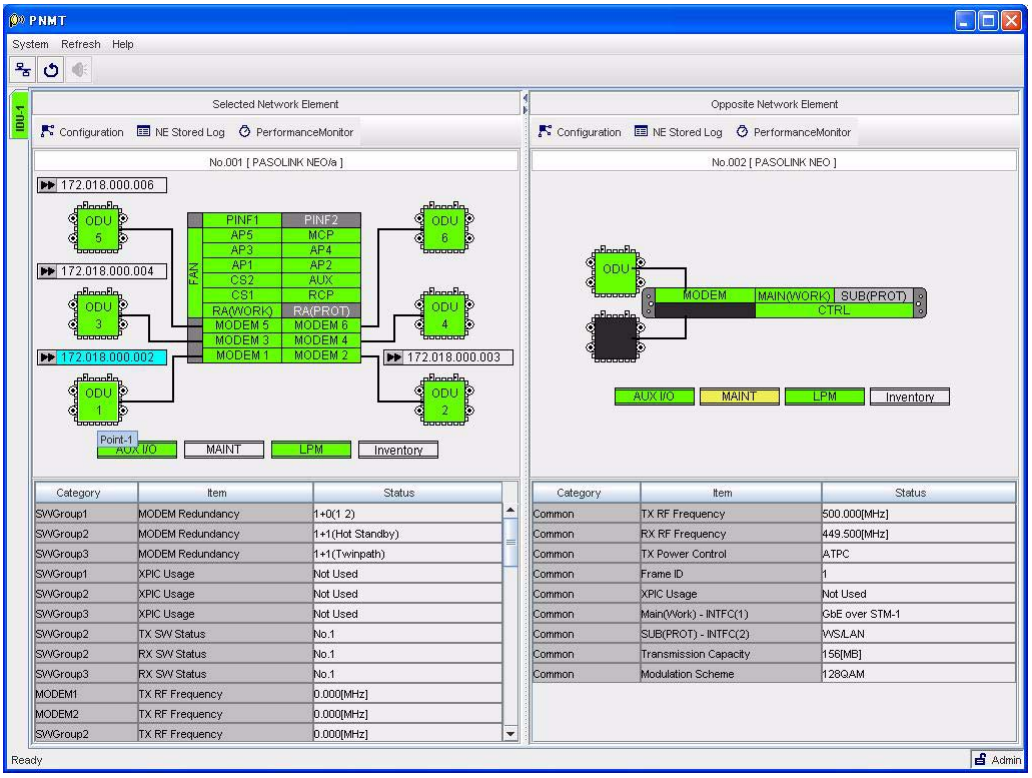
1 Opposite NE information are set up in ADM Management Tool. This is done by entering the name of NE opposite to ODUx into "RA Protx Name" field (with x being 1-6). For setup method, please refer to "4.4.8 Set Port Name" section of chapter 4, "SYSTEM OPERATION & MANAGEMENT TOOL FOR BASEBAND PORTION".

2 Opposite NE information entered will be displayed as "Opposite NE Name" (with Category being MODEM1-6or SWGroup1-3) in Inventory. If designated field of ADM Management Tool is kept blank, "####" will be displayed.



Note: When Space Code (0×20) is entered in front or following the character string entered in 1), that Space Code is deleted in display. If only Space Code is entered, display will be blank.

3 By pointing at a part of ODU in LinkSummary, opposite NE name set up in 1) will be displayed inside the tooltip. As for 1+1 configuration, tooltips will be displayed for #1 side ODUs only.



Note: When Space Code (0×20) is entered in front or following the character string entered in 1), that Space Code will be deleted in display. If only Space Code is entered, tooltip will not be displayed.

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4. SYSTEM OPERATION & MAINTE-NANCE WITH ADM MANAGEMENT TOOL FOR BASEBAND PORTION

This chapter explains the menu structure and procedures for operating the ADM Management Tool. The explanation uses typical ADM Management Tool screens to illustrate the hierarchy of menus.

4.1 Login/Logout/Exit

Perform the steps in this procedure to login/logout to a local or remote network element (NE).

4.1.1 Things to Know Prior to Login

4.1.1.1 The Role of ADM Management Tool

When using the ADM Management Tool, commands are issued to the NE to which the ADM Management Tool is currently logged in. The ADM Management Tool is an application software that sets up and maintains each NE individually.

4.1.1.2 Accessing Restriction

Maximum 14 users can access the NE at the same time.

4.1.1.3 Remote Login

When the equipment communicates with the ADM Management Tool by direct connection, the equipment can be defined as Local NE. When the equipment communicates with the ADM Management Tool through radio transmission path and intermediate equipment, the equipment is defined as Remote NE.

4.1.1.4 Performance Restrictions

If the equipment communicates with the ADM Management Tool through radio transmission path and intermediate equipment, the equipment is defined as Remote NE.

Caution: Do not remove ADM Management Tool connection cable while in the ADM Management Tool OPERATION. If removed, the ADM Management Tool may be terminated forcibly, or another session be rejected at login when connection is recovered. To clear these problems, if happen, start ADM Management Tool again or restart your pc.

4.1.2 Login to NE

4.1.2.1 Local NE

When the equipment communicates with the ADM Management Tool by direct connection, the equipment can be defined as Local NE.

Note: ADM Management Tool operation via Local port on RCP supports only local management.

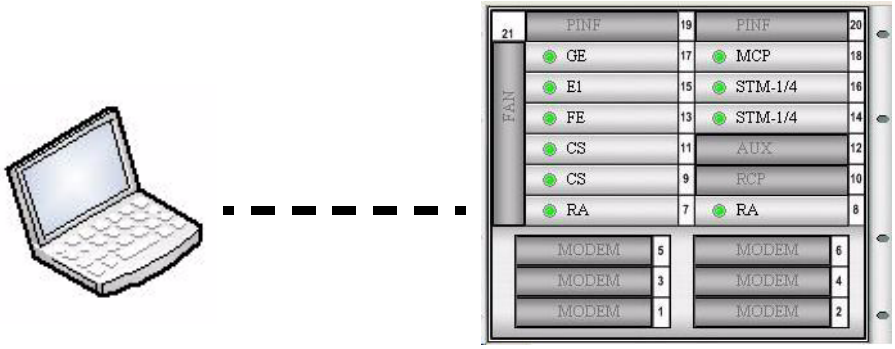


Fig. 4-1-1 Login Local NE

4.1.2.2 Login to Local NE

Procedure

1 To login to local NE, click on any card in the baseband portion of the NEO/a block diagram on PNMT main window.
The relationship between the PNMT and ADM Management Tool is shown in ***Fig. 4-1-2***.

2 When card in baseband portion is clicked, ADM Management Tool is executed automatically.

3 After successful login, ADM Management Tool will collect the NE data and enter network manager interface after collecting completely.

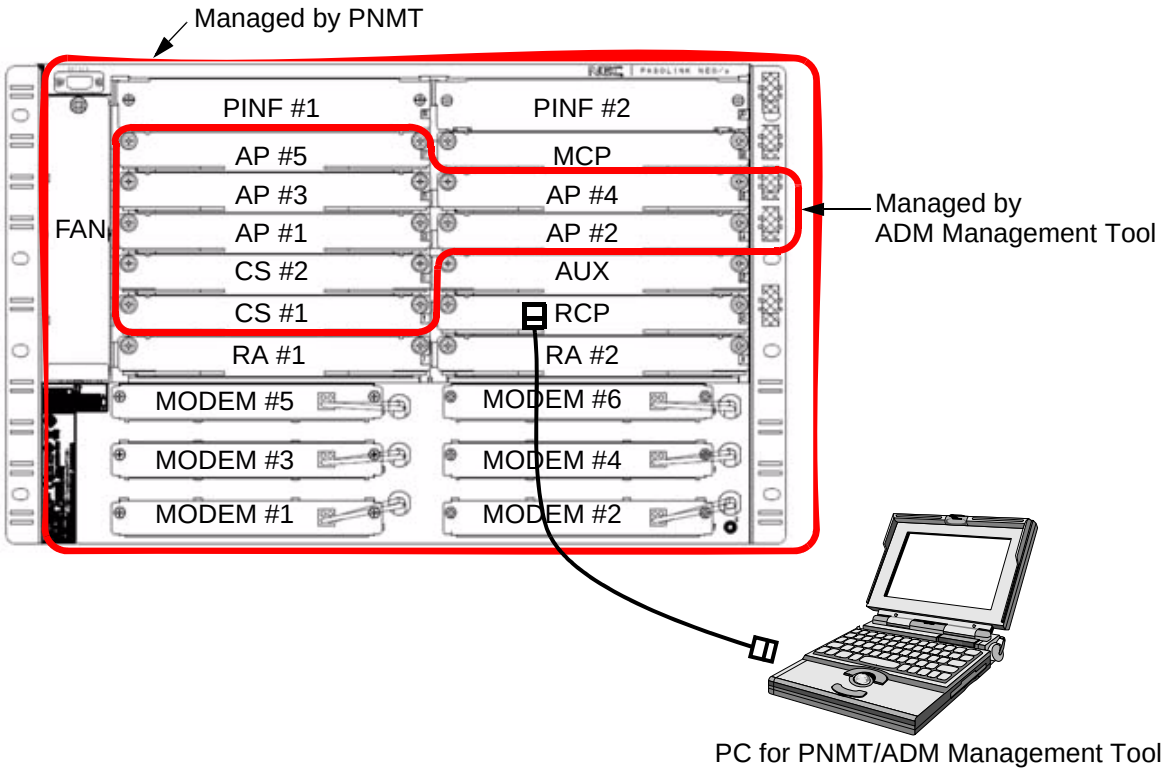


Fig. 4-1-2 ADM Management Tool

This step is the end of the procedure.

4.1.3 Logout of NE

To logout the NE, perform the following procedure:

Procedure

1 Confirm the modifications that user had done should be set or cancelled.

2 Close the window under operation.

3 Logout from the NE on ADM Management Tool.

4.1.4. User Logout

To close the ADM Management Tool application and to terminate communication between ADM Management Tool and the NE, perform the following procedure:

4.1.4.1 Manually Logout

NE would logout a user manually when it received the logout request from the login user.

Procedure

1 Confirm the modifications that user had done should be set or cancelled.

2 Logout from the NE on ADM Management Tool.

4.1.4.2 Automatic Logout

When the login user has no communication from ADM Management Tool over the timeout timer, the login user is logout by NE automatically.

Default time out timer: 24 hours. ADM Management Tool can change the time out timer.

4.2 User Management

This chapter describes the user management function, such as user ID, password and some of restrictions etc.

4.2.1 User Authority

PASOLINK NEO/a security management provides security environment for user. For example, to configure NE, to monitor alarm and status from NE, and to download firmware to NE.

Usable functions for each user are limited according to the user level of each user.

4.3 Brief Description of Working with ADM Management Tool

4.3.1 ADM Management Tool

The ADM Management Tool retrieves the configuration information data on the equipment during logging in.

The appearance of ADM Management Tool is shown in ***Fig. 4-3-1***. Users can see the information about the target NE: type of equipment and alarm conditions, as well as they can take the corresponding setting from this dialog box.

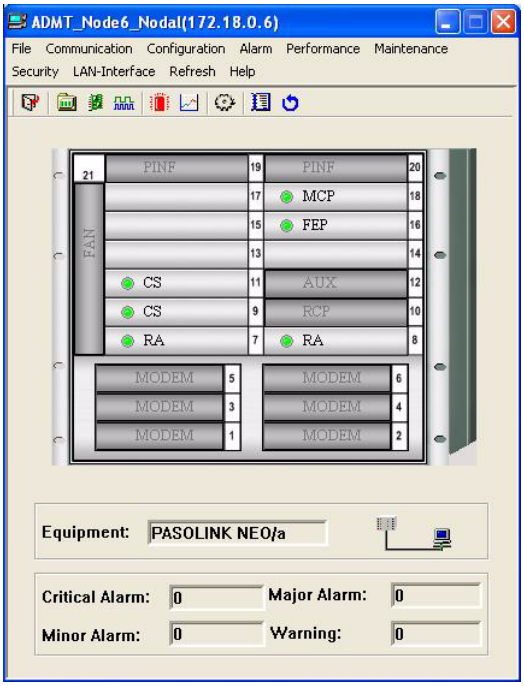


Fig. 4-3-1 ADM Management Tool

4.3.1.1 Menu

By using the menu (see ***Fig. 4-3-2*** below) on the ADM Management Tool, configuration, alarm, performance and maintenance operation for the NE can be performed. The detailed illumination of each menu refers to ***4.4*** of this manual.

Fig. 4-3-2 Menu Bar on ADM Management Tool

4.3.1.2 Shortcut Buttons

In order to provide convenience for user, the ADM Management Tool adopts shortcut mode and shortcut buttons corresponding menu commands are provided under the menu bar.

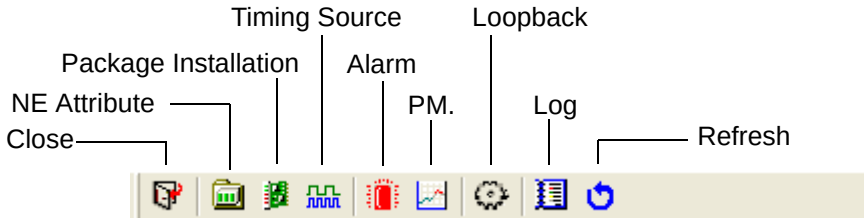


Fig. 4-3-3 Shortcut Buttons on ADM Management Tool

The following table lists the shortcut buttons supported by the ADM Management Tool, with their corresponding menu command and function:

Table 4-3-1 Shortcut Buttons on ADM Management Tool

Button	Menu Command	Function
	**File** menu => **Logout**	Quits ADM Management Tool.
	**Configuration** menu => **NE Attribute**	Modifies slot configuration and timing source setting.
	**Configuration** menu => **Physical Slot Configuration**	Modifies the card configuration information of NE.
	**Configuration** menu => **Timing Source Configuration**	Modifies the timing source information of NE.
	**Alarm** menu => **Current Alarm**	Views current alarm information of NE.
	**Performance** menu => **Current PM**	Views current performance information of NE.
	**Maintenance** menu => **Loopback Control**	Modifies the loopback setting of NE.
	**Security** menu => **Operation Log**	Views the operation log of NE.
	**Refresh**	Refresh window

4.3.2 ADM Management Tool Menus

4.3.2.1 File

Sub Menu	Dialog Box
Database Upload/Download	Upload / Download Database
Logout	–

4.3.2.2 Communication

Sub Menu	Dialog Box
Physical Layer Setup	Setup Physical Layer

4.3.2.3 Configuration

Sub Menu	Dialog Box
Setup NE (wizard)	Setup-Physical Slot Configuration
	Setup-Timing Source Configuration
	Setup- Timing Source Attribute
	Setup-Others
NE Attribute	Setup (with NE Attribute tab)
Physical Slot Configuration	Setup (with Physical Slot Configuration tab)
Package Protect Configuration	Setup (Package Protect Configuration)
Timing Source Configuration	Setup (with Timing Source Configuration tab)
Timing Source Attribute	Setup (with Timing Source Attribute tab)
Sub Menu	Dialog Box
Set 2M EXT CLK Output	Set Output-Clock Port
MSP Group Configuration	Set MSP Group
MSP Configuration	Set MSP
OH Protect Configuration	OH Protect Configuration
Cross Connect Configuration	Cross Connect Configuration
Port Configuration	Port Configuration
Port Enable	Port Enable
Set Trace Message	Set Trace Message
Orderwire and User CH Configuration	Orderwire and User CH Configuration
Set Port Name	Set Port Name
Laser Management	Laser Management

4.3.2.4 Alarm

Sub Menu	Dialog Box
Current Alarm	Alarm Monitor (with Current Alarm tab)
History Alarm	Alarm Monitor (with History Alarm tab)
Actual Alarm	Alarm Monitor (with Actual Alarm tab)
Alarm Attribute Setup	Alarm Attribute Setup
Event View	Event View
Set Alarm Transfer	Set Alarm Transfer

4.3.2.5 Performance

Sub Menu	Dialog Box
Current PM	Current PM-15m Data
	Current PM-24h Data
History PM	History PM-15m Data
	History PM-24h Data
PM Counter Reset	Reset PM Counter

4.3.2.6 Maintenance

Sub Menu	Dialog Box
Loopback Control	Loopback Control
Equipment Reset	Equipment Reset
Erase NE History Data	Erase NE History Data
View Maintain Status	View Maintain Status
Inventory	Inventory
Upgrade F/W and FPGA	Upgrade F/W and FPGA

4.3.2.7 Security

Sub Menu	Dialog Box
Operation Log	Browse Operation Log
User Management	User Management

4.3.2.8 LAN-Interface

Sub Menu	Dialog Box
Ethernet Port Configuration	Ethernet Port Configuration
Link Loss Forwarding Configuration	Link Loss Forwarding Configuration
Layer 2 Configuration	Layer 2 Configuration
Encapsulation and LCAS Configuration	Encapsulation and LCAS Configuration
Bandwidth Configuration	Bandwidth Configuration

4.3.2.9 Refresh

Sub Menu	Dialog Box
Refresh	Refresh window

4.3.2.10 Help

Sub Menu	Dialog Box
About	About ADM Management Tool

4.4 Register NE Configuration

This section provides the procedures to setup cards in baseband portion of the PASOLINK NEO/a.

The operations are performed from the **Configuration** menu on the target NE's management dialog box by using the ADM Management Tool. Thus, the ADM Management Tool must be ready to proceed with these steps. First, the target NE must be connected with the ADM Management Tool. Second, you must login to the NE.

4.4.1 Setup NE

The ADM Management Tool retrieves the configuration information data of the equipment for each login. When logging in for the first time, it is required to initialize (setup) NE.

4.4.1.1 Setup Physical Slot Configuration

In the Setup-Physical Slot Configuration dialog box, parameters required to setup the physical slot configuration should be specified.

4.4.1.1.1 Items and Parameters

The **Setup-Physical Slot Configuration** dialog box has the following items and parameters:

ITEM/PARAMETER	VALUES	DESCRIPTION
Slot NO.	(not selected)	Display the slot number and card type selected by clicking a slot on the left of equipment figure.
Installed Board	(not selected)	Display the installed card type.
Required Installed Board	----	Select a card to be installed to the selected slot from the drop-down list.
Management Status	**Work Normally**	Select the management status from the drop-down list. (When you register a card in ADM Management Tool, system would select **Work Normally** as the management status automatically
Running Status	(not selected)	Display the installed card working status.
Install/Uninstall	button	Add/Delete card on ADM Management Tool.
<<Auto Slot Set	button	Retrieve the actual cards slot configuration from the NE, and changing the ADM Management Tool setting to match with actual NE

4.4.1.1.2 Procedure: Setup Physical Slot Configuration

1 Confirm that the **Setup-Physical Slot Configuration** dialog box is displayed.

2 When you install/uninstall cards in ADM Management Tool, please repeat the steps, 3 to 7.

3 Click a slot number configured on the equipment in the figure. The selected slot number will be displayed in the **Slot NO**.: field, at the same time the actual installed card and hardware version will be displayed in the corresponding field of right side.

4 Select the name of card from **Required Installed Board** drop-down list, according to the actual configuration.

5 Select "Work Normally" from the **Management Status** drop-down list.

Note: Only "work normally" can be used and system will specify "work normally" as management status automatically.

6 If you set the ADM Management Tool configuration as the same as the actual NE setting, please click **Auto Slot Set** button, system would check the valid of the cards and delete or change the configuration of cards, and then system would match the configuration of ADM Management Tool with actual configuration of NE.

Note: Auto Slot Set function will delete or changing the configuration of cards; it mainly refers to the configuration of crossconnection, time source, MSP, DCC pass through and package protection etc.

7 Click the **Install** button to register the card.

*Note: For removing the card registration, click the **Uninstall** button.*

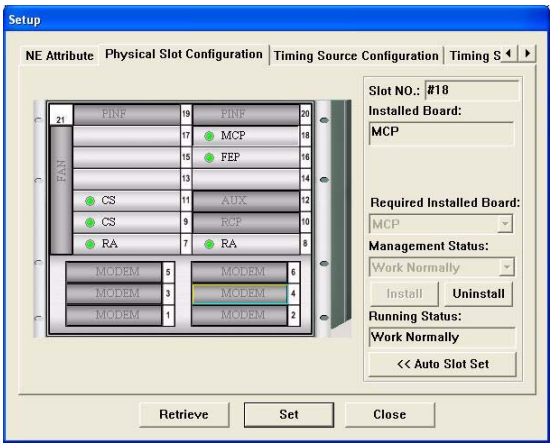
8 Perform one of the following:

- To proceed with the NE setup operation, click the **Next** button to open the **Setup-Timing Source Configuration** dialog box, and go to ***4.4.1.2 Setup NE Timing Source*** to perform the procedure.
- To quit the NE setup operation, click the **Close** button.

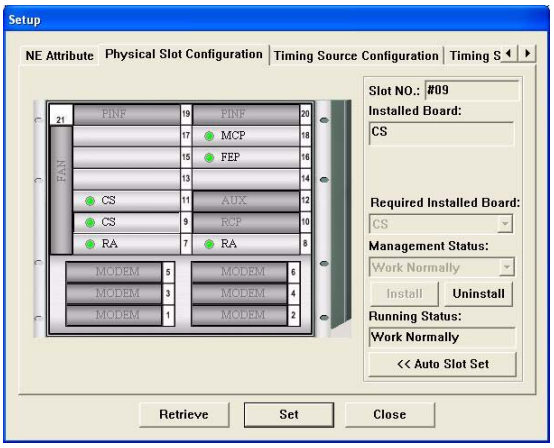
This step is the end of the procedure.

Note: The detailed procedures of physical slot configuration are shown as below to illustrate how to configure each kind of card in ADM Management Tool more easily.

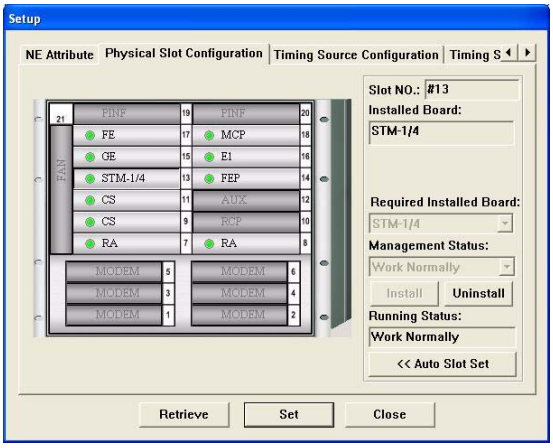
- **MCP**



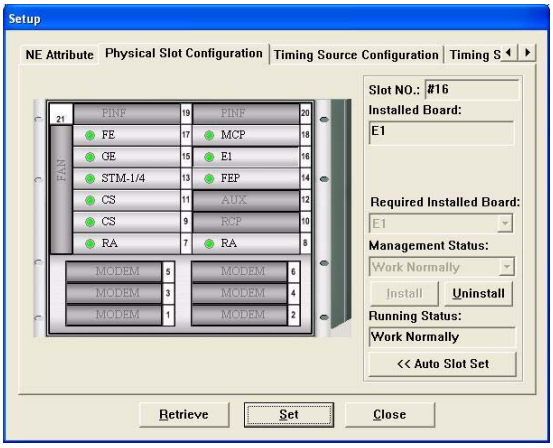
- **CS**



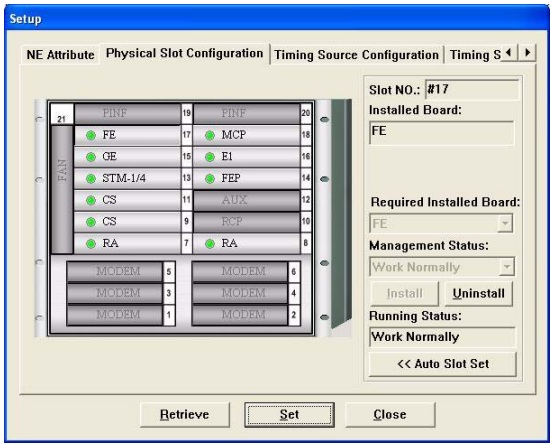
- **STM-1/4**



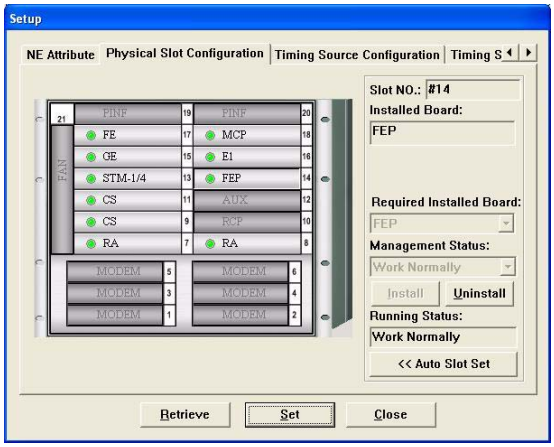
- **E1**



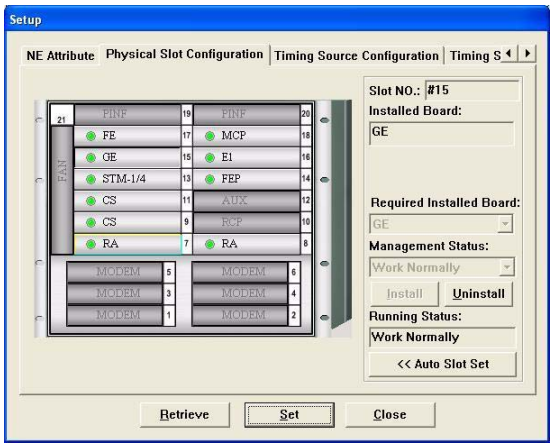
- **FE**



- **FEP**



- **GE**



4.4.1.2 Setup NE Timing Source

The **Setup-Timing Source Configuration** dialog box is used to setup the NE timing source.

Addition of a new timing source is configured in the **Set Timing Source** dialog box by clicking the **Add** button on the upper left of the **Setup-Timing Source Configuration** dialog box. Perform the procedure described in ***4.4.1.2.2 Procedure: Add New NE Timing Source***.

Modification and deletion of a timing source can also be operated. For this operation, click the **Modify** or **Delete** button on the upper left of the dialog box. Perform the procedure described in ***4.4.1.2.3 Procedure: Modify NE Timing Source*** or ***4.4.1.2.4 Procedure: Delete NE Timing Source*** respectively.

In addition, the switching type can be set for each timing source in the **Set Clock External Commands** dialog box, which will be opened by clicking the **Switch** button on the top of the **Setup-Timing Source Configuration** dialog box. Refer to ***4.4.1.3.2 Procedure: Setup Timing Source Switching Type*** for the procedure.

4.4.1.2.1 Items and Parameters

The **Setup-Timing Source Configuration** dialog box has the following items and parameters:

ITEM/PARAMETER	VALUES	DESCRIPTION
System Timing Source/ Bypass Timing Source	---	Display the system timing source and bypass timing source. System clock is the working clock for phase-lock loop of SDH system, and bypass clock is selected for external output clock
Timing Source	---	Display the list of timing sources for selection.
Receive SSM Set Value	---	Select the QL (quality level) of the receiving timing source from the drop-down list. This is valid when the SSM protocol is selected.
Transmit SSM Mode	**Force/Auto**	Select **Force** or **Auto** from the drop-down list. When **Force** is selected, the selected port will be forced to send QL of the timing source. When **Auto** is selected, the QL of the timing source sent at the selected port is that of the current operating reference clock. In this case, the current operating reference clock is not the timing source of the selected port.
Force Transmit SSM Value	---	Selected port sends forcibly QL value of the timing source.
Hold Off Time	**300** thru **1800** (ms)	Set Hold-off time, which is the duration to hold QL until the operating timing source switches to be available upon failure of this timing source. The step is 300 ms.
WTR Time	**60** thru **720** (sec)	Set Wait To Restore time, which is the amount of time to wait before a recovered timing source becomes active again. The step is 60s.
Priority	**1** thru **254**	Set the priority of timing source manually. The highest priority is **1**, and the lowest is **254**.

4.4.1.2.2 Procedure: Add New NE Timing Source

1 Confirm that the **Setup-Timing Source Configuration** dialog box shown in ***Fig. 4-4-4*** is displayed:

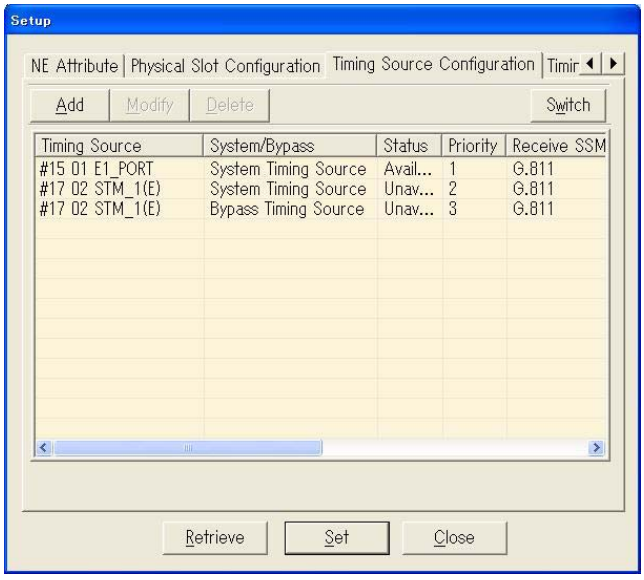


Fig. 4-4-4 Setup-Timing Source Configuration Dialog Box

2 Click the **Retrieve** button on the bottom of the **Setup-Timing Source Configuration** dialog box to retrieve the timing source configuration data.

3 Click the **Add** button on the upper left of the **Setup-Timing Source Configuration** dialog box. The **Set Timing Source** dialog box shown in ***Fig. 4-4-5*** appears:

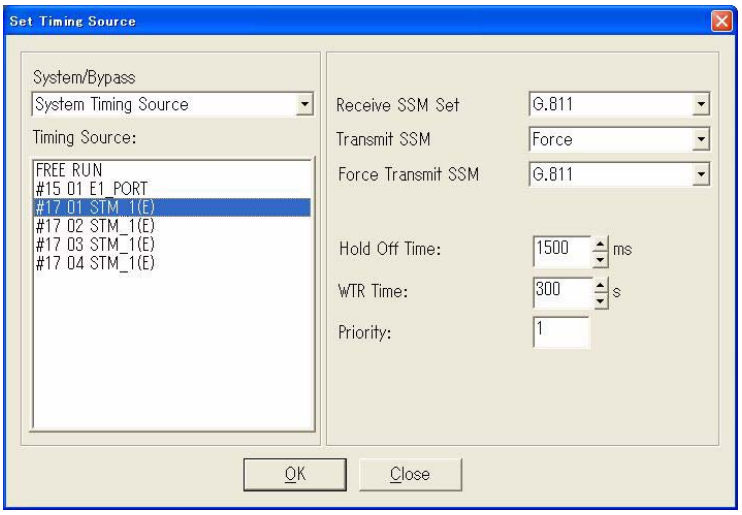


Fig. 4-4-5 Set Timing Source Dialog Box (for Addition)

4 Select the clock type from the **System/Bypass** drop-down list.

5 Select the timing source in **Timing Source** list box.

6 Set values for the **Receive SSM Set Value, Transmit SSM Mode** and **Force Transmit SSM Value** combo boxes on the right of the dialog box, using the drop-down list.

Note: The Synchronous Equipment Timing Sources are shown as bellow, among them, the G.811> G.812 Transit>G.812 Local>G.813 (SETS), the 1111 do not used for timing source.

Bits (5 thru 8) in S1 Byte	Timing Source Quality and Grade
0010	G.811
0100	G.812 Transit
1000	G.812 Local
1011	G.813 (SETS)
1111	Do not use for timing source

7 Set the **Hold Off Time** (300 thru 1800 ms) and **WTR Time** (60 thru 720 s).

8 Set the Priority (1 thru 254).

9 Confirm the entered items, and click the **OK** button. The **Set Timing Source** dialog box disappears, and the **Setup-Timing Source Configuration** dialog box is displayed again with the specified timing source in the list.

*Note: Clicking the Close button instead of the **OK** button cancels adding the NE timing source, back to the **Setup-Timing Source Configuration** dialog box ignoring all the settings.*

10 Perform one of the following:

- To modify/delete the timing sources, click the **Modify** or **Delete** button on the upper left of the **Setup-Timing Source Configuration** dialog box. Then go to ***4.4.1.2.3 Procedure: Modify NE Timing Source*** or ***4.4.1.2.4 Procedure: Delete NE Timing Source*** respectively.

- To set the switching type for timing sources, click the **Switch** button on the upper right of the **Setup-Timing Source Configuration** dialog box to open the **Set Clock External Commands** dialog box. Then go to ***4.4.1.3 Setup Timing Source Switching Type***.

- Click the **Next** button on the bottom of the **Setup-Timing Source Configuration** dialog box to open the **Setup-Timing**

Source Attribute dialog box. Then go to ***4.4.1.4 Setup-Timing Source Attributes***.

- To go back to the NE slot configuration setup, click the **Back** button to return to the **Setup-Physical Slot Configuration** dialog box.
- To cancel and quit the NE setup, click the **Close** button.

This step is the end of the procedure.

4.4.1.2.3 Procedure: Modify NE Timing Source

1 Confirm that the **Setup-Timing Source Configuration** dialog box shown as below:

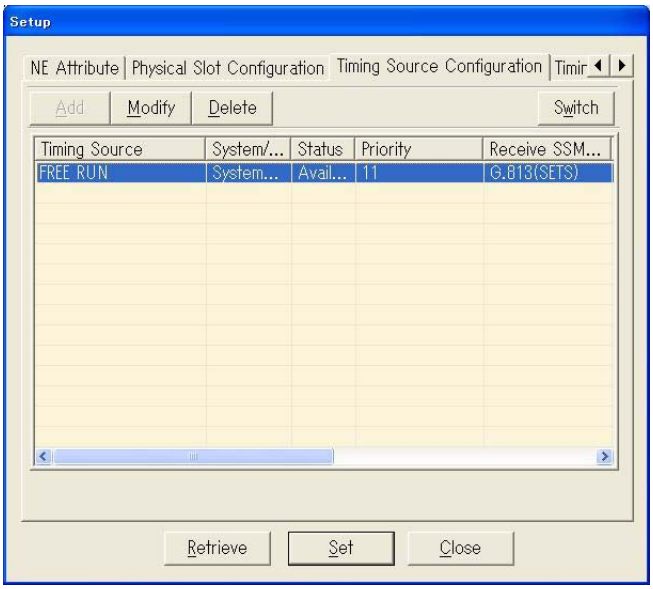


Fig. 4-4-6 Setup-Timing Source Configuration Dialog Box (Modify)

2 Click the **Retrieve** button on the bottom of the **Setup-Timing Source Configuration** dialog box to retrieve the timing source configuration data.

3 Select a timing source to be modified from the list by clicking. Then the **Modify** button becomes valid.

4 Click the **Modify** button on the upper left of the **Setup-Timing Source Configuration** dialog box. The **Set Timing Source** dialog box shown in ***Fig. 4-4-7*** appears:

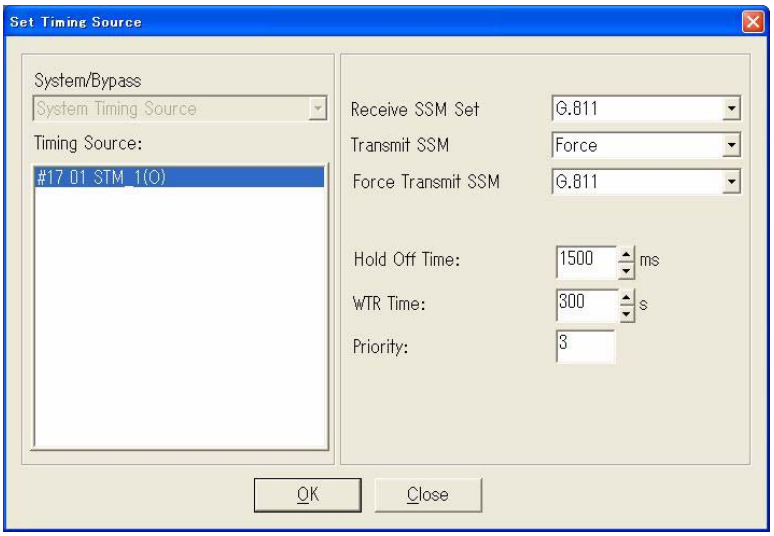


Fig. 4-4-7 Set Timing Source Dialog Box (for modification)

5 Modify the necessary parameters by referring to the procedures for adding a new timing source, provided in ***4.4.1.2.2 Procedure: Add New NE Timing Source***.

6 Confirm the entered items, and click the **OK** button. The **Set Timing Source** dialog box disappears, and the **Setup-Timing Source Configuration** dialog box is displayed again with the modified timing source in the list.

*Note: Clicking **Close** button instead of **OK** button to cancel the NE timing source modification, and back to the **Setup-Timing Source Configuration** dialog box with ignoring all the settings.*

7 Perform one of the following:

- To set the switching type for timing sources, click the **Switch** button on the upper right of the **Setup-Timing Source Configuration** dialog box to open the **Set Clock External Commands** dialog box. Then go to ***4.4.1.3 Setup Timing Source Switching Type***.
- Click the **Next** button on the bottom of the **Setup-Timing Source Configuration** dialog box to open the **Setup-Timing Source Attribute** dialog box. Then go to ***4.4.1.4 Setup-Timing Source Attributes***.
- To go back to the NE slot configuration setup, click the **Back** button to return to the **Setup-Physical Slot Configuration** dialog box.
- To cancel and quit the NE setup, click the **Close** button.

This step is the end of the procedure.

4.4.1.2.4 Procedure: Delete NE Timing Source

1 Confirm that the **Setup-Timing Source Configuration** dialog box shown as below:

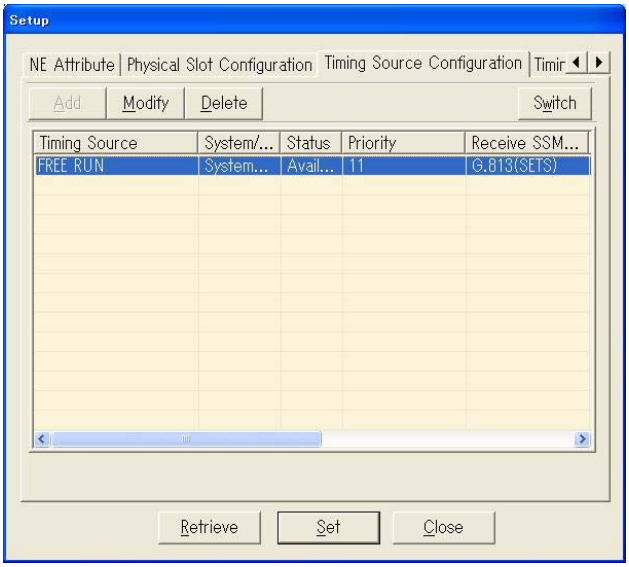


Fig. 4-4-8 Setup-Timing Source Configuration Dialog Box (Delete)

2 Select a timing source to be deleted from the list by clicking. Then the **Delete** button becomes enabled.

3 Click the **Delete** button on the upper left of the **Setup-Timing Source Configuration** dialog box.

4 Perform one of the following:

- To set the switching type for timing sources, click the **Switch** button on the upper right of the **Setup-Timing Source Configuration** dialog box to open the **Set Clock External Commands** dialog box. Then go to ***4.4.1.3 Setup Timing Source Switching Type***.
- Click the **Next** button on the bottom of the **Setup-Timing Source Configuration** dialog box to open the **Setup-Timing Source Attribute** dialog box. Then go to ***4.4.1.4 Setup-Timing Source Attributes***.
- To go back to the NE slot configuration setup, click the **Back** button to return to the **Setup-Physical Slot Configuration** dialog box.
- To cancel and quit the NE setup, click the **Close** button.

This step is the end of the procedure.

4.4.1.3 Setup Timing Source Switching Type

In the **Set Clock External Commands** dialog box, the switching type can be specified for each timing source.

4.4.1.3.1 Items and Parameters

The **Set Clock External Commands** dialog box has the following items and parameters:

ITEM/PARAMETER	VALUES	DESCRIPTION
System/Bypass	----	Which timing source switching, system or bypass, is controlled, can be selected.
(list box)	----	Lists the timing sources for selection.
Lockout	(Check Box)	When this check box is selected, the selected timing source is not used as synchronous signal.
Forced Switch		When this check box is selected, the current reference clock is forcibly used as the timing source whether it has alarms or not.
Manual Switch		When this check box is selected, the current reference clock is used as the timing source if it has no alarms.

4.4.1.3.2 Procedure: Setup Timing Source Switching Type

1 Confirm that the **Set Clock External Commands** dialog box shown in ***Fig. 4-4-9*** is displayed:

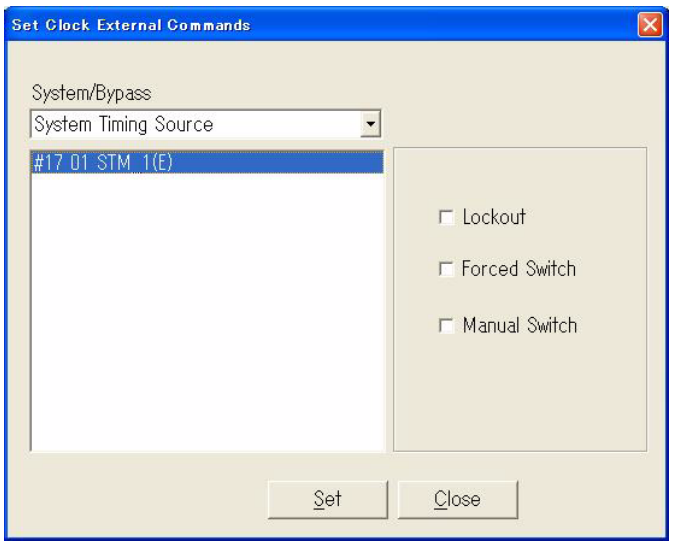


Fig. 4-4-9 Setup-Timing Source Attribute Dialog Box

2 Select system clock or external clock using the **System/Bypass** drop-down list.

3 Select the target timing source for which the switching type is set from the list.

4 Select the switching type to **Lockout, Forced Switch** or **Manual Switch** by clicking a check box.

5 Confirm the setting, and click the **Set** button.

6 After that **Maintain Status** menu will pop up, you should click **Set Declare** button to enable maintenance function and confirm the status is indicated as Maintenance Declare, the setting window shown as below:

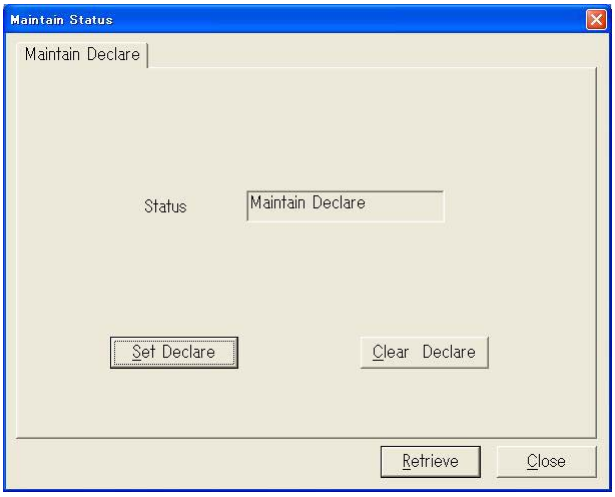


Fig. 4-4-10 Maintain Status Dialog Box

7 Click the **Close** button to exit the Maintain Status menu.

8 After closed **Set Clock External Commands** menu, the **Setup-Timing Source Configuration** dialog box is displayed again.

9 In the **Setup-Timing Source Configuration** dialog box, perform one of the following:

- Click the **Next** button to open the **Setup-Timing Source Attribute** dialog box. Then go to ***4.4.1.4 Setup-Timing Source Attributes***.
- To go back to the NE slot configuration setup, click the **Back** button to return to the **Setup-Physical Slot Configuration** dialog box.
- To cancel and quit the NE setup, click the **Close** button.

This step is the end of the procedure.

4.4.1.4 Setup-Timing Source Attributes

In the **Setup-Timing Source Attributes** dialog box, the timing source attributes are specified for the NE clock card configuration.

4.4.1.4.1 Items and Parameters

The **Setup-Timing Source Attributes** dialog box has the following items and parameters:

ITEM/PARAMETER	VALUES	DESCRIPTION
System/Bypass	---	Select System or Bypass for timing source: System: For NE system clock with PLL Bypass: For EXTCLK output without PLL
Switching Criterion	**Priority/SSM**	When **Priority** is selected, the clock card switches according to the priority order that is set manually for timing sources. When **SSM** is selected, the clock card takes the QL that is set manually for timing source and the actual QL value as the precondition. When the QL that is set manually and the QL collected by line coexist, the former (QL set manually) is effective. When the QLs of several timing sources are same, the clock card switches according to the priority that is set manually for timing source.
Timing Source Threshold	---	Select the timing source threshold. When starting up the SSM protocol, the timing source cannot be used as the reference clock if its QL priority is lower than the setting value.
Actual Received SSM Value	(not a selection)	This is the QL of active reference timing source.
Working Timing Source Subrack	(not a selection)	NE identity of working timing source.
Working Timing Source Slot	(not a selection)	Slot number of working timing source.
Working Timing Source Port	(not a selection)	Port number of working timing source.
Working Mode	**Lock** **Holdover** **Oscillation** (not a selection)	Indicates the working mode of the clock card. **Lock** indicates that clock card is tracking current reference timing source normally. **Holdover** indicates that current reference source alarms or losses.

4.4.1.4.2 Procedure: Setup NE Clock Card Configuration

1 Confirm that the **Setup-Timing Source Attribute** dialog box shown in ***Fig. 4-4-11*** is displayed:

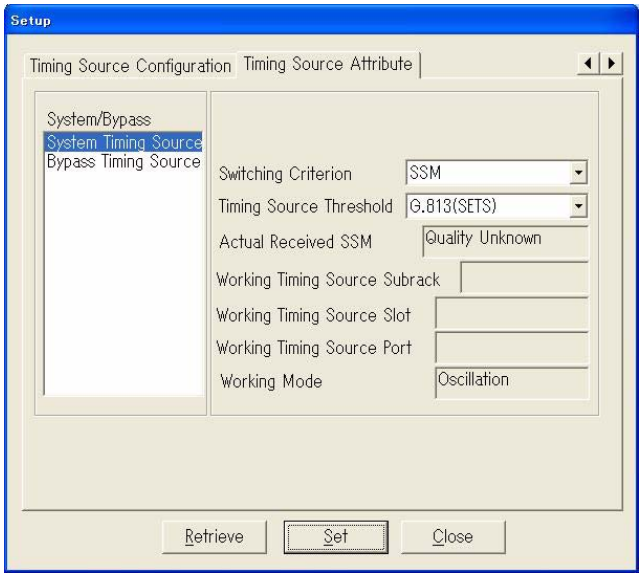


Fig. 4-4-11 Setup-Timing Source Attribute Dialog Box

2 Clicking the **Retrieve** button on the bottom of the dialog box to retrieve the attribute data.

3 Select the target timing source from the list box.

4 Select Priority or **SSM** from the **Switching Criterion** drop-down list.

5 Select the timing source threshold from the **Timing Source Threshold** drop-down list.

6 Confirm the entered items.

7 Perform one of the following:

- Click the **Next** button to open the **Setup-Others** dialog box. Then go to ***4.4.1.5 Complete NE Setup***.
- To go back to the timing source configuration setup, click the **Back** button to return to the **Setup-Timing Source Configuration** dialog box.
- To cancel and quit the NE setup, click the **Close** button.

This step is the end of the procedure.

4.4.1.5 Complete NE Setup

Perform the following procedure to complete the NE setup operations.

Procedure

1 Confirm that the **Setup-Others** dialog box shown in ***Fig. 4-4-12*** is displayed:

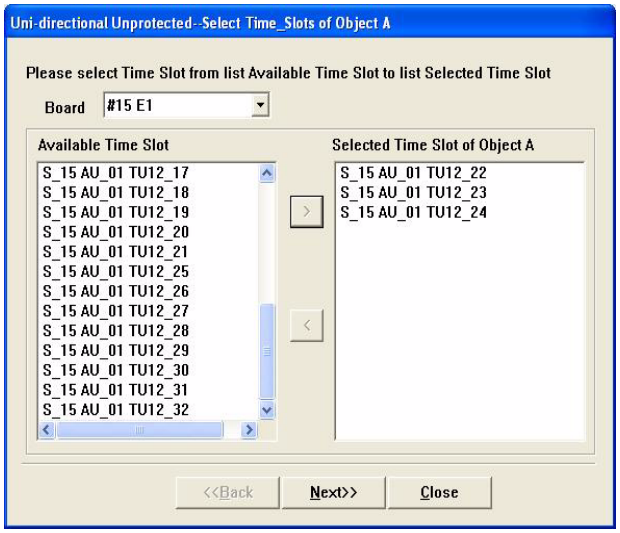


Fig. 4-4-12 Setup-Others Dialog Box

2 Click the **Download** check box (leaving a tick) to download any data to the NE.

Note: To configure NE, Download check box must be checked.

3 Confirm the settings, and perform one of the following:

- To modify any settings for NE setup again, click the **Back** button to go back to the Setup-Timing Source Attribute dialog box.
- To complete the setting for NE setup (initialization), click the **End** button.
- To cancel and quit the NE setup, click the **Close** button.

This step is the end of all the procedures for NE setup operation.

4.4.1.6 NE Attribute

In the **NE Attributes** dialog box, parameters in NE attributes required for NE setup should be specified.

4.4.1.6.1 Items and Parameters

The **Setup-NE Attribute** dialog box has the following items and parameters:

ITEM/PARAMETER	VALUES	DESCRIPTION
Equipment Type	(not selected)	Displays the current NE type.
NE Name	(text field)	A name of NE should be set so that the ADMT support multi-language versions. The default is blank. Maximum charact- er number is 80.

4.4.1.6.2 Procedure: Retrieve NE Attribute

1 Confirm the **NE Attribute** dialog box shown in Fig. 4-4-13 is displayed.

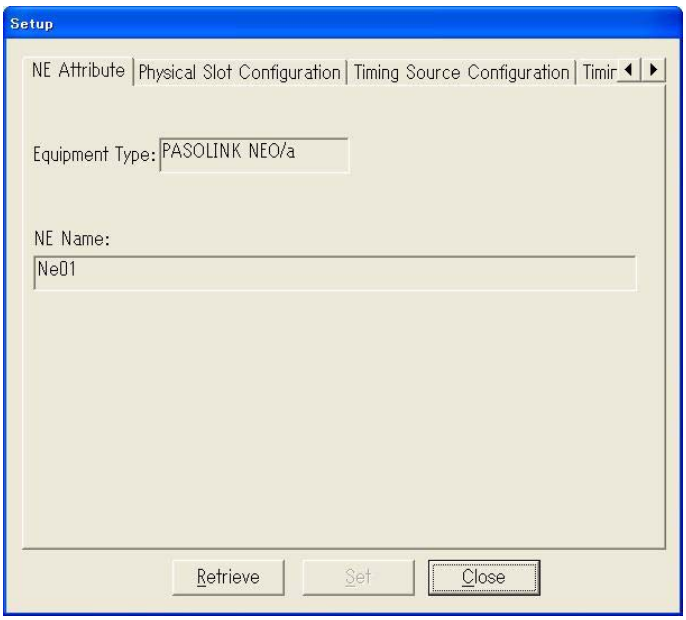


Fig. 4-4-13 Setup-NE Attributes Dialog Box

2 Click the **Retrieve** button to retrieve the **Equipment Type** and **NE Name**.

3 Click the **Close** button to quit the NE setup operation.

4.4.2 Package Protect Configuration

Package protect function refers to both CS card and RA card. The protect principle of RA card is similar as CS card, and the configuration procedure of both are the same. The below section will give an example to show the detailed procedure to set up CS card protect configuration for the equipment.

The package protect operation is performed by the **Package Protect Configuration** dialog box using the ADM Management Tool. Perform the following procedure:

1 Start up the ADM Management Tool, and login to the target NE.

2 Open the management dialog box of the target NE.

3 Select **Package Protect Configuration** from the **Configuration** menu to open the **Package Protect Configuration** dialog box. The **Package Protect Configuration** dialog box shown in Fig. 4-4-14 appears:

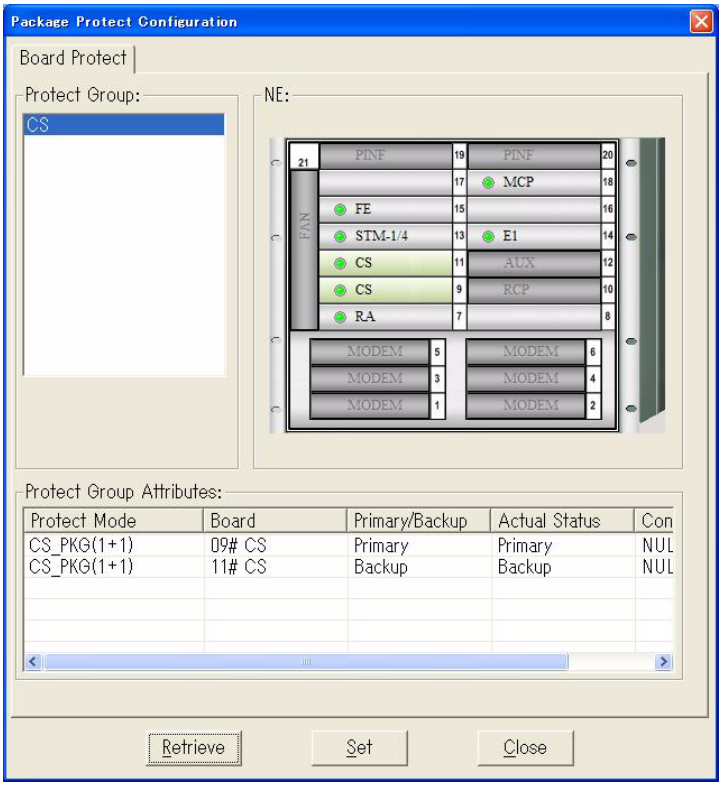


Fig. 4-4-14 Package Protect Configuration

4.4.2.1 Items and Parameters

4.4.2.1.1 CS Card Protect

The **Card Protect** dialog box has the following items and parameters:

ITEM/PARAMETER		VALUES	DESCRIPTION
Protect Group		CS_PKG(1+1)	Display the Protect Group.
Protect Group Attribute	Board	09# CS 11# CS	Display the slot number and card name.
	Primary/ Backup	Primary/Backup	Display the configuration of card: primary or backup.
	Actual Status	Primary/Backup	Display the actual status of card: primary or backup.
	Control Status	Forced switch/ Manual switch	Display CS package switch external command.
Switch Test		Switch to 09# slot	let the 09# slot as primary card
		Switch to 11# slot	let the 11# slot as primary card
External Command		Forced switch	When this check box is selected, the backup CS card is forcibly used as the primary card whether it has alarms or not.
		Manual switch	When this check box is selected, the backup CS card is used as the primary card if it has no alarms.

4.4.2.1.2 RA Card Protect

The **Card Protect** dialog box has the following items and parameters:

ITEM/PARAMETER		VALUES	DESCRIPTION
Protect Group		RA_PKG(1+1)	Display the Protect Group.
Protect Group Attribute	Board	07# RA 08# RA	Display the slot number and card name.
	Primary/ Backup	Primary/Backup	Display the configuration of card: primary or backup.
	Actual Status	Primary/Backup	Display the actual status of card: primary or backup.
	Control Status	Forced switch/ Manual switch	Display RA package switch external command.
External Command		Forced switch	When this check box is selected, the backup CS card is forcibly used as the primary card whether it has alarms or not.
		Manual switch	When this check box is selected, the backup CS card is used as the primary card if it has no alarms.

*Note: The **Forced switch** and **Manual switch** commands in the **Command** field are controlled by the software in the CS/RA card. When the software in the CS/RA card gets problem, these commands are unavailable. But Switch Test command is available as it is controlled by the software in the MCP.*

4.4.2.1.3 Procedure: Package Protect Configuration

1 Open the **Package protect configuration** dialog box as shown in ***Fig. 4-4-15***.

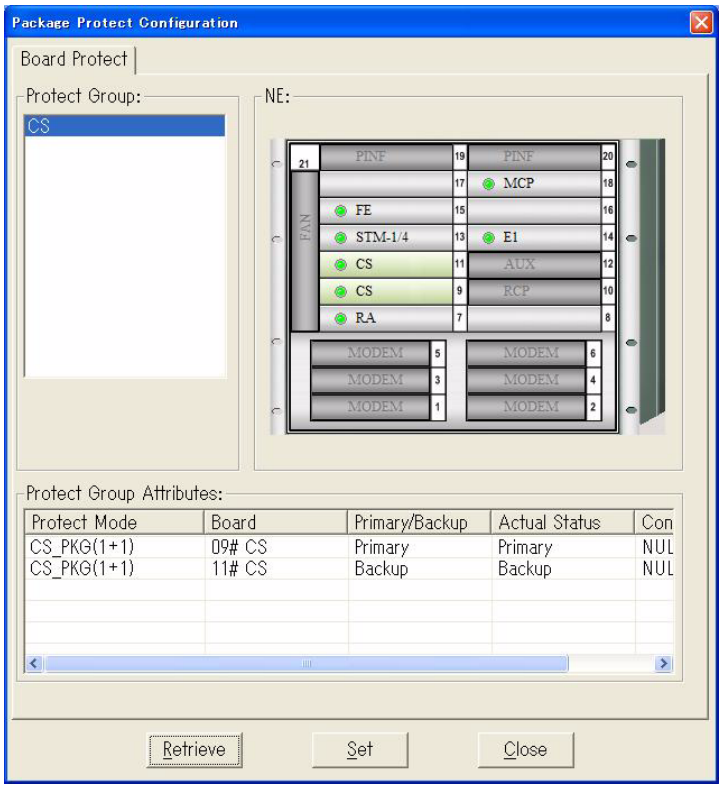


Fig. 4-4-15 Package Protect Configuration

2 Double click target row according to CS card needing to modify from **Protect Group Attributes**. Then there will pop-up the **Protect Attributes Configuration** window. It shown as bellow:

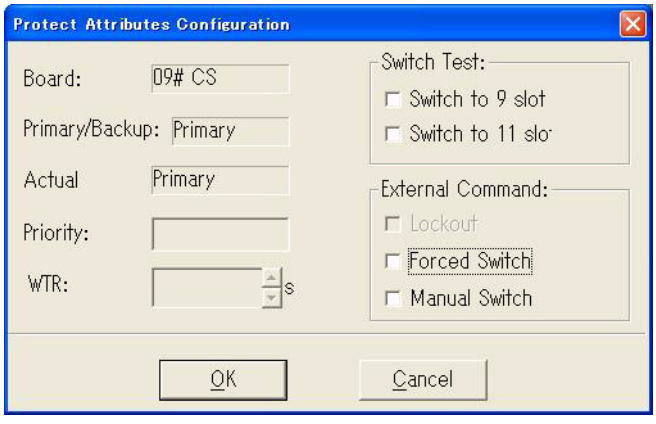


Fig. 4-4-16 The Protect Attributes Configuration of 9# CS

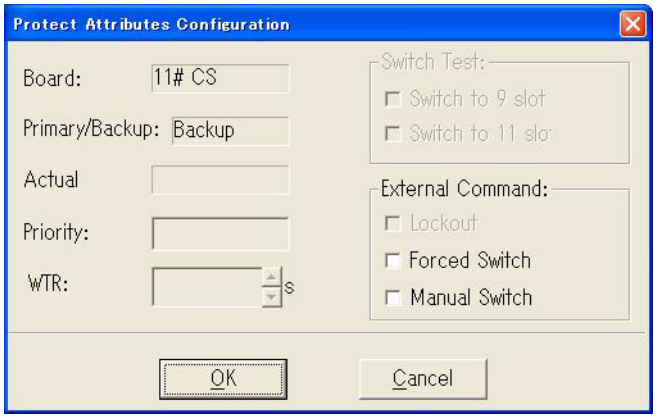


Fig. 4-4-17 The Protect Attributes Configuration of 11# CS

*Note: According to the **Fig. 4-4-16** and **Fig. 4-4-17**, the Switch Test function of the 9# CS card can be set, but this function of the 11# CS card cannot be set now.*

3 From Switch Test field, you can decide which CS card as the primary card and which as backup card.

4 If you want to change the status of target CS card, you can select three commands in list: **Force switch** and **Manual switch**.

5 Click **Set** button to send your setting to NE

6 After that **Maintain Status** menu will pop up, you should click **Set Declare** button to enable maintenance function and confirm the status is indicated as Maintenance Declare, the setting window shown as below:

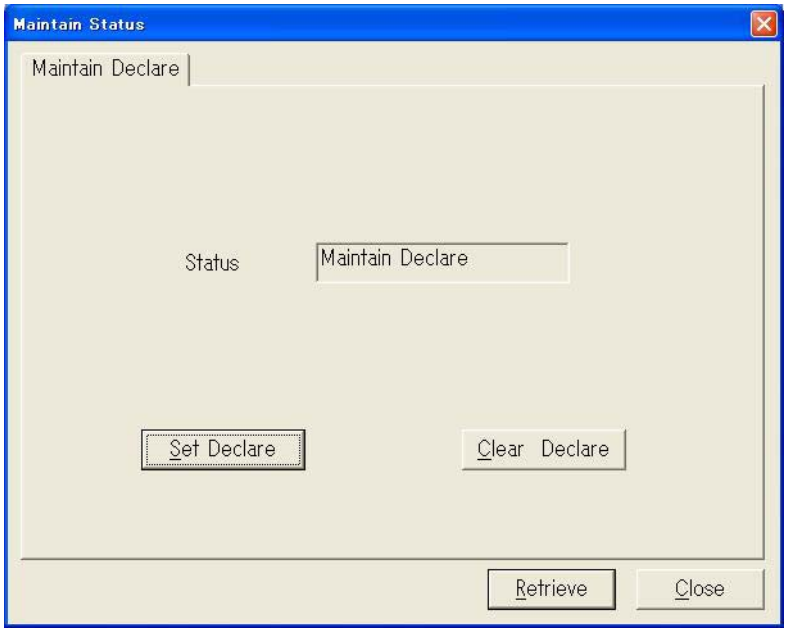


Fig. 4-4-18 Maintain Status Dialog Box

7 Click **Close** button to exit the Maintain Status window.

This step is the end of the procedure.

4.4.3 Set 2M EXT CLK Output

This section provides the procedures of output-clock port setup.

4.4.3.1 Items and Parameters

The **2M EXT CLK Output** dialog box has the following parameters:

ITEM/PARAMETER	DESCRIPTION	NOTE
Slot ID	Display slot ID of the selected slot.	*Only CS card available*
Port ID	Display port ID of the selected port.	*(not selected)*
SANBIT	Display SANBIT value of 2Mb/s port.	*(not selected)*
Output Status	Display the output status.	*(not selected)*
Timing Source Threshold	Display the squelch value.	*(not selected)*
Setting: SANBIT	A4-A8 in 2Mbps signal can be used as SANBIT.	*(drop-down list)*
Setting: Output Status	----	*(drop-down list)*
Setting: Squelch	----	*(drop-down list)*

4.4.3.2 Procedure: Set Output-Clock Port

To install new ports, perform the following procedure:

1 Open the management dialog box of the target NE.

2 From the main menu on the NE ADM Management Tool, select **Set Output-Clock Port** from the **Configuration** menu. The **2M EXT CLK Output** dialog box shown in ***Fig. 4-4-19*** appears:

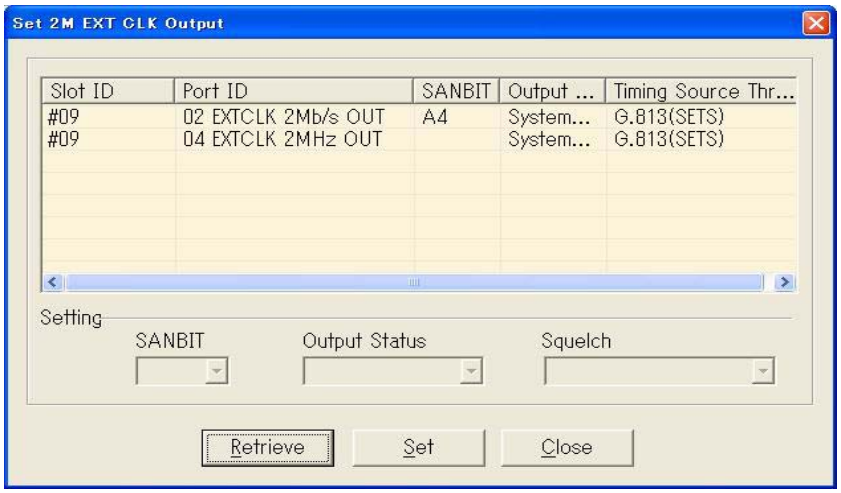


Fig. 4-4-19 2M EXT CLK Output Dialog Box

3 Click the **Retrieve** button to retrieve the current configuration information from NE.

4 Select the SANBIT from the **SANBIT** drop-down list.

5 Select the Output Status from the **Output Status** drop-down list.

6 Select the Timing Source Threshold from the **Squelch** drop-down list.

7 Click the **Set** button to send the data down to NE. The entered port will be displayed in the **Output Clock Port** list.

8 Click the **Close** button to complete the operation.

This step is the end of the procedure.

4.4.4 Setup MSP Configuration

This section provides the procedures of MSP configuration setup.

Creating a MSP is operated in the **MSP Group Configuration** and **MSP Configuration** dialog boxes by using ADM Management Tool.

Note: The MSP mode can be used by STM1o, STM1e or STM4o.

4.4.4.1 Items and Parameters

The **MSP Group Configuration** dialog box has the following parameters:

ITEM/PARAMETER	DESCRIPTION	NOTE
MSP Group ID	Display the existed MSP group ID	*(for retrieve)*
Protection Type	Select the protection type of MSP group.	*(drop-down list, SDH MS Linear 1+1 Protection, SDH MS Linear 1:1 Protection)*
Protect Attribute	Select the protection attribute of MSP group	*For SDH MS Linear 1+1 Protection, the protect attribute can only be set as Single/Double Port Protection and Support External Command.*
		For SDH MS Linear 1:1 Protection, the protect attribute can not be changed, it is set as Double Port Protect, Revertive and Support External Command.
MSP Level	Select MSP level	*(STM-1/STM-4)*

The **MSP Configuration** dialog box has the following parameters:

ITEM/PARAMETER	DESCRIPTION	NOTE
MSP Group ID	MSP group ID	*(auto-created according sequence)*
Protection Type	Protection type of MSP group.	*(selected in above MSP Group Configuration)*
Protection Attribute	Display protect attribute: Uni-Directional/Bi-Directional; Revertive/Non Revertive	(for retrieve)
Primary/Backup	Select work or protect for selected line interface	*(work or protect)*
Hold Off Time	It is the time between declaration of signal degrade or signal fail, and the initialization of the protection switching algorithm.	*In non revertive mode, fixed to 0(ms)*

ITEM/PARAMETER	DESCRIPTION	NOTE
WTR time	It is the time between failure cleared and traffic switch back.	*(Selected, the range from 60s to 720s)*
K1/K2 Received Value	K1/K2 received value	*(for retrieve)*
K1/K2 Transmitted Value	K1/K2 transmitted value	*(for retrieve)*
Primary Port Switch Command	Set extern switch command for primary port.	*(for retrieve)*
Backup Port Switch Command	Set extern switch command for backup port.	*(for retrieve)*
Status	Status of MSP	*(normal or switch)*
Switch	For extern command setup	*(radio)*

4.4.4.2 Procedure: Set MSP Configuration

To create a MSP, perform the following procedure:

1 Open the management dialog box of the target NE.

2 From the main menu on the ADM Management Tool, select **MSP Group Configuration** from the **Configuration** menu. The **MSP Group Configuration** window shown in ***Fig. 4-4-20*** appears:

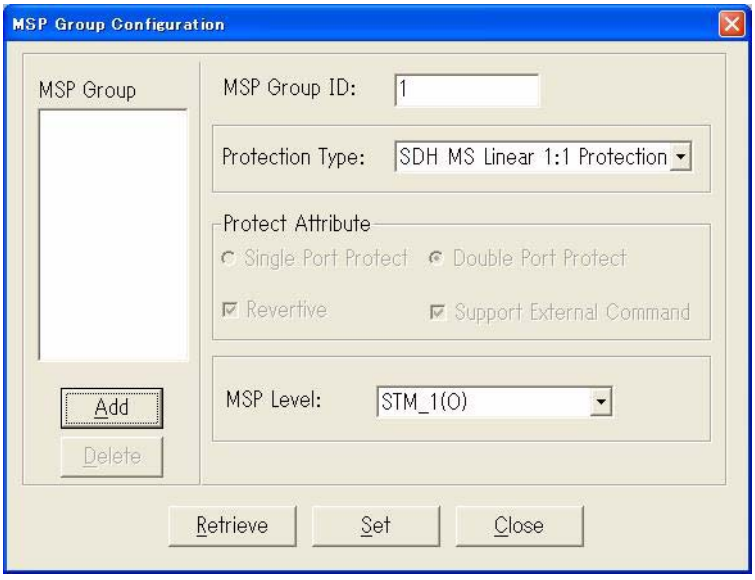


Fig. 4-4-20 MSP Group Configuration

3 Specify the MSP group ID into **MSP Group ID** text box.

4 Select the protection type (**SDH MS Linear 1+1 Protection / SDH MS Linear 1:1 Protection**) from the **Protection Type** drop down list box.

