ROI-S06959-051E
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NEC

P ASOLINK

N ETWORK

M ANAGEMENT

T ERMINAL

PNMT (Java version) Operation Manual

(for PASOLINK NEO NODAL)

NEC Corporation

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Document Warranty

1. The information contained in this document is subject to change without prior notice.
2. The PNMS/PNMT screen figures 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 in.

This software package remotely monitors and controls the status and configuration of an entire PASOLINK network with associated equipment as well as the performance of the actual microwave 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 on 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 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 enter the appropriate value. This is also commonly used when asking for a password.	<password>
Keycap	Keyboard keys.	Press Enter key.

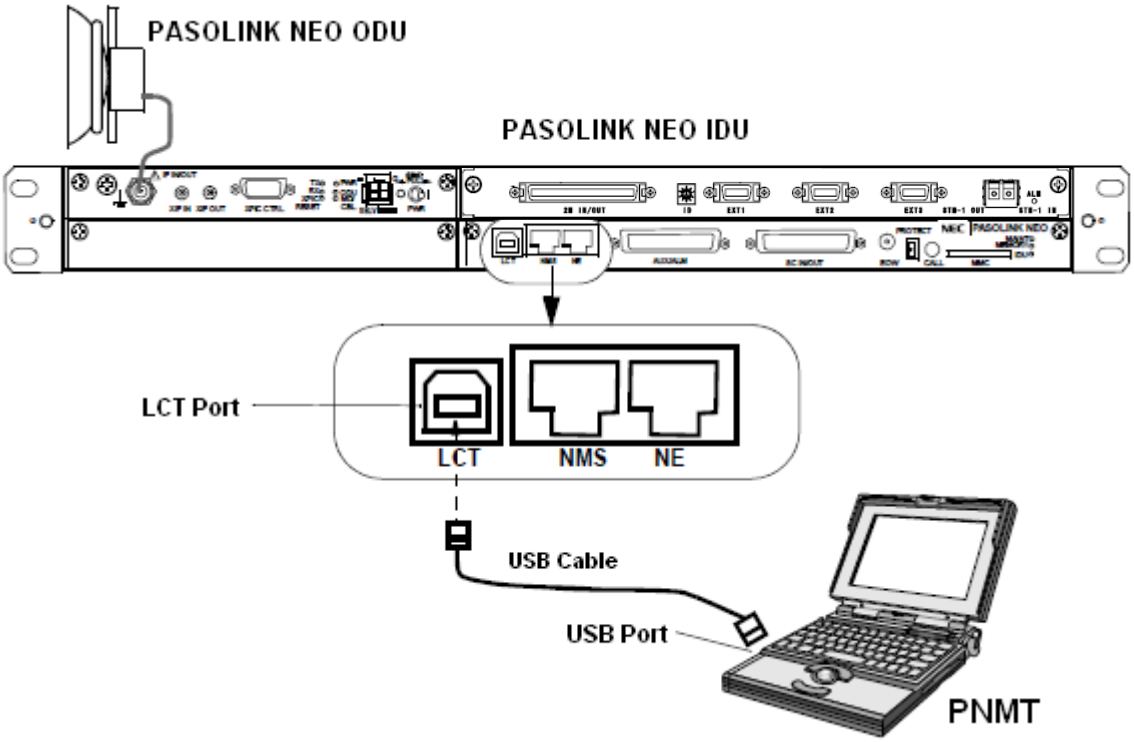
1.3 PNMT Communication Interfaces

1.3.1 Communications

Communications between the PNMT and the wireless network equipment can be 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 NODAL

PASOLINK NEO has 6types of IDU.

- 1+1 (HOT STANDBY)
- 1+1 (TWINPATH)
- 1+0->1+1
- 2-WAY
- 1+0 (E1 TRIBUTARY ONLY)
- 1+1 (E1 TRIBUTARY ONLY)

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: Windows2000 Professional (English version) with SP4 or higher
  Windows XP Professional (English version) with SP2 or higher
- IE6.0 with SP2 or higher
- ADOBE® 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.

- **IP address Window (for 2-WAY system only)**

The IP addresses for the respective opposite stations connected to DIR-A/DIR-B are displayed in the IP address window. Each selected station has a ▶▶ button which, when clicked, enables the display mode for the respective connected device(s) to be switched from DIR-A to DIR-B (or vice versa).
The available display options are:
Opposite station is displayed: blue background
Opposite station is not displayed or no opposite station is connected (IP address is displayed as ”000.000.000.000”): white background

- **Overall Status Window**

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

- **Data Window**

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

- **Tabs**

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

- **IDU Tabs**

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

- **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

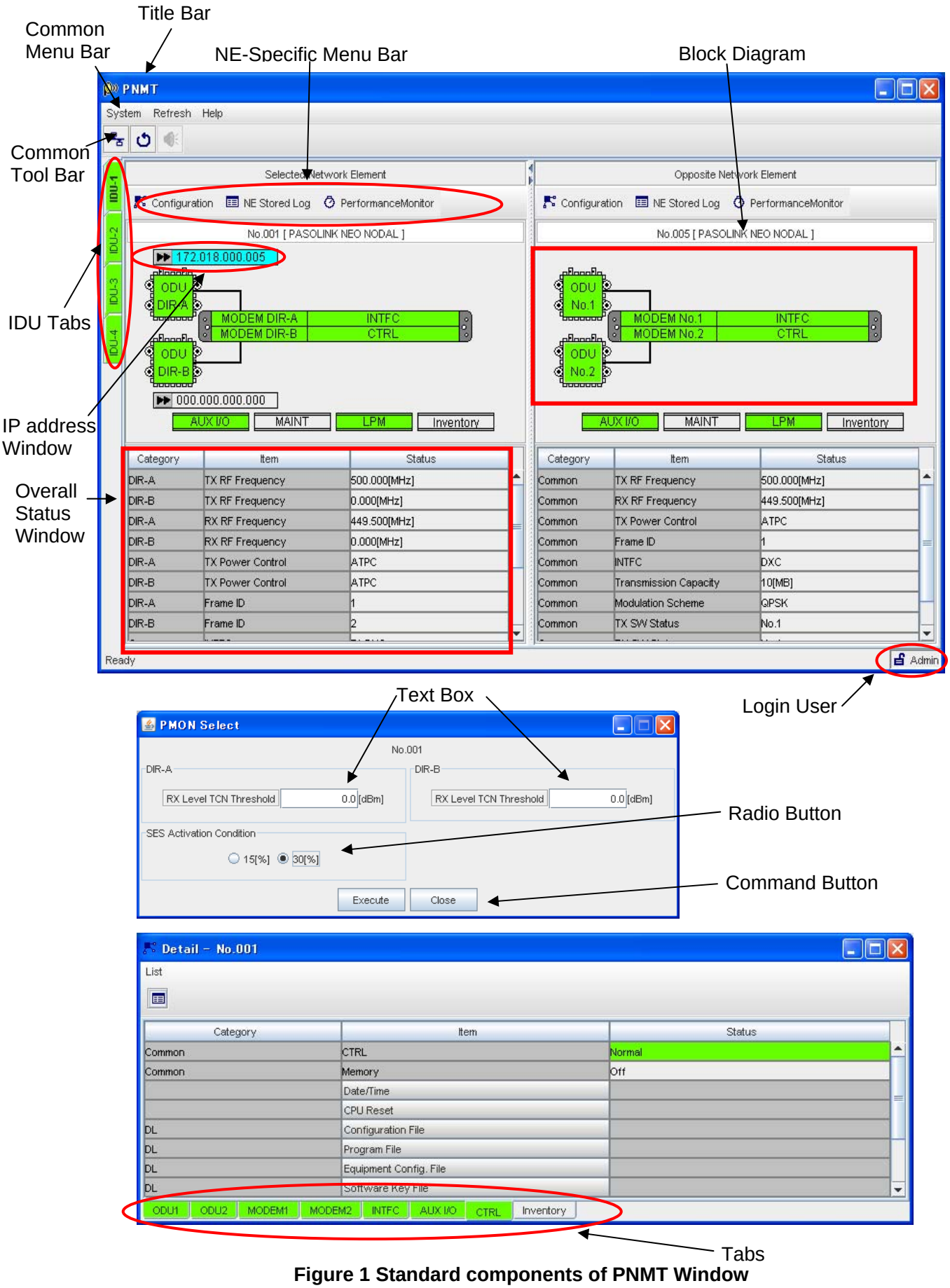


Figure 1 Standard components of PNMT Window

2.2 Launching the PNMT Application

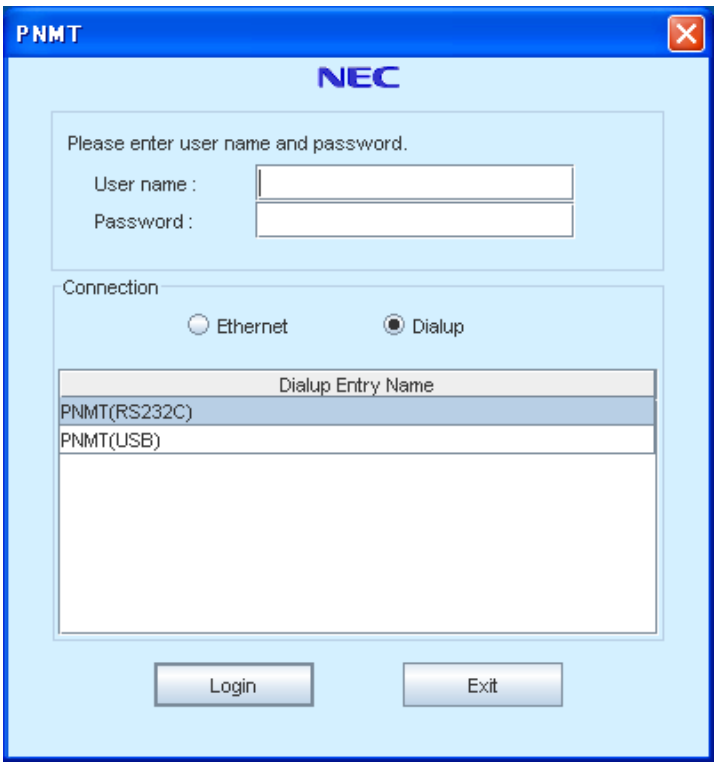
To start PNMT:

1. Turn ON the computer.

NOTE

Connect the PNMT cable 30 seconds after IDU's power is ON making 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

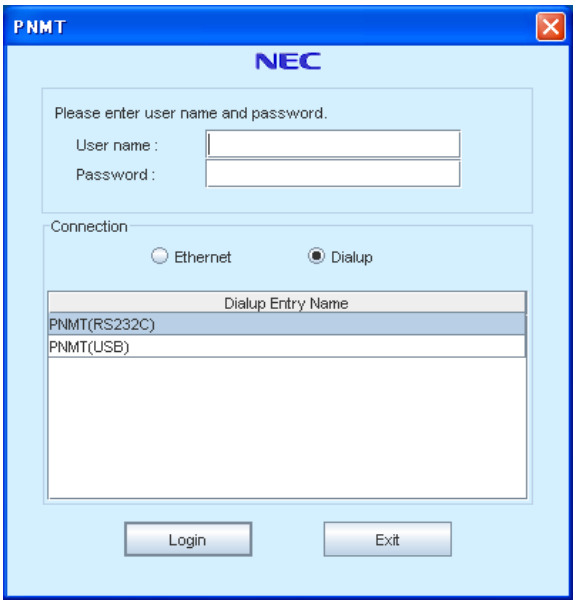
Please do not change the clock settings of your computer once PNMT has started.

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 Level Privilege) of users are defined with different privileges. The functions available in the window depend on the user's access level. Therefore, some of the functions may or may not be carried out.

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



To login:

1. Start PNMT, and then Login window appears.

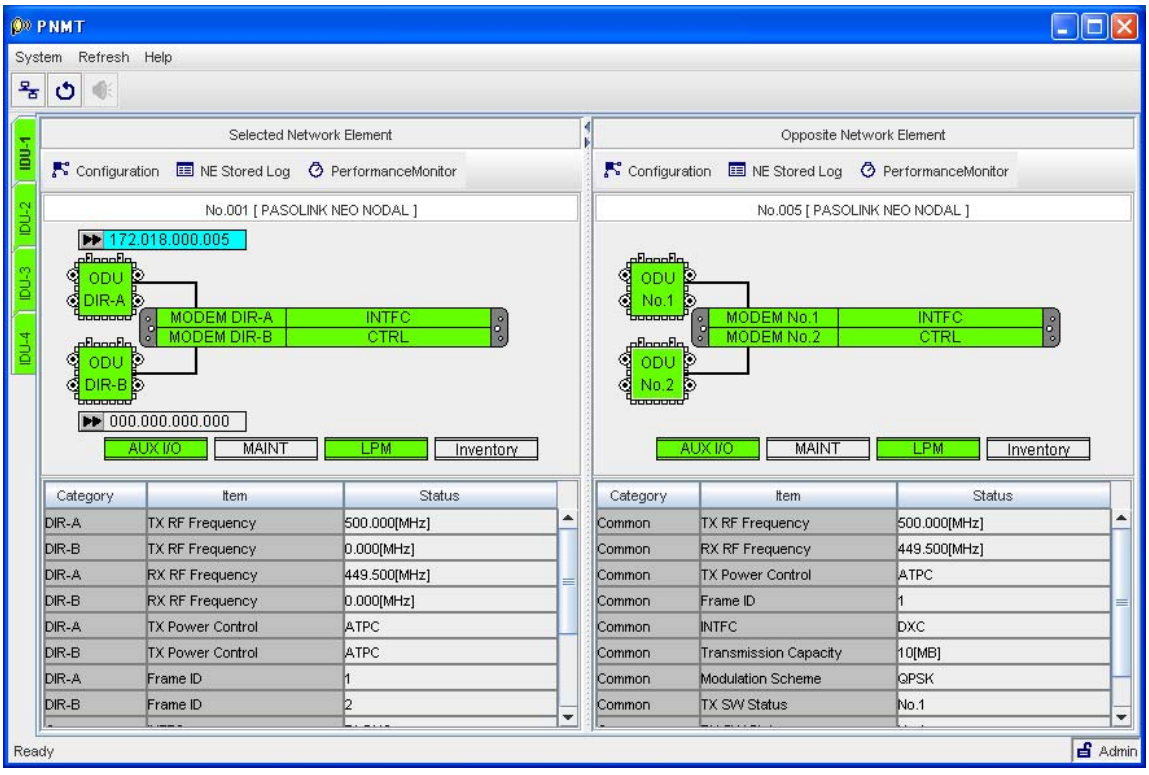
2. Enter the <user name>.

