NEC

P ASOLINK

N ETWORK

M ANAGEMENT

T ERMINAL

PNMT (Java version)
Operation Manual

(for PASOLINK NEO
High Performance)

NEC Corporation

Table of Contents

Document Warranty

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

2. The PNMS/PNMT screen images 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 equipment manual for details.

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.

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 **LCT** port of the equipment

1.3.2 LCT Port Interface

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

PNMT – IDU Connection
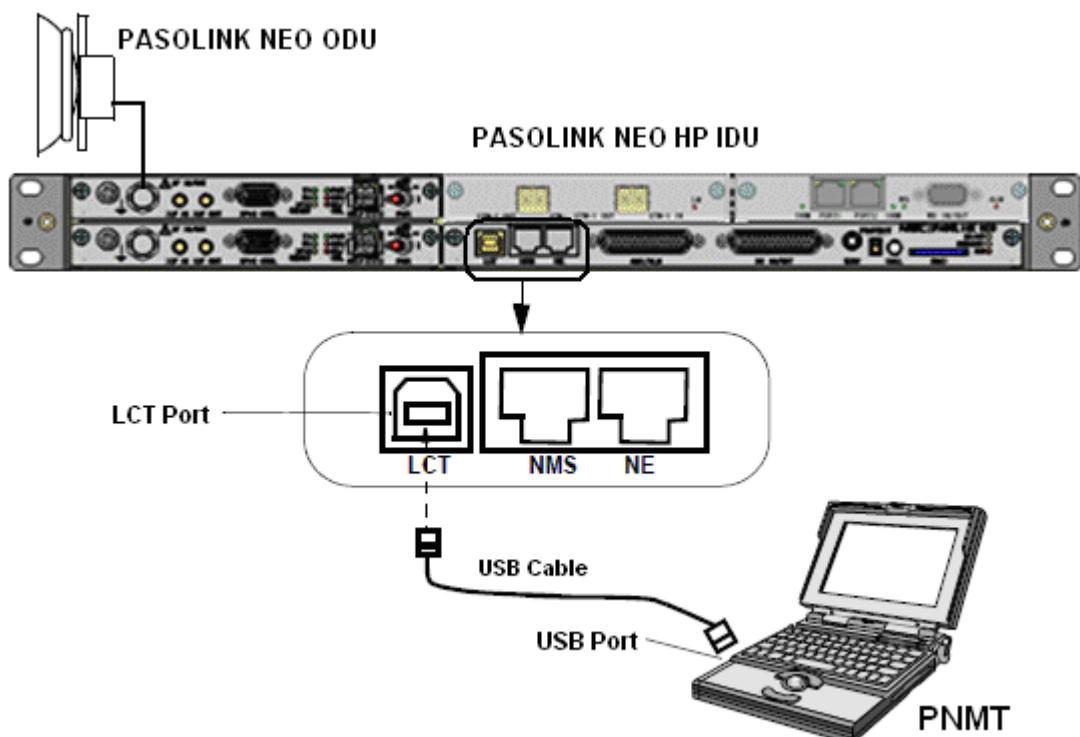
The PNMT and the Control (CTRL) Module mounted in the IDU must be connected using a standard USB cable (the *Type A* plug is fitted into the *Type A* socket of the PNMT computer and the *Type B* plug is fitted into the *Type B* socket of the LCT Port on the IDU Control (CTRL) Module)

The LCT port has the following specifications:

- Connector type: USB Type B (female)
- Bit per second rate: 1200/2400/4800/9600/19200 (default 19200)
- Stop bits: 1
- Data bit length: 8
- Parity: no parity

1.4   Equipment Configuration of PASOLINK NEO High Performance (HP)

PASOLINK NEO HP has 3 types of IDU.

- 1+0 (Terminal)
- 1+1 (Hot Stand-by)
- 1+1 (Twin Path)

1+0 (Terminal)
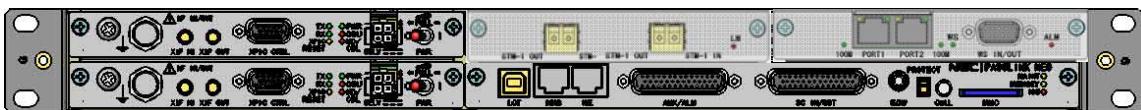
1+1 (Hot Stand-by), 1+1 (Twin Path)

1.5   Hardware Requirements

Recommended configuration of PNMT mobile computer

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

1.6   Software Requirements

- OS: Windows XP Professional (English version) with SP2 or higher
             Windows Vista Business Edition (English version) with SP1 or higher
- Acrobat Reader
- PNMT Application software

2   System Operation & Maintenance

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

2.1   The PNMT Screen

The PNMT window comprises the following main parts (Refer to Figure 1).

- **Title Bar**

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

- **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 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 a specific equipment/part 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
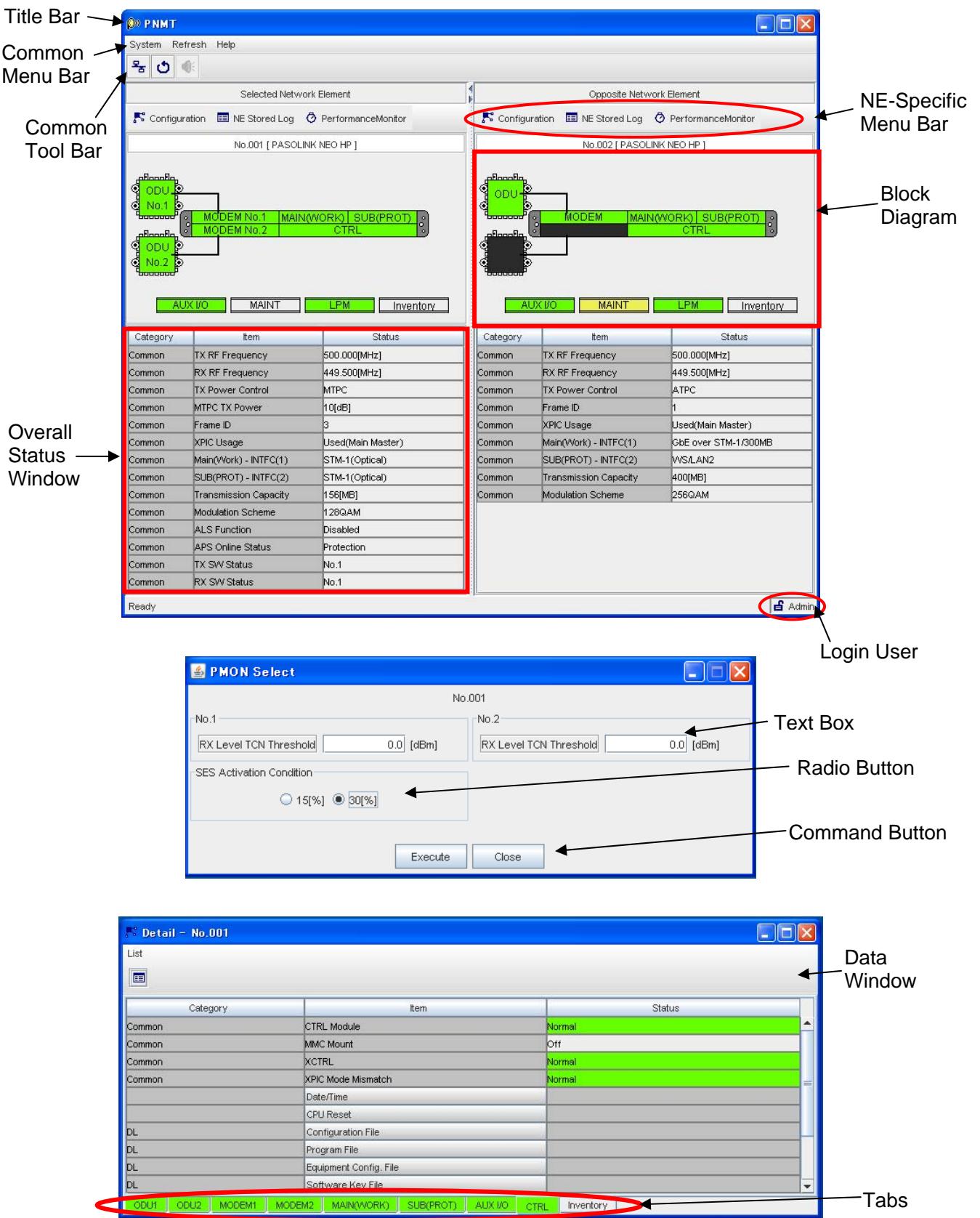
Figure 1 Standard components of PNMT Window

2.2 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 and make sure that the PNMT cable is connected
between USB port of the PNMT computer and the LCT
port of the IDU.**

---

2. Login to Windows OS.

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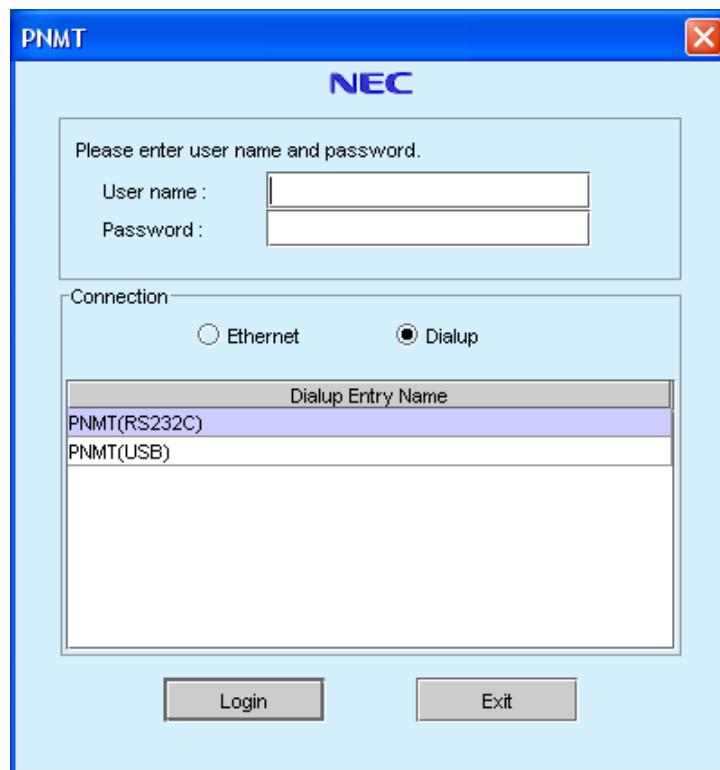
NOTE

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

2.3   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 2.3.1 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 specific user.

4. For Connection select **Dialup.**

5. For Dialup Entry Name select **PNMT(USB)**.

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

Login User
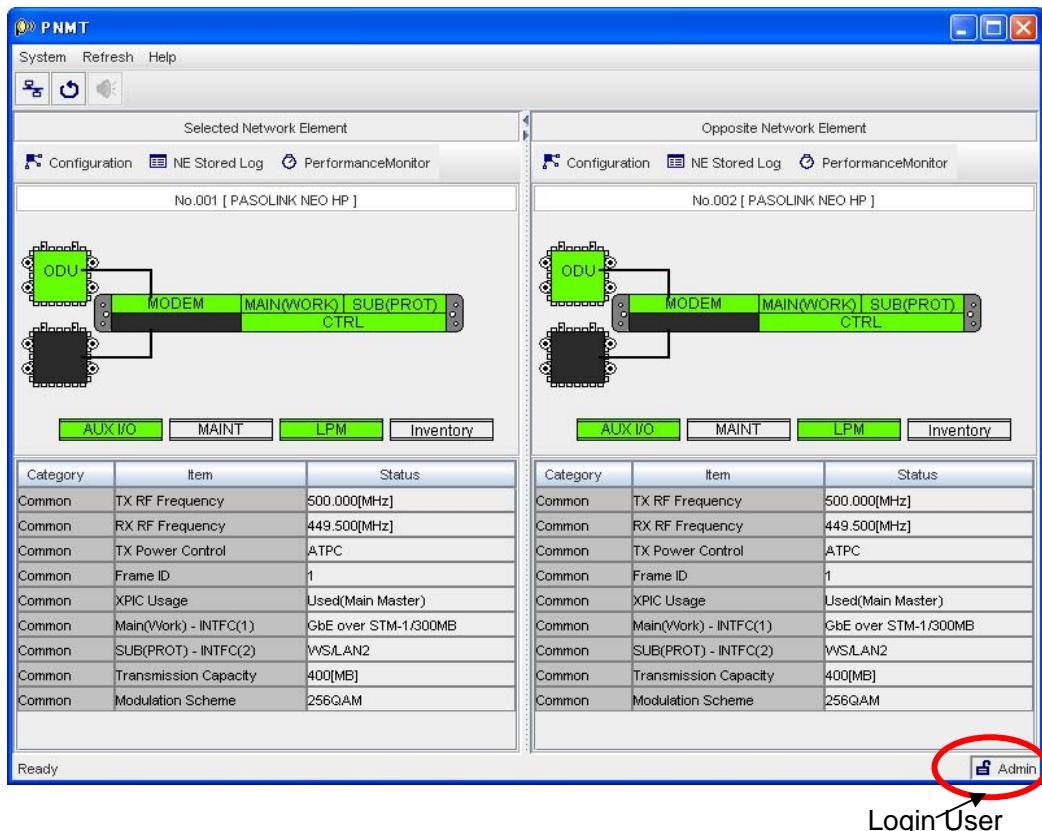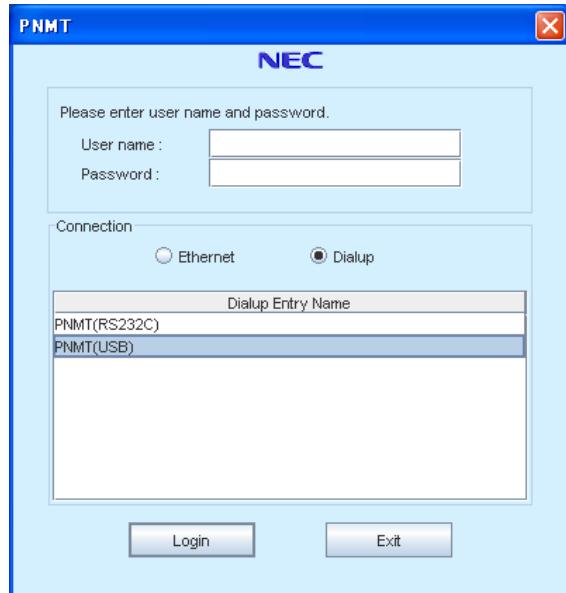
2.3.1 User Access Privilege Levels

✔: Available, -: Not available

| Functions			User Name and Accessible Functions				
Category		ITEM	Monitor	User	Local	Remote	Admin
SYSTEM		ALARM BUZZER	-	✔	✔	✔	✔
		CONNECT (Remote Login)	-	-	-	✔	✔
NE LIST		CONNECT	-	-	-	✔	✔
NE STORD LOG		SAVE AS	-	✔	✔	✔	✔
EQUIPMENT SETUP		(Wizard Setting)	-	-	✔	✔	✔
		NE NAME	-	-	✔	✔	✔
		NOTE	-	✔	✔	✔	✔
PROVISIONING	CHANNEL SETTING	MS-AIS GENERATION	-	-	✔	✔	✔
		STM-1 USAGE	-	-	✔	✔	✔
		RSOH CH SELECT	-	-	✔	✔	✔
	BER THRESHOLD SETTING	HIGH BER THRESHOLD	-	-	✔	✔	✔
		LOW BER THRESHOLD	-	-	✔	✔	✔
		E-BER (DMR)	-	-	✔	✔	✔
		SD (DMR)	-	-	✔	✔	✔
		E-BER(MUX)	-	-	✔	✔	✔
		SD (MUX)	-	-	✔	✔	✔
	SUB INTFC	E1 WS USAGE	-	-	✔	✔	✔
		WS IMPEDANCE			✔	✔	✔
		WS AIS GENERATED REPORT	-	-	✔	✔	✔
		WS AIS RECEIVED REPORT	-	-	✔	✔	✔
	SC ASSIGNMENT	RS-232C-1	-	-	✔	✔	✔
		RS-232C-2	-	-	✔	✔	✔
		V11-1	-	-	✔	✔	✔
		V11-2	-	-	✔	✔	✔
		SC LAN1	-	-	✔	✔	✔
		V11-1 DIRECTION SETTING	-	-	✔	✔	✔
		V11-2 DIRECTION SETTING	-	-	✔	✔	✔
	LAN PORT SETTING	LAN PORTx(MAIN) USAGE LAN PORTx(SUB) USAGE	-	-	✔	✔	✔
		SPEED & DUPLEX PORTx(MAIN) SPEED & DUPLEX PORTx(SUB)	-	-	✔	✔	✔
		FLOW CONTROL PORTx(MAIN) FLOW CONTROL PORTx(SUB)	-	-	✔	✔	✔
		COLLISION REPORT PORTx(MAIN) COLLISION REPORT PORTx(SUB)	-	-	✔	✔	✔
		LINK LOSS FORWARDING PORTx(MAIN) LINK LOSS FORWARDING PORTx(SUB)	-	-	✔	✔	✔
		CLOCK SOURCE SETTING	-	-	✔	✔	✔
		SUB SWITCHING FUNCTION	-	-	✔	✔	✔
		GbE MEDIA TYPE	-	-	✔	✔	✔
		GbE SPEED & DUPLEX	-	-	✔	✔	✔
		GbE LINK LOSS FORWARDING	-	-	✔	✔	✔
		GbE FLOW CONTROL SETTING	-	-	✔	✔	✔
	ALS	ALS FUNCTION	-	-	✔	✔	✔
		ALS INTERVAL	-	-	✔	✔	✔
	TX POWER CTRL	MTPC TX POWER	-	-	✔	✔	✔
		ATPC THRESHOLD LEVEL	-	-	✔	✔	✔
		ADDITIONAL ATT	-	-	✔	✔	✔
		ATPC RANGE (MAX)	-	-	✔	✔	✔
		ATPC RANGE (MIN)	-	-	✔	✔	✔
		ATPC POWER MODE	-	-	✔	✔	✔
		COMM ALARM MODE	-	-	✔	✔	✔
	CONDITION for TX/RX SW	TX SW PRIORITY	-	-	✔	✔	✔
		TX SW LOCK IN USAGE	-	-	✔	✔	✔
		TX SW REVERSE FUNCTION	-	-	✔	✔	✔
		RX SW PRIORITY			✔	✔	✔
		RX SW MAINTENANCE MODE	-	-	✔	✔	✔
		RX SW CONDITION-EARLY WARNING	-	-	✔	✔	✔

✓: Available, -: Not available

Functions			User Name and Accessible Functions				
Category		ITEM	Monitor	User	Local	Remote	Admin
PROVISIONING (Cont'd)	CONDITION for APS	APS MAINTENANCE MODE	-	-	✔	✔	✔
		APS CONDITION-SF	-	-	✔	✔	✔
		APS CONDITION-SIGNAL DEGRADE	-	-	✔	✔	✔
		LOCK IN USAGE	-	-	✔	✔	✔
		LOCK IN COUNT	-	-	✔	✔	✔
		LOCK IN DETECT TIME	-	-	✔	✔	✔
		LOCK IN HOLD TIME	-	-	✔	✔	✔
	RELAY	RELAY CONFIGURATION	-	-	✔	✔	✔
		CLUSTER1 INPUT	-	-	✔	✔	✔
		CLUSTER2 INPUT	-	-	✔	✔	✔
		CLUSTER3 INPUT	-	-	✔	✔	✔
		CLUSTER4 INPUT	-	-	✔	✔	✔
	TCN THRESHOLD	TCN THRESHOLD(PMON Threshold)	-	-	✔	✔	✔
	XPIC CONDITION-LOCAL FAIL	XPIC CONDITION-LOCAL FAIL	-	-	✔	✔	✔
	EOW IF TYPE	EOW2 EXTERNAL SETTING	-	-	✔	✔	✔
	PMON SELECT	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 CONTROL POWER	-	-	✔	✔	✔
		TX MUTE CONTROL	-	-	✔	✔	✔
		TX MUTE OFF CONTROL TIME	-	-	✔	✔	✔
		CW CONTROL	-	-	✔	✔	✔
		APS MANUAL CONTROL	-	-	✔	✔	✔
		IF LOOPBACK	-	-	✔	✔	✔
		MAIN LOOPBACK-1 INTFC(1)	-	-	✔	✔	✔
		MAIN LOOPBACK-1 INTFC(2)	-	-	✔	✔	✔
		MAIN LOOPBACK-2	-	-	✔	✔	✔
		DADE ADJUST	-	-	✔	✔	✔
		LAN DEVICE RESET	-	-	✔	✔	✔
		ALS RESTART	-	-	✔	✔	✔
		XPIC CONTROL	-	-	✔	✔	✔
		RF SETTING SUB BAND	-	-	✔	✔	✔
		ANTENNA ALIGNMENT MODE	-	-	✔	✔	✔
		X-DEM DELAY ADJUST	-	-	✔	✔	✔
AUX I/O		INPUT	-	✔	✔	✔	✔
		OUTPUT	-	✔	✔	✔	✔
		CLUSTERx ALARM	-	✔	✔	✔	✔
PMON	PMON	ALL DATA CLEAR	-	✔	✔	✔	✔
		SAVE AS	-	✔	✔	✔	✔
RMON		ALL DATA CLEAR	-	✔	✔	✔	✔
		SAVE AS	-	✔	✔	✔	✔
CTRL	CONTROL	DATE/TIME	-	-	✔	✔	✔
	DOWNLOAD	CONFIGURATION FILE	-	-	-	-	✔
		PROGRAM FILE	-	-	-	-	✔
		EQUIPMENT CONFIG. FILE	-	-	-	-	✔
		SOFTWARE KEY.FILE	-	-	-	-	✔
	UPDATE	SOFTWARE KEY FILE	-	-	-	-	✔
	UPLOAD	CONFIGURATION FILE	-	-	-	-	✔
		EQUIPMENT CONFIG. FILE	-	-	-	-	✔
		SOFTWARE KEY.FILE	-	-	-	-	✔
CTRL(cont'd)	EQUIPMENT NETWORK SETTING	NETWORK SETTING	-	-	-	-	✔
	CPU RESET	RESET	-	-	✔	✔	✔

*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 which do not affect the equipment.

*Monitor: Enabled only to monitor (disabled from control).

*Admin: Enabled to access all Network Elements.

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

2.4   Shutting Down the PNMT

To close the PNMT application:

1. Click **System → Exit** in the menu bar of the PNMT main window.
2. Click **[OK]** button in the confirmation message window to close the application.
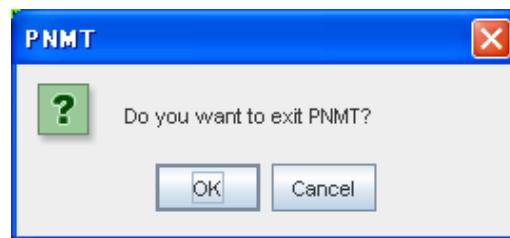
2.5   Searching for Network Elements and Connecting to Selected NE

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.
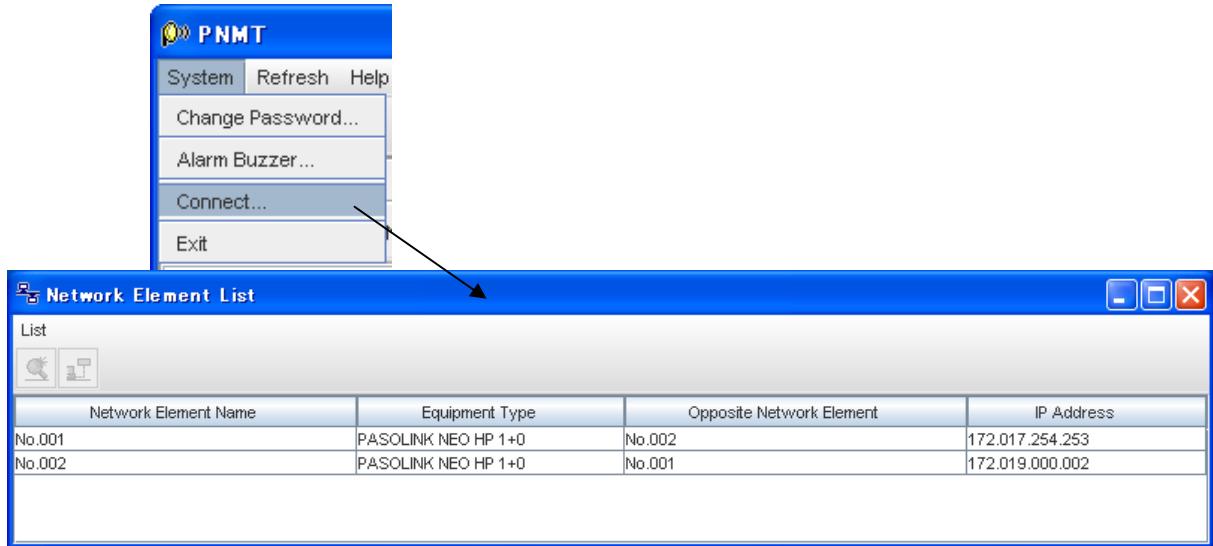
NOTE

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

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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.