5 If you select **SDH MS Linear 1+1 Protection** as the protection type, the protect attribute can only be set as **Single/Double Port Protection** and **Support External Command**. And if you select **SDH MS Linear 1:1 Protection** as the protection type, the protection attribute can not be changed, it can only be set as **Double Port Protect, Revertive** and **Support External Command**.

6 Select line level from down drop list box **MSP Level.**

7 Click **Add** button, **MSP Configuration** window pops up shown in ***Fig. 4-4-20***:

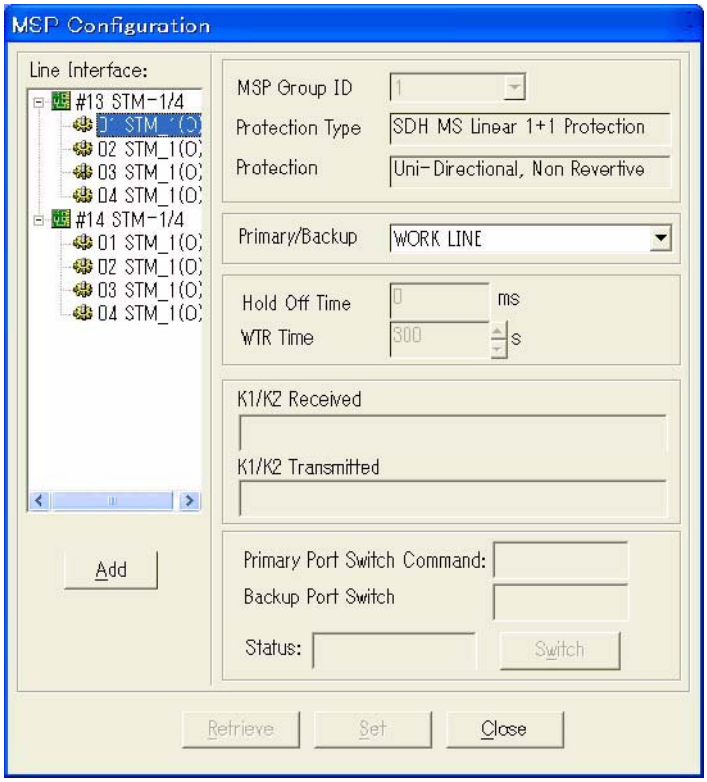


Fig. 4-4-21 MSP Configuration (1)

8 Select **WORK_LINE or PROTECT_LINE** from the drop down list box of **Primary/Backup**.

9 Click **Add** button, **MSP Configuration** window pops up shown in ***Fig. 4-4-22***.

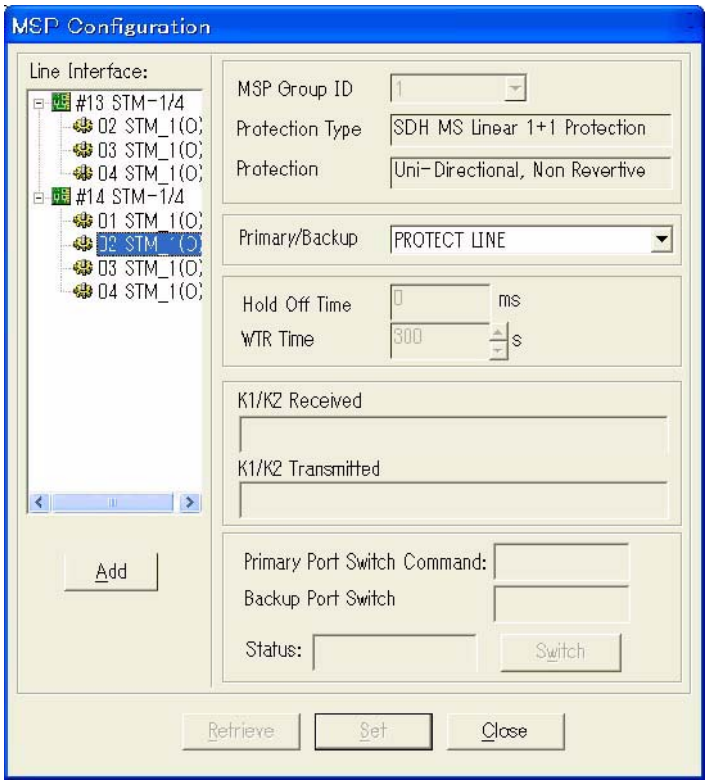


Fig. 4-4-22 MSP Configuration (2)

10 Click **Add** button, **MSP Configuration** window disappears with MSP creating.

This step is the end of the procedure.

4.4.4.3 Procedure: Set MSP Switch Status

This sub-section would give an example to describe the method of setting the switch status in **MSP Configuration** menu.

1 In **MSP Configuration** window, the read-only edit box **Status** shows the MSP status. If PASOLINK NEO/a works on working line, it shows **Normal** as in ***Fig. 4-4-23***:

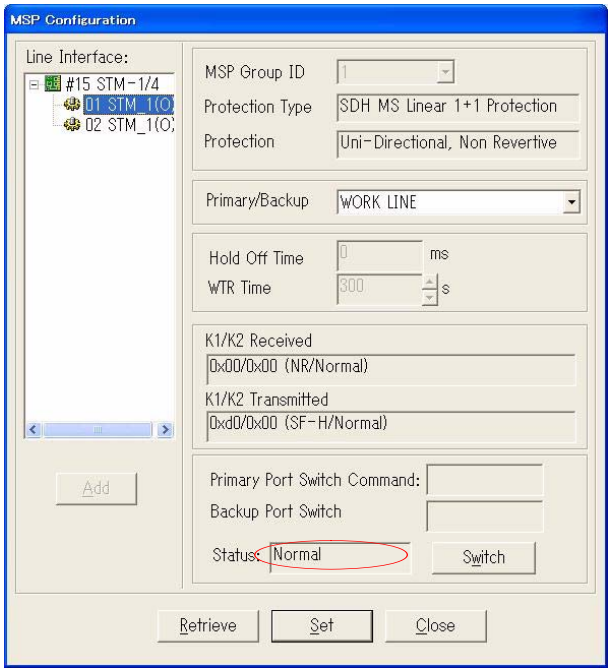


Fig. 4-4-23 MSP in Normal Status

2 Click **Switch** button, to select a extra command:

- **Lockout** - The line on which the command is set will be forbidden to use unconditionally. If the command (LKOP) is set on protection line, the traffic will be switched to work line unconditionally.

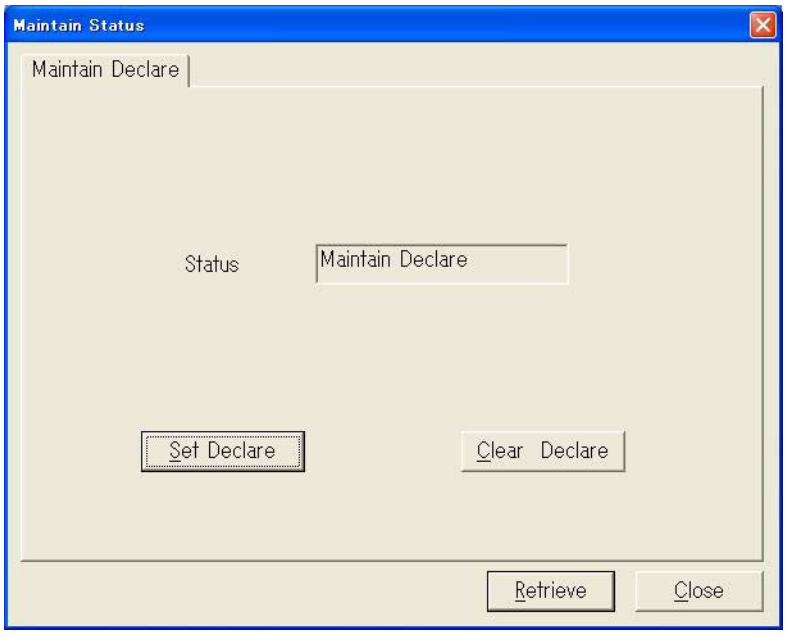
- **Forced Switch** - If the command is set on one line, the traffic will be switched to the other line unconditionally. If the command (FSP) is set on work line, the traffic will be switched to protection line unconditionally. If the command (FSW) is set on protection line, the traffic will be switched to work line unconditionally.

- **Manual Switch** - If the command is set on one line and the other line is in normal status, the traffic will be switched to the other line. If the command (MSP) is set on work line and protection line is in normal status, the traffic will be switched to protection line. If the command (MSW) is set on protection line and work line is in normal status, the traffic will be switched to work line.

  Note: If several commands are set in work and protection line at the same time, the command with the highest priority will be executed. The priority of the commands is shown below:

  LKOP >FSP>FSW>MSP>MSW>CLR

3 After that **Maintain Status** menu will pop up, you should click **Set Declare** button to enable maintenance function and confirm the status is indicated as Maintenance Declare, the setting window shown as below:



4 And then you can retrieve the working status from MSP Configuration dialog box, the detailed information shown as below figure:

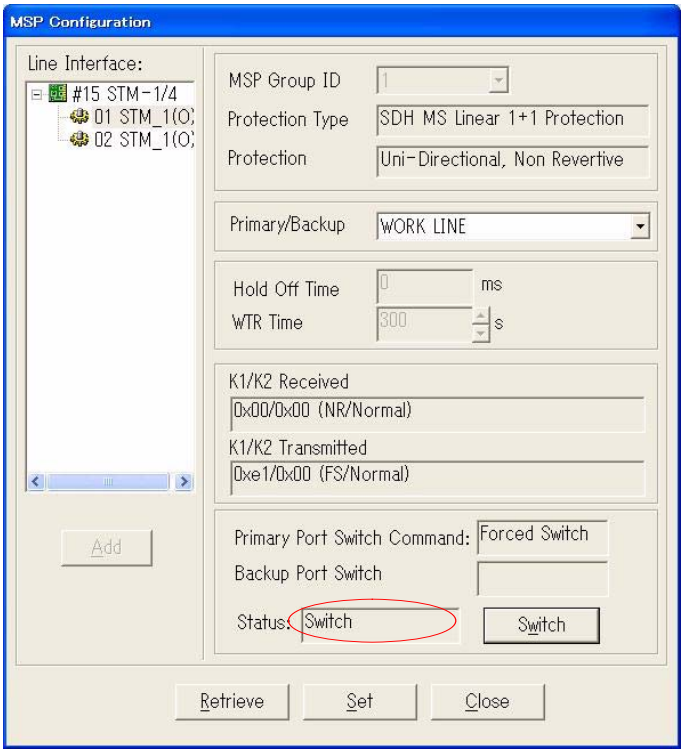


Fig. 4-4-24 MSP in Switch Status

4.4.4.4 Retrieve MSP Switch Status

ADM Management Tool provides two methods to check MSP switch status. Below description gives the detailed information of two methods.

4.4.4.4.1 Retrieve MSP Switch Status

1 Start up the ADM Management Tool, and login to the target NE.

2 Open the management dialog box of the target NE.

3 Open **MSP Configuration** sub-menu from **Configuration**.

4 In **MSP Configuration** window, the read-only edit box **Status** shows the MSP status.

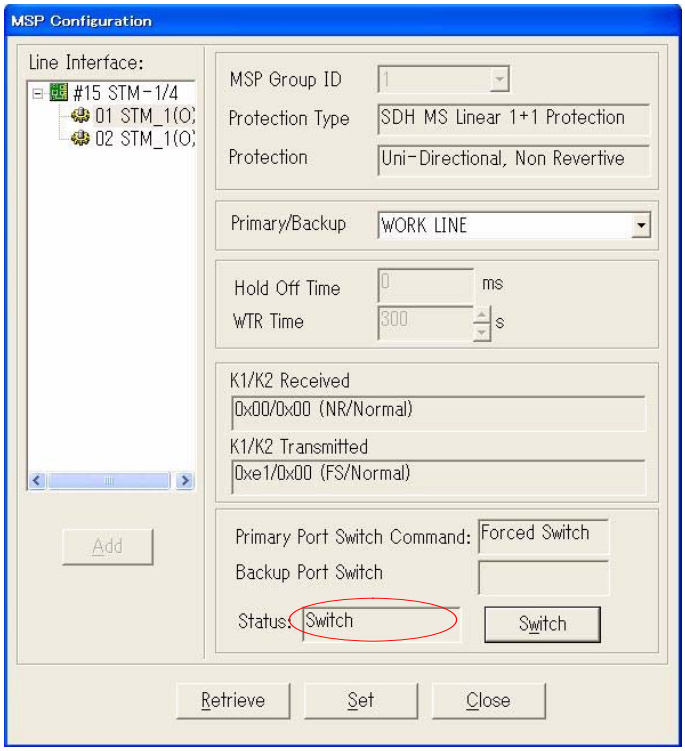


Fig. 4-4-25 MSP Switch Status

5 Click the **Retrieve** button to retrieve the current status from NE.

6 Click the **Close** button to complete the operation.

This step is the end of the procedure.

4.4.4.4.2 Retrieve MSP Switch Event

Perform the following procedure to monitor the MS protection switching conditions:

1 Start up the ADM Management Tool, and login to the target NE.

2 Open the management dialog box of the target NE.

3 Select **Event View** from the **Alarm** menu. The **Event View** dialog box appears.

4 Click the **MSP Event** tab. The window shown in ***Fig. 4-4-26*** appears:

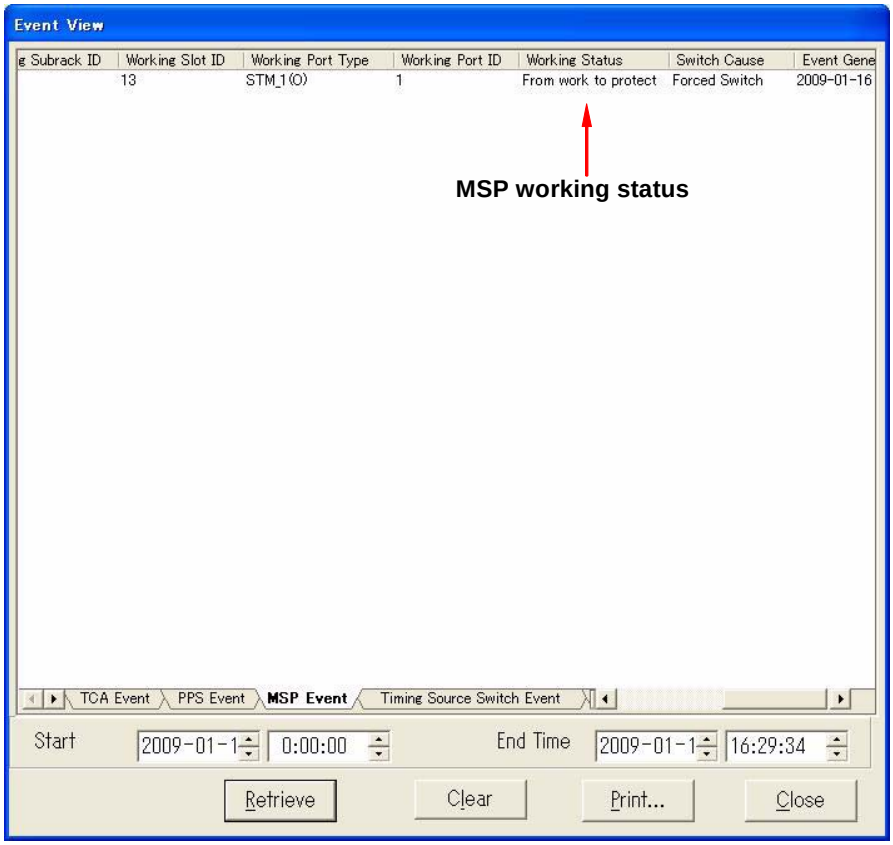


Fig. 4-4-26 Event View Dialog Box with MSP Event Tab

4.4.5 Setup OH Protection

This section provides the procedures of OH protect configuration setup.

4.4.5.1 Items and Parameters

The **OH Protect Configuration** dialog box has the following parameters:

ITEM/PARAMETER		VALUES	DESCRIPTION
OH Protect	DCCr	Check box	Enable the OH protection of DCCr Bytes
	DCCm	Check box	Enable the OH protection of DCCm Bytes
	E1	Check box	Enable the OH protection of E1 Byte
	E2	Check box	Enable the OH protection of E2 Byte
	F1	Check box	Enable the OH protection of F1 Byte

4.4.5.2 Procedure: Setup OH Protection

To setup OH protection, perform the following procedure:

1 Open the management dialog box of the target NE.

2 From the main menu on the ADM Management Tool, select **OH Protect Configuration** from the **Configuration** menu. The **OH Protect Configuration** dialog box shown in ***Fig. 4-4-27*** appears:

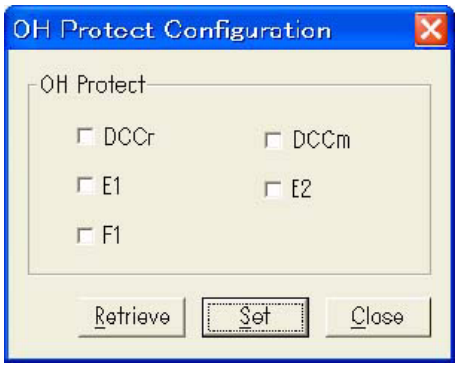


Fig. 4-4-27 OH Protect Configuration Dialog Box

3 Click the **Retrieve** button to retrieve the current OH protect configuration from NE.

4 Click **DCCr/DCCm/E1/E2/F1** check box to enable the relative protect function.

5 Click the **Set** button to send the data down to NE.

6 Click the **Close** button to complete the operation.

This step is the end of the procedure.

4.4.6 Setup Port Configuration

This section provides the procedures of port configuration setup.

Installation of a port is operated in the **Port Configuration** dialog box by using ADM Management Tool.

4.4.6.1 Items and Parameters

The **Port Configuration** dialog box has the following parameters:

ITEM/PARAMETER	DESCRIPTION	NOTE
Board	Select the card to be added for a port.	*(drop-down list)*
Port Kind	Display port type.	–
Port No.	Indicates the port number.	*(not selected)*
Installed Port Type	Display the actual port types identified by the ADM Management Tool.	*(not selected)*
Expected Port Type	Select the port types defined by a user.	*(Expected ports list)*
Status	Display the port status.	*(not selected)*
AutoSet	Match **Expected Port Type to Installed Port Type**	*button*

4.4.6.2 Procedure: Setup Port Configuration

To install a port, perform the following procedure:

1 Open the management dialog box of the target NE.

2 From the main menu on the ADM Management Tool, select **Port Configuration** from the **Configuration** menu. The **Port Configuration** dialog box shown in ***Fig. 4-4-28*** appears:

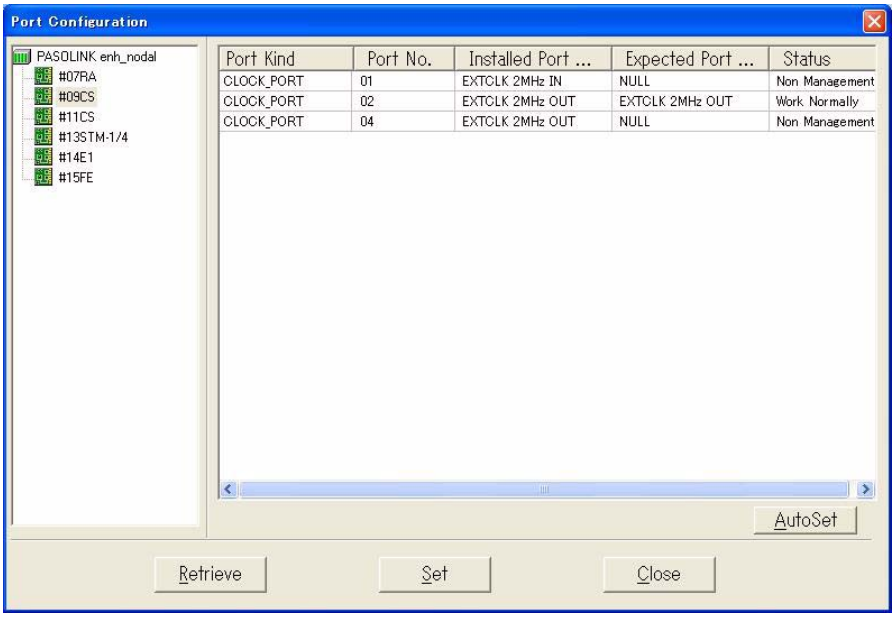


Fig. 4-4-28 Port Configuration Dialog Box

3 Click the **Retrieve** button to retrieve the current ports installation status from the NE.

4 Select the card from the left sub window. And then the right sub window would display all ports' configuration of selected card.

5 Click **AutoSet** button to match **Expected Port Type** to **Installed Port Type**.

6 If you want to set mismatch **Expected Port Type** to **Installed Port Type**, you can change **Expected Port Type** then click **set** button to send the setting to NE.

7 Click the **Close** button to complete the operation.

This step is the end of the procedure.

4.4.7 Setup Port Enable

This section provides the procedures of port configuration setup.

Installation of a port is operated in the **Setup Port Enable** dialog box by using ADM Management Tool.

4.4.7.1 Items and Parameters

The **Setup Port Enable** dialog box has the following parameters:

ITEM/PARAMETER	DESCRIPTION	NOTE
Port Number	Display port number	*(not selected)*
Port Type	Display port type	*(not selected)*
Activation Setting	Activate/Inactivate port	*(drop-down list)*
ReTiming	Turn off/Turn on retiming function	*(drop-down list)* *Note: Note:Only E1 board (supported ch1-ch8) and E1 ports of RA board support this function.*
Port Resistance	Display the port resistance	*(not selected)* *Note: Only E1 card supports this function*
PPI-AIS Detect	Enable or disable detecting PPI-AIS alarm by click the drop-down list	*(drop-down list)* *Note: Only E1 board and E1 ports of RA board support this function*
CH Usage Detect	Enable or disable detecting CH_Usage_error alarm by click the drop-down list	*(drop-down list)* *Note: Only E1 board supports this function*
LP-UNEQ Insert	Enable or disable inserting LP-UNEQ by click the drop-down list, when E1 has failure.	*(drop-down list)* *Note: Only E1 board and E1 ports of RA board support this function.*

4.4.7.2 Procedure: Setup Port Enable

To enable a port, perform the following procedure:

1 Open the management dialog box of the target NE.

2 From the main menu on the ADM Management Tool, select **Port Enable** item from the Configuration menu. The **Port Enable** dialog box shown in ***Fig. 4-4-29*** appears:

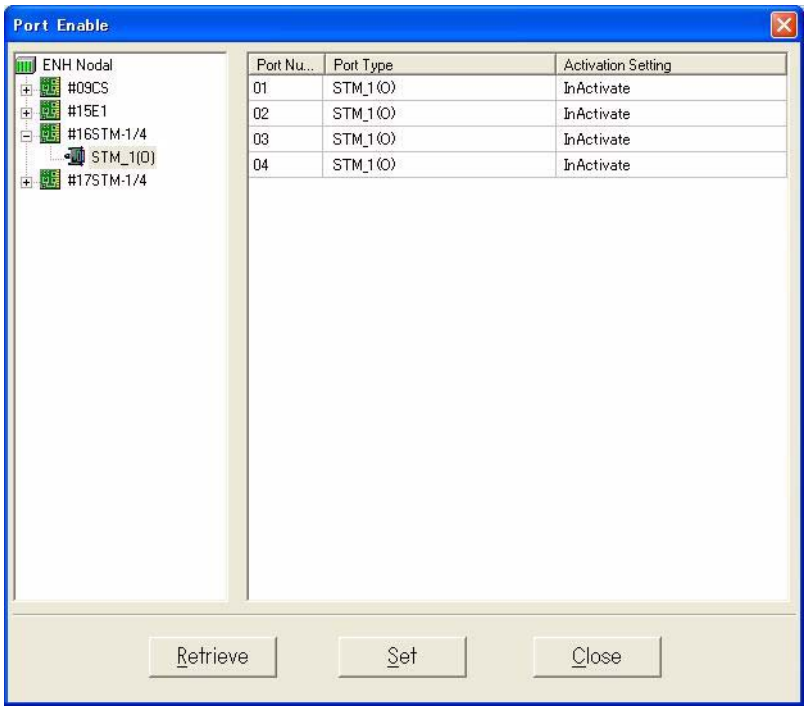


Fig. 4-4-29 Setup Port Enable

3 Click the **Retrieve** button to retrieve the installed port condition from the NE.

4 Select the port of target card from the left sub window. And then the right sub window displayed all ports' status of selected card.

Note: Retiming and port resistance functions only supported by E1 and E1 ports of RA.

5 If you want to change the activation setting, you should select activate/inactivate item from the drop-down list.

Note: If you want to enable or disable the retiming function, you should select enable/disable item from the retiming drop-down list.

6 Click the **set** button to send setting to NE.

7 Click the **Close** button to complete the operation.

This step is the end of the procedure.

4.4.8 Set Port Name

This section will show some details about the procedure of setting the port name. RA port name will be indicated on applicable windows on the PNMx.

4.4.8.1 Procedure: Change Port Name

1 Select **Set Port Name** from the **Configuration** menu. The **Set Port Name** dialog box shown in Fig. 4-4-30 below appears:

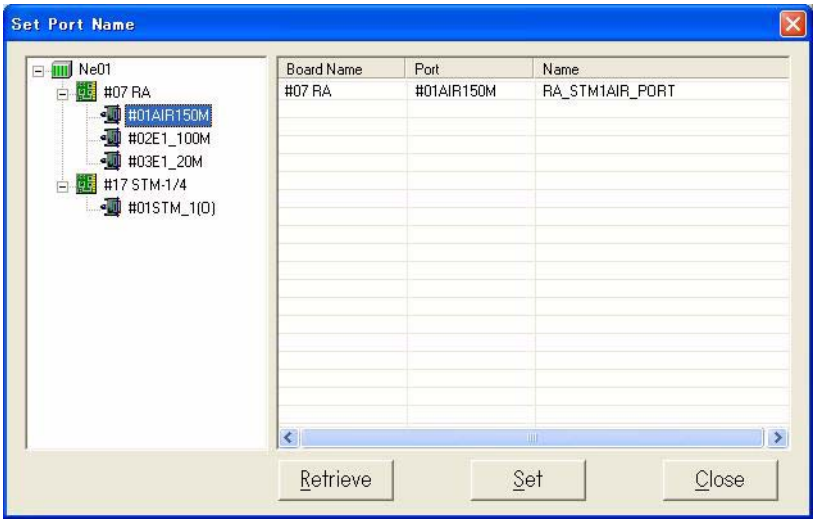


Fig. 4-4-30 Set Port Name Dialog Box

2 Unfold the tree structure in the left window.

3 Click a port which name should be modified in the right window.

4 Double-click a port in the screen. The **Name Definition** dialog box for the selected port appears.

Fig. 4-4-31 shows an example of **Name Definition** dialog box where **#01AIR150M Port** is selected:

Fig. 4-4-31 Name Definition Dialog Box

5 Enter a new port name in the **Name Definition** dialog box.

6 Confirm the entered name, and then click the **Set** button. The **Name Definition Dialog Box** will disappear.

NOTE:

*1) Clicking the **Close** button instead of the **Set** button closes the **Name Definition** dialog box, ignoring the modified setting.*

2) Port name can be up to 20 characters.

7 Confirm that the defined new name is set for the selected port in the **Set Port Name** dialog box.

8 Click the **Close** button on the **Set Port Name** dialog box to complete the port name setup.

This step is the end of the procedure.

4.4.9 Setup Trace Message

This section provides the procedures of trace message setup.

The trace message setup is operated in the **Set Trace Message** dialog box by using ADM Management Tool.

4.4.9.1 Items and Parameters

The **Set Trace Message** dialog box has the following items and parameters:

ITEM/PARAMETER	DESCRIPTION	NOTE
(list box)	Display the cards and ports of them.	Click to select.
Enable Trace Message	Enable or disable the trace message function.	(check box)
J Sending Value	Specify the sending value of J byte.	(text field) Up to 15-character length with any ASCII code.
J Expected Receiving Value	Specify the expected receiving Value of J byte.	
J Actual Receiving Value	Display the actual receiving Value of J byte.	(text field) See *Note* below.

Note: The actual receiving path signal identifier, C2/ V5, cannot be modified by users.

4.4.9.2 Procedure: Setup Trace Message

To setup the trace massage, perform the following procedure:

1 Open the management dialog box of the target NE.

2 From the main menu on the ADM Management Tool, select **Set Trace Message** from the **Configuration** menu. The **Set Trace Message** dialog box shown in ***Fig. 4-4-32*** appears:

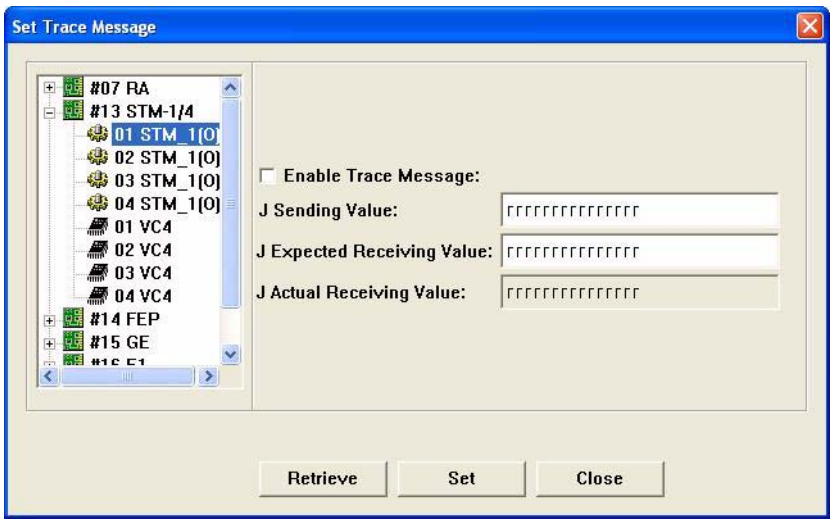


Fig. 4-4-32 Set Trace Message Dialog Box

3 Click the **Retrieve** button to retrieve the current configurations from NE.

4 Select the target port from the list box on the left of the dialog box.

5 Click the **Enable** Trace check box (leaving a tick) to enable trace message.

Note: When this check box is unselected, trace message is disabled.

6 Set J sending value and J expected receiving value in the corresponding text box on the right of the dialog box.

Note: The length input characters must be less than 16.

7 After completing the setting above, confirm the entered items. Then click the **Set** button to download the settings to NE.

8 Click the **Close** button to complete the trace message setup.

This step is the end of the procedure.

4.4.10 Laser Management

This section provides the procedures of Laser Management setup.

Installation of a port is operated in the **Laser Management** dialog box by using ADM Management Tool.

4.4.10.1 Attribute Setting

4.4.10.1.1Items and Parameters

The **Laser Management** dialog box has the following parameters:

ITEM/PARAMETER	DESCRIPTION	NOTE
Port	Display optical port	*(not selected)*
Protocol Setting	Selected protocol setting: Forced Open/ Auto Run/ Manual Run	*(drop-down list)*
Auto Activate Delay	Select auto activate delay time: 60s, 180s, 300s.	*(drop-down list)*
Short On Time	Select the laser automatically starting time: 2s/9s.	*(drop-down list)*
Force Shutdown	Display whether the laser be shutdown forcibly	*(not selected)*
Laser State	Display laser state	*(not selected)*
Laser Type	Display laser type	*(not selected)*

4.4.10.1.2Procedure: Laser Attribute Setting

To install a port, perform the following procedure:

1 Open the management dialog box of the target NE.

2 From the main menu on the ADM Management Tool, select **Laser Management** from the **Configuration** menu. The **Laser Management** dialog box with **Attribute Setting** tab selected appears shown in ***Fig. 4-4-33*** appears:

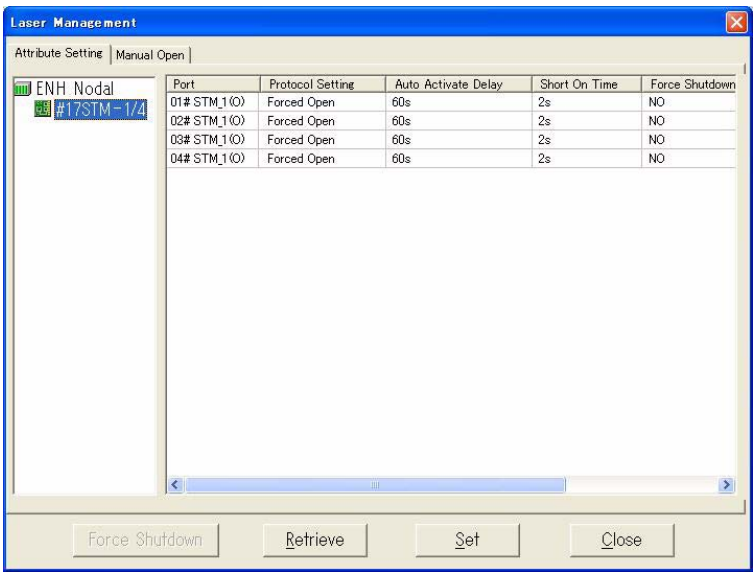


Fig. 4-4-33 Laser Attribute Setting

3 Click the **Retrieve** button to retrieve the current configurations from NE.

4 Select target card from the left sub window. Right sub window displayed all port laser attribute of selected card.

5 If you want to change **Protocol Setting**, you can select Forced Open/Auto Run/Manual Run state from drop-down list.

*Note: If you select Manual Run, you can refer to **4.4.10.2 Manual Open** to get more information for it.*

6 When you select the Auto Run protocol, the **Auto Activate Delay** time may be changed as 60s/180s/300s from drop-down list.

7 From **Short On Time** drop-down list, you can change the laser short starting time as 2s/9s.

8 Click the **Force Shuntdown** button to execute force shunt down

function.

Note: Force shunt down function only supported by Admin user.

9 Click the **Set** button to send setting to NE.

10 Click the **Close** button to complete the operation.

This step is the end of the procedure.

4.4.10.2 Manual Open

4.4.10.2.1Items and Parameters

The **Laser Management** dialog box has the following parameters:

ITEM/PARAMETER		DESCRIPTION	NOTE
Select		Select the row	(selected)
Slot		Display slot number and Package name.	(not selected)
Port		Display port number	(not selected)
Protocol Setting		Display protocol setting: Forced Open/ Forced Close/ Auto Run/ Manual Run	(not selected)
Auto Activate Delay		Display auto activate delay time:60s/180s/ 300s	(not selected)
Short On Time		Display the laser automatically starting time: 2s/9s.	(not selected)
Laser State		Display laser state: Open/Close	(not selected)
Manual Open Operation	**Manual Open (short time, 2s/9s)**	After you manual open the laser 2/9 seconds later, it will be closed automatically.	(selected)
	Manual Test Open (long time, 90s)	After you manual open the laser 90 seconds later, it will be closed automatically.	(selected)

4.4.10.2.2Procedure: Laser Manual Open

To install a port, perform the following procedure:

1 Open the management dialog box of the target NE.

2 From the main menu on the ADM Management Tool, select **Laser Management** from the **Configuration** menu. The **Laser Management** dialog box with **Manual Open** tab selected appears shown in ***Fig. 4-4-34*** appears:

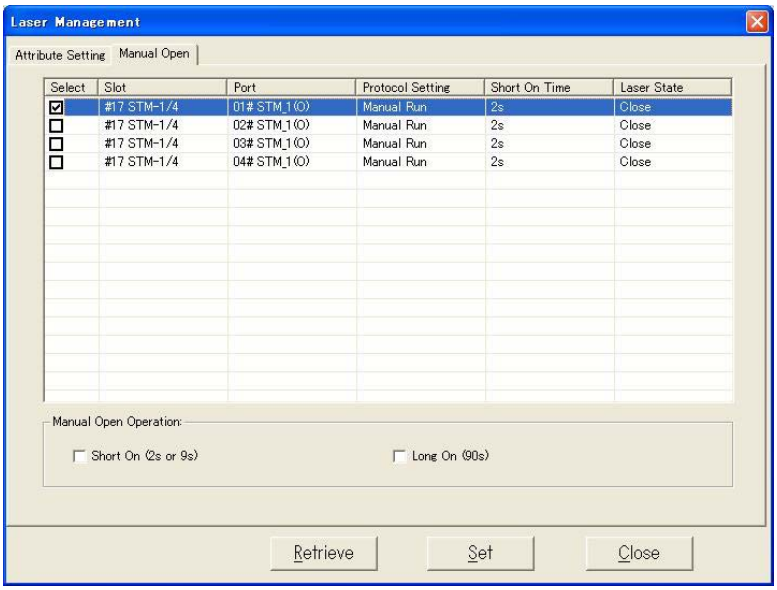


Fig. 4-4-34 Laser Manual Open

3 Click the **Retrieve** button to retrieve the current configurations from NE.

4 You can click **Short On (2s or 9s)** or **Long On (90s)** check box from **Manual Open Operation**.

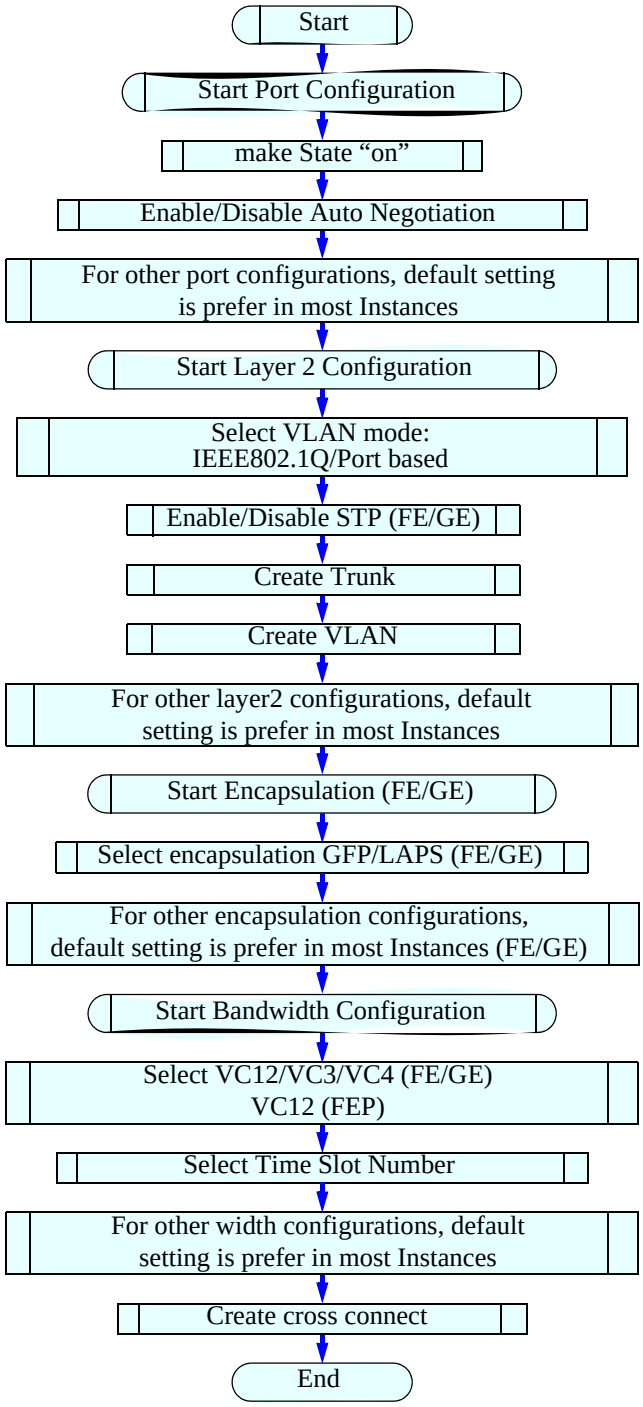
5 Click the **set** button to send setting to NE.

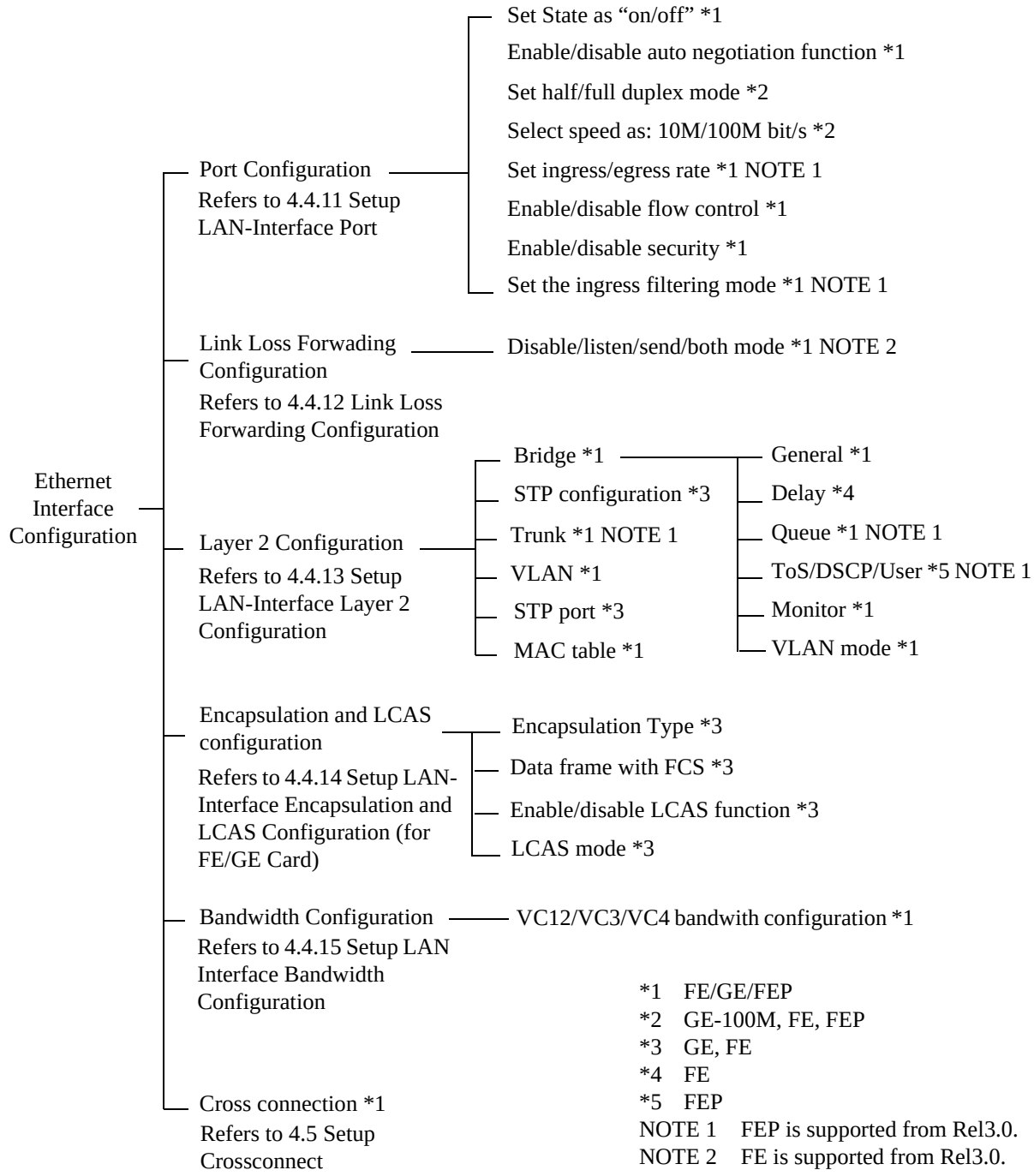
6 Click the **Close** button to complete the operation.

This step is the end of the procedure.

4.4.11 Setup LAN-Interface Port Configuration

The sections from ***4.4.11 Setup LAN-Interface Port Configuration*** to ***4.4.15 Setup LAN Interface Bandwidth Configuration*** provide the procedures to setup the LAN-Interface. Following chart gives the rough step. See corresponding sections for detail.





*1 FE/GE/FEP
*2 GE-100M, FE, FEP
*3 GE, FE
*4 FE
*5 FEP
NOTE 1 FEP is supported from Rel3.0.
NOTE 2 FE is supported from Rel3.0.

4.4.11.1 Parameters

- **LAN port**

PARAMETER	VALUE	GE 1G	GE 100M	FE	FEP	DESCRIPTION
State	**On/Off**	√	√	√	√	Set the LAN port status.
Auto Negotiation	**Enable/ Disable**	√	√	√	√	*Enable or disable the auto negotiation function.*
Duplex (Actual/set)	**Half/Full**	–	√	√	√	*Display actual working mode and setting mode of the port.* *NOTE: you just can set this parameter on FE LAN of FE/GE board; GE LAN of GE board can not be set.*
Speed (bit/s Actual/ set)	**10M/100M**	–	√	√	√	*Display actual working speed and setting speed of the port.* *NOTE: you just can set this parameter on FE LAN of FE/GE board; GE LAN of GE board can not be set.*
Ingress Rate (10Kbit/s)	**0, 200-10000**	–	–	√	–	*Limit the port in rate and the max rate is 10000 x 10Kbit/s.* *NOTE: 0 denotes not limit rate.*
Egress Rate (10Kbit/s)	**0, 200-10000**	–	–	√	–	*Limit the port out rate and the max rate is 10000 x 10Kbit/s* *NOTE: 0 denotes not limit rate.*
Ingress Rate (64Kbit/s)	**0, 32-1562**	–	–	–	√	*Limit the port in rate and the max rate is 1600 x 64Kbit/s.* *NOTE: 0 denotes not limit rate.* *(Rel 3.0 or later)*
Egress Rate (64Kbit/s)	**0, 32-1562**	–	–	–	√	*Limit the port out rate and the max rate is 1600 x 64Kbit/s.* *NOTE: 0 denotes not limit rate.* *(Rel 3.0 or later)*
Ingress Rate (64Kbit/s)	**0, 32-1600**	–	√	–	–	*Limit the port in rate and the max rate is 1600 x 64Kbit/s.* *NOTE: 0 denotes not limit rate.*
Egress Rate (64Kbit/s)	**0, 32-1600**	–	√	–	–	*Limit the port out rate and the max rate is 1600 x 64Kbit/s.* *NOTE: 0 denotes not limit rate.*
Ingress Rate (64Kbit/s)	**0, 32-16000**	√	–	–	–	*Limit the port in rate and the max rate is 16000 x 64Kbit/s.* *NOTE: 0 denotes not limit rate.*
Egress Rate (64Kbit/s)	**0, 32-16000**	√	–	–	–	*Limit the port out rate and the max rate is 16000 x 64Kbit/s.* *NOTE: 0 denotes not limit rate.*
Flow Control	**Enable/ Disable**	√	√	√	√	*Enable or disable the flow control function.*
Security	**Enable/ Disable**	√	√	√	√	*Enable or disable the port security function.*

PARAMETER	VALUE	GE 1G	GE 100M	FE	FEP	DESCRIPTION
Ingress Filtering	**Forward Matched VID/**	√	√	√	√	*Forward VID_matched, all untagged, VID=1 frames and priority tagged frames with VID=0. FEP is supported from Rel 3.0.*
	Drop Untagged Frame/	√	√	√	√	*Discard all untagged frames and priority tagged frames with VID=0, forward all other frames. FEP is supported from Rel 3.0.*
	Enable All/	√	√	√	√	*Discard all untagged frames and priority tagged frames with VID=0, forward VID_matched and VID=1 frames FEP is supported from Rel 3.0.*
	Disable All	√	√	√	√	*Forward all frames. NOTE: When VLAN Mode is Port Based, Ingress Filtering function is not applicable. FEP is supported from Rel 3.0.*
MDI/MDI-X	**Auto**	–	–	–	√	*AutoNego Enable; MDO/MDI-X is automatical selection.*
	MDI-X/ MDI	–	–	–	√	*AutoNego Disable; MDI-X/ MDI is manual selection.*

Notes: 1. When auto negotiation of local NE is enabled and auto negotiation of far end equipment is disabled or it does not support auto negotiation, local NE via auto negotiation works at "Half duplex" even if it is set as "Full duplex" working mode.

2. This function takes effect combining with MAC table function at L2SW. If it's enabled, the port does not forward any packets except that defined to forward in MAC table with source address being "MAC Address [DST]". If it's disabled, the port forward packets normally through address learning.

3. If 'Data Synchronization failure' is detected, the target data should be sent out again. If this operation fails repeatedly, check whether the Ethernet card works properly.

- **WAN port**

PARAMETER	VALUE	GE 1G	GE 100M	FE	FEP	DESCRIPTION
State	**On/Off**	√	√	√	√	Set the LAN port status.
Ingress Filtering	**Forward Matched VID/**	√	√	√	√	Forward VID_matched, all untagged, VID=1 frames and priority tagged frames with VID=0. FEP is supported from Rel 3.0.
	Drop Untagged Frame/	√	√	√	√	Discard all untagged frames and priority tagged frames with VID=0, forward all other frames. FEP is supported from Rel 3.0.
	Enable All/	√	√	√	√	Discard all untagged frames and priority tagged frames with VID=0, forward VID_matched and VID=1 frames. FEP is supported from Rel 3.0.
	Disable All	√	√	√	√	Forward all frames. NOTE: When VLAN Mode is Port Based, Ingress Filtering function is not applicable. FEP is supported from Rel 3.0.

4.4.11.2 Procedure: Setup Port Configuration

The LAN-Interface port setup operation is performed via the **Port Configuration** dialog box using the ADM Management Tool. Perform the following procedure:

1 Start up the ADM Management Tool, and login to the target NE.

2 Open the management dialog box of the target NE.

3 Select **LAN-Interface** from the **Ethernet Port Configuration** menu to open the **Ethernet Port Configuration** dialog box. The Ethernet Port Configuration dialog box shown in ***Fig. 4-4-35*** appears:

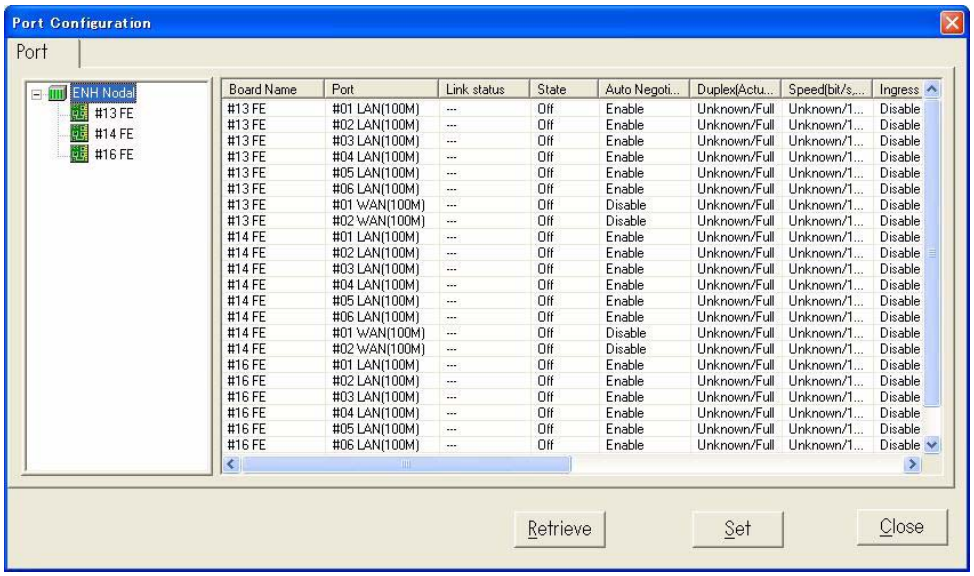


Fig. 4-4-35 Ethernet Port Configuration Dialog Box

Note: If a port has already belonged to a trunk, it can not be set individually, of cause, it can not be shown the setting individually.

4 Click the **Retrieve** button to retrieve the current configurations from NE.

5 Select one port by click then click **Set** button or double-click a port. The **Port Configuration** dialog box shown in ***Fig. 4-4-36*** to ***Fig. 4-4-39*** appears:

Notes: 1. State value should be "on" in order to make the port available.

2. The setting of ingress rate and egress rate must not exceed port speed. For example, you can not set the port speed as 10M, and set the ingress rate as 10000 (x 10Kbit/s).

3. In case of using Port base VLAN, Filter function doesn't be available.

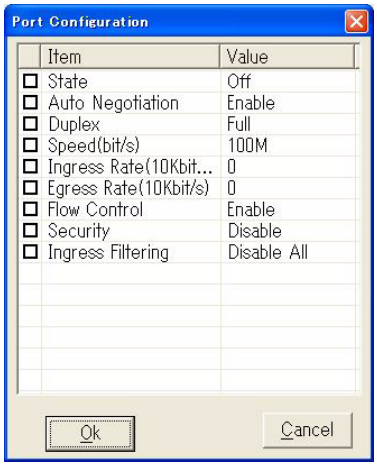


Fig. 4-4-36 LAN Port Configuration Dialog Box of FE

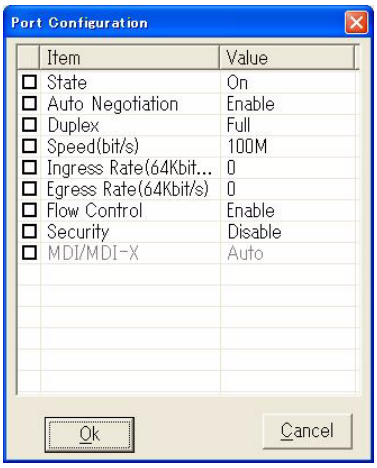


Fig. 4-4-37 LAN Port Configuration Dialog Box of FEP

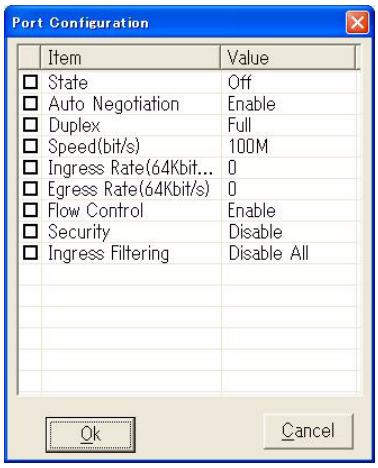


Fig. 4-4-38 LAN Port Configuration Dialog Box of GE

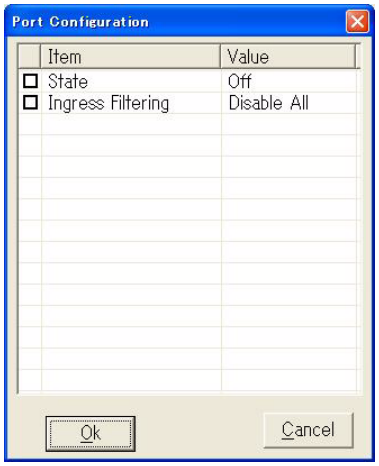


Fig. 4-4-39 WAN Port Configuration Dialog Box of FE & GE

6 Configure the parameters according to your need.

7 Click the **Ok** button to download the settings to NE.

8 Click the **Close** button to finish the LAN-Interface port setup.

This step is the end of the procedure.

4.4.12 Link Loss Forwarding Configuration

4.4.12.1 Parameter

PARAMETER	VALUE	GE	FE	FEP	DESCRIPTION
WAN Port	**WAN port number**	√	√	√	Display WAN port number. FE is supported from Rel 3.0.
Mode	**Display/**	√	√	√	Specify the action mode. FE is supported from Rel 3.0.
	Listen/	√	√	√	
	Send/	√	√	√	
	Both	√	√	√	
Port List	**—**	√	√	√	Display the useable LAN ports. FE is supported from Rel 3.0.
Member list	**(list)**	√	√	√	Display the LLF group member. FE is supported from Rel 3.0.

4.4.12.2 Procedure: Setup Link Loss Forwarding Configuration

1 Select **Link Loss Forwarding Configuration** item from **LAN-Interface** menu, the **Link Loss Forwarding Configuration** window shown as below:

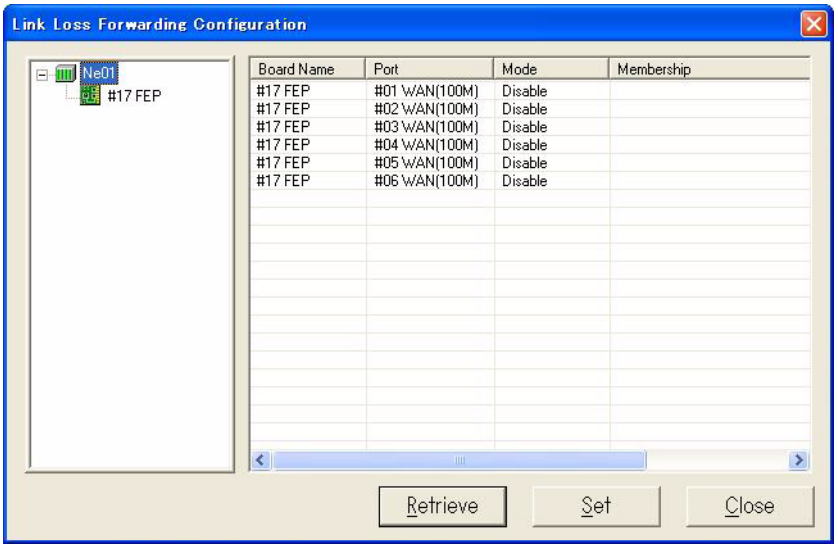


Fig. 4-4-40 Link Loss Forwarding Configuration

2 Select the target board from the left subwindow.

3 And then select the target WAN port from right subwindow.

4 Click **Set** button, the below window appears:

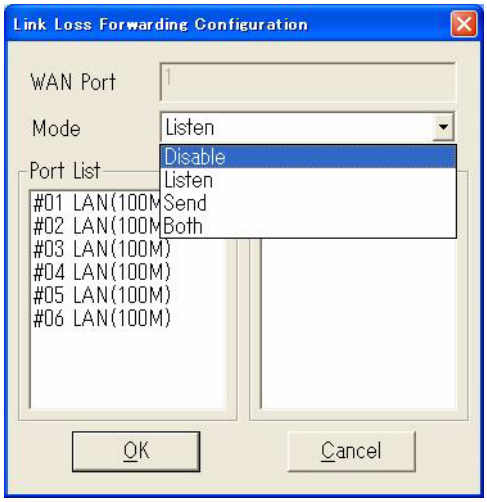


Fig. 4-4-41 Adding Trunk Window

5 Specify action mode: **Disable**/**Listen**/**Send**/**Both** by selected from the drop-down list.

6 Double-click the port from the **Port List** in left sub-window to add the port(s) into the **Member List**. Double-click the port from **Member List** in right sub-window to delete the port(s) into **Port List**.

7 Click the **OK** button to download the settings to NE.

8 Click the **Close** button to finish **Link Loss Forwarding Configuration** setup and exit the configuration of Layer 2.

This is the end of procedure.

4.4.13 Setup LAN-Interface Layer 2 Configuration

This section provides the procedure to set up the LAN-Interface layer 2 configuration for the equipment.

The LAN-Interface layer 2 setup operation is performed via the **Layer 2 Configuration** dialog box using the ADM Management Tool. Perform the following procedure:

1 Start up the ADM Management Tool, and login to the target NE.

2 Open the management dialog box of the target NE.

3 Select **Layer 2 Configuration** from the **LAN-Interface** menu to open the **Layer 2 Configuration** dialog box. The Layer 2 Configuration dialog box shown in ***Fig. 4-4-42*** appears:

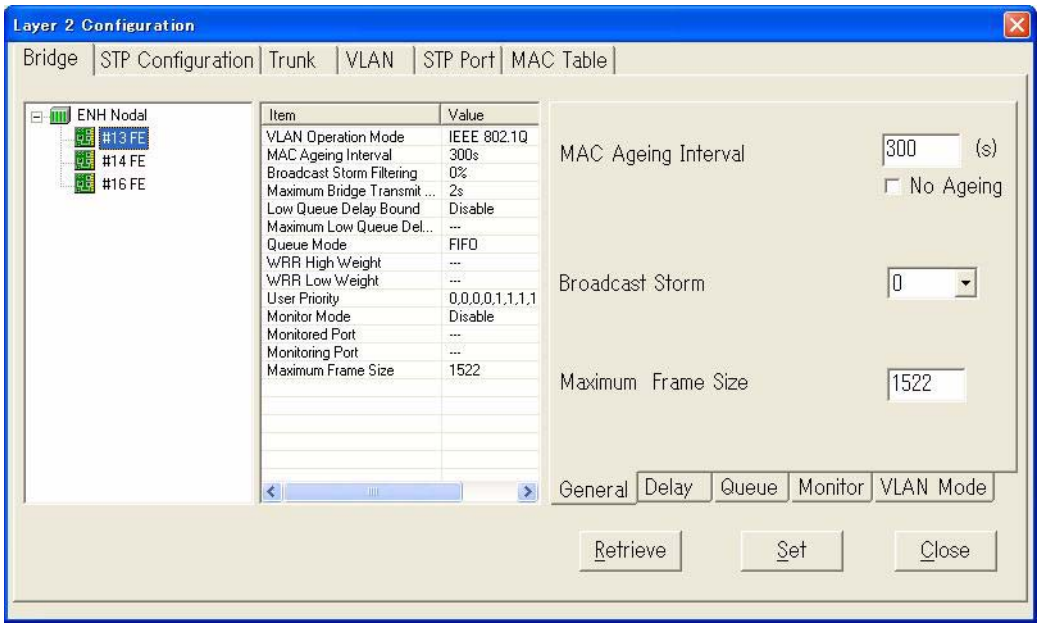


Fig. 4-4-42 Layer 2 Configuration Dialog Box

4.4.13.1 Bridge

4.4.13.1.1 Parameters

PARAMETER	VALUE	GE	FE	FEP	DESCRIPTION
VLAN Operation Mode	**Port based**	√	√	√	Set the VLAN Operation mode. Portbased is supported from Rel2.0/Rel2.5. FEP (IEEE 802.1Q) is supported from Rel 3.0.
	IEEE 802.1Q	√	√	√	
MAC Ageing Interval	**300 thru 765**	–	√	–	Set MAC Ageing time. No Ageing means: the MAC add- ress entry is not deleted for long time.
	10 thru 65535	√	–	√	
	or No Ageing	√	√	√	
Broadcast Storm Filtering	**0%**	–	√	–	Set Broadcast Storm Filtering. "0" denotes to disable broadcast storm filter. NOTE: This function is only used for FE board.
	5%	–	√	–	
	10%	–	√	–	
	15%	–	√	–	
	20%	–	√	–	
	25%	–	√	–	
Broadcast Traffic Rate	**0 thru 256000**	√	–	√	Set Broadcast Traffic Rate. NOTE: This function is only used for GE board. FEP is supported from Rel 3.0.
Multicast Traffic Rate	**0 thru 256000**	√	–	√	Set Multicast Traffic Rate. NOTE: This function is only used for GE board. FEP is supported from Rel 3.0.
DLF Packets Rate	**0 thru 256000**	√	–	√	Set DLF Packets Rate. NOTE: This function is only for GE board. FEP is supported from Rel 3.0.
Maximum Bridge Transmit Delay	**2**	–	√	–	It's used for a frame to set the maximum time of staying in the switcher. NOTE: This function is only for FE board. And the default value is fixed as 2 seconds and can't be changed.
Low Queue Delay Bound	**Enable**	–	√	–	The default value is Enable, and this value can't be changed. NOTE: This function is only for FE board.
Maximum Low Queue Delay Time	**510**	–	√	–	The default value is 510ms. And this value can't be changed. NOTE: This function is only for FE board.

PARAMETER	VALUE	GE	FE	FEP	DESCRIPTION
Queue Mode	**FIFO/**	√	√	√	Set Queue mode. FEP is supported from Rel 3.0.
	SP/	√	√	√	
	WRR	√	√	√	
Priority Mode	**COS**	–	–	√	Set Packet Priority mode if SP/WRR is Queue Mode. FEP is supported from Rel 3.0.
	Precedence	–	–	√	
	ToS	–	–	√	
	DSCP	–	–	√	
WRR High Weight	**1 thru 7**	–	√	–	Set high WRR Weight. NOTE: This function is only for FE board.
WRR Low Weight	**1 thru 7**	–	√	–	Set low WRR Weight. NOTE: This function is only for FE board.
WRR Weight	**1 thru 15**	√	–	√	Set WRR Weight. NOTE: This function is only for GE board. FEP is supported from Rel 3.0.
User Priority	**0 or 1 (FE)**	–	√	–	Set User priority. FEP is supported from Rel 3.0.
	0~7 (GE)	√	–	√	
Monitor Mode	**Disable/**	√	√	√	Define the status of Monitor Mode.
	Ingress/	√	√	√	
	Egress /	√	√	√	
	Both	√	√	√	
Monitored Port	**LAN&WAN port**	√	√	√	Set monitored port.
Monitoring Port	**LAN port**	√	√	√	Set monitoring port.
Maximum Frame Size	**9072 (FE-LAN& FE-WAN)** **9220 (GE-LAN& GE-WAN)**	√	–	–	Set Maximum frame size. NOTE: GE/FEP board doesn't support this function.
	1522 thru 1568	–	√	–	
	1916	–	–	√	

4.4.13.1.2 Procedure: Setup Bridge Configuration

1 See ***Fig. 4-4-42***, select **Bridge** attribute page on the top of window.

2 Click the **Retrieve** button to retrieve the current configurations from NE.

3 In order to set the **VLAN Mode**, select **VLAN** in the bottom of window. ***Fig. 4-4-43*** appears. Select **Port based** or **IEEE 802.1Q** in **VLAN Operation Mode** drop down box according to the requirement.

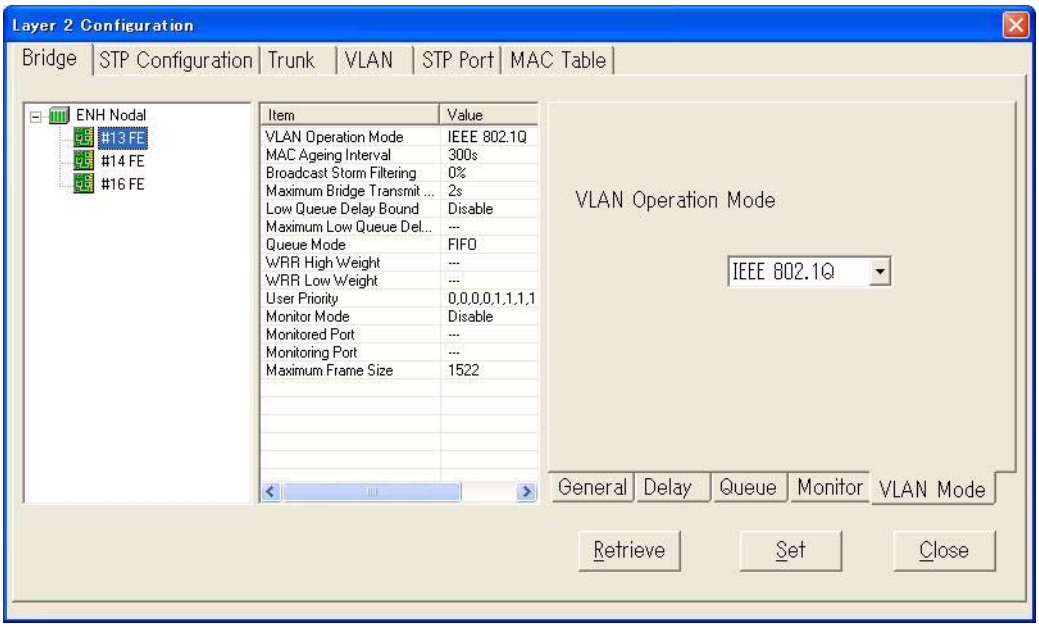


Fig. 4-4-43 VLAN Operation Mode Setting

Note: Exclude default VLAN (VLAN1), if any VLAN exist, you must not change VLAN mode before delete the VLAN.