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

4. For Connection select **Dialup.**

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

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



PNMT main window

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)	-	-	✓	✓	✓
		IDU NAME	-	-	✓	✓	✓
		NOTE	-	-	✓	✓	✓
PROVISIONING	CHANNEL SETTING	CH USAGE	-	-	✓	✓	✓
		CH USAGE ERROR REPORT	-	-	✓	✓	✓
		AIS ACTIVATION CONDITION	-	-	✓	✓	✓
		AIS GENERATED REPORT	-	-	✓	✓	✓
		AIS RECEIVED REPORT	-	-	✓	✓	✓
		AIS RECEIVED CONDITION	-	-	✓	✓	✓
		E1 PORT IMPEDANCE	-	-	✓	✓	✓
		STM-1 USAGE	-	-	✓	✓	✓
		STM-1 USAGE ERROR REPORTED	-	-	✓	✓	✓
	DXC SETTING	DXC CH SETTING	-	-	✓	✓	✓
	BER THRESHOLD SETTING	HIGH BER THRESHOLD	-	-	✓	✓	✓
		LOW BER THRESHOLD	-	-	✓	✓	✓
		E-BER (MUX)	-	-	✓	✓	✓
		SD (MUX)	-	-	✓	✓	✓
	SC ASSIGNMENT	RS-232C-1	-	-	✓	✓	✓
		RS-232C-2	-	-	✓	✓	✓
		V11-1	-	-	✓	✓	✓
		V11-2	-	-	✓	✓	✓
		V11-1 DIRECTION SETTING	-	-	✓	✓	✓
		V11-2 DIRECTION 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	-	-	✓	✓	✓
		RX SW PRIORITY	-	-	✓	✓	✓
		RX SW MAINTENANCE MODE	-	-	✓	✓	✓
		RX SW CONDITION -EARLY WARNING	-	-	✓	✓	✓
	RELAY	RELAY CONFIGRATION CHANGED	-	-	✓	✓	✓
		CLUSTER1 INPUT	-	-	✓	✓	✓
		CLUSTER2 INPUT	-	-	✓	✓	✓
		CLUSTER3 INPUT	-	-	✓	✓	✓
		CLUSTER4 INPUT	-	-	✓	✓	✓
	TCN THRESHOLD	TCN THRESHOLD	-	-	✓	✓	✓
	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 POWER	-	-	✓	✓	✓
		TX MUTE CONTROL	-	-	✓	✓	✓
		TX MUTE OFF TIMER	-	-	✓	✓	✓
		CW CONTROL	-	-	✓	✓	✓
		IF LOOPBACK	-	-	✓	✓	✓
		MAIN CH LOOPBACH-1	-	-	✓	✓	✓
		MAIN CH LOOPBACH-2	-	-	✓	✓	✓
		MAIN LOOPBACK-1	-	-	✓	✓	✓
		DADE ADJUST	-	-	✓	✓	✓
		LINEARIZER CONTROL	-	-	✓	✓	✓
		ALS RESTART	-	-	✓	✓	✓
		RF SUB BAND SELECT	-	-	✓	✓	✓
		ANTENNA ALIGNMENT MODE	-	-	✓	✓	✓
AUX I/O		INPUT	-	✓	✓	✓	✓
		OUTPUT	-	✓	✓	✓	✓
PMON	PMON	All Data Clear	-	✓	✓	✓	✓
		Save to disk	-	✓	✓	✓	✓
EVENT LOG		Save to disk	-	✓	✓	✓	✓
CTRL	CONTROL	DATE/TIME	-	-	✓	✓	✓
	DOWNLOAD	CONFIGURATION FILE	-	-	-	-	✓
		PROGRAM FILE	-	-	-	-	✓
		EQUIPMENT CONFIG. FILE	-	-	-	-	✓
		SOFTKEY FILE	-	-	-	-	✓
	UPDATE	SOFTKEY FILE	-	-	-	-	✓
	UPLOAD	CONFIGURATION FILE	-	-	-	-	✓
		EQUIPMENT CONFIG. FILE	-	-	-	-	✓
		SOFTKEY FILE	-	-	-	-	✓
	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)

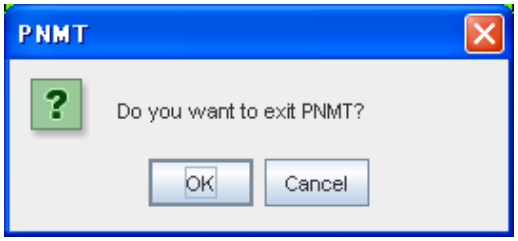
*User: Enabled only to access items which do not affect the equipment.

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

2.4 Shutting Down the PNMT

To close the PNMT application:

1. Click **System → Exit** in the menu bar of **PNMT main window**.
2. Click **[OK]** button in the confirmation message window to close the application.

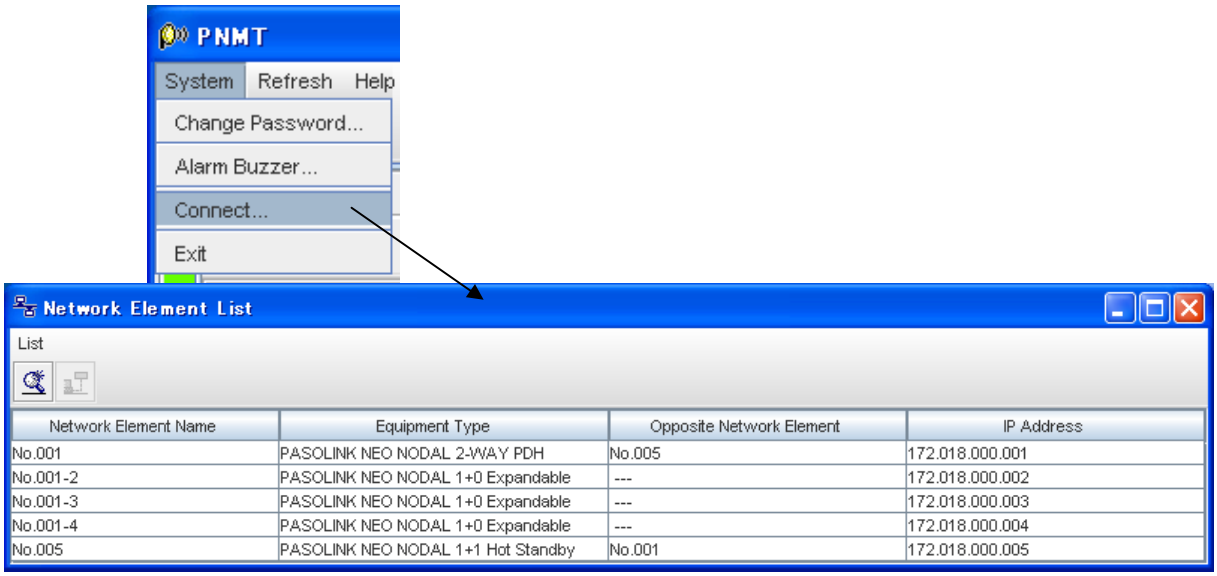


2.5 Searching for Network Elements and Connecting to Selected NE

The summary description (IDU 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 on PNMT main window.



NOTE

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

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

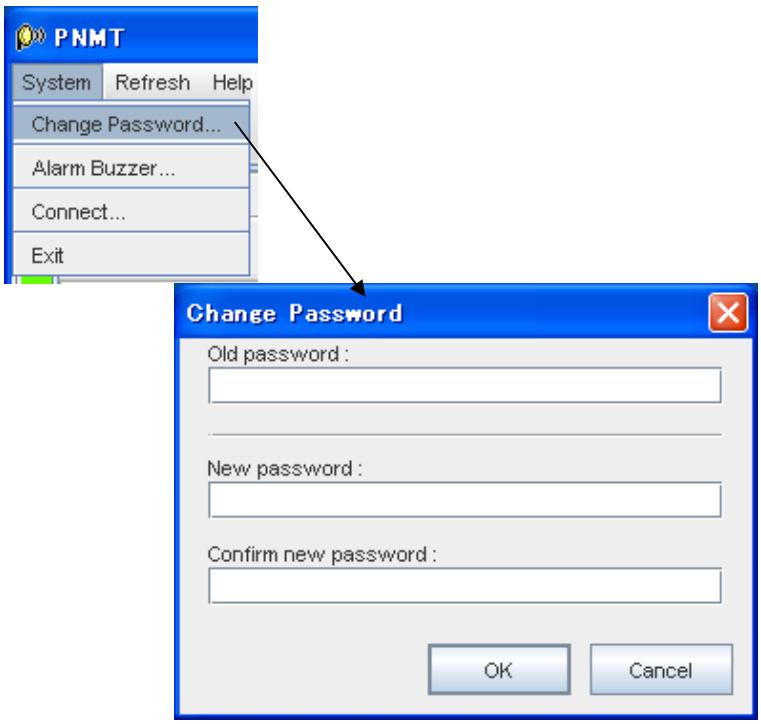
NOTE

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)
3 Remote connection
PNMT is connected to the NE by 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 new <password>.
4. Reenter the new <password> in the **Confirm New Password** box to confirm.
5. Click **[OK]** button.

NOTE

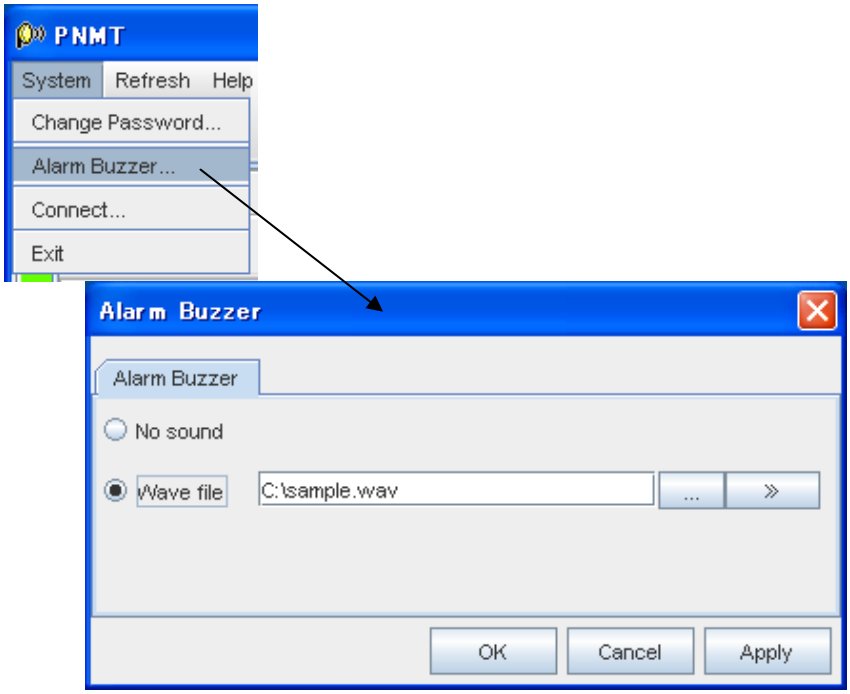
For details on initial user name and password, please refer to PNMT Installation Manual.

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:

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



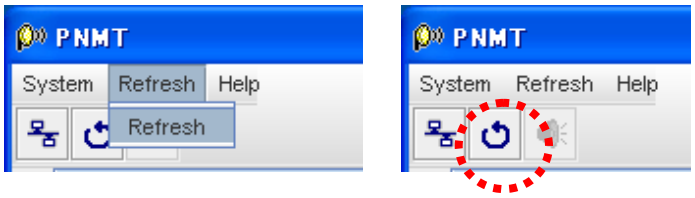
2. Select the **Wave file** to activate the buzzer. **No sound** is the factory setting of the PNMT.
3. If you select the **Wave file** box, enter the location of the sound file (*.wav) Otherwise; click the browse ... button to locate the desired file. You can also preview the *.wav file by clicking on the arrow » button next to the browse button.
4. Click the **[OK]** button to activate the new setting.

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.

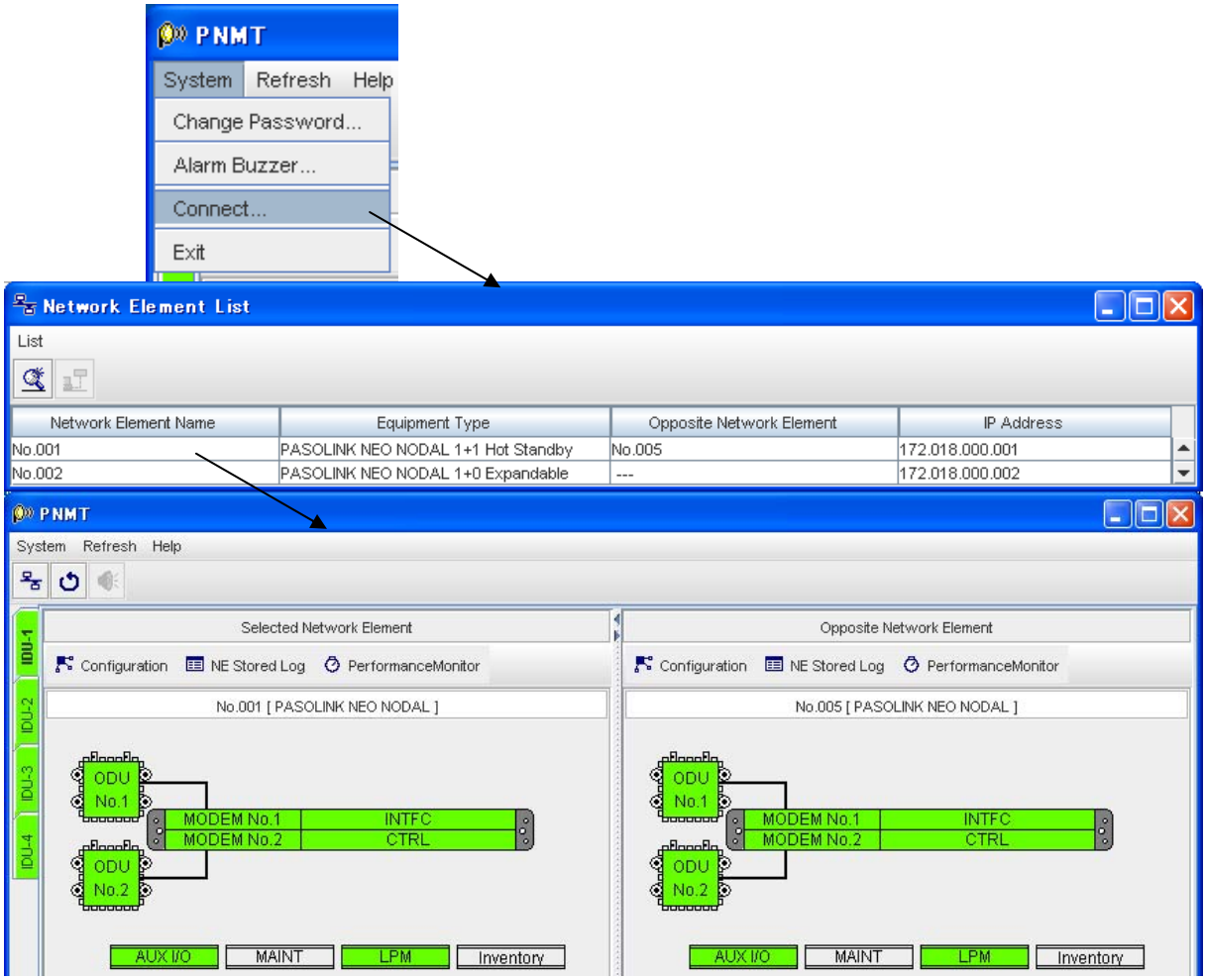
To Refresh:

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 a target NE. Please refer to **Section 2.5 Searching for Network Elements and Connecting to Selected NE**. This function allows remote connection to any NE in the network.