NOTE

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.*

2.6 Change Password

To change the password:

1. Click **System → Change Password** in the menu bar of PNMT main window.
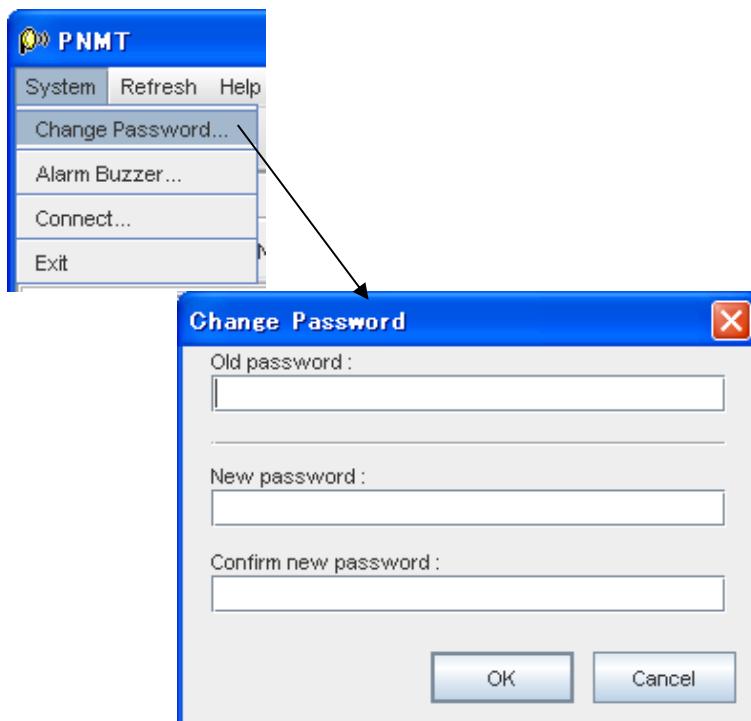
2. Enter the old <password>.

3. Enter the new <password>.

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

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

NOTE

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

2.7 Alarm Buzzer Setting

This function 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:

6. Click **System → Alarm Buzzer** in the menu bar of PNMT main window.
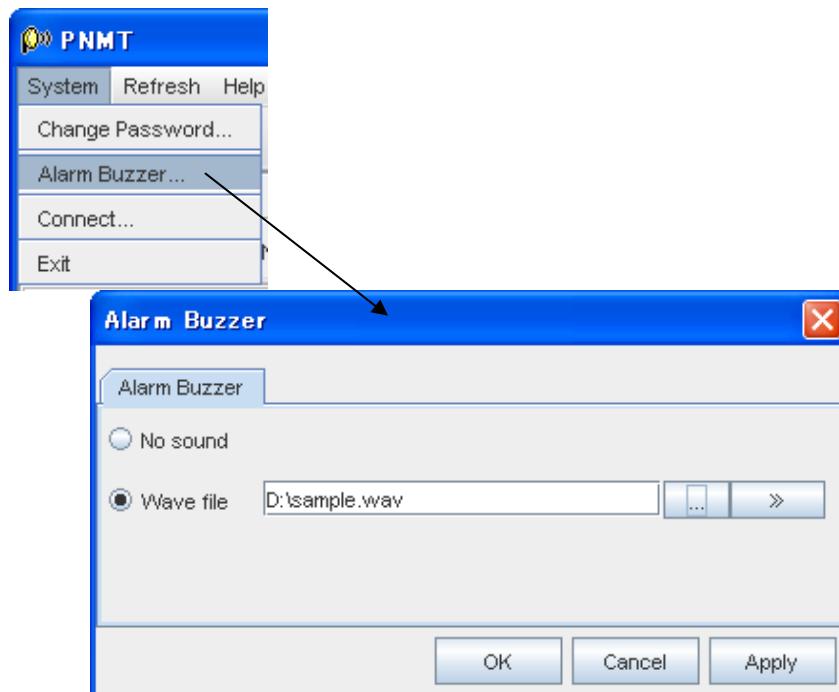
7. Select the **Wave file** to activate the buzzer. **No sound** is the factory setting of the PNMT.

8. 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.

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

2.8 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:

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

2.9 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 2.5 Searching for Network Elements and Connecting to Selected NE**. This feature allows remote connection to any NE in the network.
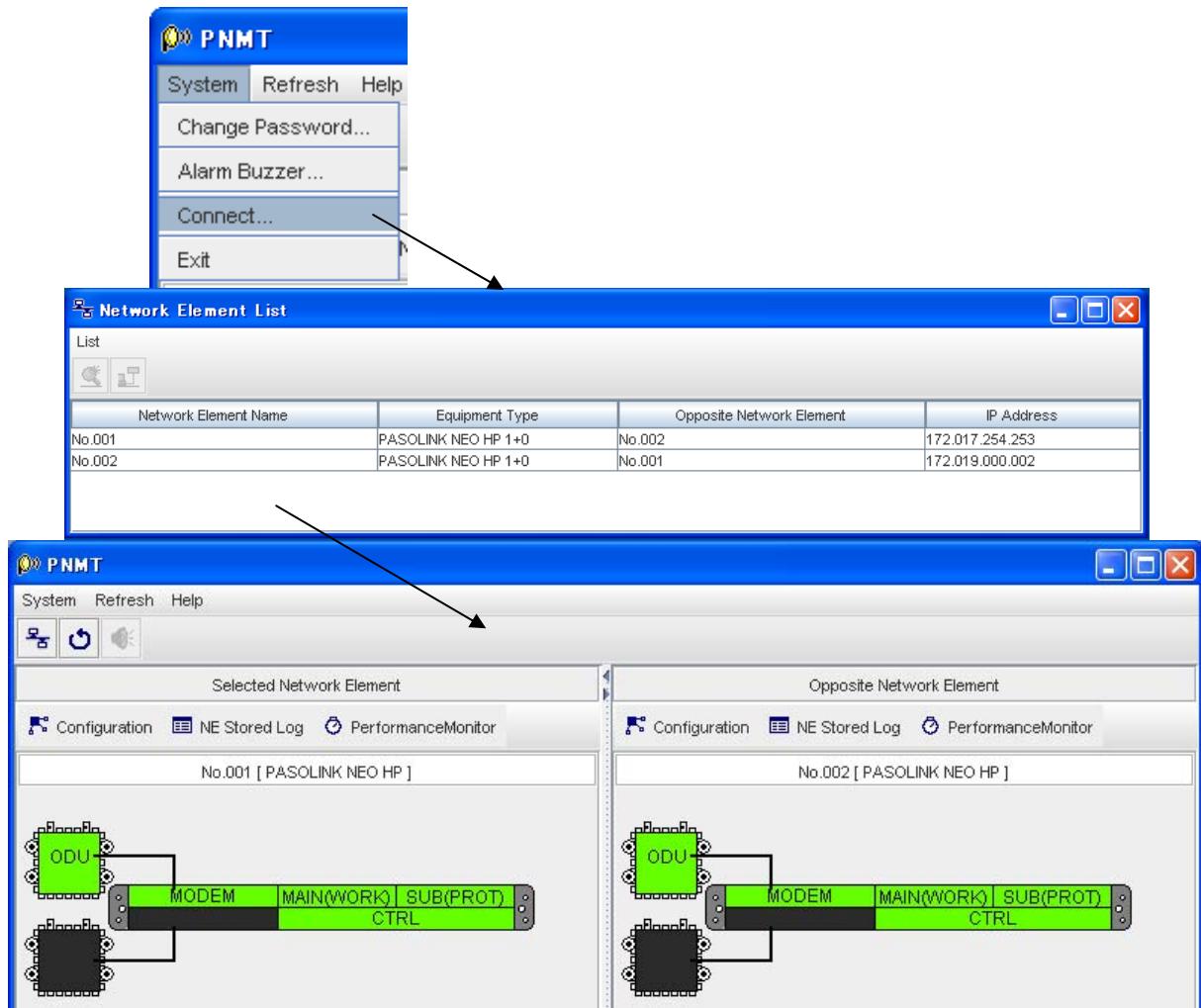
PNMT main window (1+0 configuration)

2.10 License

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

To display the current license status:

10. Click **Help → License** in the main window.
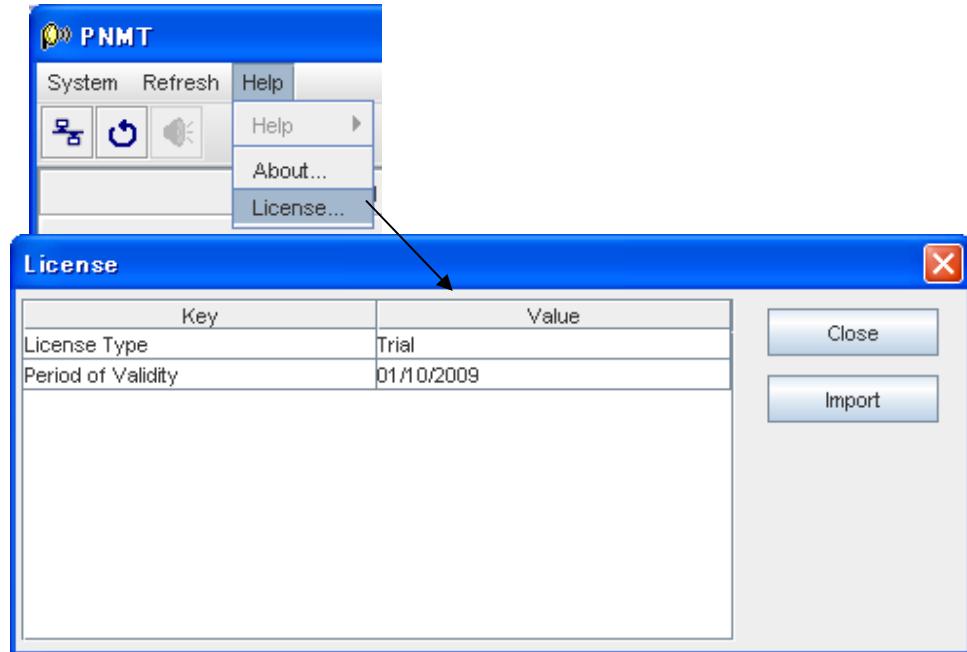
11. Click **[Close]** to exit this screen. To change the license file, click **[Import]**, and proceed as follows.

12. Click **[Next]** to continue.
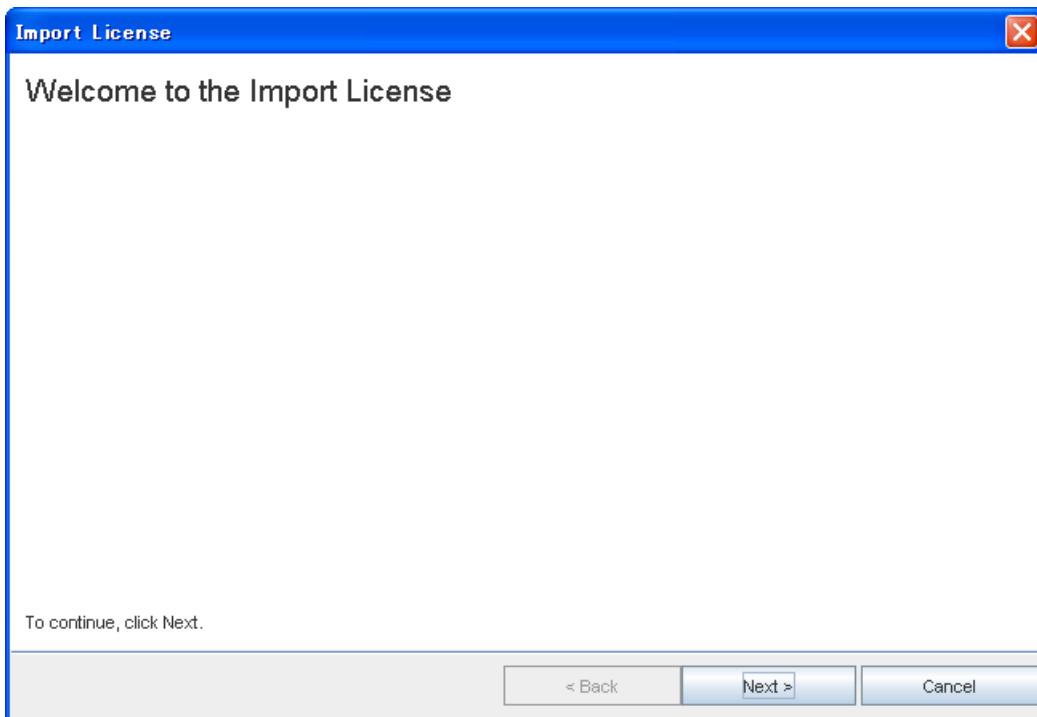
13. Specify the License.Key file if one is available. Click **[Next]**.
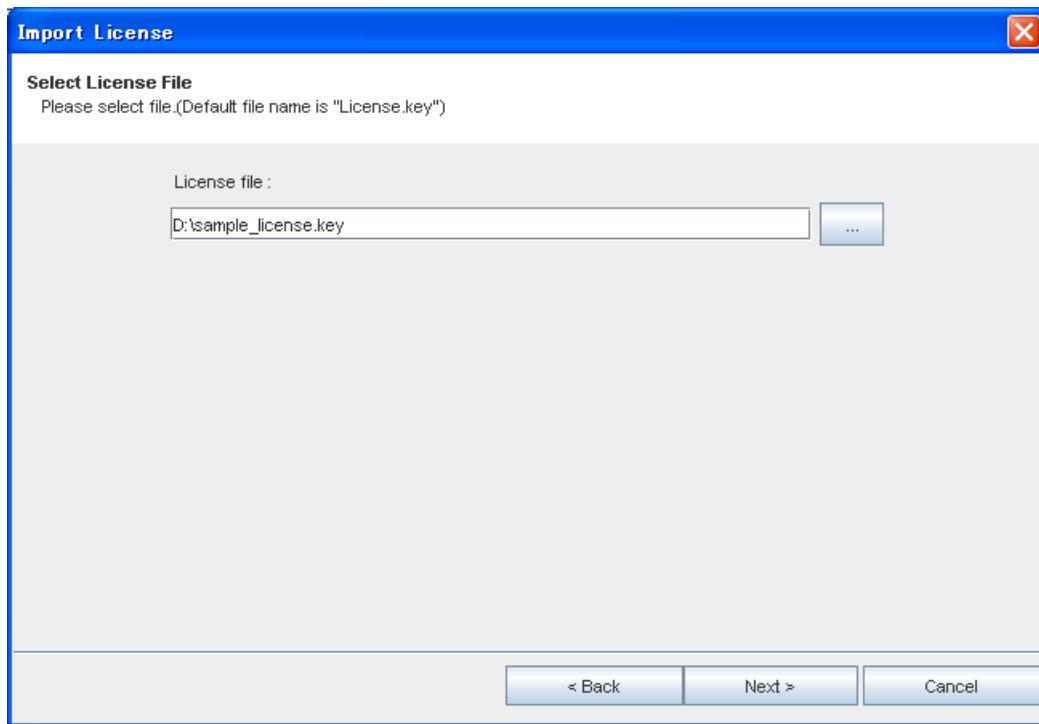
14. The progress of **Check License File** will be displayed. If no error is encountered when importing license file, click **[Next]** as soon as the button becomes available.
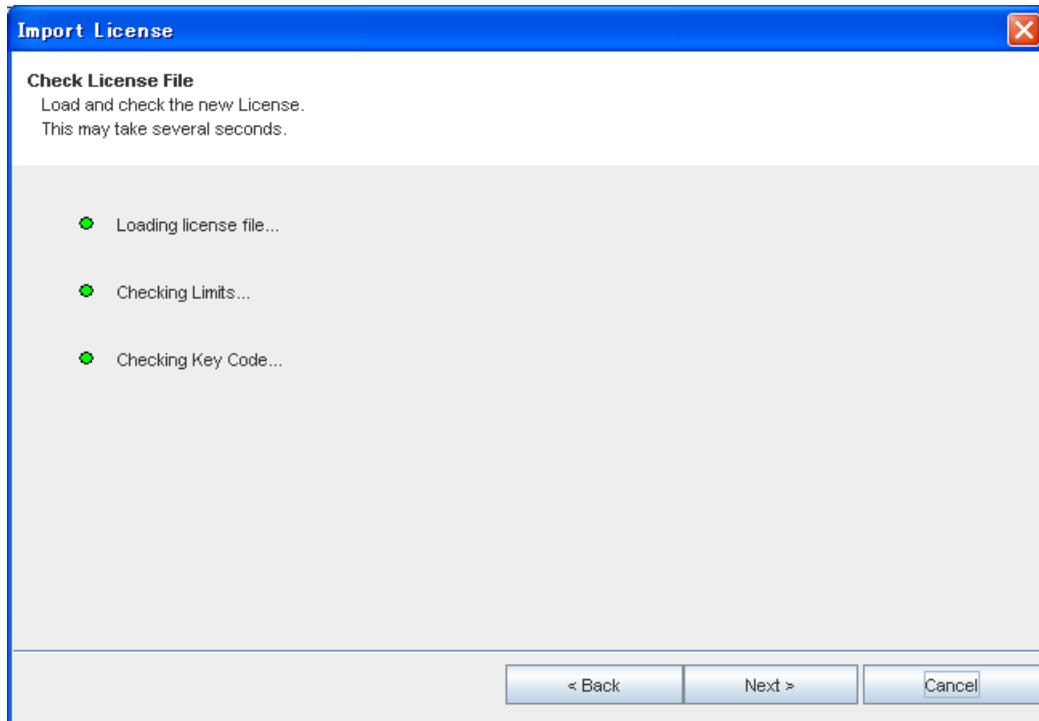
15. Confirm the type of license Imported, and click **[Next]**.

Import License

Import License Limits

Following limits were imported from file :

Key	Value
License Type	Permit

< Back   Next >   Cancel
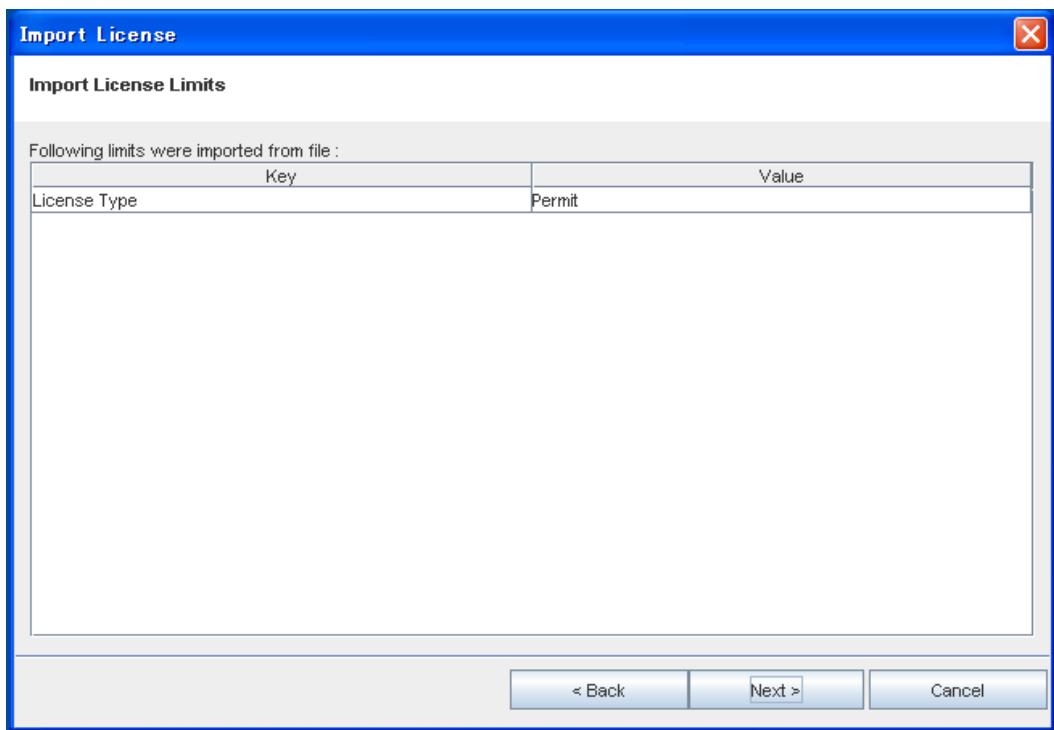
16. Click **[Finish]** in ensuing window to end **Import License Wizard.**

Import License

Import License has done

To processing is performed, click Finish.

< Back   Finish   Cancel
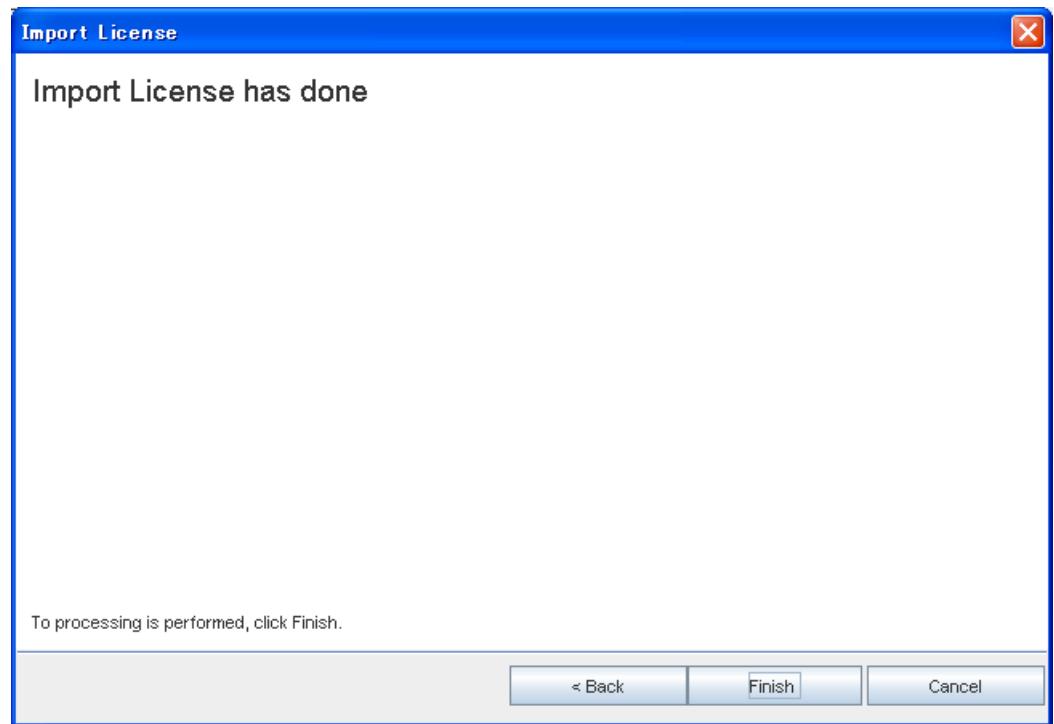
2.11 Overall Status Window

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
Common	TX RF Frequency	500.000[MHz]
Common	RX RF Frequency	449.500[MHz]
Common	TX Power Control	ATPC
Common	Frame ID	1
Common	XPIC Usage	Not Used
Common	Main(Work) - INTFC(1)	2xSTM-1(Optical)
Common	SUB(PROT) - INTFC(2)	2xSTM-1(Optical)
Common	Transmission Capacity	156[MB]
Common	Modulation Scheme	128QAM
Common	ALS Function	Disabled
Common	APS Online Status	Protection
Common	TX SW Status	No.1
Common	RX SW Status	No.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:

- **TX RF Frequency** – the currently used transmission frequency [1].
- **RX RF Frequency** – the currently used receiving frequency. [1]
- **TX Power Control** – shows the power control mode currently used by the ODU. The TX Power Control is either Automatic Transmitter Power Control (ATPC) or Manual Transmitter Power Control (MTPC).
- **MTPC TX Power** – the value (in dB) of the Manual Transmitter Power Control attenuation currently set in the ODU. The MTPC Attenuation will only have valid data if the MTPC is enabled. [1]
- **Frame ID** – the predefined value of the NE frame ID. [1]
- **XPIC Usage** – the status of usage for the XPIC.
- **Main (work)** – the main work interface setting.
- **SUB (PROT)** – the SUB (PROTECTION) Interface setting
- **Transmission Capacity** – the transmission capacity of the system.
- **Modulation scheme** – the currently used modulation type.
- **ALS Function** – Intermittently turns laser output on/off after designated interval from start of LOS mode being "Enabled" or "Disabled" (Only STM-1 (optical) or 2xSTM-1(Optical) interface)
- **APS Online Status** – indicates route when APS is available.
- **TX SW status** (for hot standby configuration only) – shows which modem-ODU configuration is currently used for transmitting signals.
- **RX SW status** (for 1+1 system only) – shows which modem-ODU configuration is currently used for receiving signals.