4 In order to set the **MAC Ageing Interval**, **Broadcast Storm Filtering** and **Maximum Frame Size,** select **General** tab in the bottom of window. ***Fig. 4-4-42*** appears.

1) For FE board, you can input a number within 300 through 765 into MAC Ageing Interval text edit box. System will delete a MAC address route in route table if the MAC address does not renew in the course of MAC Ageing Interval set. For FEP/GE board, the principle is the same as FE board. However, the range of interval time is from 10 to 65535s.

2) For FE board, you can select one item from 0, 5%, 10%, 15%, 20% and 25% in Broadcast Storm Filtering drop down box. It's preferred to enable broadcast storm filter function in a network with many broadcast frames transmitting. And when configure the GE board, you should specify the broadcast traffic rate, multicast traffic rate and DLF packets rate in Broadcast Traffic Rate, Multicast Traffic Rata and DLF Packets Rate text box respectively.

3) For FEP board, the basic principle of the Broadcast Storm Filter functions is similar as FE board. However the filtering function of FEP board is more exact than FE board, the filter condition of FE board is based on rate (the rate between the data flux of the broadcast frame and the overall data flux or the rate between the ingress data and the egress data), the FEP filter condition is based on PPS (packages per second) that means one port can only received a certain number of broadcast frames (that includes Ethernet broadcast traffic, multicast traffic, and the DLF traffic) per second, while the flux of the data frames exceeds the threshold specified by user, the switch chip will discard the redundant data frames to relieve the flux of the data frame and increase the effective network bandwidth.

4) For setting Maximum Frame Size, input a number within 1522 through 1568. Maximum Frame Size text edit box. It's used to set the maximum frame length that system can deal with.

NOTE:FEP/GE board doesn't support Maximum Frame Size function.

5 Select **Delay** in the bottom of the window. ***Fig. 4-4-44*** appears, you will find the value of **Maximum Bridge Transmit Delay**, **Low Queue Delay Bound** and **Maximum Low Queue Delay**. These parameters can't be changed. The default value of **Maximum Bridge Transmit Delay** is 2s, and the value of **Low Queue Delay Bound** is Enable, and the value of **Maximum Low Queue Delay** is 510ms (FE card only).

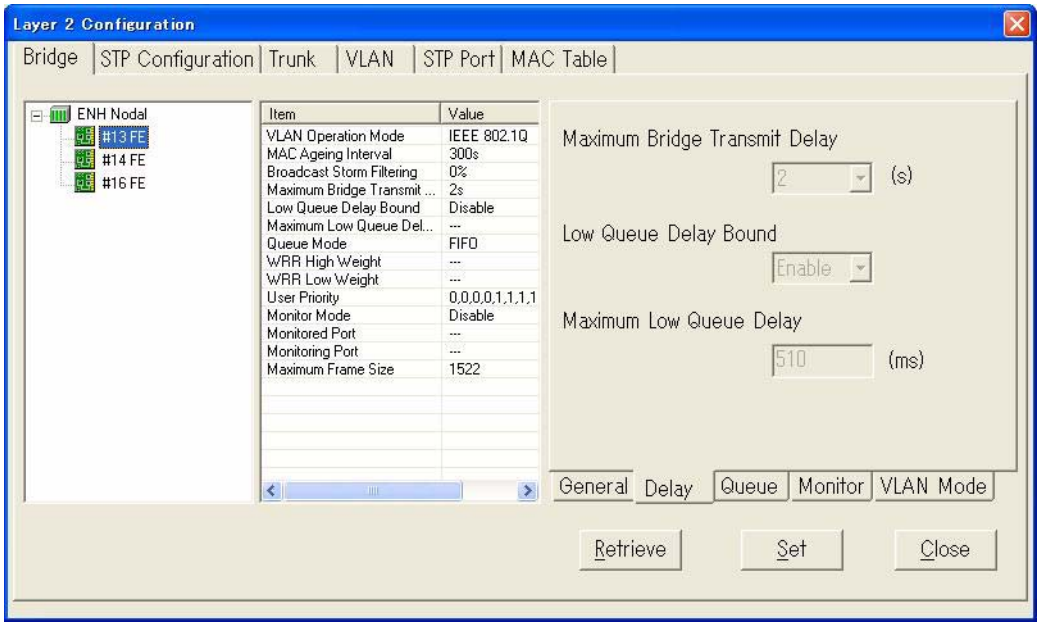


Fig. 4-4-44 Delay Setting

6 In order to set the **Queue Mode**, **WRR Weight** and **User Priority**, select **Queue** tab in the bottom of window. For setting **Queue Mode**, specify the queue mode from **FIFO, SP** and **WRR** in **Queue Mode** drop down box.

1) For FE/GE board

i When **FIFO** is selected, the order of queue ingress and egress is FIFO (first in first out), namely ignoring queue priority. The window is shown in ***Fig. 4-4-45***.

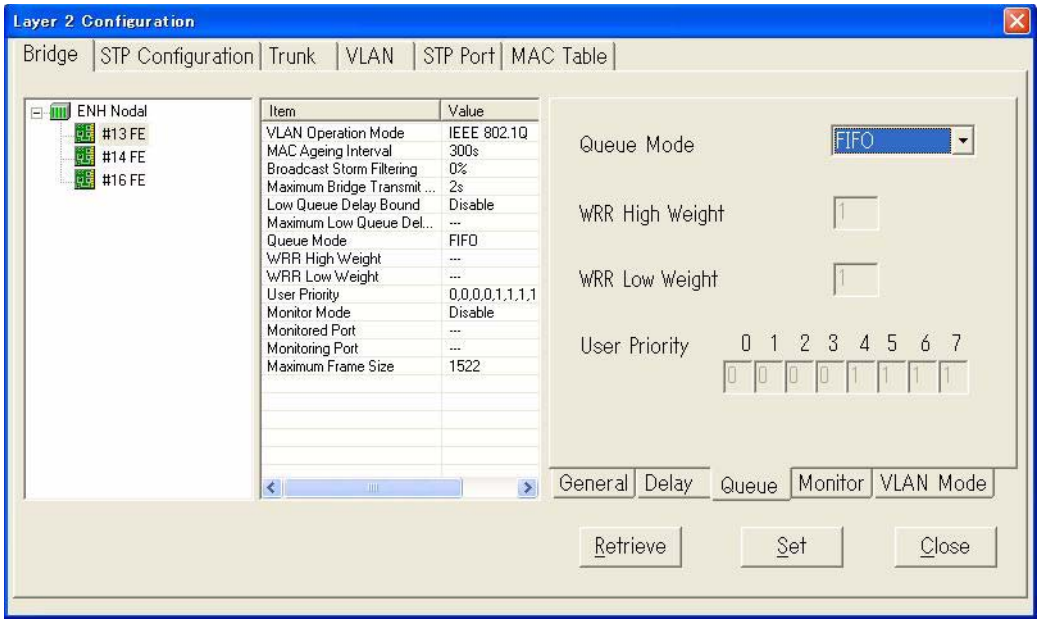


Fig. 4-4-45 FIFO Selection (FE Card)

ii When SP is selected, the order of queue ingress and egress is decided by its priority, namely it is only after all the queues with higher priority are sent out that the queues with lower priority begin to be sent out. The window is shown in Fig. 4-4-46. For FE board, in the figure User Priority of 8 (0-7) kinds of frames may be set as 0 (low user priority) or 1 (high user priority). And for GE board, in the figure User Priority of 8 (0-7) kinds of frames may be set as 0 (low user priority) or 7 (high user priority).

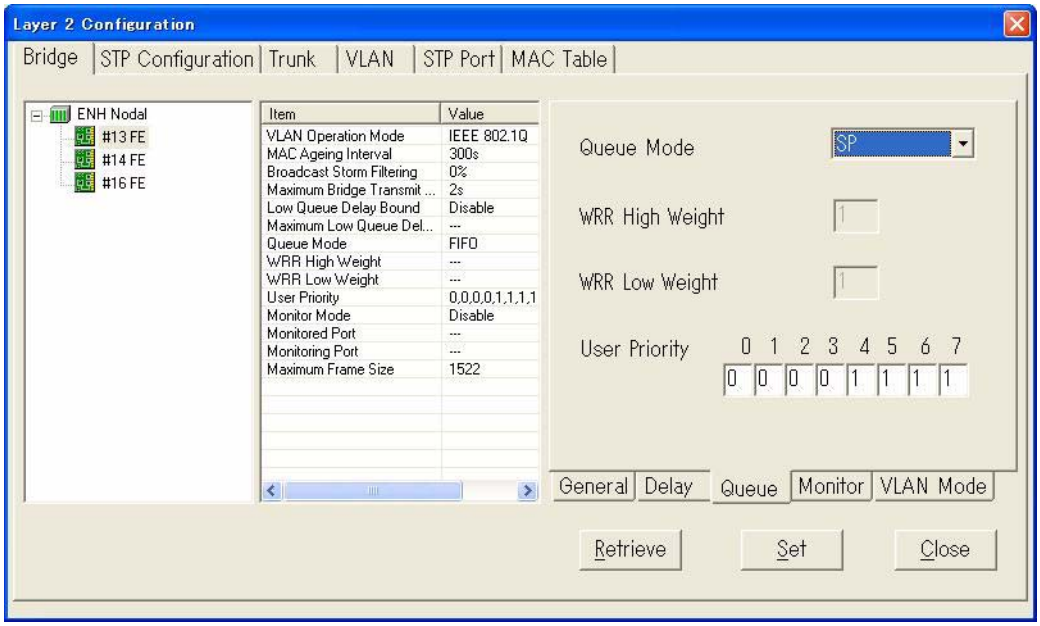


Fig. 4-4-46 SP Selection (FE Card)

iii WRR Configuration:

- For FE card, the order of queue ingress and egress is decided by its priority and "weight". The weight may be rough regarded as the bandwidth possessed by high priority or low priority. The larger value of the weight, the more the bandwidth possesses. The window is shown in ***Fig. 4-4-47***. In the figure **User Priority** setting is same to that of ***Fig. 4-4-46***. **WRR High Weight** and **WRR Low Weight** may be set a value from 1 to 7 to specify package speed ratio of high user priority (1) and low user priority (0).

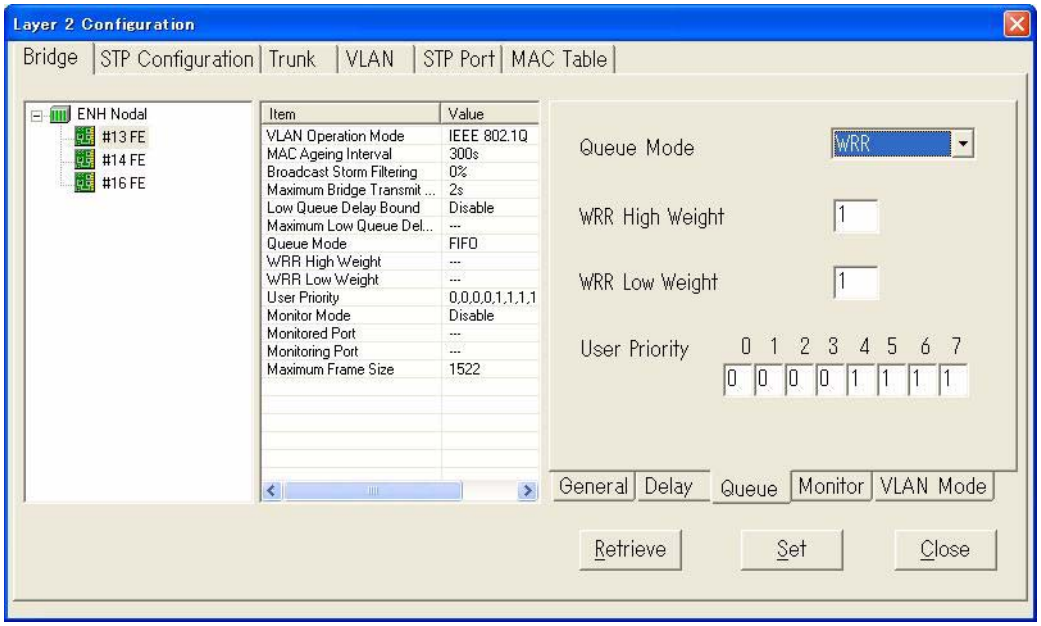


Fig. 4-4-47 WRR Selection (FE card)

Note: If you want to set 'High Priority Weight' or 'Low Priority Weight', you must set 'Queue Mode' to WRR.

- For GE board, the order of queue ingress and egress is decided by its priority and "weight". The bandwidth of each queue is assigned by the configured priority weight. The larger value of the weight, the more the bandwidth possesses. The window is shown in Fig. 4-4-48. In the figure User Priority setting is same to that of Fig. 4-4-47. WRR Weight may be set a value from 1 to 15 to specify package speed ratio of low user priority (0) to high user priority (7).

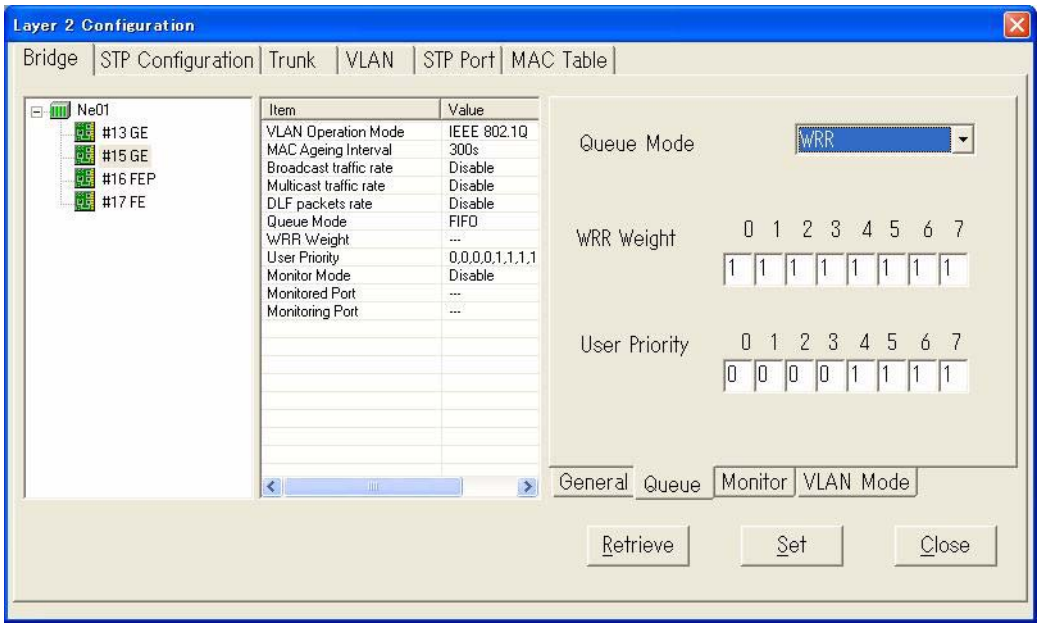


Fig. 4-4-48 WRR Selection (GE card)

Note: This function is only used for GE board.

2) FEP Card

- If Queue Mode is SP or WRR, select "Priority Mode".

i FIFO

- Set using procedure 1) For FE/GE board ***i***.
  Screen of FEP is shown below.

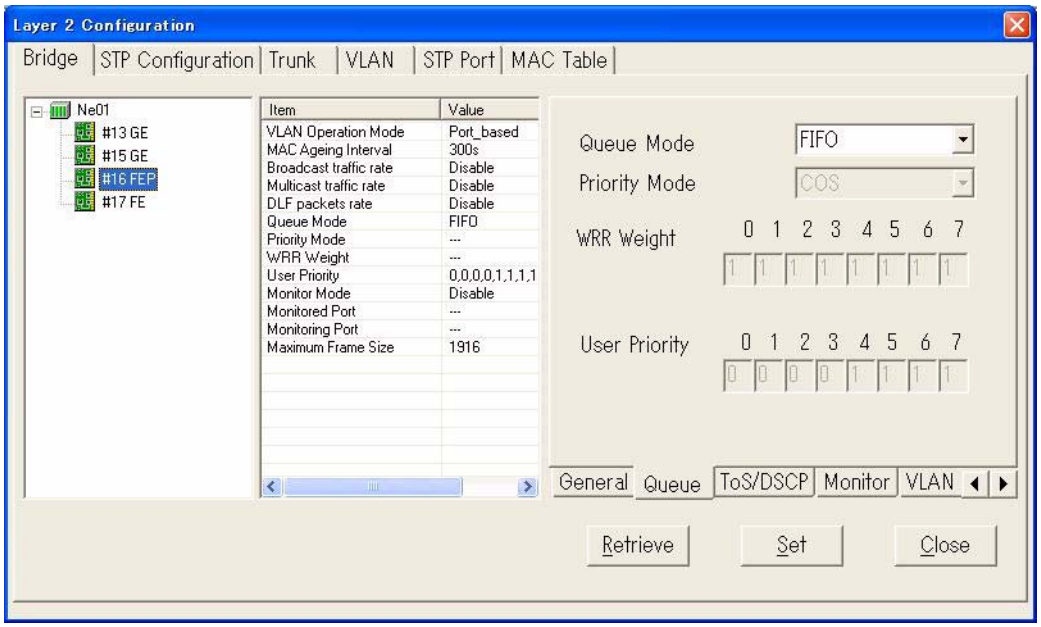


Fig. 4-4-49 FIFO Selection (FEP board)

ii Queue mode (SP)

- If Priority Mode is COS, set "User Priority".

  The screen is shown below. See procedure 1) For FE/GE board ***ii*** GE portion for setting.

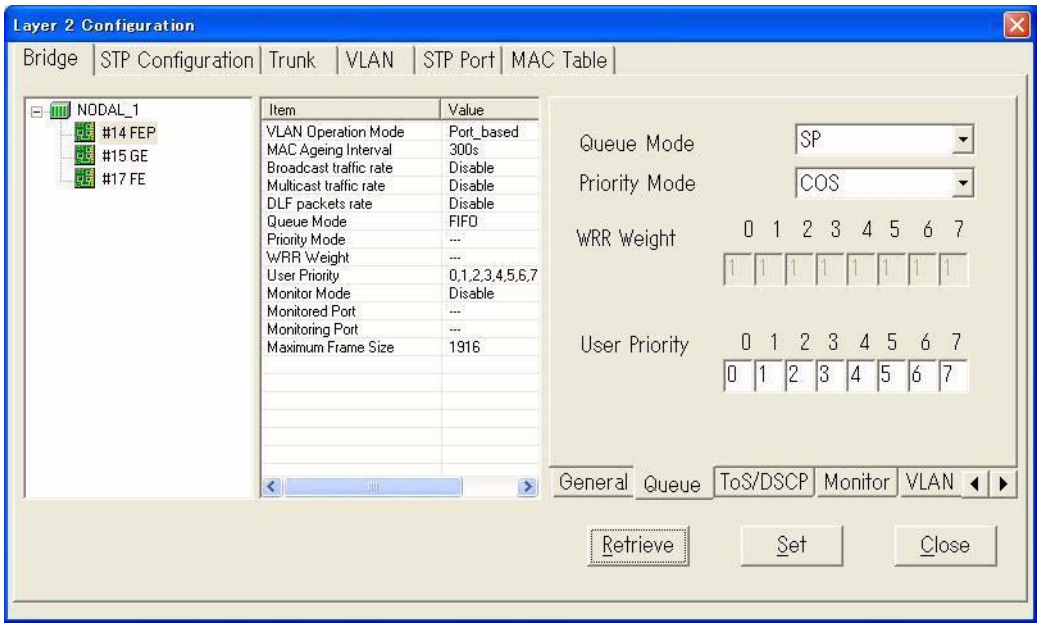


Fig. 4-4-50 SP-COS Selection (FEP board)

- If Priority Mode is Precedence, set "User Priority".

  The screen is shown below. See procedure 1) For FE/GE board ***ii*** GE portion for setting.

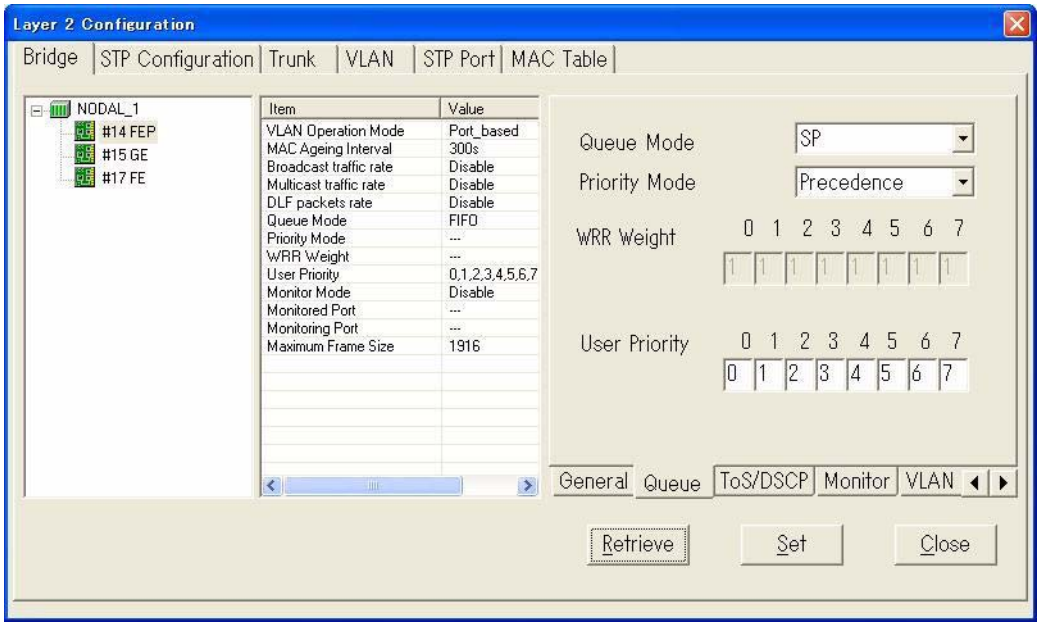


Fig. 4-4-51 SP-Precedence Selection (FEP board)

- If Priority Mode is Tos, set "User Priority" at Tos/DSCP sheet.

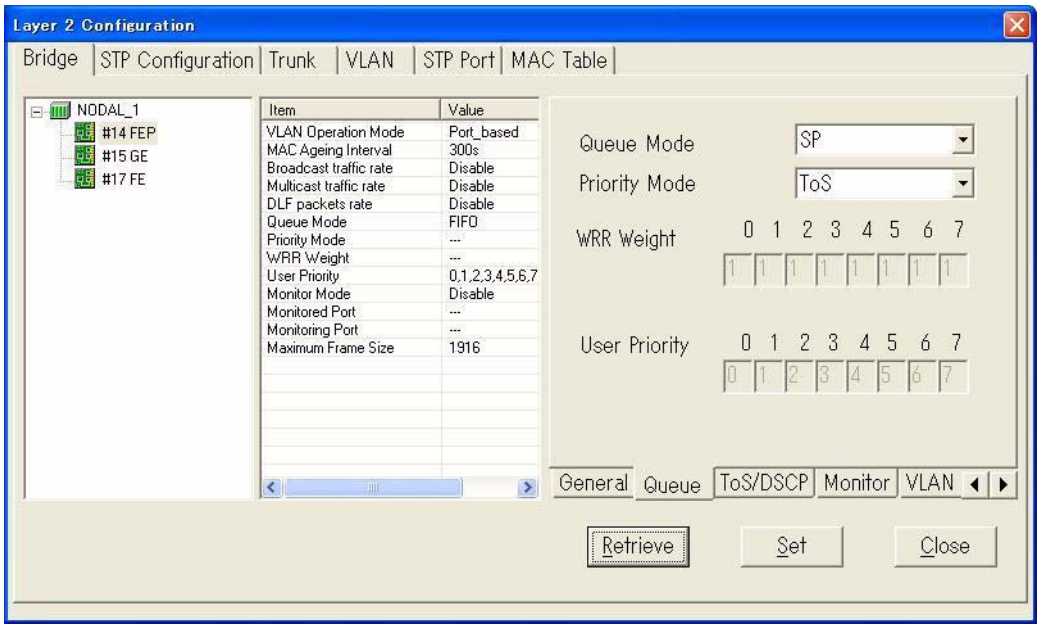


Fig. 4-4-52 SP-Tos Selection (FEP board)

The screen of ToS/DCSP sheet is shown below. If Priority Mode is ToS, User Priority, from 0 (Lowest user Priority) to 7 (Highest user Priority), should be set to 16(0-15) Frames.

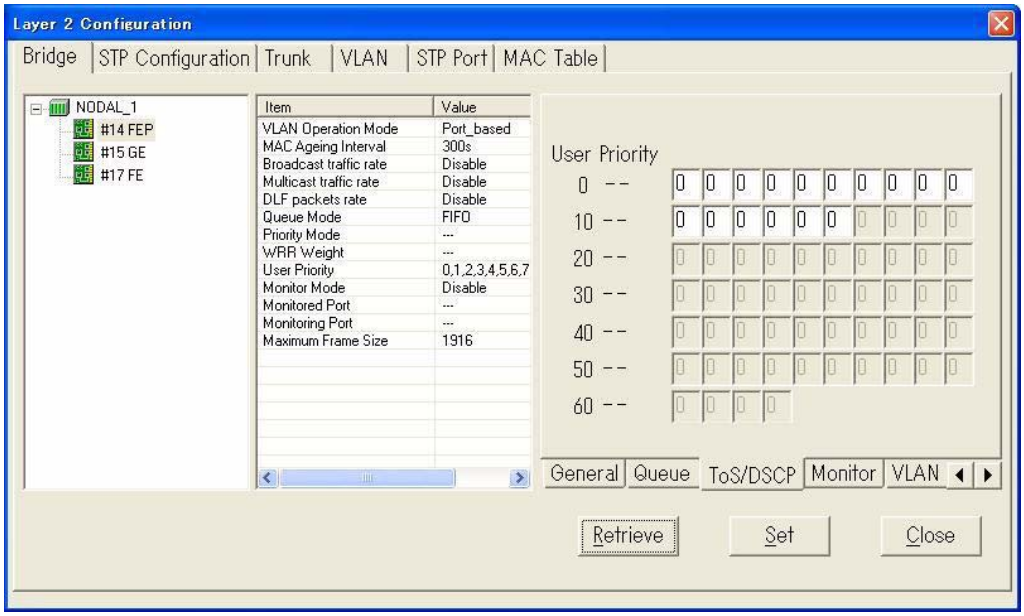


Fig. 4-4-53 Tos/DSCP Setting (FEP board)

- If Priority Mode is DSCP, User priority can be set using Tos/ DSCP sheet. Screen of ToS/DCSP sheet is shown below. If Priority Mode is DSCP, User Priority , from 0 (Lowest user Priority) to 7 (Highest user Priority), should be set to 64(0-63) Frames.

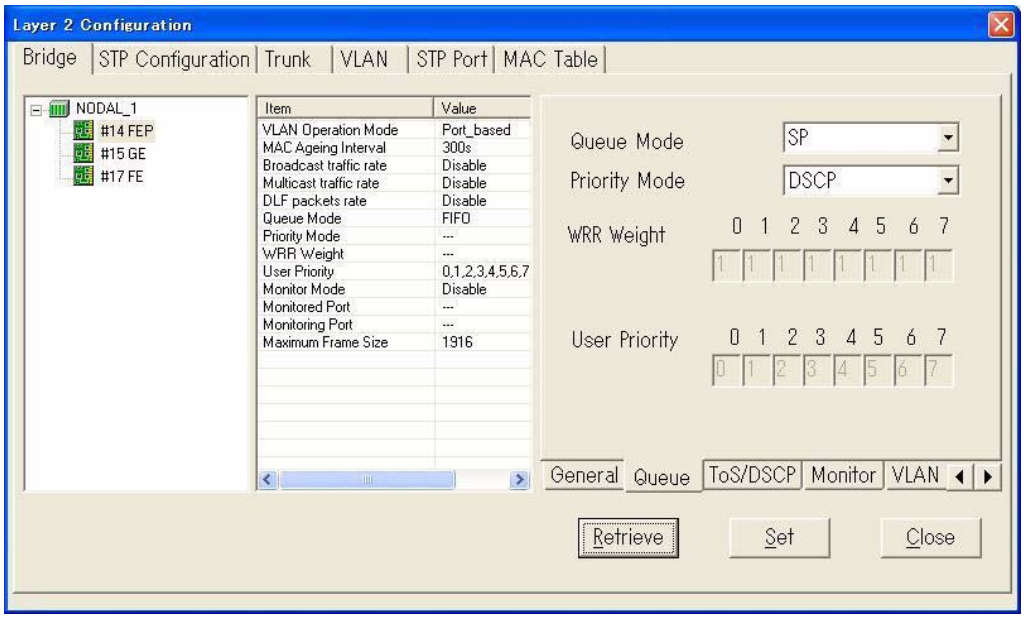


Fig. 4-4-54 SP-DSCP Selection (FEP board)

Screen of ToS/DCSP sheet is shown below.If Priority Mode is DSCP, User Priority, from 0 (Lowest user Priority) to 7 (Highest user Priority), should be set to 64(0-63) Frames.

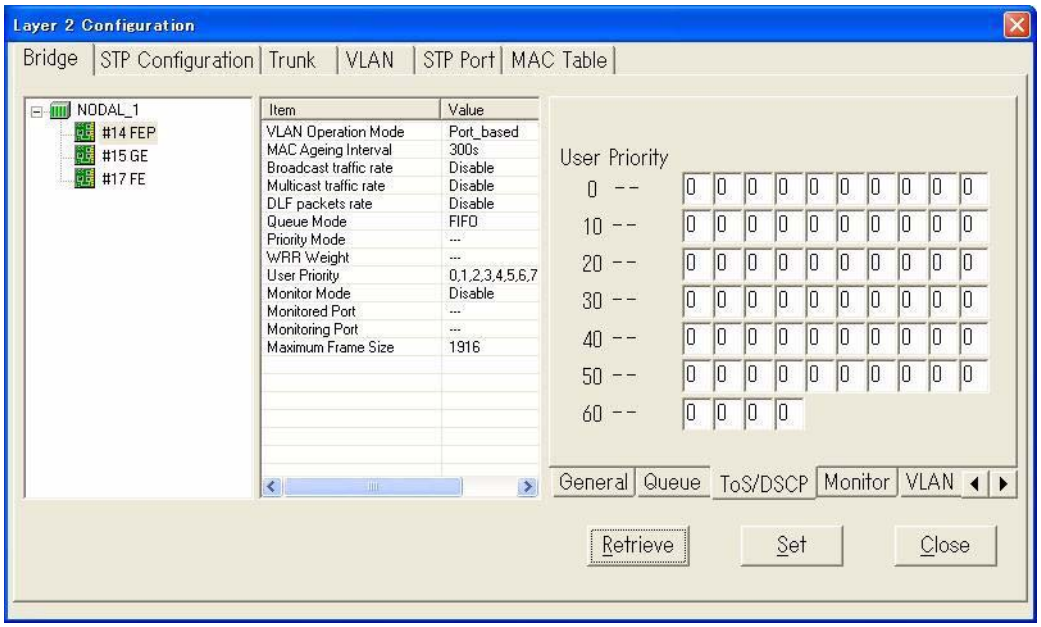


Fig. 4-4-55 Tos/DSCP Setting (FEP board)

iii Queue Mode (WRR)

- If Priority Mode is COS, set "WRR weight" and "User priority".

  The screen is shown below. For setting, see 1) For FE/GE board ***iii*** GE portion.

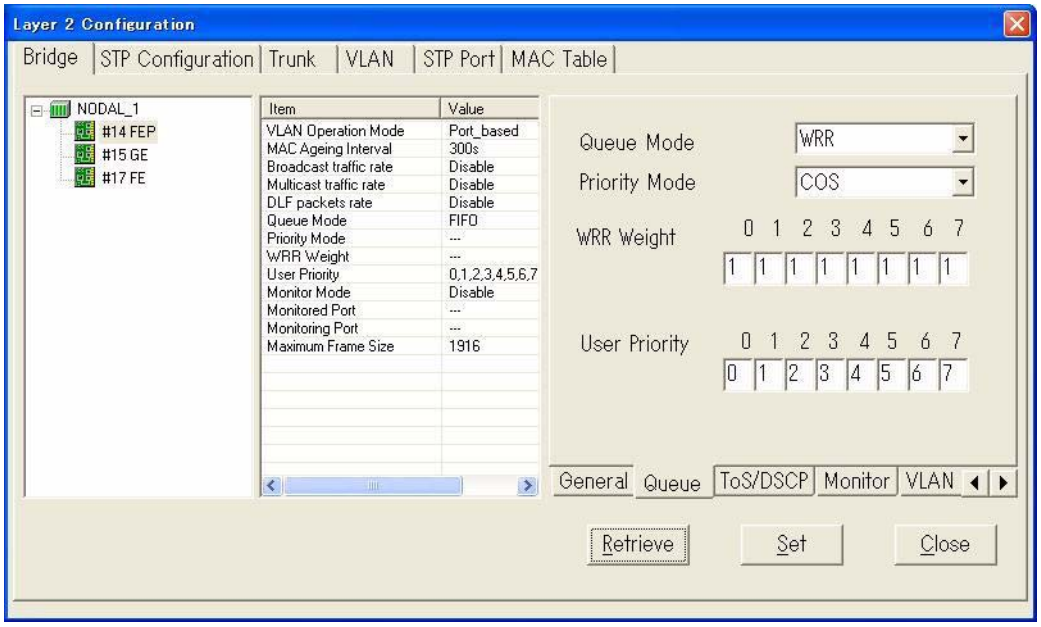


Fig. 4-4-56 WRR-COS Selection (FEP board)

- If Priority Mode is Precedence, set "WRR weight" and "User priority".

  The screen is shown below. For setting, see 1) For FE/GE board ***iii*** GE portion.

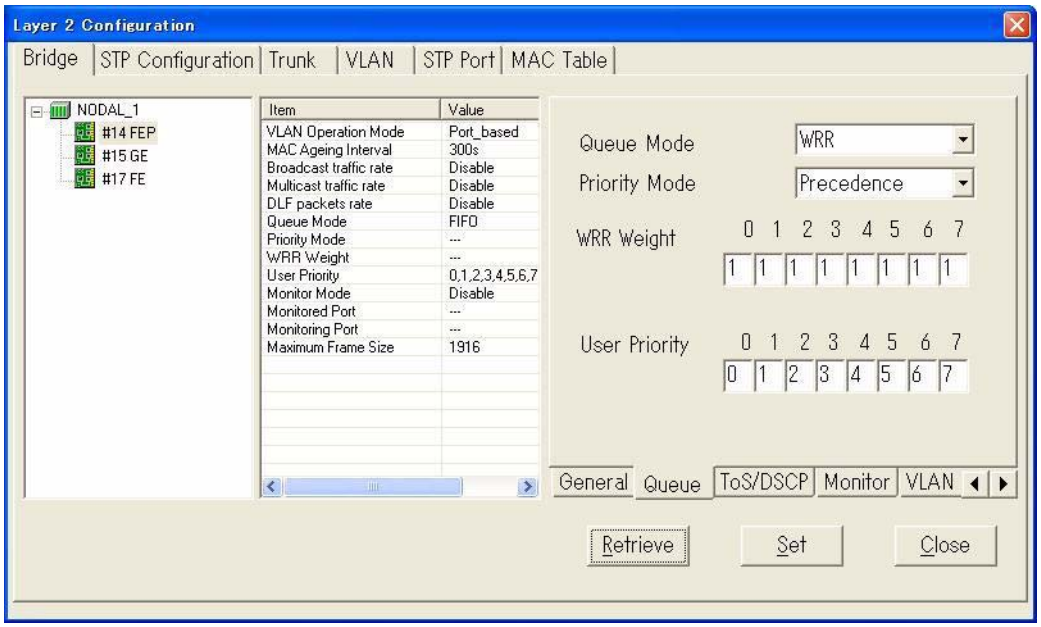


Fig. 4-4-57 WRR-Precedence Selection (FEP board)

- If Priority Mode is ToS, set "WRR weight" and "User priority". WRR Weight may be set a value from 1 to 15 to specify package speed ratio of low user priority (0) to high user priority (7). For setting User priority, use ToS/DSCP sheets.

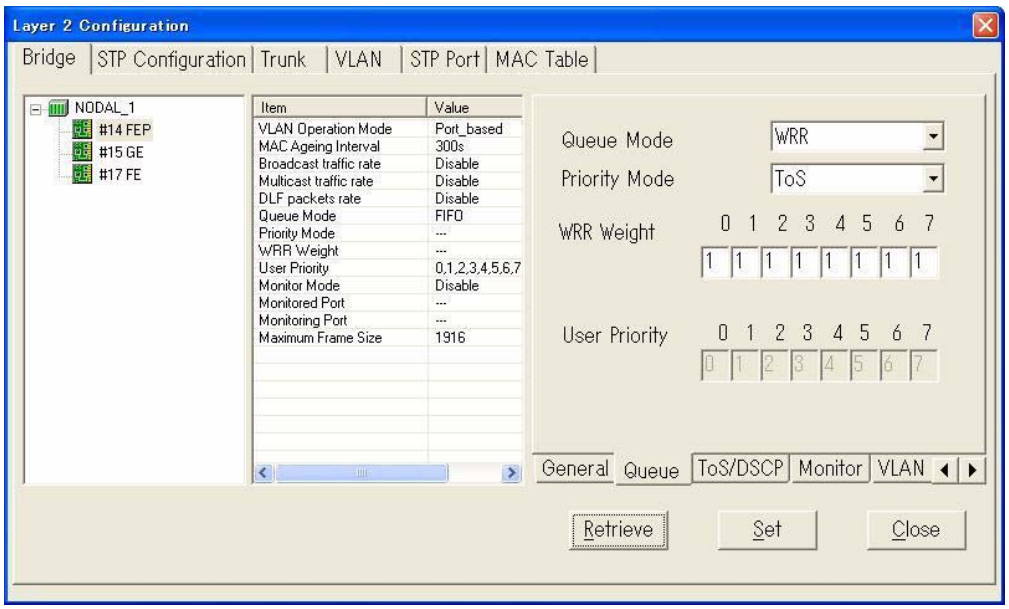


Fig. 4-4-58 WRR-Tos Selection (FEP board)

The screen of ToS/DCSP sheet is shown in below. If Priority Mode is ToS, User Priority, from 0 (Lowest user Priority) to 7 (Highest user Priority), should be set to 16 (0-15) Frames.

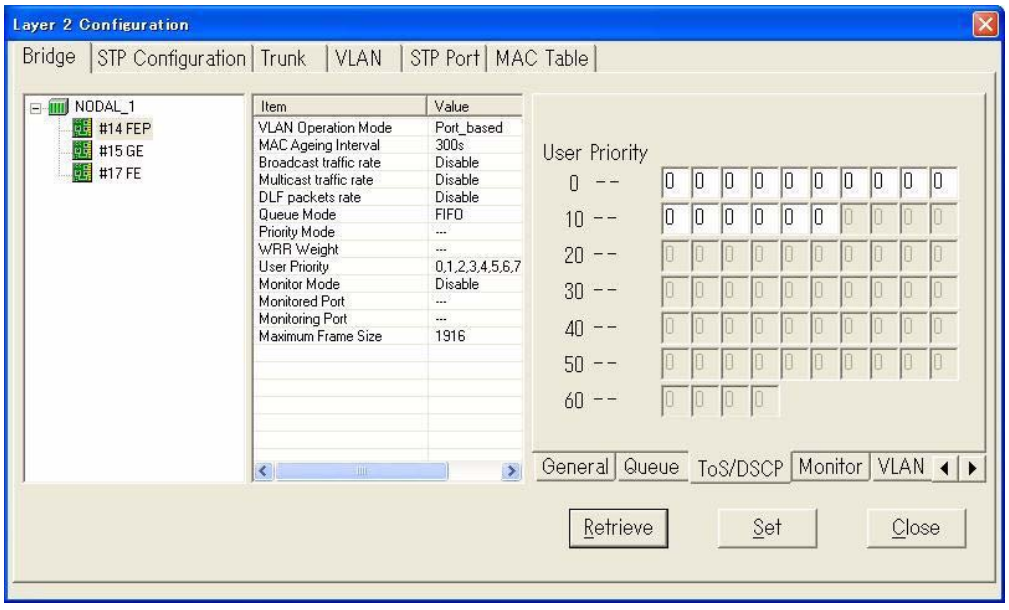


Fig. 4-4-59 Tos/DSCP Setting (FEP board)

- If Priority Mode is DSCP, set "WRR weight" and "User priority". WRR Weight may be set a value from 1 to 15 to specify package speed ratio of lowest user priority (0) to highest user priority (7).For setting User priority, use ToS/ DSCP sheet.

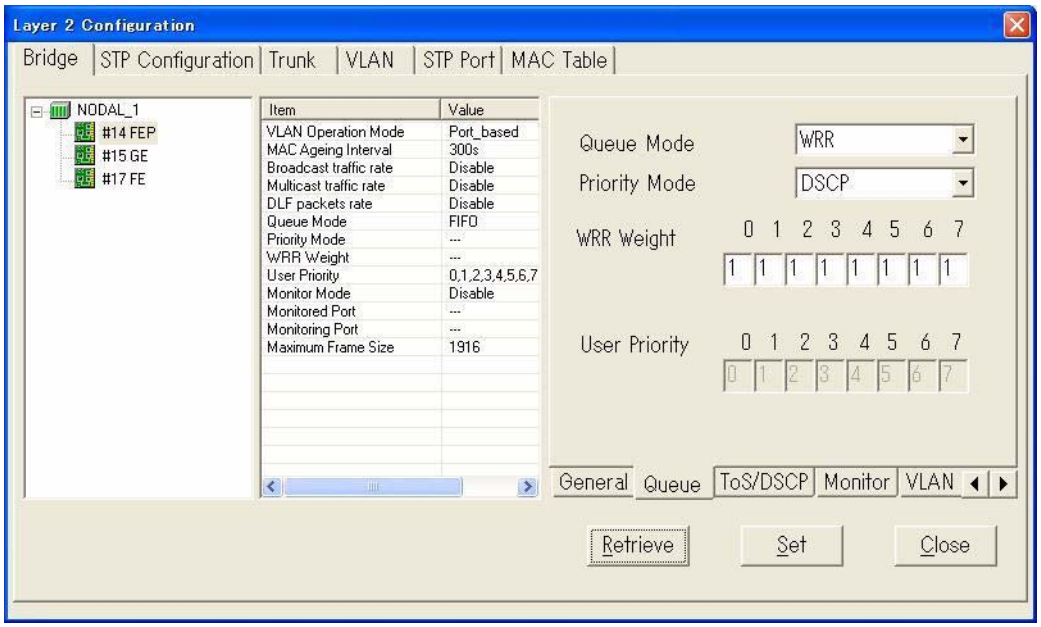


Fig. 4-4-60 WRR-DSCP Selection (FEP board)

The screen of ToS/DCSP sheet is shown in below. If Priority Mode is DSCP, User Priority, from 0 (Lowest user Priority) to 7 (Highest user Priority), should be set to 64(0-63) Frames.

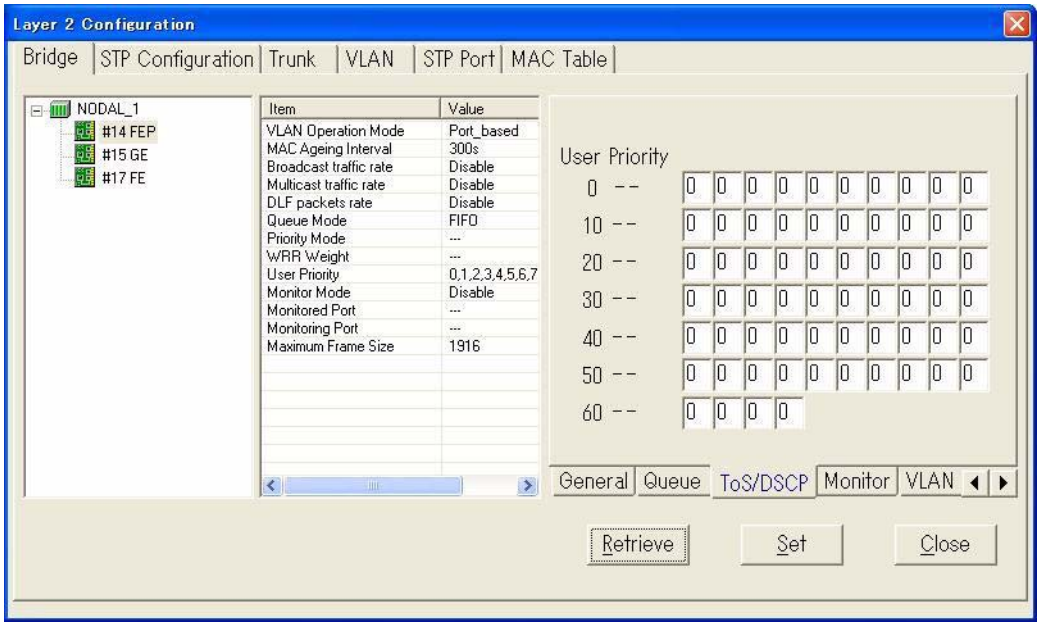


Fig. 4-4-61 Tos/DSCP Setting (FEP board)

7 In order to set the **Monitor Mode, Monitoring Port** and **Monitored Port,** select **Monitor** in the bottom of window, shown in ***Fig. 4-4-62***.

Notes: 1. Monitored port and monitoring port must be in same VLAN group.

2. Port configured as Trunk cannot monitor or be monitored.

3. Only LAN port can be selected in 'monitoring port'.

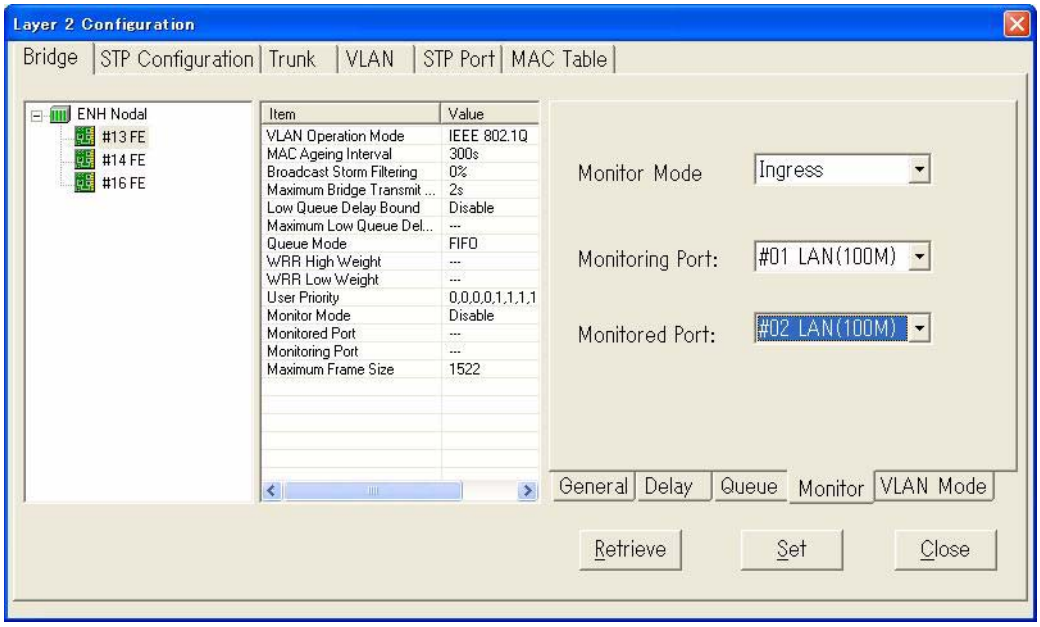


Fig. 4-4-62 Monitor Setting

1) For setting **Monitor Mode**, select one from **Disable**, **Ingress**, **Egress** and **Both** in **Monitor Mode** drop down box.

2) For setting **Monitoring Port**, select one from **LAN Ports** in **Monitoring Port** drop down box.

3) For setting **Monitored Port**, select one from **LAN&WAN ports** in **Monitored Port** drop down box.

8 When all settings are completed, click **Set** button to make them valid.

9 Click the **Close** button to finish **Bridge** setup and exit the configuration of Layer 2.

4.4.13.2 STP Configuration (for FE/GE Card)

4.4.13.2.1 Parameter

PARAMETER	VALUE	GE	FE	FEP	DESCRIPTION
STP Action	**Enable/ Disable**	√	√	–	Enable/Disable STP protocol
Bridge Hello Time (unit: second)	*1 thru 10*	√	√	–	Set STP hello time. General speaking, the larger the network, the less Bridge hello time should be set as.
Bridge Forward Delay Time (unit: second)	*1 thru 10*	√	√	–	Set Bridge Forward Delay Time. General speaking, the larger the network, the larger Bridge hello time should be set as.
Bridge Maximum Ageing Interval (unit: second)	*6 thru 40*	√	√	–	Set Bridge Maximum Ageing Interval.
Bridge Priority	*0 thru 65535*	√	√	–	Set Bridge Priority. When user knows network topology in advance, bridge priority may be helpful to construct a more robust network by making a station with good conditions as root knot.
STP Standard	---	√	√	–	---
Bridge Address	*00-07-30-xx-xx-xx*	√	√	–	Set by manufacturer and forbidden modifying.
Root Bridge ID	STP Priority+ Root Bridge MAC Address	√	√	–	Read only.

*Note: The relation between 'Bridge Maximum Ageing Interval' and 'Bridge Hello Time' is: 'Bridge Maximum Ageing Interval' >=2 * ('Bridge Hello Time' + 1.0 seconds).*

4.4.13.2.2 Procedure: Setup Protocol Configuration

1 See ***Fig. 4-4-42***, select **STP Configuration** attribute page on the top of window. ***Fig. 4-4-63*** appears:

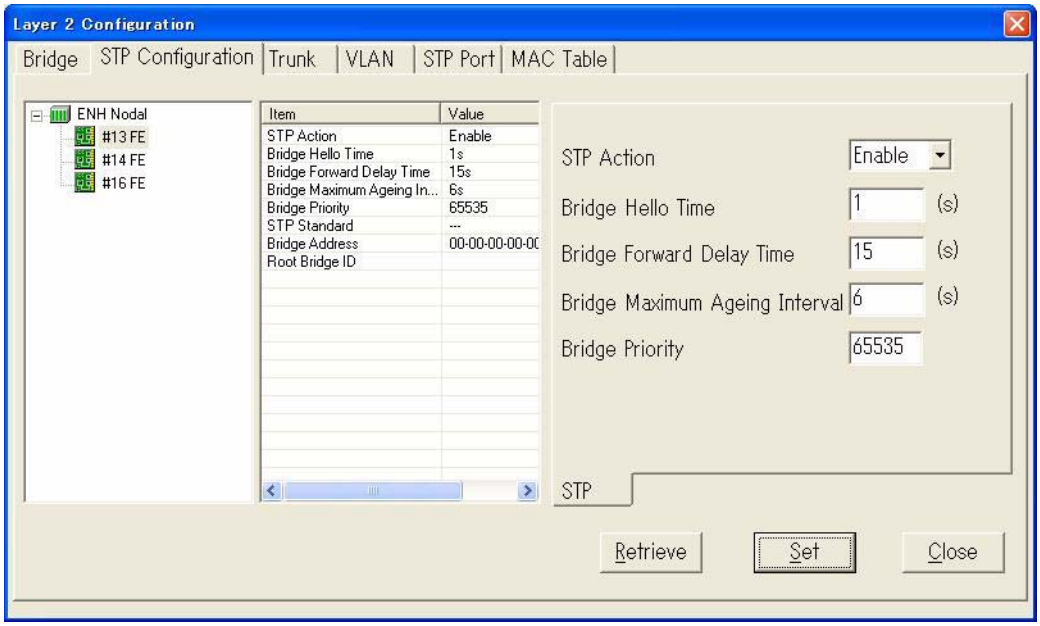


Fig. 4-4-63 STP Configuration

2 Click the **Retrieve** button to retrieve the current configurations from NE.

3 Select **Enable** or **Disable** in **STP Action** drop down box according requirement.

4 Input a value within 1 through 10 into **Bridge Hello Time** text edit box.

5 Input a value within 4 through 30 into **Bridge Forward Delay Time** text edit box.

6 Input a value within 6 through 40 into **Bridge Maximum Ageing Interval** text edit box.

7 Input a value within 0 through 65535 into **Bridge Priority** text edit box.

8 When all settings are completed, click **Set** button to make them valid.

9 Click the **Close** button to finish **STP Configuration** setup and exit the configuration of Layer 2.

Note: STP is not supported for the uni-directional traffic.

4.4.13.3 Trunk

Trunk function allows one or more links to be aggregated together to form a Link Aggregation Group, which is treated as if it were a single link.

Notes:
1. *This function not supports Auto Negotiation.*
2. *This function not supports half duplex.*
3. *All member of TRUNK must belong to same VLAN with same tag mode.*
4. *ALL of a TRUNK member must be LAN port or WAN port.*
5. *If you want to create a TRUNK, all setting of ports excludes port cost and port priority must be identical.*
6. *Before registering any port into Trunk member, each port should be configured into the same VLAN group.*
7. *Port configuration and bandwidth configuration of each port configured into Trunk member should be the same value.*
8. *If a port has already become a TRUNK member, it can not be added another TRUNK.*
9. *If a TRUNK has been set a static MAC, it must be not deleted before delete the static MAC.*
10. *If you want to create a TRUNK, you must add two or more port.*
11. *If you want to modify a TRUNK, you must leave two or more port.*
12. *If you want to add a port into a TRUNK, the port must has not static MAC.*
13. *If a TRUNK consists of WAN ports, the trunk has same parameter to WAN port.*

4.4.13.3.1 Parameter

PARAMETER	VALUE	GE	FE	FEP	DESCRIPTION
Trunk ID	1 *thru* 4	–	√	–	Set the Trunk NO. FEP is supported from Rel 3.0.
	1 *thru* 6	–	–	√	
	1 *thru* 8	√	–	–	
Port List	---	√	√	√	Display the LAN/WAN port. FEP is supported from Rel 3.0.
Member list	(list)	√	√	√	Display the Trunk member. FEP is supported from Rel 3.0.

4.4.13.3.2 Procedure: Setup Trunk configuration

1 See ***Fig. 4-4-42***, select **Trunk** attribute page on the top of window. ***Fig. 4-4-64*** appears.

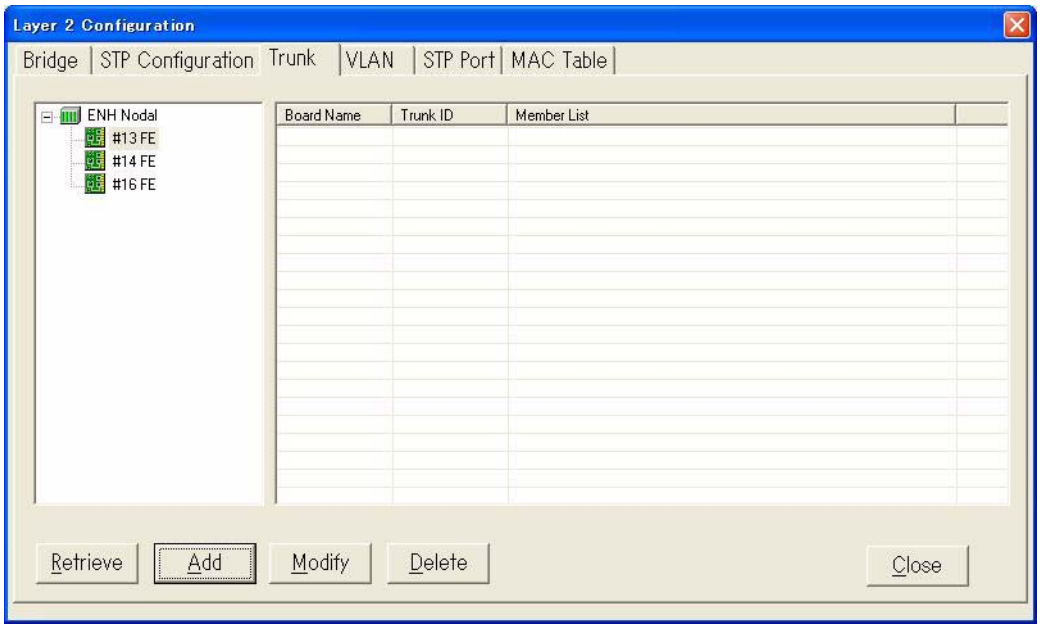


Fig. 4-4-64 Trunk

2 Select FE card in left subwindow, and then click **Add** button, ***Fig. 4-4-65*** appears:

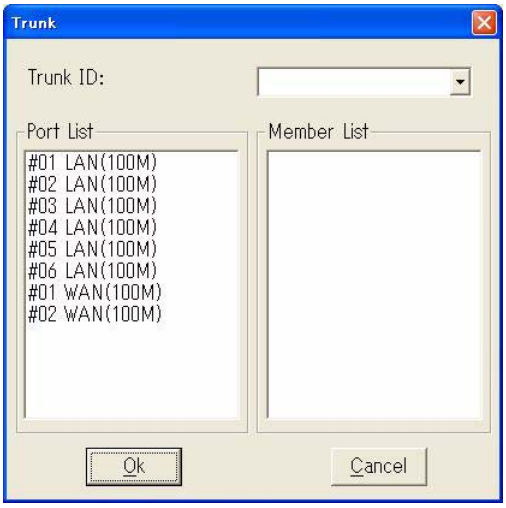


Fig. 4-4-65 Adding Trunk Window

3 Select Trunk port No. from **Trunk ID** drop down box.

4 Double-click the port from the **Port List** in left sub-window to add the port(s) into the **Member List**. Double-click the port from **Member List** in right sub-window to delete the port(s) into **Port List**.

5 Click the **Ok** button to download the settings to NE.

6 If need to modify a trunk port, select the trunk port and click modify button. ***Fig. 4-4-66*** appears:

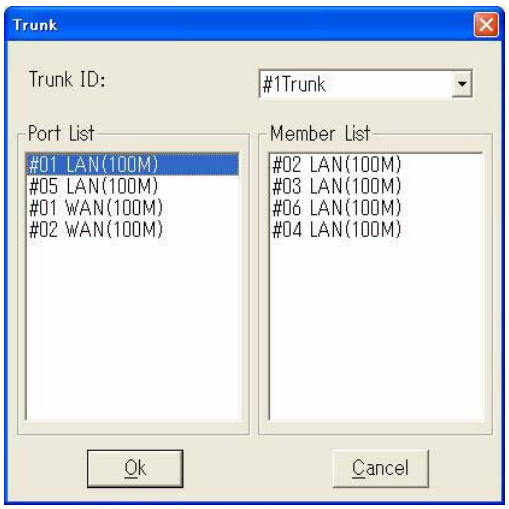


Fig. 4-4-66 Modifying Trunk Window

7 Repeat steps 3 through 5.

8 If need to delete a trunk port, select the trunk port and click **Delete** button.

9 Click the **Close** button to finish **Trunk Configuration** setup and exit the configuration of Layer 2.

This is the end of procedure.

4.4.13.4 VLAN

VLAN is used to logically separate the ports in a VLAN from other ports. Only the ports in a same VLAN can communicate with each other.

4.4.13.4.1 VLAN with Port Based Mode

4.4.13.4.1.1 Parameter

PARAMETER	VALUE	GE	FE	FEP	DESCRIPTION
VLAN ID	**2** *thru* **255**	√	√	√	Set the VLAN ID NO. (Default VLAN is NO.1, PASOLINK NEO/a supports up to 254 VLAN in the mode).
Port List	(list)	√	√	√	Display the LAN/WAN/Trunk port.
Member List	VLAN member	√	√	√	Display the VLAN member.

4.4.13.4.1.2 Procedure: Setup VLAN Configuration

1 See ***Fig. 4-4-42***, select **VLAN** attribute page on the top of window. ***Fig. 4-4-67*** appears:

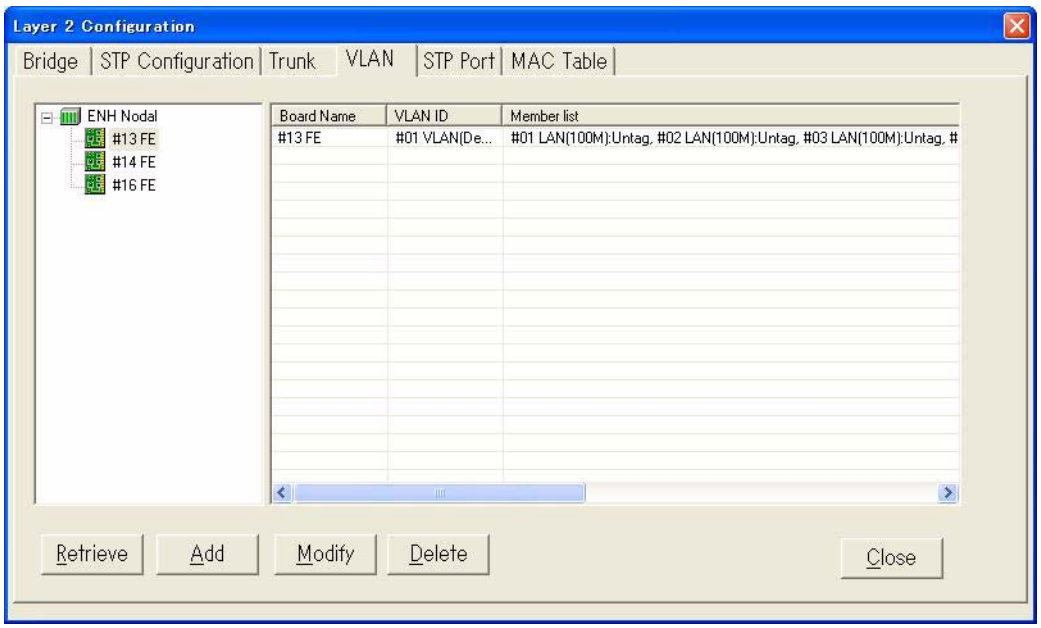


Fig. 4-4-67 VLAN

2 Select FE or FEP card in left sub-window, then click **Add** button, ***Fig. 4-4-68*** appears:

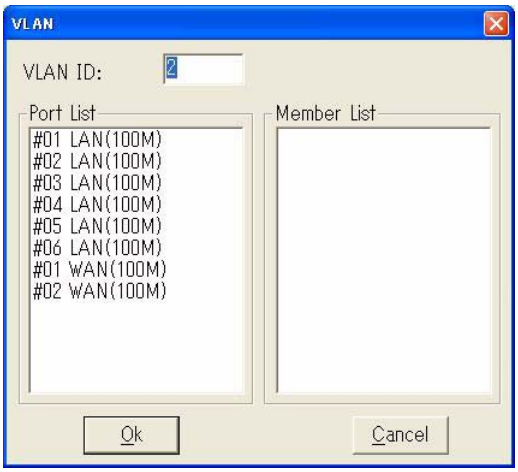


Fig. 4-4-68 Adding VLAN

3 Input the **VLAN ID** on the top of the window.

4 Double-click the port from the **Port List** on the left of the window to add the port(s) into the **Member List**. Double-click the port from **Member List** in right sub-window to delete the port(s) into **Port List**.

5 Click the **Ok** button to download the settings to NE.

6 If need to modify a VLAN, select the VLAN and click modify button. ***Fig. 4-4-69*** appears:

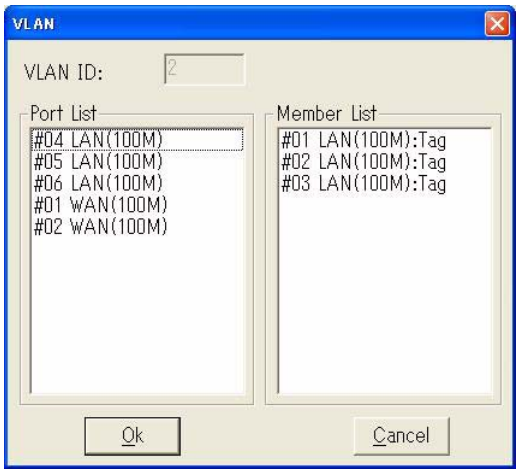


Fig. 4-4-69 Modifying VLAN

7 Repeat steps ***4*** through ***5***.

8 If need to delete a VLAN, select the VLAN and click **Delete** button.

9 Click the **Close** button to finish **VLAN Configuration** setup and exit the configuration of Layer 2.

This step is the end of the procedure.

Notes: 1. If a port has already belonged to a trunk, it can not be set individually. Of course, it can not be showed setting individually.

2. If a VLAN has been set a static MAC, it must be not deleted before delete the static MAC.

3. In port-based VLAN mode, one port must belong to only one VLAN.

4. In 802.1Q VLAN mode, one port with tagged can be add to multi VLAN and can be add to only one VLAN with untagged mode.

5. If a VLAN member has been set a static MAC, it must be not remove from VLAN before delete the static MAC.

4.4.13.4.2 VLAN with IEEE 802.1Q Mode

4.4.13.4.2.1 Parameter

PARAMETER	VALUE	GE	FE	FEP	DESCRIPTION
VLAN ID	**2** *thru* **4094(Tag)/ 2** *thru* **255(Untag)**	√	√	√	Set the VLAN ID NO. (default VLAN is NO.1. PASOLINK NEO/a supports up to 254 VLAN in untag mode and 4093 in tag mode). FEP is supported from Rel 3.0.
Port List	(list)	√	√	√	Display the LAN/WAN/Trunk port. FEP is supported from Rel 3.0.
Member List	*VLAN member*	√	√	√	Display the VLAN member. FEP is supported from Rel 3.0.

Note: The total ports in all VLANs in one GE/FE/FEP card are permitted up to 480, that is to say, if each VLAN include 2 ports, the maximum number of VLAN can be configured in one FE card is 240. The other cases can be deduced by analogy.

4.4.13.4.2.2 Procedure: Setup VLAN Configuration

1 See ***Fig. 4-4-42***, select **VLAN** attribute page on the top of window. ***Fig. 4-4-67*** appears.

2 Select FE card in left sub-window, then click **Add** button. ***Fig. 4-4-68*** appears.

3 Input the **VLAN ID** on the top of the window.

4 Double-click the port from the **Port List** on the left of the window. ***Fig. 4-4-70*** appears:

Fig. 4-4-70 Port Mode

5 After selecting Tag/Untag, click **Ok** to add the port(s) into the **Member List**. Double-click the port from **Member List** in right sub-window to delete the port(s) into **Member List**.

6 Click the **Ok** button to download the settings to NE.

7 If need to modify a VLAN, select the VLAN port and click **Modify** button in ***Fig. 4-4-67*** and ***Fig. 4-4-71*** appears:

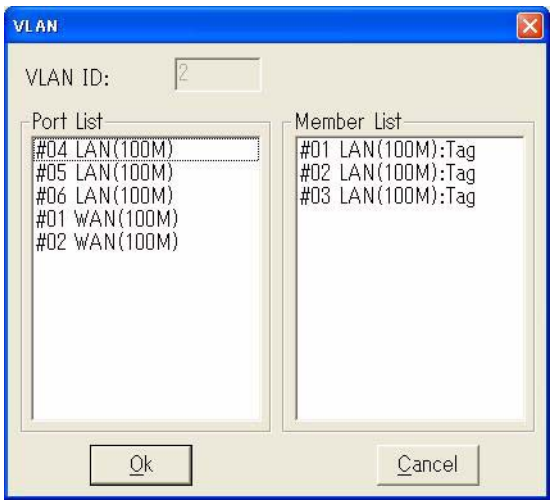


Fig. 4-4-71 Modifying VLAN

8 Repeat steps ***4*** through ***6***.

9 If need to delete a VLAN, select the VLAN and click **Delete** button in ***Fig. 4-4-67***.

10 Click the **Close** button to finish **Layer 2 Configuration** setup and exit the configuration of Layer 2.

This is the end of procedure.