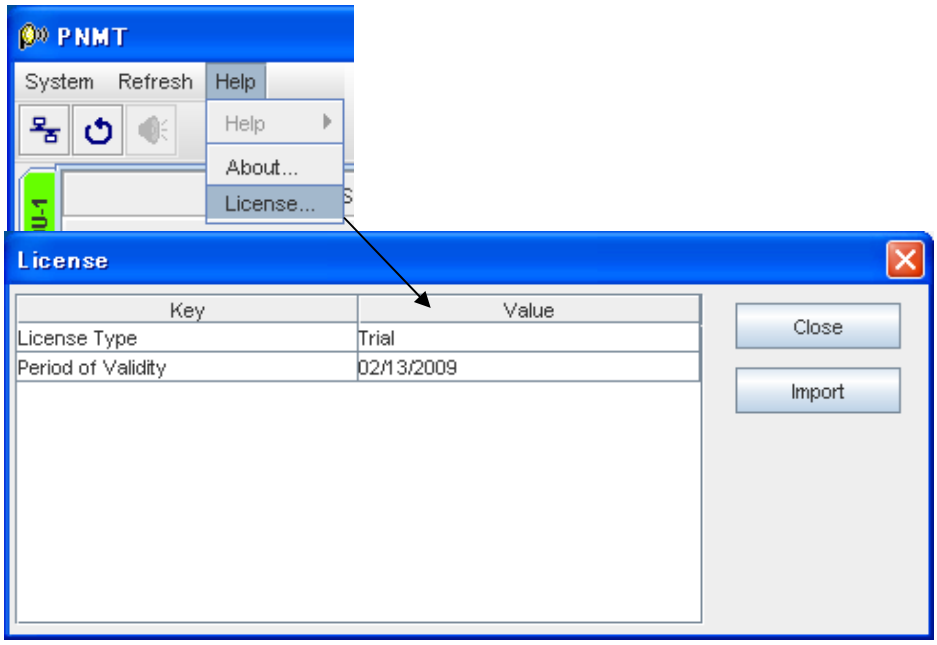
PNMT main window (1+1(HOT STANDBY) configuration)

2.10 License

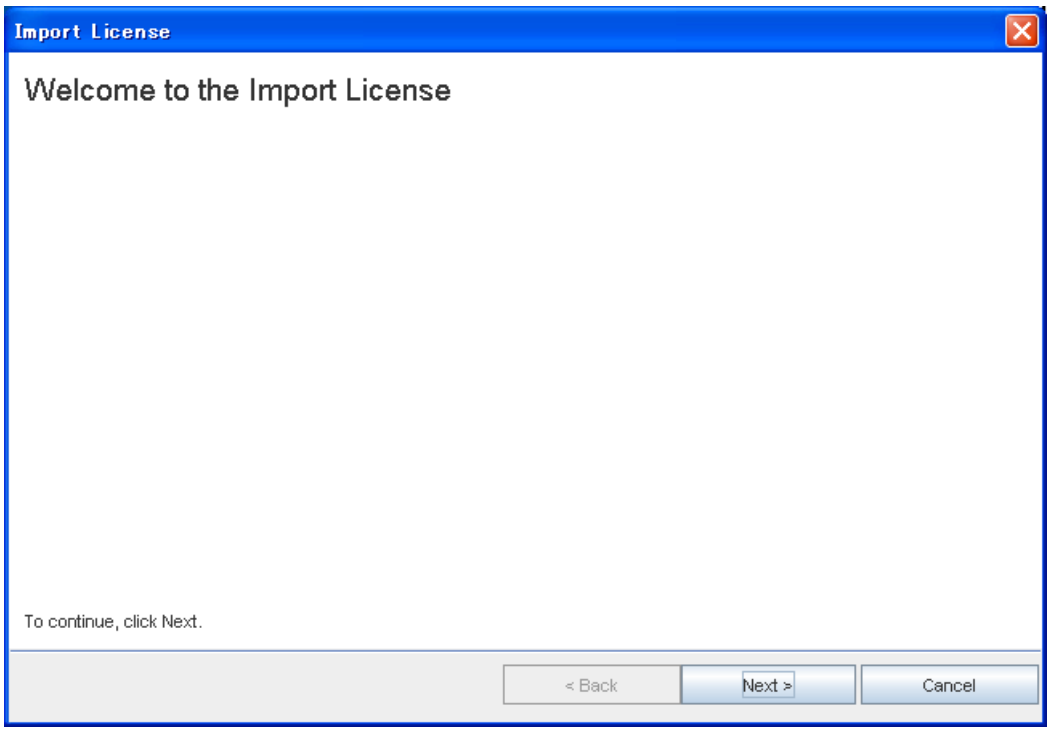
To protect PNMT functions, the PNMT application includes license files.

To display the current license status:

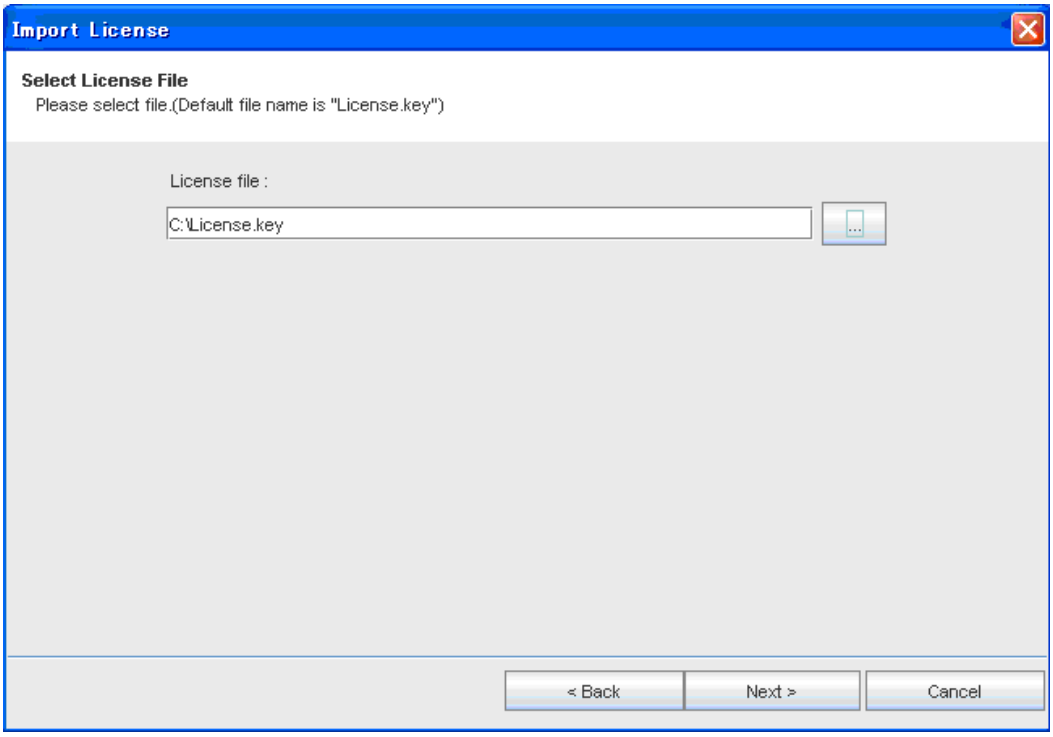
1. Click **Help → License** in the main window.



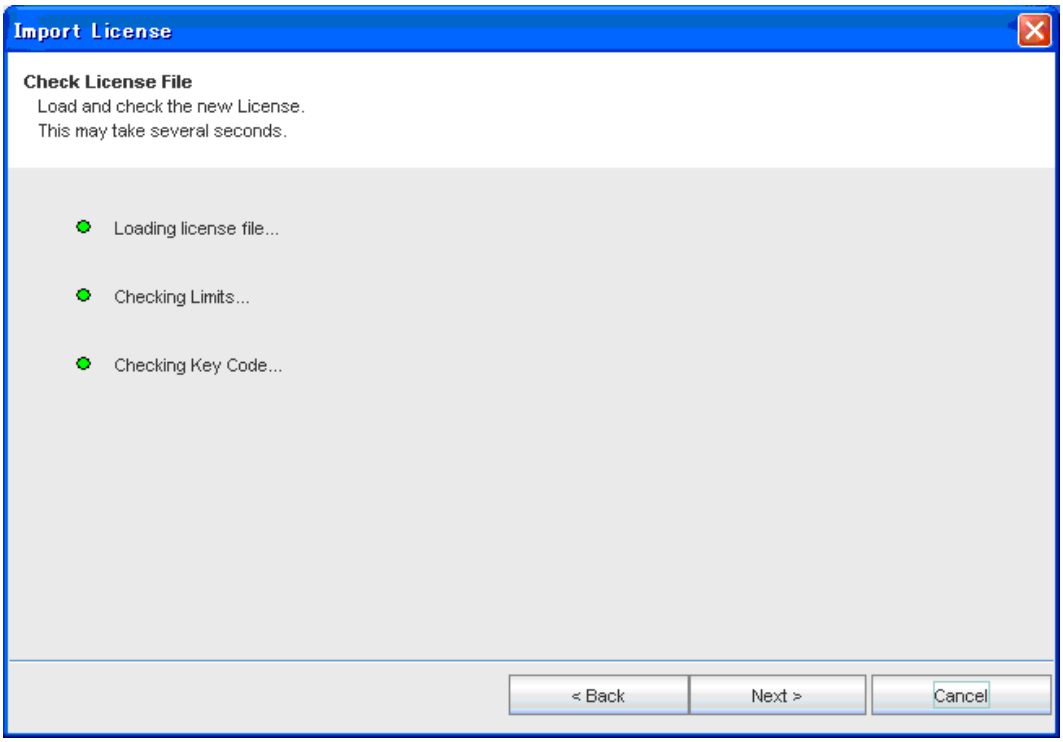
2. Click **[Close]** to shut this window. To obtain the license file, click **[Import]**, and follow the following procedure.
3. Click **[Next]** to continue.



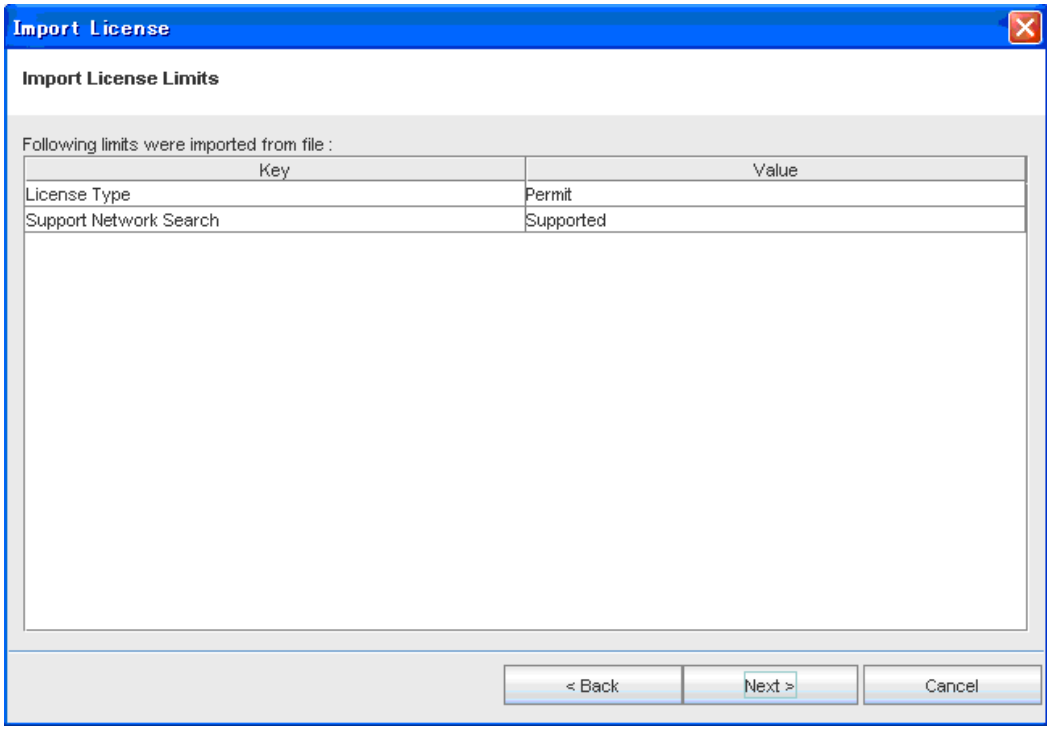
4. Specify the License.Key file if one is available. Click **[Next]**.



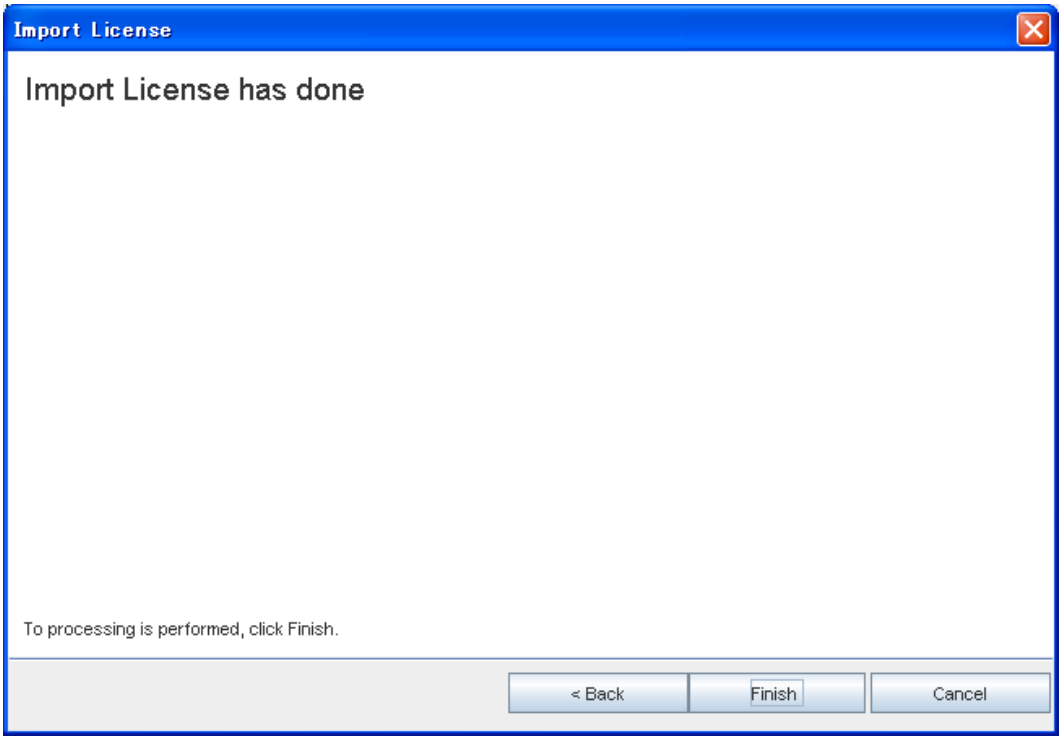
5. The progress of **Check License File** will be displayed. If no error is encountered when importing license file, click **[Next]** as soon as the button becomes available.