  [1] **For Twin path configuration both respective parameters (1, 2) are shown**

2.12 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 chapters 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.
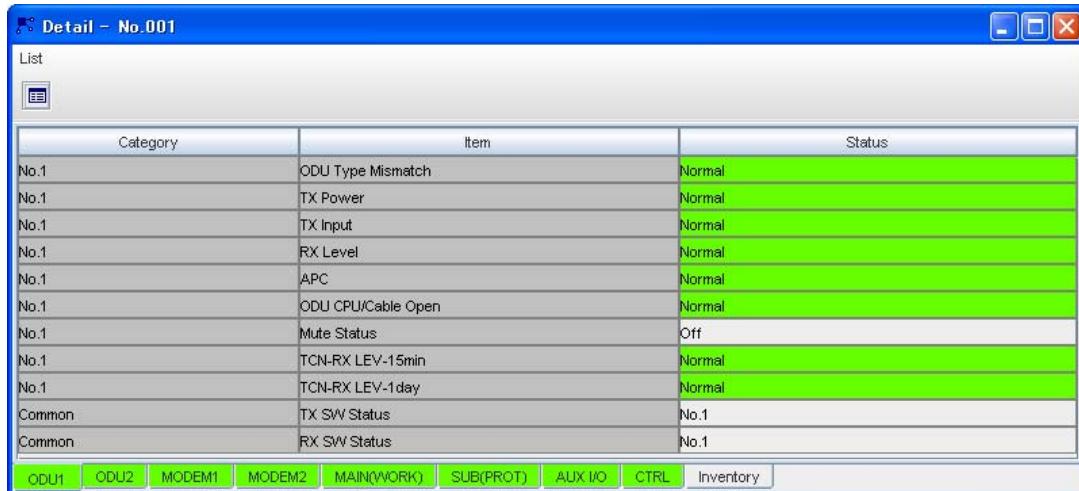
Overview and description of the Items monitored in the ODU.

Item/Feature	Description	Specific conditions for it to be displayed/configured
ODU Type Mismatch	Indicates that an invalid ODU is in use.	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 disrupted	None
ODU Linearizer	Indicates the status of the linearizer in the ODU; it is issued when an anomaly occurs in the linearizer.	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
TX SW Lock-in Status	Indicates the status of TX SW Lock-in Status	Only when TX SW Lock-in Usage is "used"
TX SW Reverse Request	Indicates the status of TX SW Reverse Request	Only when TX SW Reverse Function is "used"

Item/Feature	Description	Specific conditions for it to be displayed/configured
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 1+ 1 Twin path

2.13 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:

1. Click the respective **MODEM** field in the **PNMT main window** of the target NE.
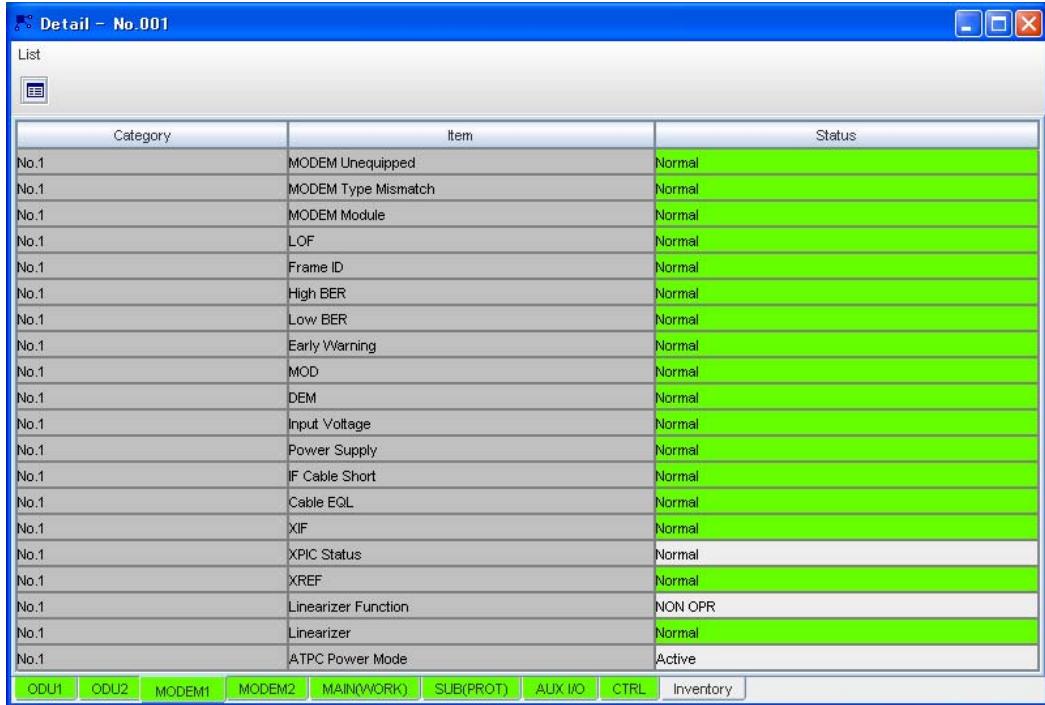
Overview and description of the alarm and status items/features of the modem

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
MODEM Type Mismatch	Indicates that an invalid modem is in use.	None
LOF	Indicates the frame synchronization status. If the synchronization with DMR is disrupted, 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 IDU and Sub Master IDU. When the XIF input signal falls below the threshold, this alarm is issued and the XPIC function is reset.	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, his 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.	None
Linearizer / MODEM Linearizer	Indicates the linearizer operating status; this alarm is issued when the linearizer is not properly operating in the OPR state.	None
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

2.14 MAIN (WORK) Interface Tab

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

To set the Main (work) interface parameters see the chapters on *Equipment Setup* and *Provisioning*.

To view the alarms and status of the main (work) interface:

1. Click the respective **MAIN(WORK)** field in the **PNMT main window** of the target NE.
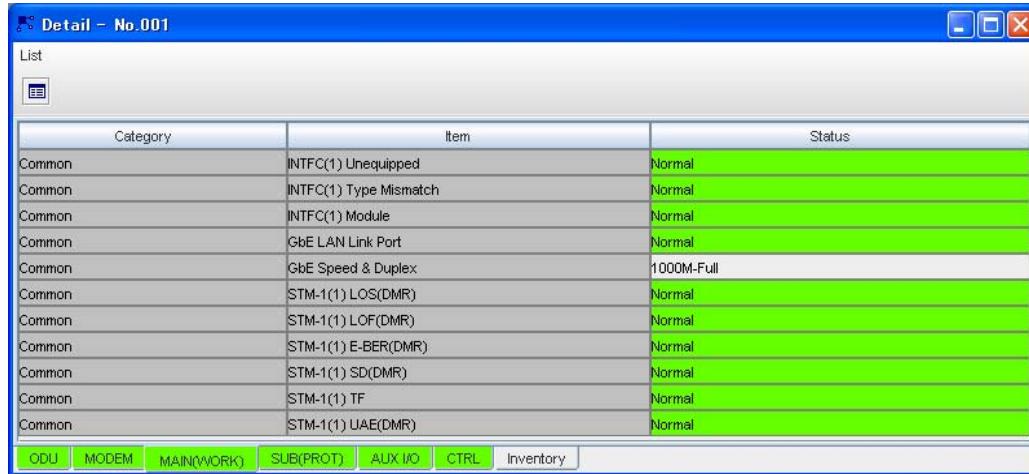
Overview and description of the monitored items for the Main (Work) interface

Item/Feature	Description	Specific conditions for it to be displayed/configured
INTFC (1) Unequipped	Indicates whether there is any Main Interface. If there is no INTFC (1), this alarm is issued.	None
INTFC (1) Type Mismatch	When this alarm is issued, it indicates that INTFC (1) does not correspond to the inventory list.	None
INTFC (1) Module	Indicates the operating status of the MAIN INTFC. If any anomaly occurs in the MAIN INTFC, this alarm is issued.	None
LAN Link Port (1-2) (Main)	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"
GbE LAN Link Port	Indicates the GbE LAN Link Port status: an alarm occurs when the link fails	When Main(Work)-INTFC(1)=GbE over STM-1 or GbE over STM-1/300MB
LAN Collision Port (1-2) (Main)	Indicates the status of any collision for the respective ports	The respective Port Collision Report function must be enabled (set to "report")
Link Loss Forwarding Port (1-2) (Main)	Indicates the status of Link Loss Forwarding status for the respective ports	The Link Loss Forwarding function must be "enabled"
GbE Link Loss Forwarding Port	Indicates the status of GbE Link Loss Forwarding status	When GbE LINK LOSS FORWARDING=ENABLED
Speed & Duplex Port (1-2) (Main)	Indicates the status of LAN Mode (Speed & Duplex) for the respective ports	The respective Port Usage must be set to "used"
GbE Speed & Duplex	Indicates the status of GbE LAN Mode (Speed & Duplex)	When Main(Work)-INTFC(1)=GbE over STM-1 or GbE over STM-1/300MB

| Item/Feature	Description	Specific conditions for it to be displayed/configured
STM-1 (1) LOS (MUX)	Indicates the input signal status of the STM-1 from MUX. If the input is disconnected this alarm is issued.	When Main(Work)-INTFC(1)=STM-1(Optical), STM-1(Electrical), 2xSTM-1(Optical) or 2xSTM-1(Electrical)
STM-1 (1) LOF (MUX)	Indicates the input signal status of the STM-1 from MUX. If the input signal is out of frame synchronization, this alarm is issued.	When Main(Work)-INTFC(1)=STM-1(Optical), STM-1(Electrical), 2xSTM-1(Optical) or 2xSTM-1(Electrical)
STM-1 (1) E-BER (MUX)	Indicates Excessive-BER of the input STM-1 signal from MUX. If the signal deteriorates below the present threshold level, this alarm is issued. The settable threshold values are 1E-3, 1E-4 and 1E-5.	When Main(Work)-INTFC(1)=STM-1(Optical), STM-1(Electrical), 2xSTM-1(Optical) or 2xSTM-1(Electrical)
STM-1 (1) SD (MUX)	Indicates the input signal status of the STM-1 from MUX. If the signal deteriorates below the preset threshold level, the alarm is issued. The selectable threshold values are: 1E-6, IE-7, 1E-8 and 1E-9.	When Main(Work)-INTFC(1)=STM-1(Optical), STM-1(Electrical), 2xSTM-1(Optical) or 2xSTM-1(Electrical)
STM-1 (1) LOS (DMR)	Indicates the signal status of the STM-1 from DMR. If the input is disconnected, this alarm is issued.	When Transmission Capacity=156MB
STM-1 (1) LOF (DMR)	Indicates the status of the input STM-1 signal from DMR. If the input signal is out of synch, this alarm is issued.	When Transmission Capacity=156MB
STM-1 (1) E-BER (DMR)	Indicates Excessive-BER of the input STM-1 signal from the DMR unit. If the signal deteriorates below the present threshold level, this alarm is issued. The settable threshold values are 1E-6, 1E-7, 1E-8 and IE-9.	When Transmission Capacity=156MB
STM-1 (1) SD (DMR)	Indicates the input signal status of the STM-1 from DMR. If the signal deteriorates beyond the preset threshold level, this alarm is issued. The selectable BER threshold values are 1E-3, 1E-4 and 1E-5.	When Transmission Capacity=156MB
STM-1 (1) TF	Indicates "alarm" when there is a defect in this interface that interrupts the STM-1 signal	When Main(Work)-INTFC(1)=STM-1(Optical), STM-1(Electrical), 2xSTM-1(Optical) or 2xSTM-1(Electrical), or Main(Work)-INTFC(1)= GbE OVER STM-1 or GbE OVER STM-1/300MB and GbE MEDIA TYPE = "SFP"
STM-1 (1) UAE (DMR)	Indicates whether UAS were monitored (in DMR)	None
STM-1 (1) UAE (MUX)	Indicates whether UAS were monitored (in MUX)	When Main(Work)-INTFC(1)=STM-1(Optical), STM-1(Electrical), 2xSTM-1(Optical) or 2xSTM-1(Electrical)
INTFC (1) In-phase	Indicates the DADE status of the received No.1 and No.2 signal. If the received signal delay time is out of the permissible range, an "Out-of-phase" alarm is issued	Only for 1+1 hot standby or Twin path
STM-1 (1) Output Control	Indicates signal interruption status when MS-AIS Generation is set to "Disable". Indicates UNDER EXECUTION, when there is no STM-1 output signal from STM-1 INTERFACE	Only when MS-AIS Generation is "disabled"

2.15 SUB (PROT) Interface Tab

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

To set the SUB (PROT) interface parameters see the chapters on *Equipment Setup* and *Provisioning*.

To view the alarms and status of the SUB (PROT) interface:

1. Click the respective **SUB(PROT)** field in the **PNMT main window** of the target NE.
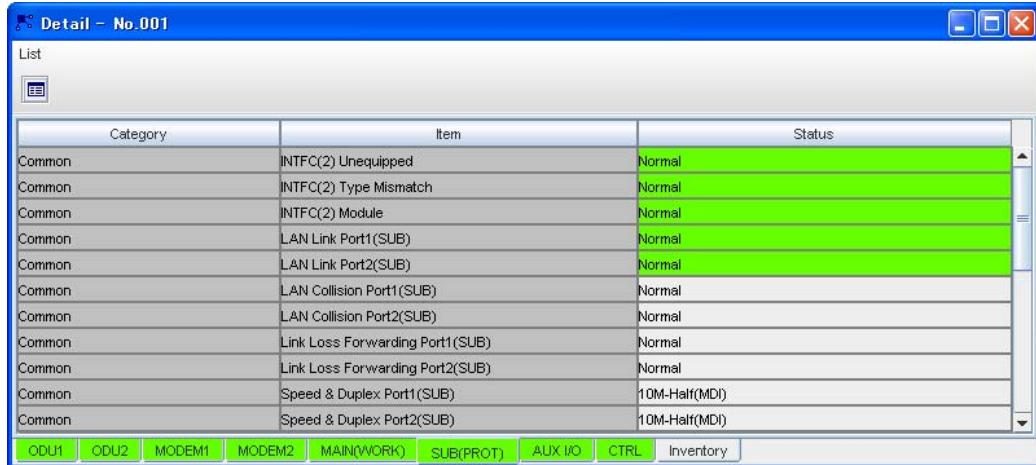
Overview and description of the monitored items for the SUB(PROT) interface

| Item/Feature	Description	Specific conditions for it to be displayed/configured
INTFC (2) Module	Indicates the operating status of the SUB INTFC. If any anomaly occurs in the SUB INTFC, this alarm is issued.	Only when SUB interface is set
INTFC (2) Unequipped	Indicates whether there is any SUB Interface. If there is no INTFC (2), this alarm is issued.	Only when SUB interface is set
INTFC (2) Type Mismatch	When this alarm is issued, it indicates that INTFC (2) does not correspond to the inventory list.	Only when SUB interface is set
STM-1 (2) LOS (MUX)	Indicates the input signal status of the STM-1 from MUX. If the input is disconnected this alarm is issued.	Only when APS Function is available
STM-1 (2) LOF (MUX)	Indicates the input signal status of the STM-1 from MUX. If the input signal is out of frame synchronization, this alarm is issued.	Only when APS Function is available
STM-1 (2) E-BER (MUX)	Indicates Excessive-BER of the input STM-1 signal from MUX. If the signal deteriorates below the present threshold level, this alarm is issued. The settable threshold values are 1E-3, 1E-4 and 1E-5.	Only when APS Function is available
STM-1 (2) SD (MUX)	Indicates the input signal status of the STM-1 from MUX. If the signal deteriorates below the preset threshold level, the alarm is issued. The selectable threshold values are: 1E-6, IE-7, 1E-8 and 1E-9.	Only when APS Function is available
STM-1 (2) LOS (DMR)	Indicates the signal status of the STM-1 from DMR. If the input is disconnected, this alarm is issued.	Only when APS Function is available
STM-1 (2) LOF (DMR)	Indicates the status of the input STM-1 signal from DMR. If the input signal is out of synch, this alarm is issued.	Only when APS Function is available
LAN LinkPort (1-2) (SUB)	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"

Item/Feature	Description	Specific conditions for it to be displayed/configured
LAN Collision Port (1-2) (SUB)	Indicates the status of any collision for the respective ports	When WS/LAN or WS/LAN2 is SUB The respective Port Collision Report function must be enabled (set to "report")
Link Loss Forwarding Port (1-2) (SUB)	Indicates the status of Link Loss Forwarding status for the respective ports	When WS/LAN or WS/LAN2 is SUB. The Link Loss Forwarding function must be "enabled"
Speed & Duplex Port (1-2) (SUB)	Indicates the status of LAN Mode (Speed & Duplex) for the respective ports	When WS/LAN or WS/LAN2 is SUB The respective Port Usage must be set to "used"
STM-1 (2) E-BER (DMR)	Indicates Excessive-BER of the input STM-1 signal from the DMR unit. If the signal deteriorates below the present threshold level, this alarm is issued. The settable threshold values are 1E-6, 1E-7, 1E-8 and IE-9.	Only when APS Function is available
STM-1 (2) SD (DMR)	Indicates the input signal status of the STM-1 from DMR. If the signal deteriorates beyond the preset threshold level, this alarm is issued. The selectable BER threshold values are 1E-3, 1E-4 and 1E-5.	Only when APS Function is available
INTFC (2) In-phase	Indicates the DADE status of the received No.1 and No.2 signal. If the received signal delay time is out of the permissible range, an "Out-of-phase" alarm is issued	Only when APS Function is available and only for 1+1 hot standby or Twin path
STM-1 (2) TF	Indicates "alarm" when there is a defect in this interface that interrupts the STM-1 signal	Only when APS Function is available
STM-1 (2) WS Input LOS	Indicates the operating status of the LAN/WS. When E1 WS input signal falls below the threshold, this alarm is issued.	Only when WS is set
WS AIS Received	Indicates the E1 signal transmitting status. If AIS is received from MUX, this alarm is issued.	WS is set and AIS Received Report function must be enabled (set to "report").
WS AIS Generated	Indicates the E1 signal receiving status. If AIS is generated in the E1 INTFC, this alarm is issued.	WS is set and AIS Generated Report function must be enabled (set to "report")
STM-1 (2) Output Control	Indicates signal interruption status when MS-AIS Generation is set to "Disable". Indicates UNDER EXECUTION, when there is no STM-1 output signal from STM-1 INTERFACE	Only when APS Function is available and MS-AIS Generation is "disabled
STM-1 (2) UAE (DMR)	Indicates whether UAS were monitored (in DMR)	Only when APS Function is available
STM-1 (2) UAE (MUX)	Indicates whether UAS were monitored (in MUX)	Only when APS Function is available

2.16 Auxiliary I/O Tab

6 photocoupler input and 4-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. Click the respective **AUX I/O** field in the **PNMT main window** of the target NE.
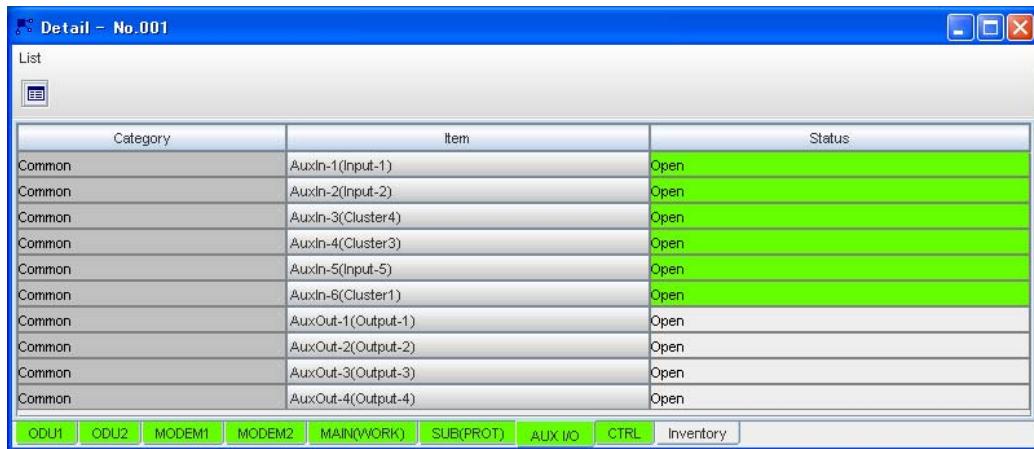
Category	Item	Status
Common	AuxIn-1(Input-1)	Open
Common	AuxIn-2(Input-2)	Open
Common	AuxIn-3(Cluster4)	Open
Common	AuxIn-4(Cluster3)	Open
Common	AuxIn-5(Input-5)	Open
Common	AuxIn-6(Cluster1)	Open
Common	AuxOut-1(Output-1)	Open
Common	AuxOut-2(Output-2)	Open
Common	AuxOut-3(Output-3)	Open
Common	AuxOut-4(Output-4)	Open

AUX. I/O window

2.16.1   Monitored Items

The following items are monitored via this tab:

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

2. Four (4)-relay outputs. (Output-1 to Output-4)

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.

2.16.2 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.
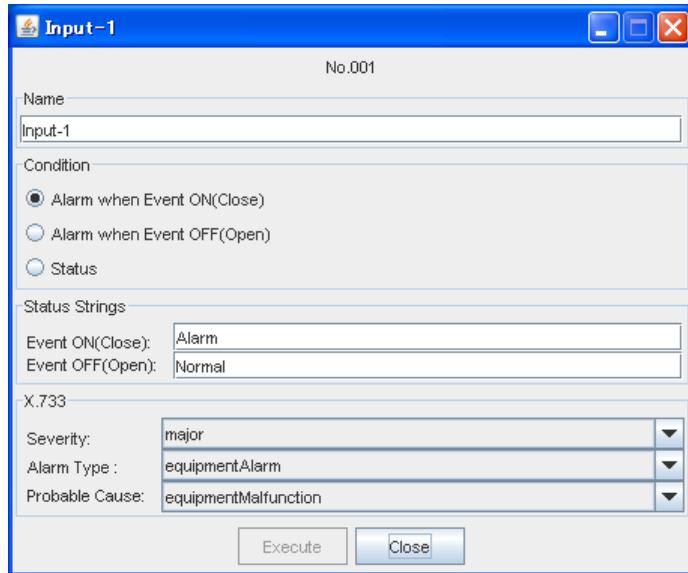
2.16.2.1 Setting the Selected Input to Alarm or Status

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

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

2.16.3 Relay Output Setting

To set the relay output:

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

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

2.17 Control (CTRL) Tab

Various control parameters can be set via the CTRL tab.

CTRL window

2.17.1   Control Module

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

The following items can be monitored and controlled in the **CTRL** window:

- CTRL Module Alarm

- MMC Mount (Yes = On / No = Off)

- APS SW Fail (when APS is available)

- APS Online Status (indicates route when APS is available)

- APS Lock-in Status (when APS is available and Lock-in Usage is selected as "Used")

- XCTRL (when XPIC Usage is selected as "Used" and the control signal between Master and Sub Master IDU is lost; this alarm is issued)

- XPIC Mode Mismatch (when XPIC Usage is selected as "Used" and is incorrectly defined [e.g. Main Master to Main Master, Sub Master to Sub Master]; alarm is issued)

- Date/Time

- CPU Reset

- Download: Configuration File

- Download: Program File

- Download: Equipment Configuration File

- Download: Software Key File

- Upload: Configuration File

- Upload: Equipment Configuration File

- Upload: Software Key File

- Equipment Network Setting

2.17.2   Setting the Date/Time

The Date and Time stored in Control module can be displayed and adjusted using this function.

To set the Date/Time:

1.   Click the **[Date/Time]** button in the **CTRL** window.
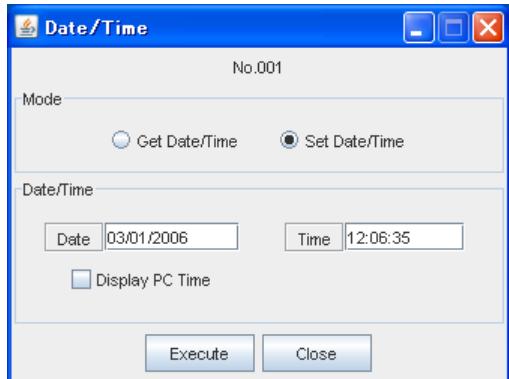
2.   To check the Date and Time Settings of the Control module:

   1)   Select **Get Date/Time** in the Date/Time window.

   2)   Click **[Execute]** button.

   3)   The current date and time in the Control module will be displayed in the **Date** and **Time** field.

3.   To set the Date and Time on the Control module:

   1)   Select **Set Date/Time** in the Date/Time window.

   2)   Click **[Execute]** button.

   3)   Click **[Close]** button when done.

2.17.3   CPU Reset

The Control module can be reset using this function

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

NOTE

Resetting the Control module will not affect traffic. The connection to the selected NE will be disrupted for a few minutes but will be automatically restored.

To reset the Control module:

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

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

3. Click **[Execute]** button to continue the Control module reset operation.
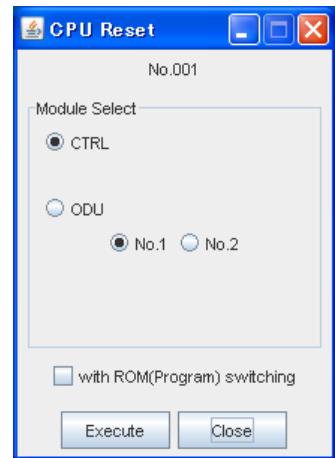
2.17.4 Downloading the Configuration Files to the Control Module

This function is used to download the network configuration files from the PNMT to the Control module. The network configuration file – **pp_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 **pp_mib.cfg** file contains relevant information about the equipment (i.e. name, pm type, etc.) and housekeeping (AUX. I/O).