4.4.13.5 STP Port (for FE/GE Card)

4.4.13.5.1 Parameter

PARAMETER	VALUE	GE	FE	FEP	DESCRIPTION
Port	*(Port Displayed)*	√	√	–	The source port for STP enable or not
STP Control	**Enable/ Disable**	√	√	–	Enable/Disable STP function
Link Cost	**1** *thru* **65535**	√	√	–	Set link cost
Port Priority	**0** *thru* **255**	√	√	–	Set Port Priority
Port Status	**Disable**	√	√	–	Port status (Read only)
	Blocking	√	√	–	
	Listening	√	√	–	
	Learning	√	√	–	
	Forwarding	√	√	–	

4.4.13.5.2 Procedure: Setup STP Port Configuration

1 See ***Fig. 4-4-42***, select **STP Port** attribute page on the top of window. ***Fig. 4-4-72*** appears:

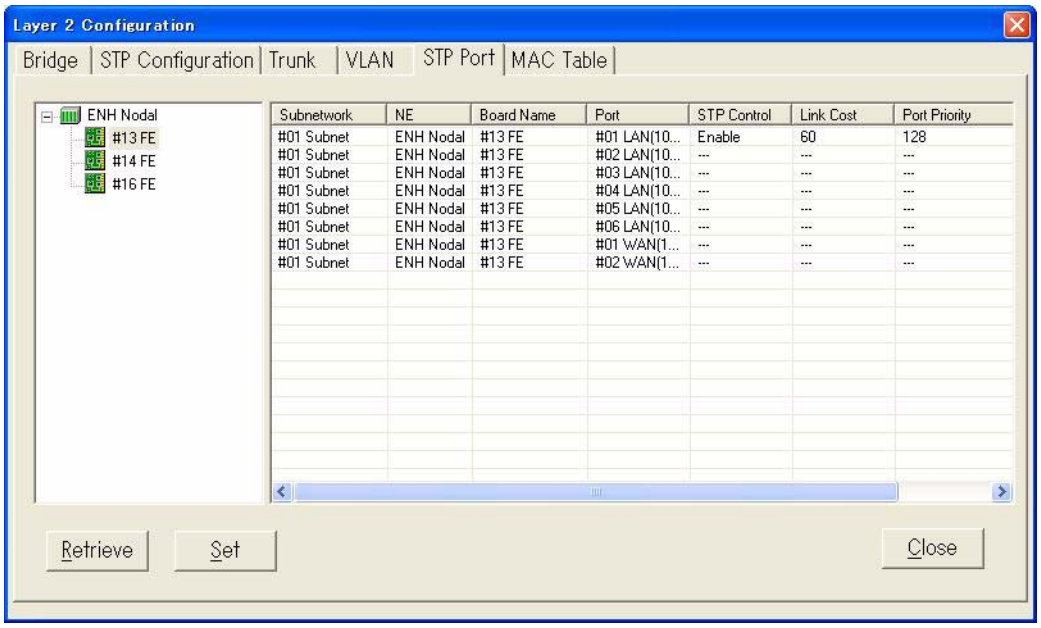


Fig. 4-4-72 STP Port

2 Double-click a row of record, ***Fig. 4-4-73*** appears:

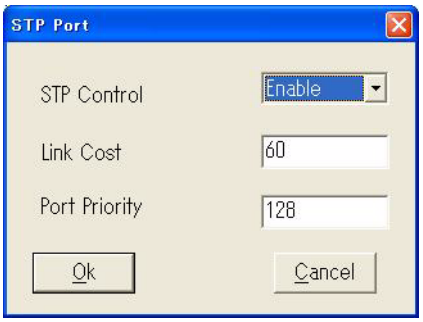


Fig. 4-4-73 STP Parameter Setting

3 If need to enable STP function of the port, select **Enable** in **STP Control** drop down box. If need to disable STP function of the port, select **Disable** in **STP Control** drop down box.

4 Input link cost number into **Link cost** text edit box.

5 Input a port priority number into **Port Priority** text edit box.

6 Click the **Ok** button to download the settings to NE.

7 Click the **Close** button to finish **STP Port Configuration** setup and exit the configuration of Layer 2.

This is the end of procedure.

Note: If a port has already belonged to a trunk, it can not be set individually. Of course, it can not be showed setting individually.

4.4.13.6 MAC Table

4.4.13.6.1 Parameter

PARAMETER	VALUE	GE	FE	FEP	DESCRIPTION
Action	**Forward/ Discard**	√	√	√	Set operation mode
MAC Address	**48bit**	√	√	√	Set MAC address
VLAN ID	**ALL existed VLAN**	√	√	√	Set for VLAN ID
Member List	**Selected port**	√	√	√	Set the port(s) for Member List
Learning Table	**Clear**	–	–	√	Clear MAC address table

4.4.13.6.2 Procedure: Setup MAC Table Configuration

1 See ***Fig. 4-4-42***, select **MAC Table** attribute page on the top of window. ***Fig. 4-4-74*** appears:

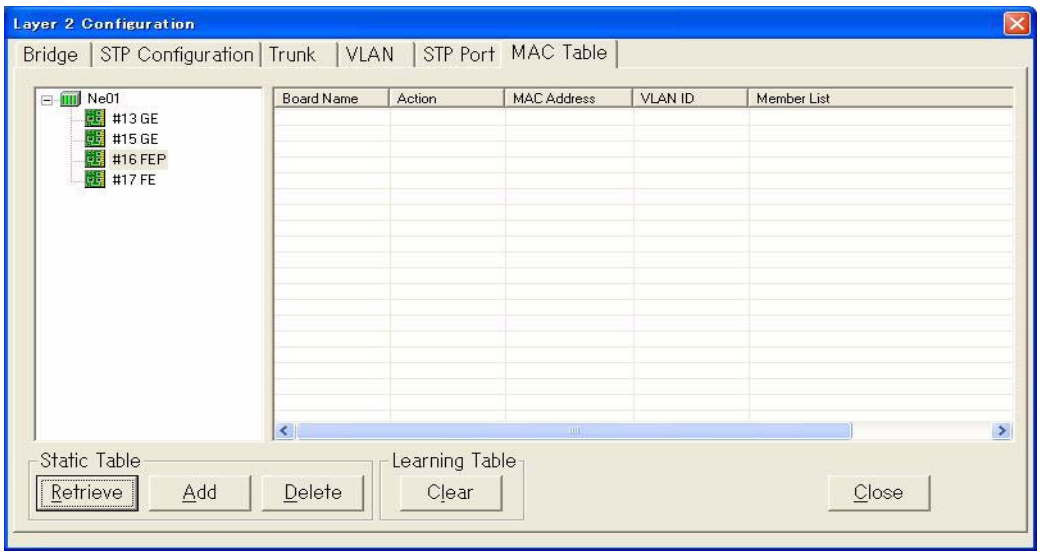


Fig. 4-4-74 MAC Table

2 Select FE or FEP card in left sub-window, then click **Add** button. ***Fig. 4-4-75*** appears:

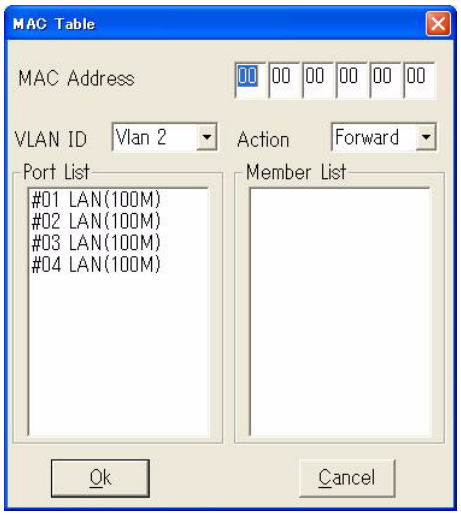


Fig. 4-4-75 MAC Table Parameter Setting

3 Input the MAC Address into **MAC Address** text edit box.

4 Select VLAN from **VLAN ID** drop down box.

5 Select **Forward/Discard** in **Action** drop down box.

6 For applying **Forward/Discard** to a port, double-click the port in left sub-window to add the port(s) into right sub-window.

7 Click the **Ok** button to download the settings to NE.

8 If need to delete a row of record, select the row and click **Delete** button.

9 For FEP board, you can click **Clear** button in the **Learning Table** field to clear the learning MAC addresses.

10 Click the **Close** button to finish **MAC Table Configuration** setup and exit the configuration of Layer 2.

This is the end of procedure.

Notes: 1. If a port has already belonged to a trunk, it can not be set individually. Of cause, it can not be showed setting individually.

2. One MAC can be added only one mode (FORWARD or DISCARD) in one VLAN.

3. The following MAC must not be add: 00-00-00-00-00-00; ff-ff-ff-ff-ff-ff; 01-80-C2-xx-xx-xx

4. One Unicast-MAC can be added to only one port.

4.4.14 Setup LAN-Interface Encapsulation and LCAS Configuration (for FE/GE Card)

This section provides the procedure to set up the LAN-Interface encapsulation configuration for the equipment.

4.4.14.1 Parameters

PARAMETER	VALUE	GE	FE	FEP	DESCRIPTION
Port	**WAN port**	√	√	–	Encapsulation port.
Encapsulation Type	**GFP**	√	√	–	Set encapsulation type.
Data Frame with FCS	**Yes/No**	√	√	–	Enable/Disable FCS for data frame. *Note: FPGA will judge the FCS flag automatically with input streams from WAN port and handle different streams in different ways If it is different between local and remote side.*
LCAS	**Enable/ Disable**	√	√	–	Enable/Disable LCAS function.
LCAS Mode	**Directional/ Unidirectional**	√	√	–	Specify the LCAS Mode: Directional/ Unidirectional

Note: LCAS of FEP is fixed to Enable/Bidirectional, not selectable.

4.4.14.2 Procedure: Setup Encapsulation Configuration

The LAN interface encapsulation setup operation is performed via the **Encapsulation and LCAS Configuration** dialog box using the ADM Management Tool. Perform the following procedure:

1 Start up the ADM Management Tool, and login to the target NE.

2 Open the management dialog box of the target NE.

3 Select **Encapsulation and LCAS Configuration** from the **LAN-Interface** menu to open the **Encapsulation and LCAS Configuration** dialog box. The **Encapsulation and LCAS Configuration** dialog box shown in ***Fig. 4-4-76*** appears:

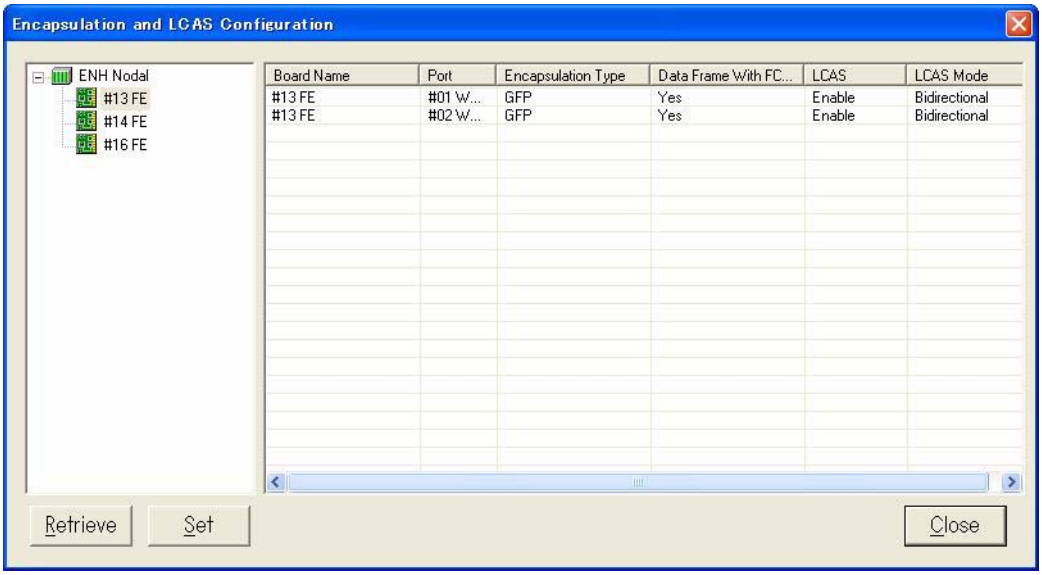


Fig. 4-4-76 Encapsulation and LCAS Configuration Dialog Box (1)

4 Double click a row of record then **Encapsulation and LCAS Configuration** dialog box of corresponding port will be shown in ***Fig. 4-4-77*** appears:

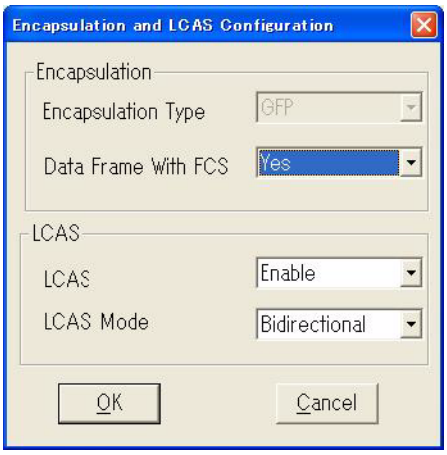


Fig. 4-4-77 Encapsulation and LCAS Configuration Dialog Box (2)

5 Select **Yes/No** in the drop down list box of **Data Frame with FCS**.

6 If you want to use LCAS function, select **Enable** in the drop down list box of **LCAS**; If you don't want to use LCAS function, select **Disable** in the drop down list box of **LCAS**. If you select **Enable**, then go to the step ***8***; otherwise go to the step ***9***.

7 Select **Bidirectional/Unidirectional** in the drop down list box of **LCAS Mode.**

8 Click the **OK** button to make settings effective.

This step is the end of the procedure.

4.4.15 Setup LAN Interface Bandwidth Configuration

This section provides the procedure to set up the LAN-Interface bandwidth configuration for the equipment.

4.4.15.1 Parameters

PARAMETER	VALUE	GE	FE	FEP	DESCRIPTION
Board Name	**Slot number+FE**	–	√	–	Display the slot number and package name.
	Slot number+GE	√	–	–	
	Slot number+FEP	–	–	√	
Source Port	**#01 WAN(100M)**	√	√	√	The source port of bandwidth configuration.
	#02 WAN(100M)	√	√	√	
	#03 WAN(100M)	√	√	√	
	#04 WAN(100M)	√	√	√	
	#05 WAN(100M)	√	–	√	
	#06 WAN(100M)	√	–	√	
	#07 WAN(100M)	√	–	–	
	#08 WAN(100M)	√	–	–	
	#01 WAN(1G)	√	–	–	
	#02 WAN(1G)	√	–	–	
Destination Port	**#01AU_1**	√	√	√	The destination port of bandwidth configuration. NOTE: when GE board is inserted into slot6/ slot7/, the number of AU port is 16, and if the GE board is inserted into slot8/ slot9/ slot10, the number of AU port is 8. No. 09 AU_1Å`No. 16 AU_1 are not supported.
	#02AU_1	√	√	√	
	#03AU_1	√	√	√	
	#04AU_1	√	√	√	
	#05 AU_1	√	–	√	
	#06 AU_1	√	–	√	
	#07 AU_1	√	–	–	
	#08 AU_1	√	–	–	
	#09 AU_1	–	–	–	
	#10 AU_1	–	–	–	
	#11 AU_1	–	–	–	
	#12 AU_1	–	–	–	
	#13 AU_1	–	–	–	
	#14 AU_1	–	–	–	
	#15 AU_1	–	–	–	
	#16 AU_1	–	–	–	

PARAMETER	VALUE	GE	FE	FEP	DESCRIPTION
Bandwidth	**nxVC12(n=1-63) 100M**	√	√	–	Set bandwidth.
	nxVC3(n=1-3) 100M	√	√	–	
	nxVC4(n=1) 100M	√	√	–	
	nxVC12(n=1-63) 1G	√	–	–	
	nxVC3(n=1-21) 1G	√	–	–	
	nxVC4(n=7) 1G	√	–	–	
	nxVC12(n=1-50)	–	–	√	
Time Slots(Rx)	**1-63VC12 100M**	√	√	–	Select Time Slot Number for Receiving direction.
	1-3VC3 100M	√	√	–	
	1VC4 100M	√	√	–	
	1-63VC12 1G	√	–	–	
	1-21VC3 1G	√	–	–	
	1-7VC4 1G	√	–	–	
	1-50VC12	–	–	√	
Time Slots(Tx)	**1-63VC12 100M**	√	√	–	Select Time Slot Number for Transmitting direction.
	1-3VC3 100M	√	√	–	
	1VC4 100M	√	√	–	
	1-63VC12 1G	√	–	–	
	1-21VC3 1G	√	–	–	
	1-7VC4 1G	√	–	–	
	1-50VC12	–	–	√	

4.4.15.2 Procedure: Setup Bandwidth Configuration

The LAN interface bandwidth setup operation is performed via the **Bandwidth Configuration** dialog box using the ADM Management Tool. Perform the following procedure:

1 Start up the ADM Management Tool, and login to the target NE.

2 Open the management dialog box of the target NE.

3 Select **Bandwidth Configuration** from the **LAN-Interface** menu to open the **Bandwidth Configuration** dialog box. The **Bandwidth Configuration** dialog box shown in ***Fig. 4-4-78*** appears:

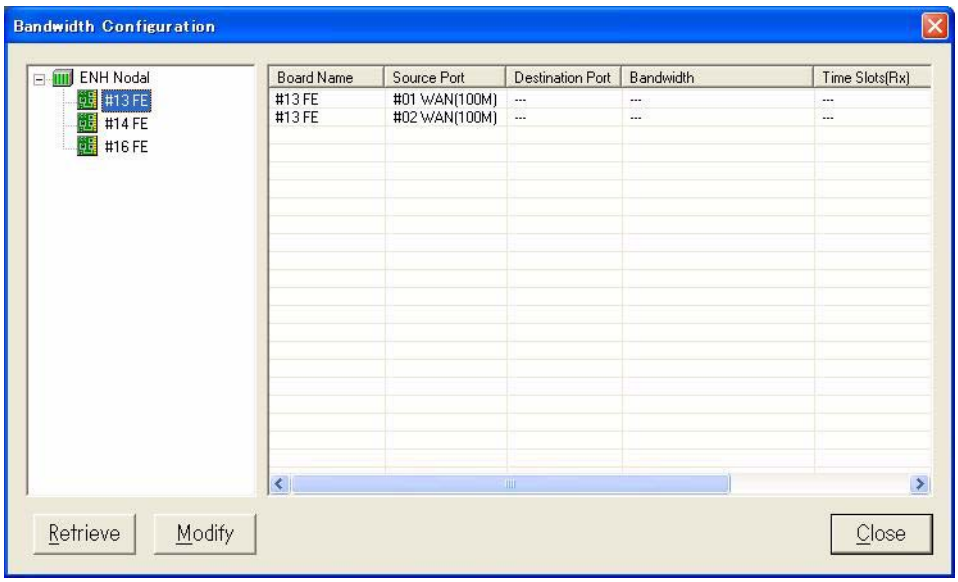


Fig. 4-4-78 Bandwidth Configuration Dialog Box

4 Click the **Retrieve** button to retrieve the current configurations from NE.

LCAS configuration in ***4.4.14 Setup LAN-Interface Encapsulation and LCAS Configuration (for FE/GE Card)*** can influence the bandwidth configuration.

LCAS CONFIGURATION	BANDWIDTH CONFIGURATION DESCRIPTION CHAPTER
LCAS Disable	***4.4.13.2.1***
LCAS Enable/unidirectional	***4.4.13.2.1***
LCAS Enable/Bidirectional	***4.4.13.2.2***

4.4.15.2.1 Bandwidth under LCAS Disable

1 Double click a row of record then **Bandwidth Configuration** dialog box of corresponding port will be shown in ***Fig. 4-4-79*** appears:

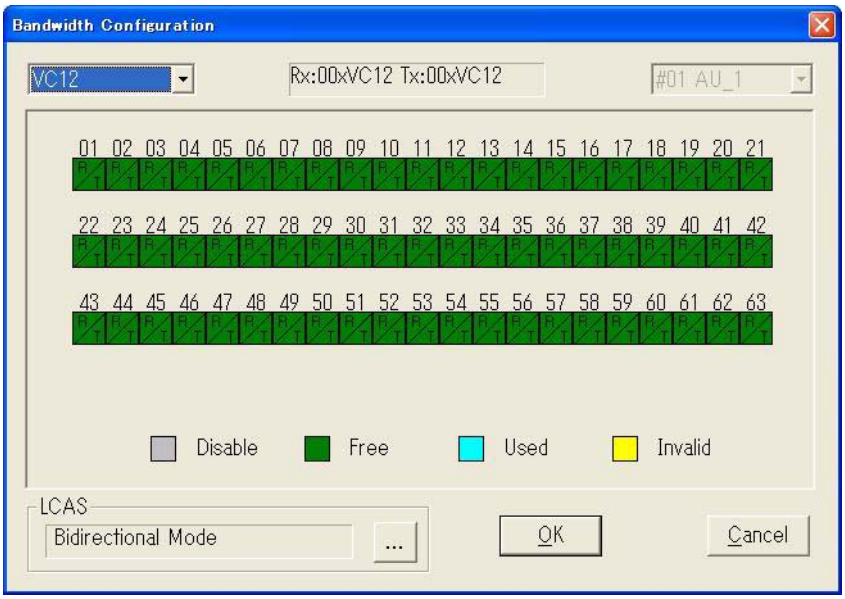


Fig. 4-4-79 VC12 Bandwidth Configuration Dialog Box

Note: In case of FEP, it doesn't show more than CH51 in ***Fig. 4-4-79*** *because of the FEP supporting up to CH50. And the "LCAS" displayed lower left in* ***Fig. 4-4-79*** *is shown in gray out.*

2 Choose **VC12/VC3/VC4** in drop down list box of left upper window. If choosing VC12, **Bandwidth Configuration** Dialog box is shown in ***Fig. 4-4-79*** If choosing VC3, **Bandwidth Configuration** Dialog box is shown in ***Fig. 4-4-80***. If choosing VC4, **Bandwidth Configuration** Dialog box is shown in ***Fig. 4-4-81***.

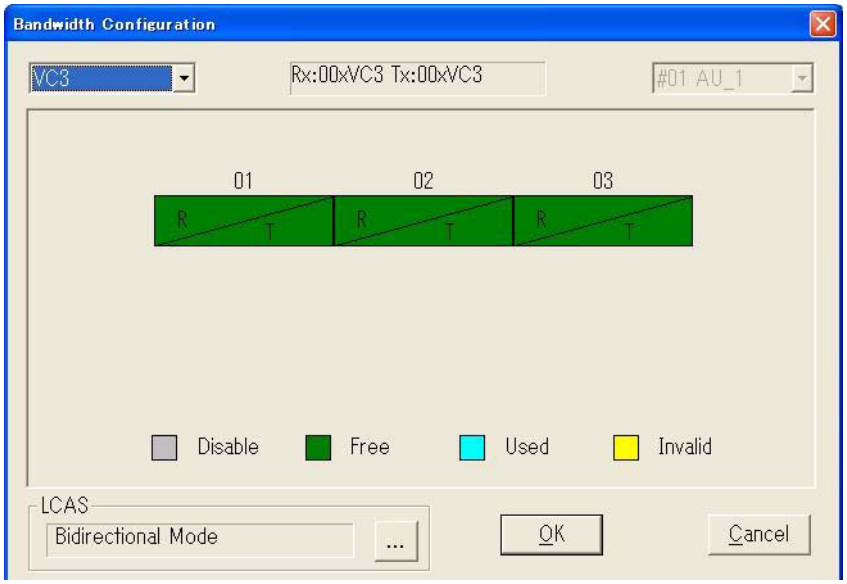


Fig. 4-4-80 VC3 Bandwidth Configuration Dialog Box

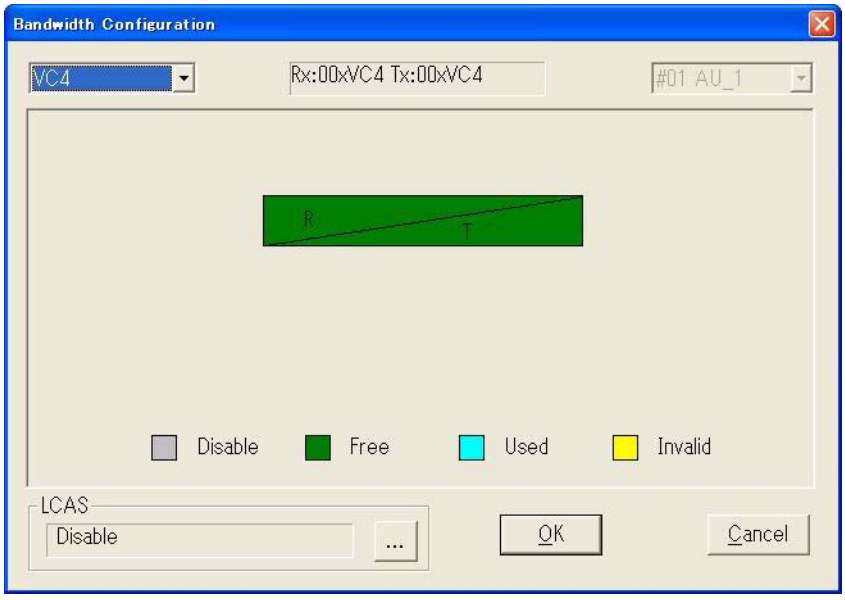


Fig. 4-4-81 VC4 Bandwidth Configuration Dialog Box

Note: 1) FE does not support VC4 configuration with LCAS enabled.

2) GE 1 G WAN port support VC4 configuration with LCAS enabled.

3) GE 100BT WAN port doesn't support VC4 configuration with LCAS enabled.

4) VC12 bandwidth configuration and retrieving can be supported at the first four AU ports of GE board.

5) FEP supports only VC12 configuration.

3 In ***Fig. 4-4-79*** and ***Fig. 4-4-80***, click time slot (TS) number according to requirement. In ***Fig. 4-4-81***, only one TS is available for selection. Refer to ***Fig. 4-4-82***, ***Fig. 4-4-83*** and ***Fig. 4-4-84***.

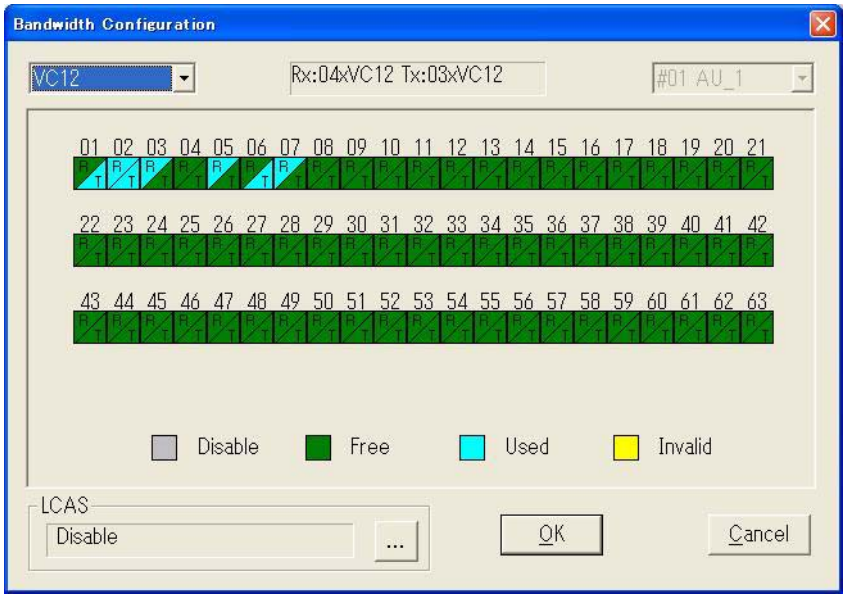


Fig. 4-4-82 VC12 Timeslot Type

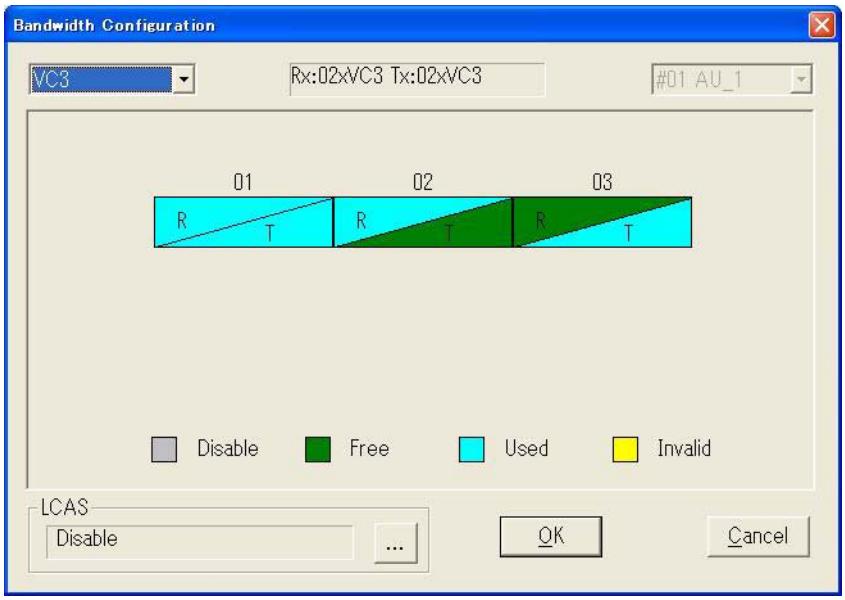


Fig. 4-4-83 VC3 Timeslot Type

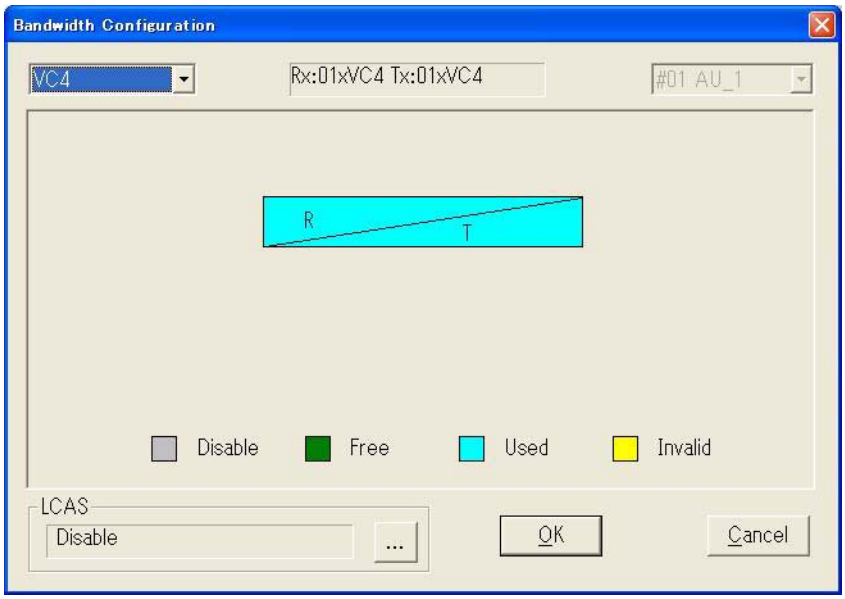


Fig. 4-4-84 VC4 Timeslot Type

4 In ***Fig. 4-4-82***, ***Fig. 4-4-83*** and ***Fig. 4-4-84***, "R" and "T" can be selected respectively showing Rx time slot and Tx time slot can be configured respectively.

Note: User can select several paths at one time by dragging mouse for simplifying operation.

5 In **Bandwidth Configuration** main menu, click button of "..." to configure LCAS function according to application requirement. Refer to ***Fig. 4-4-85***.

Fig. 4-4-85 LCAS Configuration

6 After completing the configuration, click the Set button in LCAS Configuration window and click the OK button on Bandwidth Configuration Dialog box to download the settings to NE.

7 After completing configuration **Bandwidth Configuration** Dialog box is shown in ***Fig. 4-4-86***.

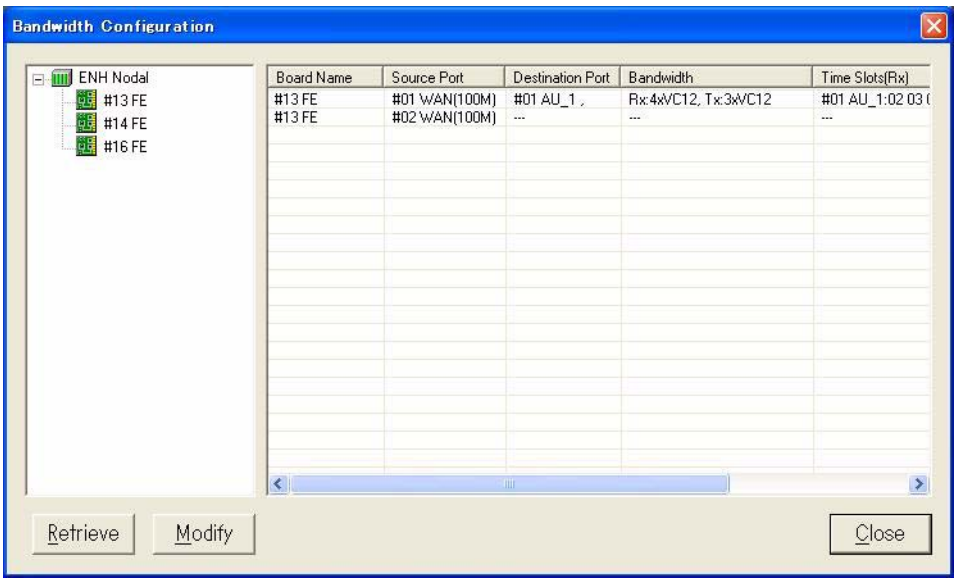


Fig. 4-4-86 Bandwidth Configuration Dialog Box (2)

8 If need to modify bandwidth configuration of one port, select corresponding row and click **Modify** button.

9 Click the **Close** button to finish **Bandwidth Configuration** Dialog box.

Under LCAS Directional/Unidirectional status bandwidth configuration process is same as that under LCAS disable mostly except LCAS status shows different in bandwidth configuration box. Take below figure for an example.

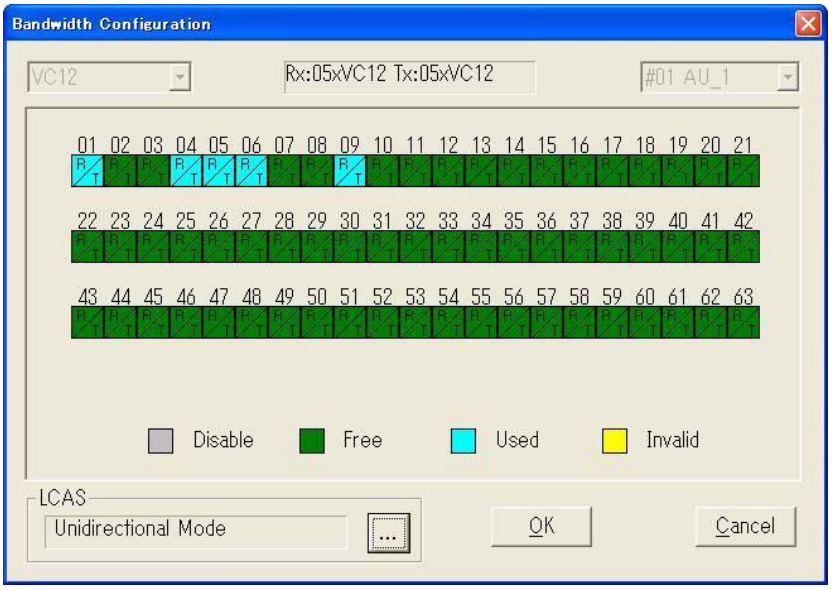


Fig. 4-4-87 LCAS Directional/Unidirectional Status Bandwidth Configuration

This step is the end of the procedure.

4.4.15.2.2 Bandwidth under LCAS Enable/Bidirectional

1 Double click a row of record then **Bandwidth Configuration** dialog box of corresponding port will be shown in ***Fig. 4-4-88*** appears:

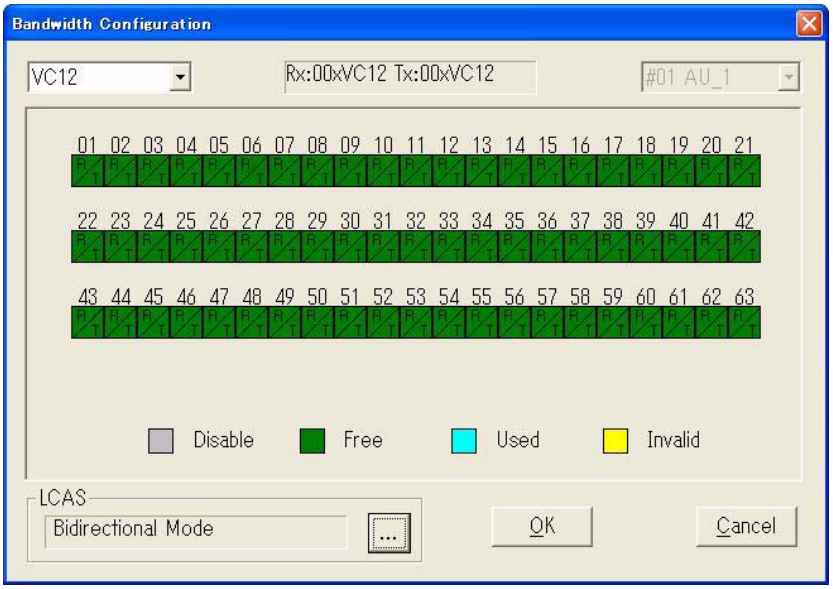


Fig. 4-4-88 VC12 Bandwidth Configuration Dialog Box

2 Choose **VC12/VC3** in drop down list box of left upper window. If choosing VC12, **Bandwidth Configuration** Dialog box is shown in ***Fig. 4-4-88***. If choosing VC3, **Bandwidth Configuration** Dialog box is shown in ***Fig. 4-4-89***.

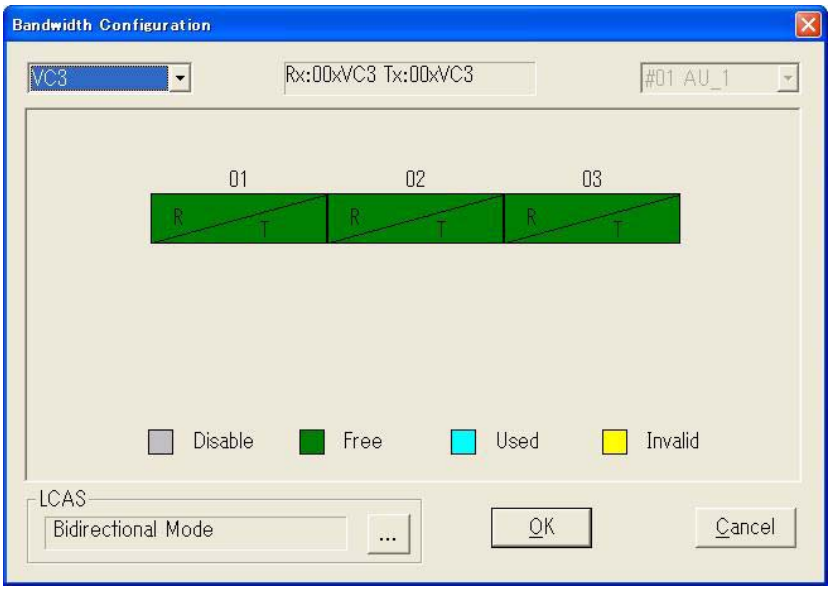


Fig. 4-4-89 VC3 Bandwidth Configuration Dialog Box

Note: 1) FE does not support VC4 configuration with LCAS enabled.

2) GE 1 G WAN port support VC4 configuration with LCAS enabled.

3) GE 100BT WAN port doesn't support VC4 configuration with LCAS enabled.

4) VC12 bandwidth configuration and retrieving can be supported at the first four AU ports of GE board.

5) FEP supports only VC12 configuration.

3 In ***Fig. 4-4-88*** and ***Fig. 4-4-89***, click time slot (TS) number according to requirement.

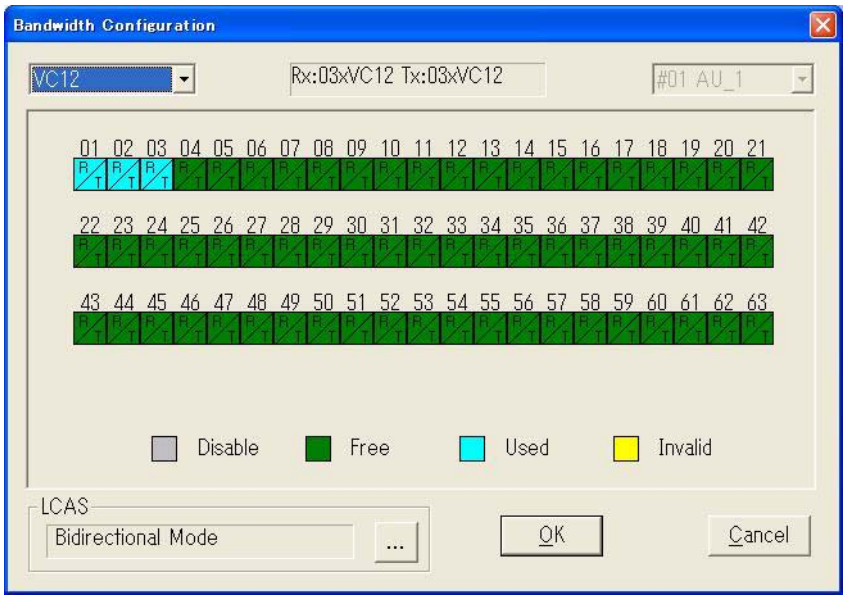


Fig. 4-4-90 VC12 Timeslot Type

Note: User can select several paths at one time by dragging mouse for simplifying operation.

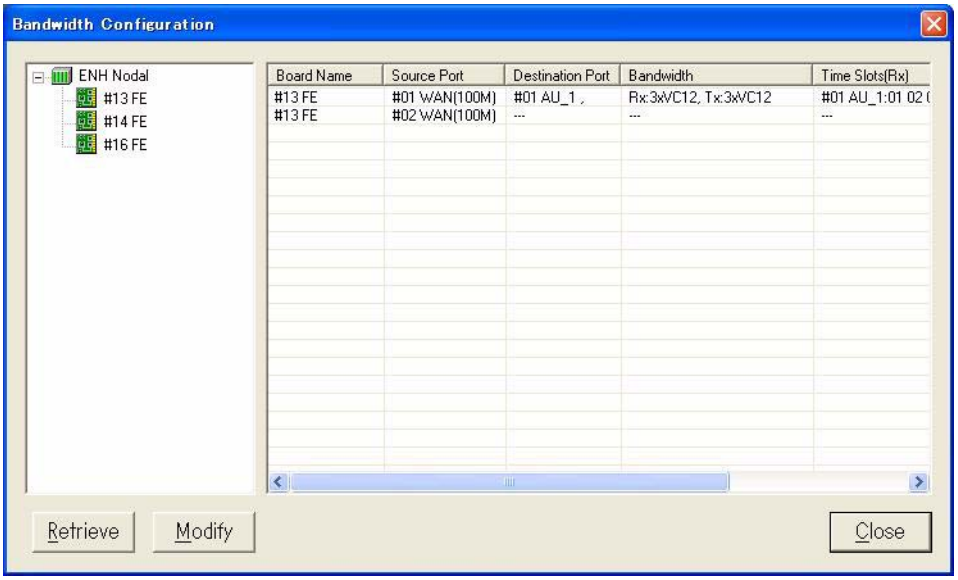


Fig. 4-4-91 Bandwidth Configuration Dialog Box

4 If need to modify bandwidth configuration of one port, select corresponding row and click **Modify** button. If need to retrieve bandwidth configuration of one port, select corresponding row and click **Retrieve** button.

5 Click the **Close** button to finish **Bandwidth Configuration** Dialog box.

This step is the end of the procedure.

4.4.16 Alarm Attributes

The alarm attributes including alarm severity, alarm mask, auto report/ passive report, delay time and stretch time can be changed via the **Alarm Attribute Setup** dialog box.

4.4.16.1 Precautions

Changing the alarm severity level affects all other objects within the equipment if they have the same condition types.

4.4.16.2 Parameters

PARAMETER	VALUE	DESCRIPTION
Alarm Severity	**Critical Alarm**	Specifies the alarm severity. See next table for details.
	Major Alarm	
	Minor Alarm	
	Warning	
Alarm Mask	**Mask**	Enables/disables alarm mask.
	Non Mask	
Auto Report	**Auto Report**	Select auto report or passive report for alarm report. NOTE: When set Passive Report, the alarm will not auto report to ADMT screen, Please retrieve in ADMT in order to update the alarm display.
	Passive Report	
Delay Time[s]	**0 thru 2.5**	Specify the delay time.
Stretch Time[s]	**0 thru 10**	Specifies the stretch time.
Detect Threshold	**10-5 or10-8**	Specifies the detect threshold of MS-DEG. It's only applied for STM-1/4 and RA_STM1AIR_PORT

Alarm Severity Levels

For the V-Node S, the following four severities are used:

SEVERITY	DESCRIPTION
Critical Alarm	CR: Service-affecting condition has occurred and an immediate corrective action is required, such as when a managed object becomes totally out of service and its capability must be restored.
Major Alarm	MJ: Service-affecting condition has developed and an immediate corrective action is required, such as when there is a severe degradation in the capability of the managed object and its full capability must be restored
Minor Alarm	MN: Existence of non-service-affecting fault and a corrective action should be taken to prevent a more serious (i.e., service-affecting) fault. This severity can be used, for example, when the detected alarm is not currently degrading the capacity of the managed object
Warning	Warning: Non-service-affecting fault has developed and a corrective action should be taken to prevent a more serious fault.

4.4.17 Procedure: Modify Alarm Attribute

To modify alarm attributes, perform the following procedure:

1 Select Alarm Attribute Setup from the Alarm menu. The Alarm Attribute Setup dialog box shown in Fig. 4-4-92 appears:

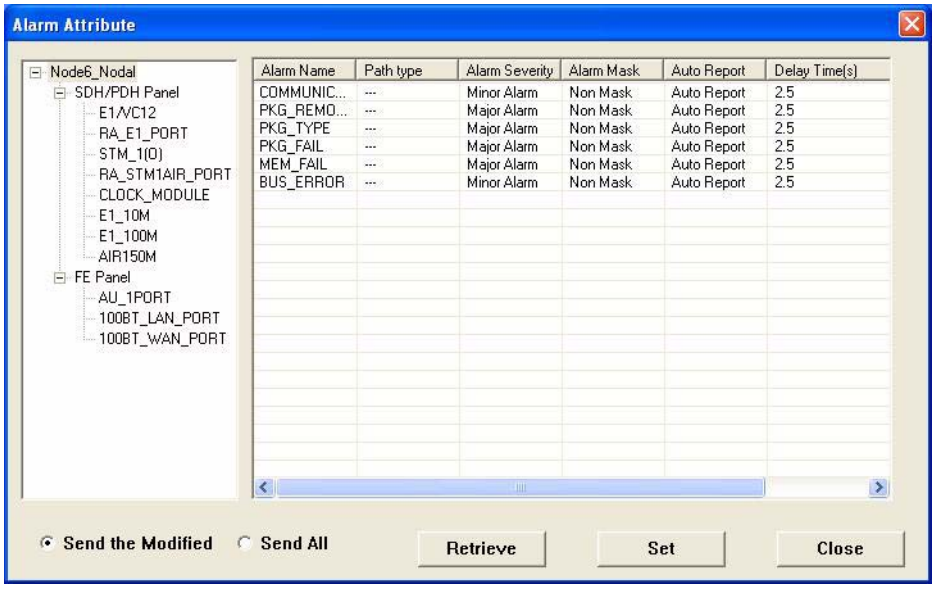


Fig. 4-4-92 Alarm Attribute Setup Dialog Box

2 Select the location of generated alarm among the alarm source tree in the left window.

3 Click the alarm attribute to be modified in the right window, and re-select or enter new setting.

4 Confirm the setting and click the **Set** button to download the data to NE.

5 Click the **Retrieve** button to retrieve the alarm attribute value to the ADMT.

6 After all the settings are completed, click the **Close** button to complete the alarm attribute setup.

This step is the end of the procedure.

4.5 Setup Crossconnect

This section provides the procedures that are required to setup the crossconnection configuration.

4.5.1 Crossconnection Type

The following four crossconnection types are available for the PASOLINK NEO/a.

- **Time Slot (TS) Connection (without protective TS)**

  Time slot connection (without protective TS) means only one source time slot or path and one destination time slot or path can be connected together.

  For the setup procedure of the time slot connection (without protective TS), refer to ***4.5.4 Unidirectional Time Slot Connection***.

- **Both Way Time Slot Connection**

  Both way time slot connection means building a bidirectional cross-connection, when specified the source address and destination address in 'both ways' mode.

  For the setup procedure of the both way time slot connection, refer to ***4.5.5 Both Ways Time Slot Connection.***

- **Broadcast Time Slot Connection**

  Broadcast time slot connection means only one source time slot or path and more than one destination time slot or path can be connected together.

  For the setup procedure of the broadcast time slot connection, refer to ***4.5.6 Broadcast Time Slot Connection***.

- **Protective Time Slot Connection**

  Protective time slot connection means two source time slots or paths and one destination time slot or path are connected to compose protective connection.

  For the setup procedure of the protective time slot connection, refer to ***4.5.7 Protective Time Slot Connection***.

4.5.2 Cross Connect Configuration Dialog Box

The crossconnect configuration setup operation is operated via the **Cross Connect** Configuration dialog box. This section provides the procedure to open the **Cross Connect Configuration** dialog box and functions provided with this dialog box.

4.5.2.1 Open Cross Connect Configuration Dialog Box

Perform the following to display the **Cross Connect Configuration** dialog box:

Procedure

1 Start up the ADM Management Tool, and login to the target NE.

2 Open the management dialog box of the target NE.

3 Select **Cross Connect Configuration** from the **Configuration** menu. The **Cross Connect Configuration** dialog box shown in ***Fig. 4-5-93*** appears:

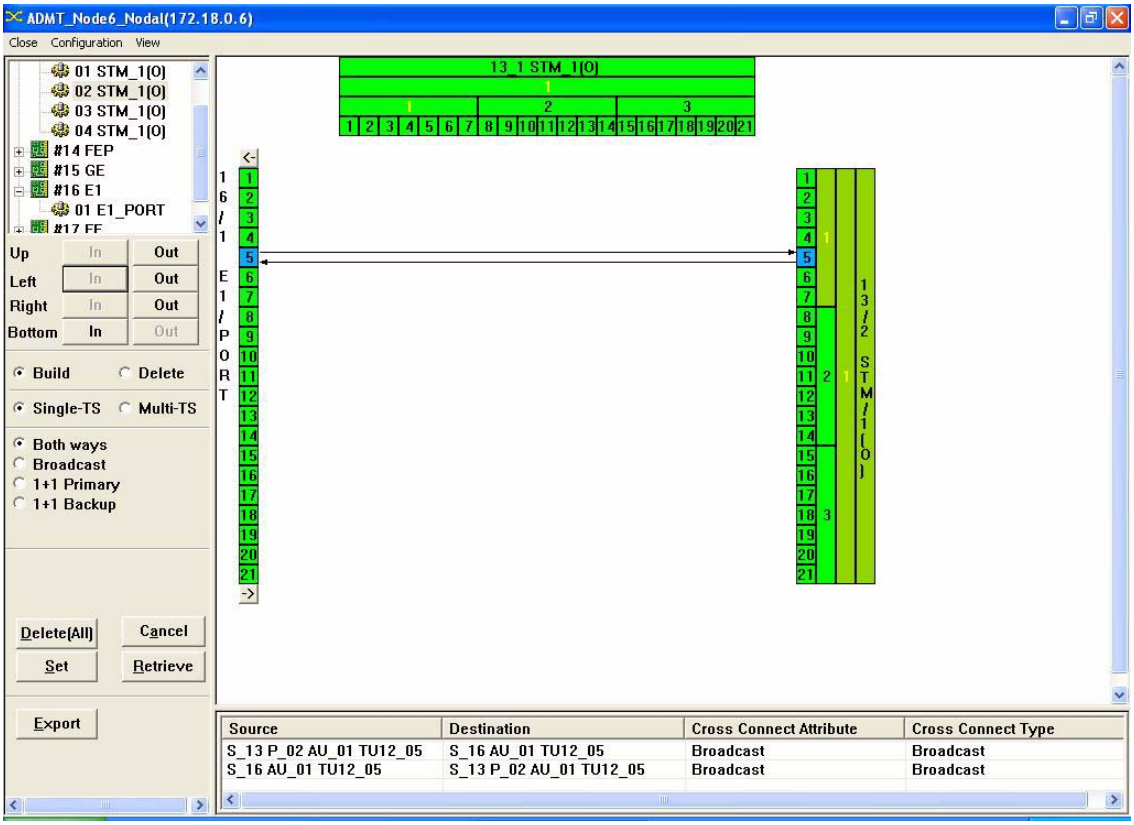


Fig. 4-5-93 Cross Connect Configuration Dialog Box

4.5.2.2 Items in Cross Connect Configuration Dialog Box

The **Cross Connect Configuration** diagram has the following items: (1/2)

Items	Description	Note
Port list box	Select the port.	(tree diagram)
Configuration window	Display the crossconnect configuration.Time slot connections can be selected by clicking.	The color of connection turns pinkish red when selected.
Up	Moves the port location in the configuration window to upward by clicking **In**.	–
Left	Moves the port location in the configuration window to the left by clicking **In**.	–
Right	Moves the port location in the configuration window to the right by clicking **In**.	–
Bottom	Moves the port location in the configuration window downward by clicking **In**.	–
Build	Creates a new time slot connection.	(radio button)
Delete	Deletes the selected time slot connection. When this is selected, Multi-TS is disabled.	(radio button)
Single-TS	Specifies the Single-TS mode. Under this mode, a new connection should be created one-by-one	(radio button)
Multi-TS	Specifies the Multi-TS mode. Under this mode, multi time slot connections can be created at a time based on different types of function unit (32x2M extended card).	(radio button) This option is invalid when configuring the protective time slot with **1+1 Primary** or **1+1 Backup** option.
Both Ways	Build a bidirectional cross-connection, when you specified the source address and destination address in 'both ways' mode.	(radio button)
Broadcast	Specifies the broadcast time slot connection. In this connection, a source time slot can connect to multi-destination time slots.	(radio button)
1+1 Primary	Specifies the 1+1 primary path protection for destination time slot.	(radio button) When either of these options selected, the multi-TS mode is not available.
1+1 Backup	Specifies the 1+1 backup path protection for destination time slot.	
Delete [All]	Deletes all the crossconnection on the equipment.	
Set	Makes the current crossconnect setting valid. The setting is sent to the NE.	–
Cancel	Makes the current crossconnect setting invalid. The setting is cancelled and not sent to the NE.	–
Retrieve	Retrieves the current crossconnect setting status to the ADM Management Tool.	–
Export	Click "Export" button to export the cross connection configuration to a "csv" format file.	–
Source	Display the source time slots.	(no selection)
Destination	Display the destination time slots.	(no selection)

The **Cross Connect Configuration** diagram has the following items: (2/2)

Items	Description	Note
Cross Connect Attribute	Display the crossconnect attributes	(no selection)
Cross Connect Type	Displays the crossconnect type: •Uni-directional Unprotected •Bi-directional Unprotected •Broadcast •Uni-directional open end protected •Uni-directional close end protected •Bi-directional Protected	(no selection)

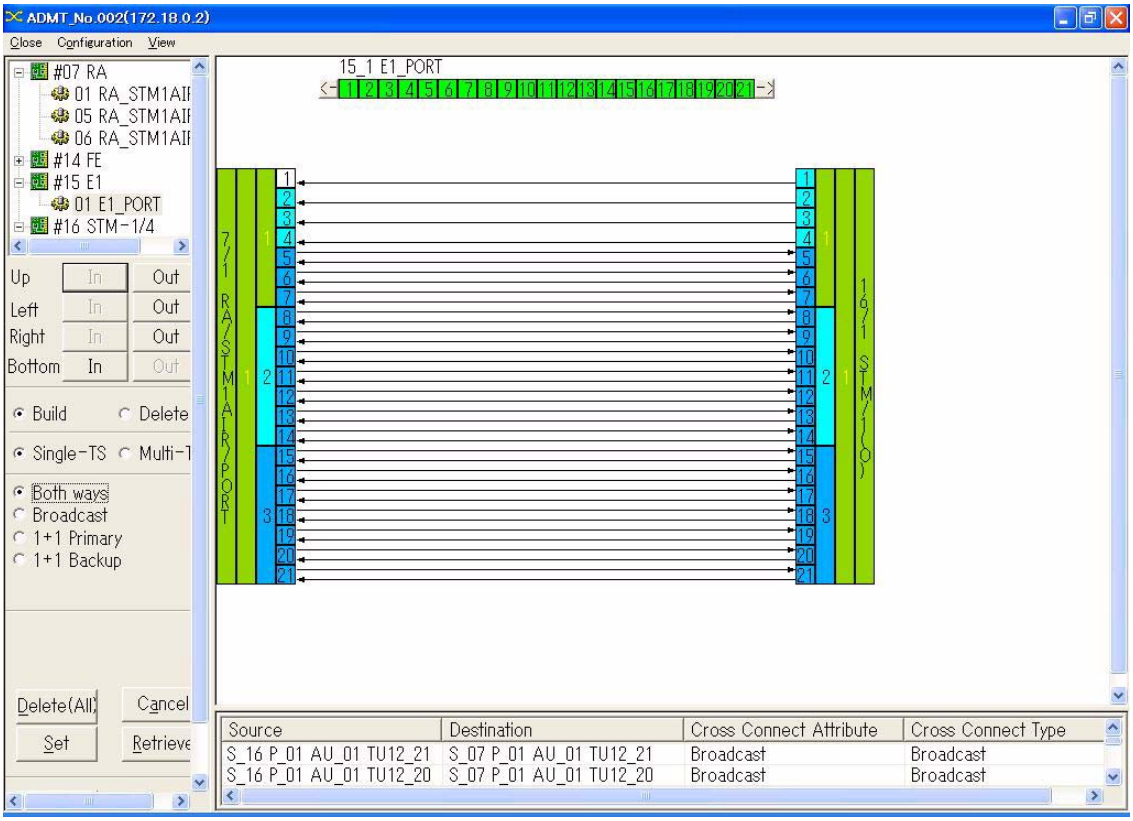


Fig. 4-5-94 Color Instance of Cross Connect Configuration Dialog Box

Color Supplementary Explanation

Background Color	Character Color	Figure Instance	Description
Any color	**Yellow Bold Character**	1	Selected Layer
White	**Any color**	1	Selected channel
Light Blue	**Any color**	2	One direction occupied
Blue	**Any color**	5	Both direction occupied
Dark Green	**Any color**	1	The lower layer is partially/full occupied
Light Green	**Any color**	2	No occupied

4.5.2.3 Pop-Up Menu for Time Slot Configuration

A pop-up menu window shown in ***Fig. 4-5-95*** is provided for the time slot configuration. This window appears by right-clicking the mouse.

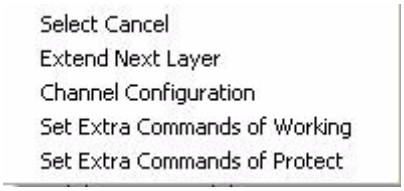


Fig. 4-5-95 Pop-Up Menu for Time Slot Configuration

The functions of each menu in this pop-up window is as follows:

ITEMS	DESCRIPTION
Select Cancel	Cancels the selected time slots or the crossconnection that has been built.
Extend Next Layer	Extends the layer to see next order path. When one of ports you have selected is moved, the port icon will be seen first in the visual time slot configuration window. By right-clicking to open the menu and selecting Extend Next Layer, the higher order path VC4, TUG3, and VC12 path can be seen sequentially, by repeating this operation. See for detailed information.
Channel Configuration	Sets WTR time and Hold Off Time for path protection.
Set Extra Command of Working	Sets operation status of path working.
Set Extra Command of Protect	Sets operation status of path protection.

4.5.2.3.1 Extend Layer

In the configuration window, each of three TUG3 extends to 21 TU-12s by selecting Extend Next Layer from the pop-up menu. For the convenience of thoroughly understanding the relationship among TU12, TUG2 and TUG3, the following list is provided. This table shows the multiplexing arrangements of three TU-12s via the TU-2, and multiplexing arrangement of seven TUG-2s via TUG-3 as right column.

ADM Management Tool		ITU-T			
TUG3	TU12	TS NO.	TUG3	TUG2	TU12
1	1	1	1	1	1
1	2	2	1	1	2
1	3	3	1	1	3
1	4	4	1	2	1
1	5	5	1	2	2
1	6	6	1	2	3
1	7	7	1	3	1
1	8	8	1	3	2
1	9	9	1	3	3
1	10	10	1	4	1
1	11	11	1	4	2
1	12	12	1	4	3
1	13	13	1	5	1
1	14	14	1	5	2
1	15	15	1	5	3
1	16	16	1	6	1
1	17	17	1	6	2
1	18	18	1	6	3
1	19	19	1	7	1
1	20	20	1	7	2
1	21	21	1	7	3
2	22	22	2	1	1
2	23	23	2	1	2
2	24	24	2	1	3
2	25	25	2	2	1
2	26	26	2	2	2
2	27	27	2	2	3
2	28	28	2	3	1
2	29	29	2	3	2
2	30	30	2	3	3
2	31	31	2	4	1
2	32	32	2	4	2
2	33	33	2	4	3
2	34	34	2	5	1
2	35	35	2	5	2
2	36	36	2	5	3
2	37	37	2	6	1
2	38	38	2	6	2
2	39	39	2	6	3
2	40	40	2	7	1
2	41	41	2	7	2
2	42	42	2	7	3
3	43	43	3	1	1
3	44	44	3	1	2
3	45	45	3	1	3
3	46	46	3	2	1
3	47	47	3	2	2
3	48	48	3	2	3
3	49	49	3	3	1
3	50	50	3	3	2
3	51	51	3	3	3
3	52	52	3	4	1
3	53	53	3	4	2
3	54	54	3	4	3
3	55	55	3	5	1
3	56	56	3	5	2
3	57	57	3	5	3
3	58	58	3	6	1
3	59	59	3	6	2
3	60	60	3	6	3
3	61	61	3	7	1
3	62	62	3	7	2
3	63	63	3	7	3

4.5.3 Task Flow for Crossconnection Setup

This section provides the general procedure for crossconnection setup. All the operations are performed via the **Cross Connect Configuration** dialog box using the ADM Management Tool.

4.5.3.1 Task Flow

The task flow of the crossconnection setup is as follows:

1 Open the **Cross Connect Configuration** dialog box.

2 Select a port and move it to the configuration window.

3 Specify necessary options.

4 Perform necessary operations using the pop-up menu.

5 Complete the crossconnection setting.

For detailed procedures, see ***4.5.3.2 General Procedure for Crossconnection Setup***.

Note: When crossconnect setup is unsuccessful, to remove any inconsistency between ADM Management Tool and NE, retrieving crossconnect information is required before starting next operation.

4.5.3.2 General Procedure for Crossconnection Setup

The following shows the general procedure to setup cross connection, based on the task flow shown in ***4.5.3.1 Task Flow*** above. For the procedure according to each cross connection type, refer to ***4.5.4 Unidirectional Time Slot Connection***, ***4.5.5 Both Ways Time Slot Connection***, ***4.5.7 Protective Time Slot Connection***, respectively.

Procedure

1 Open the **Cross Connect Configuration** dialog box.

Open the **Cross Connect Configuration** dialog box. Refer to ***4.5.2.1 Open Cross Connect Configuration Dialog Box***.

2 Select a port and move it to the configuration window.

3 Select a port in the list box, and then click the **In** button of **Up**, **Left, Right** or **Bottom** option. The selected port is moved into the crossconnection configuration window on the right.

*Note: The location of the port in the window depends on what option is selected to **In, Up, Left, Right** and **Bottom** correspond to the position of up, left, right, and bottom in the configuration window, respectively. The port can be located up, left, right or bottom.*

4 Specify necessary options.

Click the necessary options on the left frame according to the crossconnection type to be configured. For the function of each option, refer to ***4.5.2.2 Items in Cross Connect Configuration Dialog Box***.

- Click the **Build** radio button to create a new time slot connection.
- Click the **Delete** radio button to delete the time slot connection had has been once built.
  Then select the destination time slot so that its relevant crossconnection turns from black to pinkish red, and click the **Delete** button to delete the built crossconnection.
- Select **Single-TS** or **Multi-TS** by clicking the corresponding radio button.
  In the Single-TS mode, only one time slot connection can be built at a time, while in the Multi-TS mode all time slot connections can be built at one time.
- When configuring the bidirectional time slot connection, click the **Both Ways** radio button.
- When configuring the broadcast time slot connection, click the **Broadcast** radio button.
- When configuring the protective time slot connection, select **1+1 Primary** or **1+1 Backup** by clicking the corresponding radio button, then connect proper time slot.

  After this, the selected radio button has automatically switched to the selected path protection, prompting to configure the corresponding protective time slot.

5 Perform necessary operations using the pop-up menu.

Please right-click the mouse to open the pop-up menu and select a menu according to the configured crossconnection type, if necessary. When configuring the protective time slot connection, for example, select **Channel Configuration** from the pop-up menu to specify the WTR time and Hold Off time for path protection (see ***4.5.7 Protective Time Slot Connection*** for detailed information on the protective time slot connection).

6 Complete the crossconnection setting.

Perform one of the following:

- Click the **Set** button to complete the crossconnection setting. In this event, the setting data is sent to the NE.
- Click the **Cancel** button to cancel the crossconnection setting. In this event, the setting data is not sent to the NE.
- Click the **Delete [All]** button to delete all the crossconnection setting on the equipment.
- Click the **Retrieve** button to retrieve the current crossconnection setting status to the ADM Management Tool.

This step is the end of the procedure.

4.5.4 Unidirectional Time Slot Connection

This section provides the procedure to establish the unidirectional time slot connection.

Perform the following procedure:

Procedure

1 Open the **Cross Connect Configuration** dialog box.

2 Select a port in the list box, and then click the **In** button of **Up, Left, Right** or **Bottom** option. The selected port is moved into the crossconnection configuration window on the right.

3 Click the **Build** radio button.

4 Select **Single-TS** or **Multi-TS** by clicking the corresponding radio button.

Note: In the Single-TS mode, only one time slot connection can be built at a time, while in the Multi-TS mode all time slot connections can be built at one time.

5 Select **Broadcast** or **Both Ways**.

6 Select a source time slot ID or path in the crossconnect configuration window by clicking. The selected source time slot or path will be displayed in red.

*Note: To cancel the selection, right-click the time slot that has been selected and click **Select Cancel** in the pop-up menu.*

7 Click the destination time slot ID or path. The time slot connection is built.

8 Click the **Set** button.

This step is the end of the procedure.

4.5.5 Both Ways Time Slot Connection

This section provides the procedure to build the bidirectional time slot connection.