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



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



2.11 Overall Status

The **Overall Status** provides a snapshot of the most significant monitored items in the IDU.

Overall Status

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	INTFC	DXC
Common	Transmission Capacity	10[MB]
Common	Modulation Scheme	QPSK
Common	TX SW Status	No.1
Common	RX SW Status	No.1
Common	IDU ID	1

The **Overall Status** shows a snapshot of all important NE parameters/settings. This window only displays current settings; no control functions are available here.

These are the individual items that are shown:

Item/Feature	Description	Specific conditions for it to be displayed/configured
TX RF Frequency	The currently used transmission frequency.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*[1] (No.1/No.2) are displayed when Redundancy setting is 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY.
RX RF Frequency	The currently used receiving frequency.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*[1] (No.1/No.2) are displayed when Redundancy setting is 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY.
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).	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*[1] (DIR-A/DIR-B) are displayed when Redundancy setting is2-WAY.
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.	When TX POWER CONTROL = MTPC and Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*[1] (No.1/No.2) are displayed when Redundancy setting is 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY.

Item/Feature	Description	Specific conditions for it to be displayed/configured
Frame ID	The predefined value of the NE frame ID.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 (No.1/No.2) are displayed when Redundancy setting is 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY.
INTFC	The currently used INTFC (interface card)	None (displayed by default)
Transmission Capacity (DIR-A/DIR-B)	The transmission capacity of the system.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*[1] (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY.
Modulation scheme (DIR-A/DIR-B)	The currently used modulation type.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*[1] (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY.
ALS Function	Intermittently turns laser output on/off after designated interval from start of LOS mode being "Enabled" or "Disabled" (Only DXC INTFC).	When all the following applies: INTFC = DXC IDU ID = 1 STM-1 Usage = Used
TX SW status	Shows which modem-ODU configuration is currently used for transmitting signals.	When REDUNDANCY SETTING = 1+1 (HOT STANDBY).
RX SW status	Shows which modem-ODU configuration is currently used for receiving signals.	When REDUNDANCY SETTING = 1+1 (HOT STANDBY) or 1+1 (TWINPATH).
IDU ID	Individual ID allotted to each IDU.	None (Displayed by default)

*1 Not displayed for: 1+0 (E1 TRIBUTARY ONLY), 1+1 (E1 TRIBUTARY ONLY).

2.12 ODU Tab

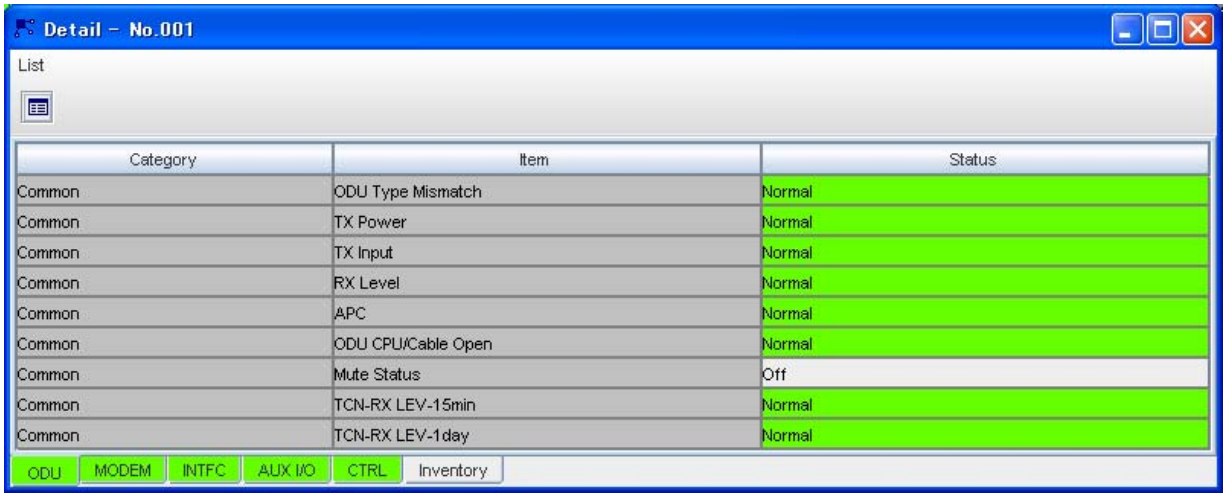
The ODU tab displays the status of the monitored ODU items. This window only displays current settings and no control functions are available here.

Note: ODU tab is not displayed if 1+0 (E1 TRIBUTARY ONLY), 1+1 (E1 TRIBUTARY ONLY) settings are configured.

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 **PNMT main window** of the selected IDU.



Overview and description of the Items monitored in the ODU.

Item/Feature	Description	Specific conditions for it to be displayed/configured
ODU Type Mismatch	In NEO/c ODU(CPV) connection mode, this alarm is issued when the Modulation Scheme setting is not QPSK/16QAM.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*1 (No.1/No.2) are displayed when Redundancy setting is 1+1 (HOT STANDBY), 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY. During ODU CPU alarm or MODEM POWER SUPPLY, IF CABLE SHORT, UNEQUIPPED, INPUT VOLTAGE alarms; Display is disabled.
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.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*1 (No.1/No.2) are displayed when Redundancy setting is 1+1 (HOT STANDBY), 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY. During ODU CPU alarm or ODU TYPE MISMATCH, MODEM POWER SUPPLY, IF CABLE SHORT, UNEQUIPPED, INPUT VOLTAGE alarms; Display is disabled.

Item/Feature	Description	Specific conditions for it to be displayed/configured
TX Input	Indicates the status of the ODU input signal from the IDU; it is issued when the input signal from the IDU is lost.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*[1] (No.1/No.2) are displayed when Redundancy setting is 1+1 (HOT STANDBY), 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY. During ODU CPU alarm or ODU TYPE MISMATCH, MODEM POWER SUPPLY, IF CABLE SHORT, UNEQUIPPED, INPUT VOLTAGE alarms; Display is disabled.
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.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*[1] (No.1/No.2) are displayed when Redundancy setting is 1+1 (HOT STANDBY), 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY. During ODU CPU alarm or ODU TYPE MISMATCH, MODEM POWER SUPPLY, IF CABLE SHORT, UNEQUIPPED, INPUT VOLTAGE alarms; Display is disabled.
APC	Indicates the status of the synthesizer in the ODU; it is issued when an anomaly occurs in the synthesizer.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*[1] (No.1/No.2) are displayed when Redundancy setting is 1+1 (HOT STANDBY), 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY. During ODU CPU alarm or ODU TYPE MISMATCH, MODEM POWER SUPPLY, IF CABLE SHORT, UNEQUIPPED, INPUT VOLTAGE alarms; Display is disabled.
ODU CPU/Cable Open	Indicates the status of the CPU in the ODU; it is issued when an anomaly occurs during CPU operation.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*[1] (No.1/No.2) are displayed when Redundancy setting is 1+1 (HOT STANDBY), 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY. During ODU TYPE MISMATCH or MODEM POWER SUPPLY, IF CABLE SHORT, UNEQUIPPED, INPUT VOLTAGE alarms; Display is disabled.
Mute Status	On: transmitter output is muted (off). Off: transmitter output is normal (on).	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*[1] (No.1/No.2) are displayed when Redundancy setting is 1+1 (HOT STANDBY), 1+1

Item/Feature	Description	Specific conditions for it to be displayed/configured
		(TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY. During ODU CPU alarm or ODU TYPE MISMATCH, MODEM POWER SUPPLY, IF CABLE SHORT, UNEQUIPPED, INPUT VOLTAGE alarms; Display is disabled.
TCN-RX LEV-15min	The (lower) Threshold Crossing Notice level for 15 min alarm.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*1 (No.1/No.2) are displayed when Redundancy setting is 1+1 (HOT STANDBY), 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY. During ODU CPU alarm or ODU TYPE MISMATCH,MODEM POWER SUPPLY, IF CABLE SHORT, UNEQUIPPED, INPUT VOLTAGE alarms; Display is disabled.
TCN-RX LEV-1day	The (lower) Threshold Crossing Notice level for 1 day alarm.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*1 (No.1/No.2) are displayed when Redundancy setting is 1+1 (HOT STANDBY), 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY. During ODU CPU alarm or ODU TYPE MISMATCH,MODEM POWER SUPPLY, IF CABLE SHORT, UNEQUIPPED, INPUT VOLTAGE alarms; Display is disabled.
TX SW Status	Indicates the modem-ODU configuration currently used for transmitting signals.	When Redundancy setting is 1+1 (HOT STANDBY).
RX SW Status	Indicates the modem-ODU configuration currently used for receiving signals.	When Redundancy setting is 1+1 (HOT STANDBY) or 1+1 (TWINPATH).

*1 Not displayed for: 1+0 (E1 TRIBUTARY ONLY), 1+1 (E1 TRIBUTARY ONLY).

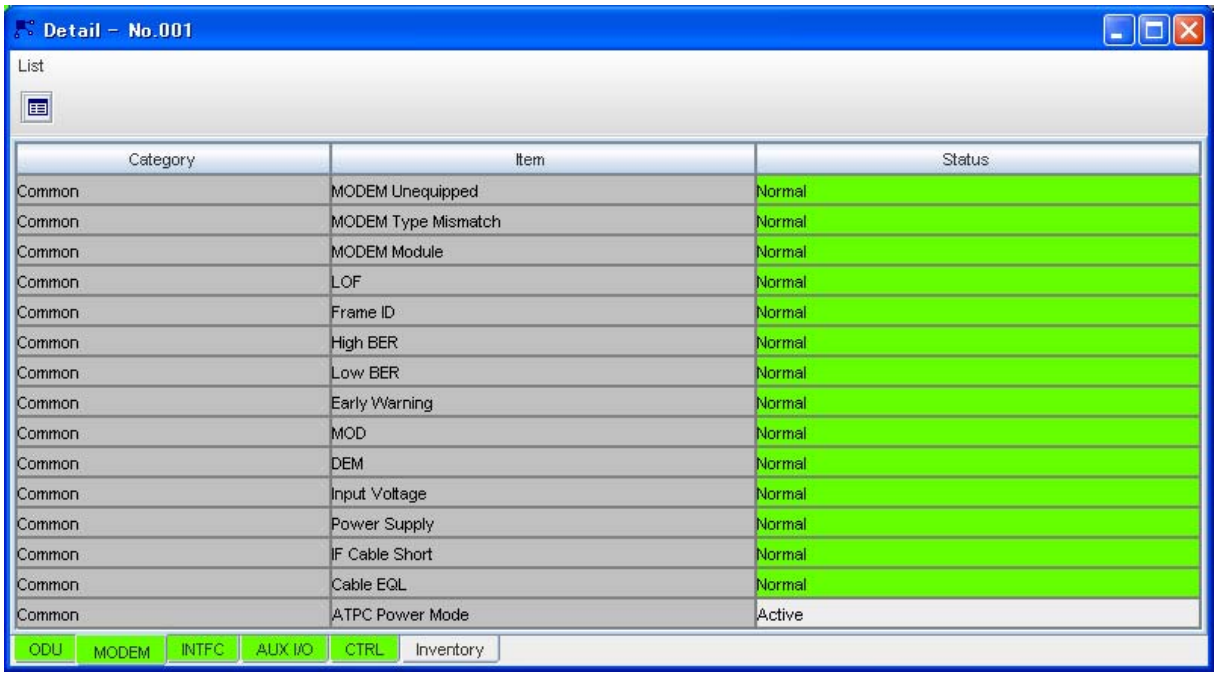
2.13 MODEM Tab

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 chapters on *Equipment Setup and Provisioning*.

To view the alarms and status of the modem:

Select **MODEM** field in **PNMT main window** of the selected IDU.