*This window is not available when MAINT is OFF.

To download the new configuration file to the CTRL:

1. Click **[DL Configuration File]** button in **CTRL** window.
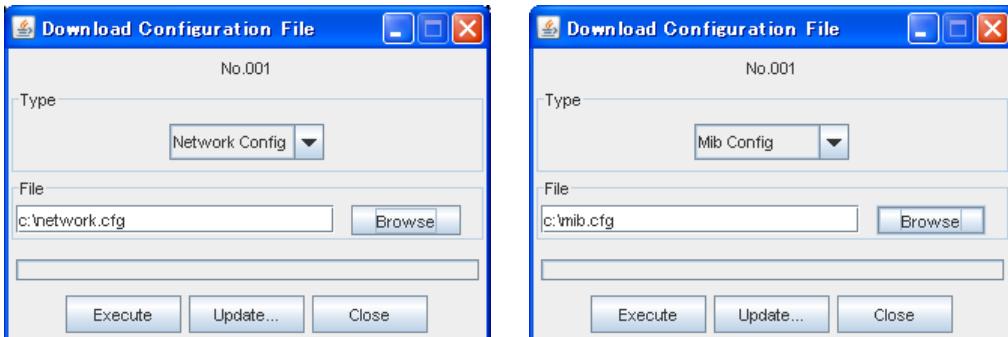
2. Select the type of file to be downloaded in the **Type** list.

3. Enter the location of the configuration file in the **File** field, or click **[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 Control module. An incorrect configuration file may lead to Control module or network malfunction/failure.

---

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

WARNING!!!

While data is being transmitted, do not remove the USB 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 Control module will switch to an empty ROM that may cause Control module malfunction/failure.

---

6. Click the **[Update]** button to activate and save the new configuration file (s).
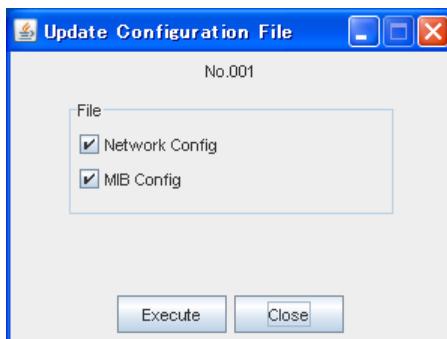
7. Select the appropriate box for the type of configuration file to be updated. One or more configuration file(s) can be updated by checking the selection box of the configuration file name. Click **[Execute]** to start the operation. The "**with ROM (CTRL Program) Switching**" box is for switching to the ROM with the new CTRL Program and has the same function that was previously described in section *2.17.5 Downloading a new Program file to the Control Module*.

NOTE

When updating the pp_network.cfg file, NE-to-NE communication will be disrupted when the Control module reinitializes to the new system configuration. This WILL NOT affect the wireless link. During this time PNMT connection to the NE will be disrupted but will automatically be restored after the Control module is reset.

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

2.17.5   Downloading a new Program File to the Control Module

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

*This window is not available when MAINT is OFF.

To download the program file to Control module:

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

2.   Select the module select button.

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

WARNING!!!

Make sure that the correct program file is downloaded to the Control module. Incorrect program files are likely to cause malfunction

---

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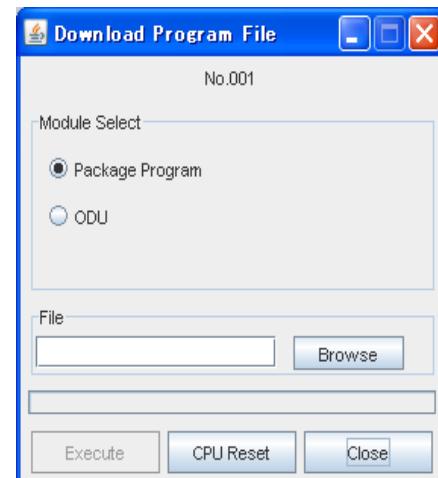
WARNING!!!

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

---

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 program file size.

---

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

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

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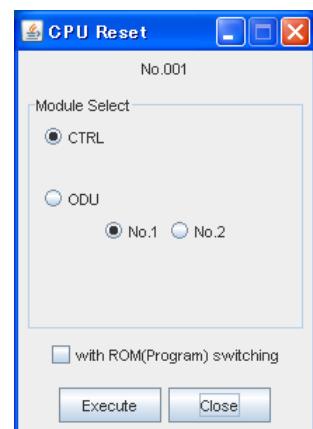
NOTE

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

2.17.6   Downloading the Equipment Configuration Files to the Control Module

This function is used to download equipment configuration files from the PNMT to the Control module. The equipment configuration file contains the wireless configuration data (i.e. frequency, main interface) and provisioning data (i.e. BER alarm threshold).

*This window is not available when MAINT is OFF.

To download new configuration file to the NE:

1. Click the **[DL Equipment Config. File]** button in CTRL window.

2. 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 Control module. Incorrect configuration file is liable to cause Control module or network malfunction/failure.

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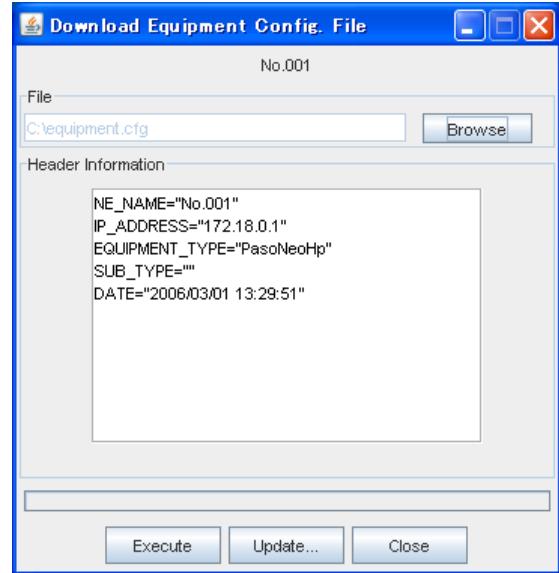
3. Click the **[Execute]** button to start the operation.

4. 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 Control module will switch to an empty ROM that is liable to cause Control module malfunction/failure.

---

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

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

2.17.7 Downloading the Software Key Files

This function is used to download the Software Key file from the PNMT to the Control module. The Software Key file is used to enhance PNMT functionality.

*This window is not available when MAINT is OFF.

To download the Software Key files:

Category	Item	File Status	Equipment Current Status
Common	Key Serial No.	0	-
	CTRL Serial No.	0	0
Capacity&Redundancy	Capacity	156[MB]	
	Redundancy	1+0	1+1
	Precheck Enable	OFF	-
	Capacity(previous)	-	
	Redundancy(previous)	-	1+1
Bit Rate Free	Bit Free		
	Precheck Enable		
	Bit Free(previous)		
LAN INTFC	LAN		
	Precheck Enable		
	LAN(previous)		
XPIC	XPIC		
	Precheck Enable		
	XPIC(previous)		
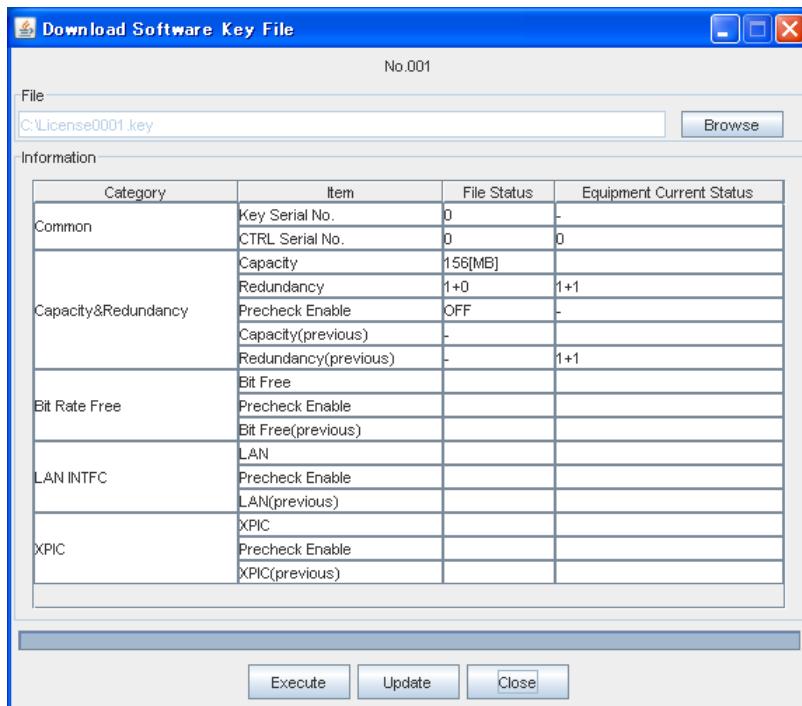
1. Click the **[DL Software Key File]** button in CTRL window.

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

WARNING!!!

Make sure that the correct Software Key file is downloaded to the correct Control module. Incorrect Software Key file is liable to cause Control module or network malfunction/failure.

---

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

4. The values of "Equipment Current Status" are updated.

5. Click the **[Update]** button to activate the new Software Key file. "Update Software Key File" window is displayed.

6. Select the File to update and click the **[Execute]** button.

7. Click the **[Close]** button when done.
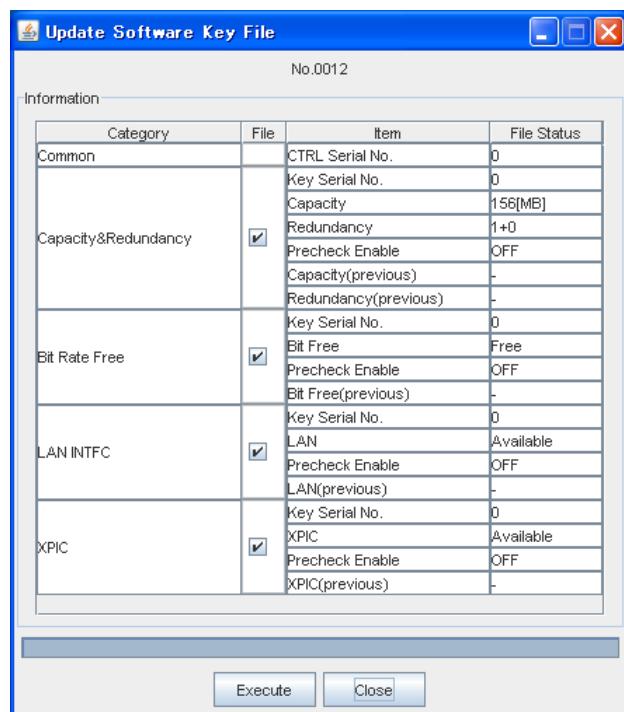
2.17.8 Uploading Configuration File to PNMT PC

This function is used to upload the configuration file from the Control module of the selected NE to the PNMT PC.

To upload the configuration file from the Control module to the PNMT:

1. Click the **[UL Configuration File]** button in **CTRL** window.
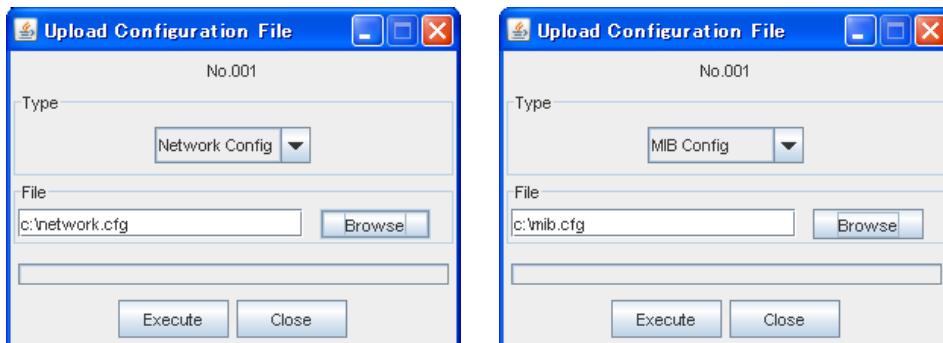
2. Select the type of file to be uploaded onto the **Type** field.

3. Enter the desired file name for the uploaded file. And select and 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. It will close automatically once the operation is completed.

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

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

2.17.9 Uploading Equipment Configuration File to PNMT PC

This feature is used to upload the equipment configuration file from the Control module of the selected NE to the PNMT PC.

To upload the equipment configuration file from the Control module to the PNMT:

1. Click the **[UD Equipment Config. File]** button in CTRL window.

2. Enter the desired name for the uploaded file and select the directory where the uploaded file is to be saved.

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

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

5. Verify that the file was uploaded on the specified directory.
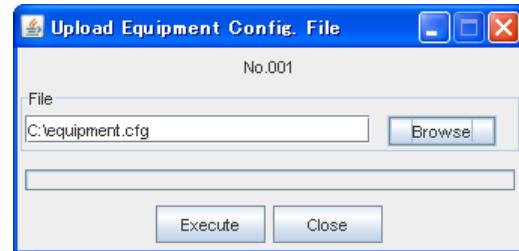
2.17.10 Uploading Software Key File to PNMT PC

This feature is used to upload the equipment configuration file from the Control module of the selected NE to the PNMT PC.

To upload the equipment configuration file from the Control module to the PNMT:

1. Click the **[UD Software Key File]** button in CTRL window.

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

3. After the upload is finished, click the **[Close]** button.
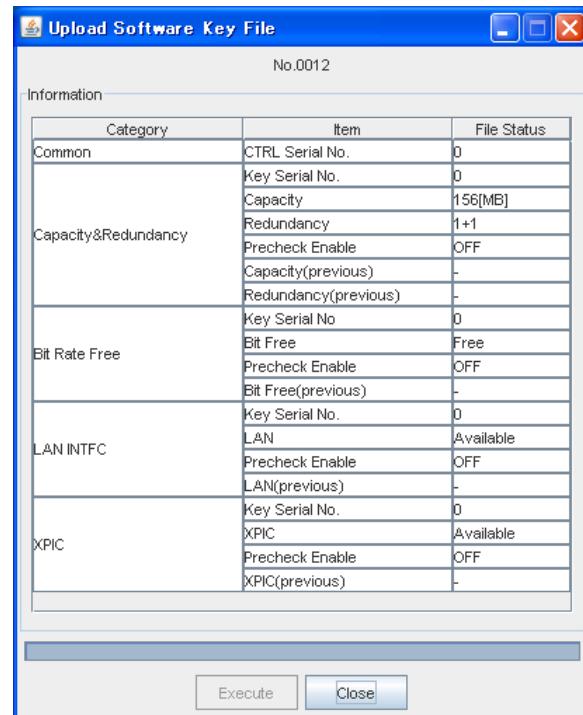
2.17.11 Configuring the Equipment Network Settings

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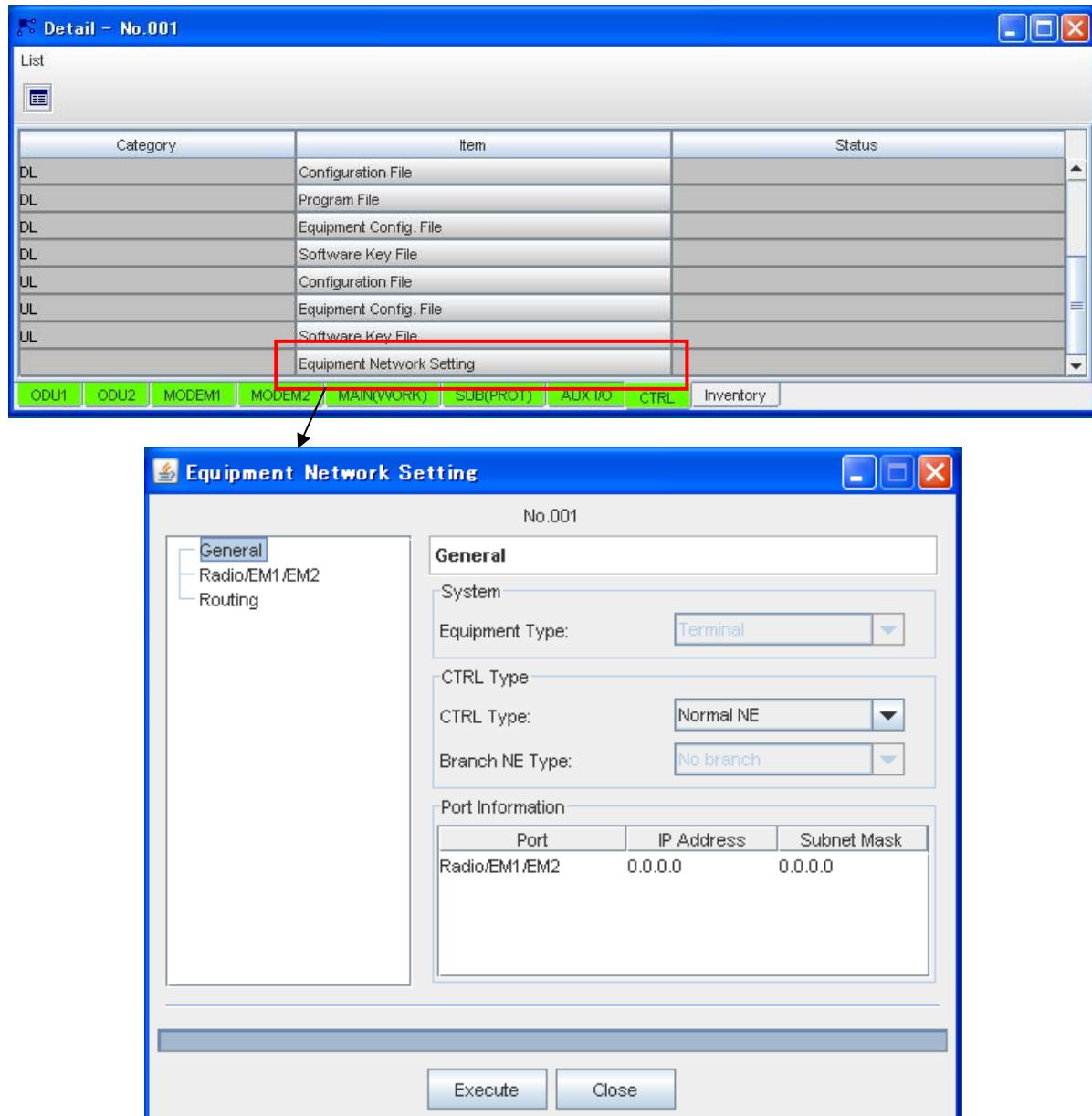
For details, refer to **Appendix A**.

	Reserved IP addresses	Item
NOTE	172.17.251.XXX	Unnumbered PPP IP Address
Since, the following IP addresses are reserved for NEC's Radio Equipment, they cannot be set in this window's IP address column.	172.17.252.XXX	Unnumbered Async/ LAN IP Address
	172.17.254.253	PNMT IP Address
	172.17.254.254	PNMT IP Address

2.18 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).

Maintenance:	To switch Maintenance mode to 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
TX Mute Control[1][2]:	To set TX Mute Control
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
LAN Device Reset:	Resets LAN INTFC ports (when LAN Port setting is "used")
RF Setting[1]:	To change the ODU sub band for the wireless link according to the RF frequency allocation
XPIC Control	To temporarily interrupt XPIC (when XPIC is available)
Antenna Alignment Mode[1][2]:	To turn on Antenna Alignment Mode (only available for specific ODU type)
X-DEM Delay Adjust[1]:	To adjust the transmission delay between Main Master and Sub Master caused by XPIC. (Available only when XPIC is in use.)
APS Manual Control:	Allows APS to be manually controlled (when APS is available)
Main Loopback-1 INTFC (1) :	Allows the pinpointing of signal interruption faults
Main Loopback-1 INTFC (2) :	Same as above (when APS is available)
Main Loopback-2:	Same as above
ALS Restart:	For optical interfaces, the duration of laser emittance during ALS manual restarts (for testing)

[1] - Operation is possible only when NE directly connected to PNMT appears in "Selected Network Element" side.

[2] - Operation is possible only when NE opposite to the one directly connected to PNMT appears in "opposite Network Element" side.

2.18.1 Selecting Maintenance

To open the Maintenance window:

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

Category	Item	Status
Common	Maintenance	Off
Common	RX SW Manual Control	Auto
No.1	ATPC Manual Control	Off
No.2	ATPC Manual Control	Off
No.1	TX Mute Control	Off
No.2	TX Mute Control	Off
No.1	CW Control	Off
No.2	CW Control	Off
No.1	IF Loopback	Off
No.2	IF Loopback	Off
Common	DADE Adjust	
Common	LAN Device Reset	
No.1	Linearizer Control	Auto
No.2	Linearizer Control	Auto
No.1	RF Setting	
No.2	RF Setting	
No.1	Antenna Alignment Mode	Off
No.2	Antenna Alignment Mode	Off

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.

2.18.2 Mode

To switch the NE to maintenance mode:

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

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

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

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

2.18.3 TX SW Manual Control (for Hot Stand-by system only)

To control the TX switch manually:

1. Click **[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.
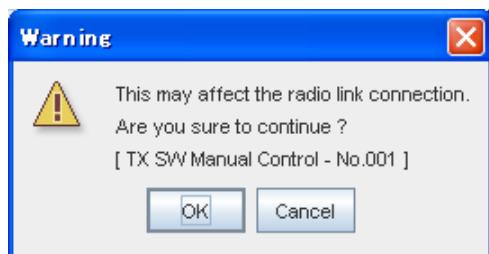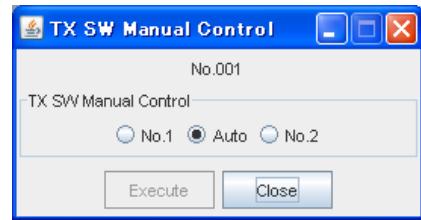
CAUTION:

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.

2.18.4 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.
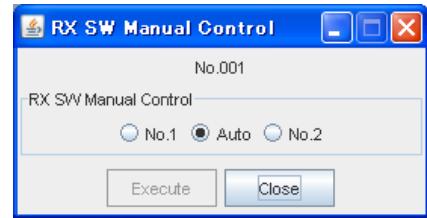
2.18.5 ATPC Manual Control

Use when an optional transmitting power is required during ATPC operation.
To set the ATPC Manual:

1. Click **[ATPC Manual]** 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.

2.18.6 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 **[TX Mute Control]** 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.

2.18.7 CW Control

When taking 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 **[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.

2.18.8 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 **[Close]** button when finished.
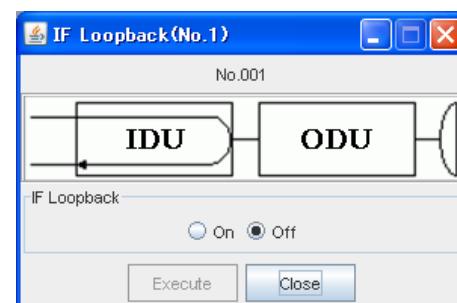
2.18.9 DADE Adjust

DADE adjustment is necessary when the IF cable is to be 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 **[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.

2.18.10 LAN Device Reset

To reset Ports of LAN INTFC interface:

1. Click **[LAN Device Reset]** button in **Maintenance** window.

2. Select the port that you want to reset.

3. Click the **[Execute]** button to reset LAN ports.

4. Click the **[Close]** button when finished.
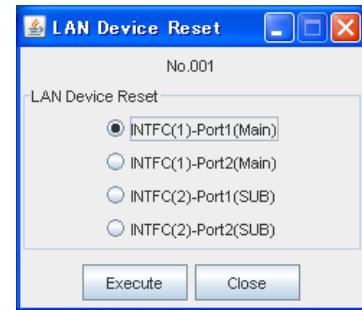
2.18.11 RF Setting

Sub Band of ODU can be selected

To select Sub Band:

1. Click **[RF Setting SUB Band]** 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.
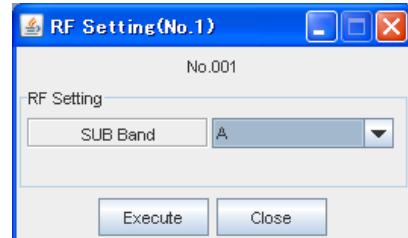
2.18.12 Antenna Alignment Mode (only available for specific ODU type)

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 **[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.
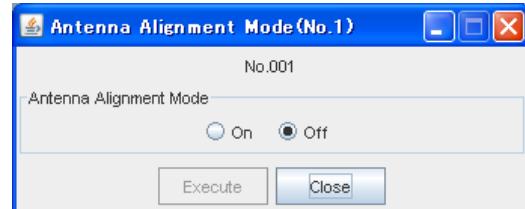
2.18.13 Main Loopback-2

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 **Maintenance** window.