Fig. 4-5-96 shows an example of both ways time slot connection:

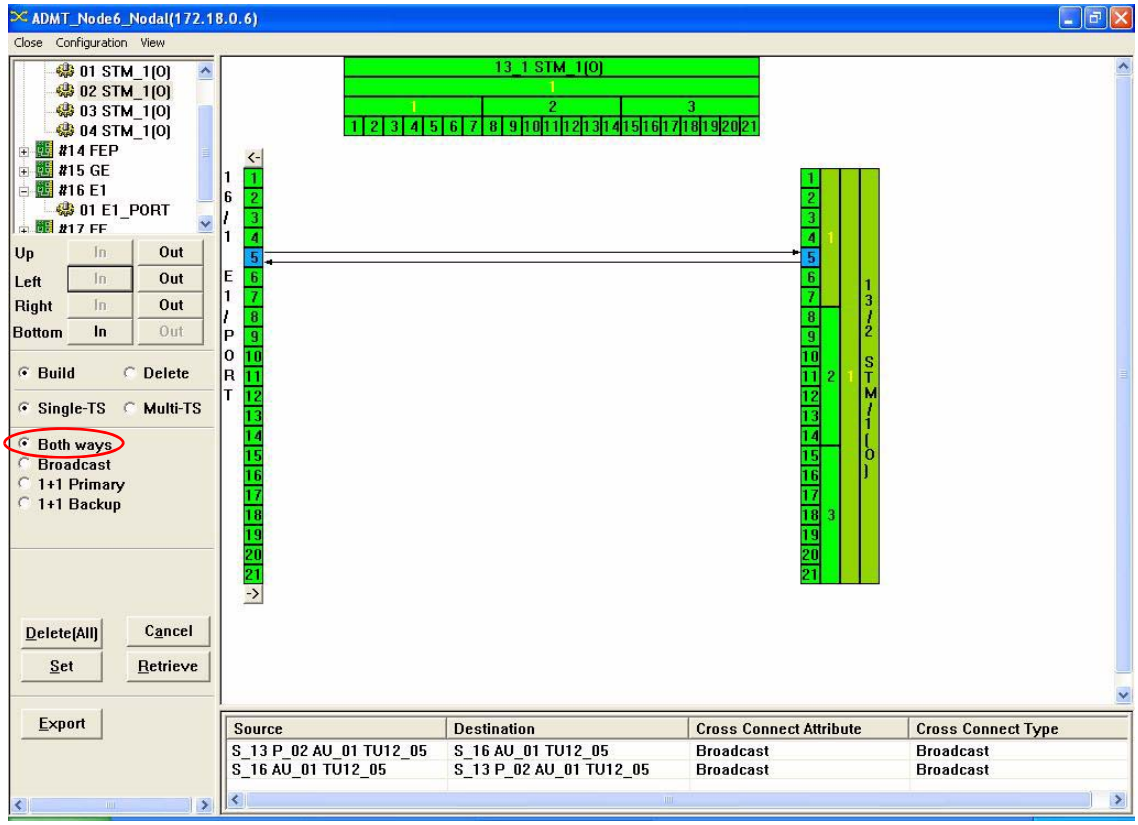


Fig. 4-5-96 Both Ways Time Slot Connection

To configure the Both Ways time slot connection, perform the following procedure:

Procedure

1 Open the **Cross Connect Configuration** dialog box.

2 Select a port in the list box, and then click the **In** button of **Up, Left, Right** or **Bottom** option. The selected port is moved into the crossconnection configuration window on the right.

3 Click the **Build** radio button.

4 Select **Single-TS** or **Multi-TS** by clicking the corresponding radio button.

Note: In the Single-TS mode, only one time slot connection can be built at a time, while in the Multi-TS mode all time slot connections can be built at one time.

5 Click the **Both Ways** radio button.

6 Select a source time slot ID or path in the crossconnect configuration window by clicking. The selected source time slot or path will be displayed in red.

*Note: To cancel the selection, right-click the time slot that has been selected and click **Select Cancel** in the pop-up menu.*

7 Click the destination time slot ID or path. The time slot connection is built.

8 Select the time slot or path again that needs to broadcast, and connect them to the corresponding time slot or channel of another side.

9 Click the **Set** button.

This step is the end of the procedure.

4.5.6 Broadcast Time Slot Connection

This section provides the procedure to build the broadcast time slot connection.

Fig. 4-5-97 shows an example of broadcast time slot connection:

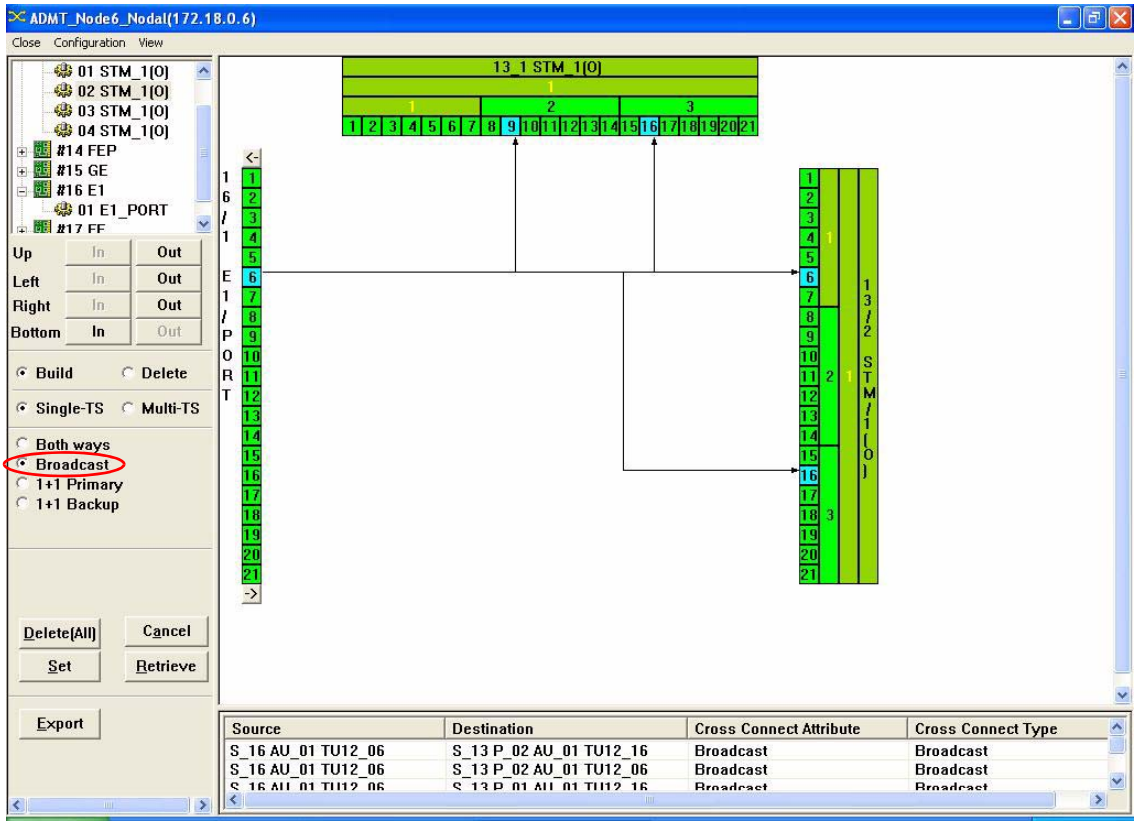


Fig. 4-5-97 Broadcast Time Slot Connection

To configure the broadcast time slot connection, perform the following procedure:

Procedure

1 Open the **Cross Connect Configuration** dialog box.

2 Select a port in the list box, and then click the **In** button of **Up, Left, Right** or **Bottom** option. The selected port is moved into the crossconnection configuration window on the right.

3 Click the **Build** radio button.

4 Select **Single-TS** or **Multi-TS** by clicking the corresponding radio button.

Note: In the Single-TS mode, only one time slot connection can be built at a time, while in the Multi-TS mode all time slot connections can be built at one time.

5 Click the **Broadcast** radio button.

6 Select a source time slot ID or path in the crossconnect configuration window by clicking. The selected source time slot or path will be displayed in red.

*Note: To cancel the selection, right-click the time slot that has been selected and click **Select Cancel** in the pop-up menu.*

7 Click the destination time slot ID or path. The time slot connection is built.

8 Select the time slot or path again that needs to broadcast, and connect them to the corresponding time slot or channel of another side.

9 Click the **Set** button.

This step is the end of the procedure.

Note: When broadcast path is configured, source path termination point may send RDI signal, because it cannot receive appropriate path overhead information from destination path termination point. In order to avoid this situation, it is recommended to make two way paths between one of destination path termination point and source path termination point.

4.5.7 Protective Time Slot Connection

This section provides the procedure to build the protective time slot connection.

Fig. 4-5-98 shows an example of protective time slot connection:

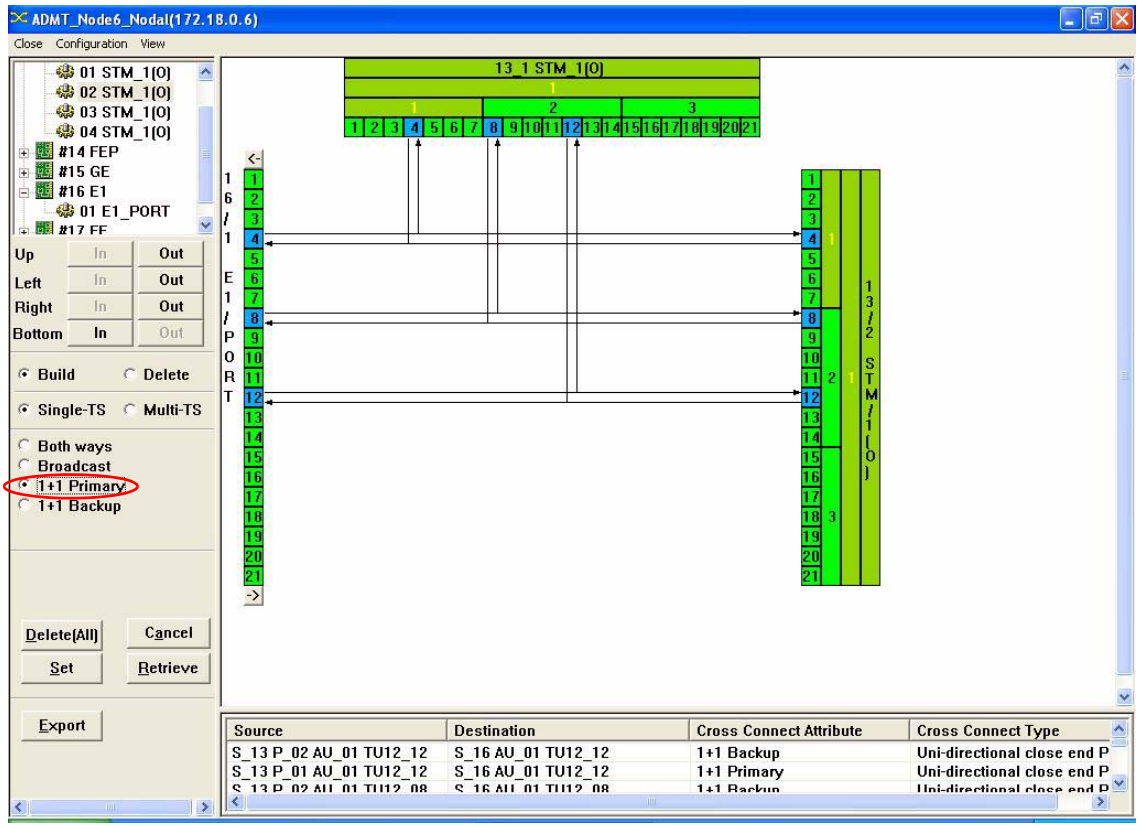


Fig. 4-5-98 Protective Time Slot Connection

To configure the protective time slot connection, first ensure the types of protection: 1+1 primary path protection or 1+1 backup path protection. Then perform the following procedure:

Procedure

1 Open the **Cross Connect Configuration** dialog box.

2 Select a port in the list box, and then click the **In** button of Up, **Left, Right** or **Bottom** option. The selected port is moved into the crossconnection configuration window on the right.

3 Click the **Build** radio button.

4 Select **Single-TS** by clicking the radio button.

5 Click the **1+1 Primary** or **1+1 Backup** radio button according to the path protection type to be set.

6 Connect proper time slot.

7 To specify the path parameters, perform the following:

1) Right-click the destination time slot number to open the pop-up menu, and then select **Channel Configuration**. The **Channel Configuration** dialog box shown in ***Fig. 4-5-99*** appears:

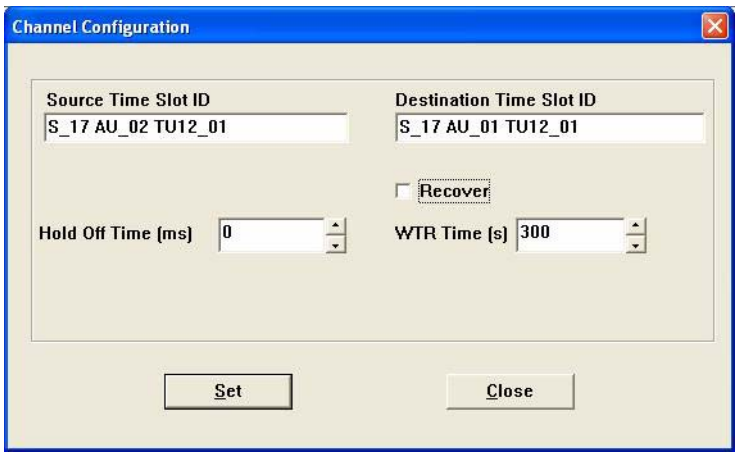


Fig. 4-5-99 Channel Configuration Dialog Box (Standby Channel Configuration)

2) In this dialog box, the **Source Time Slot ID** and **Destination Time Slot ID** with path identity are displayed. Confirm the settings.

3) Click the **Recover** check button to enable recover switching after the fault has been cleared.

4) Set the hold off time into **Hold Off Time [ms].** The available range is within 0 through10000 ms and the step is 100ms.

5) Set the wait-to-restore time into **WTR Time [s].** The available range is within 0 through 720 s and the step is 60s.

6) Confirm the settings, and then click the **Set** button. The **Channel Configuration** dialog box disappears and the **Cross Connect Configuration** dialog box is displayed again.

*Note: To cancel the path parameter setting, click the **Close** button. The **Channel Configuration** dialog box disappears and the **Cross***

Connect Configuration *dialog box is displayed, ignoring all the settings specified here.*

8 To specify the switching mode (operation status of channel protection), right-click the destination time slot number to open the pop-up menu, and then select **Set Extra Command of Working** or **Set Extra Command of Protect** command.

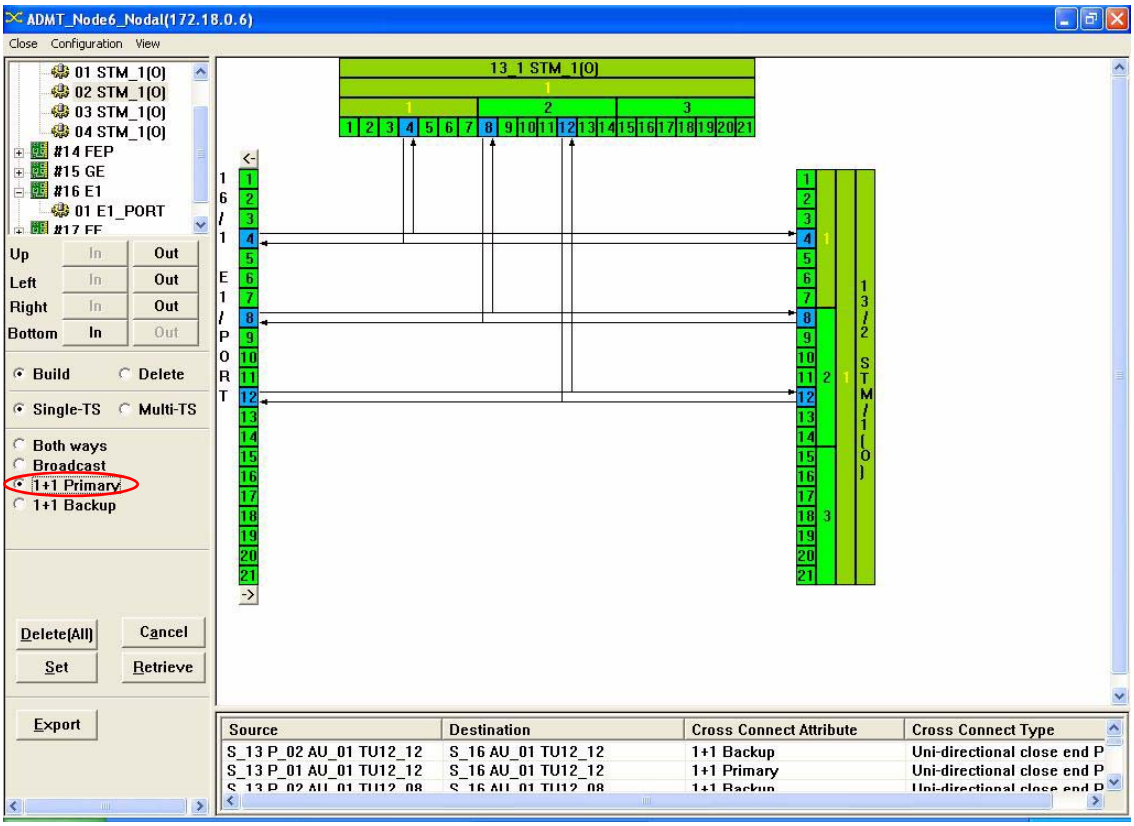


Fig. 4-5-100 Specify Protective Time Slot Connection

The **Set Extra Commands** dialog box shown in ***Fig. 4-5-101*** below appears:

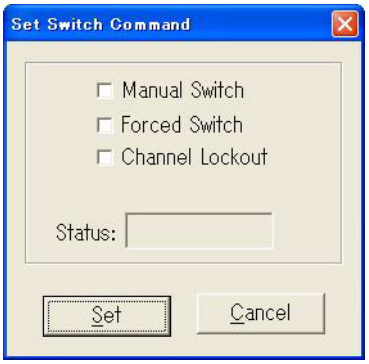


Fig. 4-5-101 Set Switch Command Dialog Box

Note: By Clicking "Set Extra Command of Working", "Channel Lockout" button becomes Gray-out.

In this dialog box, perform the following:

1) Click a check box to select the switching mode. The function of each mode is shown as follows:

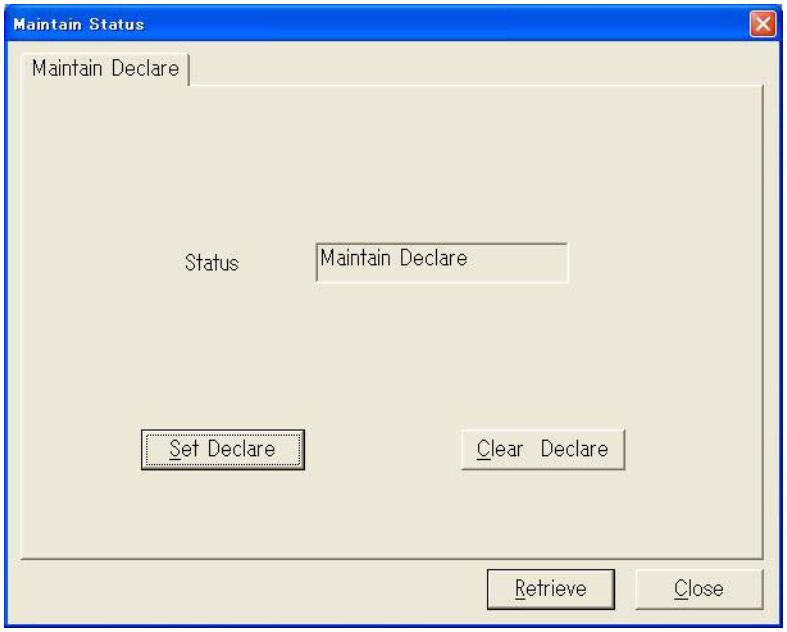
SWITCHING MODE	FUNCTION
Manual Switch	If the command is set and protection channel is in normal status, the traffic will be switched to protection channel.
Forced Switch	If the command is set, the traffic will be switched to protection channel unconditionally.
Channel Lockout	If the command is set, the protection channel will be forbidden to use unconditionally.

Note: It is impossible to set several commands at the same time because a new command set will automatically cancel the command set before.

2) Confirm the setting and click the **Set** button.

*Note: To cancel the switching mode setting, click the **Cancel** button. The **Set Switch Command** dialog box disappears and the **Cross Connect Configuration** dialog box is displayed, ignoring the setting specified here.*

3) After that **Maintain Status** menu will pop up, you should click **Set Declare** button to enable maintenance function and confirm the status is indicated as Maintenance Declare, the setting window shown as below:



This step is the end of the procedure.

4.5.8 Time Slot Connection Configuration Used Text Interfaces

This section provides the general procedure for crossconnection setup by using text interface. All the operations are performed via the **Cross Connect Configuration** dialog box using the ADM Management Tool.

4.5.8.1 General Procedure for Crossconnection Retrieve

Perform the following procedure:

Procedure

1 Open the **Cross Connect Configuration** dialog box.

2 Select **Panel** from the drop-down list.

3 Select the cross connect level.

4 Then click **Retrieve** button to upload cross connect status:

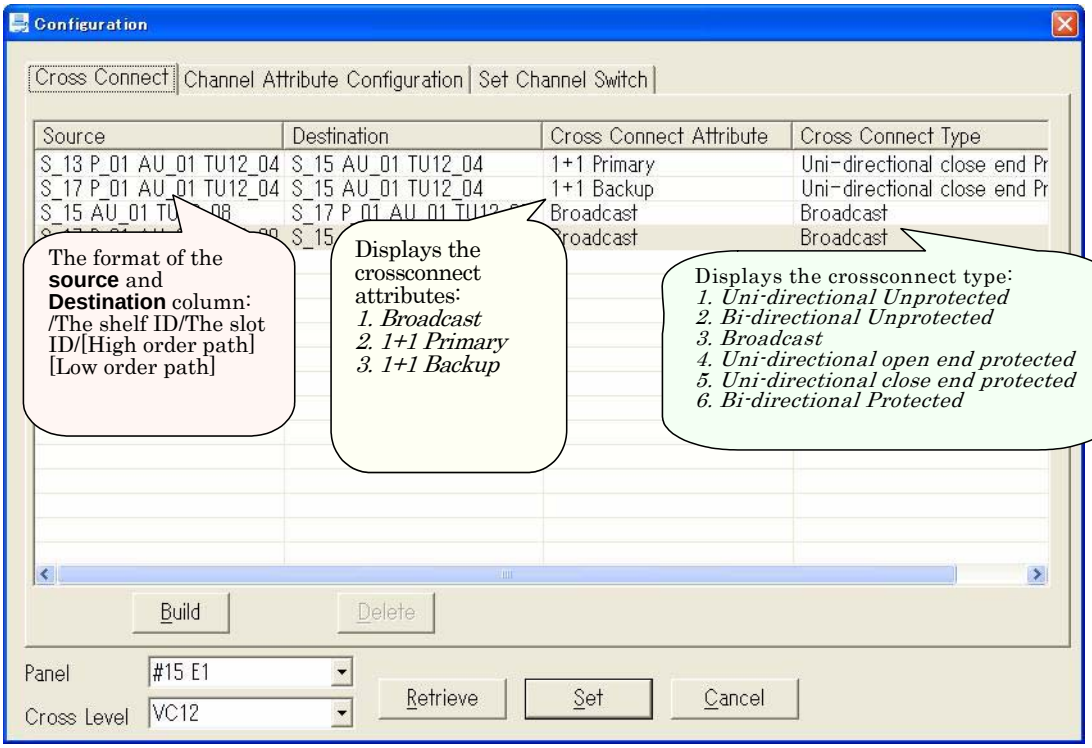


Fig. 4-5-102 Cross-connect Status

This step is the end of the procedure.

4.5.8.2 General Procedure for Crossconnection Setup

Perform the following procedure:

Procedure

1 Open the **Cross Connect Configuration** dialog box.

2 Select **Cross Connect** from the **Configuration** menu.

3 Click the **Build** button to open the **Cross Connect Configuration** window.

4 Select the cross connect type and cross connect level from the **Cross Connect Configuration** window.

5 Configure the time slot for every object.

6 Click the **End** button to finish the configuration.

This step is the end of the procedure.

4.5.8.2.1 Procedure for Uni-directional Unprotected Crossconnection Setup

Since the cross connect type is classified as Uni-directional Unprotected, Bidirectional Unprotected, Broadcast, Uni-directional open end protected, Uni-directional close end protected, Bidirectional protected. It is only the type of Uni-directional unprotected for example to show how to configure the cross connect.

Procedure

1 Open the **Cross Connect Configuration** dialog box.

2 Select **Cross Connect** from the **Configuration** menu. The **Cross Connect** dialog box is shown in.

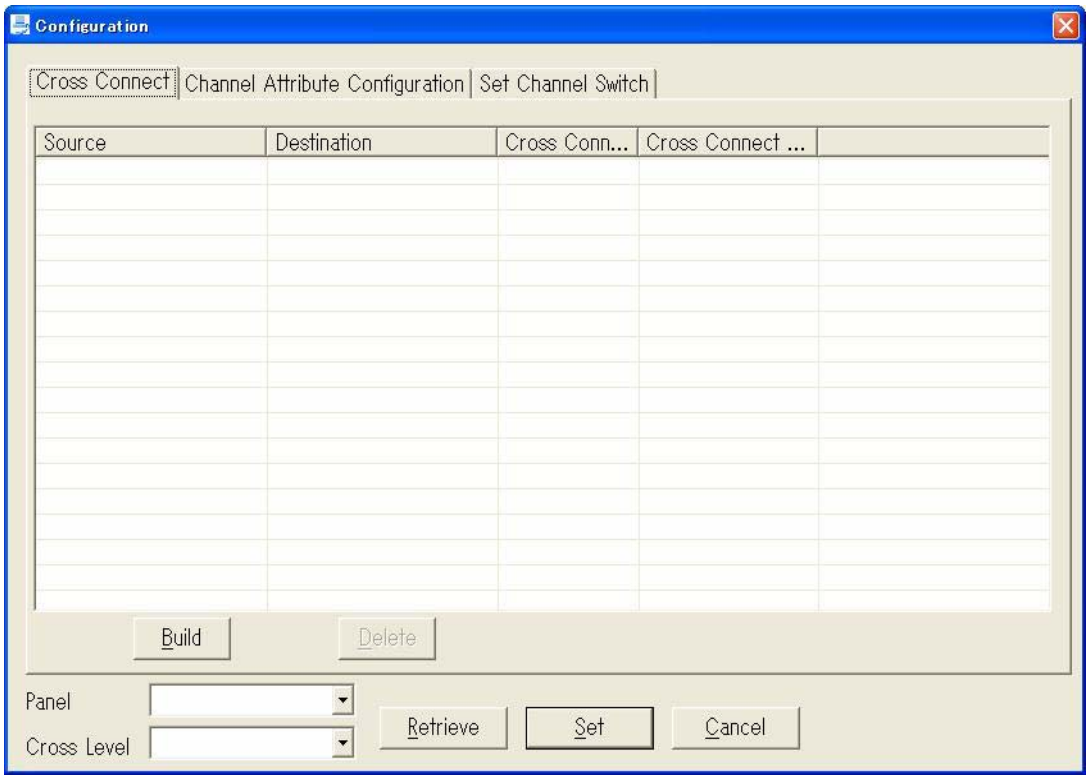


Fig. 4-5-103 Cross-connect Configuration

3 Click the **Build** button to open the **Cross Connect Configuration** window, it is shown as bellow:

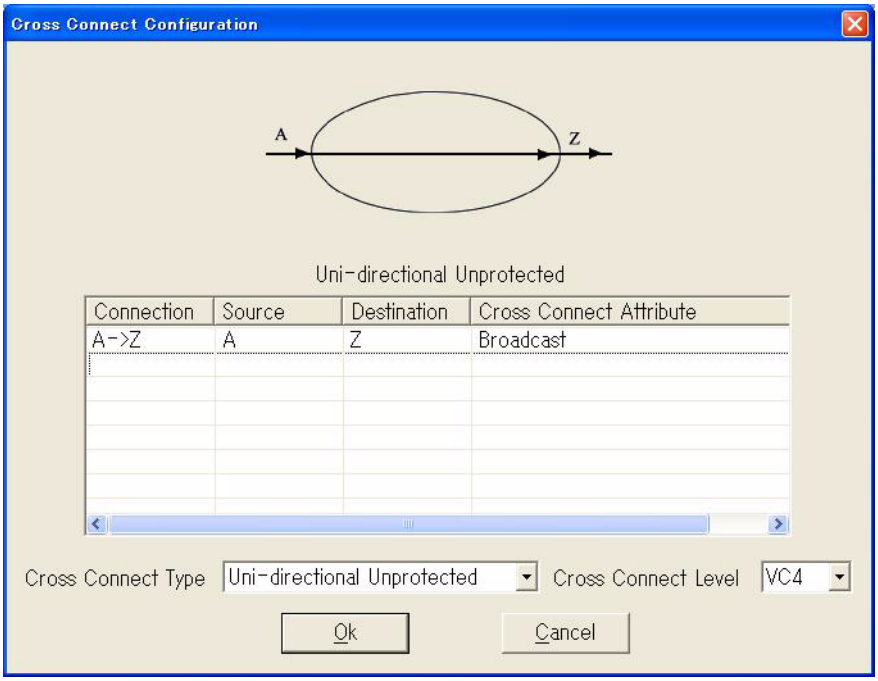


Fig. 4-5-104 Cross-connect Configuration Window

4 Select **Uni-directional Unprotected** from the **Cross Connect Type** drop-down list and then select the cross connect level, at last, click Ok button to continue the cross connect configuration.

5 Just then, we need to select time slots of object A. Select **Board** from **Board** drop-down list, click the time slot which you want to configuration from **Available Time Slot** drop-down list and then click ">" to selected it, repeated this step you can select several time slots for the object A.

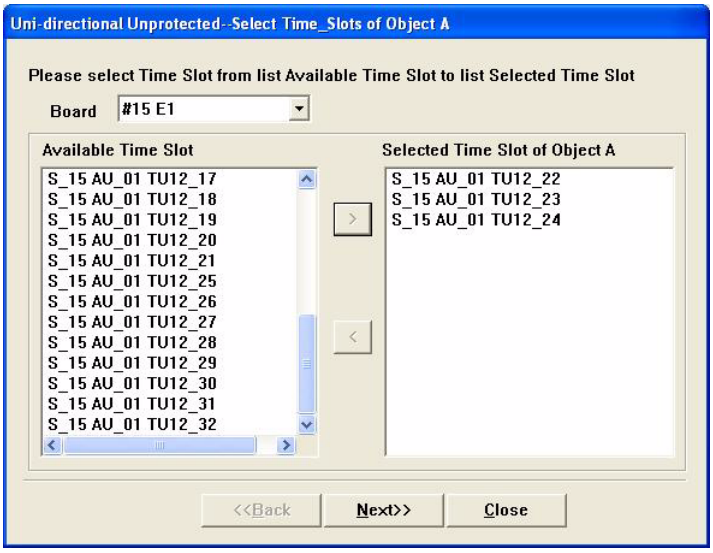


Fig. 4-5-105 Uni-directional Unprotected Configuration

6 Click **Next** button to continue.

7 Repeat step 5 to 6 to select time slot of Z.

Note: If the number of Time-Slots is not matching, it will be configured with minimum number.

8 Click the **End** button to finish the configuration, the operation interface is shown as bellow:

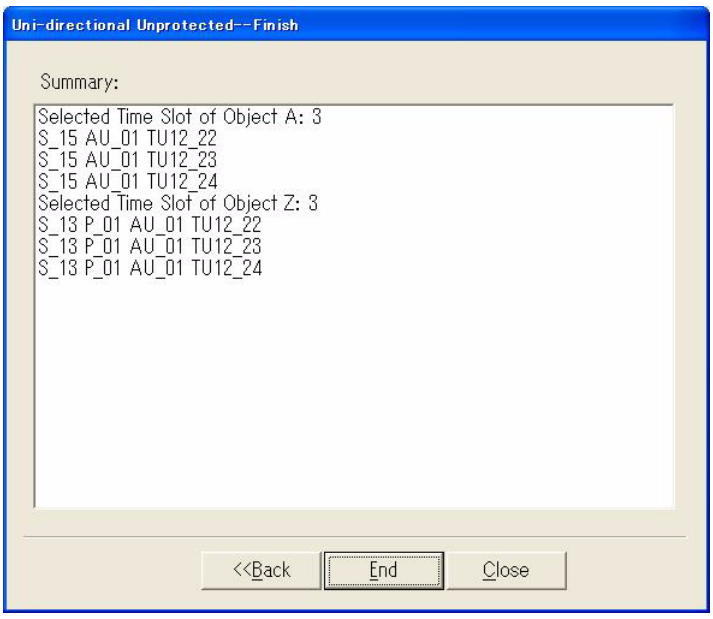


Fig. 4-5-106 Finishing Uni-directional Unprotected Configuration

This step is the end of the procedure.

4.5.8.2.2 Procedure for Bi-directional Unprotected Crossconnection Setup

This is the procedure for Bi-directional unprotected crossconnection setup.

Procedure

1 Open the **Cross Connect Configuration** dialog box.

2 Open the **Cross Connect** window from the Configuration menu.

3 Click the **Build** button to open the **Cross Connect Configuration** window, it is shown as bellow:

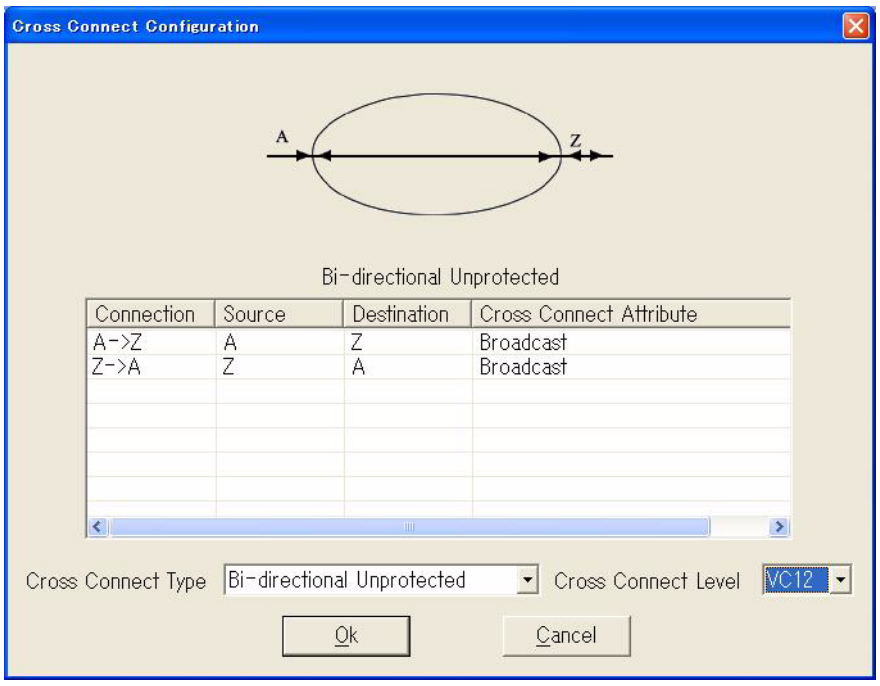


Fig. 4-5-107 Cross Connect Configuration Window

4 Select **Bi-directional Unprotected** from the **Cross Connect Type** drop-down list and then select the cross connect level, at last, click the **Ok** button to continue the cross connect configuration.

5 Just then, we need to select time slots of object A. Select **Board** from **Board** drop-down list, click the time slot which you want to configuration from **Available Time Slot** drop-down list and then click ">" to selected it, repeated this step you can select several time slots for the object A.

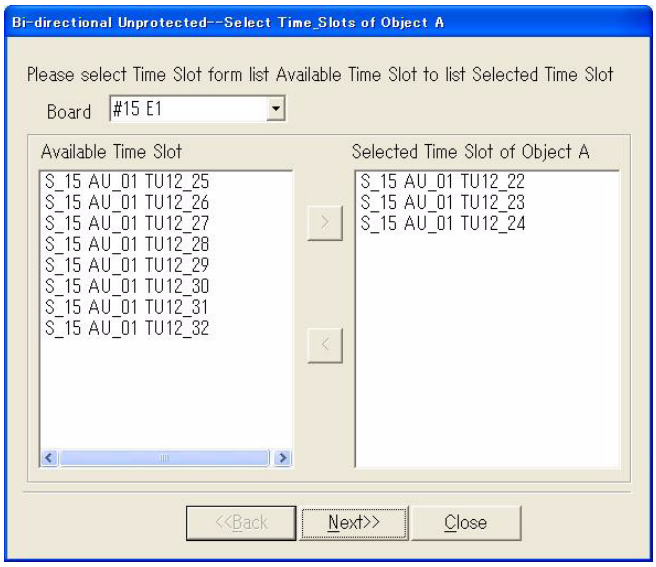


Fig. 4-5-108 Bi-directional Unprotected Configuration

6 Click **Next** button to continue.

7 Repeat step 5 to 6 to select time slot of Z.

Note: If the number of Time-Slots is not matching, it will be configured with minimum number.

8 Click the **End** button to finish the configuration, the operation interface is shown as bellow:

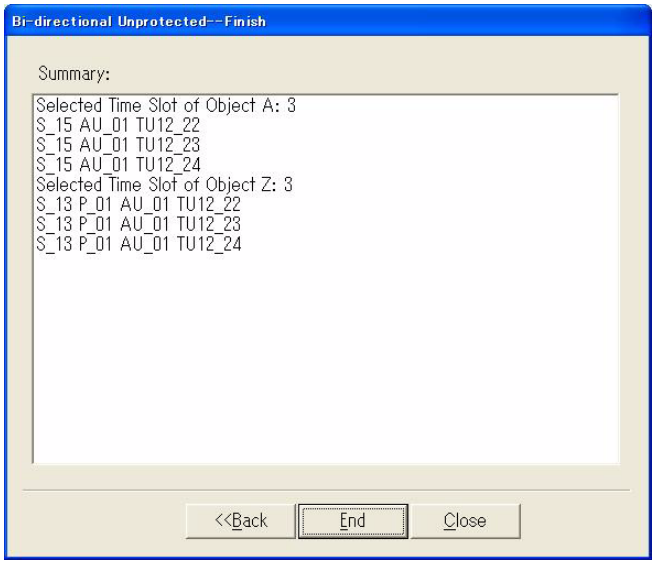


Fig. 4-5-109 Finishing Bi-directional Unprotected Configuration

This step is the end of the procedure.

4.5.8.2.3 Procedure for Broadcast Crossconnection Setup

This is the procedure for Broadcast crossconnection setup.

Procedure

1 Open the **Cross Connect Configuration** dialog box.

2 Open the C**ross Connect** window from the Configuration menu.

3 Click the **Build** button to open the **Cross Connect Configuration** window, it is shown as bellow:

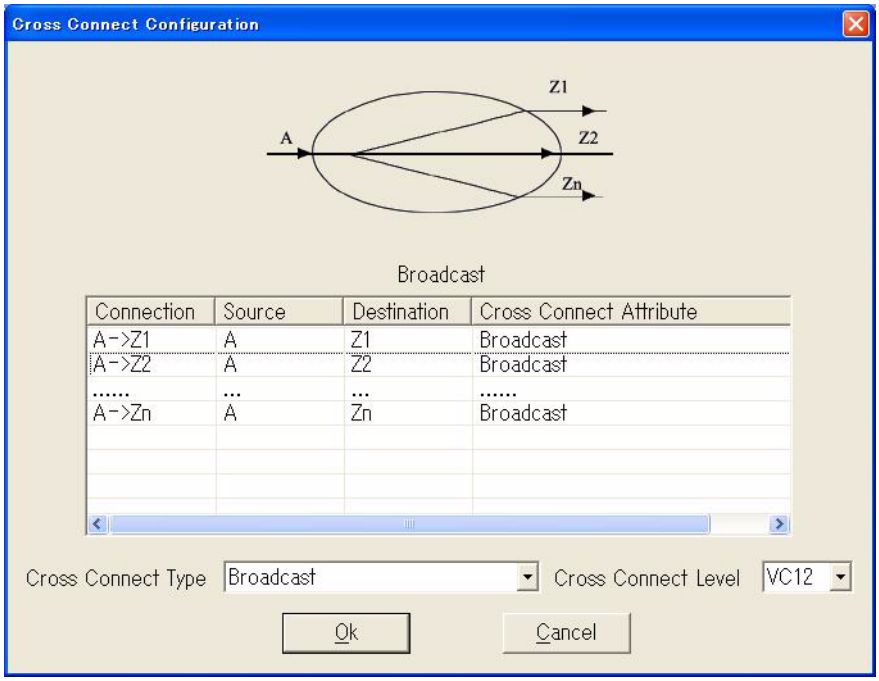


Fig. 4-5-110 Cross Connect Configuration Window

4 Select **Broadcast** from the **Cross Connect Type** drop-down list and then select the cross connect level, at last, click Ok button to continue the cross connect configuration.

5 Just then, we need to select time slots of object A. Select **Board** from **Board** drop-down list, click the time slot which you want to configuration from **Available Time Slot** drop-down list and then click ">" to selected it.

Note: Only one Time-Slot can be selected, because it is Broadcast mode.

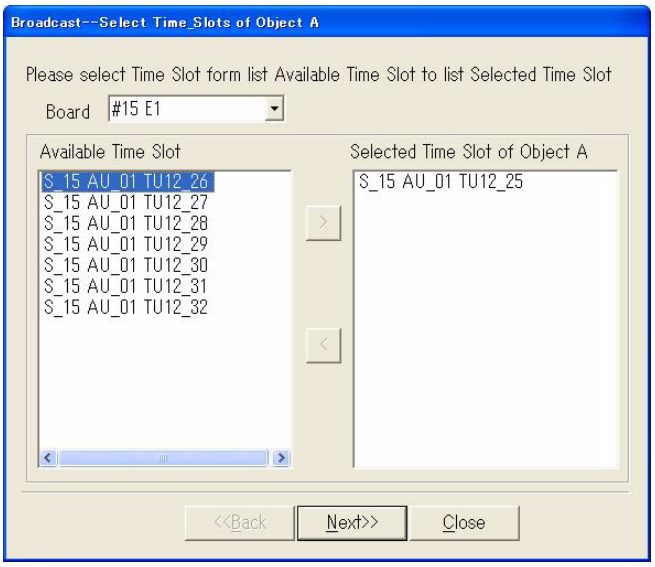


Fig. 4-5-111 Broadcast Configuration

6 Click **Next** button to continue.

7 Repeat step 5 to 6 to select time slot of Z1...Zn.

8 Click the **End** button to finish the configuration, the operation interface is shown as bellow:

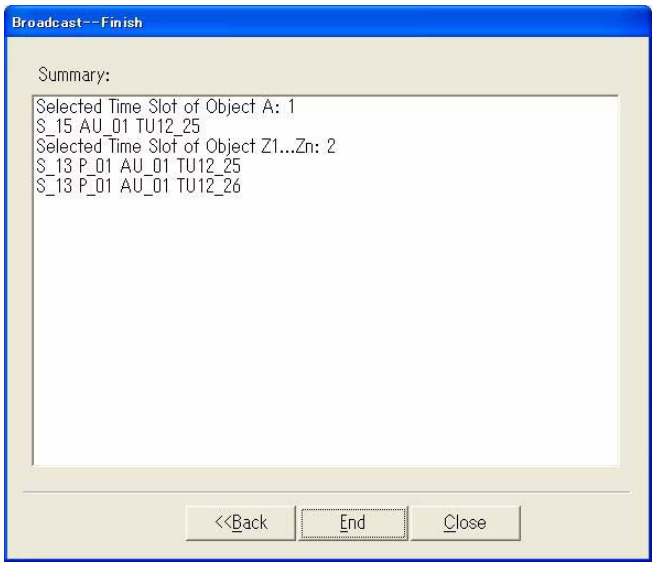


Fig. 4-5-112 Finishing Broadcast Configuration

This step is the end of the procedure.

4.5.8.2.4 Procedure for Uni-directional Open End Protected Crossconnection Setup

This is the procedure for Uni-directional open end protected crossconnection setup.

Procedure

1 Open the **Cross Connect Configuration** dialog box.

2 Open the **Cross Connect** window from the Configuration menu.

3 Click the **Build** button to open the **Cross Connect Configuration** window, it is shown as bellow:

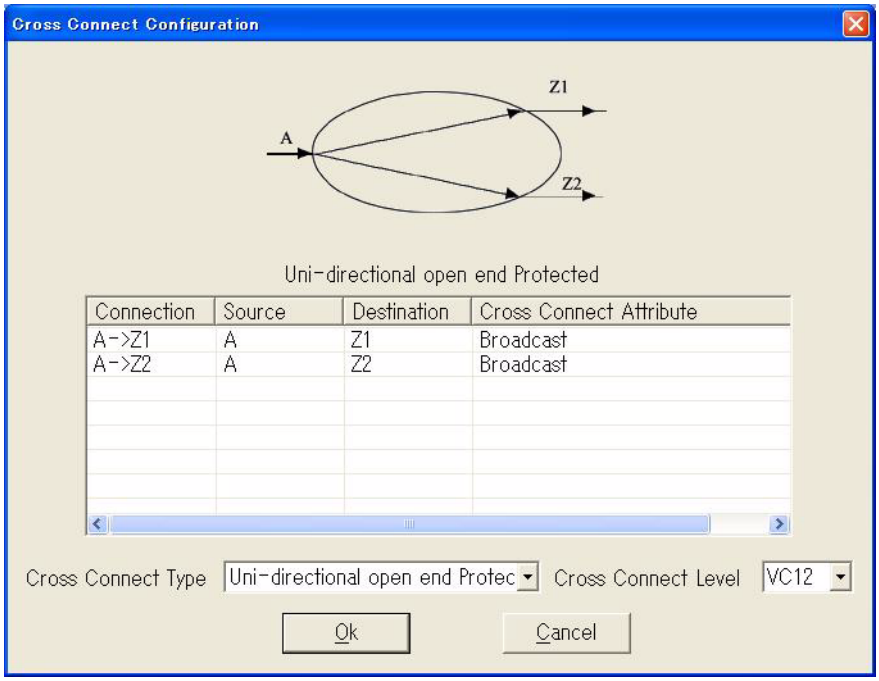


Fig. 4-5-113 Cross Connect Configuration Window

4 Select **Uni-directional open end protected** from the **Cross Connect Type** drop-down list and then select the cross connect level, at last, click Ok button to continue the cross connect configuration.

5 Just then, we need to select time slots of object A. Select **Board** from **Board** drop-down list, click the time slot which you want to configuration from **Available Time Slot** drop-down list and then click ">" to selected it. Repeated this step you can select several time slots for the object A.

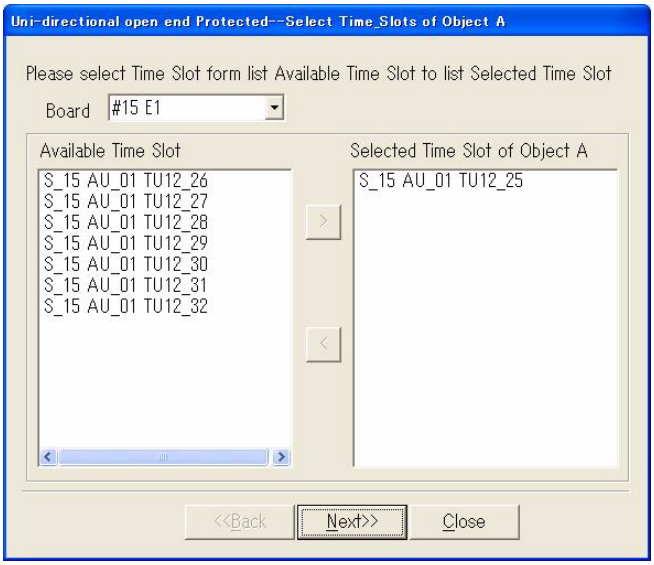


Fig. 4-5-114 Uni-directional Open End Protected Configuration

6 Click **Next** button to continue.

7 Repeat step 5 to 6 to select time slot of Z1 and Z2.

Note: If the number of Time-Slots is not matching, it will be configured with minimum number.

8 Click the **End** button to finish the configuration, the operation interface is shown as bellow:

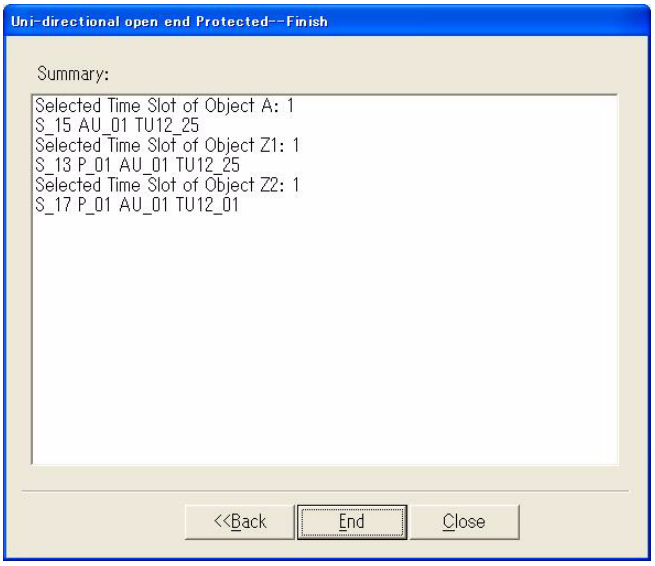


Fig. 4-5-115 Finishing Uni-directional Open End Protected Configuration

This step is the end of the procedure.

4.5.8.2.5 Procedure for Uni-directional Close End Protected Crossconnection Setup

This is the procedure for Uni-directional close end protected crossconnection setup.

Procedure

1 Open the **Cross Connect Configuration** dialog box.

2 Open the **Cross Connect** window from the Configuration menu.

3 Click the **Build** button to open the **Cross Connect Configuration** window, it is shown as bellow:

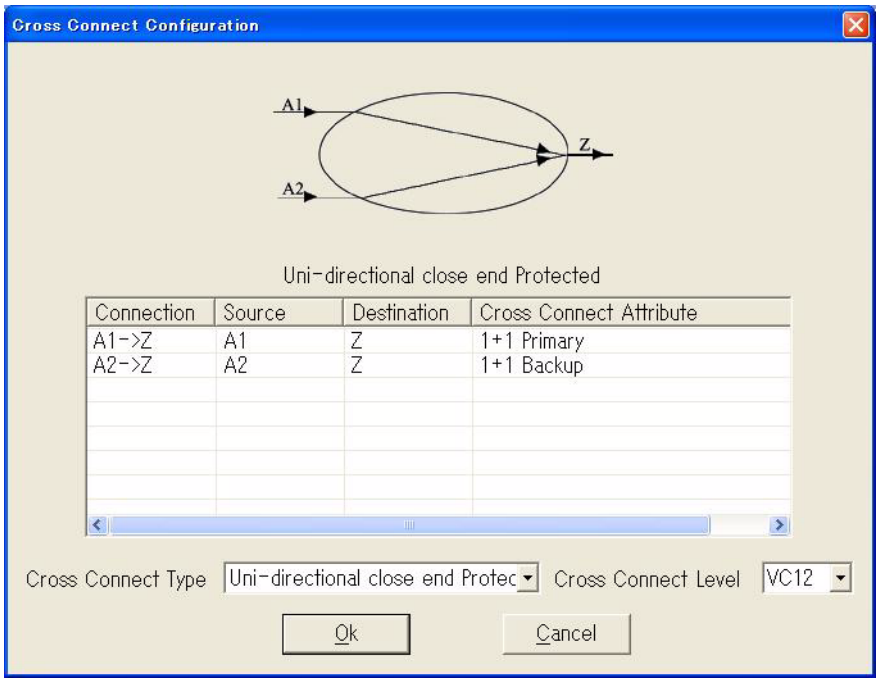


Fig. 4-5-116 Cross Connect Configuration Window

4 Select **Uni-directional close end Protected** from the **Cross Connect Type** drop-down list and then select the cross connect level, at last, click Ok button to continue the cross connect configuration.

5 Just then, we need to select time slots of object A1. Select **Board** from **Board** drop-down list, click the time slot which you want to configuration from **Available Time Slot** drop-down list and then click ">" to selected it, repeated this step you can select several time slots for the object A1.

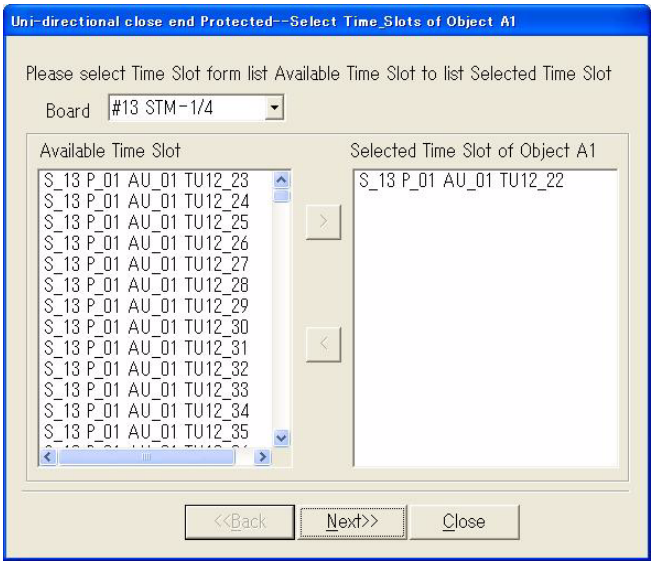


Fig. 4-5-117 Uni-directional Close End Protected Configuration

6 Click **Next** button to continue.

7 Repeat step 5 to 6 to select time slot of A2 and Z.

Note: If the number of Time-Slots is not matching, it will be configured with minimum number.

8 Click the **End** button to finish the configuration, the operation interface is shown as bellow:

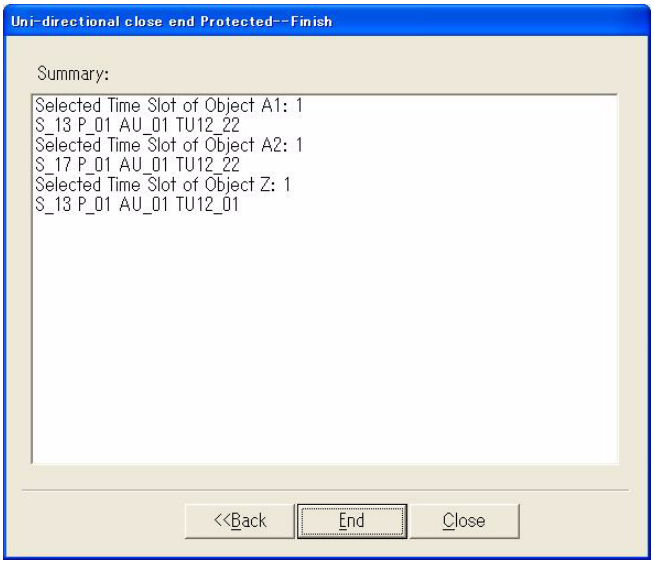


Fig. 4-5-118 Finishing Uni-directional Close End Protected Configuration

This step is the end of the procedure.

4.5.8.2.6 Procedure for Bi-directional Protected Crossconnection Setup

This is the procedure for Bi-directional protected crossconnection setup.

Procedure

1 Open the **Cross Connect Configuration** dialog box.

2 Open the **Cross Connect** window from the Configuration menu.

3 Click the **Build** button to open the **Cross Connect Configuration** window, it is shown as bellow:

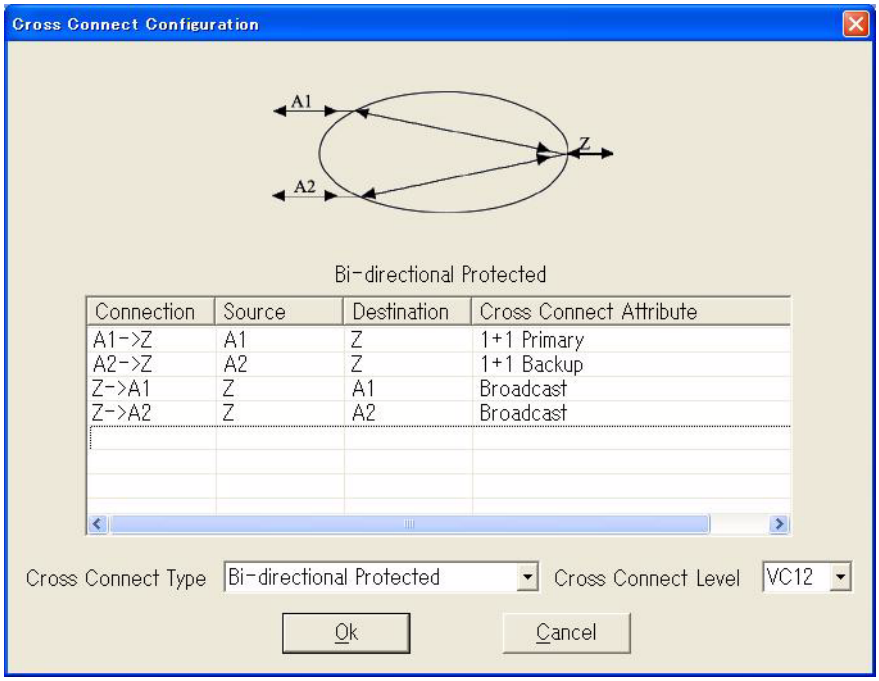


Fig. 4-5-119 Cross Connect Configuration Window

4 Select **Bi-directional** Protected from the **Cross Connect Type** drop-down list and then select the cross connect level, at last, click Ok button to continue the cross connect configuration.

5 Just then, we need to select time slots of object A1. Select **Board** from **Board** drop-down list, click the time slot which you want to configuration from **Available Time Slot** drop-down list and then click ">" to selected it, repeated this step you can select several time slots for the object A1.

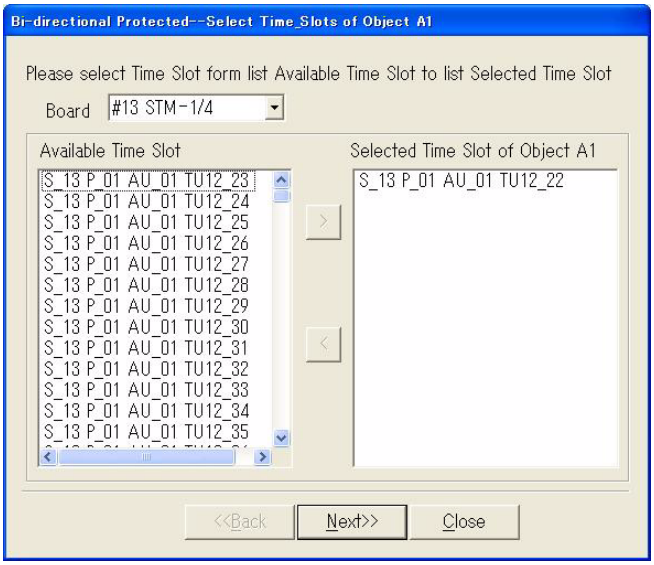


Fig. 4-5-120 Bi-directional Protected Configuration

6 Click **Next** button to continue.

7 Repeat step 5 to 6 to select time slot of A2 and Z.

Note: If the number of Time-Slots is not matching, it will be configured with minimum number.

8 Click the **End** button to finish the configuration, the operation interface is shown as bellow:

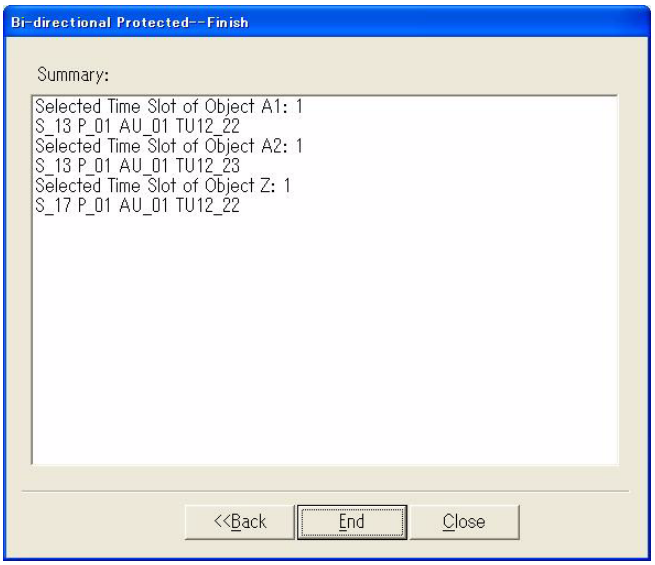


Fig. 4-5-121 Finishing Bi-directional Protected Configuration

This step is the end of the procedure.

4.6 Setup Network Connection

This section provides the information on the necessary setup for the communication between the ADM Management Tool and NEs.

4.6.1 Physical Layer Setup

This section provides the procedure to set the parameters of DCC Pass through function.

4.6.1.1 Parameters of DCC Pass Through Tab

PARAMETER		VALUE	DESCRIPTION
Subnet		(drop-down list)	Display the subnet ID
NE		(drop-down list)	Display the NE name
Board A		(drop-down list)	Display the port A slot ID;
Port A		(drop-down list)	Display the port A port ID;
Section A	**D1-D3**	(check box)	Specifies the communication bytes of DCC channels of port A.
	D4-D6	(check box)	
	D7-D9	(check box)	
	D10-D12	(check box)	
Board Z		(drop-down list)	Display the port A slot ID;
Port Z		(drop-down list)	Display the port A port ID;
Section Z	**D1-D3**	(check box)	Specifies the communication bytes of DCC channels of port A.
	D4-D6	(check box)	
	D7-D9	(check box)	
	D10-D12	(check box)	
Direction		***Bidirectional/Unidirectional***	Display the DCC pass through direction.

4.6.1.2 Procedure: Setup Physical Layer

All the operations for physical layer setup are performed via the **Physical Layer Setup** dialog box from Communication menu, at the main menu of the ADM Management Tool. Perform the following procedure:

4.6.1.2.1 Configuration in DCC Pass Through Dialog Box

Add DCC Function

1 Click the **DCC pass through** tab (see ***Fig. 4-6-1*** for an example).

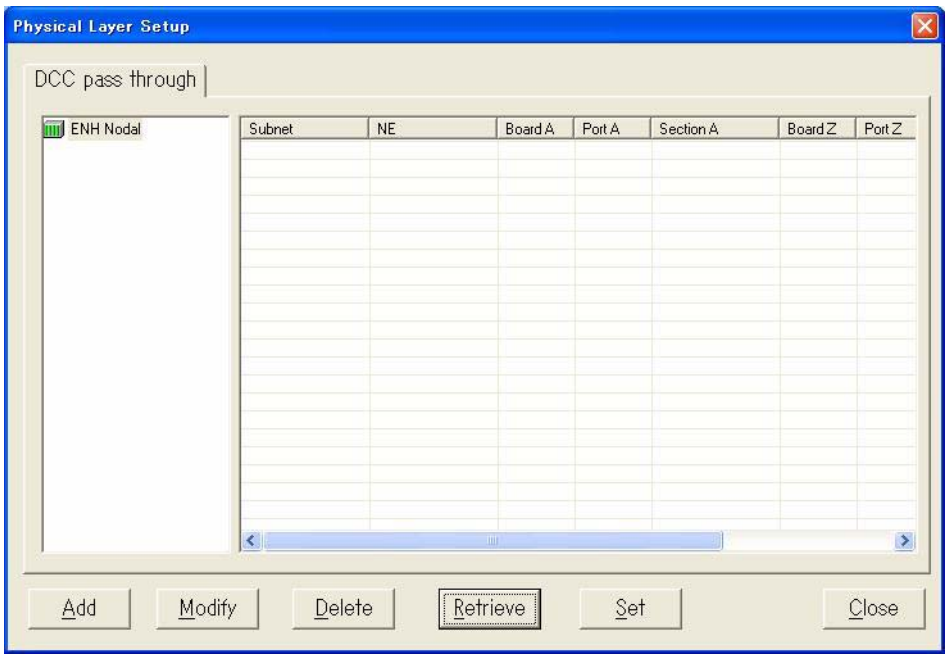


Fig. 4-6-1 Physical Layer Setup Dialog Box (DCC pass through)

2 Click the **Retrieve** button to retrieve the current setting data from NE.

3 If you want to add the DCC, you should click the **Add** button to open **DCC pass through** window, it is shown as bellow:

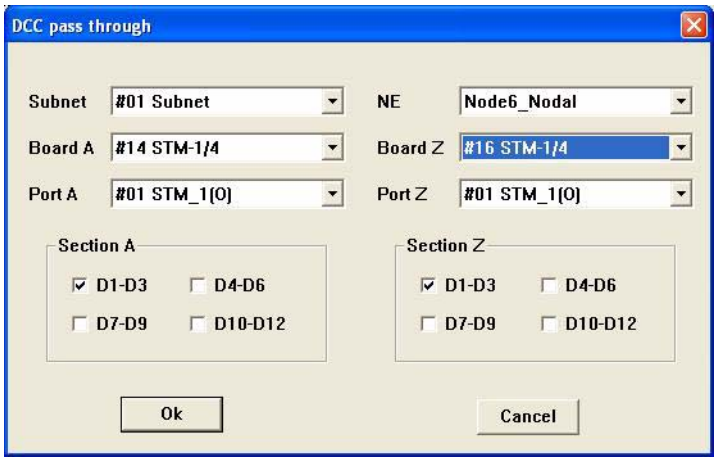


Fig. 4-6-2 Add DCC Configuration

4 Select the subnet from the **Subnet** drop-down list.

5 Select the NE from the **NE** drop-down list.

6 From the **Board A** drop-down list, you can specify the **Board A** slot ID.

7 From the **Port A** drop-down list, you can specify the port ID of port A;

8 Specify the communication bytes through click the check box of **D1_D3**, **D4_D6**, **D7-D9**, and **D10-D12**.

9 Repeat the same step of ***6***, ***7***, and ***8*** to configure the **Board Z**, **Port Z**, and **Section Z**.

Note: The sum of selected communication bytes of Section Z must equal with Section A's. And the selected communication bytes should be sequential. For example:

***Correct** configuration:*

Section A: D7-D9, D10-D12 -> Section Z: D7-D9, D10-D12

***Error** configurations:*

Section A: D1-D3, D7-D9, D10-D12 -> Section Z: D1-D3, D10-D12

Section A: D1-D3, D10-D12 -> Section Z: D1-D3, D10-D12

10 Click **Ok** button to confirm the setting.

11 Click the **Set** button on the Physical Layer Setup dialog box to send the setting data to the ADM Management Tool. If not click this button changing setting are invalid.

Note: No setting is valid until the Set button is clicked.

12 Click the **Close** button to finish the physical layer setup.

This step is the end of the procedure.

Modify Function

1 Click the **Retrieve** button to retrieve the current setting from the **DCC pass through** window(Physical Layer Setup Dialog Box).

2 Select corresponding DCC link in the right field and click Modify button. The Modify DCC Configuration dialog box is shown as bellow.

Note: You can also double-click the corresponding DCC link for appearing the Modify DCC Configuration dialog box.

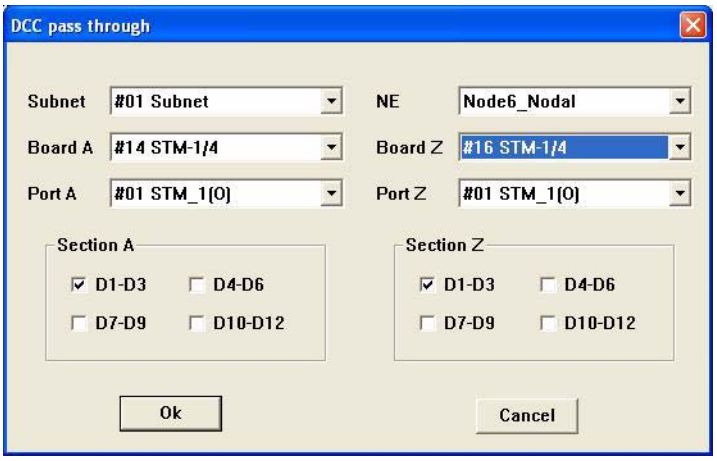


Fig. 4-6-3 Modify the DCC Configuration

3 Specify the parameters to be modified in the **DCC pass through** dialog box.

4 Click **Ok** button to confirm the setting.

5 Click the **Set** button to send the setting data to the ADM Management Tool. If not click this button, changing settings are invalid.

Note: No setting is valid until the Set button is clicked.

6 Click the **Close** button to finish the physical layer setup.

This step is the end of the procedure.

Delete Function

1 Click the **Retrieve** button to retrieve the current setting from the **DCC pass through** window(Physical Layer Setup Dialog Box).

2 Click the corresponding DCC item to select it.

3 Click the Delete button to delete it.

4 Click the **Set** button to send the setting data to the ADM Management Tool. If not click this button changing setting are invalid.

Note: No setting is valid until the Set button is clicked.