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.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*[1] (No.1/No.2) are displayed when Redundancy setting is 1+1 (HOT STANDBY), 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY. During MODEM POWER SUPPLY or UNEQUIPPED, MODEM TYPE MISMATCH alarms; Display is disabled.
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 (displayed by default). (No.1/No.2) are displayed when Redundancy setting is 1+1 (HOT STANDBY), 1+1 (TWINPATH), 1+1 (E1 TRIBUTARY ONLY). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY. During MODEM POWER SUPPLY or MODEM TYPE MISMATCH alarms; Display is disabled.
MODEM Type Mismatch	Indicates that CTRL F/W Version (1.2.2 or higher) and MODEM Parameter Version (50 or higher) are not compatible. This alarm is also issued when no Compact MODEM is set.	None (displayed by default). (No.1/No.2) are displayed when Redundancy setting is 1+1 (HOT STANDBY), 1+1 (TWINPATH), 1+1 (E1 TRIBUTARY ONLY). (DIR-A/DIR-B) are displayed when

Item/Feature	Description	Specific conditions for it to be displayed/configured
		Redundancy setting is 2-WAY. During MODEM POWER SUPPLY or UNEQUIPPED alarms; Display is disabled.
LOF	Indicates the frame synchronization status.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*1 (No.1/No.2) are displayed when Redundancy setting is 1+1 (HOT STANDBY), 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY. During MODEM POWER SUPPLY or UNEQUIPPED, MODEM TYPE MISMATCH alarms; Display is disabled.
Frame ID	Indicates that the frame ID numbers of an NE and its opposite are out of sync.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*1 (No.1/No.2) are displayed when Redundancy setting is 1+1 (HOT STANDBY), 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY. During MODEM POWER SUPPLY or UNEQUIPPED, MODEM TYPE MISMATCH alarms; Display is disabled.
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.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*1 (No.1/No.2) are displayed when Redundancy setting is 1+1 (HOT STANDBY), 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY. During MODEM POWER SUPPLY or UNEQUIPPED, MODEM TYPE MISMATCH alarms; Display is disabled.
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.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*1 (No.1/No.2) are displayed when Redundancy setting is 1+1 (HOT STANDBY), 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY. During MODEM POWER SUPPLY or UNEQUIPPED, MODEM TYPE MISMATCH alarms; Display is disabled.
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.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*1 (No.1/No.2) are displayed when Redundancy setting is 1+1 (HOT STANDBY), 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when

Item/Feature	Description	Specific conditions for it to be displayed/configured
		Redundancy setting is 2-WAY. During MODEM POWER SUPPLY or UNEQUIPPED, MODEM TYPE MISMATCH alarms; Display is disabled.
MOD	Indicates the operating status of the MOD. If any anomaly occurs in the modulator, this alarm is issued.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*[1] (No.1/No.2) are displayed when Redundancy setting is 1+1 (HOT STANDBY), 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY. During MODEM POWER SUPPLY or UNEQUIPPED, MODEM TYPE MISMATCH alarms; Display is disabled.
DEM	Indicates the operating status of the DEM. If any anomaly occurs in the demodulator, this alarm is issued.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*[1] (No.1/No.2) are displayed when Redundancy setting is 1+1 (HOT STANDBY), 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY. During MODEM POWER SUPPLY or UNEQUIPPED, MODEM TYPE MISMATCH alarms; Display is disabled.
Input Voltage	Indicates the operating status of the input power voltage. When there is an anomaly in the input voltage, this alarm is issued.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*[1] (No.1/No.2) are displayed when Redundancy setting is 1+1 (HOT STANDBY), 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY. During MODEM POWER SUPPLY or UNEQUIPPED, MODEM TYPE MISMATCH alarms; Display is disabled.
Power Supply	Indicates the operating status of the power supply. When there is an anomaly in the power supply, this alarm is issued.	None (displayed by default). (No.1/No.2) are displayed when Redundancy setting is 1+1 (HOT STANDBY), 1+1 (TWINPATH), 1+1 (E1 TRIBUTARY ONLY). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY. During MODEM UNEQUIPPED or MODEM TYPE MISMATCH alarms; Display is disabled.
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.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*[1] (No.1/No.2) are displayed when Redundancy setting is 1+1 (HOT STANDBY), 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY. During MODEM POWER SUPPLY or UNEQUIPPED, MODEM TYPE MISMATCH alarms; Display is disabled.

Item/Feature	Description	Specific conditions for it to be displayed/configured
Cable EQL	Indicates the status of the IF cable equalizer. This alarm is issued when the equalizer function does not kick in.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*1 (No.1/No.2) are displayed when Redundancy setting is 1+1 (HOT STANDBY), 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY. During MODEM POWER SUPPLY or UNEQUIPPED, MODEM TYPE MISMATCH alarms; Display is disabled.
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.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*1 (No.1/No.2) are displayed when Redundancy setting is 1+1 (HOT STANDBY), 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY. Not available in QPSK Modulation Scheme. During MODEM POWER SUPPLY or UNEQUIPPED, MODEM TYPE MISMATCH alarms; Display is disabled.
Linearizer	Indicates the linearizer operating status; this alarm is issued when the linearizer is not properly operating in the OPR state.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*1 (No.1/No.2) are displayed when Redundancy setting is 1+1 (HOT STANDBY), 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY. Not available in QPSK Modulation Scheme. During MODEM POWER SUPPLY or UNEQUIPPED, MODEM TYPE MISMATCH alarms; Display is disabled.
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).	TX POWER CONTROL = ATPC and When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*1 (No.1/No.2) are displayed when Redundancy setting is 1+1 (HOT STANDBY), 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY. During MODEM POWER SUPPLY or UNEQUIPPED, MODEM TYPE MISMATCH alarms; Display is disabled.

*1 Not displayed for: 1+0 (E1 TRIBUTARY ONLY), 1+1 (E1 TRIBUTARY ONLY).

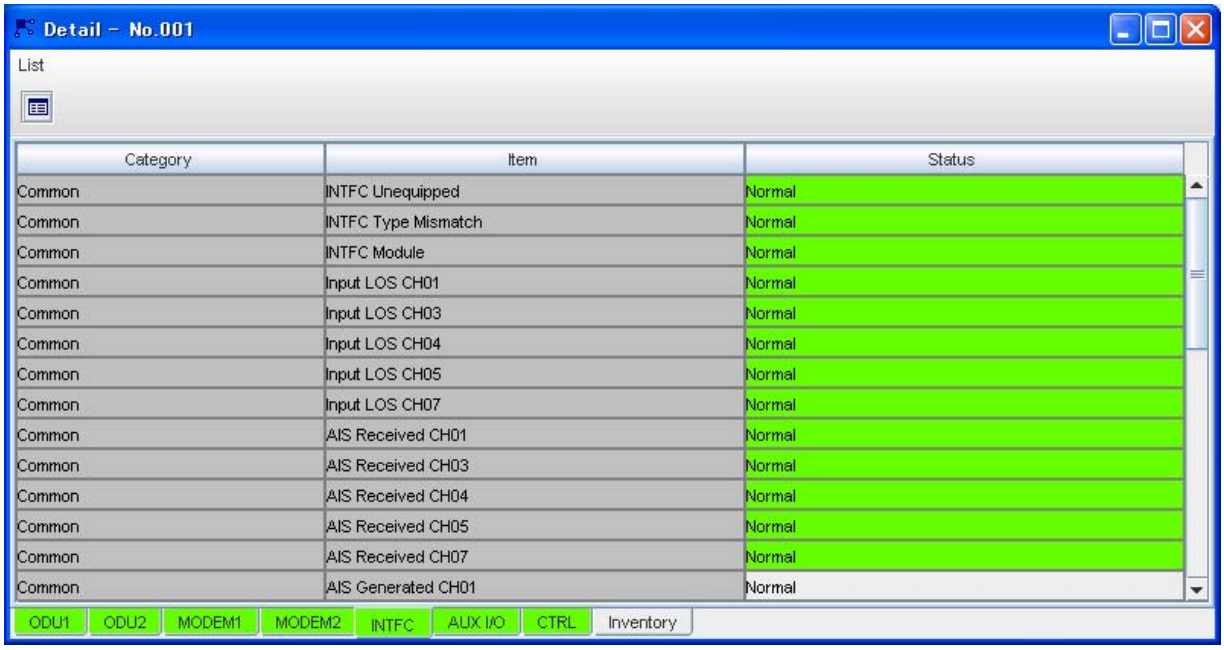
2.14 INTFC INTERFACE Tab

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

To set the INTFC interface parameters see the chapters on *Equipment Setup and Provisioning*.

To view the alarms and status of the INTFC interface:

Select **INTFC** field in **PNMT main window** of the selected IDU.



Overview and description of the monitored items for INTFC interface.

Item/Feature	Description	Specific conditions for it to be displayed/configured
INTFC Module	Indicates the operating status of INTFC. If any anomaly occurs in INTFC, this alarm is issued.	None (displayed by default).
INTFC Type Mismatch	When this alarm is issued, it indicates that INTFC does not correspond to the inventory list.	None (displayed by default).
INTFC Unequipped	Indicates whether there is any INTFC. If there is no INTFC, this alarm is issued.	None (displayed by default).
Input LOS CH (01 – 16)	Indicates the input status of the input E1 signal from MUX. If the input is disconnected, this alarm is issued.	Only CH with the setting: CH USAGE = USED, are displayed.
AIS received CH (01 - 16)	Indicates the E1 signal transmitting status. If AIS is received from MUX, this alarm is issued.	Only with the setting: AIS RECEIVED REPORT = REPORT. Only CH with the setting: CH USAGE = USED, are displayed.
AIS generated CH (01 - 16)	Indicates the E1 signal receiving status.	Only with the setting: AIS GENERATED REPORT = REPORT. Only CH with the setting: CH USAGE = USED, are displayed.
Usage Error CH (01 - 16)	Indicates the status of the E1 signal interface. When E1 signal is applied to the input interface as long as it is set to "Not Used", this alarm is generated. This parameter is indicated only when CH Usage Error Report has been selected.	Only with the setting: CH USAGE ERROR REPORT = REPORT. Only CH with the setting: CH USAGE = USED, are displayed.

Item/Feature	Description	Specific conditions for it to be displayed/configured
INTFC Inphase	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.	When REDUNDANCY SETTING = 1+1 (HOT STANDBY) or 1+1 (TWINPATH).
UAE (Total/DIR-A) (Total/DIR-B)	Indicates whether any UAS were monitored (in any channel).	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*1 (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY.
STM-1 LOS (MUX)	Indicates the input signal status of the STM-1 from MUX. If the input is disconnected this alarm is issued.	When all the following applies: INTFC = DXC IDU ID = 1 STM-1 Usage = Used
STM-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 all the following applies: INTFC = DXC IDU ID = 1 STM-1 Usage = Used
STM-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 all the following applies: INTFC = DXC IDU ID = 1 STM-1 Usage = Used
STM-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 all the following applies: INTFC = DXC IDU ID = 1 STM-1 Usage = Used
STM-1 TF	Indicates "alarm" when there is a defect in this interface that interrupts the STM-1 signal.	When all the following applies: INTFC = DXC IDU ID = 1 STM-1 Usage = Used
STM-1 UAE (MUX)	Indicates whether UAS were monitored (in MUX).	When all the following applies: INTFC = DXC IDU ID = 1 STM-1 Usage = Used
ID ERROR	Displayed if NE ID is incorrect.	None (displayed by default).
EXT% CABLE (% = 1/2/3)	Displayed if intra-NE cable is incorrect.	When IDU number for EXT1 CABLE= 2, 3, 4. When IDU number for EXT2 CABLE= 3, 4 When IDU number for EXT3 CABLE= 4.
STM-1 USAGE ERROR	Displayed when an input signal is detected at unused STM-1 port F(Only DXC INTFC).	When all the following applies: INTFC = DXC IDU ID = 1 STM-1 Usage = Not Used

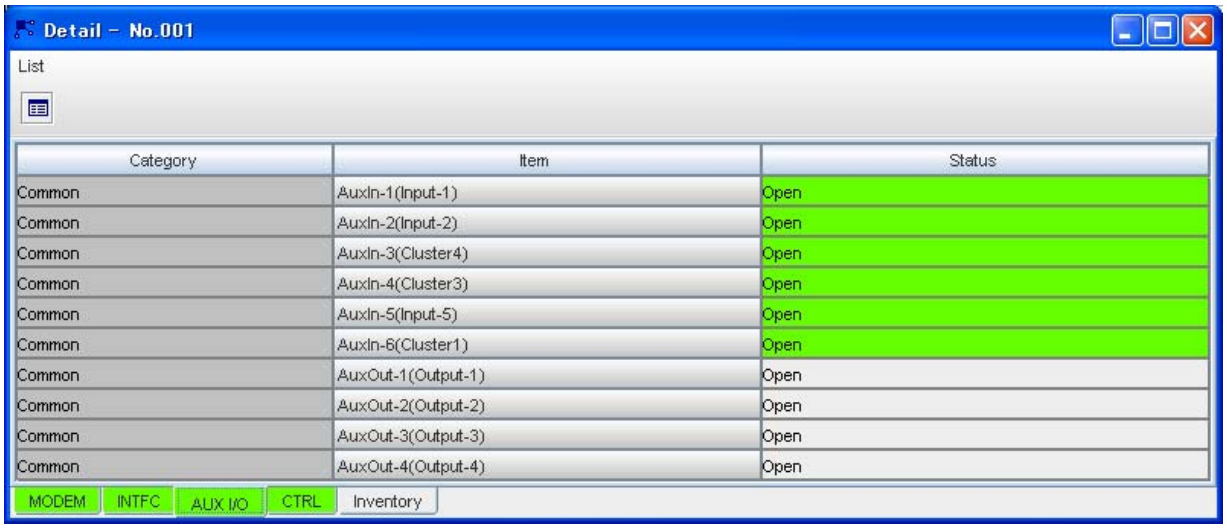
*1 Not displayed for: 1+0 (E1 TRIBUTARY ONLY), 1+1 (E1 TRIBUTARY ONLY).

2.15 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. Select **AUX I/O** field in **PNMT main window**.



AUX I/O tab

2.15.1 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.

For 2-WAYconfiguration:

1. When Cluster1 Input is enabled, Input-6 item is used as Cluster ALM1 (DIR-B).
2. When Cluster2 Input is enabled, Input-5 item is used as Cluster ALM2 (DIR-B).
3. When Cluster3 Input is enabled, Input-4 item is used as Cluster ALM3 (DIR-A).
4. When Cluster4 Input is enabled, Input-3 item is used as Cluster ALM4 (DIR-A).

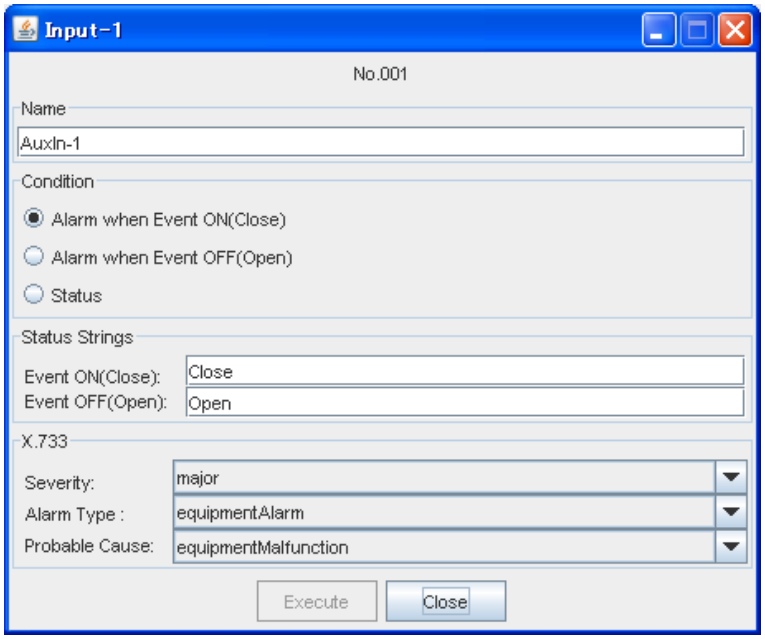
For standard (non-2-WAY) configuration:

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.

2.15.2 Photocoupler Input Setting

To set the photocoupler input:

1. Click the selected **[AuxIn-*n*]** button in **AUX I/O tab**.
2. The input properties will be displayed in the ensuing window.

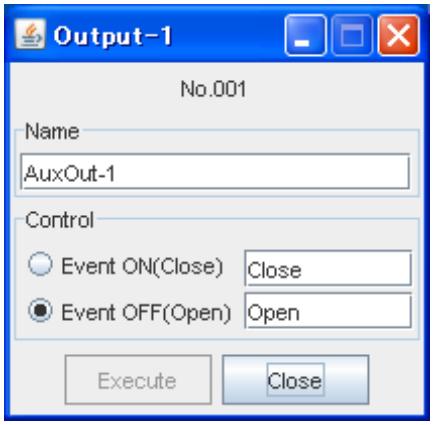


Setting the Selected Input to Alarm or Status

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.