2. Select **On** to activate the loopback.

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

4. Click the **[Close]** button when finished.
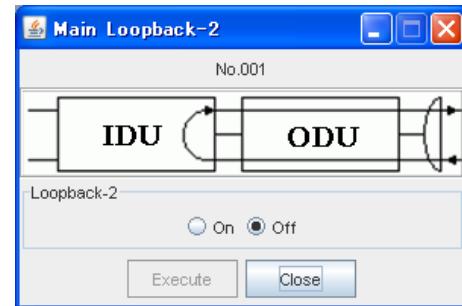
2.18.14 APS Manual Control

To control the APS manually:

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

2. Select the route you want to manually control: **Working**, **Auto** or **Protection**. (The default setting is **Auto**)

3. Click the **[Execute]** button to switch to the manual control of APS.

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

2.18.15 Main Loopback-1 INTFC (1)

This type of Loopback is configured when the Selected NE currently connected has either STM-1 (optical), STM-1 (Electrical), 2xSTM-1(Optical) or 2xSTM-1 (electrical) interface.

To set the near-end loopback:

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

2. Select **ON** to activate the loopback.

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

4. Click the **[Close]** button when finished.
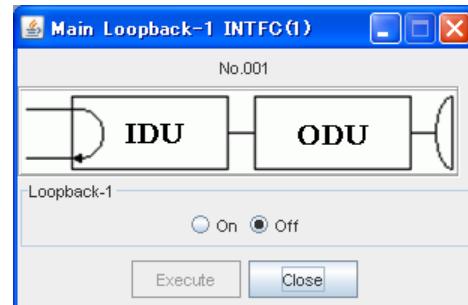
2.18.16 Main Loopback-1 INTFC (2)

This type of loopback is created at the 156MB INTFC/OPT INTFC or 310MB INTFC/OPT INTFC of the opposite NE.

To set the opposite NE loopback:

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

2. Select **ON** to activate the loopback.

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

4. Click the **[Close]** button when finished.
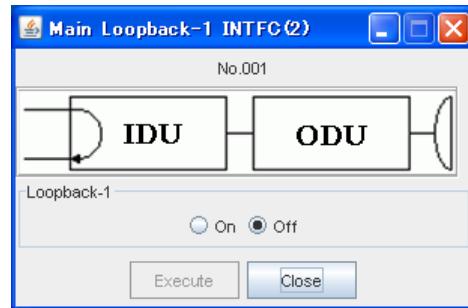
2.18.17 ALS Restart

This feature is used to set the time of manual restart of the Automatic Laser Shutdown (ALS). When the optical input signal is lost, the IDU will emit a laser signal from *STM-1 OUT* at a preset value (2 sec or 90 sec), at this point, if the fault has been rectified then the ALS will be released and operation will return to normal. Otherwise, the laser emission will immediately terminate.

To set the ALS restart:

1. Click the **[ALS Restart]** button in the **Maintenance** window.

2. Select the timing in seconds of the laser emission for manual restart.

3. Click the **[Execute]** button to apply the timing of the manual restart.

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

2.18.18 XPIC Control

This feature is used to temporarily interrupt XPIC.

To set XPIC Control:

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

2. Select **[Forced Reset]**.

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

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

2.18.19 X-DEM Delay Adjust

This feature is used to adjust transmission delay between Main Master and Sub Master.

To set X-DEM delay Adjust:

1. Click the **[X-DEM Delay Adjust]** button in **Maintenance** window.

2. Select **[Forced Reset]**.

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

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

CAUTION:

When the value is changed to adjust delay, the value for the matching NE in pair must also be adjusted.

2.19 Equipment Setup

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

2.19.1   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 information and control parameters for the ODU and the IDU. The **Equipment Setup** window is shown below.

Category	Item	Status
Common	Redundancy Setting	1+0(TERM)
Common	Main(Work) - INTFC(1)	GbE over STM-1
Common	SUB(PROT) - INTFC(2)	WS/LAN
Common	XPIC Usage	Used(Main Master)
Common	Modulation Scheme	128QAM
Common	Transmission Capacity	156[MB]
Common	TX RF Frequency	500.000[MHz]
Common	RX RF Frequency	449.500[MHz]
Common	Frame ID	1
Common	TX Power Control	ATPC
Common	LAN Port Usage	Used , P1-2 Shared/1Port Only(WS)
Common	Radio Mapping	P=150[Mbps] , P1-P2/1P=2(WS)[Mbps]
Common	NE Name	No.001
Common	IP Address	172.019.000.001
Common	MAC Address	00-00-00-00-00-00
Common	Opposite-1 IP Address	172.019.000.002
Common	Note	Memo 1

Equipment Setup window (example shows GbE over STM-1 1+0 Configuration)

To edit the NE name:

1. Click **[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.

2.19.2 Editing the Note for CTRL

To put an optional description on the current NE:

1. Click **[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.
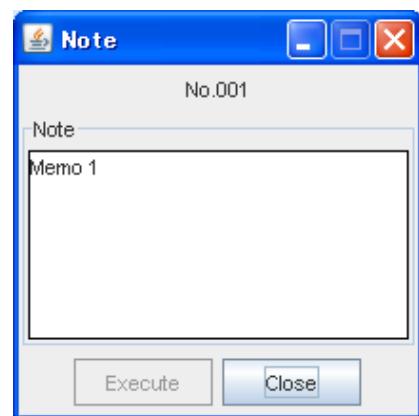
2.19.3 Setup

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.
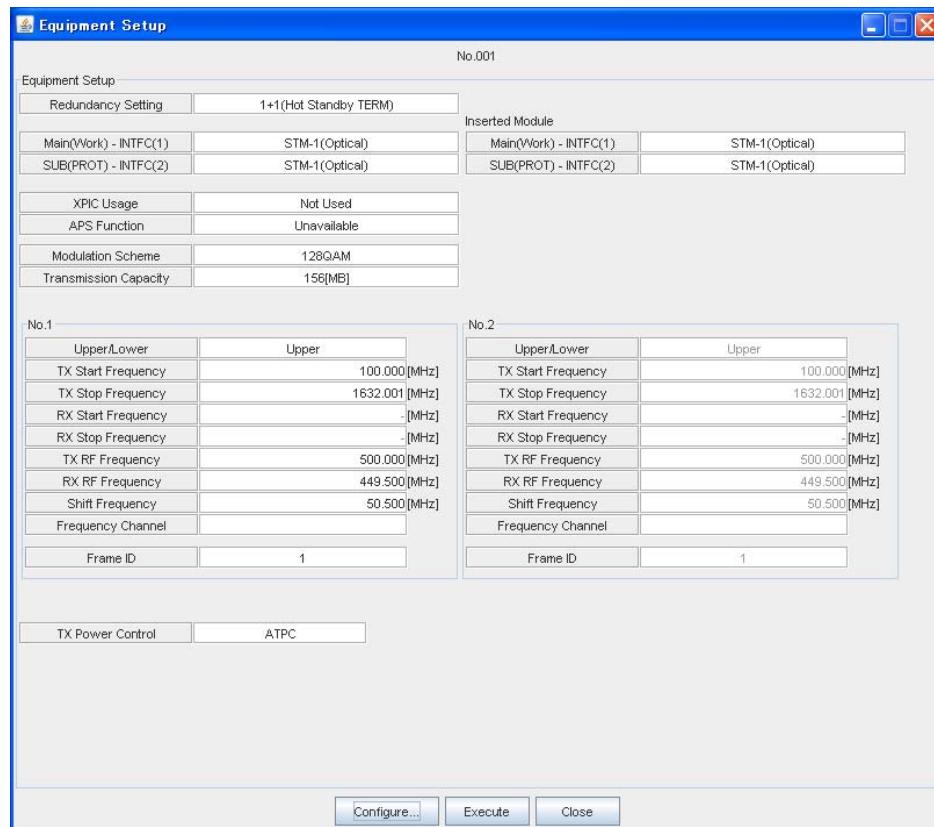
Equipment Setup Window (to verify settings)

Equipment Setup (No.001) — Screen 1

Equipment Setup		Inserted Module	
Redundancy Setting	1+1(Hot Standby TERM)		
Main(Work) - INTFC(1)	GbE over STM-1/300MB	Main(Work) - INTFC(1)	STM-1(Optical)
SUB(PROT) - INTFC(2)	WS/LAN2	SUB(PROT) - INTFC(2)	STM-1(Optical)
XPIC Usage	Not Used		
APS Function	Unavailable		
Modulation Scheme	256QAM		
Transmission Capacity	400[MB]		

No.1 / No.2

	No.1	No.2
Upper/Lower	Upper	Upper
TX Start Frequency	100.000 [MHz]	100.000 [MHz]
TX Stop Frequency	1632.001 [MHz]	1632.001 [MHz]
RX Start Frequency	- [MHz]	- [MHz]
RX Stop Frequency	- [MHz]	- [MHz]
TX RF Frequency	500.000 [MHz]	500.000 [MHz]
RX RF Frequency	449.500 [MHz]	449.500 [MHz]
Shift Frequency	50.500 [MHz]	50.500 [MHz]
Frequency Channel		
Frame ID	1	1

TX Power Control: ATPC

LAN Port Setting(MAIN)		LAN Port Setting(SUB)	
LAN Port Usage	Used	LAN Port Usage	P1-2 Shared/1Port Only(SC)
Radio Mapping	P=400[Mbps]	Radio Mapping	P1-P2/1P=256[kbps]

Configure... | Execute | Close

Main (Work) - INTFC (1): GbE over STM-1/GbE over STM-1/300MB
SUB (PROT) - INTFC (2): WS/LAN /WS/LAN2

Equipment Setup (No.001) — Screen 2

Equipment Setup		Inserted Module	
Redundancy Setting	1+1(Hot Standby TERM)		
Main(Work) - INTFC(1)	STM-1(Optical)	Main(Work) - INTFC(1)	STM-1(Optical)
SUB(PROT) - INTFC(2)	WS/LAN	SUB(PROT) - INTFC(2)	STM-1(Optical)
XPIC Usage	Not Used		
APS Function	Unavailable		
Modulation Scheme	128QAM		
Transmission Capacity	156[MB]		

	No.1	No.2
Upper/Lower	Upper	Upper
TX Start Frequency	100.000 [MHz]	100.000 [MHz]
TX Stop Frequency	1632.001 [MHz]	1632.001 [MHz]
RX Start Frequency	- [MHz]	- [MHz]
RX Stop Frequency	- [MHz]	- [MHz]
TX RF Frequency	500.000 [MHz]	500.000 [MHz]
RX RF Frequency	449.500 [MHz]	449.500 [MHz]
Shift Frequency	50.500 [MHz]	50.500 [MHz]
Frequency Channel		
Frame ID	1	1

TX Power Control: ATPC

LAN Port Setting(SUB)	
LAN Port Usage	Not Used
Radio Mapping	

Configure... | Execute | Close

Main (Work) - INTFC (1): STM-1 (Optical/Electrical)/2xSTM-1 (Optical/Electrical)
SUB (PROT) - INTFC (2): WS/LAN WS/LAN2

2. Clicking **Configure** opens the **Setup Wizard(1)**.
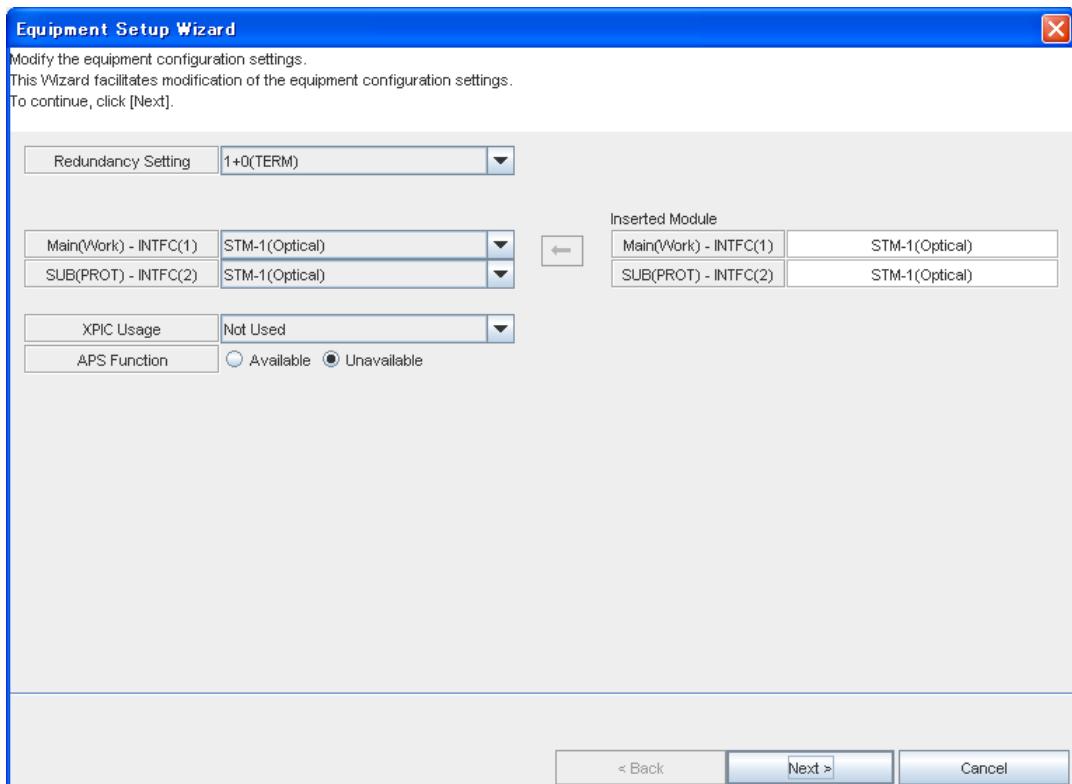
Setup Wizard(1)

3. The settings in the window can now be configured. To continue click **[Next]**.
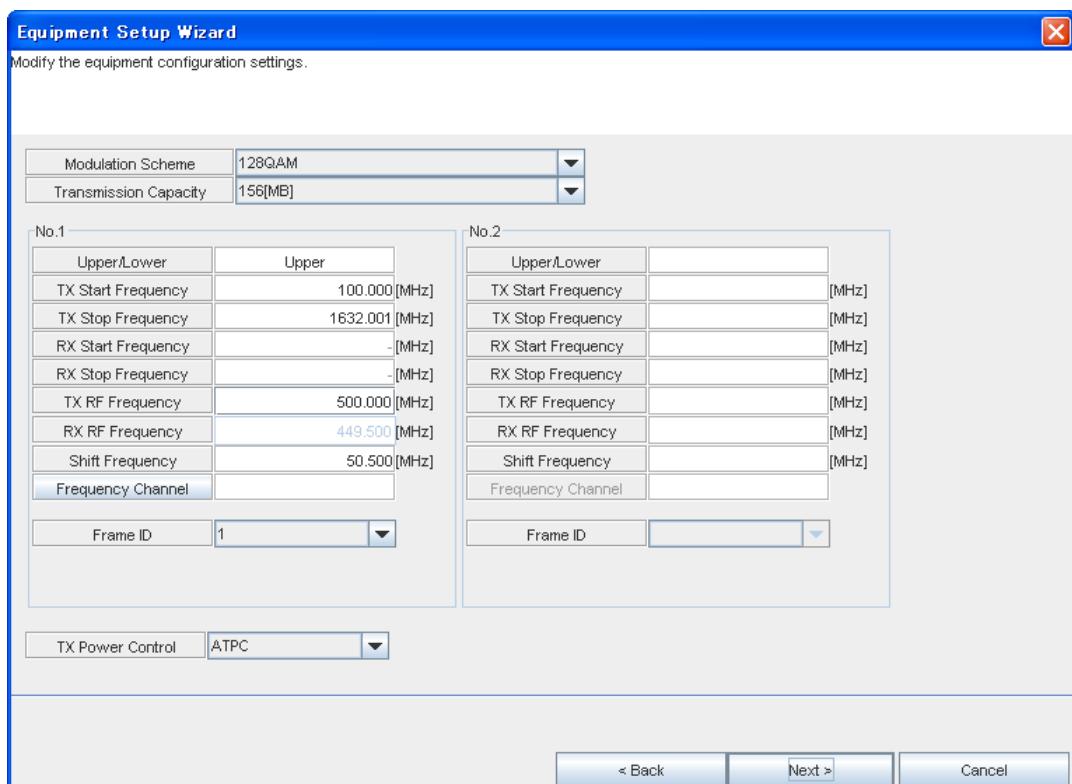
Setup Wizard(2)

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

5. If LAN parameters need to be set, the following window will open.
    After setting the LAN parameters, click **[Next]** and in the ensuing window click **[Finish]**.
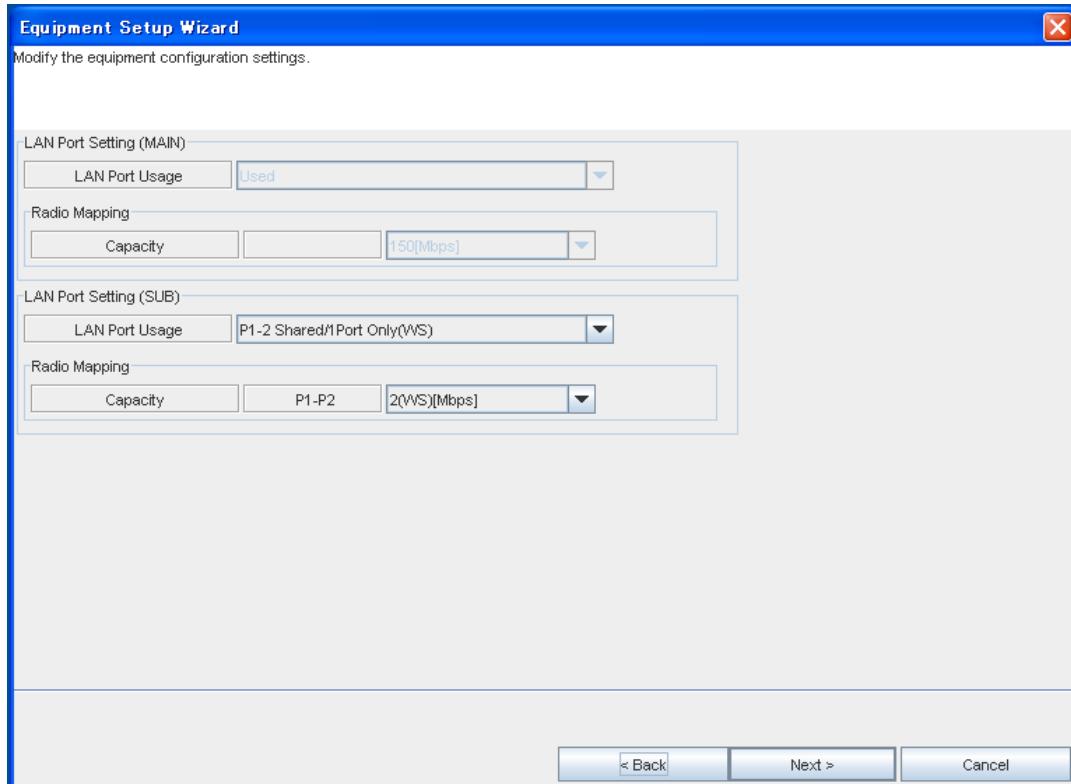
**Main (Work) - INTFC (1): GbE over STM-1/GbE over STM-1/300MB
SUB (PROT) - INTFC (2): WS/LAN WS/LAN2**
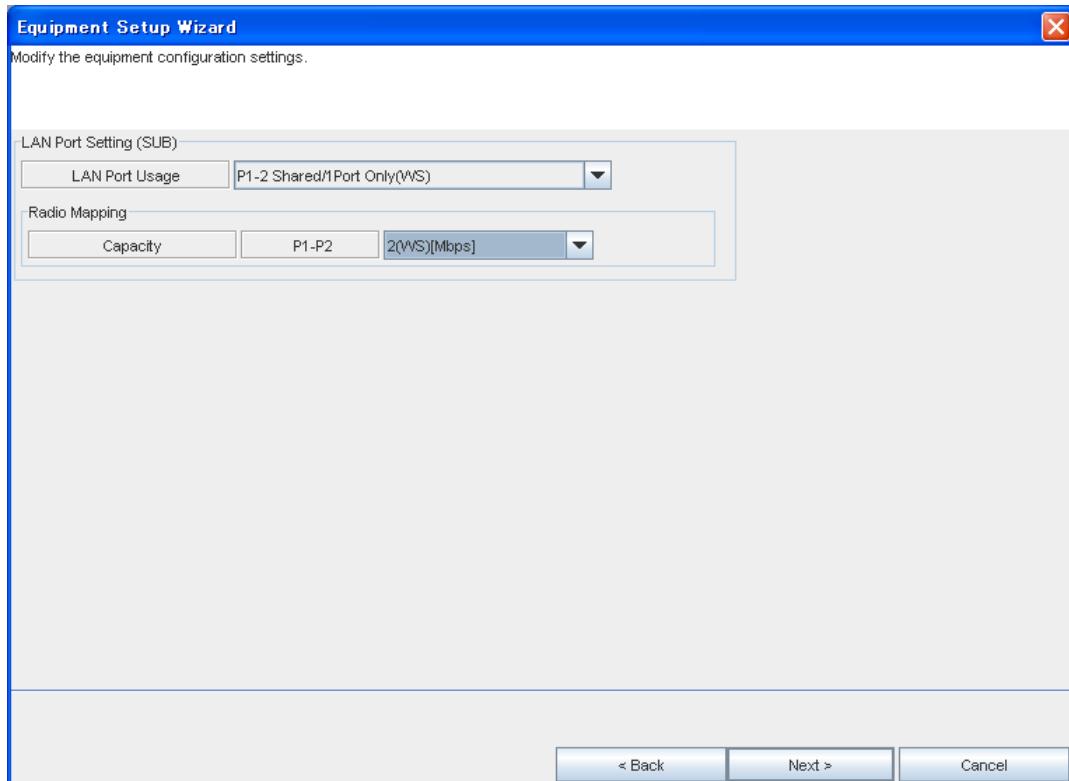
**Main (Work) - INTFC (1): STM-1 (Optical/Electrical)/2xSTM-1 (Optical/Electrical)
SUB (PROT) - INTFC (2): WS/LAN WS/LAN2**

6. 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.

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

Redundancy setting: To select the desired redundancy setting

Main (Work)-INTFC (1):   To select the desired work interface (the available options depend on the selected User Interface)

SUB (PROT)-INTFC (2):   To select the desired protection interface (the available options depend on the selected User Interface and Main (Work) interface)

XPIC Usage: To select the XPIC Usage (where supported)

APS Function: APS function can only be set when both Main (WORK) and SUB (PROT) interfaces are STM-1 (optical)

Inserted module: This function is only enabled when the interface setting and the actually inserted module do not match. It allows the setting to be updated to match the inserted module

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

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

LAN Port Usage: To select the LAN Port Usage (the available options depend on the selected User Interface)

2.19.4 Frequency Channel

1. **[Explain how to open Frequency Channel window.]** To open [Frequency Channel] Window, click [Frequency Channel] of Setup Wizard (2).

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

3. 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
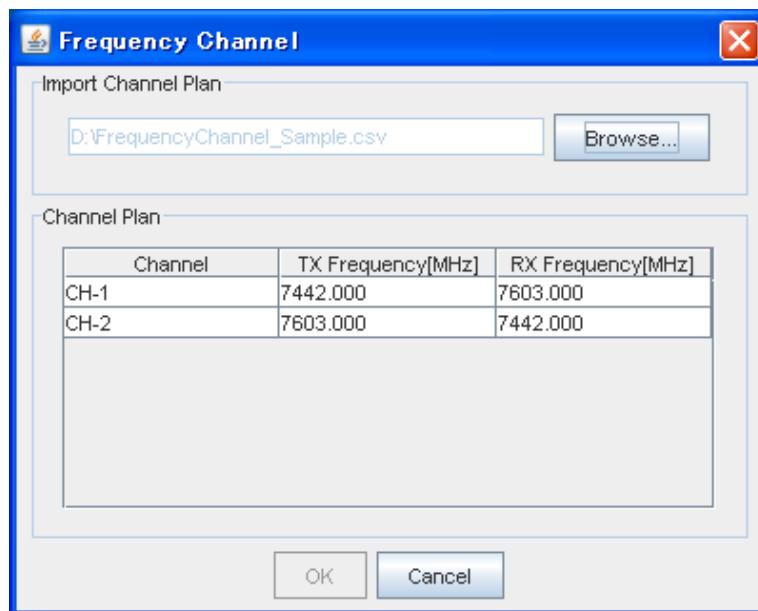
2.20 Provisioning

This window enables the main interface (MAIN INTFC), SC Assignment, MTPC / ATPC parameters, as well as error rate and other thresholds to be set.

Provisioning window

To open the Provisioning window:

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, SC and Assignment. The **Provisioning** window is shown below.