5 Click the **Close** button to finish the physical layer setup.

This step is the end of the procedure.

4.6.2 Orderwire and User CH Configuration

This section provides the procedure to set up the orderwire communication for the equipment.

4.6.2.1 Parameters

- **Orderwire Attribute tab**

PARAMETER	VALUE	DESCRIPTION
Subnet	*(not selected)*	Display the subnet name
NE	*(not selected)*	Display the NE name
Calling Number	**000** thru **999**	Set a number for one-to-one orderwire communication. It must be unique in the SDH network, and different from the group calling number. *Note: **000** denotes all call, so please don't specify **000** as calling number.*
Group Calling Number	**000** thru **999**	Set a number for group calling (party line) communication. It must be unique in the SDH network, and different from the calling number. *Note: **000** denotes all call, so please don't specify **000** as group calling number.*
Coding Way	**a**	Display the coding way. The default value is a-law and it can not be modified.
Working Status	**Hang Up/Hook Off**	Display the working status
Line Status	**Free/Busy**	Display the line status

- **Orderwire Channel tab**

PARAMETER	VALUE	DESCRIPTION
Subnet	*(not selected)*	Display the subnet name
NE	*(not selected)*	Display the NE name
Board	*(not selected)*	Display the card name
Port	*(not selected)*	Display the port number
Orderwire Selected Status	***Selected*** *(check box)*	When the check box is selected, you can enable orderwire channel and modify the value of the **Channel NO**. And the **Section**.
Channel No.	**1** thru **12** (text box)	Specify the number of selected channel.
Receiving	**Open**	Display the receiving control status. (The default value is Open, and it can not be modified)
Sending	**Open**	Display the sending control status. (The default value is Open, and it can not be modified)
Section	**E1** or **E2** *(drop-down list)*	Select orderwire byte

Note: In order to avoid OW signal turn into ring, make sure the unused OW ports are shut down. For the used OW channel which is connected by cable or fiber, make sure the setting of the two ports are same, the setting including OW enable or disable, the OW byte.

- **User Channel tab**

PARAMETER	VALUE	DESCRIPTION
Subnet	*(not selected)*	Display the subnet name
NE	*(not selected)*	Display the NE name
Board A	*MCP+optical board*	Select one card used for user channel
Port A	*Optical ports provided by selected Board A*	Select one port used for user channel *Note: MCP card also provides 3 user channel ports besides optical card.*
Section A	**E1/E2/F1**	Select user channel byte
Board Z	*MCP+optical board*	Select one card used for user channel
Port Z	*Optical ports provided by selected Board Z.*	Select one port used for user channel *Note: MCP card also provides 3 user channel ports besides optical card.*
Section Z	**E1/E2/F1**	Select one port used for user channel
Direction	**Unidirectional** *(not selected)*	Display the user channel direction.

Note: When a port was specified as the standby port for MSP protection, it can not set DCC, orderwire and user channel.

4.6.2.2 Procedure: Setup Orderwire Attribute

The orderwire attribute setup operation is performed via the **Orderwire and User CH Configuration** dialog box using the ADM Management Tool. Perform the following:

1 Start up the ADM Management Tool, and login to the target NE.

2 Open the management dialog box of the target NE.

3 Select **Orderwire and User CH Configuration** from the **Configuration** menu. The **Orderwire and User CH Configuration** dialog box shown in ***Fig. 4-6-4*** appears:

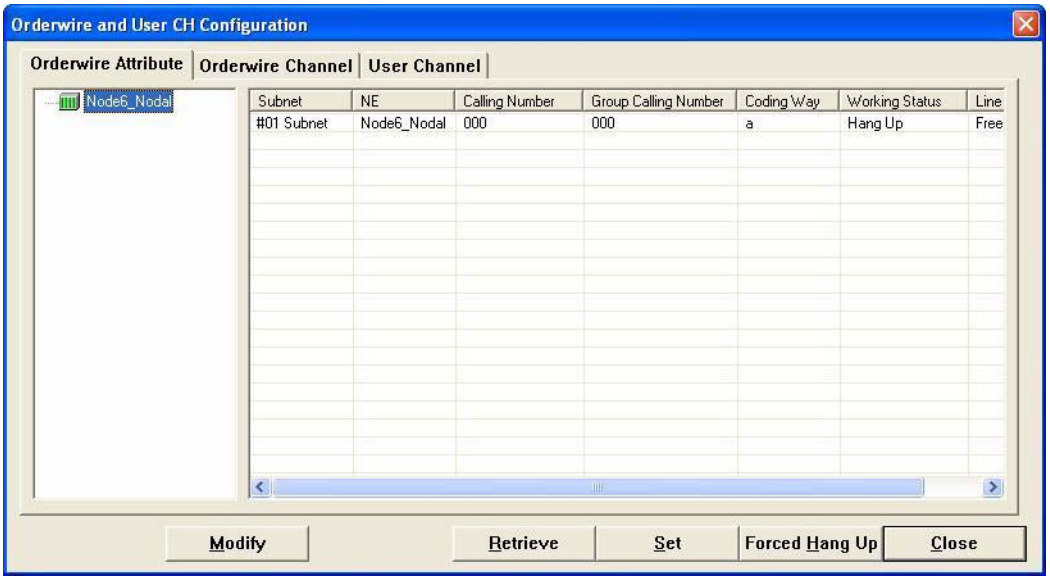


Fig. 4-6-4 Orderwire and User CH Configuration Dialog Box (Orderwire Attribute Setup tab)

4 Click the **Retrieve** button to retrieve the current configuration from NE.

5 Click the target row to select and click the Modify button to open the **Orderwire Attribute** window. The **Orderwire Attribute** window is shown as bellow:

Fig. 4-6-5 Orderwire Attribute Configuration

6 Specify each parameter.

7 Click the **OK** button to confirm the settings and close this window or click **Cancel** button to ignore the setting and close the window.

8 In **Orderwire and User CH Configuration** window, click the **Set** button to download the settings to NE.

9 Click the **Close** button to finish the orderwire attribute setup.

This step is the end of the procedure.

4.6.2.3 Procedure: Setup Orderwire Channel

The user channel setup operation is performed via the **Orderwire and User CH Configuration** dialog box using the ADM Management Tool. Perform the following:

1 Start up the ADM Management Tool, and login to the target NE.

2 Open the management dialog box of the target NE.

3 Select **Orderwire and User CH Configuration** from the **Configuration** menu to open the **Orderwire and User CH Configuration** dialog box.

4 Click the **Orderwire Channel** tab. ***Fig. 4-6-6*** shows an example:

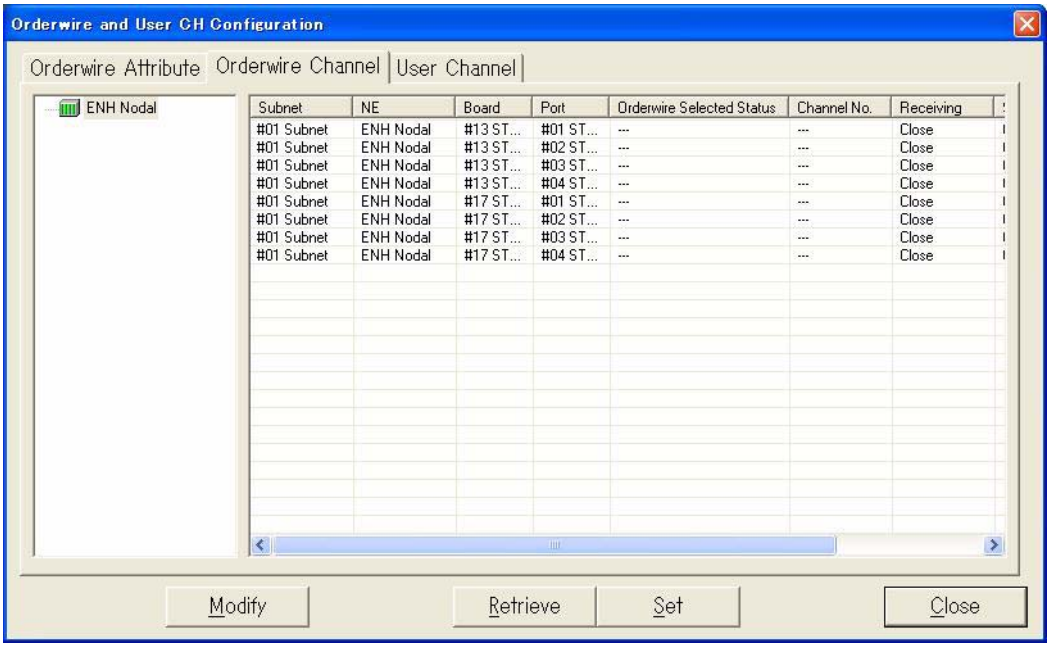


Fig. 4-6-6 Orderwire and User CH Configuration Dialog Box (Orderwire Channel Setup tab)

5 Click the Add button.

6 Select one of the channels by click and click the Modify button to open the **Orderwire Channel** window. It is shown as bellow:

Fig. 4-6-7 Orderwire Channel Configuration

7 If the selected channel is to be used for orderwire communication, click the **Orderwire Selected Status** check box.

Note: Up to twelve orderwire intercommunications are available in the system.

8 Set the overhead byte used by data channel, **E1** (E1 byte) or **E2** (E2 byte), from the **Section** drop-down list (in the **orderwire Channel** field).

9 Click the **Ok** button to confirm the settings and close this window or click **Cancel** button to ignore the setting and close the window.

10 In **Orderwire and User CH Configuration** window, click the **Set** button to download the settings to NE.

11 Click the **Close** button to finish the Orderwire Channel.

This step is the end of the procedure.

4.6.2.4 Procedure: Setup User Channel

The user channel setup operation is performed via the **Orderwire and User CH Configuration** dialog box using the ADM Management Tool. Perform the following:

1 Start up the ADM Management Tool, and login to the target NE.

2 Open the management dialog box of the target NE.

3 Select **Orderwire and User CH Configuration** from the **Configuration** menu to open the **Orderwire and User CH Configuration** dialog box.

4 Click the **User Channel** tab. ***Fig. 4-6-8*** shows an example:

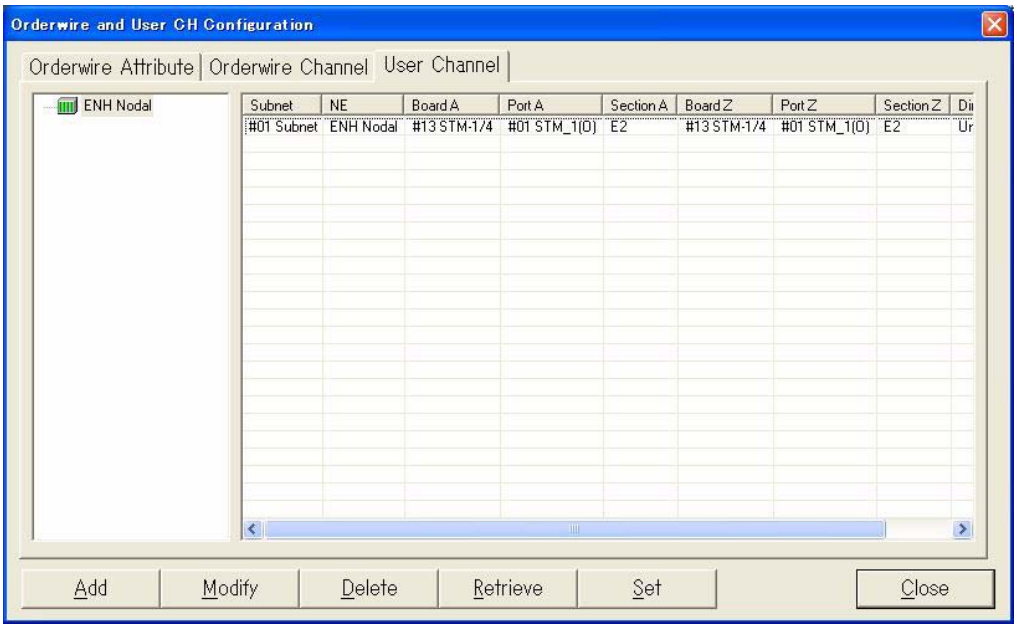


Fig. 4-6-8 Orderwire and User CH Configuration Dialog Box (User Channel Setup tab)

5 Click the Add button.

6 Select one of the channels by click to open the **User Channel** window. It is shown as bellow:

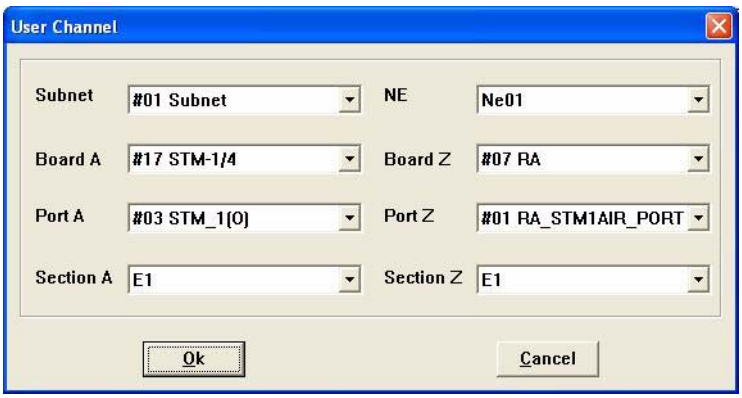


Fig. 4-6-9 Configure the Communication from Port A to Port Z

For communicate with port A and port Z, you should not only configure the communication from port A to port Z but also configure the communication from port Z to port A. The detailed configuration is shown as below:

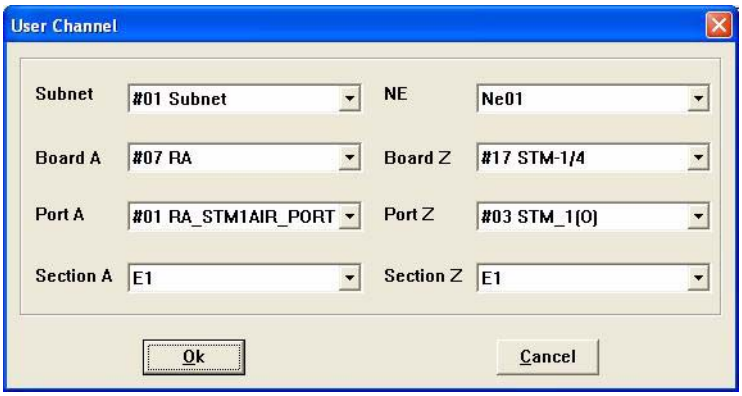


Fig. 4-6-10 Configure the Communication from Port Z to Port A

7 Select one card used for user channel, STM-1/4, RA, AUX card, from the **Board A** drop-down list in the **User Channel** field.

8 Select one of the provided ports used for user channel from the **Port A** drop-down list in the **User Channel** field.

9 Select user channel byte, **E1** (E1 byte) or **E2** (E2 byte) or **F1** (F1 byte), from the **Section A** drop-down list in the **User Channel** field.

10 Refer to the procedure ***7, 8, 9*** to configuration **Board Z, Port Z**, Section Z.

11 Click the **Ok** button to confirm the settings and close this window or click **Cancel** button to ignore the setting and close the window.

NOTE: *Since the user channels can connect with the SDH interface and AUX card, there are two connection types:*
1) The connection between AUX and application interface;
2) The connection between SDH interface and SDH interface.

The detailed configure operation of these two connection types are shown as below:

- **The connection between AUX and SDH interface**

  (a) Specify AUX card and a SDH interface from the drop-down list in **User Channe**l field.

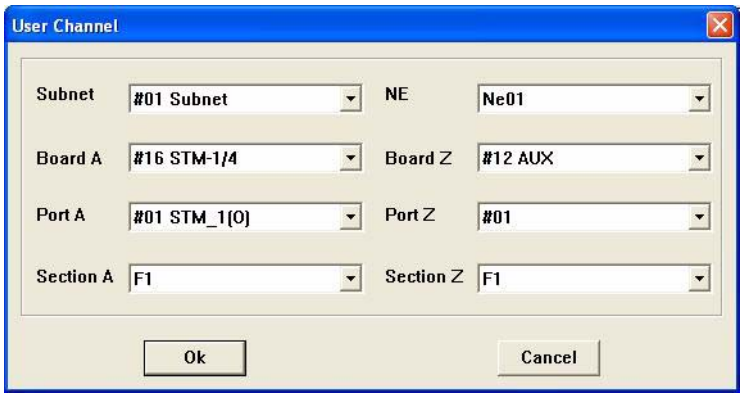


Fig. 4-6-11 User Channel Configuration (between AUX and SDH interface)

  (b) The result is shown as below figure:

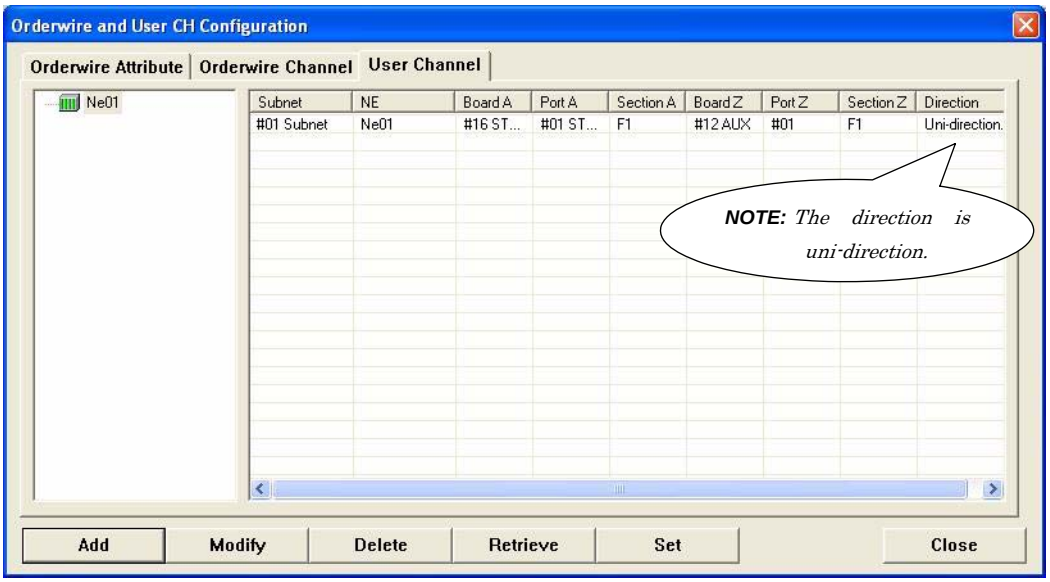


Fig. 4-6-12 User Channel Configuration Result (between AUX and SDH interface)

- **The connection between SDH interface and SDH interface**

(a) Specify two SDH interface from the drop-down list in User Channel field

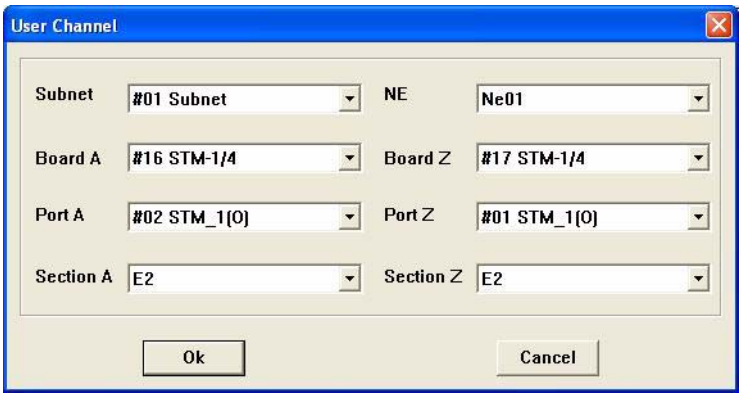


Fig. 4-6-13 User Channel Configuration (between SDH interface and SDH interface)

(b) The result is shown as below figure:

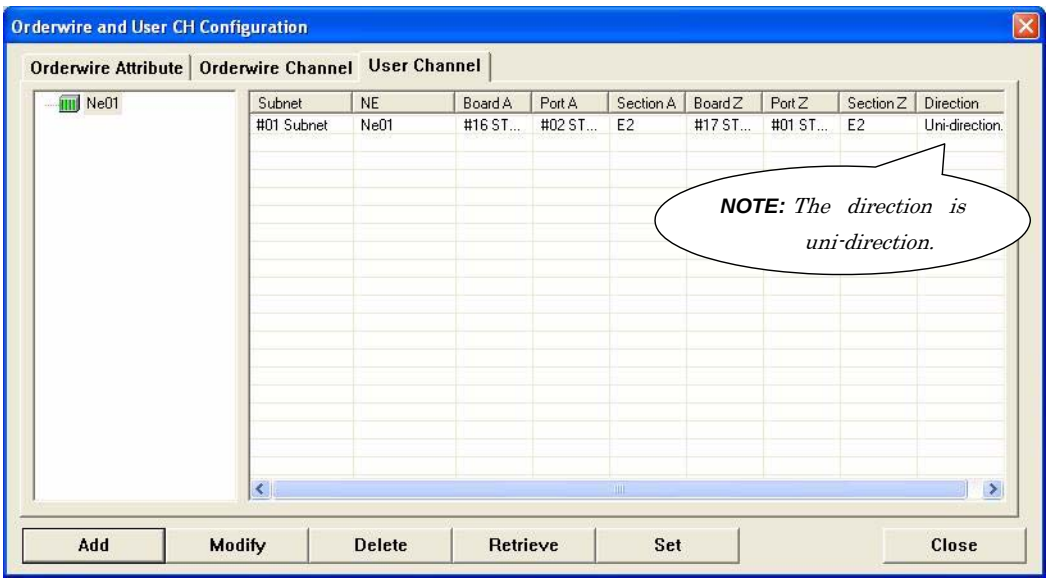


Fig. 4-6-14 User Channel Configuration Result

12 In **Orderwire and User CH Configuration** window, click the **Set** button to download the settings to NE.

13 Click the **Close** button to finish the user channel setup.

This step is the end of the procedure.

Note: When using OH protection function in MSP 1+1 unidirectional configuration. You should configure the communication from MCP user channel to both optical ports, protection and working.

4.7 Retrieve Information

4.7.1 Alarm Status

The information on the alarm status, including the current alarms, history alarm and actual alarms, can be retrieved and displayed in the **Alarm Monitor** dialog box.

Notes:

1. *Only up to 3000 items of History Alarm message can be saved in the system. When the number of History Alarm message is more than 3000, there are two strategies options offered: stop accumulating or first come first out.*

2. *ADM Management Tool does not retrieve and display the current alarm status automatically. The display should be updated occasionally by retrieving the current alarms.*

4.7.1.1 Procedure: Open Alarm Monitor Dialog Box

Perform the following procedure to open the **Alarm Monitor** dialog box:

1 Open the management dialog box of the target NE.

2 Perform one of the following procedures:

- Select **Current Alarm**, **History Alarm** or **Actual Alarm** from the **Alarm** menu. The **Alarm Monitor** dialog box appears with the corresponding tab selected.

- Click the visual card of the equipment in the ADM Management Tool. The **Alarm Monitor** dialog box appears with the **Current Alarm** tab selected.

- Click the  shortcut button. The Alarm Monitor dialog box appears with the **Current Alarm** tab selected.

This step is the end of the procedure. Go to ***4.7.1.2 Alarm Monitor Dialog Box*** subsection for the use of the **Alarm Monitor** dialog box.

4.7.1.2 Alarm Monitor Dialog Box

Fig. 4-7-1 shows an example of the Alarm Monitor dialog box:

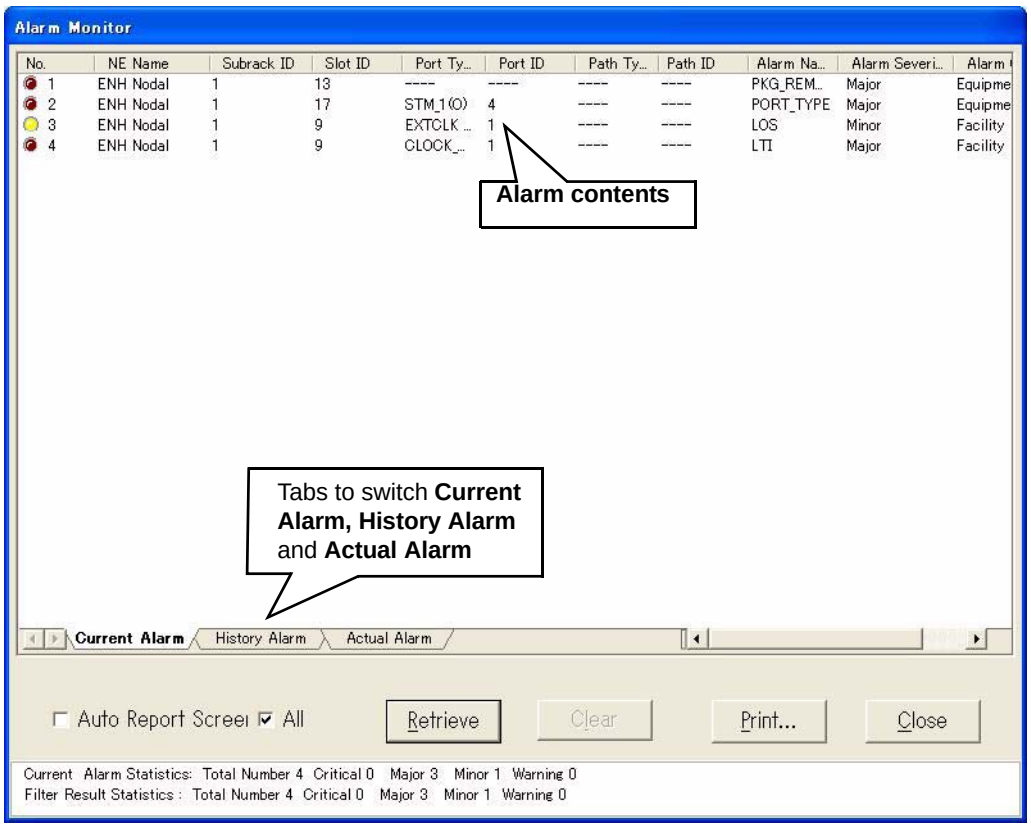


Fig. 4-7-1 Alarm Monitor Dialog Box (Current Alarm Tab Selected)

4.7.1.2.1 Items in Alarm Monitor Dialog Box

ITEMS		DESCRIPTION
Column Headers (on top)		Sort alarm records. By clicking a column header, the alarm records in the list are sorted according to the selected subject.
Current Alarm tab		Switch the window for displaying a list of current alarms.
History Alarm tab		Switch the window for displaying alarm history.
Actual Alarm tab		Switch the window for displaying a list of alarms including both masked and unmasked ones (actual alarms).
Retrieve Button		The alarms of NE are collected again by clicking this button.
Clear Button		Detele the alarm history information. PM history specified by the time span will be deleted. Note: This Clear Button is enable on History alarm window.
Print Button	**Out To Printer**	The alarm information is printed out to printer by clicking this button.
	Out To File	The alarm information is printed out to file by clicking this button.
Close Button		Alarm browsing is quitted (closing the dialog box) by clicking this button.
Auto Report Screen check box		The auto report function is enabled by clicking this check box (leaving a tick). This is provided for the current alarm list (**Current Alarm** tab selected) only.
All check box		Specifies whether to list the alarm records of all the cards or those of a certain card type by clicking this check box. When this is selected (leaving a tick), the alarms in all cards are listed. When this is not selected (leaving empty), only the alarms in certain-type cards are listed. This is selected by default.

4.7.1.2.2 Display Options

When the **All** check box is unselected (leaving empty), the following display options are available:

ITEMS		DESCRIPTION
Board		Used to select the card type from the drop-down list.
Port Type		Used to select the port type from the drop-down list.
Alarm Class	**Equipment**	Specify to list equipment alarms.
	Facility	Specify to list facility alarms.
	Environment	Specify to list environment alarms.
	Ethernet	Specify to list Ethernet alarms.
Alarm Severity	**Critical Alarm**	Specify to list critical alarms (CR).
	Major Alarm	Specify to list major alarms (MJ).
	Minor Alarm	Specify to list minor alarms (MN).
	Warning	Specify to list warning alarms (WN).
Time Span	**Start Time**	Specify the start time for time span.
	End Time	Specify the end time for time span.

4.7.1.3 View Current Alarms

A list of alarms that is currently occurring and not cleared can be displayed in the **Alarm Monitor** dialog box with the **Current Alarm** tab selected.

The list of the current alarms is displayed when opening the **Alarm Monitor** dialog box. When the **Alarm Monitor** dialog box has already been opened for viewing alarm history or actual alarms, switch the window by clicking the **History Alarm** or **Actual Alarm** tab.

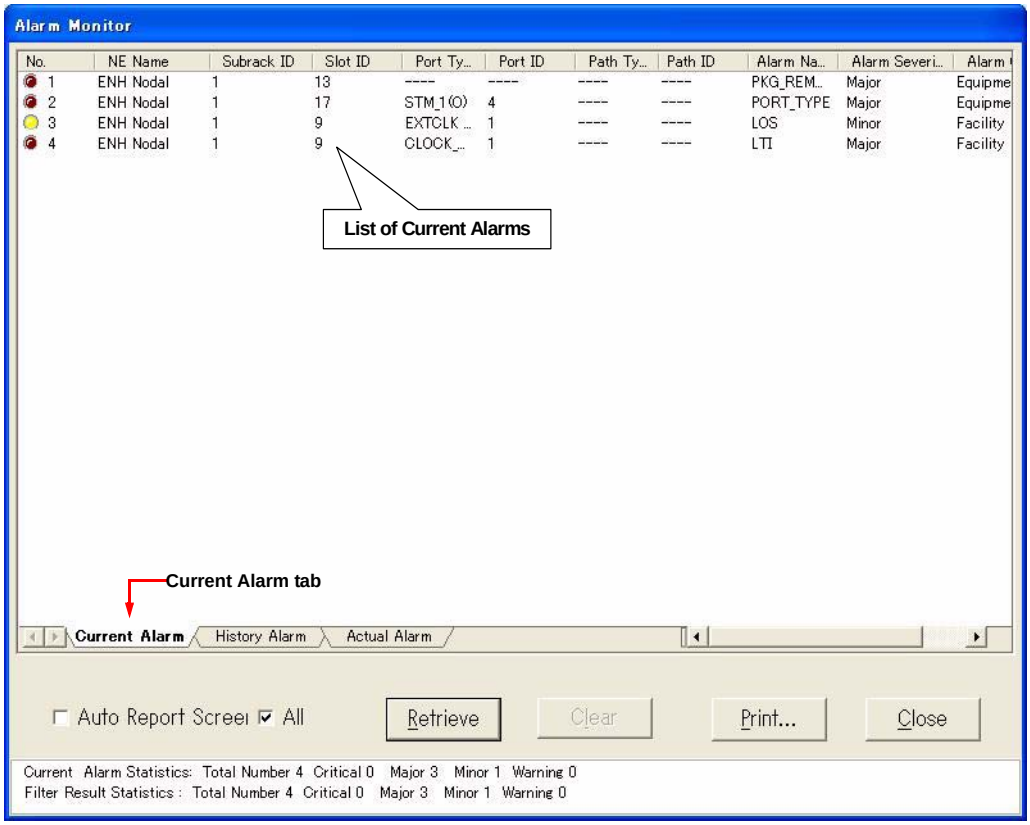


Fig. 4-7-2 Alarm Monitor Dialog Box (Current Alarm)

In this dialog box:

- Click the **Retrieve** button to update the current alarm list.
- Click the **Print** button to print out the current alarm list.
- Click the **Close** button to finish viewing.

4.7.1.3.1 Using Display Options

When the **Alarm Monitor** dialog box is opened for the first time, the **All** check box is selected by default to display all current alarms for the equipment. The current alarms to be displayed, however, can be specified by using the display options. Refer to ***4.7.1.3.2 Auto Refresh Function*** for detailed information on the display options.

Perform the following procedure to select the current alarms to be displayed in the list:

Procedure

1 Clear the active state of **All** check box by clicking. The window shown in ***Fig. 4-7-3*** appears:

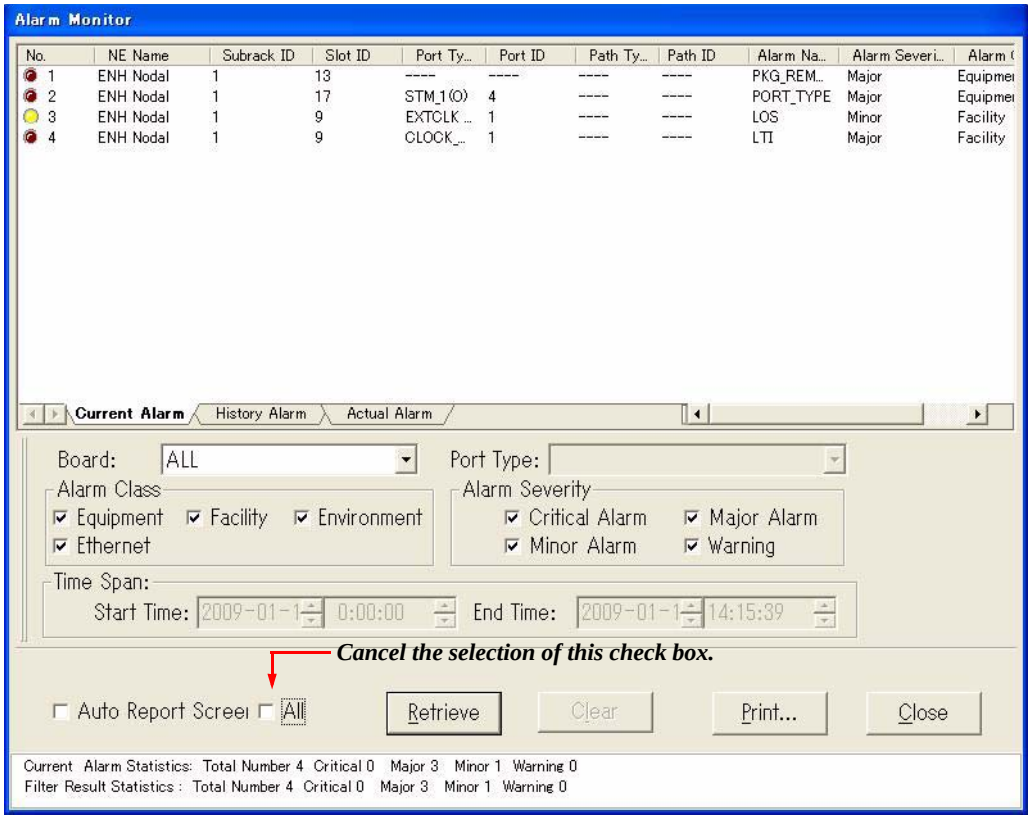


Fig. 4-7-3 Browsing Current Alarms (Clear the Selection of 'All' Check Box)

2 Select the card type from the drop-down list box of the **Board**.

3 Select the port type from the drop-down list box of the Port Type.

4 Specify the alarm class by clicking the check boxes in the **Alarm Class** field.

5 Specify the alarm severity by clicking the check boxes in the Alarm Severity field.

6 Click the **Retrieve** button. The current alarms that correspond to the selection above are displayed.

This step is the end of the procedure.

*Notes: 1. To display all the alarms after specifying the alarms to be displayed in the alarm list, click the **All** check box to select it again and click the **Retrieve** button.*

*2. Selection/unselection of the **All** check box is valid even after the window is switched by clicking the **Current Alarm/History Alarm** tab for viewing current alarms/ alarm history.*

4.7.1.3.2 Auto Refresh Function

Current alarm information displayed in the **Alarm Monitor** dialog box can automatically be updated by using the auto refresh function. This function is enabled by clicking the **Auto Report Screen** check box. After select/unselect the **Auto Report Screen** check box, click the **Retrieve** button to update the Current Alarm display.

The alarm should be reported automatically after the alarm's delay time has passed and it should be holding before exceed this alarm's stretch time.

4.7.1.4 View History Alarms

A list of alarms that have already cleared and confirmed by the user (alarm history) can be displayed in the **Alarm Monitor** dialog box with the **History Alarm** tab selected.

To display the alarm history, perform one of the following:

- Select **History Alarm** from the Alarm menu.
- When the **Alarm Monitor** dialog box has already been opened for viewing current alarms or actual alarms, click the **History Alarm** tab.

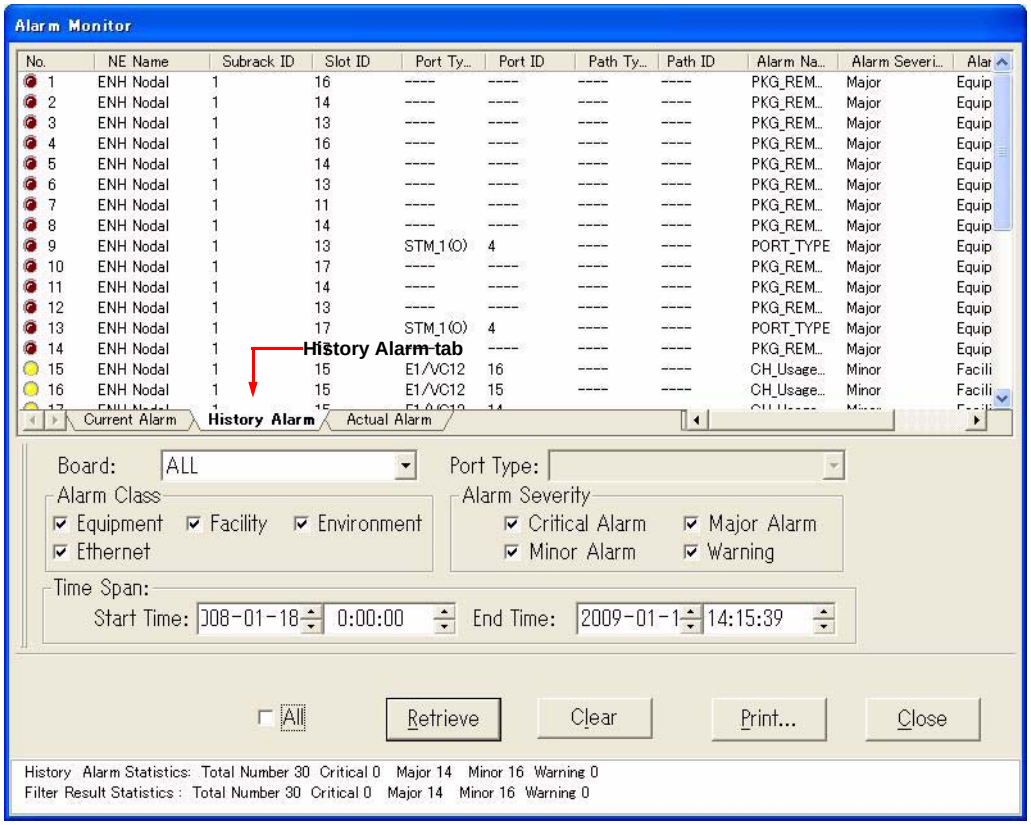


Fig. 4-7-4 Browsing Alarm History (Clear All Check Box)

In this dialog box:

- Click the **Retrieve** button to update the alarm history.
- Click the **Print** button to print out the alarm history.
- Click the **Close** button to finish viewing.

4.7.1.4.1 Using Display Options

Alarms displayed in the history alarm field can be specified by using the display options. Refer to ***4.7.1.2.2 Display Options*** for detailed information.

Perform the following procedure to select the alarms displayed in the history alarm.

Procedure

1 Unselect the **All** check box by clicking.

2 Select the card type from the drop-down list box of the **Board**.

3 Select the port type from the drop-down list box of the **Port Type.**

4 Specify the alarm class by clicking the check boxes in the **Alarm Class** field.

5 Specify the alarm severity by clicking the check boxes in the **Alarm Severity** field within NE working period.

6 Specify the time span by setting **Start Time** and **End Time** in the **Time Span** field.

7 Click the **Retrieve** button. The alarms that correspond to the selection above are displayed.

This step is the end of the procedure.

*Notes: 1. To display all the alarms after specifying the alarms to be displayed in the alarm list, click the **All** check box to select it again and click the **Retrieve** button.*

*2. Selection/unselection of the **All** check box is valid even after the window is switched by clicking the **Current Alarm/History Alarm** tab for viewing current alarms/ alarm history.*

4.7.1.5 View Actual Alarms

A list of alarms, regardless of whether they are masked or not, can be displayed in the **Alarm Monitor** dialog box with the **Actual Alarm** tab selected.

Note: The difference between current alarm and actual alarm is that actual alarm includes masked current alarms but current alarm not, that is, masked current alarms are shown in actual alarm tab but not in current alarm tab.

To display the actual alarms, perform one of the following:

- Select **Actual Alarm** from the **Alarm** menu.
- When the **Alarm Monitor** dialog box has already been opened for viewing current alarms or history alarm, click the **Actual Alarm** tab.

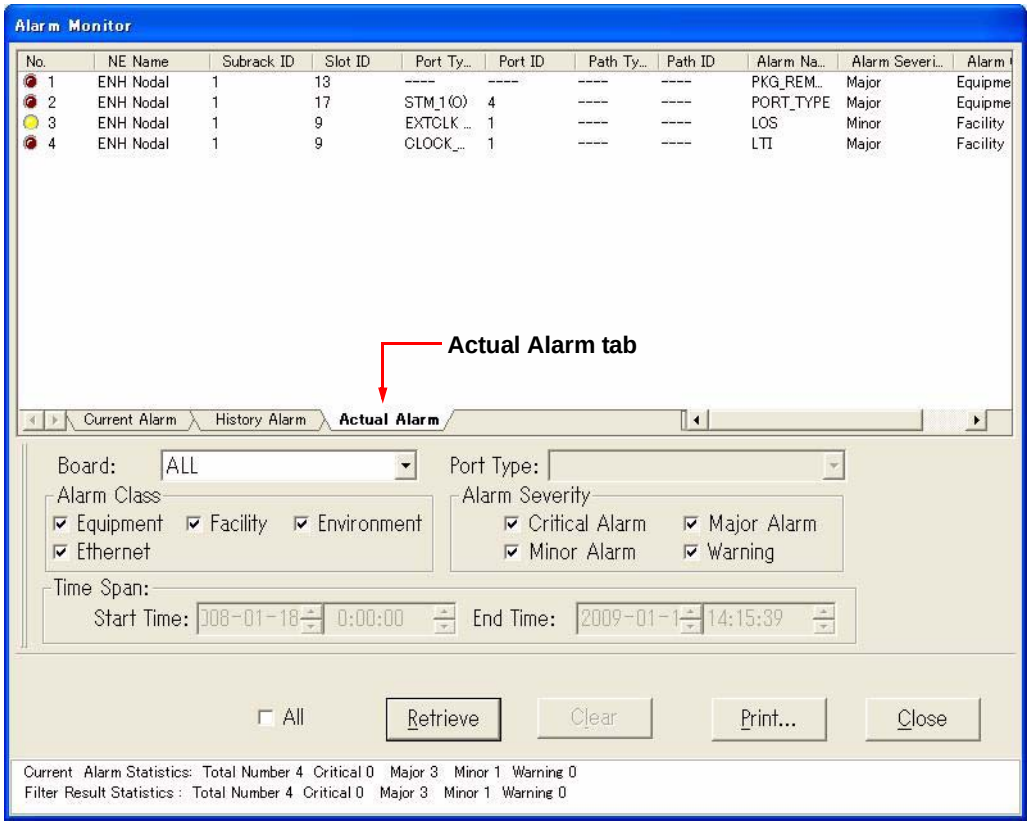


Fig. 4-7-5 Browsing Actual Alarm (Clear All Check Box)

In this dialog box:

- Click the **Retrieve** button to update the alarm list.
- Click the **Print** button to print out the alarm list.
- Click the **Close** button to finish viewing.

4.7.1.5.1 Using Display Options

Actual alarms to be displayed can be specified by using the display options. Refer to ***4.7.1.2.2 Display Options*** for detailed information.

Perform the following procedure to select the alarms displayed in the actual alarm list:

Procedure

1 Unselect the **All** check box by clicking.

2 Select the card type from the drop-down list box of the **Board**.

3 Select the port type from the drop-down list box of the **Port Type.**

4 Specify the alarm class by clicking the check boxes in the **Alarm Class** field.

5 Specify the alarm severity by clicking the check boxes in the **Alarm Severity** field.

6 Click the **Retrieve** button. The alarms that correspond to the selection above are displayed.

This step is the end of the procedure.

*Notes: 1. To display all the alarms after specifying the alarms to be displayed in the alarm list, click the **All** check box to select it again and click the **Retrieve** button.*

*2. Selection/unselection of the **All** check box is valid even after the window is switched by clicking the **Current Alarm/History Alarm** tab for viewing current alarms/ alarm history.*

4.7.2 Retrieve Alarm Attribute

The Alarm attribute can be retrieved via the **Alarm Attribute** dialog box shown in ***Fig. 4-7-6*** appears.

Procedure

The procedure for retrieve alarm attributes is given below:

1 Open the management dialog box of the target NE.

2 Select **Alarm Attribute Setup** from the **Alarm** menu. The **Alarm Attribute** dialog box shown in ***Fig. 4-7-6*** appears.

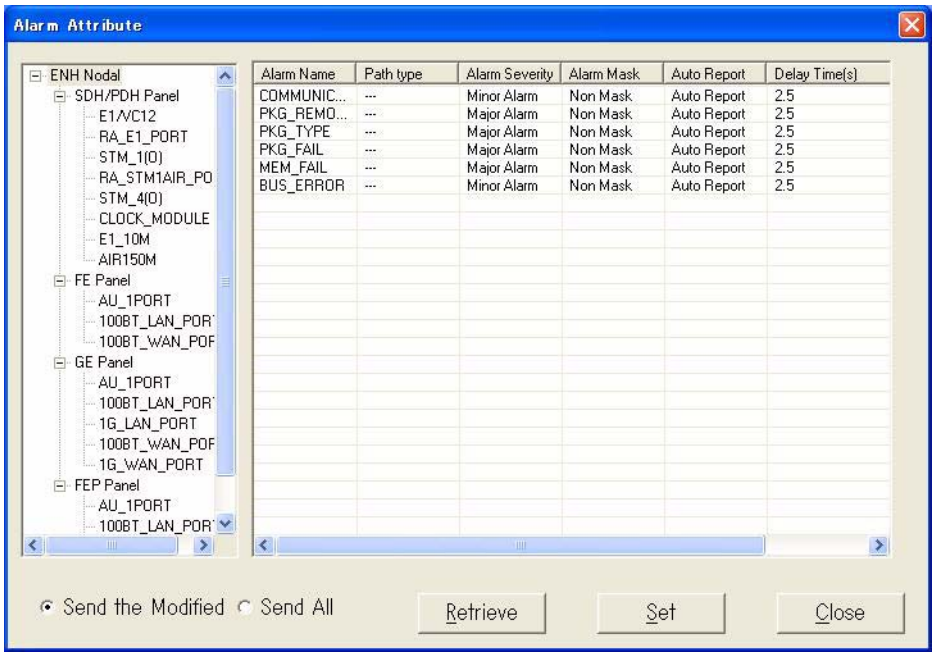


Fig. 4-7-6 Alarm Attribute Dialog Box

3 Click the **Retrieve** button to retrieve the alarms attribute.

4 After the retrieve are completed, click the Close button to complete the alarm attribute retrieve.

This step is the end of the procedure.

4.7.3 Set Alarm Transfer

When detect MS-EXC alarm, user can decide whether inserting AU-AIS by this function. The detailed procedure show as below:

1 Open the management dialog box of the target NE. Detailed operation is provided in the section ***CH07. Working with ADMT*** of the ***F5361_F09 ADMT Operating Guide*** manual.

2 Select **Set Alarm Transfer** from the **Alarm** menu. The **Set Alarm Transfer** dialog box shown in Fig. 4-7-7 appears.

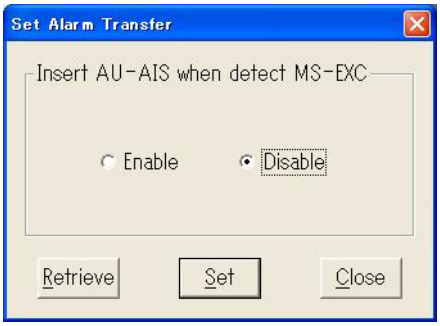


Fig. 4-7-7 Set Alarm Transfer Dialog Box

3 Click **Retrieve** button to retrieve the current setting from equipment.

4 According to your need to choice **Enable** or **Disable** radio button. If you click **Enable** radio button and equipment detecting MS-EXC, system will insert AU-AIS automatically; if you choice **Disable** radio button and equipment detecting MS-EXC, system will not insert AU-AIS.

5 Click **Set** button to valid the setting or click **Close** button to cancel your setting.

4.7.4 Operation Log

A list of the operation logs (event logs) of the NE can be displayed in the **Operation Log** dialog box.

4.7.4.1 Items in Operation Log Dialog Box

ITEMS		DESCRIPTION
Column headers (on top)		Sort operation logs. By clicking a column header, the operation logs in the list are sorted according to the selected subject.
Start Time/End Time		Specify the time scope. It is valid when the radio button **TIME SCOPE** is selected.
TIME SCOPE radio button		Display the operation logs within the time range specified by **Start Time** and **End Time**. When this radio button is selected, the **ALL** radio button on the right of this radio button is automatically unselected, and **Start Time** and **End Time** are enabled.
ALL radio button		Display all the operation logs, regardless of the time range. When this radio button is selected by click, the **TIME SCOPE** radio button on the left of this radio button is automatically unselected, and **Start Time** and **End Time** are disabled.
Delete button		Delete selected operation logs from the list.
Retrieve button		Retrieve the operation logs.
Print button	**Out To Printer**	The operation log list is printed out to printer by clicking this button.
	Out To File	The operation log list is printed out to file by clicking this button.
Close button		Finish the operation log browsing (closing the dialog box).

4.7.4.2 Procedure: View Operation Logs

Perform the following procedure to view the operation log list:

1 Start up the ADM Management Tool, and login to the target NE.

2 Open the management dialog box of the target NE.

3 Open the **Operation Log** dialog box by performing one of the following procedures:

- Select **Operation Log** from the **Security** menu.

- Click the  shortcut button.

  Fig. 4-7-8 shows an example:

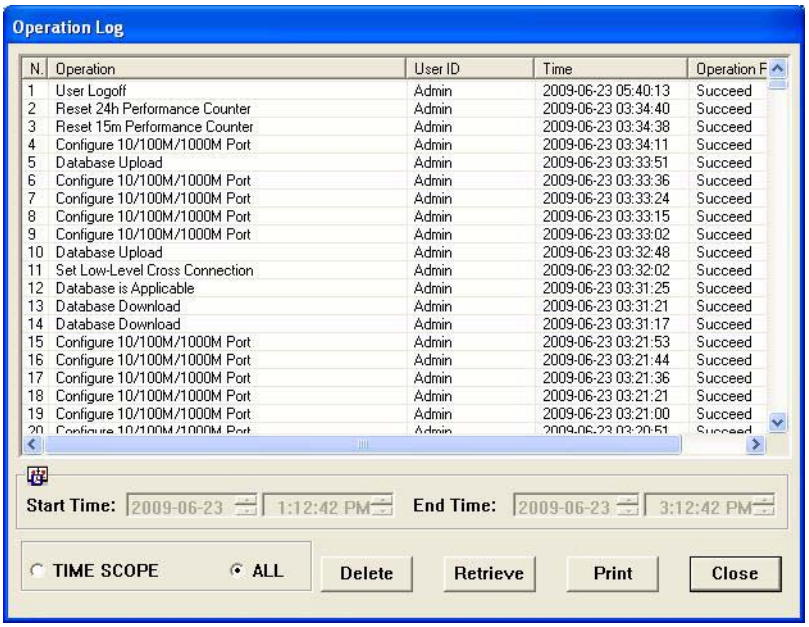


Fig. 4-7-8 Operation Log Dialog Box

4 In this dialog box:

- To display all the operation logs, click the **ALL** radio button (leaving a tick), and click the **Retrieve** button.
- To display operation logs within a certain time range, click the **TIME SCOPE** radio button (leaving a tick) and specify the start time and end time in the **Start Time** and **End Time** text boxes. Then click the **Retrieve** button.

5 To quit the operation log browsing, click the **Close** button. The **Operation Log** dialog box will be closed.

This step is the end of the procedure.

4.7.5 Event View

The conditions of traffic performance TCA, PPS, MSP, timing source switch and card switch can be retrieved and displayed in the **Event View** dialog box.

4.7.5.1 Monitor Traffic Performance

Perform the following procedure to monitor the traffic performance:

Procedure

1 Start up the ADM Management Tool, and login to the target NE.

2 Open the management dialog box of the target NE.

3 Select **Event View** from the **Alarm** menu. The **Event View** dialog box shown in ***Fig. 4-7-9*** *appears:*

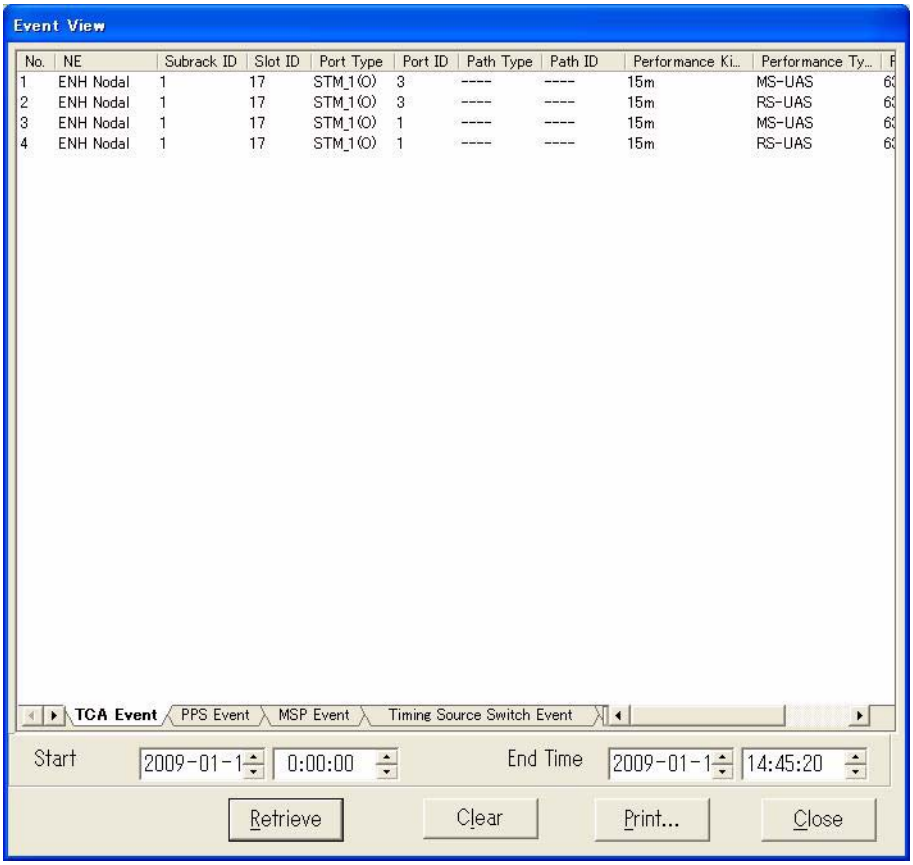


Fig. 4-7-9 Event View Dialog Box with TCA Event Tab

4 Confirm that the **TCA Event** tab is selected. If not, click the **TCA Event** tab.

5 Click the **Retrieve** button. The performance conditions of the existing events are displayed.

6 Click the **Close** button to finish event monitor.

This step is the end of the procedure.

4.7.5.2 Monitor Path Protection Switching Conditions

Perform the following procedure to monitor the path protection switching conditions:

Procedure

1 Start up the ADM Management Tool, and login to the target NE.

2 Open the management dialog box of the target NE.

3 Select **Event View** from the **Alarm** menu. The **Event View** dialog box appears.

4 Click the **PPS Event** tab. The window shown in ***Fig. 4-7-10*** appears:

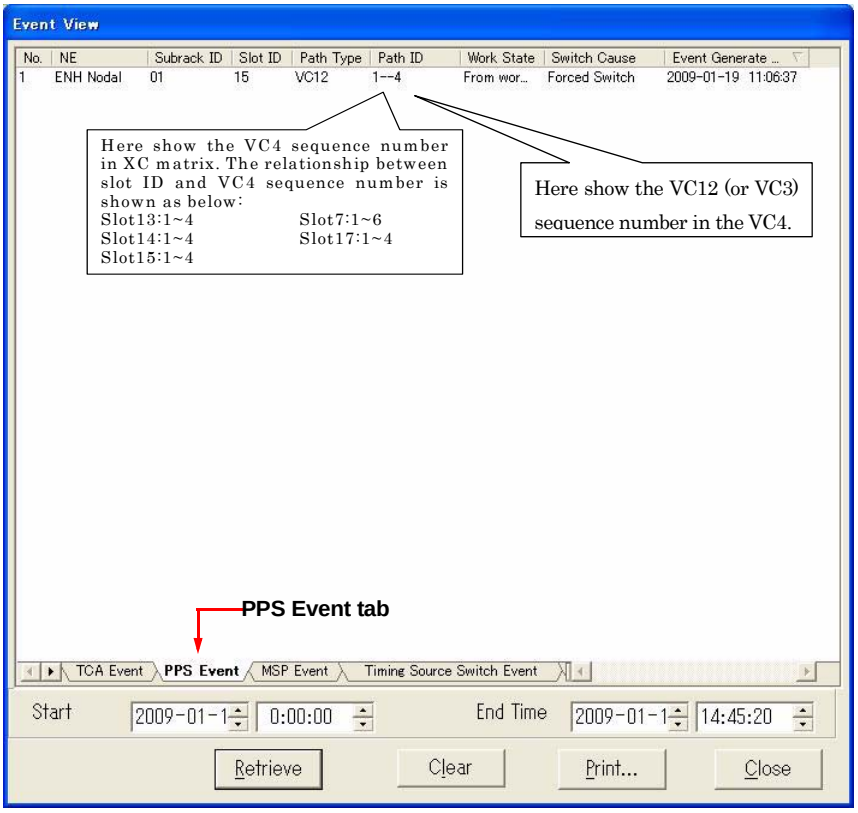


Fig. 4-7-10 Event View Dialog Box with PPS Event Tab

5 Click the **Retrieve** button. The locations and causes of switching events are displayed, if any events happen.

6 Click the **Close** button to finish event monitor.

This step is the end of the procedure.

4.7.5.3 Monitor MS Protection Switching Conditions

Perform the following procedure to monitor the MS protection switching conditions:

Procedure

1 Start up the ADM Management Tool, and login to the target NE.

2 Open the management dialog box of the target NE.

3 Select **Event View** from the **Alarm** menu. The **Event View** dialog box appears.

4 Click the **MSP Event** tab. The window shown in ***Fig. 4-7-11*** appears:

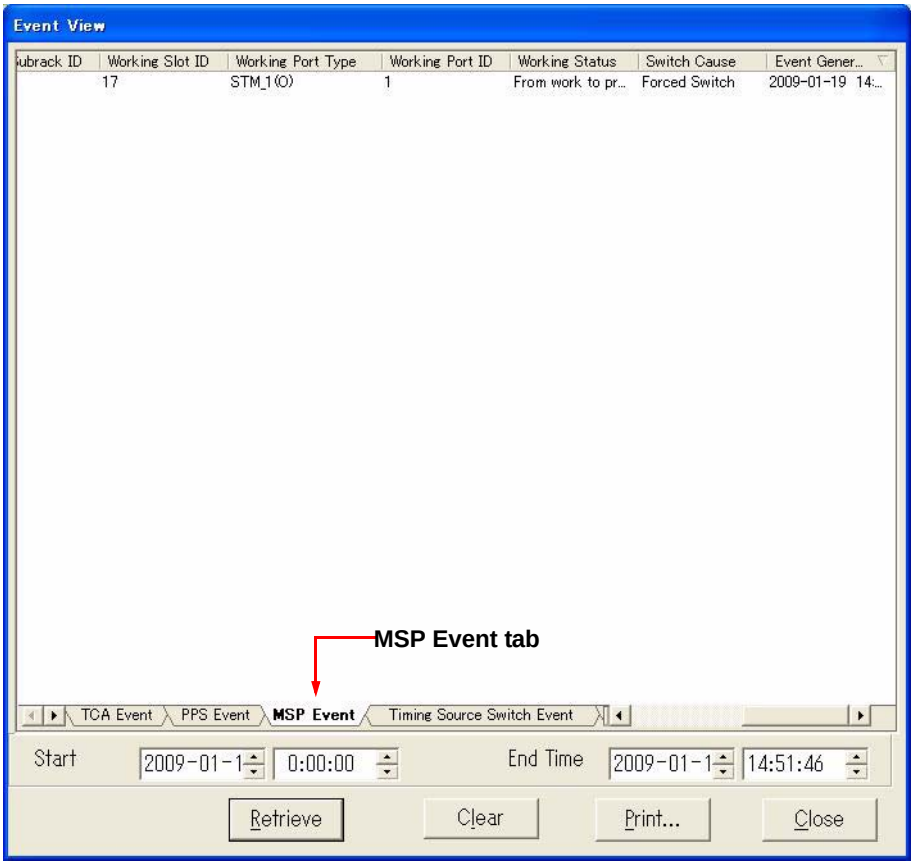


Fig. 4-7-11 Event View Dialog Box with MSP Event Tab

5 Click the **Retrieve** button. The locations and causes of MSP events are displayed, if any events happen.

6 Click the **Close** button to finish event monitor.

This step is the end of the procedure.

4.7.5.4 Monitor Timing Source Switching Conditions

Perform the following procedure to monitor the timing source switching conditions:

Procedure

1 Start up the ADM Management Tool, and login to the target NE.

2 Open the management dialog box of the target NE.

3 Select **Event View** from the **Alarm** menu. The **Event View** dialog box appears.

4 Click the **Timing Source Switch Event** tab. The window shown in ***Fig. 4-7-12*** appears:

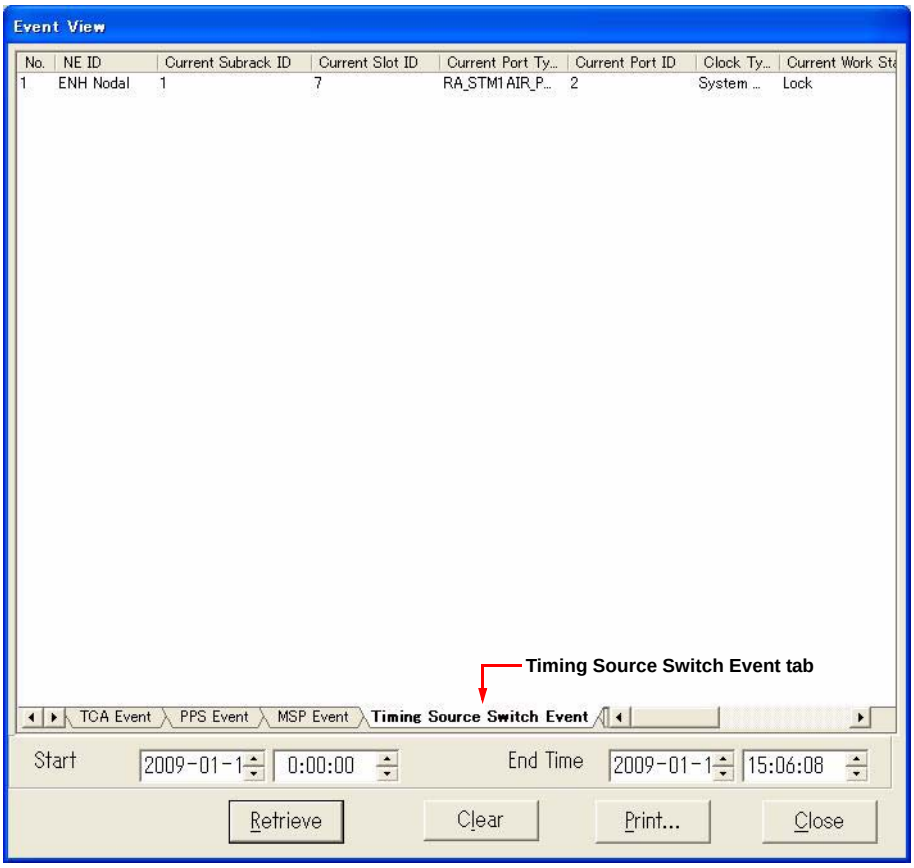


Fig. 4-7-12 Event View Dialog Box with Timing Source Switch Event Tab

5 Click the **Retrieve** button. The locations and causes of Timing Source switching events are displayed, if any events happen.

6 Click the **Close** button to finish event monitor.

This step is the end of the procedure.

4.7.5.5 Monitor Board Switching Conditions

Perform the following procedure to monitor the card switching conditions.

Procedure

1 Start up the ADM Management Tool, and login to the target NE.

2 Open the management dialog box of the target NE.

3 Select **Event View** from the **Alarm** menu. The **Event View** dialog box appears.

4 Click the **Board Switch Event** tab. The window shown in ***Fig. 4-7-13*** appears:

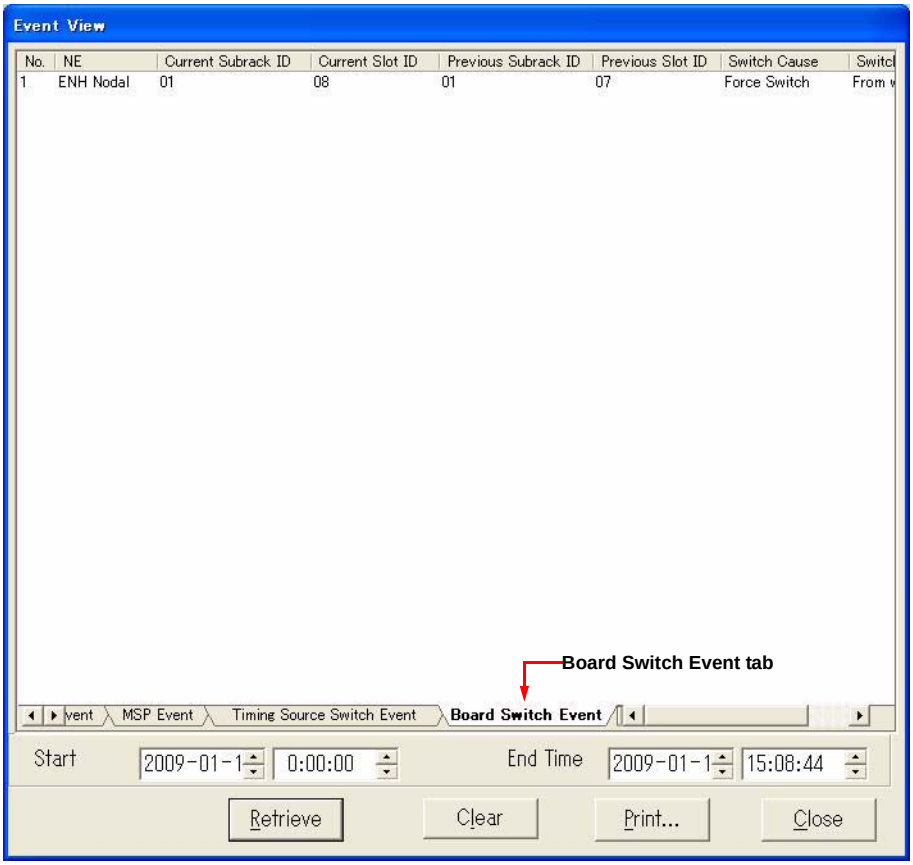


Fig. 4-7-13 Event View Dialog Box with Board Switch Event Tab

5 Click the **Retrieve** button. The locations and causes of Card switching events are displayed, if any events happen.

6 Click the **Close** button to finish event monitor.

This step is the end of the procedure.

4.7.6 Performance Monitoring

The Performance Monitoring (PM) is used to identify and isolate the problem if occurring at a particular line or path. It also monitors the quality of lines and paths. All Performance Monitoring parameters are collected

every minute and accumulated to 15-minute and 24-hour (1 day) statistics. The following are brief descriptions about the PM provided by the PASOLINK NEO/a.

4.7.6.1 Display Current PM Status

The current performance monitor (PM) data of NE can be retrieved and displayed.

Note: When PM value exceeds the maximum content of PM register, ADM Management Tool reports "PM value overflow" in "Performance value" column.