2.15.3 Relay Output Setting

To set the relay output:

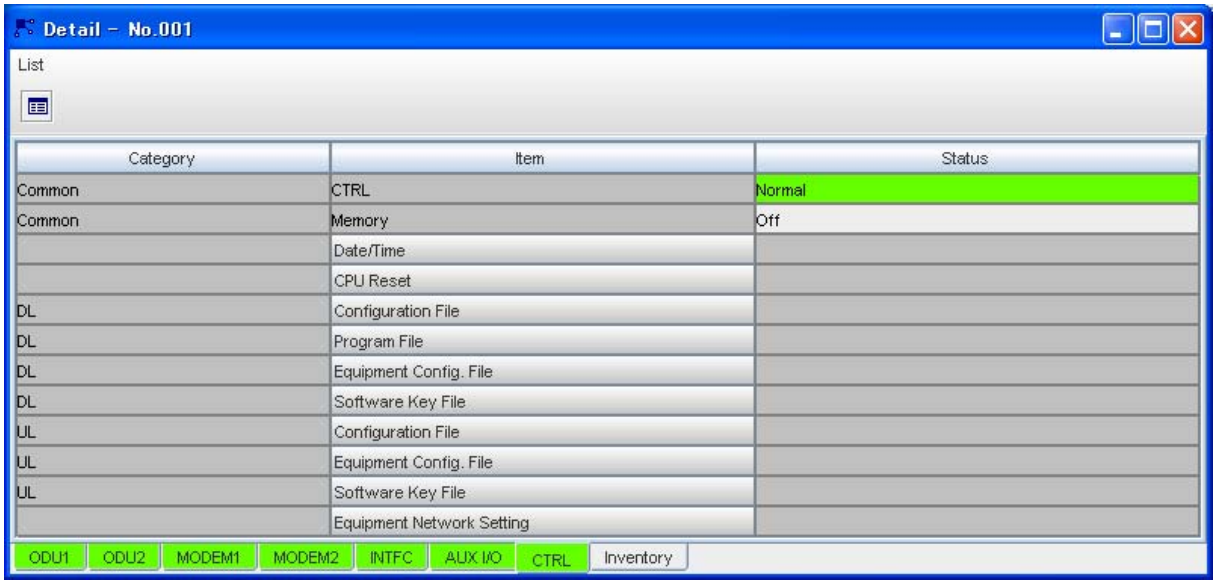


1. Click **[AuxOut-*n*]** button in **AUX I/O tab**.
2. Enter the desired name of the selected output in the **Name** field. A maximum of 32 characters can be used.
3. To select the desired output condition of the selected relay output, select the **Event ON** (the output terminal will be in closed loop 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.

2.16 Control (CTRL) Tab

Select **CTRL** field in **PNMT main window** of the selected IDU.

Various control parameters can be set via the **CTRL tab**.



2.16.1 Control Module

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

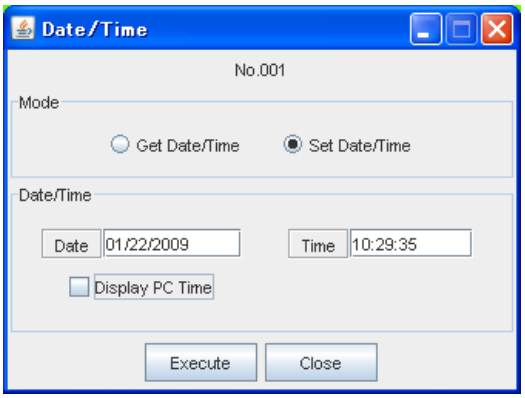
- CTRL
- Memory
- Date/Time
- CPU Reset
- Download: Configuration File
- Download: Program File
- Download: Equipment Configuration File
- Download: Software Key File
- Upload: Configuration File
- Upload: Equipment Configuration File
- Upload: Software Key File
- Equipment Network Setting

2.16.2 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 **CTRL tab**.



NOTE

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

2. To check the Date and Time Settings of the 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.

2.16.3 CPU Reset

The Control module can be reset using this function.

*The CPU Reset window is not available when **Maintenance** is **Off**.

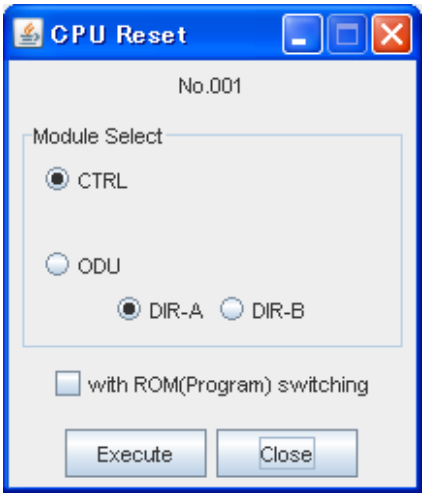
NOTE

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

To reset the Control module:

1. Click the **[CPU Reset]** button in **CTRL tab**.
2. With the **Module Select** feature, select **CTRL** or **ODU**.
3. When **ODU** is selected, you can select the "**with ROM (Program) Switching"** option if you want to switch to a newly downloaded Control module Program file.

   ODU is not displayed if 1+0 (E1 TRIBUTARY ONLY), 1+1 (E1 TRIBUTARY ONLY) settings are configured.
4. Click **[Execute]** button to continue the Control module reset operation.
5. Click the **[Close]** button when done.



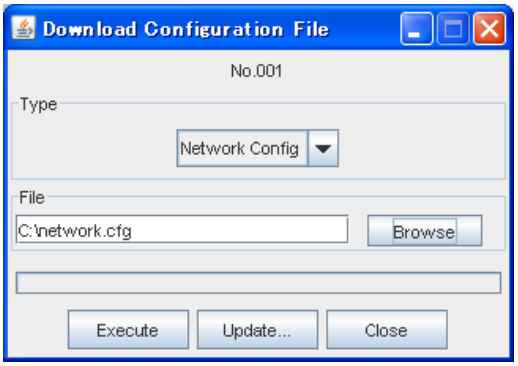
2.16.4 Downloading the Configuration Files to the Control Module

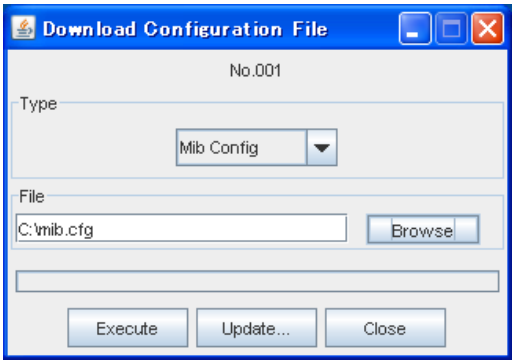
This function is used to download the network configuration files from the PNMT to the Control module. The network configuration file – **pp_network.cfg**, contains the IP address of the target NE as well as the IP address of the opposite NE and the information about the network where the target NE is 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 **Maintenance** is **Off**.

To download the new configuration file to the CTRL:

1. Click **[DL Configuration File]** button in **CTRL tab**.





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!!!

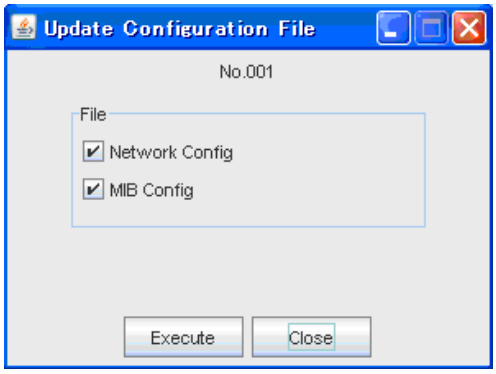
While data is being transmitted, do not remove the USB cable connecting the IDU with the PC.

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 *2.16.5 Downloading a new Program file to the Control Module*.

NOTE

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

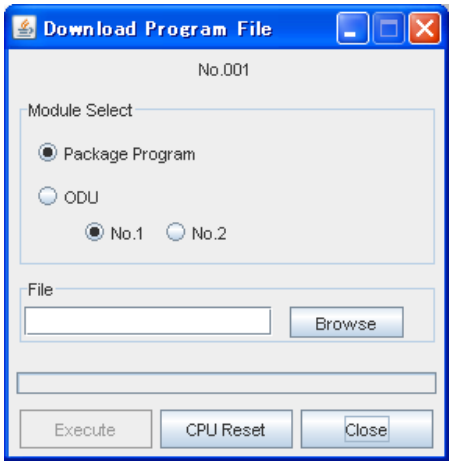
8. Click the **[Close]** button when done.

2.16.5 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 **Maintenance** is **Off**.

To download the program file to Control module:



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

   ODU is not displayed if 1+0 (E1 TRIBUTARY ONLY), 1+1 (E1 TRIBUTARY ONLY) settings are configured.

2. Enter the appropriate location of the program file (*.out) 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

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

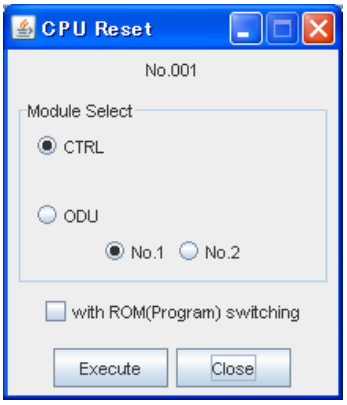
WARNING!!!

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

4. 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.



5. Click the **[CPU Reset]** button to switch to the new program file.
6. Check the "**with ROM (Program) Switching"** box.
7. Click the **[Execute]** button to complete the switch to the new program file.

NOTE

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

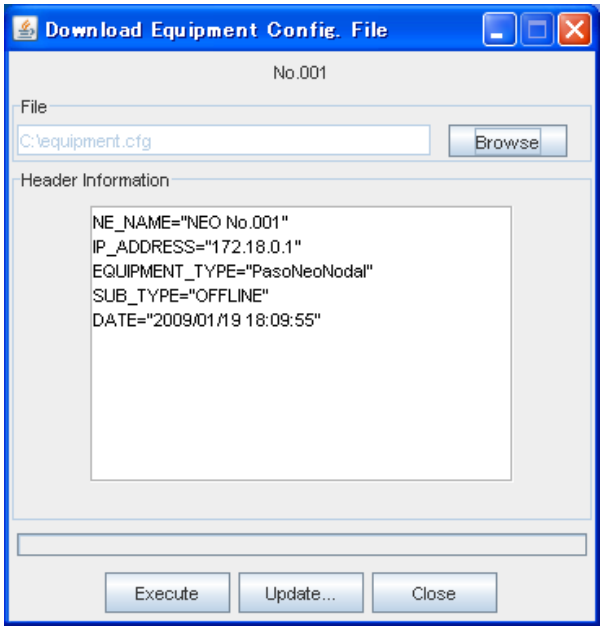
2.16.6 Downloading the Equipment Configuration Files to the Control Module

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 **Maintenance** is **Off**.

To download new configuration file to the NE:

1. Click the **[DL Equipment Config. File]** button in **CTRL tab**.
2. Click the **[Browse]** button to locate the file on the local hard disk or diskette.



WARNING!!!

The OFFLINETOOL creates the Equipment Config File for each IDU.

Before downloading the Equipment Config File which has been created in OFFLINETOOL through PNMT, make sure that SUB TYPE="OFFLINE" is specified in Header Information on Downloading the Equipment Configuration File menu. In addition, be sure to specify the destination IDU# correctly.

WARNING!!!

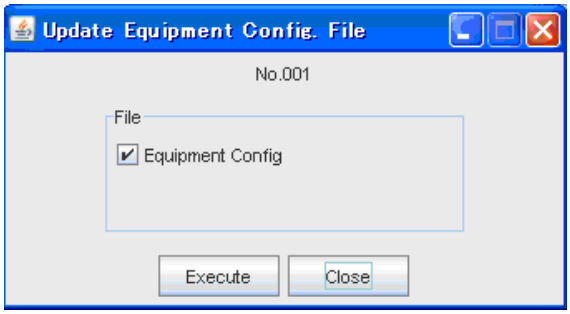
Make sure that the correct equipment configuration file is downloaded to the correct Control module. Incorrect configuration file is liable to cause Control module or network malfunction/failure.

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.

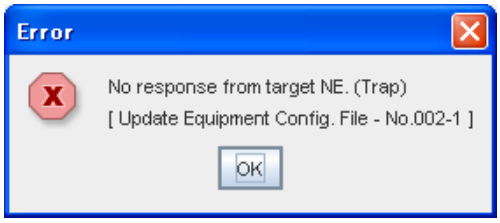


NOTE

When downloading a "Pn_equip_0x" (x:1-4) file created with OfflineTool, the TX RF Frequency and TX RF Frequency setting values can be lost during downloading with PNMT, if, they are not within the target ODU's setting range for the same parameters.

When the following error alert appears, please refer to Appendix D.