Category	Item	Status
Common	High BER Threshold	1E-3
Common	Low BER Threshold	1E-6
Common	E-BER(DMR)	1E-3
Common	SD(DMR)	1E-6
Common	E1 WS Usage	Not Used
Common	RS-232C-1	SC3
Common	RS-232C-2	SC4
Common	V11-1	Not Used
Common	V11-2	SC2
Common	SC LAN1	
Common	V11-2 Direction Setting	Co-directional
Common	LAN Port1(Main) Usage	Used
Common	LAN Port1(SUB) Usage	Not Used
Common	LAN Port2(SUB) Usage	Not Used
Common	SUB Switching Function	Disabled
Common	GbE Media Type	SFP
Common	GbE Speed & Duplex	AUTONEG(Auto 1000M Full)
Common	GbE Link Loss Forwarding	Disabled
Common	GbE Flow Control	On
Common	ATPC Threshold Level	-5[dBm]
Common	Additional ATT	3[dB]
Common	ATPC Range(MAX)	5[dB]
Common	ATPC Range(MIN)	1[dB]
Common	ATPC Power Mode	MIN
Common	COMM Alarm Mode	Hold
Common	Relay Configuration	
Common	Cluster1 Input	Enabled
Common	Cluster2 Input	Disabled
Common	Cluster3 Input	Enabled
Common	Cluster4 Input	Enabled
Common	EOW2 External Setting	Normal
Common	RX Level TCN Threshold	0.0[dBm]
Common	SES Activation Condition	15[%]
Common	Alarm Correlation Capability	On

Provisioning window

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
E-BER (MUX)	Sets the E-BER threshold for the multiplexer (MUX)	When Main(Work)-INTFC(1)=STM-1(Optical), STM-1(Electrical), 2xSTM-1(Optical) or 2xSTM-1(Electrical)
E-BER (DMR)	Sets the E-BER threshold for the digital microwave radio (DMR)	When Transmission Capacity=156MB
SD (DMR)	Sets the **Signal Degrade** threshold for the DMR	When Transmission Capacity=156MB
SD (MUX)	Sets the Signal Degrade threshold for the multiplexer (MUX)	When Main(Work)-INTFC(1)=STM-1(Optical), STM-1(Electrical), 2xSTM-1(Optical) or 2xSTM-1(Electrical)
RS-232C-1 / 2, V-11-1 / V-11-2	Assigns the respective SC to an interface	None
V-11-1 / V-11-2 Direction Setting	Enables the V-11-1 / V-11-2 service channel clocking to be set (i.e. co-directional or contra-directional)	Only if SC have been assigned (without SC assignment it is inactive)
STM-1 Usage	For enabling/disabling CH02 of STM-1	Only for 2xSTM-1 (310MB transmission)
MS-AIS Generation	For enabling/disabling the MS-AIS generation	When Main(Work)-INTFC(1)=STM-1(Optical), STM-1(Electrical), 2xSTM-1(Optical) or 2xSTM-1(Electrical)
ALS Function	The Automatic Laser Shutdown (ALS) that intermittently turns the laser output on/off after a designated interval from the start of LOS mode is "Enabled" or "Disabled")	Only when Main(Work)-INTFC(1)= STM-1(Optical), 2xSTM-1(Optical)
ALS Interval	For setting the interval (from the start of LOS) until APS Function is to be executed.	Only when ALS Function is enabled
RSOH CH select	Selects channel for dropping/inserting RSOH	When Main(Work)-INTFC(1)=STM-1(Optical), STM-1(Electrical), 2xSTM-1(Optical) or 2xSTM-1(Electrical)
E1 WS Usage	Sets the E1 Wayside usage	When usable channel for E1 WS is available.
WS Impedance	Sets the WS impedance	Only when WS is set
WS AIS Generated Report	For enabling/disabling the **AIS Generated Report**	Only when WS is set
WS AIS Received Report	For enabling/disabling the **AIS Received Report**	Only when WS is set
Port1-2 (Main/SUB) Usage	For setting the usage of the LAN interface ports (Port1 (Main), Port2 (Main), Port1 (SUB), Port2 (SUB))	Except when Port Usage=INVALID
Speed & Duplex Port1-2 (Main/SUB)	For setting the speed and duplex parameters of the LAN interface ports (Port1 (Main), Port2 (Main), Port1 (SUB), Port2 (SUB))	Only when Port1-2 (Main/SUB)
Flow Control Port1-2 (Main/SUB)	For setting the flow control parameters of the LAN interface ports (Port1 (Main), Port2 (Main), Port1 (SUB), Port2 (SUB))	Only when Port1-2 (Main/SUB) Usage is set to *Used*
Collision Report Port1-2 (Main/SUB)	For setting whether collision status is reported (or not) for the interface ports (Port1 (Main), Port2 (Main), Port1 (SUB), Port2 (SUB))	Only when Speed & Duplex Port1-2 (Main/SUB) = *AUTONEG* or *HALF-DUPLEX*
Link Loss Forwarding Port1-2 (Main/SUB)	For enabling/disabling the **Link Loss Forwarding** function for LAN interface ports (Port1 (Main), Port2 (Main), Port1 (SUB), Port2 (SUB)	Only when Port1-2 (Main/SUB) Usage is set to Used

Item/feature	Description	Specific conditions for it to be displayed/configured
Clock Source Setting	For setting the clock source of the LAN interface Port.	Only when Main (Work) – INTFC(1) = 2Port LAN over STM-1(LAN/WS) or 2Port LAN over STM-1 over STM-1(LAN/WS2)
SUB Switching Function	Allows the port switching function to be "enabled" / "disabled"	Only when SUB (PROT)= WS/LAN or WS/LAN2
GbE Media Type	Connector type for Ethernet cable port	Only when Main (Work) – INTFC (1) = GbE over STM-1 or GbE over STM-1/300MB.
GbE Speed & Duplex	For setting the GbE speed and duplex parameters of the LAN interface Port	Only when Main (Work) – INTFC (1) = GbE over STM-1 or GbE over STM-1/300MB
GbE Link Loss Forwarding	For enabling/disabling the GbE **Link Loss Forwarding** function for LAN interface Port	Only when Main(Work)-INTFC(1)=GbE over STM-1 or GbE over STM-1/300MB
GbE Flow Control	For setting the GbE flow control parameters of the LAN interface Port	Only when Main (Work) – INTFC (1) = GbE over STM-1 or GbE over STM-1/300MB
MTPC TX Power	Allows the transmission power (dB) to be set for MTPC operation.	Only when Tx Power Control=MTPC, XPIC Usage=Not Used or Used(Main Master)
ATPC Threshold Level	Allows the transmission power (dB) thresholds to be set for ATPC operation.	Only when XPIC Usage=Not Used or Used(Main Master)
Additional ATT	For setting the additional attenuation parameters (dB)	Only when XPIC Usage=Not Used or Used(Main Master)
ATPC Range (Max / Min)	For setting the minimum and maximum ATPC transmission power (dB).	Only when Tx Power Control=ATPC, XPIC Usage=Not Used or Used(Main Master)
ATPC Power Mode	For setting the power mode (Hold: maintaining present status, MIN: minimum level).	Only when Tx Power Control=ATPC, XPIC Usage=Not Used or Used(Main Master)
COMM Alarm Mode	Select ODU output powermode when the communication failes between IDU and ODU due to some problemes.	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 the TX SW Lock-in Usage	Only when TX SW Priority is "Priority No.1"
TX SW Reverse Function	For setting the TX SW Reverse Function	Only when TX SW Priority is "Non Priority"
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 / Twin path
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 / Twin path
APS Maintenance Mode	Has two settings: "manual" for disabling APS and "forced" for overriding the disabled APS.	Only when APS Function is enabled
APS Condition-SF	For setting whether **Signal Fail** is to be included in the parameters.	Only when APS Function is enabled
APS Condition-Signal Degrade	For setting whether **Signal Degrade** is to be included in the parameters.	Only when APS Function is enabled
Lock-in Usage	Allows the **Lock-in** Usage to be "Used" or"Not Used"	Only when APS Function is enabled

Item/feature	Description	Specific conditions for it to be displayed/configured
Lock-in Count	For setting the number ("count") of oscillations (within the preset **"Detect[ion] Time"**) that will activate the **Lock-in**	Only when **Lock-in** Usage is "enabled"
Lock-in Detect Time	For setting the length of the time interval within which the **Lock-in Count** is conducted.	Only when **Lock-in** Usage is "enabled"
Lock-in Hold Time	Sets the duration for maintaining ("holding") the **Lock-in** Usage	Only when **Lock-in** Usage is "Used"
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 - 4 Input	Allows the cluster alarm input to be enabled/ disabled.	None
EOW2 External Setting	Enables appropriate EOW2 calling system signal polarity to be set: "normal" when the NEO HP IDU is connected to another NEO HP IDU or a PASOLINK IDU; "invert" when connected to PASOLINK+ IDU or Mx IDU	None
RX Level TCN Threshold	For setting the threshold at which the TCN is displayed	None
XPIC Condition-Local Fail	For setting operation after Ref Local Alarm is issued	Only when XPIC Usage is Used(Main Master), Used(Sub Master)
SES Activation Condition	Enables setting of the low threshold (%) that activates SES	None
Alarm Correlation Capability	Allows the suppression of secondary (downstream) alarms to be turned on/off	None

2.20.1 BER Threshold Setting

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

To change the BER threshold setting:
1. Select the BER threshold for each item.
2. Click the **[Execute]** button to apply changes.
3. Click the **[Close]** button when finished.
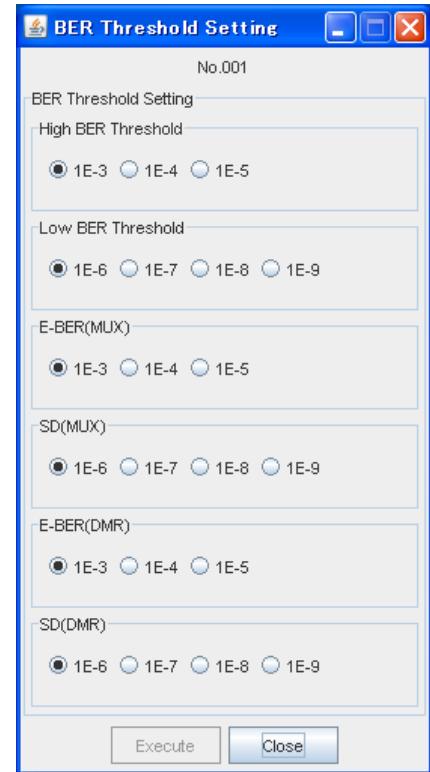
2.20.2 SC Assignment

In this window, interface type (e.g. LAN, RS-232C, V11) that is available for user channels (DSC) can be assigned and displayed. Setting the type of directional interface for SC3 and SC4 is also possible.

2.20.3   LAN Port Setting

Allows the LAN Port settings to be input or changed.
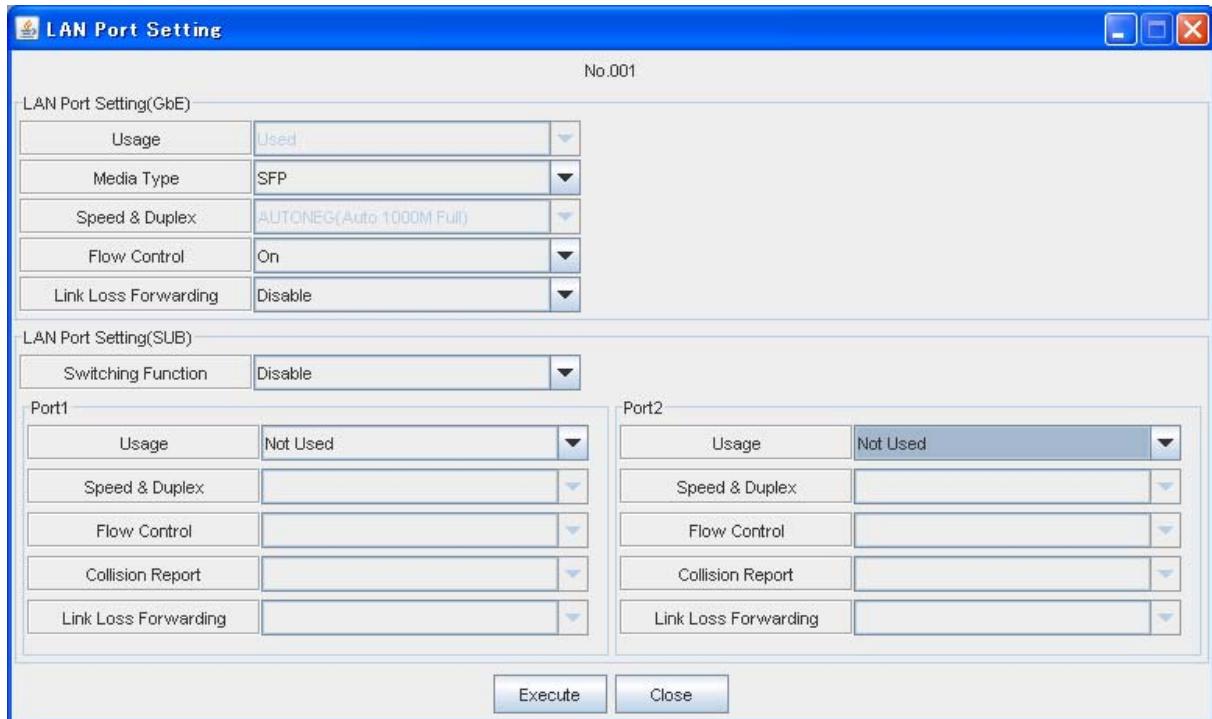
**Main (Work) - INTFC (1): GbE over STM-1/GbE over STM-1/300MB
SUB (PROT) - INTFC (2): WS/LAN WS/LAN2**
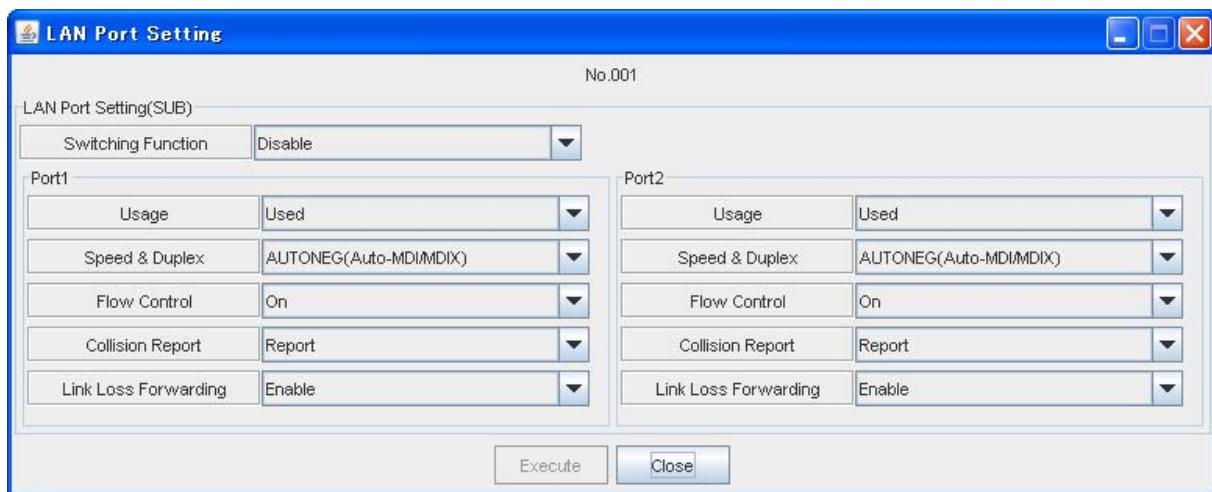
**Main (Work) - INTFC (1): STM-1 (Optical/Electrical)/2xSTM-1 (Optical/Electrical)
SUB (PROT) - INTFC (2): WS/LAN WS/LAN2**

2.20.4 ALS (Automatic Laser Shutdown)

When the ALS is enabled, the laser emission will be cut off after a certain period has elapsed after the IDU has issued an STM-1 LOS. If the ALS is disabled, the laser emission will continue perpetually.

To change the ALS settings:

1. Select **Enable**/**Disable**.

2. Select **ALS Interval**.

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

4. Click the **[Close]** button when finished.
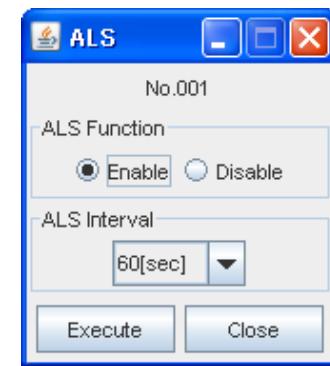
2.20.5 TX Power CTRL

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

To change the TX Power settings:

1. Enter the desired value for each item in the **TX Power CTRL** field.

2. Select **ATPC Power Mode**. (if enabled)

3. Select **COMM Alarm Mode**.

4. Click the **[Execute]** button to apply changes.

5. Click the **[Close]** button when finished.
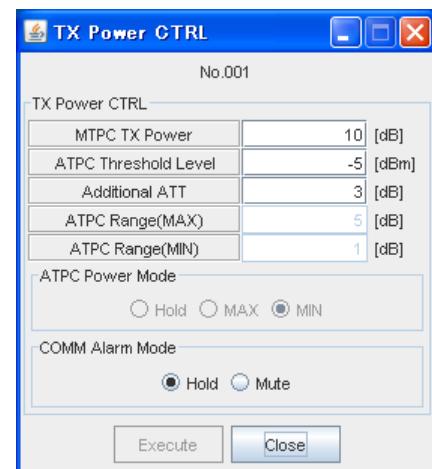
2.20.6   SW Condition

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

To change the switching parameters:

1. Select the **Priority**, **Lock in Usage**, and **Reverse Function** in the **TX SW** field.

2. Select the **Priority**, **Maintenance Mode** and **Condition-Early Warning** in the **RX SW** field.

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

4. Click the **[Close]** button when finished.
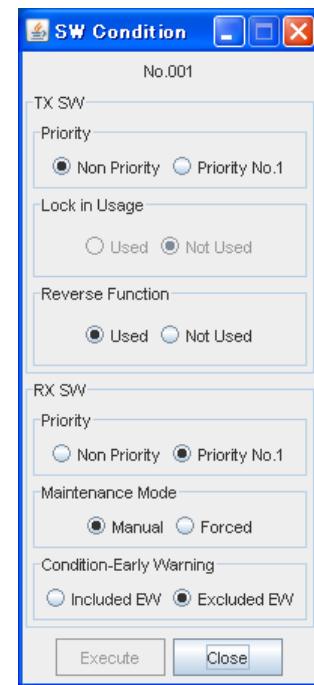
2.20.7   SW Condition (APS)

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

To change the switching parameters:

1. Select the desired setting in the **Maintenance Mode**, **Condition-SF**, **Condition-Signal Degrade** and **Lock in Usage** field.

2. Enter the desired value for **Lock in Count**, **Lock in Detect Time** and **Lock in Hold Time** field.

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

4. Click the **[Close]** button when finished.
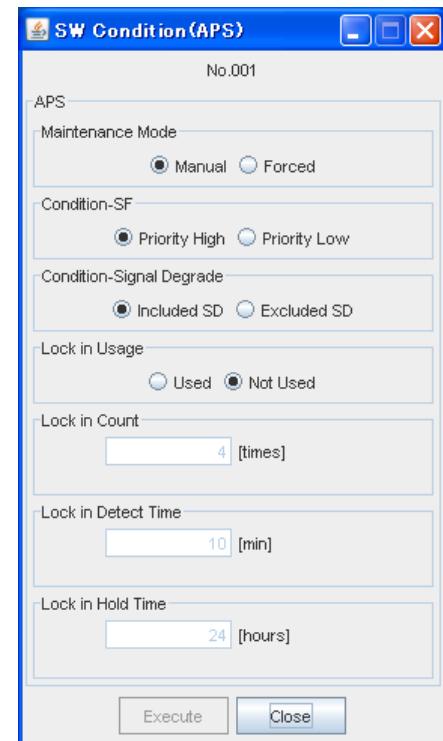
2.20.8　Relay Configuration

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.

Relay Configuration	RL01	RL02	RL03	RL04	RL05	RL06
HK OUT1						HK
HK OUT2						
HK OUT3						
HK OUT4						
CLUSTER ALM OUT1						
CLUSTER ALM OUT2					Out	
CLUSTER ALM OUT3						
CLUSTER ALM OUT4						
MAINT	Out		Mask	Mask	Mask	Mask
IDU CPU ALM		Out				
PS ALM (No.1)		Out				
PS ALM (No.2)		Out				
ODU ALM (No.1)			Out			
ODU ALM (No.2)				Out		
ODU CPU ALM (No.1)						
ODU CPU ALM (No.2)						
TX PWR ALM (No.1)						
TX PWR ALM (No.2)						
TX INPUT ALM (No.1)						
TX INPUT ALM (No.2)						
APC ALM (No.1)						
APC ALM (No.2)						
RX LEVEL ALM (No.1)						
RX LEVEL ALM (No.2)						
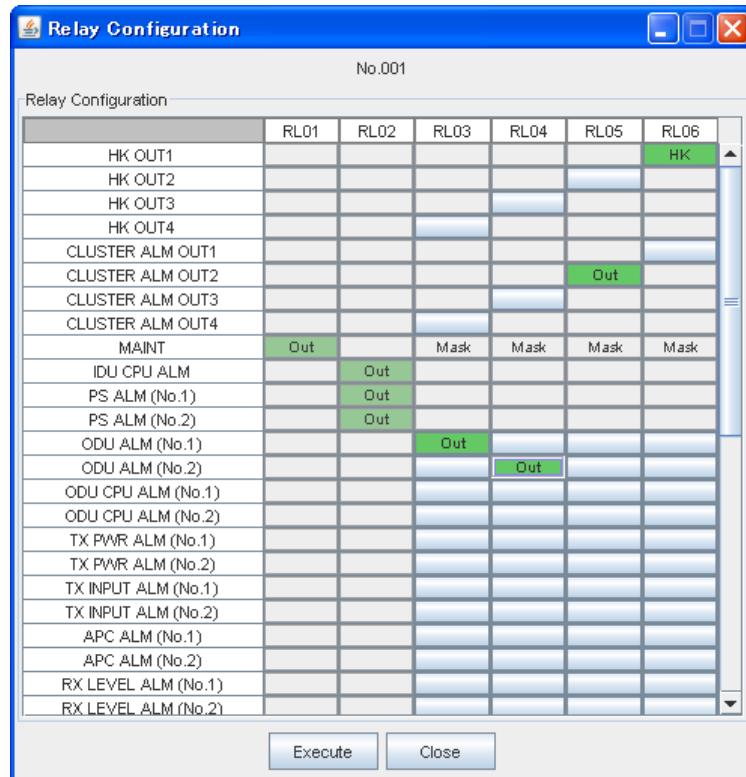
Execute　Close

2.20.9　Cluster Alarm Input

Cluster alarms can be enabled/disabled with this window.

To change the Cluster Alarm Input settings:

1. Select **Enable**/**Disable** in the **Cluster1~4 Input** field.

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

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

Cluster Alarm Input

No.001

Cluster1 Input
　○ Enable　⦿ Disable

Cluster2 Input
　⦿ Enable　○ Disable

Cluster3 Input
　⦿ Enable　○ Disable

Cluster4 Input
　○ Enable　⦿ Disable

Execute　Close
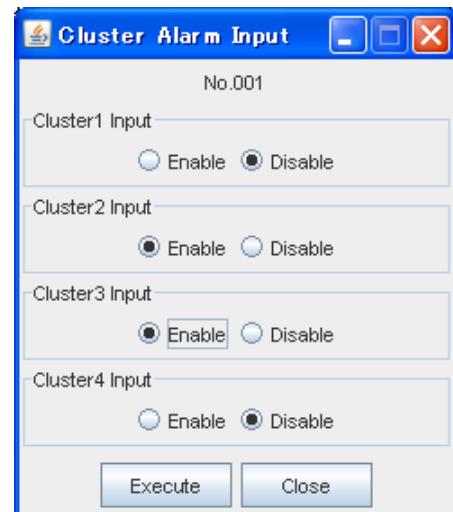
2.20.10 EOW2 External Setting

The EOW2 calling system signal polarity can be set here.

To change the EOW2 External settings:

1. Select **Normal** when the NEO HP IDU is connected to another NEO HP IDU or PASOLINK IDU.

2. Select **Invert** when the NEO HP IDU is connected to PASOLINK+ IDU or Mx IDU.

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

4. Click the **[Close]** button when finished.
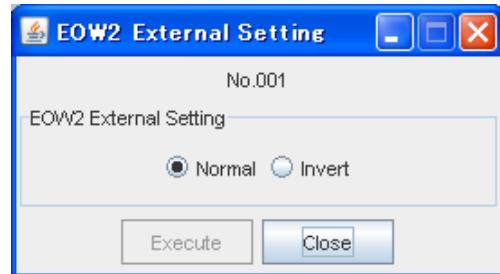
2.20.11 PMON Select

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

To change the PMON Select settings:

1. Enter the desired **RX Level TCN Threshold** value in the **No.1** and **No.2** field.

2. Select the **SES Activation Condition** percentage.

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

4. Click the **[Close]** button when finished.
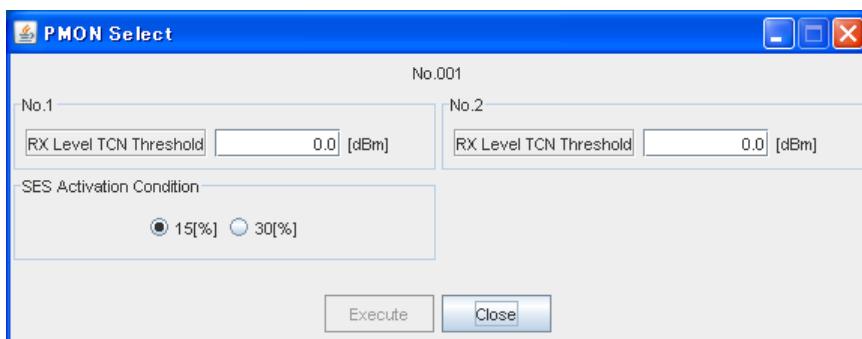
2.20.12 Alarm Correlation Capability

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

To change the alarm correlation capability:

1. Select **On/Off** depending on desired state.

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

3. Click the **[Close]** button when finished.
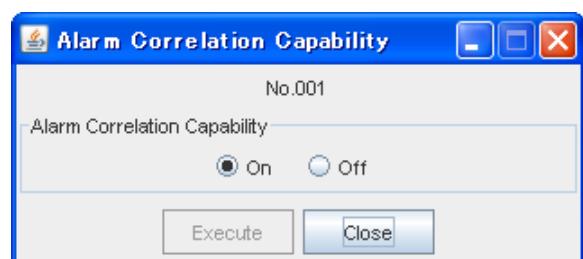
2.20.13 XPIC Condition – Local Fail

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

To change the XPIC Condition – Local Fail

1. To switch operation of ODU from Lo synchronization to self synchronization, select [RefLo=>SelfLo].

2. To set mute and stop transmission, select [Mute].

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

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

2.21 Link Performance Monitor

The following performance-related 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 the 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.