Fig. 4-7-14 shows an example where the current 15m PM data are listed.

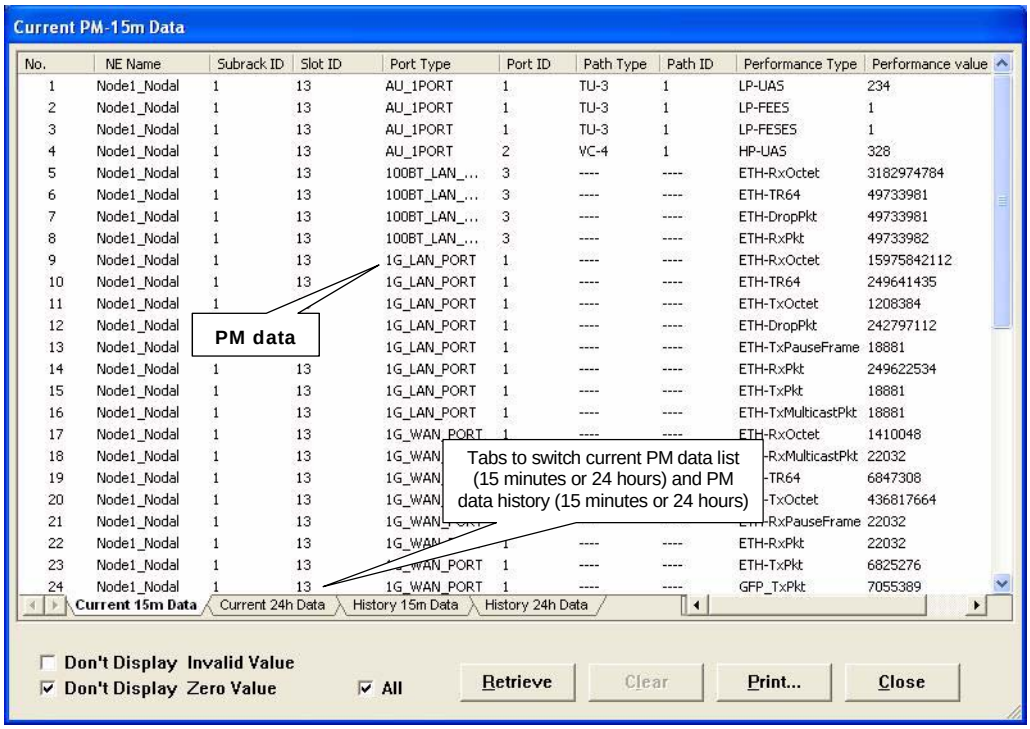


Fig. 4-7-14 PM Data Dialog Box

Note: Hereafter, a dialog box that lists the current PM data is referred to PM Data dialog box.

4.7.6.1.1 Items in PM Data Dialog Box

The functions of the items in the PM Data dialog box are following:

ITEMS		DESCRIPTION
Column headers (on top)		Sort PM data. By clicking a column header, the PM data in the list are sorted according to the selected subject.
Current 15m Data tab		Switch the window for displaying a list of current 15-minute PM data.
Current 24h Data tab		Switch the window for displaying a list of current 24-hour PM data.
History 15m Data tab		Switch the window for displaying the history of 15-minute PM data.
History 24h Data tab		Switch the window for displaying the history of 24-hour PM data.
Retrieve button		The PM data are collected again by clicking this button.
Clear Button		Detele the PM history information. PM history specified by the time span will be deleted. Note: This Clear Button is enable on History PM 15m and History 24h view.
Print button	**Out To Printer**	The PM data is printed out to printer by clicking this button.
	Out To File	The PM data is printed out to file by clicking this button.
Close button		PM data browsing is quitted (closing the dialog box) by clicking this button.
Don't Display Invalid Value check box		Select this check box not to display the PM whose value is Invalid. This is selected by default.
Don't Display Zero Value check box		Select this check box not to display the PM whose value is zero. This is selected by default.
All check box		Specifies whether to list the PM data of all the cards and ports or those of a certain type card/port by clicking this check box. When this is selected (leaving a tick), the PM data in all cards are listed. When this is not selected (not leaving a tick), only the PM data in certain-type cards and ports are listed. This check box must be unselected for viewing the PM history. This is selected by default.

4.7.6.1.2 Display Options

When the **All** check box is unselected (leaving empty), the following display options are available:

ITEMS		DESCRIPTION
Board		Select the card type from the drop-down list.
Port Type		Select the port type from the drop-down list.
Time Span	**Start Time**	Specify the start time for time span.
	End Time	Specify the end time for time span.

4.7.6.1.3 Procedure: View Current 15-Minute PM Data

Perform the following procedure to view a list of the current 15m PM data:

1 Start up the ADM Management Tool, and login to the target NE.

2 Open the management dialog box of the target NE.

3 Perform one of the following two procedures:

- Select **Current PM** from the **Performance** menu.
- Click the  shortcut button.

4 The PM Data dialog box listing the current 15m PM data shown in ***Fig. 4-7-15*** appears:

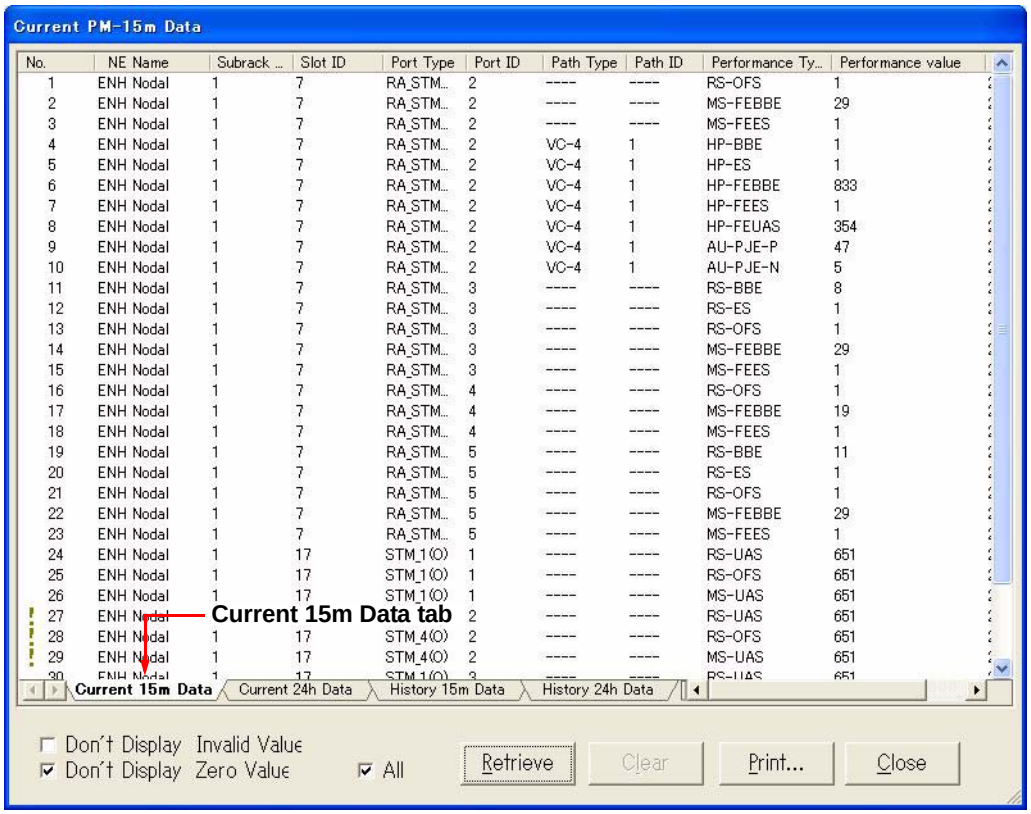


Fig. 4-7-15 Performance View -- Current 15m PM Data

5 In this dialog box, perform one of the following:

- To view the current 15m PM data list using the display option, refer to ***4.7.6.1.5 View Current PM Data Using Display Options***.
- To update the current 15m PM data list, click the **Retrieve** button.
- To print out the current 15m PM data list, click the **Print** button.
- To view the current 24h PM data list, click the **Current 24h Data** tab. Refer to ***4.7.6.1.4 Procedure: View Current 24-Hour PM Data*** for details.
- To view the PM data history, click the **History 15m Data** or **History 24h Data** tab. Refer to ***4.7.6.2 Display History PM Data*** for details.
- To finish viewing, click the **Close** button.

This step is the end of the procedure.

4.7.6.1.4 Procedure: View Current 24-Hour PM Data

Perform the following procedure to view a list of the current 24h PM data:

1 Start up the ADM Management Tool, and login to the target NE.

2 Open the management dialog box of the target NE.

3 Select **Current PM** from the **Performance** menu or click the  shortcut button. The PM Data dialog box shown in ***Fig. 4-7-15*** appears.

4 Click the **Current 24h Data** tab on the dialog box to switch the window. ***Fig. 4-7-16*** shows an example where the **Current 24h Data** tab is selected:

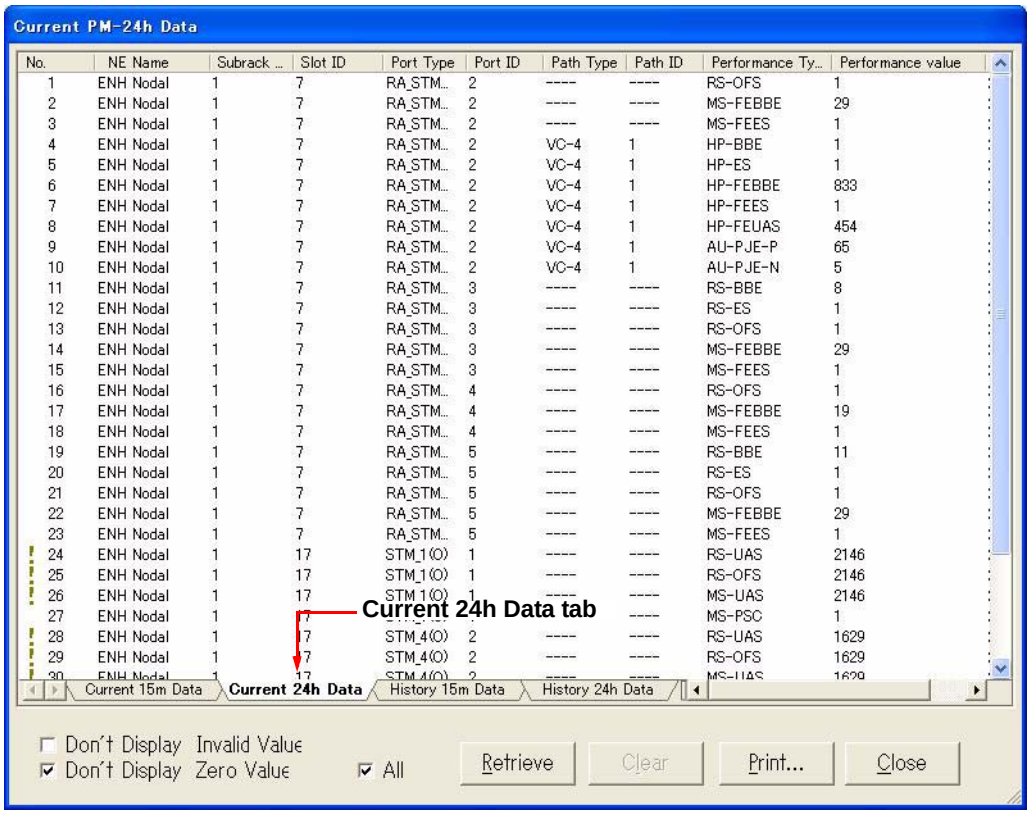


Fig. 4-7-16 Performance View -- Current 24h Data

5 In this dialog box, perform one of the following:

- To view the current 24h PM data list using the display option, refer to ***4.7.6.1.5 View Current PM Data Using Display Options***.

- To update the current 24h PM data list, click the **Retrieve** button.
- To print out the current 24h PM data list, click the **Print** button.
- To view the current 15m PM data list, click the **Current 15m Data** tab. Refer to ***4.7.6.1.3 Procedure: View Current 15-Minute PM Data*** for details.
- To view the PM data history, click the **History 15m Data** or **History 24h Data** tab. Refer to ***4.7.6.2 Display History PM Data*** for details.
- To finish viewing, click the **Close** button.

This step is the end of the procedure.

4.7.6.1.5 View Current PM Data Using Display Options

When the PM Data dialog box is opened for the first time, the **All** check box is selected by default to display all the current 15m PM data within the equipment. The current PM data to be displayed, however, can be specified by using the display options. Refer to ***4.7.6.1.2 Display Options*** for detailed information on the display options.

Perform the following procedure to select the current PM data to be displayed in the list:

Procedure

1 Unselect the **All** check box by clicking. The window shown in ***Fig. 4-7-17*** appears:

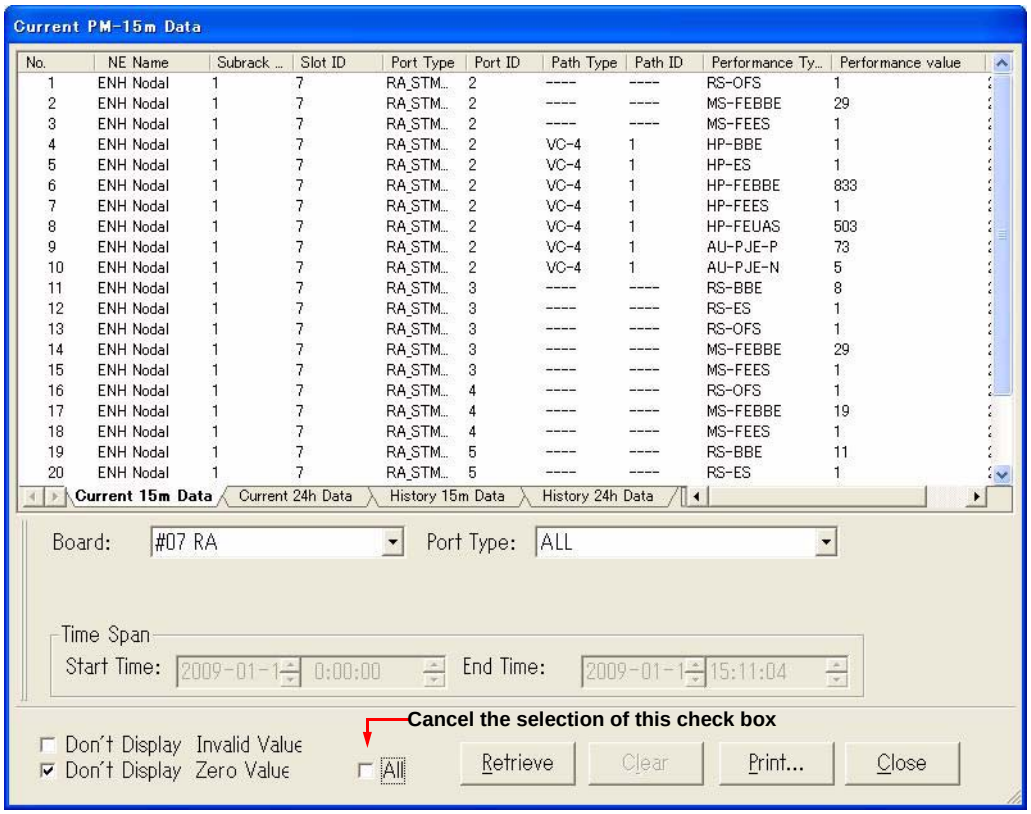


Fig. 4-7-17 Performance View -- Current 15m Data (Clear All Check Box)

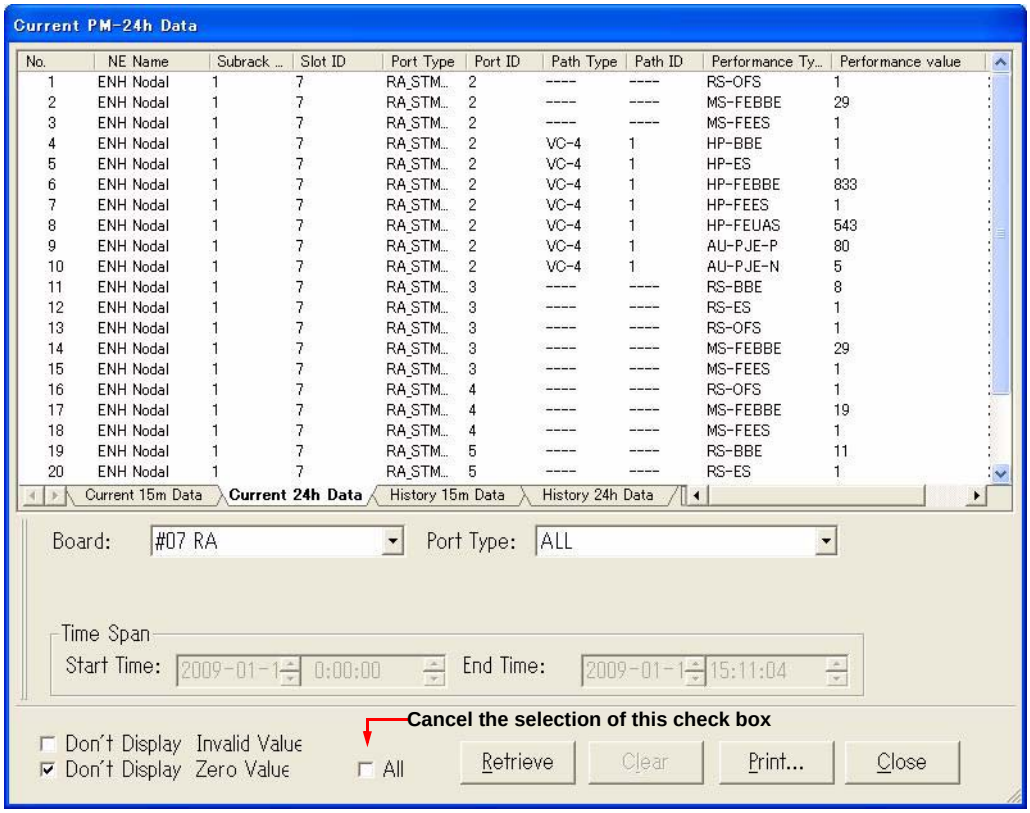


Fig. 4-7-18 Performance View --Current 24h Data (Clear All Check Box)

2 Select the card type from the drop-down list box of the **Board**.

3 Select the port type from the drop-down list box of the **Port Type.**

4 Click the **Retrieve** button. The current PM data that correspond to the selection above are displayed.

This step is the end of the procedure.

*Notes: 1. To display all the current PM data after specifying the current PM data to be displayed, click the **All** check box to select it again and click the Retrieve button.*

*2. Selection/unselection of the **All** check box is valid even after the window is switched by clicking the **Current 15m Data/Current 24h Data** tab for viewing the list of the current 15-minute/24-hour PM data or the 15-minute/24-hour PM data history.*

4.7.6.2 Display History PM Data

The history of performance monitor (PM) data of NE can be retrieved and displayed. When browsing history PM data, the **All** check box is not available.

Fig. 4-7-19 shows an example where the history of the 15m PM data is displayed.

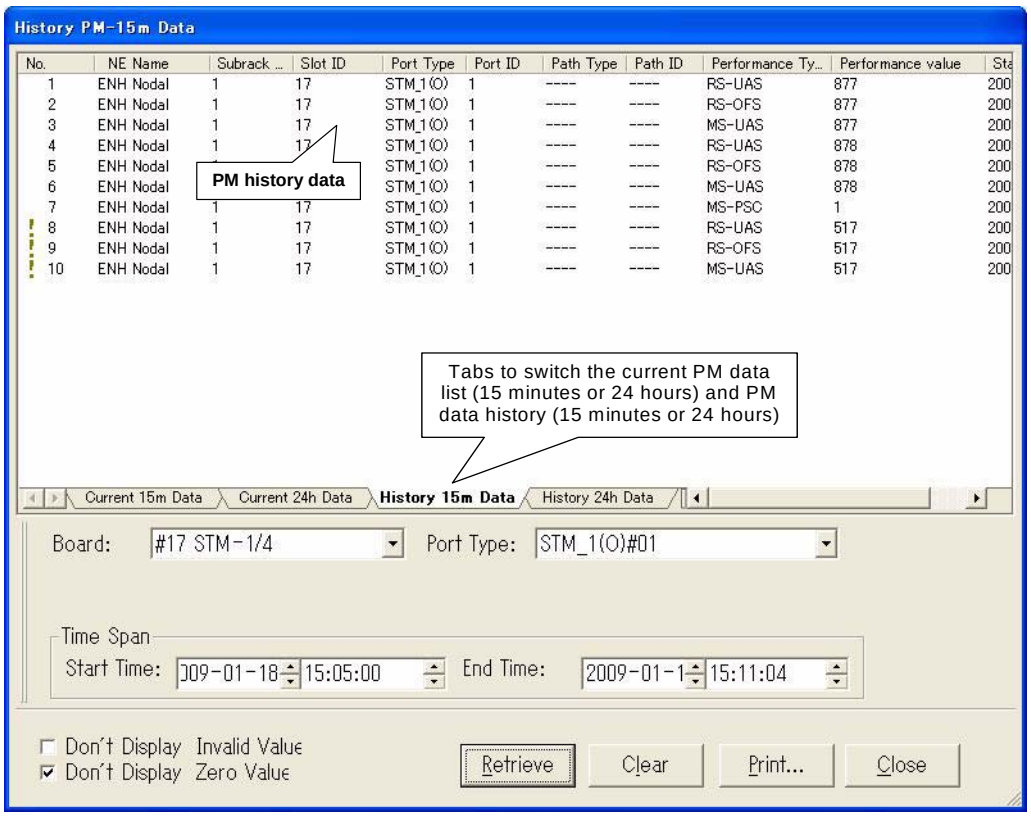


Fig. 4-7-19 PM History Dialog Box

Note: Hereafter, a dialog box that lists the PM data history is referred to as PM History dialog box.

4.7.6.2.1 Items in PM History Dialog Box

The functions of the items in the PM History dialog box are following:

ITEMS		DESCRIPTION
column headers (on top)		Sort PM data. By clicking a column header, the PM data in the list are sorted according to the selected subject.
Current 15m Data tab		Switch the window for displaying a list of current 15-minute PM data.
Current 24h Data tab		Switch the window for displaying a list of current 24-hour PM data.
History 15m Data tab		Switch the window for displaying the history of 15-minute PM data.
History 24h Data tab		Switch the window for displaying the history of 24-hour PM data.
Retrieve button		The PM data are collected again by clicking this button.
Clear Button		Detele the PM history information. By setting time range, to be deleted PM data are selected. Note: This Clear Button is enable on History PM 15m and History 24h view.
Print button	**Out To Printer**	The PM data is printed out to printer by clicking this button.
	Out To File	The PM data is printed out to file by clicking this button.
Close button		PM data browsing is quitted (closing the dialog box) by clicking this button.
Don't Display Invalid Value check box		Select this check box not to display the PM whose value is Invalid. This is selected by default.
Don't Display Zero Value check box		Select this check box not to display the PM whose value is zero. This is selected by default.

4.7.6.2.2 Display Options

ITEMS		DESCRIPTION
Board		Select the card type from the drop-down list.
Port Type		Select the port type from the drop-down list.
Time Span	**Start Time**	Specify the start time for time span.
	End Time	Specify the end time for time span.

4.7.6.2.3 Procedure: View History 15 Minute PM Data

Perform the following procedure to view history 15m PM data:

1 Start up the ADM Management Tool, and login to the target NE.

2 Open the management dialog box of the target NE.

3 Select **History PM** from the **Performance** menu. The PM History dialog box appears, showing history 15m PM data.

Note: The PM History dialog box can also be displayed by clicking the History 15m Data tab on the PM Data dialog box.

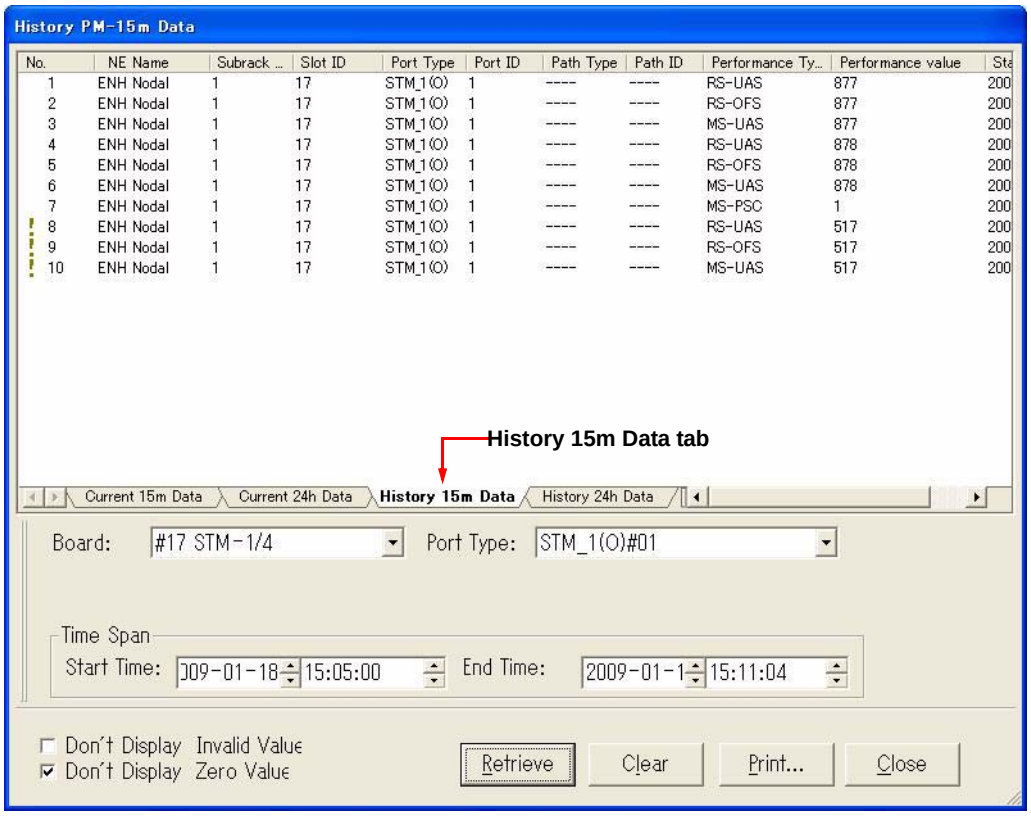


Fig. 4-7-20 Performance View -- History 15m Data

4 Select the card type from the drop-down list of the **Board**.

5 Select the port type from the drop-down list of the **Port Type.**

6 Specify the time span by setting **Start Time** and **End Time** in the **Time Span** field.

7 Click the **Retrieve** button. History 15m PM data that corresponds to the selection above is displayed.

8 In this dialog box, the following options are also available:

- To print out history 15m PM data, click the **Print** button.
- To view history 24h PM data, click the **History 24h Data** tab. Refer to ***4.7.6.2.4 Procedure: View History 24-Hour PM Data*** for details.
- To view the current 15m/24h PM data list, click the **Current 15m Data** or **Current 24h Data** tab. Refer to ***4.7.6.1 Display Current PM Status*** for details.

9 To finish viewing, click the **Close** button.

This step is the end of the procedure.

*Note: Selection/unselection of the **All** check box is valid even after the window is switched by clicking the **History 24h Data/Current 15m Data/Current 24h Data** tab for viewing the 24h PM data history or the list of the current 15-minute/24-hour PM data.*

4.7.6.2.4 Procedure: View History 24-Hour PM Data

Perform the following procedure to view history 24h PM data:

1 Start up the ADM Management Tool, and login to the target NE.

2 Open the management dialog box of the target NE.

3 Select **History PM** from the **Performance** menu. The PM History dialog box appears, showing history 15m PM data.

4 Click the **History 24h Data** tab. The PM History dialog box display history 24h PM data.

*Note: The PM History dialog box for 24h PM data can also be switched from the PM Data dialog box by clicking the **History 24h Data** tab.*

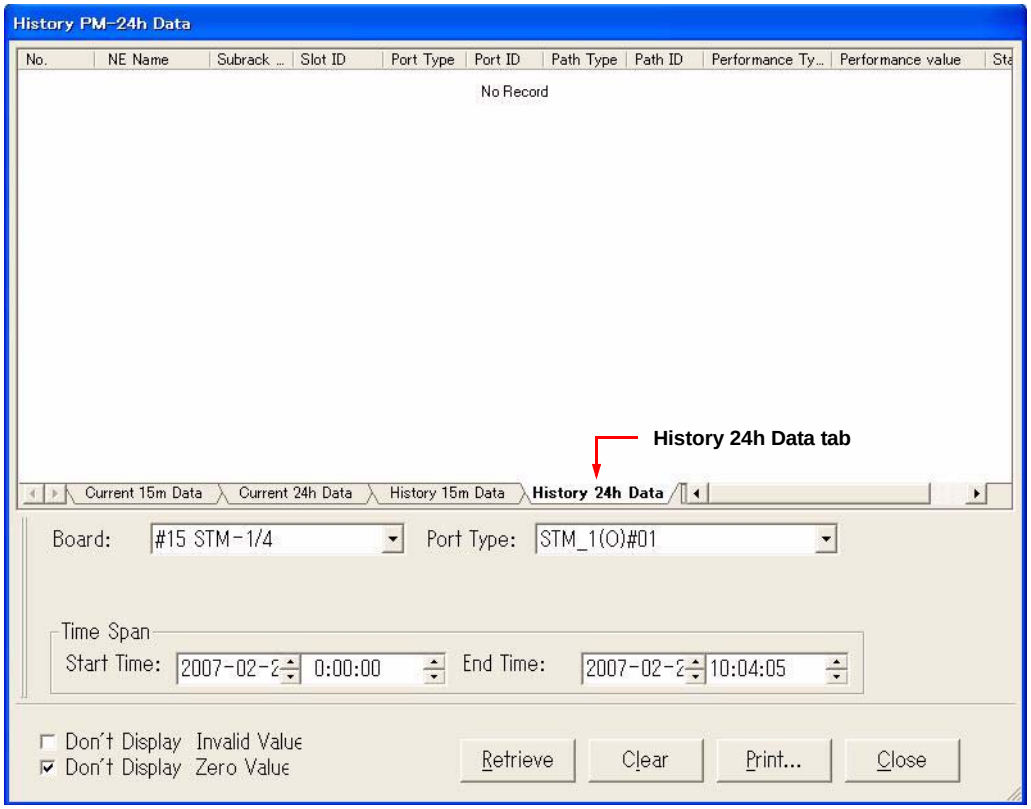


Fig. 4-7-21 Performance View -- History 24h Data

5 Select the card type from the drop-down list box of the **Board**.

6 Select the port type from the drop-down list box of the **Port Type.**

7 Specify the time span by setting **Start Time** and **End Time** in the **Time Span** field.

8 Click the **Retrieve** button. History 24h PM data that corresponds to the selection above is displayed.

9 In this dialog box, the following options are also available:

- To print out history 24h PM data, click the **Print** button.
- To view history 15m PM data, click the **History 15m Data** tab. Refer to ***4.7.6.2.3 Procedure: View History 15 Minute PM Data*** for details.
- To view the current 15m/24h PM data list, click the **Current 15m Data** or Current 24h Data tab. Refer to ***4.7.6.1 Display Current PM Status*** for details.

10 To finish viewing, click the **Close** button.

This step is the end of the procedure.

*Note: Selection/unselection of the **All** check box is valid even after the window is switched by clicking the **History 15m Data/Current 15m Data/Current 24h Data** tab for viewing the 15m PM data history or the list of the current 15-minute/24-hour PM data.*

4.7.6.3 PM Counter Reset

The performance of the equipment can be reset via the **Performance Counter Reset** dialog box. ***Fig. 4-7-22*** shows an example:

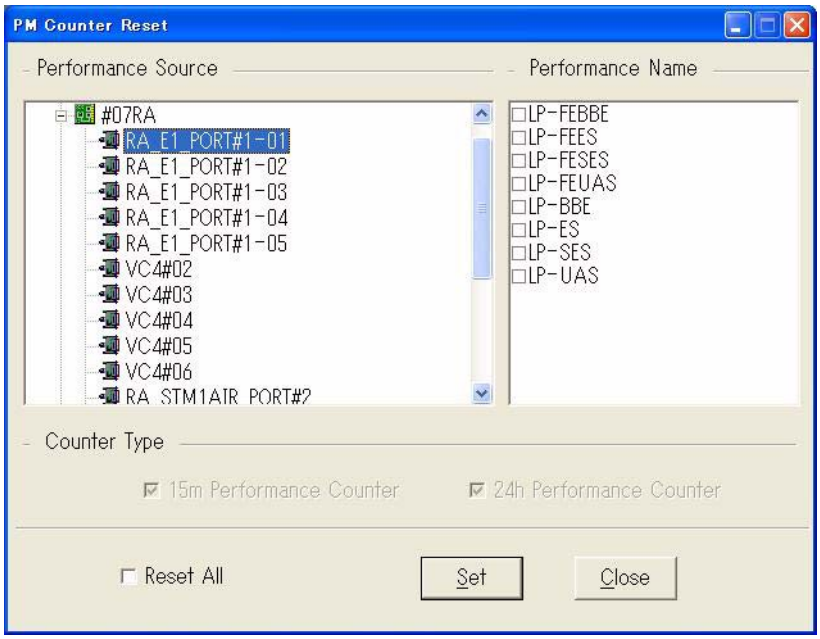


Fig. 4-7-22 Performance Counter Reset Dialog Box

Note: The PM counter cannot be reset by selecting an item. The counter reset is carried out for all the items at a time.

4.7.6.3.1 Items in Performance Counter Reset Dialog Box

ITEMS		DESCRIPTION
Performance Source		Select the operating object for which the PM counter should be reset.
Performance Name		Select the performance name that needs to be reset.
Counter Type	**15m Performance Counter**	Select the 15m PM counter. *Note:* This item already is selected by ADM Management Tool, and ADM Management Tool display grey in the screen.
	24h Performance Counter	Select the 24h PM counter. *Note:* This item already is selected by ADM Management Tool, and ADM Management Tool display grey in the screen.
Reset All check box		When this check box is selected (leaving a tick), all the operating objects will be reset.
Set button		Send the specified settings to the NE.
Close button		Quit the PM counter reset operation (closing the dialog box).

4.7.6.3.2 Procedure: Execute PM Counter Reset

Perform the following procedure to reset the PM counter.

1 Start up the ADM Management Tool, and login to the target NE.

2 Open the management dialog box of the target NE.

3 Select **PM Counter** Reset from the **Performance** menu. The **Performance Counter Reset** dialog box shown in ***Fig. 4-7-22*** appears.

4 Select the operating object for which the PM counter should be reset from the Performance Source tree in the left window.

5 Check Reset All Check box.

6 Confirm the setting, then click the **Set** button to send the data to NE.

7 Click the **Close** button to finish the PM counter reset operation.

*Note: If the **Close** button is clicked without clicking the **Set** button, the **Performance Counter Reset** dialog box is closed ignoring the setting.*

This step is the end of the procedure.

4.7.7 Hardware Inventory and LED Status

4.7.7.1 Display Hardware Information and LED Status

Information on the installed cards and its LED status can be displayed in the ADM Management Tool. Perform the following procedure to open the management dialog box of the target NE:

Procedure:

1 Start up the ADM Management Tool, and login to the target NE. The ADM Management Tool retrieves the configuration information data on the equipment during logging in.

2 The ADM Management Tool shown in ***Fig. 4-7-23*** appears:

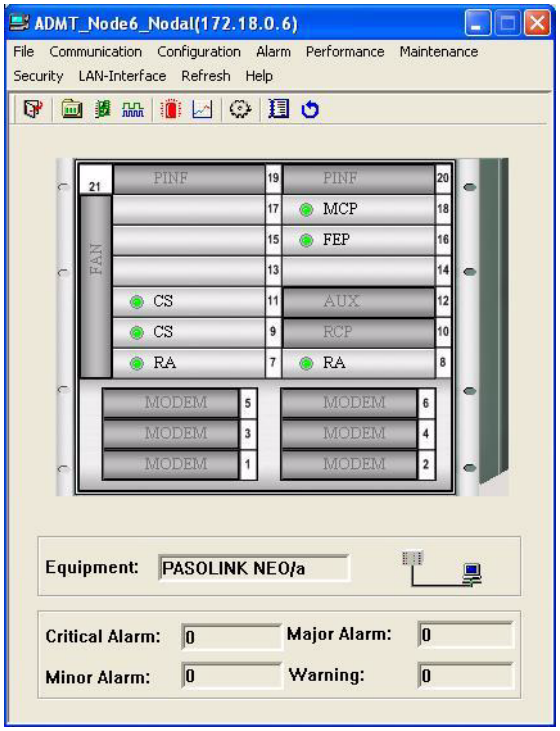


Fig. 4-7-23 ADM Management Tool

Information on the installed cards and its LED status are displayed. In this dialog box, the target NE type of the equipment, working mode and alarm conditions are also displayed.

This step is the end of the procedure.

4.7.8 Firmware Version

The information on the firmware installed in an NE can be retrieved.

4.7.8.1 Procedure: Retrieve Installed Firmware Version

1 Start up the ADM Management Tool, and login to the target NE.

2 Open the management dialog box of the target NE.

3 Select **Upgrade F/W and FPGA** from the **Maintenance** menu. The **Upgrade F/W and FPGA** Management dialog box shown in ***Fig. 4-7-24*** appears:

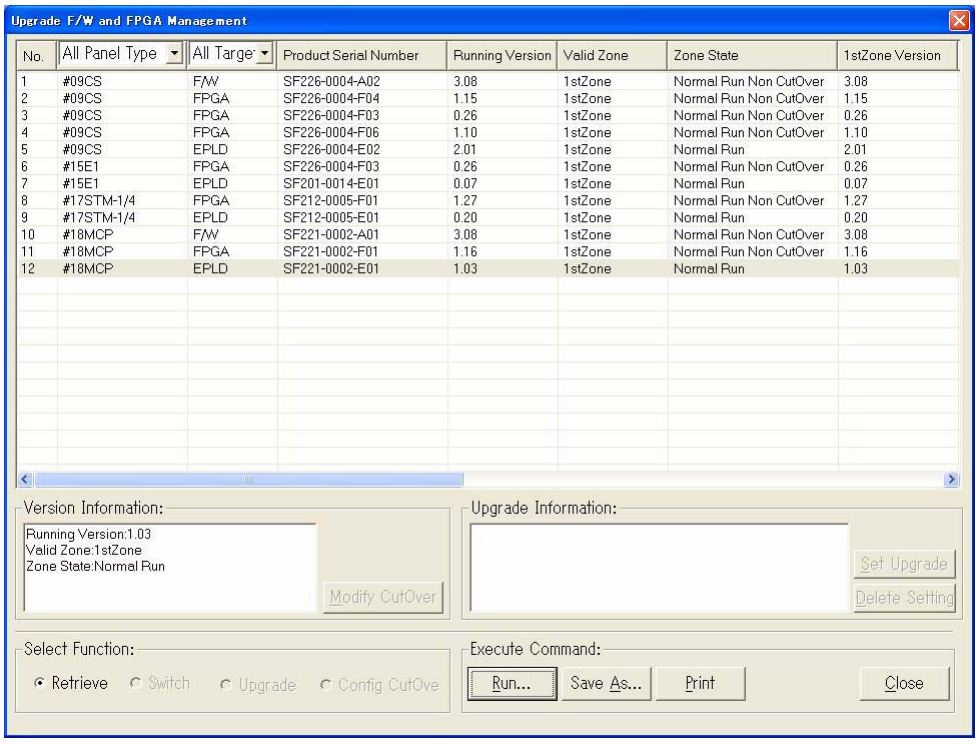


Fig. 4-7-24 Upgrade F/W and FPGA Management Dialog Box

4 Select the corresponding panel from first drop-down list on the top of the **Upgrade F/W and FPGA** Management dialog box.

5 Select type: **F/W** or **FPGA** or **EPLD** from second drop-down list on the top of the **Upgrade F/W and FPGA** Management dialog box.

6 Click the **Retrieve** radio button in the **Select Function** field.

7 Click the **Run** button to retrieve the firmware version.

If you want to save the retrieved result information, you can click the **Save As** button to pop-up the **Save As** dialog box. It is shown as bellow:

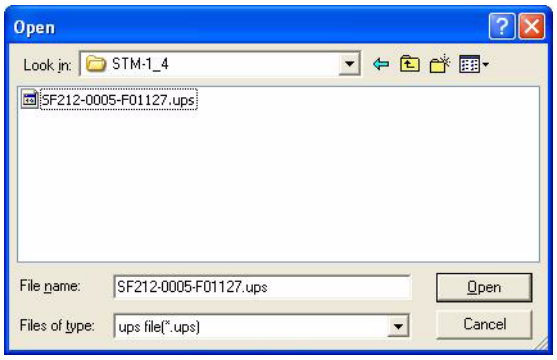


Fig. 4-7-25 File Save as Dialog Box

Else if you want to print the retrieved result information, you can click the **Print** button to print it.

8 Click the **Close** button to finish viewing the firmware version.

This step is the end of the procedure.

4.8 Equipment Maintenance

This section provides the maintenance information and procedures related to the equipment and equipment configuration.

4.8.1 Database Upload/Download

When the configuration of the PASOLINK NEO/a is completed, all the configuration information on that equipment can be saved by the database upload function. After this, these configurations can be conveniently sent to another NEO/a, which needs to set up its configuration, by the database download function without needing repeat the configuration setup for it.

4.8.1.1 Database List

The configuration database items that can be uploaded/downloaded are listed in the following table in alphabetical order. These are listed in the **Database Select** text box of the **Database Upload/Download** dialog box (see ***Fig. 4-8-1***).

Table 4-8-1 Database List

Database Items	
NE Attribute Tab	NE Parameter
Common Performance Attribute Tab	Digital Performance Type Config Tab
Signal Board Protect Tab	User Information Tab
Slot Config Tab	IP\RS232\DCC Config
Physical Port Config Tab	OWH_ATTR
Port Connect Config Tab	DATA_CHANNEL
SDH/PDH Service Interface Config Tab	TRUNK_FE
SDH MSP Group Config Tab	VLAN_FE
SDH MSP Config Tab	MAC Filter of FE
Higher Order Path Cross-Connect Config Tab	Bandwidth_FE
Higher Order Service TimeSlot (J1) Config Tab	Port_FE
SDH Lower Order TimeSlot Config Tab	Board_FE
System Timing Source Tab	STP_FE
ByPass Timing Source Tab	Encapsulation_FE
Clock Path Info Config Tab	Board_FE_Extension
2M bit/Hz Output State & SAN bit Tab	Port Name
Alarm Type Config Tab	

4.8.1.2 Procedure: Upload/Download Database

Perform the following procedure to upload/download the database:

1 Start up the ADM Management Tool, and login to the target NE.

2 Open the management dialog box of the target NE.

3 Select **Database Upload/Download** from the **File** menu. The **Database Upload/Download** dialog box shown in ***Fig. 4-8-1*** appears:

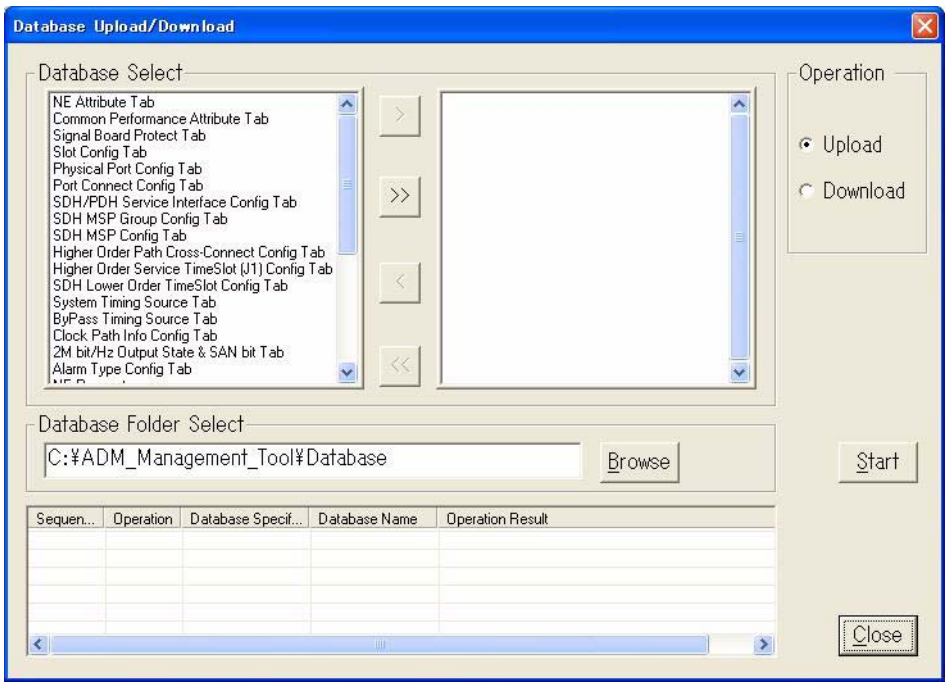


Fig. 4-8-1 Database Upload/Download Dialog Box

4 When downloading database, a database folder to which the database is to be saved must be selected first. Perform the following procedure:

1) Click the **Browse** button on the right of the **DataBase Folder Select** field to open the **Work Path Select** dialog box shown in ***Fig. 4-8-2***.

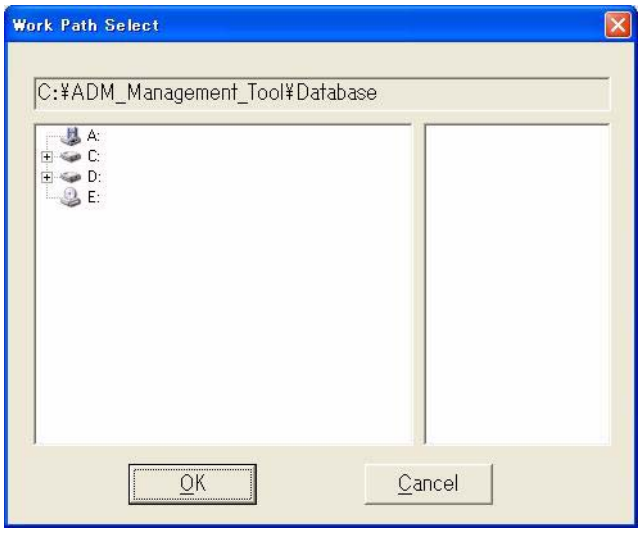


Fig. 4-8-2 Work Path Select Dialog Box

2) Select a desired directory from the tree structure on the left of the dialog box. The path of the selected folder (directory) will be displayed in the upper field.

3) Click the **OK** button. **The Work Path** Select dialog box is closed and the **Database Upload/Download** dialog box appears again, with the selected directory entered in the **DataBase Folder Select** field.

5 In the **Operation** field, select the operation mode **Upload** or **Download** radio button.

6 To select all the databases at once, click the >> button.

Note: Selected databases in the right text box can be removed by clicking the << button without selecting any databases.

7 Confirm that the specified operation (upload/download) and selected the databases to be uploaded/downloaded are correct, and then click the **Start** button.

8 Then the confirmation dialog box appears, asking whether to actually execute the uploading/downloading operation. Click the **OK** button.

9 When the updating/downloading operation is completed, a message box appears displaying whether the operation has been successfully finished or not.

This step is the end of the procedure.

Note: After completing database download by the ADM management tool, it automatically reset the MCP and disconnect the ADM from the NE. Close the ADM management tool and reopen it and login again from the PNMT screen.

4.8.2 Equipment Reset

Execute F/W reset for required device.

Notes: 1. Equipment reset operation will cause ADM Management Tool communication down.

2. The Ethernet card may lose the frames when its F/W is reset.

3. MCP and Ethernet cards do not provide H/W reset button; use S/W reset by ADM Management Tool.

4.8.2.1 Procedure: Execute Equipment Reset

Perform the following procedure to reset the equipment:

1 Start up the ADM Management Tool, and login to the target NE.

2 Open the management dialog box of the target NE.

3 Select **Equipment Reset** from the **Maintenance** menu. The **Equipment Reset** dialog box shown in ***Fig. 4-8-3*** appears:

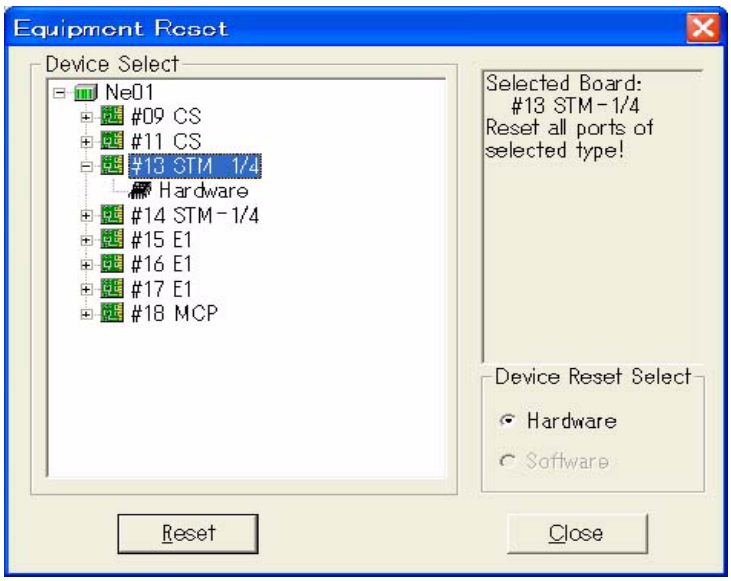


Fig. 4-8-3 Equipment Reset Dialog Box

4 Select the equipment, card, or port to be reset in the **Device Select** tree structure on the left of the dialog box.

5 Select **Hardware** or **Software** from the **Device Reset Select** field.

Note: CS, STM-1/4 and 2M card can be configured as hardware reset. When hardware reset configuration take effect, the service is break; The MCP, CS, FE, FEP and GE card can be set as software reset. When FE, FEP and GE card are set as software reset, the service is break.

6 Confirm that the selected equipment/card/port is correct, and then click the **Reset** button. The confirmation dialog box shown in ***Fig. 4-8-4*** appears:

Fig. 4-8-4 Confirmation Dialog Box for Equipment Reset

7 Click the **OK** button to perform equipment reset.

*Note: Clicking the **Cancel** button instead of the **OK** button closes the confirmation dialog box and the **Equipment Reset** dialog box appears again.*

8 The equipment restarts automatically. It takes about 60 to 90 seconds for equipment restart.

Note: When MCP to restarting, the communication between ADM Management Tool and NE will be shut down during restarting.

This step is the end of the procedure.

4.8.3 Inventory

4.8.3.1 Procedure: Retrieve/ Print Inventory Information

Perform the following procedure to erase NE history data the equipment:

1 Start up the ADMT, and login to the target NE.

2 Open the management dialog box of the target NE.

3 Select **Inventory** from the **Maintenance** menu. The **Inventory** dialog box shown in Fig. 4-8-5 appears:

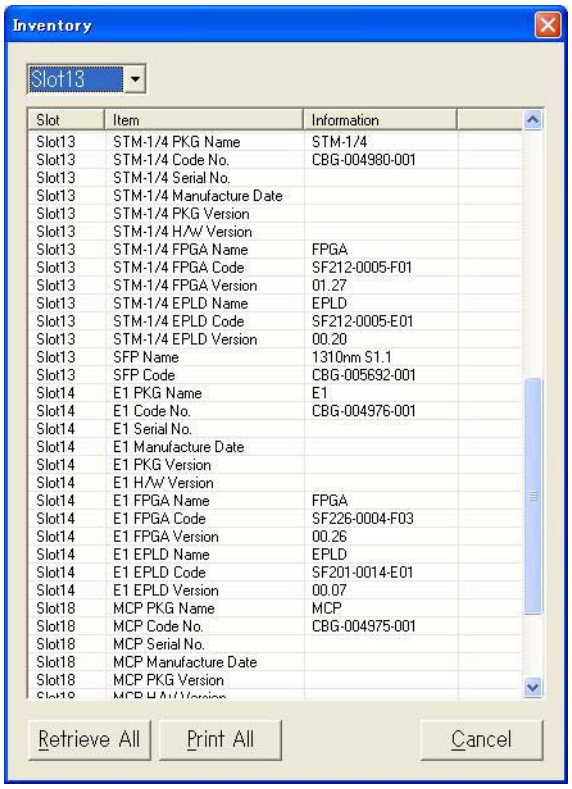


Fig. 4-8-5 Inventory

4 From the inventory list you can retrieve the detailed information of each board by select the slot from the drop-down list.

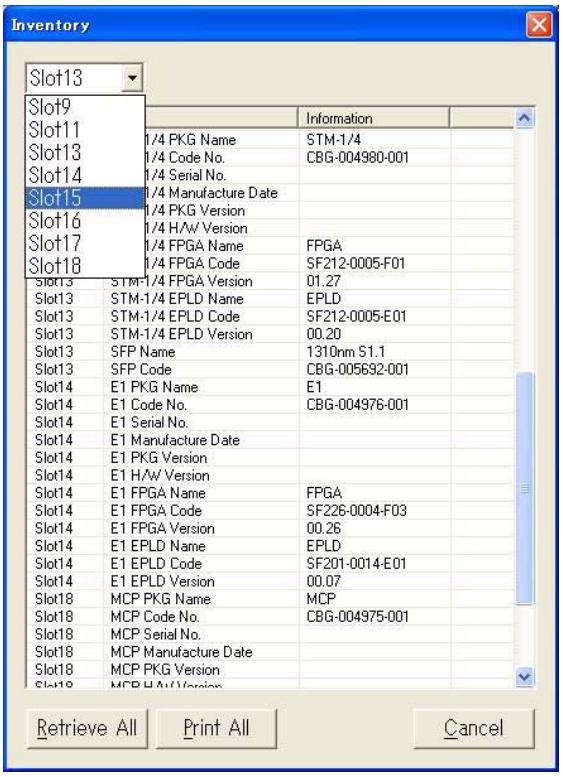


Fig. 4-8-6 Select slot from the list

5 Or you can retrieve the inventory of all boards by click **Retrieve All** button.

6 If you want to print the detailed inventory information, please click **Print All** button, the **Output Setting** window will appear like Fig. 4-8-7.

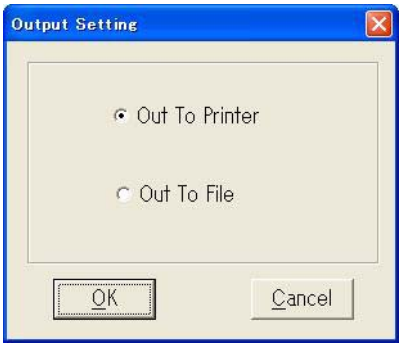


Fig. 4-8-7 Output Setting

7 Please select **Out To Printer** or **Out To File** by click the radio button according to your need.

This step is the end of the procedure.

4.9 Traffic Maintenance

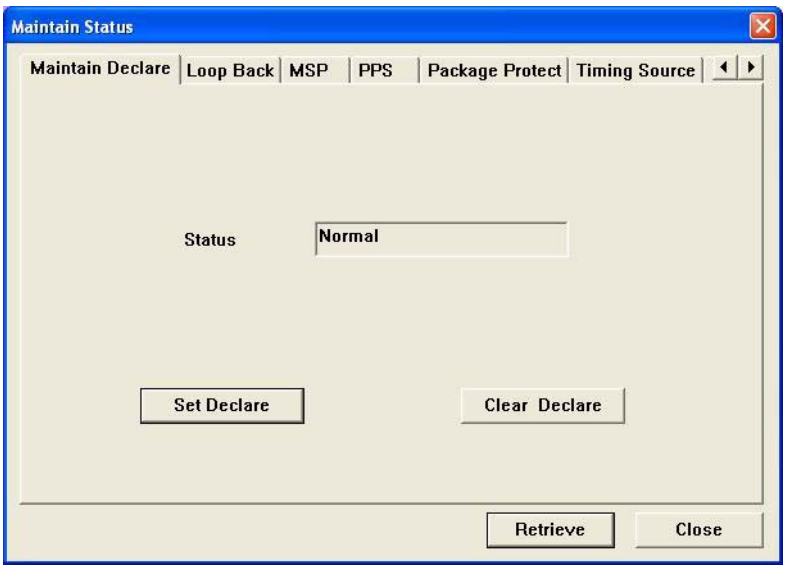
This section provides the maintenance information and procedures related to traffics.

Traffic maintenance should be carried out by maintenance personnel to assure or inspect the quality of the traffic.

The tasks provided in this section are not arranged in any specific order.

4.9.1 View Maintain Status

Maintain status mainly refer to loop back, MSP, PPS, package protect timing source and laser shutdown function.



4.9.1.1 Items and Parameters

The **Maintain Status** dialog box has the following items and parameters:

ITEM/PARAMETER	VALUE	DESCRIPTION
Set Declare	Button	Set declare command
Clear Declare	Button	Clear declare command
Status	No selection	Display the maintain status

- **Loop Back**

ITEM/PARAMETER	VALUES	DESCRIPTOIN
Panel	No selection	Display the package and slot
Port	No selection	Display the relative port
Setting Status	No selection	Display the setting status
Working Status	No selection	Display the actual working status
With Command	Radio button	To display the status of port with command
All	Radio button	To display the status of all ports

- **MSP**

ITEM/PARAMETER	VALUES	DESCRIPTION
Panel	No selection	Display the package and slot
Port	No selection	Display the relative port
MSP Group ID	No selection	Display the MSP Group ID
Primary/Back	No selection	Display the primary/back status
Switch Command	No selection	Display the current switch command
Working Status	No selection	Display the actual working status
With Command	Radio button	To display the status of port with command
All	Radio button	To display the status of all ports

- **PPS**

ITEM/PARAMETER	VALUES	DESCRIPTION
Source	No selection	Display the source
Destination	No selection	Display the destination
Cross Connect Attribute	No selection	Display the cross connect attribute
Switch Command	No selection	Display the current switch command
Working Status	No selection	Display the actual working status
With Command	Radio button	To display the status of port with command
All	Radio button	To display the status of all ports

- **Package Protect**

ITEM/PARAMETER	VALUES	DESCRIPTION
Panel	No selection	Display the package and slot
Protect Mode	No selection	Display current protect mode
Primary/Back	No selection	Display the primary/back status
Switch Command	No selection	Display the current switch command
Working Status	No selection	Display the actual working status
With Command	Radio button	To display the status of port with command
All	Radio button	To display the status of all ports

- **Timing Source**

ITEM/PARAMETER	VALUES	DESCRIPTION
Timing Source	No selection	Display the timing source
System/ByPass	No selection	Display the timing source type: system/bypass
Switch Command	No selection	Display the current switch command
Working Status	No selection	Display the actual working status
With Command	Radio button	To display the status of port with command
All	Radio button	To display the status of all ports

- **Laser Shutdown**

ITEM/PARAMETER	VALUES	DESCRIPTION
Panel	No selection	Display the relative panel
Port	No selection	Display the relative port
Force Shutdown	No selection	Display whether exit force shutdown command in this port
Working Status	No selection	Display the actual working status
With Command	Radio button	To display the status of port with command
All	Radio button	To display the status of all ports

4.9.1.1.1 Procedure: Set/Clear Maintain Declare

1 Open the management dialog box of the target NE.

2 Select **View Maintain Status** from Maintenance menu, the **Maintain Status** menu will appear. Its appearance shown as below:

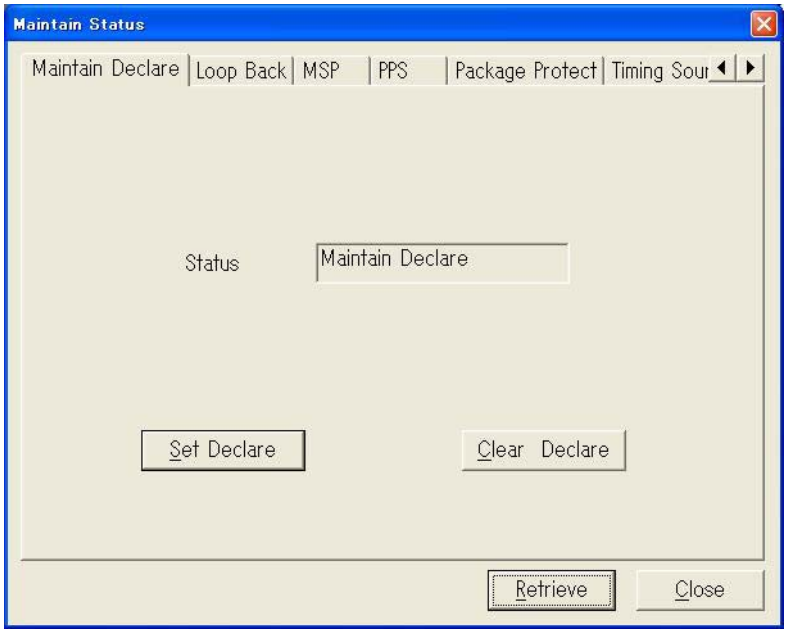


Fig. 4-9-1 Maintain Status Dialog Box

3 Click **Retrieve** button to retrieve the current maintain status.

4 Click **Set Declare** button to enable maintain function or click **Clear Declare** button to cancel all maintain command.

5 Confirm your setting and click **Close** button to exit the **Maintain Status** window.

This step is the end of the procedure.

4.9.1.1.2 Procedure: Retrieve Maintain Status

1 Open the management dialog box of the target NE.

2 Select **View Maintain Status** from Maintenance menu, the Maintain Status menu will appear. Its appearance is shown in ***Fig. 4-9-1***.

3 Select **Loop Back, MSP, PPS, Package Protect, Timing Source and Laser Shutdown** attribute pages to retrieve the corresponding maintain status. The detail attribute pages are shown as below:

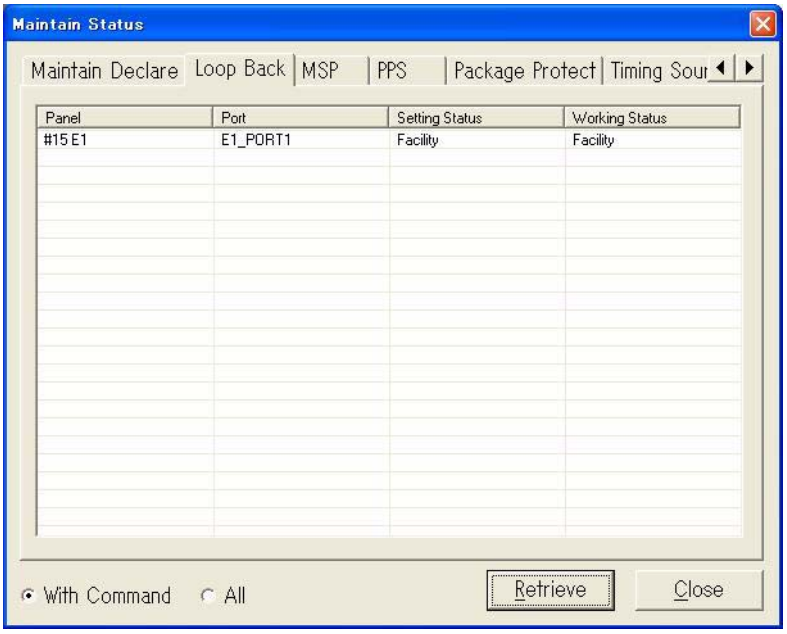


Fig. 4-9-2 Loop Back Maintain Status

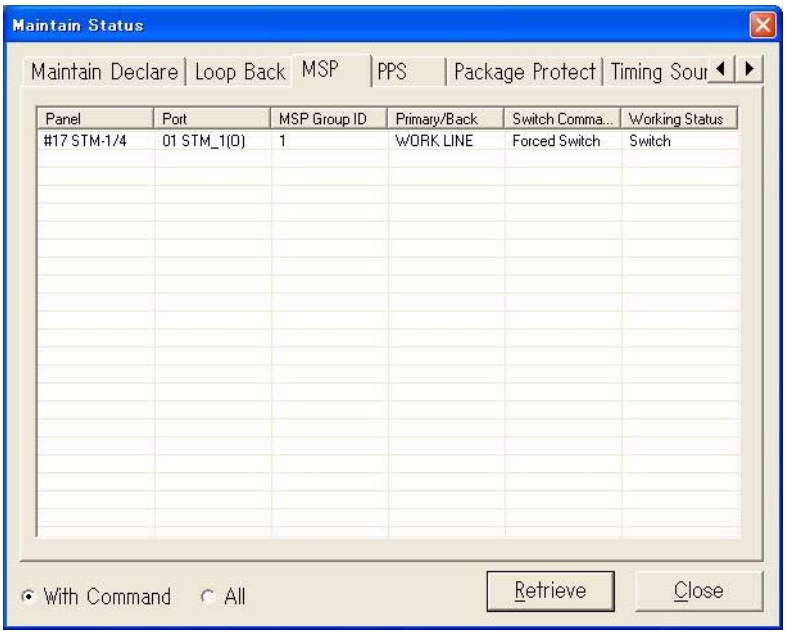


Fig. 4-9-3 MSP Maintain Status

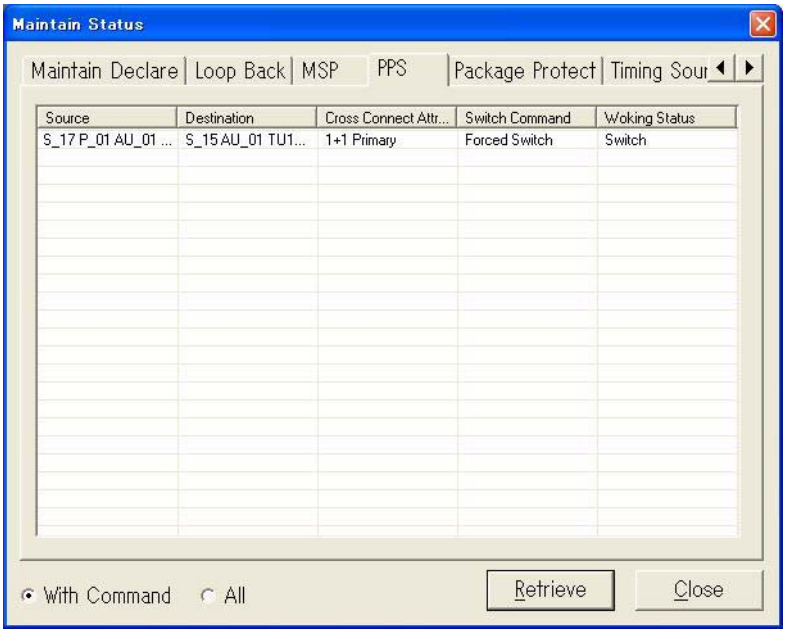


Fig. 4-9-4 PPS Maintain Status

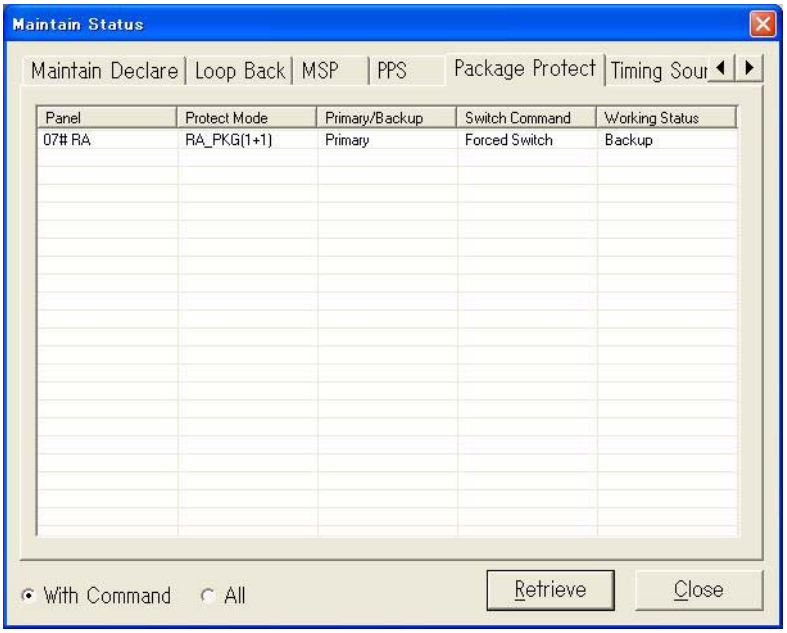


Fig. 4-9-5 Package Protect Maintain Status

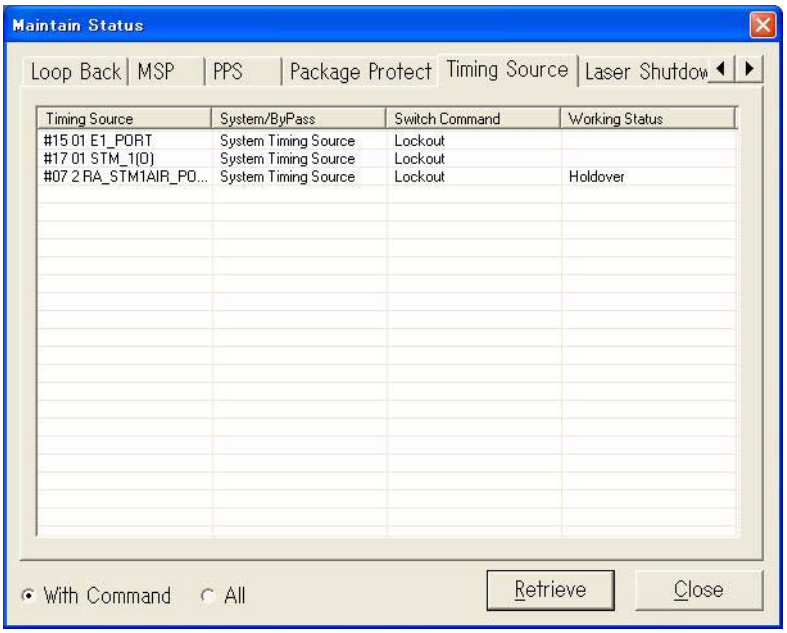


Fig. 4-9-6 Timing Source Maintain Status

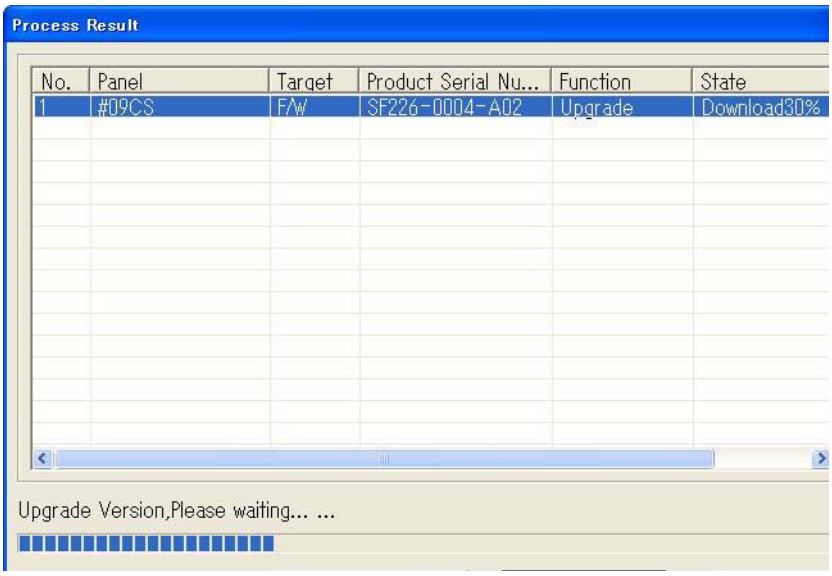


Fig. 4-9-7 Laser Shutdown Maintain Status

4 Click **With Command** or **All** radio buttons to display the port with command or display all ports.

5 Click **Close** button to exit the **Maintain Status** dialog box.

This step is the end of the procedure.