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

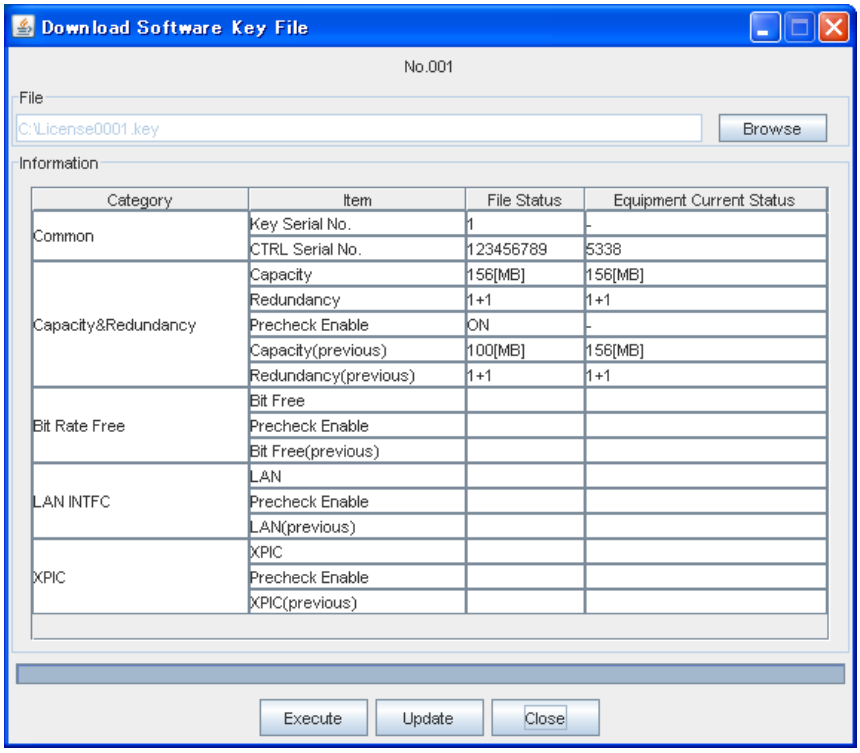


2.16.7 Downloading the Software Key Files

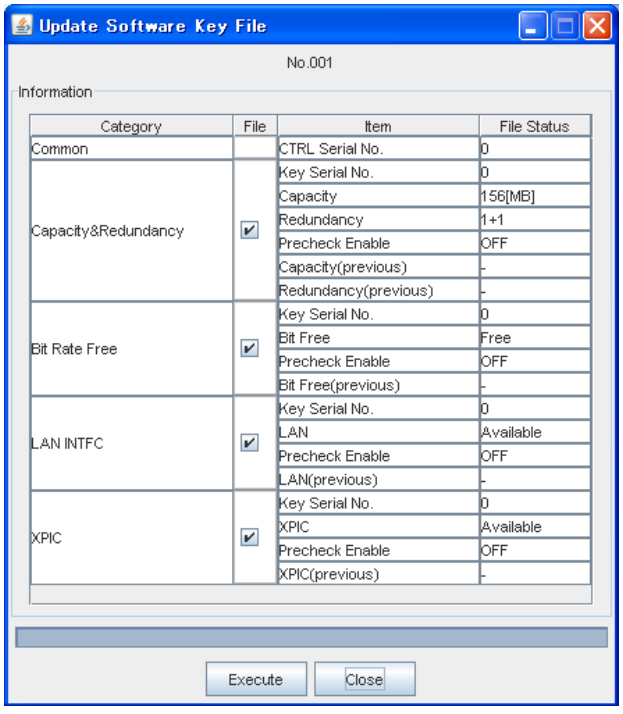
This function is used to download the Software Key file from the PNMT to the Control module. The Software Key file is used to enhance PNMT functionality.

*This window is not available when **Maintenance** is **Off**.

To download the Software Key files:



1. Click the **[DL Software Key File]** button in **CTRL tab**.
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.

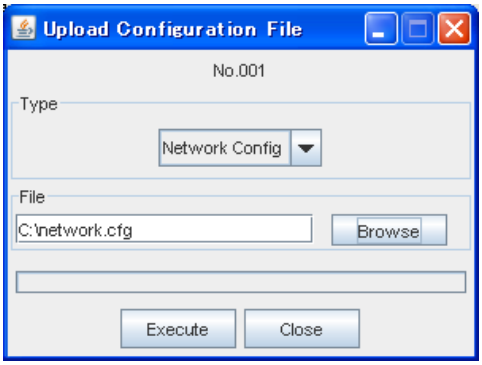
3. Click the **[Execute]** button to start the operation.
4. The values of “Equipment Current Status” are updated.
5. Click the **[Update]** button to activate the new Software Key file. “Update Software Key File” window is displayed.
6. Select the File to update and click the **[Execute]** button.
7. Click the **[Close]** button when done.

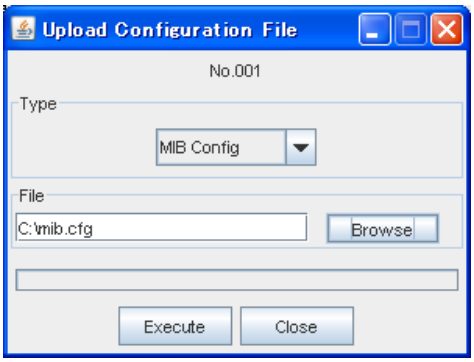
2.16.8 Uploading Configuration File to PNMT PC

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 **[UD Configuration File]** button in **CTRL tab**.



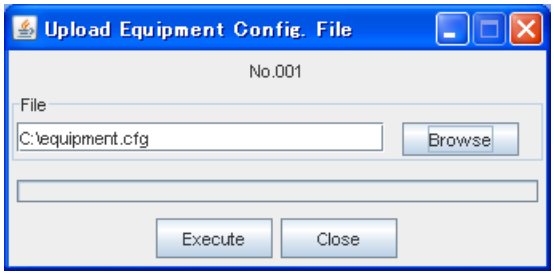


2. Select the type of file to be uploaded on the **Type** field.
3. Enter the desired file name for the uploaded file. And select and the directory where the uploaded file is to be saved.
4. Click the **[Execute]** button to start the operation.
5. A message window indicating the status of the operation 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.

2.16.9 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.

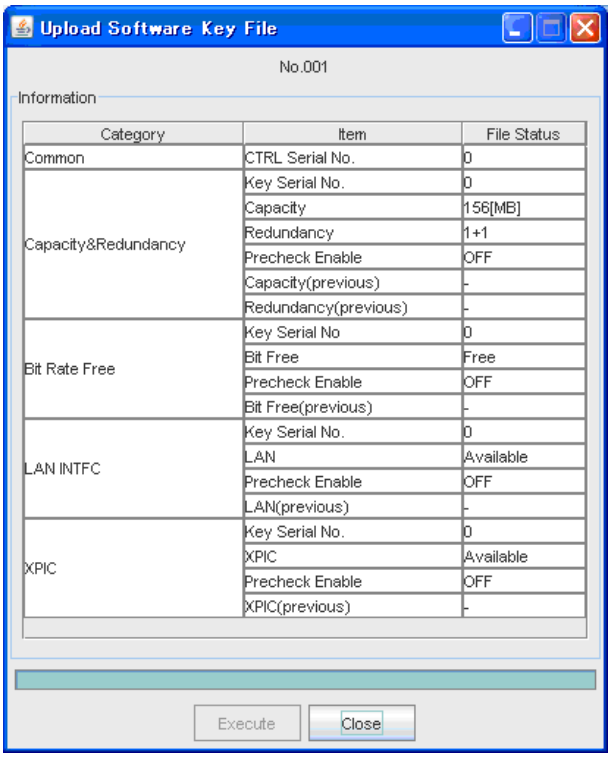
To upload the equipment configuration file from the Control module to the PNMT:



1. Click the **[UD Equipment Config. File]** button in **CTRL tab**.
2. Click the **[Execute]** button to start the operation.
3. Enter the desired name for the uploaded file and select the directory where the uploaded file is to be saved.
4. A message window indicating the status of the operation will appear. It will close automatically once the operation is completed.
5. After the upload is finished, click the **[Close]** button.
6. Verify that the file was uploaded on the specified directory.

2.16.10 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:

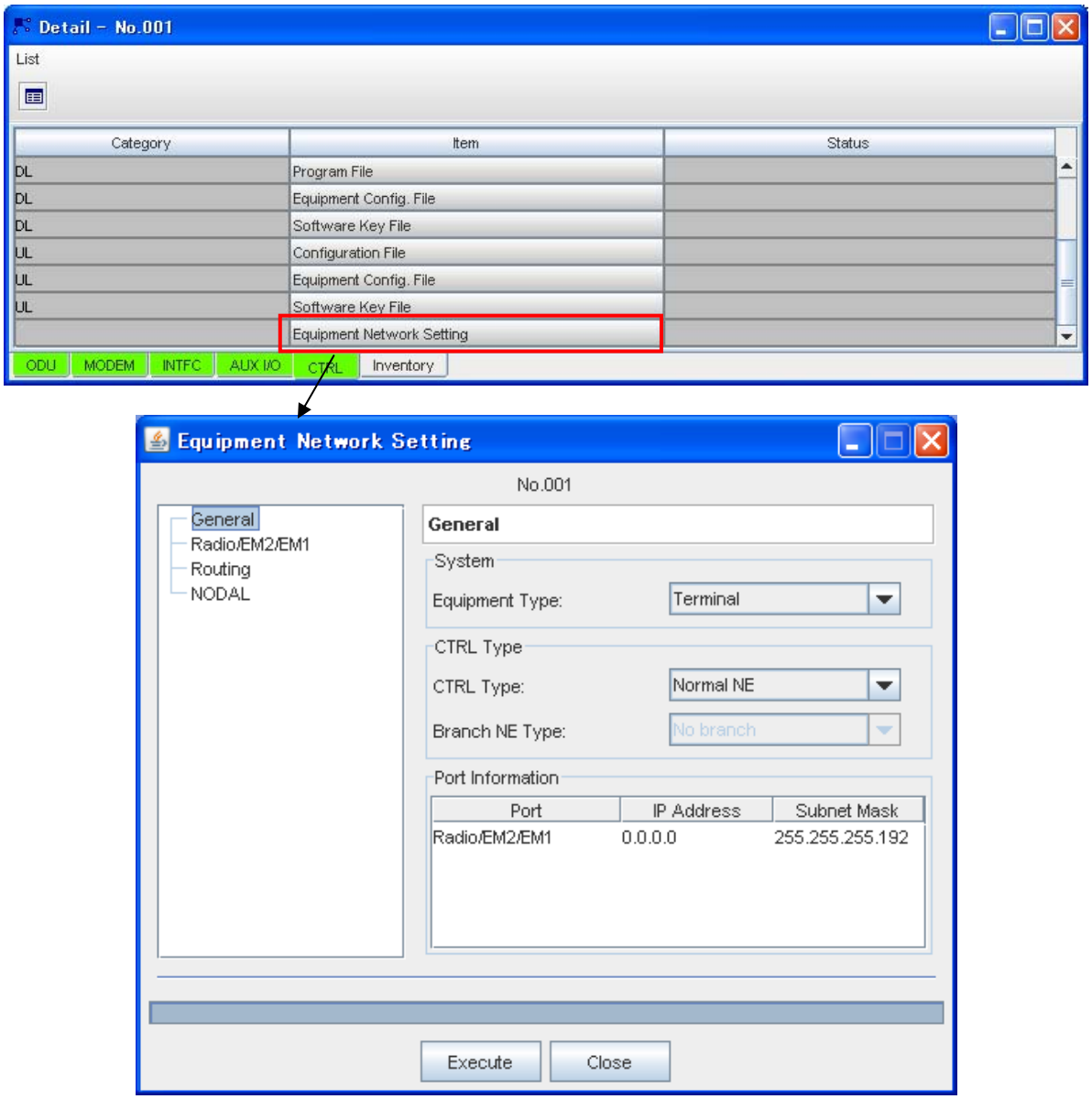
1. Click the **[UD Software Key File]** button in **CTRL tab**.
2. Click the **[Execute]** button to start the operation.
3. After the upload is finished, click the **[Close]** button.

2.16.11 Configuring the Equipment Network Settings

In order to operate the *Auto Discovery* and Network functions respectively with PNMS and PNMT it is necessary to first, connect PNMT to each NE to configure Network information.

Since, NEO NODAL belongs to the NEO series it supports the AutoDiscovery function.

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.



Select **Equipment Type** of **System** from the list.

If selecting ***Terminal***, refer to **Appendix A.**

If selecting ***2-WAY***, refer to **Appendix B.**

If selecting ***Tributary Only***, refer to **Appendix C.**

2.17 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 **Maintenance** is **Off**. “Switch to Maintenance mode first” is displayed).

Item/feature	Description	Specific conditions for it to be displayed/configured
Maintenance	To switch Maintenance mode to ON.	None (displayed by default)
TX SW Manual Control	To control the TX switch manually.	When REDUNDANCY SETTING = 1+1 (HOT STANDBY).
RX SW Manual Control	To control the RX switch manually.	When REDUNDANCY SETTING = 1+1 (HOT STANDBY) or 1+1 (TWINPATH).
ATPC Manual Control	Allows optional transmitting power when ATPC is in operation.	When TX POWER CONTROL = ATPC and Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY. *1 (No.1/No.2) are displayed when Redundancy setting is 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY.
TX Mute Control	To set TX Mute Control.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*1 (No.1/No.2) are displayed when Redundancy setting is 1+1 (HOT STANDBY), 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY. Control button is displayed/enabled when PNMT is locally linked (direct connection), Opposite station: display enabled; otherwise: disabled.
CW Control	To turn on the Carrier Wave for measurements.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*1 (No.1/No.2) are displayed when Redundancy setting is 1+1 (HOT STANDBY), 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY. Control button is displayed/enabled when PNMT is locally linked (direct connection); otherwise: disabled.
IF Loopback	To pinpoint faulty sections causing signal interruption.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*1 (No.1/No.2) are displayed when Redundancy setting is 1+1 (HOT STANDBY), 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY. Control button is displayed/enabled when PNMT is locally linked (direct connection); otherwise: disabled.

Item/feature	Description	Specific conditions for it to be displayed/configured
DADE Adjust	Select the DADE for 1+1 (HOT STANDBY) / 1+1 (TWINPATH) configuration to bring INTFC status back in phase.	When PNMT is locally linked (direct connection) display is always enabled (by default).
Linearizer Control	To manually disable the linearizer function.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*1 (No.1/No.2) are displayed when Redundancy setting is 1+1 (HOT STANDBY), 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY. Not displayed when Modulation Scheme is QPSK.
SUB Band	Allows the Sub Band to be changed for ODUs that permit this.	When PNMT is locally linked (direct connection) and Redundancy setting is: 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*1 (No.1/No.2) are displayed when Redundancy setting is 1+1 (HOT STANDBY), 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY.
Antenna Alignment Mode	To turn on Antenna Alignment Mode (only available for specific ODU type).	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*1 (No.1/No.2) are displayed when Redundancy setting is 1+1 (HOT STANDBY), 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY. Control button is displayed/enabled when PNMT is locally linked (direct connection), Opposite station: display enabled; otherwise: disabled.
Main CH Loopback-1 (CH01-16)	Allows the pinpointing of faulty sections causing signal interruption.	None (displayed by default)
Main CH Loopback-2 (CHxx) (xx:01-48)	Same as above.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1*1 When TRANSMISSION CAPACITY 10MB: CH01-05 are displayed (CH06-48are NOT displayed) 20MB: CH01-10 are displayed (CH11-48 are NOT) 40MB: CH01-20 are displayed (CH21-48 are NOT) 80MB: CH01-40 are displayed (CH41-48 are NOT displayed) 100MB: CH01-48 are displayed
Main CH Loopback-2 (DIR-A/DIR-B) (CH01-48)*2	Same as above.	Only when REDUNDANCY SETTING = 2-WAY But, depending on TRANSMISSION CAPACITY (DIR-A)/(DIR-B) the following applies: 10MB: CH01-05 are displayed (CH06-48 are