2.21.1   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)**.

You can delete the target NE's PMON/RMON data by selecting the **[All Data Clear]** and clicking **[Execute]**.
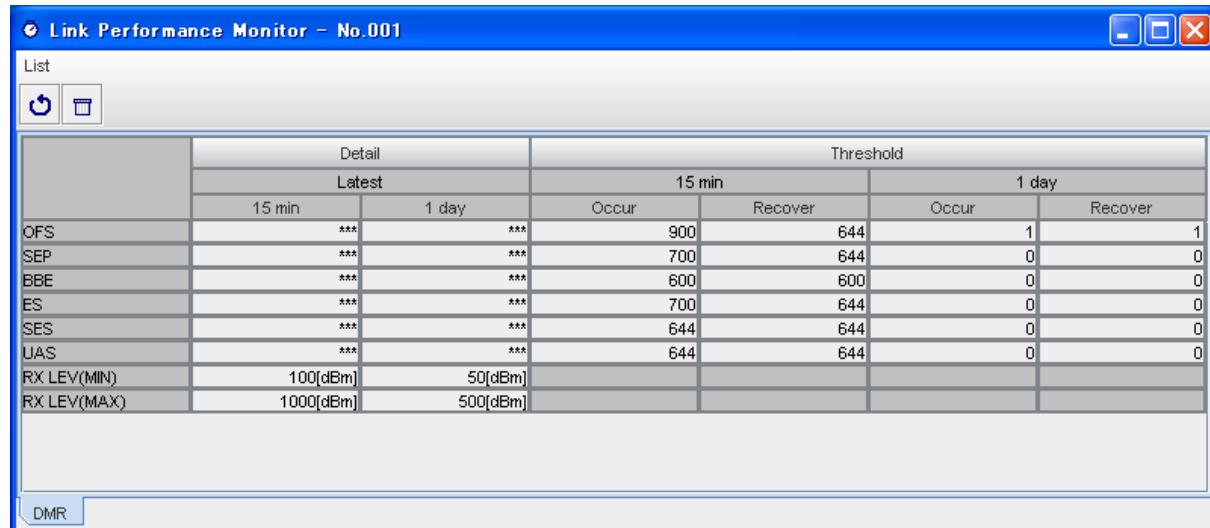
	Detail		Threshold			
	Latest		15 min		1 day	
	15 min	1 day	Occur	Recover	Occur	Recover
OFS	***	***	900	644	1	1
SEP	***	***	700	644	0	0
BBE	***	***	600	600	0	0
ES	***	***	700	644	0	0
SES	***	***	644	644	0	0
UAS	***	***	644	644	0	0
RX LEV(MIN)	100[dBm]	50[dBm]				
RX LEV(MAX)	1000[dBm]	500[dBm]				

(Link Performance Monitor – No.001 window, tab: DMR)

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.

2.21.2   Threshold Setting

To set the threshold values:

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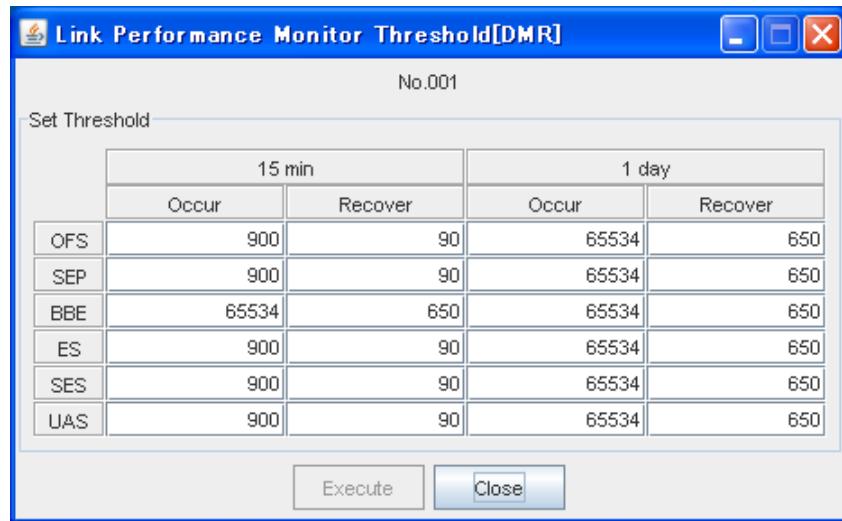
Summary Link Performance Monitor Threshold

2. Select the performance-related items that are 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 **[Execute]** button to activate the new settings.

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

2.21.3 Link Performance Monitor (1day / 15 min. Data) window

To view the 1day Data:

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

Link Performance Monitor (1 day Data) window

To view the 15-min. Data:

1. Click 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 USB cable connecting the IDU with the PC.

2.22 Remote Network Monitoring (RMON)

Remote Network Monitoring (RMON) function can monitor the signal through the LAN port, both LINE-side (the port on the NE) and DMR side. RMON can count the number of received or transmitted packets and packets errors. These items are then displayed in the PNMT.

The following RMON items can be monitored:

RMON	**RX Unicast Pkts** – the total number of unicast packets received. This item measures from 64 octets to 1536 octets.
	RX Broadcast Pkts – the total number of packets received that were directed to the broadcast address. This item measures from 64 to 1536 octets in length.
	RX Multicast Pkts – the total number of packets received that were directed to a multicast address. This item measures from 64 to 1536 octets in length.
	RX Pause Pkts – the total number of packets received that were paused.
	RX CRC Errors – the total number of packets received that detected FCS error. This item measures from 64 to 1536 octets in length.
	RX Align Errors – the total number of packets received that detected Alignment error. This item measures from 64 to 1536 octets in length.
	RX Symbol Errors – the total number of packets received that detected Symbol error. This item measures from 64 to 1536 octets in length.
	RX Undersize Pkts – the total number of good packets received that were less than 64 octets in length.
	RX Fragments – the total number of packets (Including bad packets) received that were less than 64 octets in length.
	RX Pkts 64 – the total number of packets (Including bad packets) received that were 64 octets in length.
	RX Pkts 65-127 – the total number of packets (Including bad packets) received that were between 65 and 127 octets in length.
	RX Pkts 128-255 – the total number of packets (Including bad packets) received that were between 128 and 255 octets in length.
	RX Pkts 256-511 – the total number of packets (Including bad packets) received that were between 256 and 511 octets in length.
	RX Pkts 512-1023 – the total number of packets (Including bad packets) received that were between 512 and 1023 octets in length.
	RX Pkts 1024-1536 – the total number of packets (Including bad packets) received that were between 1024 and 1536 octets in length.
	RX Pkts 1537-MAX – the total number of good packets received that were between 1537 and 1916 octets in length.
	RX Jabbers – the total number of packets received (Including bad packets) that were longer than 1537 octets.
	TX Unicast Pkts – the total number of unicast packets transmitted. This item measures from 64 to 1916 octets in length.
	TX Broadcast Pkts – the total number of packets transmitted that were directed to the broadcast address. This item measures from 64 to 1916 octets in length.
	TX Multicast Pkts – the total number of packets transmitted that were directed to a multicast address. This item measures from 64 to 1916 octets in length.
	TX Pause Pkts – the total number of packets transmitted that were paused.
	TX Total Collisions – the total number of collisions when it is transmitting.

NOTE:

If an item causes overflow,"+" will be shown in front of the number.

If an item is invalid, "" will be shown in front of the number. When the total number is incomplete, it will be shown as invalid.*

During maintenance mode, an item will be highlighted in the maintenance color (yellow as default).

2.22.1 Viewing LAN INTFC RMON [Current]

This window contains the latest 15-minute data (15-min) and to the current day's total data (Daily) for all RMON items.

To view RMON LAN INTFC **[Current]** Monitor:

Select **Performance Monitor** → **LAN INTFC RMON [Current]** in the **NE-specific** menu bar of the target NE that you intend to monitor.

You can delete the target NE's PMON/RMON data by selecting the **[All Data Clear]** and clicking **[Execute]**.
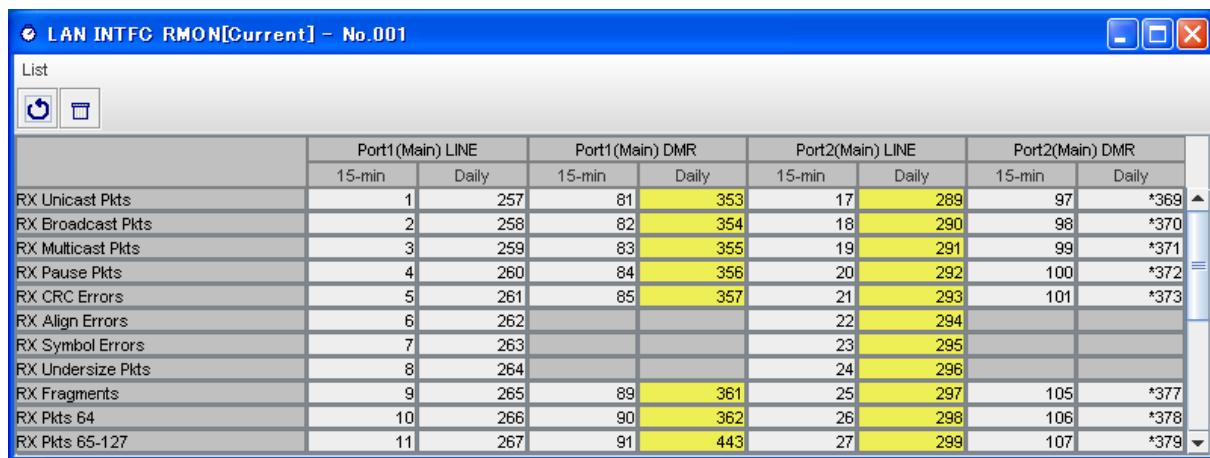
	Port1(Main) LINE		Port1(Main) DMR		Port2(Main) LINE		Port2(Main) DMR	
	15-min	Daily	15-min	Daily	15-min	Daily	15-min	Daily
RX Unicast Pkts	1	257	81	353	17	289	97	*369
RX Broadcast Pkts	2	258	82	354	18	290	98	*370
RX Multicast Pkts	3	259	83	355	19	291	99	*371
RX Pause Pkts	4	260	84	356	20	292	100	*372
RX CRC Errors	5	261	85	357	21	293	101	*373
RX Align Errors	6	262			22	294		
RX Symbol Errors	7	263			23	295		
RX Undersize Pkts	8	264			24	296		
RX Fragments	9	265	89	361	25	297	105	*377
RX Pkts 64	10	266	90	362	26	298	106	*378
RX Pkts 65-127	11	267	91	443	27	299	107	*379

LAN INTFC RMON [Current] window

This data can be refreshed by selecting **List** → **Refresh** menu or clicking on Refresh icon.

When WS/LAN is set in SUB (PROT) - INTFC (2), Port x (Main) and Port x (SUB) will be separately displayed

	Port1(Main) LINE		Port1(Main) DMR		Port2(Main) LINE		Port2(Main) DMR		Port1(SUB) LINE		Port1(SUB) DMR		Port2(SUB) LINE		Port2(SUB) DMR	
	15-min	Daily	15-min	Daily	15-min	Daily	15-min	Daily	15-min	Daily	15-min	Daily	15-min	Daily	15-min	Daily
RX Unicast Pkts	1	257	81	353	17	289	*97	*369	33	*305	113	*385	49	*321		
RX Broadcast Pkts	2	258	82	354	18	290	*98	*370	34	*306	114	*386	50	*322		
RX Multicast Pkts	3	259	83	355	19	291	*99	*371	35	*307	115	*387	51	*323		
RX Pause Pkts	4	260	84	356	20	292	*100	*372	36	*308	116	*388	52	*324		
RX CRC Errors	5	261	85	357	21	293	*101	*373	37	*309	117	*389	53	*325		
RX Align Errors	6	262			22	294			38	*310			54	*326		
RX Symbol Errors	7	263			23	295			39	*311			55	*327		
RX Undersize Pkts	8	264			24	296			40	*312			56	*328		
RX Fragments	9	265	89	361	25	297	*105	*377	41	*313	121	*393	57	*329		
RX Pkts 64	10	266	90	362	26	298	*106	*378	42	*314	122	*394	58	*330		
RX Pkts 65-127	11	267	91	443	27	299	*107	*379	43	*315	123	*395	59	*331		
RX Pkts 128-255	12	268	92	444	28	300	*108	*380	44	*316	124	*396	60	*332		
RX Pkts 256-511	13	269	93	445	29	301	*109	*381	45	*317	125	*397	61	*333		
RX Pkts 512-1023	14	270	94	446	30	302	*110	*382	46	*318	126	*398	62	*334		
RX Pkts 1024-1536	15	271	95	447	31	303	*111	*383	47	*319	127	*399	63	*335		
RX Pkts 1537-Max	16	272	96	368	32	304	*112	*384	48	*320	128	*400	64	*336		
RX Jabbers	17	273	97	369	33	305	*113	*385	49	*321	129	*401	65	*337		
TX Unicast Pkts	18	274	98	370	34	306	*114	*386	50	*322	130	*402	66	*338		
TX Broadcast Pkts	19	275	99	371	35	307	*115	*387	51	*323	131	*403	67	*339		
TX Multicast Pkts	20	276	100	372	36	308	*116	*388	52	*324	132	*404	68	*340		
TX Pause Pkts	21	277	101	373	37	309	*117	*389	53	*325	133	*405	69	*341		
TX Total Collisions	22	278			38	310			54	*326			70	*342		

2.22.2 Viewing LAN INTFC RMON [15-min]

This window contains the total 15-minute data (for 24 hours) for all RMON items.

To view LAN INTFC RMON [15-min] Monitor:

1. Select **Performance Monitor** → **LAN INTFC RMON [15-min]** in the **NE-specific** menu bar of the target NE that you intend to monitor.

		Port1(Main) LINE			
		RX Unicast Pkts	RX Broadcast Pkts	RX Multicast Pkts	
01/20/2009	00:00-00:15	8	9	10	
01/20/2009	00:15-00:30	184	185	186	
01/20/2009	00:30-00:45	360	361	362	
01/20/2009	00:45-01:00	*536	*537	*538	
01/20/2009	01:00-01:15	712	713	714	
01/20/2009	01:15-01:30	*888	*889	*890	
01/20/2009	01:30-01:45	1064	1065	1066	
01/20/2009	01:45-02:00	1240	1241	1242	
01/20/2009	02:00-02:15	1416	1417	1418	

Ready   File Size: 214429 Bytes   100%

LAN INTFC RMON [15-min] window

2. This data can be saved by selecting **File** → **Save All Data** menu or clicking on Save All Data 💾 icon. The default file name that it will be saved to is **"15min.rmon"**.

3. This data can be refreshed by selecting **File → Reload** menu or clicking on Reload
    icon.

4. This data can be sorted by port or Item by selecting **Sort → Port Sort** or **Item Sort**
    menu.

5. The viewing RMON items can be selected with the **Select window**.

If a WS/LAN or WS/LAN2 is set in the SUB (PROT) - INTFC (2), Port x (Main) and Port x
(SUB) will be displayed separately.

WARNING!!!

**While data is being updated, do not remove the USB
cable connecting the IDU with the PC.**

To view the *Select window:*

1. Choose **Select → Select** menu.

ID	Item	LINE Port1	LINE Port2	DMR Port1	DMR Port2
01	RX Unicast Pkts	✔	✔	✔	✔
02	RX Broadcast Pkts	✔	✔	✔	✔
03	RX Multicast Pkts	✔	✔	✔	✔
04	RX Pause Pkts	✔	✔	✔	✔
05	RX CRC Errors	✔	✔	✔	✔
06	RX Align Errors	✔	✔	☐	☐
07	RX Symbol Errors	✔	✔	☐	☐
08	RX Undersize Pkts	✔	✔	☐	☐
09	RX Fragments	✔	✔	✔	✔
10	RX Pkts 64	✔	✔	✔	✔
11	RX Pkts 65-127	✔	✔	✔	✔
12	RX Pkts 128-255	✔	✔	✔	✔
13	RX Pkts 256-511	✔	✔	✔	✔
14	RX Pkts 512-1023	✔	✔	✔	✔
15	RX Pkts 1024-1536	✔	✔	✔	✔
16	RX Pkts 1537-Max	✔	✔	✔	✔
17	RX Jabbers	✔	✔	✔	✔
18	TX Unicast Pkts	✔	✔	✔	✔
19	TX Broadcast Pkts	✔	✔	✔	✔
20	TX Multicast Pkts	✔	✔	✔	✔
21	TX Pause Pkts	✔	✔	✔	✔
22	TX Total Collisions	✔	✔	☐	☐

RMON Select[15-min Data]

Select Item

OK   Cancel

LAN INTFC RMON [15-min] Select window

You can select/deselect the items that you wish to view by clicking the list [▼] icon and selecting from the pull down menu {Select All / Clear All}, Package control of all items can be carried out for individual Port.

2.22.3 Viewing LAN INTFC RMON [Daily]

This window contains the daily data in 7 days for all RMON items.

To view RMON LAN INTFC [Daily] Monitor:

1. Select **Performance Monitor → LAN INTFC RMON [Daily]** in the **NE-specific** menu bar of the target NE that you intend to monitor.

RMON [Daily Data] – No.001

File   Select   Sort
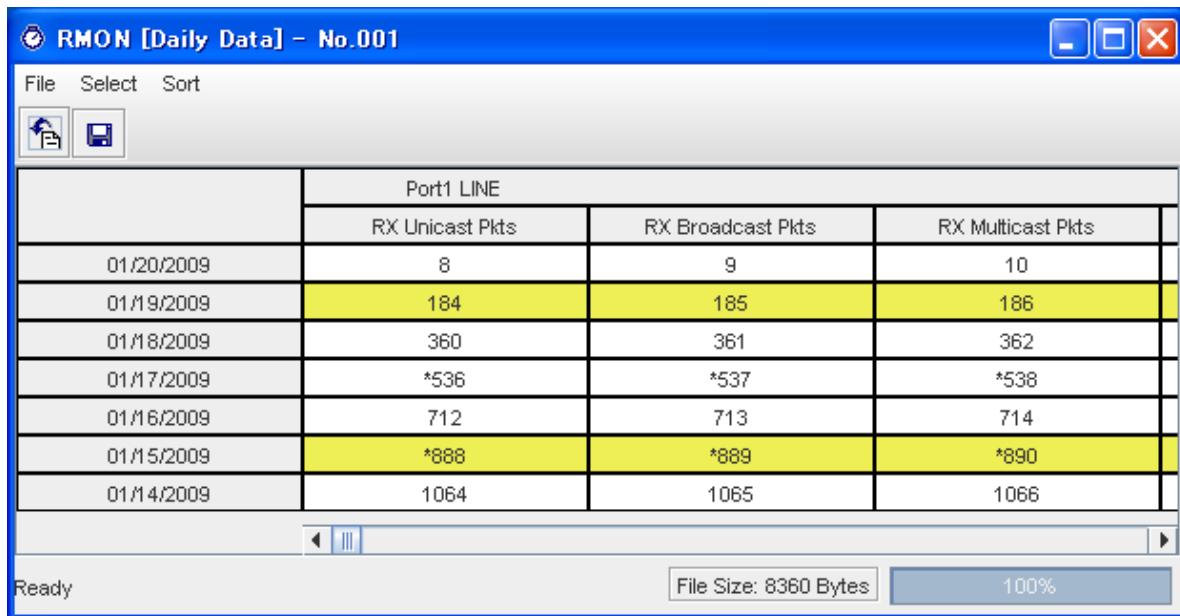
	Port1 LINE		
	RX Unicast Pkts	RX Broadcast Pkts	RX Multicast Pkts
01/20/2009	8	9	10
01/19/2009	184	185	186
01/18/2009	360	361	362
01/17/2009	*536	*537	*538
01/16/2009	712	713	714
01/15/2009	*888	*889	*890
01/14/2009	1064	1065	1066

Ready   File Size: 8360 Bytes   100%

LAN INTFC RMON [Daily] window

2. This data can be saved for all items by selecting **File → Save All Data** menu or clicking on **Save All Data** 💾 icon. The default file name is **"daily.rmon"**.

3. This data can be refreshed by selecting **File → Reload** menu or clicking on Reload 📂 icon.

4. This data can be sorted by port or Item by selecting **Sort → Port Sort** or **Item Sort** menu.

5. The viewing RMON items can be selected with the **Select window**.

If a WS/LAN or WS/LAN2 is set in the SUB (PROT) - INTFC (2), Port x (Main) and Port x (SUB) will be separately displayed.

To view the *Select window:*

Go to **Select** → **Select** menu.

ID	Item	(Main)LINE		(SUB)LINE		(Main)DMR		(SUB)DMR	
		Port1 ▼	Port2 ▼	Port1 ▼	Port2 ▼	Port1 ▼	Port2 ▼	Port1 ▼	Port2 ▼
01	RX Unicast Pkts	✔	✔	☐	☐	✔	✔	☐	☐
02	RX Broadcast Pkts	✔	✔	☐	☐	✔	✔	☐	☐
03	RX Multicast Pkts	✔	✔	☐	☐	✔	✔	☐	☐
04	RX Pause Pkts	✔	✔	☐	☐	✔	✔	☐	☐
05	RX CRC Errors	✔	✔	☐	☐	✔	✔	☐	☐
06	RX Align Errors	✔	✔	☐	☐	☐	☐	☐	☐
07	RX Symbol Errors	✔	✔	☐	☐	☐	☐	☐	☐
08	RX Undersize Pkts	✔	✔	☐	☐	☐	☐	☐	☐
09	RX Fragments	✔	✔	☐	☐	✔	✔	☐	☐
10	RX Pkts 64	✔	✔	☐	☐	✔	✔	☐	☐
11	RX Pkts 65-127	✔	✔	☐	☐	✔	✔	☐	☐
12	RX Pkts 128-255	✔	✔	☐	☐	✔	✔	☐	☐
13	RX Pkts 256-511	✔	✔	☐	☐	✔	✔	☐	☐
14	RX Pkts 512-1023	✔	✔	☐	☐	✔	✔	☐	☐
15	RX Pkts 1024-1536	✔	✔	☐	☐	✔	✔	☐	☐
16	RX Pkts 1537-Max	✔	✔	☐	☐	✔	✔	☐	☐
17	RX Jabbers	✔	✔	☐	☐	✔	✔	☐	☐
18	TX Unicast Pkts	✔	✔	☐	☐	✔	✔	☐	☐
19	TX Broadcast Pkts	✔	✔	☐	☐	✔	✔	☐	☐
20	TX Multicast Pkts	✔	✔	☐	☐	✔	✔	☐	☐
21	TX Pause Pkts	✔	✔	☐	☐	✔	✔	☐	☐
22	TX Total Collisions	✔	✔	☐	☐	☐	☐	☐	☐

RMON Select[15-min Data]

Select Item

OK   Cancel

LAN INTFC RMON [Daily] Select window

You can select/deselect the items that you want to be shown by clicking on the list [▼] button and selecting from the pull-down menu {Select All / Clear All}. Package control of all items can be carried out for individual port.