4.9.2 Loopback

4.9.2.1 Description

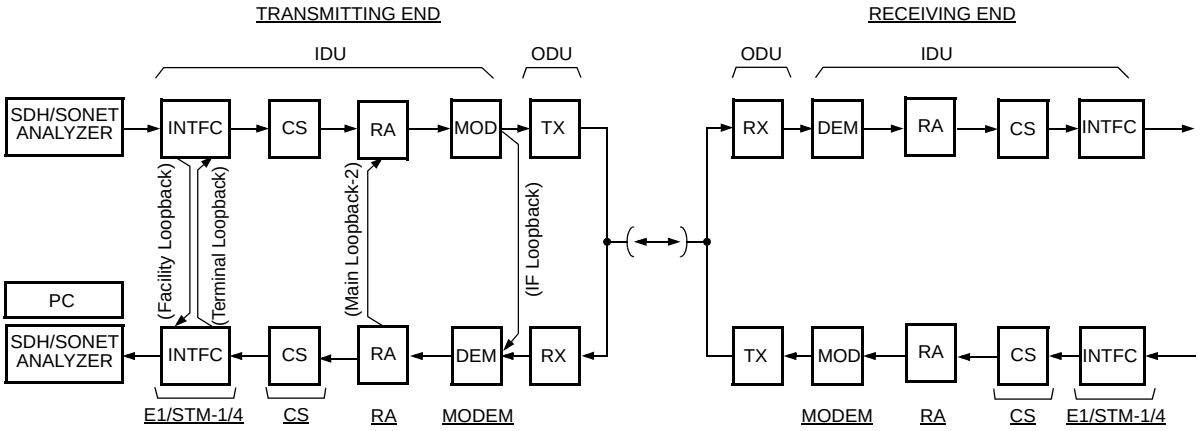
Caution: Performing loopback interrupts the flow of traffic, and changes the normal transmission.

Loopback function allows fault isolation and pre-service operation practice. Performing loopback interrupts the flow of traffic, and changes the normal transmission. Therefore, the use of loopback as routine practice is not recommended.

When the terminal loopback is executed in PDH port, the system generates an alarm indication signal, and sends it to the far-end NE.

See the following for other features of the loopback:

- The loopback can be executed on every path.
- Alarms in the path layer are masked during the loopback operation.



4.9.2.2 Loopback Status

There are the following three kinds of loopback status:

LOOPBACK STATUS	DESCRIPTION
Facility loopback	Incoming signals from other equipment is looped back to the signal source without any management.
Terminal loopback	Signals are looped back without sending to other equipment.
Non loop	Signals go straight without any loopback.

4.9.2.3 Procedure: Setup Loopback

1 Open the management dialog box of the target NE.

2 Select **Loopback Control** from the **Maintenance** menu. The **Loopback Control** dialog box shown in ***Fig. 4-9-8*** appears:

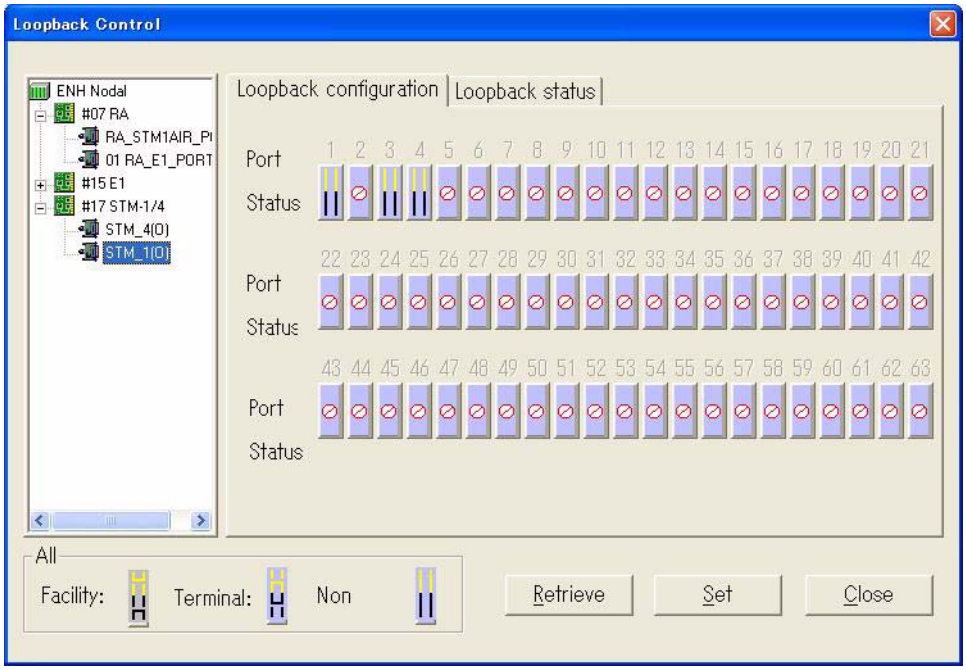


Fig. 4-9-8 Loopback Control Dialog Box

3 Select a port for which loopback is to be executed from tree structures in the left window (selected ports will be highlighted).

4 Click the **Retrieve** button to send the loopback data information of the selected port to the ADM Management Tool.

5 Click a port in the **Loopback Status** field. Its loopback status switches  (Facility) =>  (Terminal) =>  (Non Loop) by clicking.

*Note: A same loopback status can be specified for all the paths on a certain slot position by clicking the corresponding button in the **All** field.*

6 Click the **Set** button. The specified loopback settings will be sent to the NE.

7 Click the **Close** button to finish the loopback setup operation.

This step is the end of the procedure.

4.9.3 Crossconnect Maintenance

The procedures regarding the crossconnect maintenance operations are provided in ***4.5 Setup Crossconnect*** of this manual.

Procedure

1 Start up the ADM Management Tool, and login to the target NE.

2 Open the management dialog box of the target NE.

3 Select **Cross Connect Configuration** from the **Configuration** menu. The **Cross Connect Configuration** dialog box shown in ***Fig. 4-9-9*** appears:

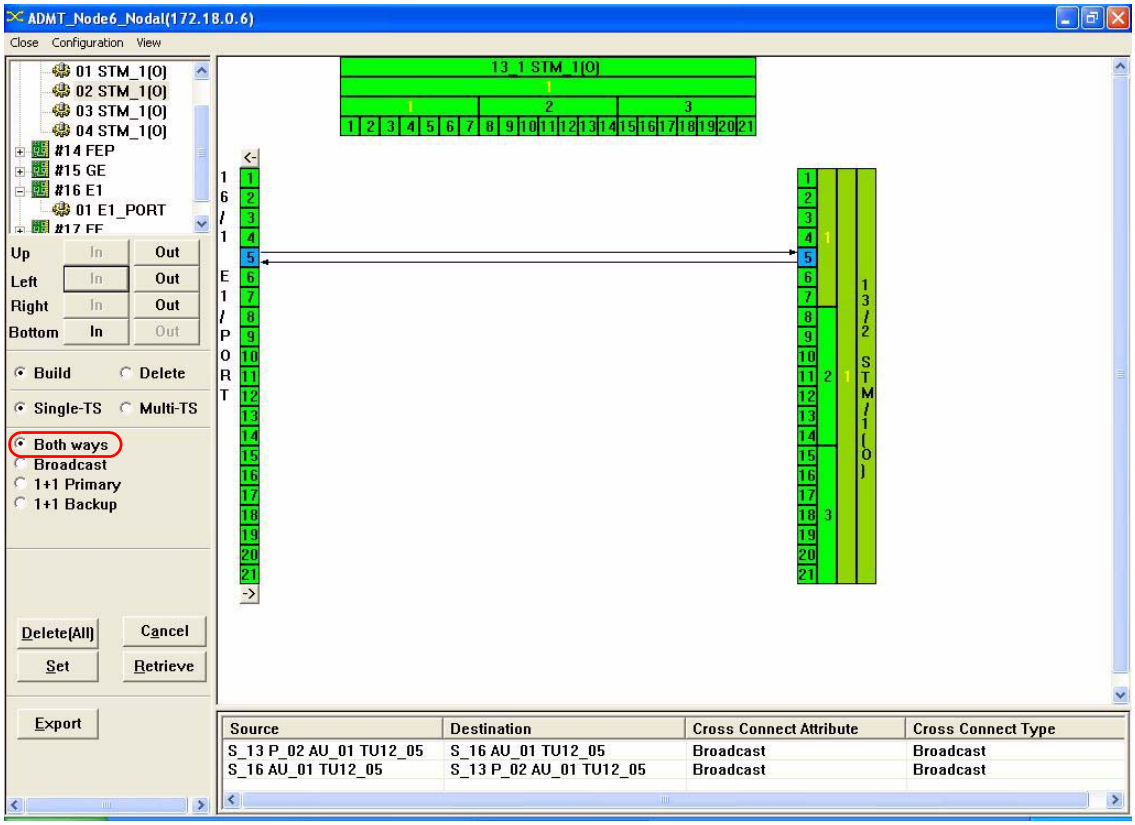


Fig. 4-9-9 Cross Connect Configuration Dialog Box

4 Choose the Delete radio button; delete the crossconnect that need to be modified at the destination side.

Note: When this is selected, Multi-TS is disabled.

5 Configure the new crossconnect.

This step is the end of the procedure.

4.9.4 Protection

PASOLINK NEO/a supports two kinds of protections: MSP (multiplex section protection), SNCP (sub-network connection protection).

4.9.4.1 MSP

4.9.4.1.1 Action Mode

PASOLINK NEO/a supports MSP's working mode: 1+1 Uni-directional Non-revertive, 1+1 Bi-directional Non-revertive, 1:1 Bi-directional Revertive Linear Protection. The following illustration shows the three kinds Linear Protection. Only receive side is switched in case of the line failure.

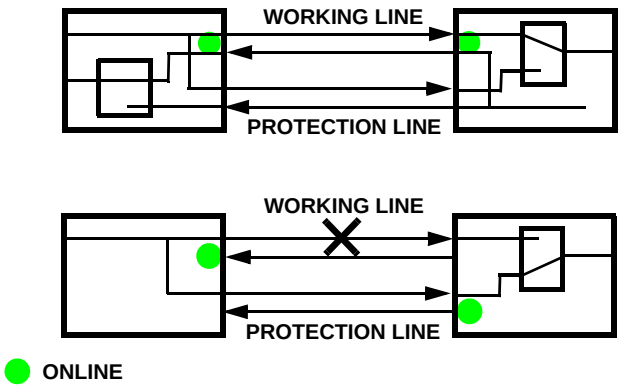


Fig. 4-9-10 1+1 Unidirectional Linear Protection Operation

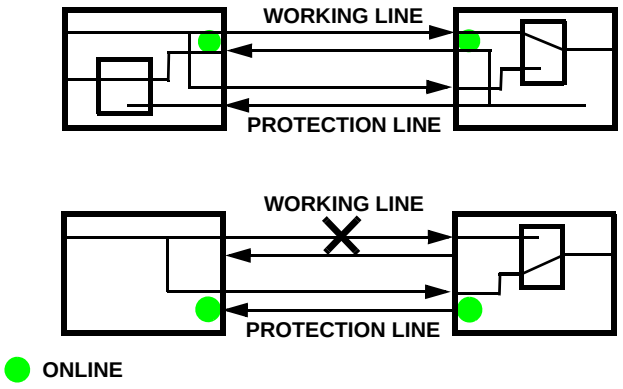


Fig. 4-9-11 1+1 Bidirectional Linear Protection Operation

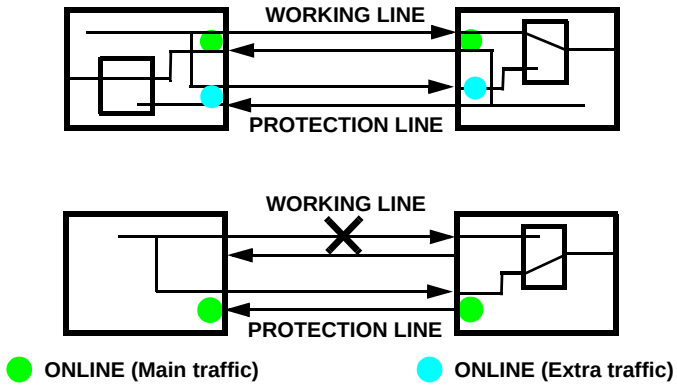


Fig. 4-9-12 1:1 Bidirectional Linear Protection Operation

4.9.4.1.2 Configuration Mode

The cards in same level can be configured as protection in PASOLINK NEO/a without slot limitation. The following figure shown as an example:

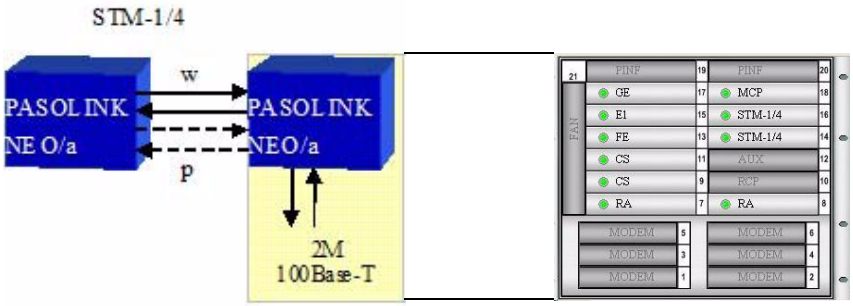


Fig. 4-9-13 MSP Configuration

4.9.4.1.3 Switching Criterion

ITEM	SWITCHING REQUIREMENT	MONITOR PLACE
B2ERR_HIGH	SF	Line (Work / Prot)
B2ERR_LOW	SD	Line (Work / Prot)
LOS	SF	Line (Work / Prot)
LOF	SF	Line (Work / Prot)
MS-AIS	SF	Line (Work / Prot)
RS-TIM*	SF	Line (Work / Prot)

Note:J Byte must be enabled in order to make TIM function be a switch criterion.*

4.9.4.1.4 External Commands

Command	Term	Content
Lockout of protection	LKOP	Protection line is forbidden to use unconditionally.
Forced switch to protection	FSP	If the command is set on working line, the traffic will be switched to protection line unconditionally.
Forced switch to working	FSW	If the command is set on protection line, the traffic will be switched to working line unconditionally.
Manual switch to protection	MSP	If the command is set on working line and protection line is in normal status, the traffic will be switched to protection line.
Manual switch to working	MSW	If the command is set on protection line and working liner is in normal status, the traffic will be switched to the working line.

4.9.4.1.5 Command Priority

- 1+1 Uni: LKOP > FS > SF > SD >MS
- 1+1 Bi: LKOP>SF on Prot>FS>SF on Work>SD on Prot>SD on Work > MS
- 1:1 Bi: LKOP>SF on Prot>FSW (to W)>FSW (to P)>SF on Work>SD on Prot> SD on Work >MSW (to W) > SW (to P)

4.9.4.1.6 Switch Time

Switch time is the interval from the decision to switch to the completion of the switch and switch operation at a switching node initiating the switch request. When Hold Off time is set as 0sec, switch time must be less 50msec.

4.9.4.2 SNCP

4.9.4.2.1 Action Mode

PASOLINK NEO/a supports SNCP in action methods: 1+1 Uni-directional Non-Revertive/ Revertive and monitor methods: SNC/I (Sub-Network Connection Protection with Inherent Monitoring) and SNC/N (Sub-Network Connection Protection with Non-intrusive Monitoring).

Note: PASOLINK NEO/a supports both SNC/N and SNC/I in SNCP ring configuration.

4.9.4.2.2 Configuration Mode

The cards in same level can be configured as protection in PASOLINK NEO/a without slot limitation. The below Fig. 4-9-14 is shown as an example:

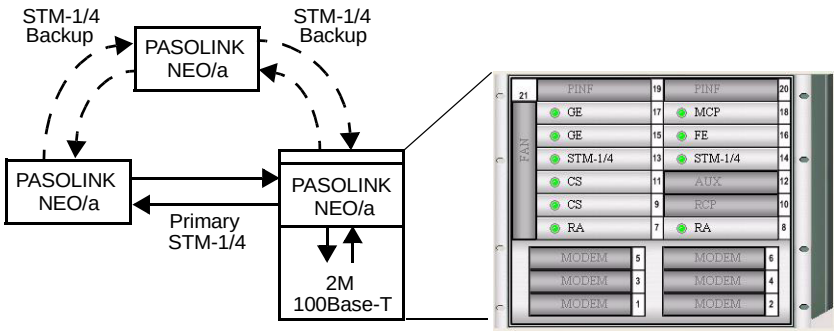


Fig. 4-9-14 SNCP Configuration

4.9.4.2.3 Switching Criterion

For SNC/I

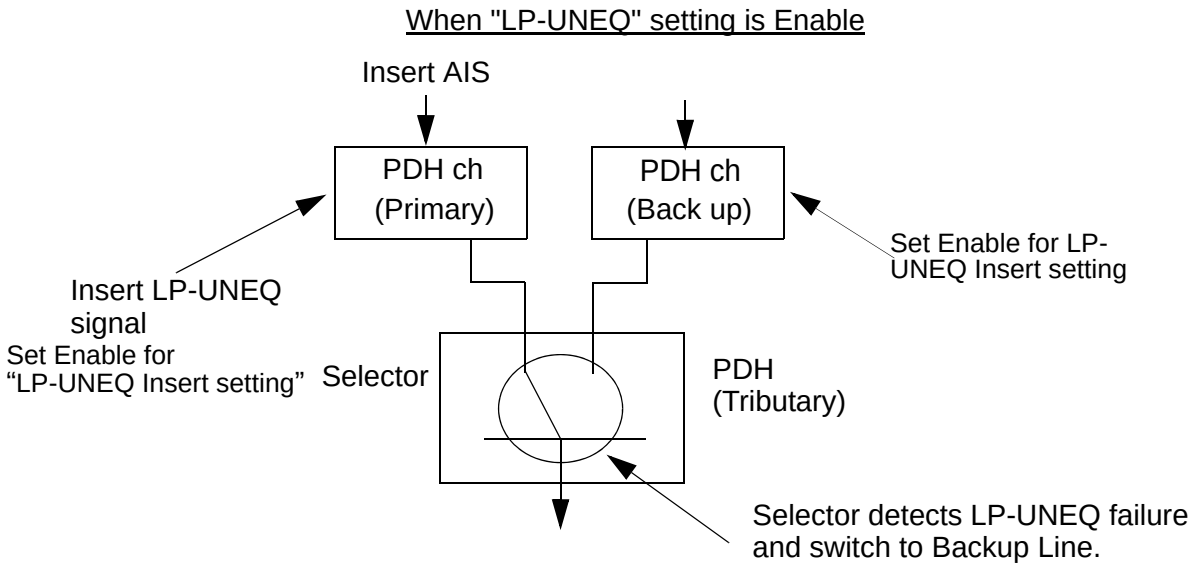
Item		Switching Requirement
HOP	AU-LOP	SSF (Server Signal Fail)
	AU-AIS	SSF (Server Signal Fail)
	HP-UNEQ	TSF (Trail Signal Fail)
	HP-TIM	TSF (Trail Signal Fail)
	HP-EXC	TSF (Trail Signal Fail)
	HP-DEG	TSD (Trail Signal Degrade)
LOP	TU-LOP	SSF (Server Signal Fail)
	TU-AIS	SSF (Server Signal Fail)
	LP-UNEQ	TSF (Trail Signal Fail)
	LP-EXC	TSF (Trail Signal Fail)
	LP-DEG	TSD (Trail Signal Degrade)
	LOM	TSF (Trail Signal Fail)

Note: LOM is only for VC-12 but not for VC-3.

For PDH path

Item		Switching Requirement
PDH path	PPI-LOS	SF (Signal Fail)
	PPI-AIS	SF (Signal Fail)

Note: When setting PDH SNCP path, It is necessary to set "LP-UNEQ Insert" setting on Port Enable wnindow to the E1 or RAPDH channel which is set SNCP input path. Because switch is executed by "LP-UNEQ"detecting on receiving selecotr side of PDH SNCP.



4.9.4.2.4 External Commands

Command	Term	Content	Revertive	Non-revertive
Lockout of protection	LKOP	If the command is set, the protection channel will be forbidden to use unconditionally.	○	○
Forced switch	FSP	If the command is set, the traffic will be switched to protection channel unconditionally.	○	○
Forced switch	FSW	If the command is set, the traffic will be switched to working channel unconditionally.	○	○
Manual switch	MSP	If the command is set and protection channel is in normal status, the traffic will be switched to protection channel.	○	○
Manual switch	MSW	If the command is set and working channel is in normal status, the traffic will be switched to working channel.	○	○
Clear	CLR	clear the upper three commands	○	○

4.9.4.2.5 Command Priority

LKOP> FS> SF> SD> MS> Wait-to-restore> No requires

4.9.4.2.6 Command Value

Wait to restore time: 0min ~12min, step=1 min

Hold-off time: 0ms ~ 10 sec, step=100ms

4.9.4.3 Hardware Protection

4.9.4.3.1 CS Card Protection

In PASOLINK NEO/a, there are 2 CS cards in 9# and 11#, they detect their own status and transfers it to each other. the 9# CS card analyze its own status and the 11# CS card's status and decide which card should be in work-status and which should be in protect-status and control the switch process, the 11# CS card accept the 9# CS card's signal and control its status. The CS card reports their status and the cause of the switch.

(1) Switching Criterion

Item	Switching Requirement	Monitor Place
EQPT FAIL	SF	Package (Work / Prot)
CPU FAIL	SF	Package (Work / Prot)
PKG_REMOVED	SF	Package (Work / Prot)

(2) External Commands

Command	Term	Content
Forced switch to protection	FSP	If the command is set on 9#, the traffic will be switched to 11# unconditionally.
Forced switch to working	FSW	If the command is set on 11#, the traffic will be switched to 9# unconditionally.
Manual switch to protection	MSP	If the command is set on 9# and protection package is in normal status, the traffic will be switched to the 11#.
Manual switch to working	MSW	If the command is set on 11# and working package is in normal status, the traffic will be switched to the 9#
Clear	CLR	It is a command for canceling the following command according to the starting demand from NE outside: FSP,FSW,MSP,MSW Moreover, in addition to the above, the WTR state is cancelled when mode of operation is revertive.

4.9.4.3.2 RA Card Protection

In PASOLINK NEO/a, there are 2 RA cards in 7# and 8#, CS detect their status and decide which card should be in work-status and which should be in protect-status and control the switch process. The RA card reports their status and the cause of the switch.

(1) Switching Criterion

Item	Switching Requirement	Monitor Place
EQPT FAIL	SF	Package (Work / Prot)
CPU FAIL	SF	Package (Work / Prot)
PKG_REMOVED	SF	Package (Work / Prot)

(2) External Commands

Command	Term	Content
Forced switch to protection	FSP	If the command is set on 7#, the traffic will be switched to 8# unconditionally.
Forced switch to working	FSW	If the command is set on 8#, the traffic will be switched to 7# unconditionally.
Manual switch to protection	MSP	If the command is set on 7# and protection package is in normal status, the traffic will be switched to the 8#.
Manual switch to working	MSW	If the command is set on 8# and working package is in normal status, the traffic will be switched to the 7#
Clear	CLR	It is a command for canceling the following command according to the starting demand from NE outside: FSP,FSW,MSP,MSW Moreover, in addition to the above, the WTR state is cancelled when mode of operation is revertive.

4.9.4.4 Overhead Protection

Overhead protection is carried out by the implement of MSP protection. It includes DCC protection, orderwire (E1/E2) protection and user data channel (E1/E2/F1) protection.

And the overhead protection function can be classified as unidirectional protection and bidirectional protection respectively.

For unidirectional protection, if the faults only detected in unidirectional, the switching function will execute. The protection principle is shown as below:

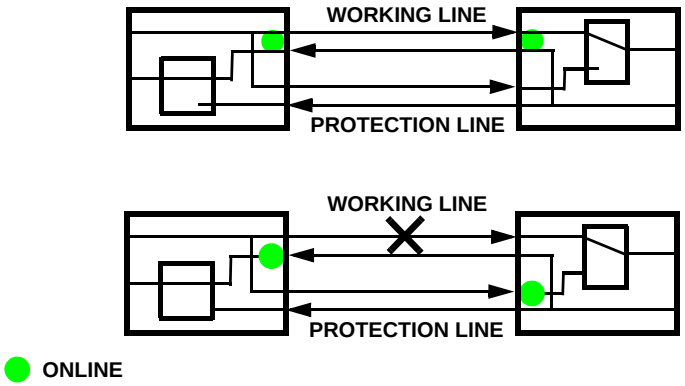


Fig. 4-9-15 The Unidirectional Protection

For bidirectional protection, if the alarms detected in any direction, the switch function will execute. The bidirectional protection principle is shown as below:

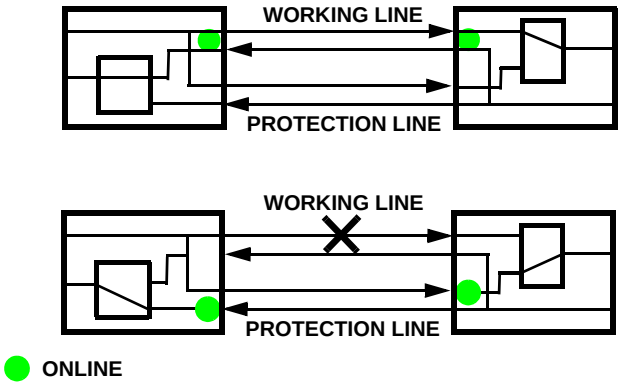


Fig. 4-9-16 The Bidirectional Protection

Notes: 1.PASOLINK NEO/a equipment can support the protection function for DCCr/DCCm/E1/E2/F1 respectively.

2. When a port was specified as the standby port for MSP protection, it can not set DCC, orderwire and user channel.

4.10 Firmware Maintenance

Firmware is the semi-permanent set of operating instructions (software). The version of the firmware can be retrieved/switched/upgraded via the **Upgrade F/W and FPGA** dialog box.

*Note: For retrieving the firmware version, refer to **4.7.8.1 Procedure: Retrieve Installed Firmware Version** in this manual.*

4.10.1 Switch Firmware Version

Sometimes it is necessary to switch the firmware version for maintenance.

The firmware version switch is available for the software port only. For other ports (FPGA hardware ports) the firmware version switch cannot be performed.

Notes 1: Only online CS is confirmed H/W version.

2: Both working and standby CS F/W cannot be executed Switch at the same time.

4.10.1.1 Procedure: Switch Firmware Version

Perform the following procedure to switch the firmware version:

1 Start up the ADM Management Tool, and login to the target NE.

2 Open the management dialog box of the target NE.

3 Select **Upgrade F/W and FPGA** from the **Maintenance** menu. The **Upgrade F/W and FPGA** dialog box shown in ***Fig. 4-10-1*** appears:

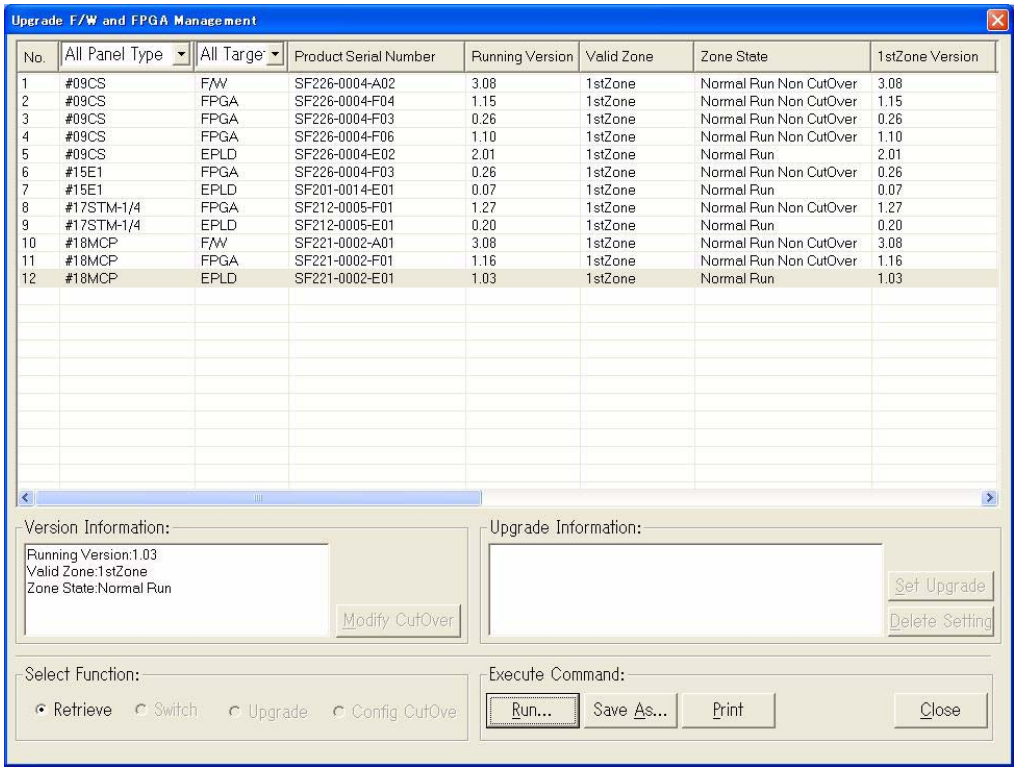


Fig. 4-10-1 Upgrade F/W and FPGA Dialog Box

4 At the top of **Upgrade F/W and FPGA** dialog box, Select the target card from first drop-down list and select **F/W** from the second drop-down list.

Note: PASOLINK NEO/a only support F/W version switch on MCP, CS, FE, FEP and GE card now.

5 Click **Retrieve** radio button to retrieve the current version information.

6 Click the Switch radio button, then **Serial** check box is appeared.

7 Click the check box from the Serial column to select the operation object, and then click the Run button. The Process Result dialog box will be shown.

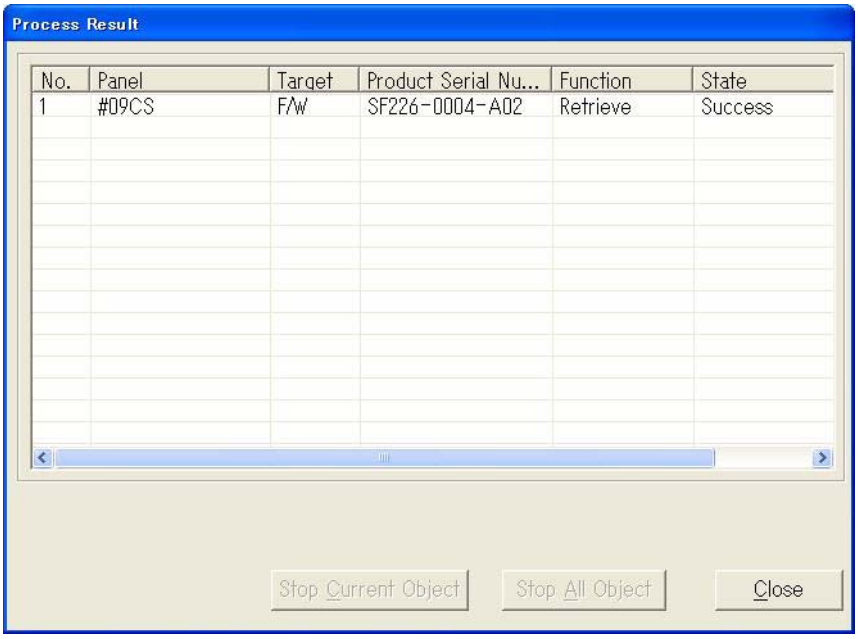


Fig. 4-10-2 Process Result Dialog Box

This step is the end of procedure.

4.10.2 Upgrade Firmware Version

The firmware can be upgraded to support new functions or revise bugs. Take CS card upgrading for example:

Notes 1: All the other applications must be quitted during performing the firmware version upgrading operation.

2: Both working and standby CS F/W cannot be executed Upgrade at the same time.

4.10.2.1 Procedure: Upgrade the Version of CS Card

- Upgrade Firmware Version

Perform the following procedure to upgrade the firmware version:

1 Close all the files and applications running in the system.

2 Start up the ADM Management Tool, and login to the target NE.

3 Open the management dialog box of the target NE.

4 Select **Upgrade F/W and FPGA** from the **Maintenance** menu. The **Upgrade F/W and FPGA** dialog box shown in ***Fig. 4-10-3*** appears:

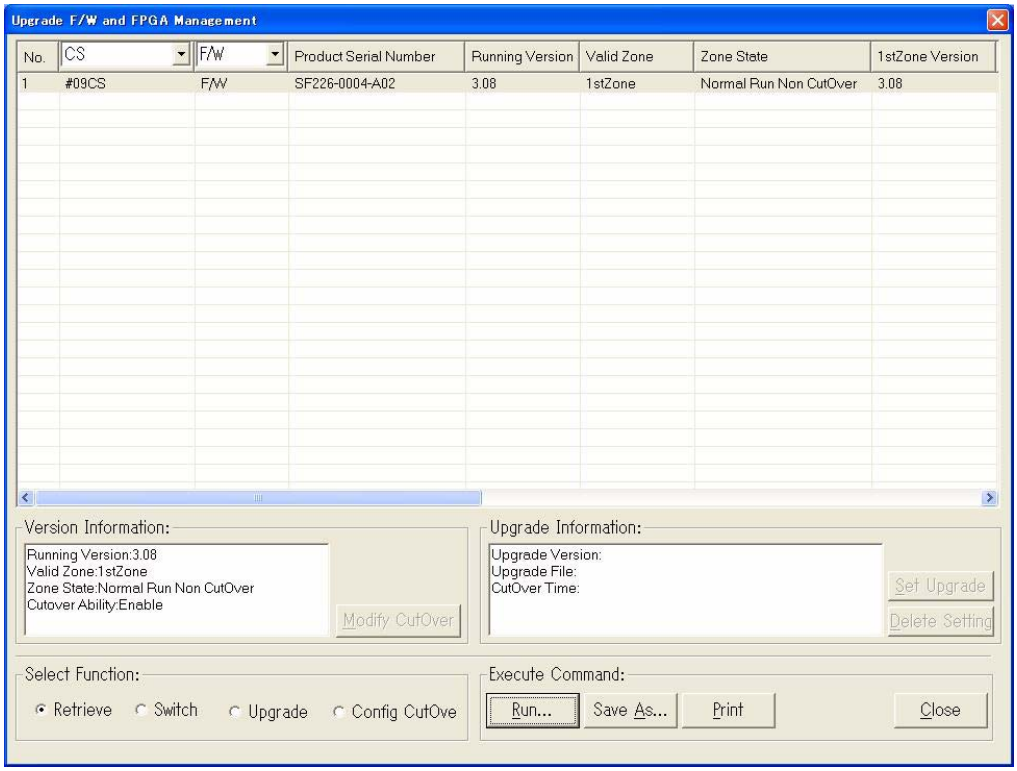


Fig. 4-10-3 Upgrade F/W and FPGA Dialog Box

5 Select the CS card and the upgrade type F/W from the drop-down list on the top of the **Upgrade F/W and FPGA** dialog box

6 Check the **Retrieve** radio button and click the **Run** button to upload the release information.

7 Click the **Upgrade** radio button.

8 Click the **Set Upgrade** button. The **Upgrade Setting** dialog box is shown in ***Fig. 4-10-4***.

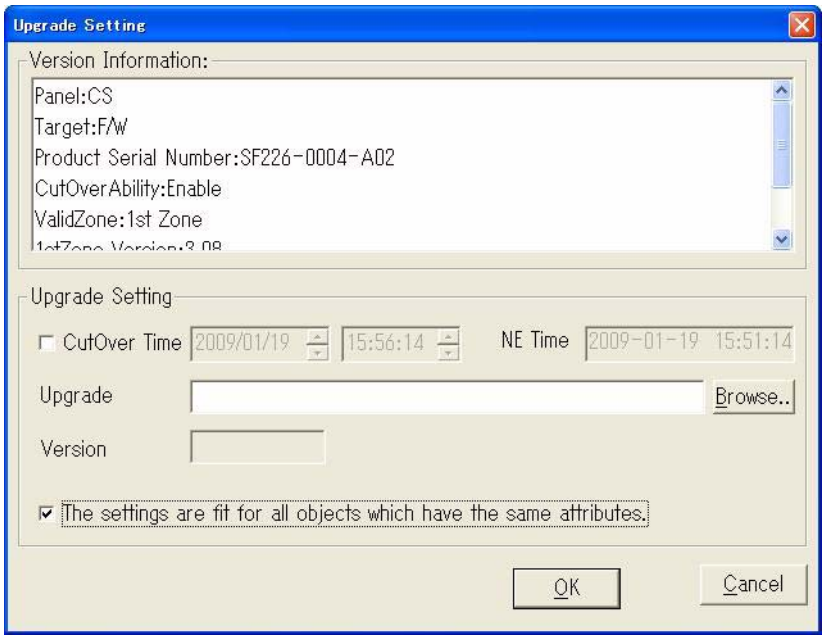


Fig. 4-10-4 Upgrade Setting Dialog Box

9 Input the location of the upgrade file to the **Upgrade File** textbox, if you know where the upgrading file exists accurately, else you can select the upgrade file by click the **Browse** button. The **Open** window shown as bellow:

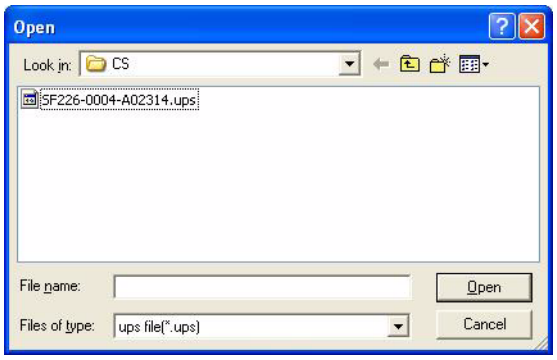


Fig. 4-10-5 Open Dialog Box

*Note: If the **Cancel** button is clicked here instead of the **Open** button, browsing operation will be cancelled.*

10 If you want to upgrade later on, you may select the **Cutover Time** check box and then you can specify a fixed time to upgrade. Detailed operation is provided in ***4.10.3 Config Cutover***.

11 Select **The settings are fit for all objects which have the same**

attributes check box to enable this function, otherwise the settings are only applied for the selected objects.

12 Confirm the setting you have just done correct, and then click the **OK** button to over you setting procedure.

13 Then click the **Run** button to execute firmware upgrading.

*Note: If the **Close** button is clicked here instead of the **Run** button, the firmware upgrading is cancelled.*

14 During the upgrading operation, the window is shown in ***Fig. 4-10-6***.

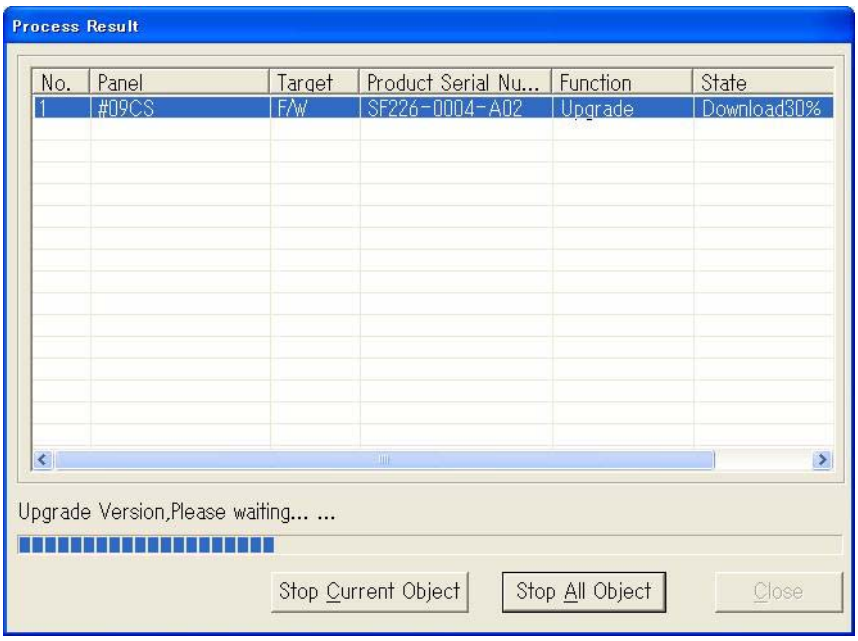


Fig. 4-10-6 Upgrade F/W and FPGA Dialog Box during Upgrading

15 If the **Stop Current Object** button in the **Process Result** dialog box is clicked during the firmware version upgrading operation, it only stop upgrading the current object; if the **Stop All Object** button is clicked, all object upgrading operation will be interrupted.

To quit the firmware version upgrading operation, click the **Close** button.

This step is the end of the procedure.

Note: When finish upgrade CS F/W, there is a trial run status, during which it is forbidden to power down or reset until 6 minutes late.

- **Upgrade FPGA Version**

Perform the following procedure to upgrade the firmware version:

1 Open the management dialog box of the target NE.

2 Select **Upgrade F/W and FPGA** from the **Maintenance** menu. The **Upgrade F/W and FPGA** dialog box shown in ***Fig. 4-10-7*** appears:

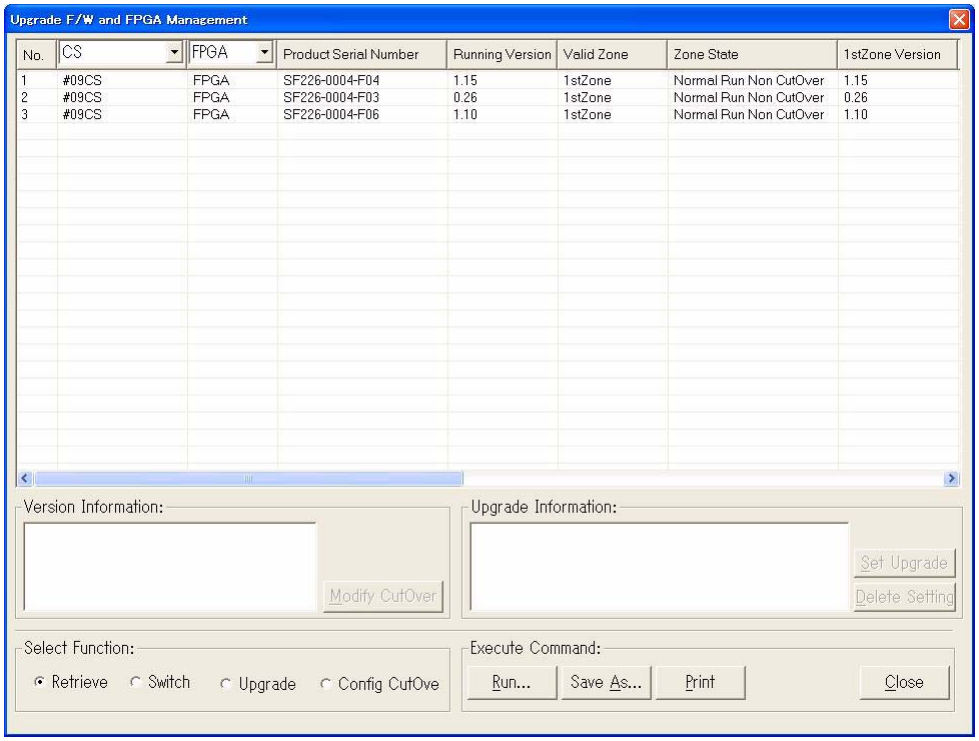


Fig. 4-10-7 Upgrade F/W and FPGA Dialog Box

3 Select the CS card and the upgrade type FPGA from the drop-down list on the top of the **Upgrade F/W and FPGA** dialog box.

4 Check the **Retrieve** radio button and click the **Run** button to upload the release information.

5 Click the **Upgrade** radio button.

6 Click the **Set Upgrade** button. The **Upgrade Setting** dialog box is shown in ***Fig. 4-10-8***:

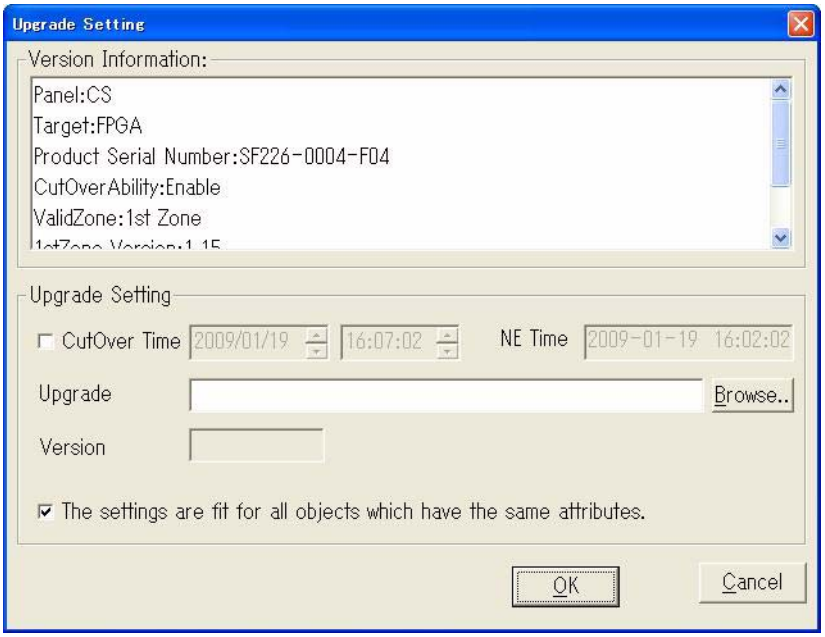


Fig. 4-10-8 Upgrade Setting Dialog Box

7 Input the location of the upgrade file to the **Upgrade File** textbox, if you know where the upgrading file exists accurately, else you can select the upgrade file by click the **Browse** button. The **Open** window shown as bellow:

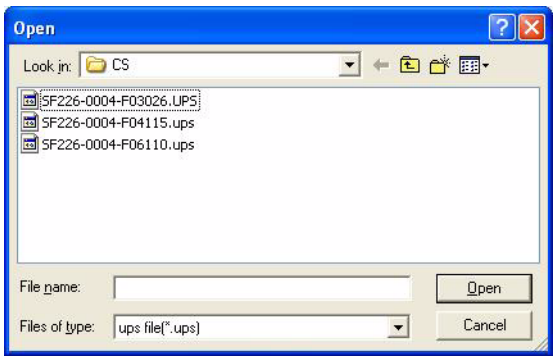


Fig. 4-10-9 Open Dialog Box

*Note: If the **Cancel** button is clicked here instead of the **Open** button, browsing operation will be cancelled.*

8 If you want to upgrade later on, you may select the **Cutover Time** check box and then you can specify a fixed time to upgrade. Detailed operation is provided in ***4.10.3 Config Cutover***.

9 Select **The settings are fit for all objects which have the same attributes** check box to enable this function, otherwise the settings are only applied for the selected objects.

10 Confirm the setting you have just done correct, and then click the **Ok** button to over you setting procedure.

11 Then click the **Run** button to execute firmware upgrading.

*Note: If the **Close** button is clicked here instead of the **Run** button, the firmware upgrading is cancelled.*

12 During the upgrading operation, the window is shown in ***Fig. 4-10-10***:

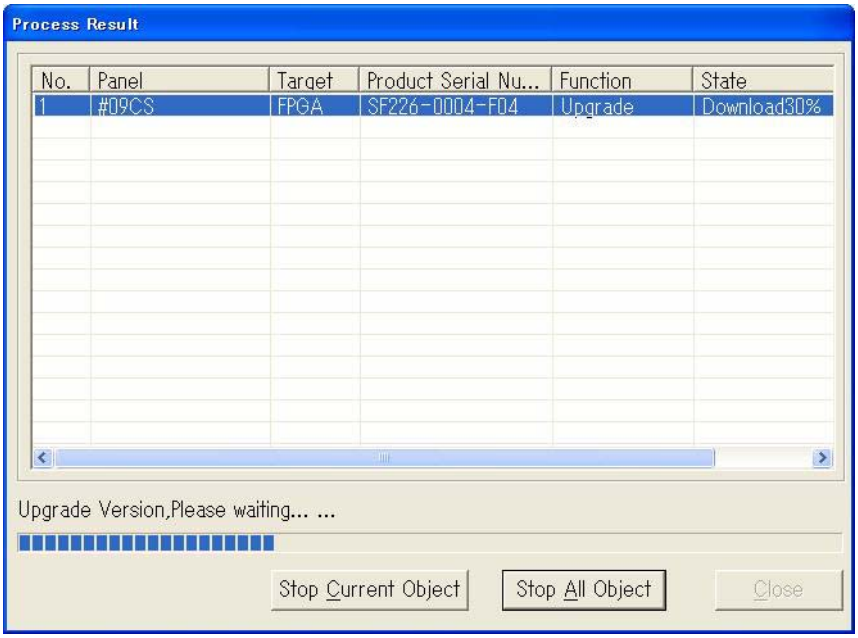


Fig. 4-10-10 Upgrade F/W and FPGA Dialog Box during Upgrading

13 If the **Stop Current Object** button in the **Process Result** dialog box is clicked during the firmware version upgrading operation, it only stop upgrading the current object; if the **Stop All Object** button is clicked, all object upgrading operation will be interrupted.

To quit the FPGA version upgrading operation, click the **Close** button.

This step is the end of the procedure.

Notes: 1. The procedure for upgrading firmware on MCP, FE, FEP and GE card is the same as CS card. The version information of all cards is listed as below:

PKG NAME	TYPE	CODE
MCP	F/W	SF221-0002-A01
	FPGA	SF221-0002-F01
	EPLD	SF221-0002-E01
CS	F/W	SF226-0004-A02
	FPGA	SF226-0004-F04
	FPGA	SF226-0004-F03
	FPGA	SF226-0004-F06
	EPLD	SF226-0004-E02
FE	F/W	SF208-0007-A01
	FPGA	SF208-0007-F01
	FPGA	SF208-0007-F02
	EPLD	SF208-0007-E01
FEP	F/W	SF208-0013-A01
	FPGA	SF208-0013-F01
GE	F/W	SF208-5003-A01
	FPGA	SF208-5003-F01
	FPGA	SF208-5003-F02
	FPGA	SF208-5003-F03
	EPLD	SF208-5003-E01
STM-1/4	FPGA	SF212-0005-F02
	EPLD	SF212-0005-E02
E1	FPGA	SF226-0004-F03
	EPLD	SF201-0014-E01

2. The upgrade time for FW on MCP card and both FW and FPGA on FE or FEP card is using ADM Management Tool's time, and the upgrade time for FPGA on the MCP card is using the PASOLINK NEO/ a's time.

3. Since the EPLD can't be downloaded via ADM Management Tool, it has no upgrade time.

4. Because the traffic card FPGAs are saved in CS card, when clicking retrieve button to get the CS card version information you can find FPGA information about traffic card such as STM-1/4 and E1 card which is only used for retrieving, but not upgrading. If you want to upgrade traffic card FPGA, you must first select the corresponding target card and upgrade it individually.

5. If there are two CS packages, you must first upgrade the

working CS FPGA, E1 FPGA, and then switch the two CS card, lastly, upgrade another CS card.

6. *When upgrading FPGA, the traffic is down for a few seconds.*

4.10.3 Config Cutover

Cutover means that user can download the upgrade file to equipment but not take effective until the time user prescribed.

Note: Both working and standby CS F/W cannot be executed Config Cutover at the same time.

4.10.3.1 Procedure: Config Cutover

Perform the following procedure to configuration cutover time:

1 Close all the files and applications running in the system.

2 Start up the ADM Management Tool, and login to the target NE.

3 Open the management dialog box of the target NE.

4 Select **Upgrade F/W and FPGA** from the **Maintenance** menu. The **Upgrade F/W and FPGA** dialog box shown in ***Fig. 4-10-11*** appears:

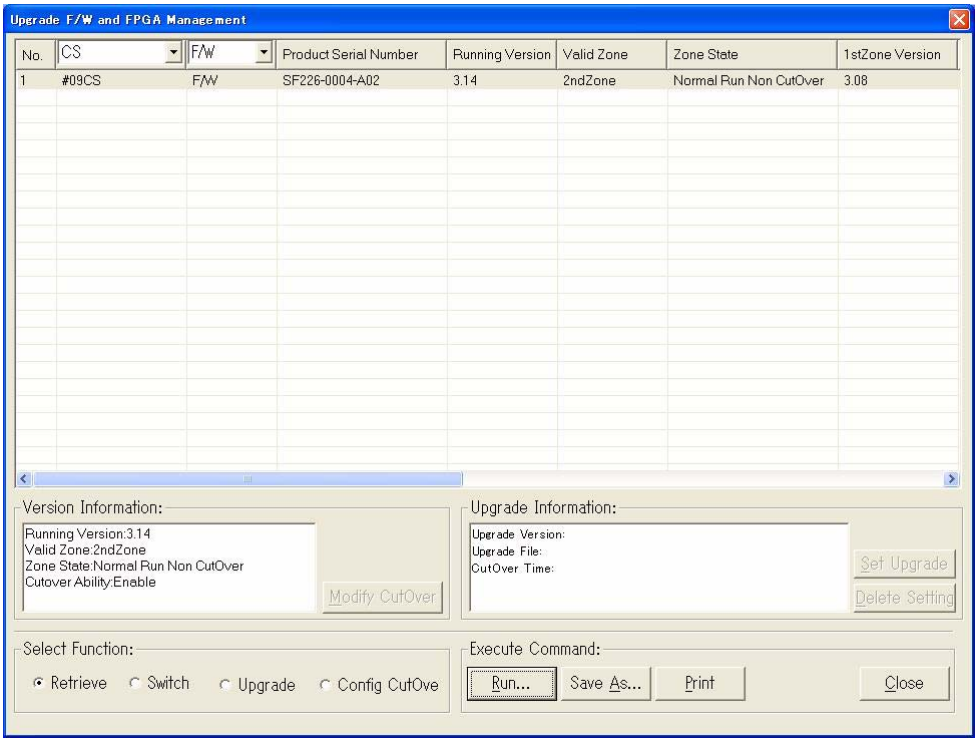


Fig. 4-10-11 Upgrade F/W and FPGA Dialog Box

5 Select the target card and the upgrade type F/W or FPGA from the drop-down list on the top of the **Upgrade F/W and FPGA** dialog box.

6 Click the **Retrieve** button and the Run button to upload the release information.

7 Click the **Upgrade** radio button.

8 Click the **Set Upgrade** button. The **Upgrade Setting** dialog box shown in ***Fig. 4-10-12*** appears for browsing:

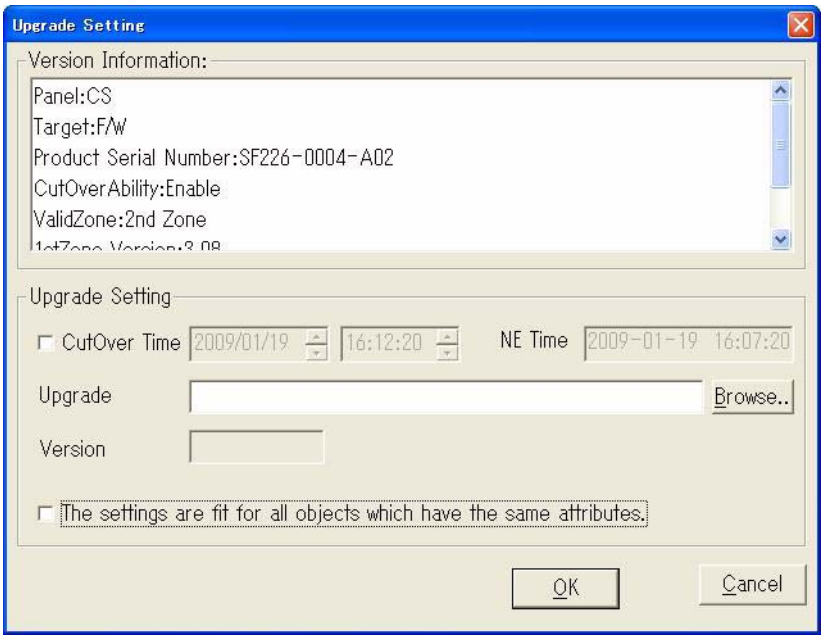


Fig. 4-10-12 Upgrade Setting Dialog Box

9 Input the location of the upgrade file to the **Upgrade File** textbox, if you know where the upgrading file exists accurately, else you can select the upgrade file by click the **Browse** button. The **Open** window shown as bellow:

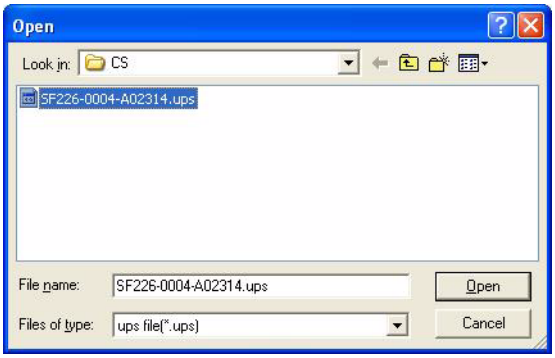


Fig. 4-10-13 Open Dialog Box

*Note: If the **Cancel** button is clicked here instead of the **Open** button, browsing operation will be cancelled.*

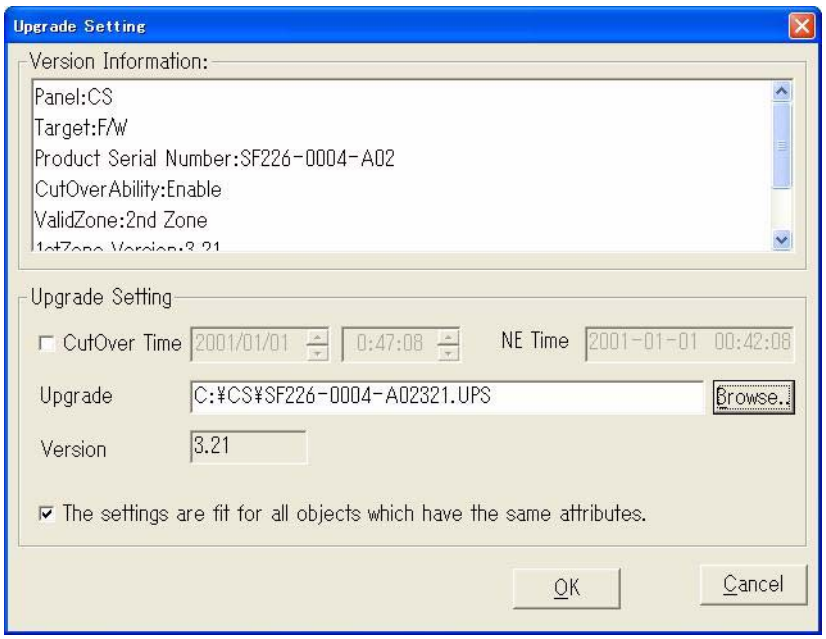


Fig. 4-10-14 Upgrade Setting Dialog Box

10 Enable the **Cutover Time** function by click the **Cutover Time** check box, and then you can specify a fixed time to upgrade.

11 Select **The settings are fit for all objects which have the same attributes** check box to enable this function, otherwise the settings are only applied for the selected objects.

12 Confirm the setting you have just done correct, and then click the **OK** button.

13 Click the **Run** button to execute firmware upgrading.

*Note: If the **Close** button is clicked here instead of the **Run** button, the firmware upgrading is cancelled.*

14 During the upgrading operation, the window is shown in ***Fig. 4-10-15***.

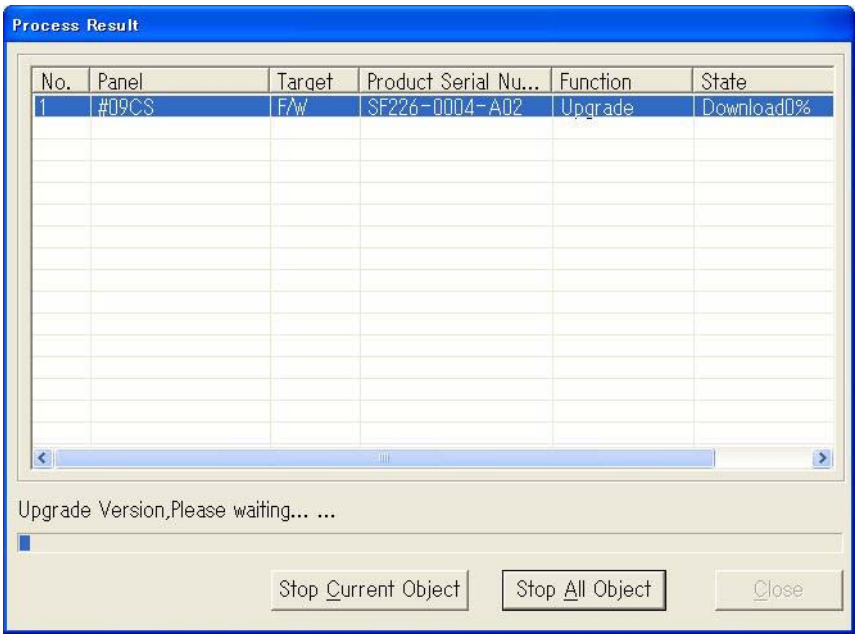


Fig. 4-10-15 Upgrade F/W and FPGA Dialog Box during Upgrading

15 If the **Stop Current Object** button in the **Process Result** dialog box is clicked during the firmware version upgrading operation, it only stop upgrading the current object; if the **Stop All Object** button is clicked, all object upgrading operation will be interrupted.

To quit the firmware version upgrading operation, click the **Close** button.

16 Then, the ADM Management Tool will feedback the result of the upgrading operation, the result interface is shown as bellow:

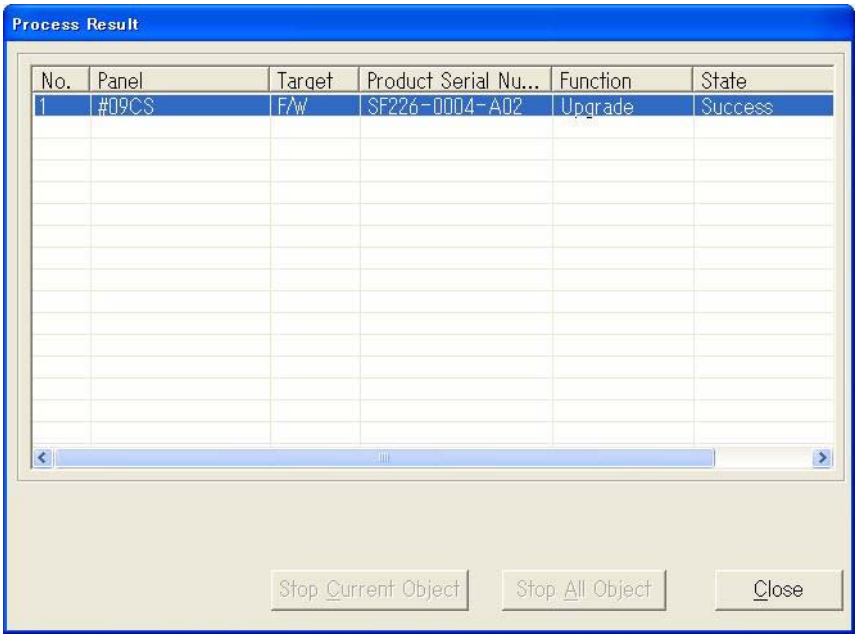


Fig. 4-10-16 Process Result

17 When download and burning the upgrade file is over, we can click the **Modify Cutover** button in the **Upgrade F/W and FPGA** dialog box to modify the cutover time. The **Modify Cutover Time** dialog box is shown as bellow:

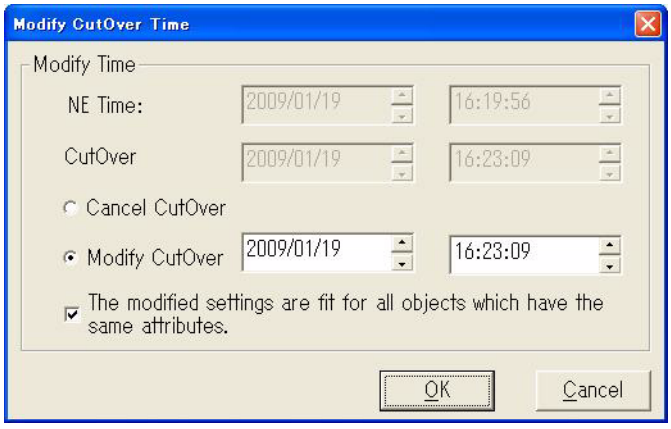


Fig. 4-10-17 Modify Cutover Time

This step is the end of the procedure.

Notes: 1. Because the service card FPGA saved in two CS cards, if FPGA requires the upgrade, upgrade the master CS first, then switch the two CS cards, lastly, upgrade the remaining one.

2. *When upgrade the FPGA or F/W of CS cards using cutover time mode, make sure that the cutover time of the two CS cards are different, and the difference should be not less than 5mins best.*

3. *At the same time, only permit one user downloading FW/FPGA to CS card.*