2.23 Event Log

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

2.23.1   Event Log monitor

1. Click **[Event 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 USB cable connecting the IDU with the PC.


2.24 Inventory Tab

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

2.24.1   Inventory Monitor

To display the equipment version:

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

2. The Inventory window shows the Code No., Date of Manufacture, Serial No., Hardware Type and Software Version of the equipment.
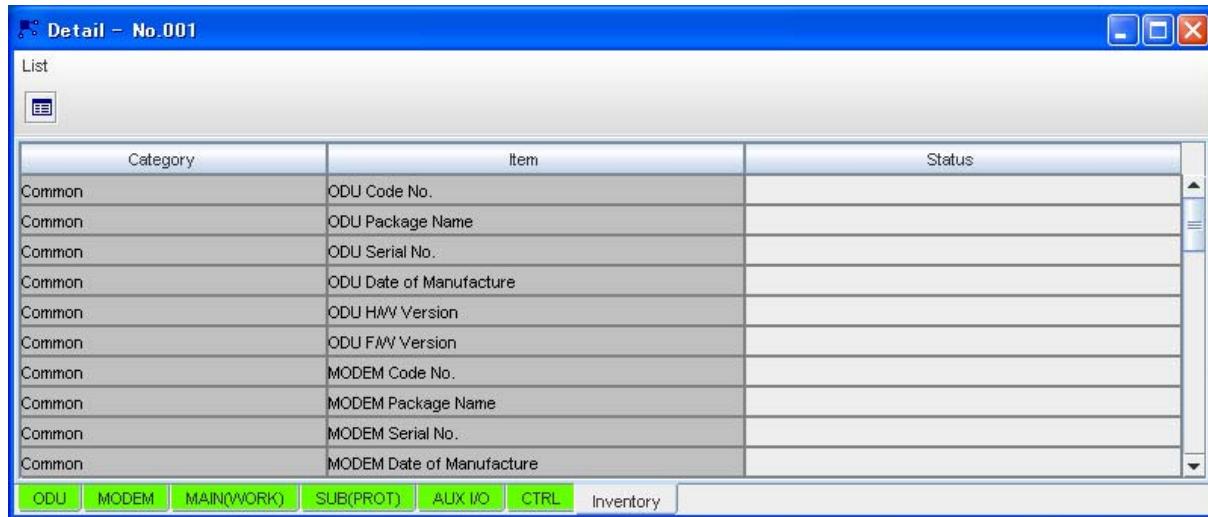
Category	Item	Status
Common	ODU Code No.	
Common	ODU Package Name	
Common	ODU Serial No.	
Common	ODU Date of Manufacture	
Common	ODU H/W Version	
Common	ODU F/W Version	
Common	MODEM Code No.	
Common	MODEM Package Name	
Common	MODEM Serial No.	
Common	MODEM Date of Manufacture	

ODU   MODEM   MAIN(WORK)   SUB(PROT)   AUX I/O   CTRL   Inventory

1. In *Category* → **General** and select **CTRL Type** (**CTRL Type** and **Branch NE Type**)
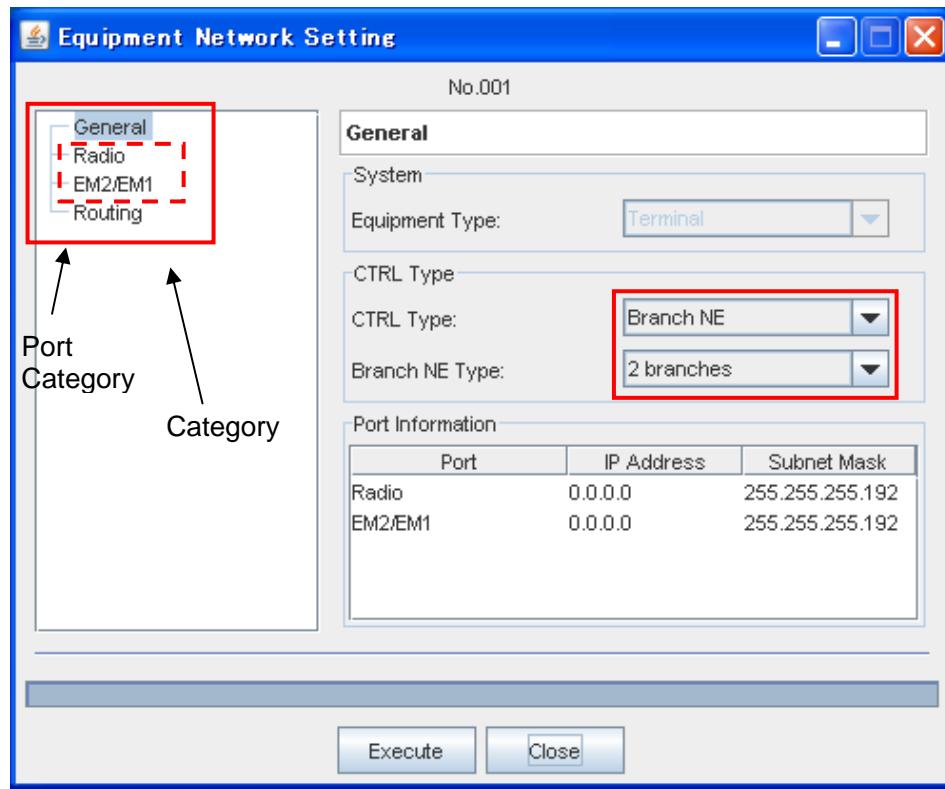
The NE will appear as follows according to configuration.

- 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

- Normal NE

    All other NEs (except the above-mentioned) are simply referred to as *Normal NEs.*

2. The **Port Category** item changes according to **CTRL Type** (**CTRL Type** and **Branch NE Type**).
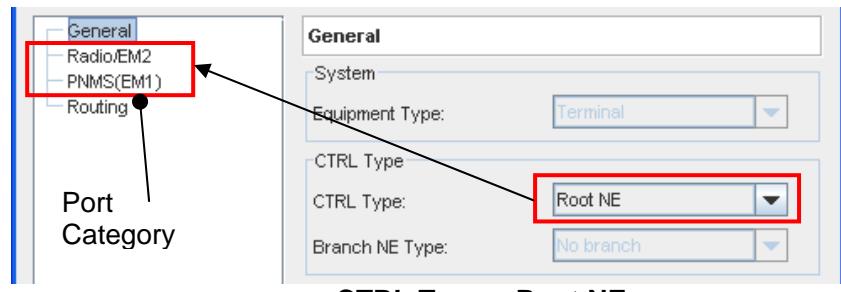
CTRL Type = Root NE
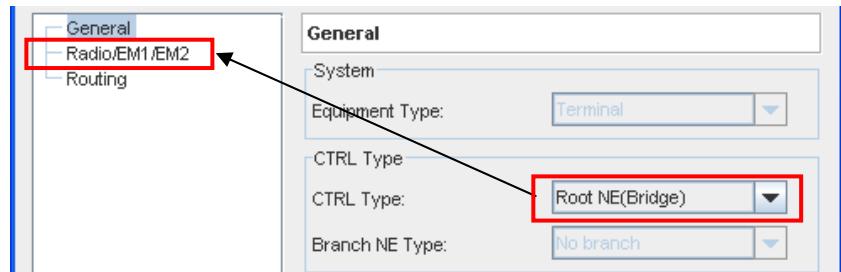
CTRL Type = Root NE(Bridge)
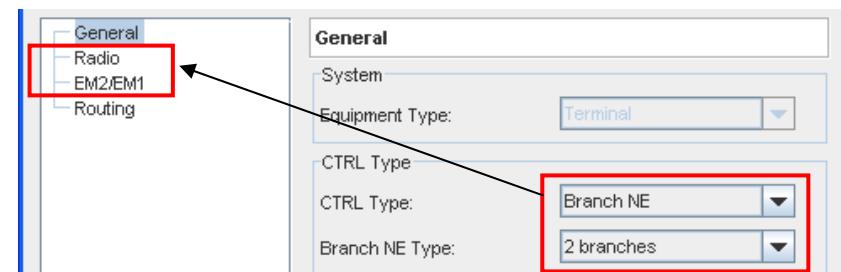
CTRL Type = Branch NE or Branch NE Type = 2 Braches
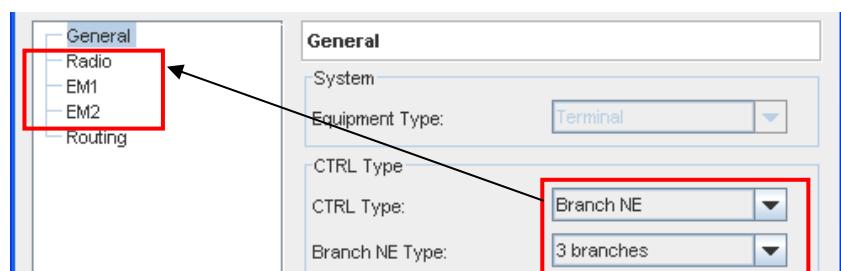
CTRL Type = Branch NE or Branch NE Type = 3 Branches
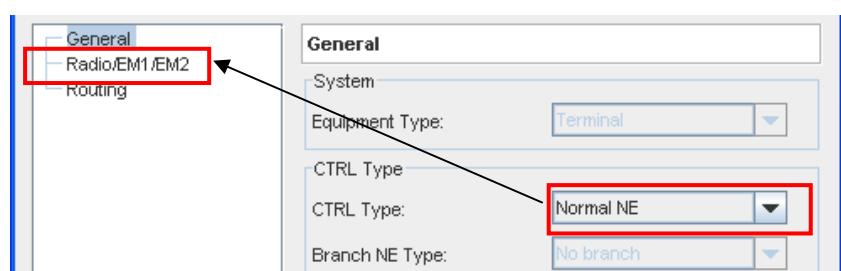
CTRL Type = Normal NE

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 **CTRL Type** when **Branch NE** is selected.

- IP Address & Subnet Mask

  The following items are set to each Port

PNMS (EM1)

PNMS (V11)

Radio or EM1 or EM2 or EM1/EM2

Radio/EM2

Radio/EM1/EM2

4.   Select and set **Routing**.

   4-1   If there is not subnet in the network, **Static Routing table** will not show any entries.
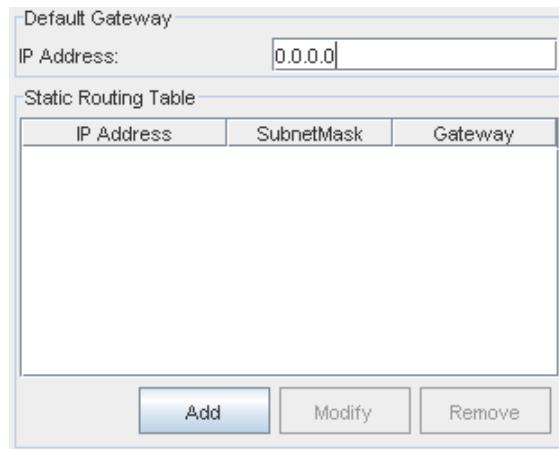
   4-2   In case of several subnet in the Network click **[add]** to entry the required value in **Static Routing Table**
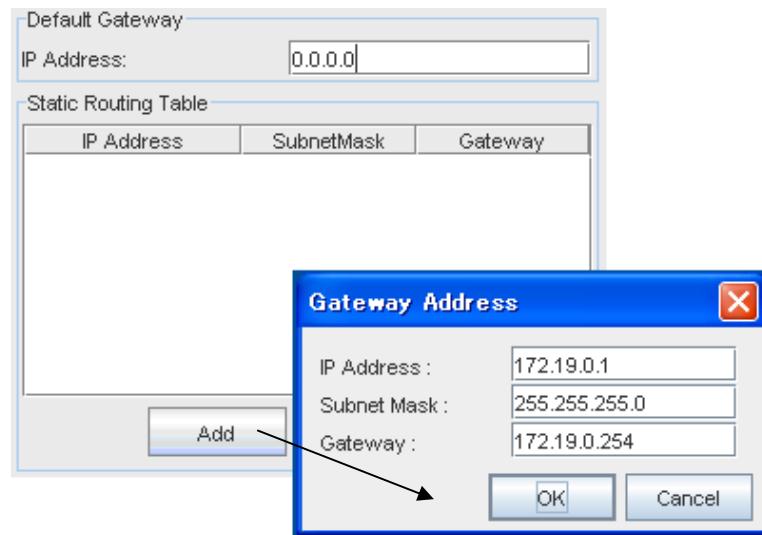
5. Click **[OK]** button to activate the address setting.
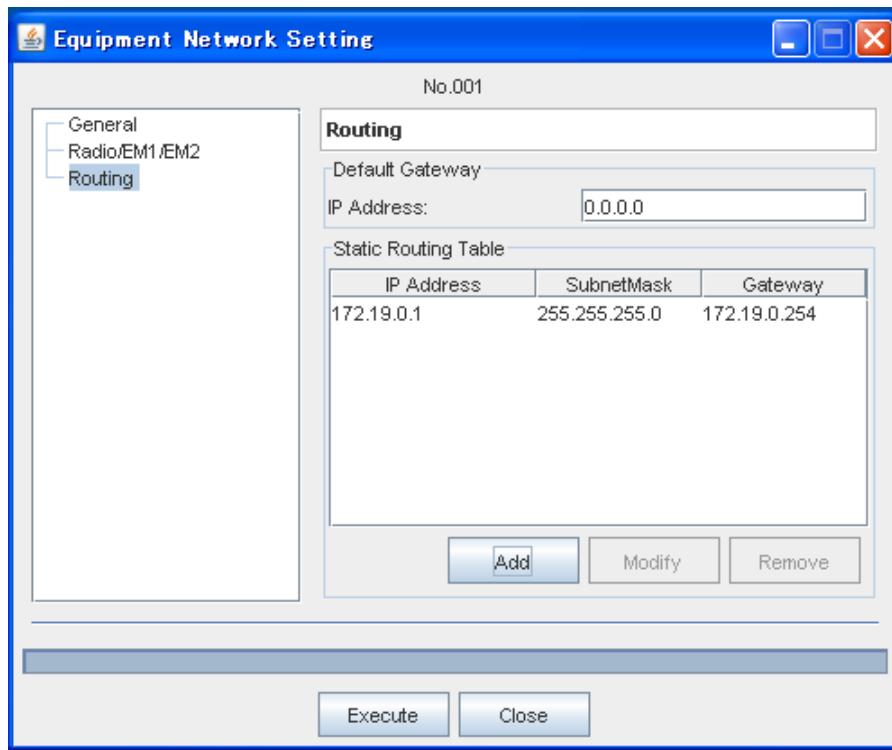
[Modify] is clicked to correct the registered value in **Static Routing table.**

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

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

NOTE:

When configuring Equipment Network Setting, communication will be lost when the Control module reinitializes to the new system configuration. This WILL NOT affect the wireless link. During this time PNMT connection to the NE will be disrupted but will automatically be restored after the Control module resets.

Appendix B: Sample Network Configuration

1. The Network Configuration when subnet is connected.

192.168.0.10
255.255.255.0

172.18.0.1
255.255.255.192

PNMS

Router

No.01

No.02

No.03

No.04

Root NE

Normal NE

Normal NE

Normal NE

192.168.0.1
255.255.255.0

172.18.0.2
255.255.255.192

172.18.0.3
255.255.255.192

172.18.0.4
255.255.255.192

PNMT

NE	General (Category)		Category	Item Name	Input data
	CTRL Type	Branch NE Type			
No.01	Root NE	Not selectable	Radio/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	Normal NE	Not selectable	Radio/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	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	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
				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 |
	CTRL Type	Branch NE Type			
No.01	Root NE	Not selectable	Radio/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	Normal NE	Not selectable	Radio/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	Branch NE	2 Branches	Radio	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	Normal NE	Not selectable	Radio/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**)

192.168.0.10
255.255.255.0

172.18.0.1
255.255.255.192

EM1 172.18.0.3
255.255.255.192

172.18.0.65
255.255.25-5.192

PNMS

No.01   No.02   No.03   No.04

Router

Root NE   Normal NE   Branch NE   Normal NE

192.168.0.1
255.255.255.0

172.18.0.2
255.255.255.192

EM2
172.18.0.129
255.255.255.192

172.18.0.66
255.255.255.192

No.05   No.06

PNMT

Normal NE   Normal NE

172.18.0.130
255.255.255.192

172.18.0.131
255.255.255.192

NE	General (Category)		Category	Item Name	Input data	
	CTRL Type	Branch NE Type				
No.01	Root NE	Not selectable	Radio/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	Normal NE	Not selectable	Radio/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	Branch NE	3 Branches	Radio	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	Normal NE	Not selectable	Radio/EM1/EM2	IP Address	172.18.0.66	
				Subnet Mask	255.255.255.192	
			Routing	Default Gateway	172.18.0.65	
				Static Routing Table	-	

NE	General (Category)		Category	Item Name	Input data
	CTRL Type	Branch NE Type			
No.05	Normal NE	Not selectable	Radio/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	Normal NE	Not selectable	Radio/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.

(**CTRL Type = Root NE(Bridge))**
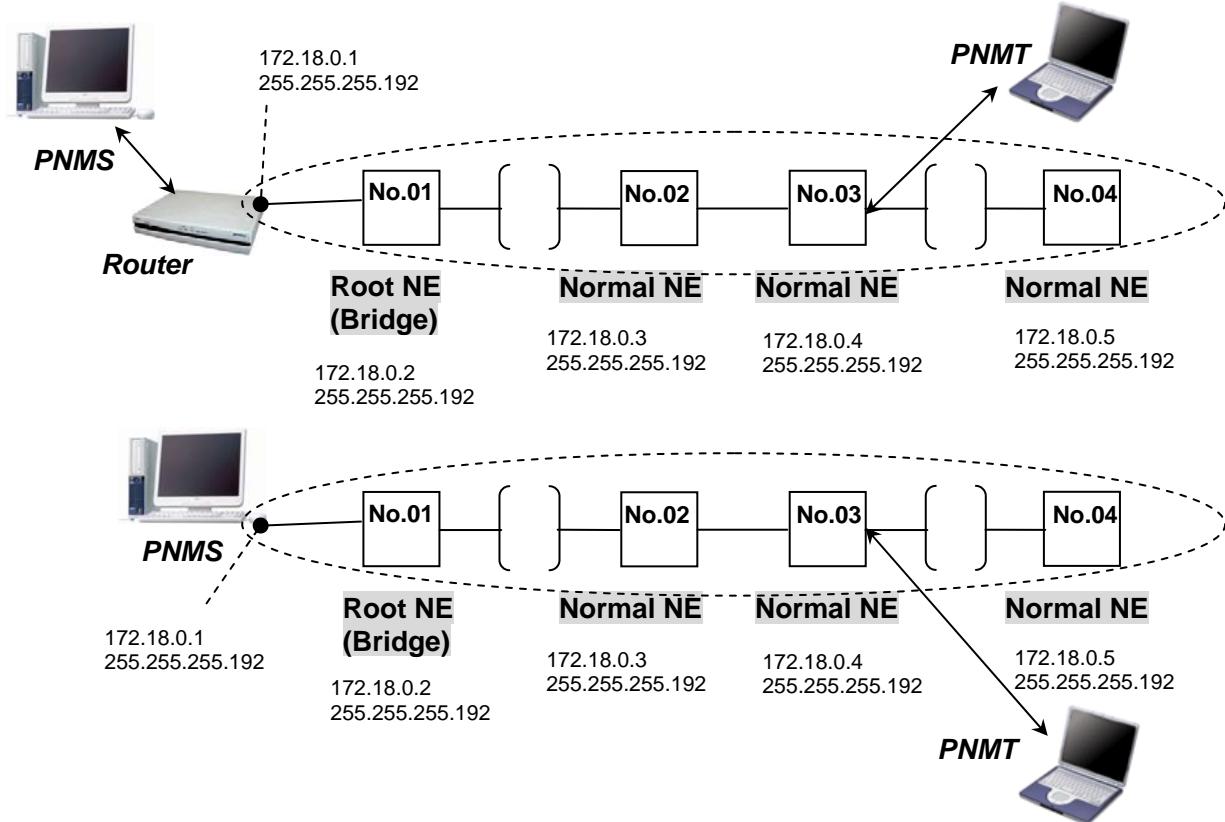
NE	General (Category)		Category	Item Name	Input data
	CTRL Type	Branch NE Type			
No.01	Root NE (Bridge)	Not selectable	Radio/EM1/EM2	IP Address	172.18.0.2
				Subnet Mask	255.255.255.192
			Routing	Default Gateway	172.18.0.1
				Static Routing Table	-
No.02	Normal NE	Not selectable	Radio/EM1/EM2	IP Address	172.18.0.3
				Subnet Mask	255.255.255.192
			Routing	Default Gateway	172.18.0.1
				Static Routing Table	-
No.03	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
				Static Routing Table	-
No.04	Normal NE	Not selectable	Radio/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)
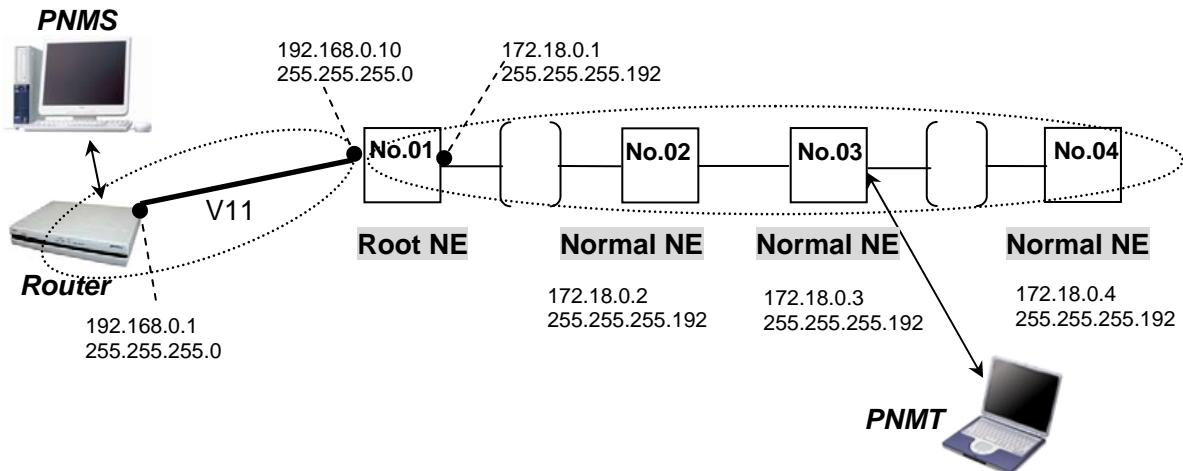
*V11 connection is available with only the top equipment.
Other equipment is connected through LAN.

| NE	General (Category)		Category	Item Name	Input data
	CTRL Type	Branch NE Type			
No.01	Root NE	Not Selectable	Radio/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	Normal NE	Not selectable	Radio/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	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	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
				Static Routing Table	-

6. Using AutoDiscovery on NEO HP & PASO+ Mixed Network.

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

PASO+ Series:
(a) STM-1: version 1.6.2 or later
(b) PDH: version 1.2.2 or later
(c) Mx: version 1.2.4 or later

NEO HP: version 2.0.0 or later

● With NEO HP & PASO+ Mixed Network, activate LLDP function of NEO HP that is directly connected to PASO+.

● Ether EM1 or EM2 of boundary equipment with NEO HP/PASO+ can be set. NEO HP and PASO+ are connected with each other through LAN.
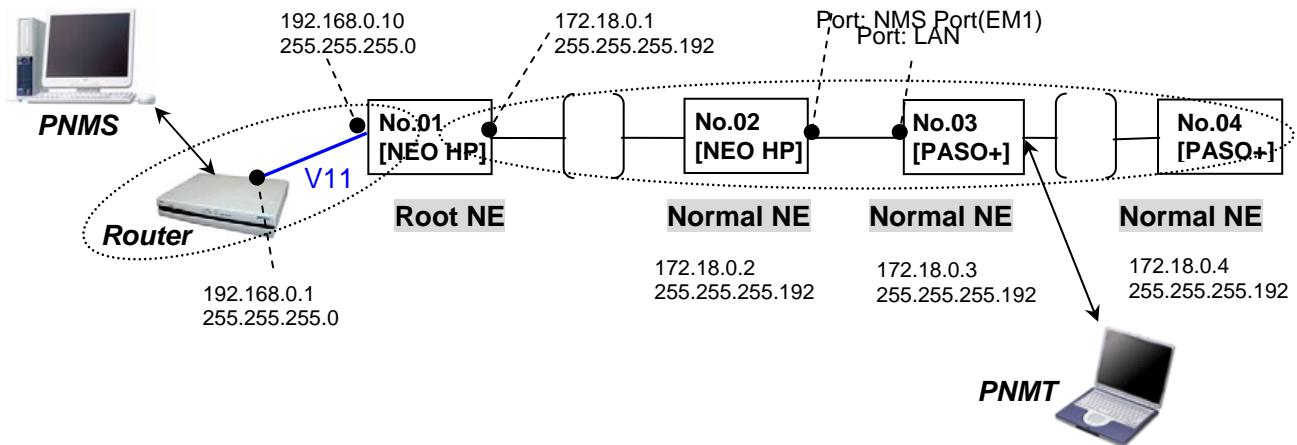
NE	TYPE	General (Category)		Category	Item Name		Input data
		CTRL Type	Branch NE Type				
No.01	NEO HP	Root NE	Not selectable	Radio/EM1/EM2	IP Address		172.18.0.1
					Subnet Mask		255.255.255.192
					LLDP	NE Port(EM2)	Disable
						NMS Port(EM1)	Disable
				PNMS (V11)	IP Address		192.168.0.10
					Subnet Mask		255.255.255.0
					Speed		19200
				Routing	Default Gateway		192.168.0.1
					Static Routing Table		-
No.02	NEO HP	Normal NE	Not selectable	Radio/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