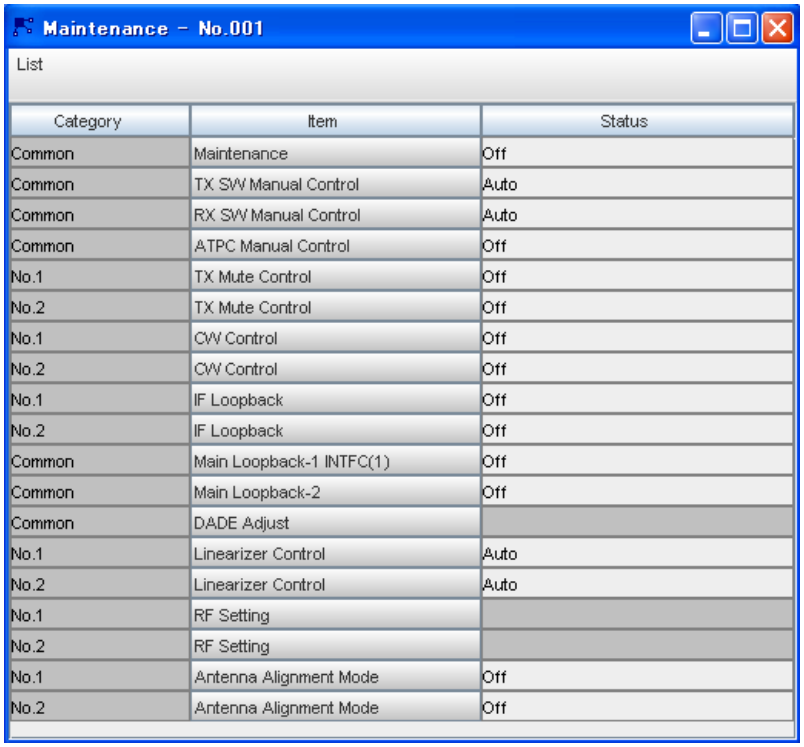
Item/feature	Description	Specific conditions for it to be displayed/configured
		NOT) 20MB: CH01-10 are displayed (CH11-48 are NOT) 40MB: CH01-20 are displayed (CH21-48 are NOT) 80MB: CH01-40 are displayed (CH41-48 are NOT) 100MB: CH01-48 are displayed
Main Loopback-1	Allows the pinpointing of signal interruption faults.	When all the following applies: INTFC = DXC IDU ID = 1 STM-1 Usage = Used
ALS Restart	For optical interfaces, the duration of laser emittance during ALS manual restarts (for testing).	When all the following applies: INTFC = DXC IDU ID = 1 ALS Function = Enable STM-1 Usage = Used

*1 Not displayed for: 1+0 (E1 TRIBUTARY ONLY), 1+1 (E1 TRIBUTARY ONLY).
*2 For 2-WAY configuration, 48CH can be set for A and B respectively.

2.17.1 Selecting Maintenance

To open the Maintenance window:

1. Select **Configuration → Maintenance** in the NE-specific menu bar. Or select **MAINT** field in **PNMT main window** of the selected IDU.



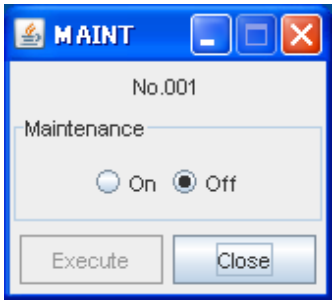
Maintenance window

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 above.

2.17.2 Mode

To switch the NE to maintenance mode:

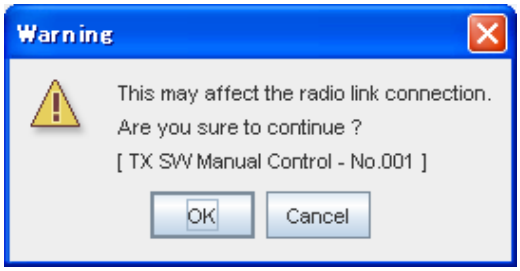
1. Click **[Maintenance]** button in **Maintenance window**.
2. Select on **On/Off** depending on desired state.
3. Click the **[Execute]** to implement the command.
4. Click the **[Close]** button when finished.



2.17.3 TX SW Manual Control (for 1+1 (HOT STANDBY) 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.

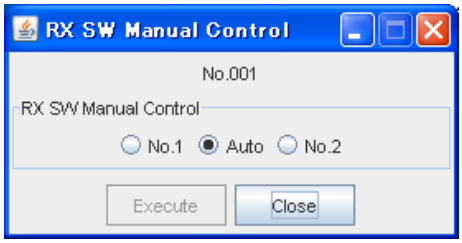
If the TX SW Manual Control has been manually switched to either No.1 or No.2, the confirmation message will NOT appear. However, this operation still may affect the radio link.

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

2.17.4 RX SW Manual Control (for 1+1 [HOT STANDBY] or 1+1 [TWINPATH])

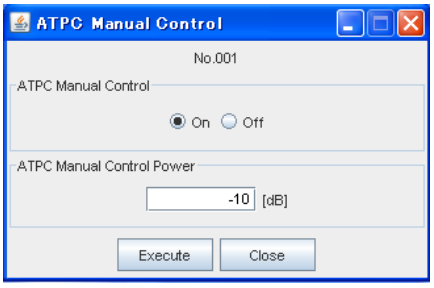
To control the RX switch manually:

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 selected RX system.
4. Click the **[Close]** button when finished.



2.17.5 ATPC Manual Control

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

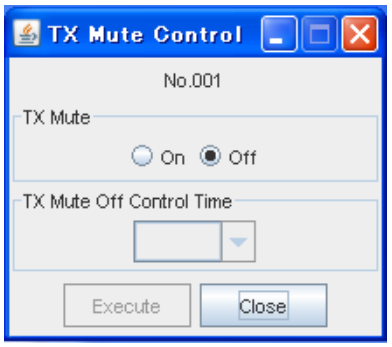


1. Click **[ATPC Manual Control]** button in **Maintenance window**.
2. Select whether to manually turn **On** (or **Off**) **ATPC Manual Control** and the desired decibel value.
3. Click the **[Execute]** button to activate the new setting.
4. Click the **[Close]** button when finished.

2.17.6 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 Mute Release Time in the list.
4. Click the **[Execute]** button to implement the command.
5. Click the **[Close]** button when finished.

2.17.7 CW Control

When doing frequency measurements, the CW should be turned **On** to have an un-modulated signal. During normal operations this status should be **Off**.

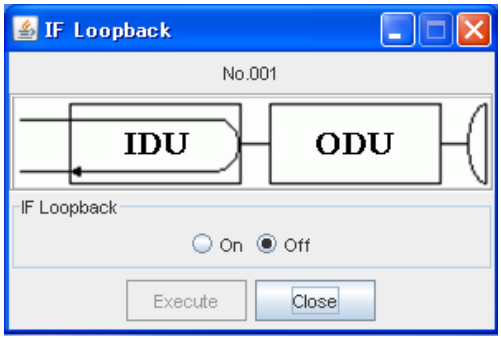
To change the CW (MOD Carrier) status:

1. Click **[CW Control]** button in **Maintenance window**.
2. Click **On/Off** button depending on desired state.
3. Click the **[Execute]** button to implement the operation.
4. Click the **[Close]** button when finished.

2.17.8 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 **Maintenance window**.
2. Select **On** to activate the loopback.
3. Click the **[Execute]** button to activate the loopback.
4. Click **[Close]** button when finished.

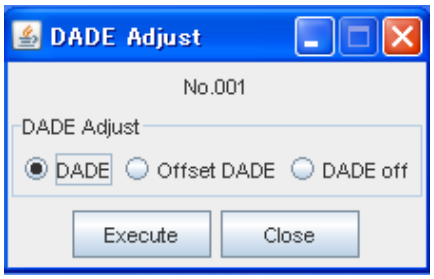


2.17.9 DADE Adjust

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.



2.17.10 Linearizer Control

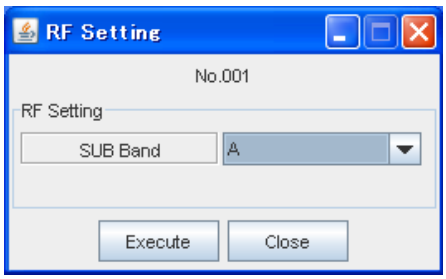
The Linearizer function is used to remove the distortion from the main amplifier in the ODU. This feature is set to **Auto** by default. If you need to turn it off during maintenance:

1. Click **[Linearizer Control]** button in **Maintenance window**.
2. Click **Forced Reset**.
3. Click the **[Execute]** button to activate this command.
4. Click the **[Close]** button when finished.

2.17.11 RF Setting

Sub Band and Shift Frequency of ODU can be selected.

To select Sub Band:

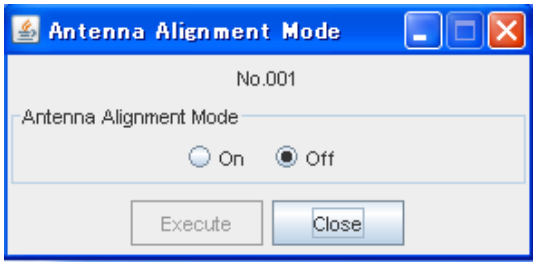


1. Click **[RF Setting]** button in **Maintenance window**.
2. Select the type of Sub Band in the Sub Band list.
3. Select the Shift Frequency in the list.
4. Click the **[Execute]** button to implement the command.
5. Click the **[Close]** button when finished.

2.17.12 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:

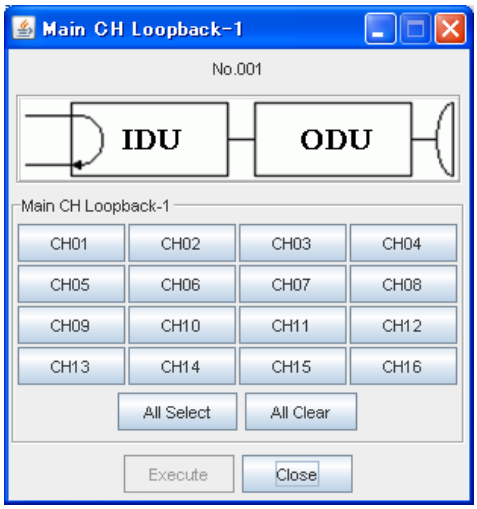


1. Click **[Antenna Alignment Mode]** button in **Maintenance window**.
2. Select **On/Off.**
3. Click the **[Execute]** button to activate the new setting.
4. Click the **[Close]** button when finished.

2.17.13 Main CH Loopback-1 (CH01- 16)

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

To set the loopback:



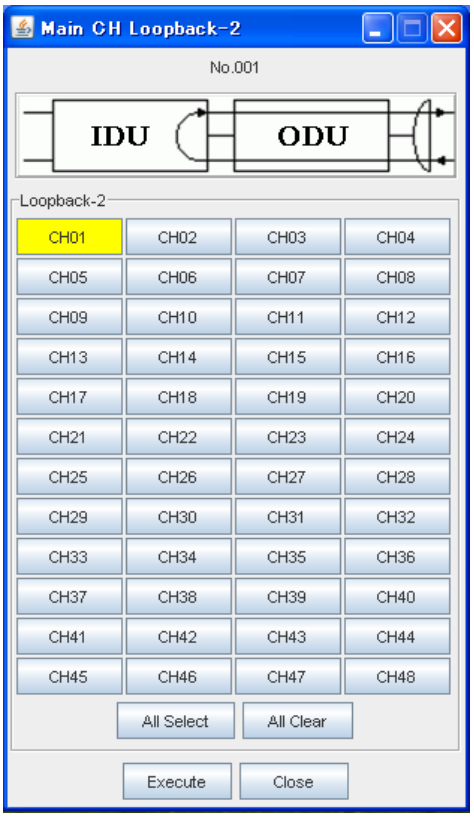
1. Click the **[Main CH Loopback-1]** button in **Maintenance window**.
2. Select the channel (01 - 16).
3. Click the **[Execute]** button to apply the loopback.
4. Click the **[Close]** button when finished.

2.17.14 Main CH Loopback-2 (CH01- 48)

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

To set the loopback:

1. Click the **[Main CH Loopback-2]** button in **Maintenance window**.
2. Select the channel (01 - 48).
3. Click the **[Execute]** button to apply the loopback.
4. Click the **[Close]** button when finished.

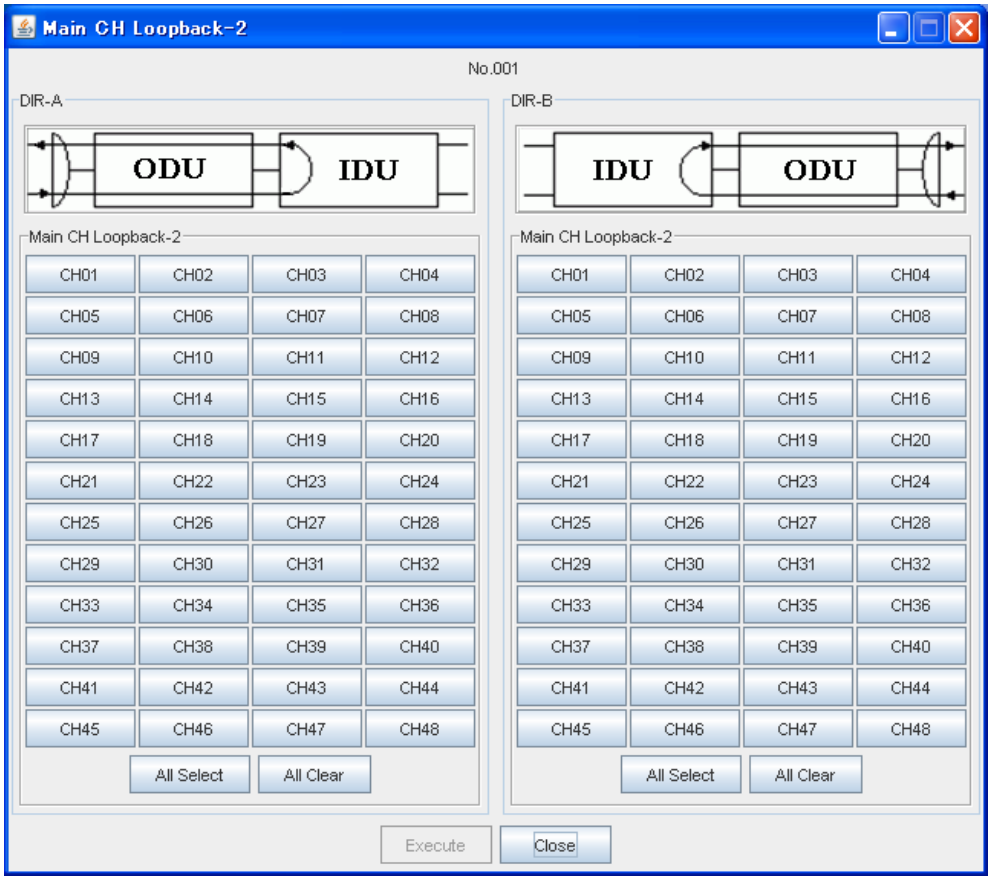


2.17.15 Main CH Loopback-2 (DIR-A/DIR-B) (CH01- 48)

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

To set the loopback:

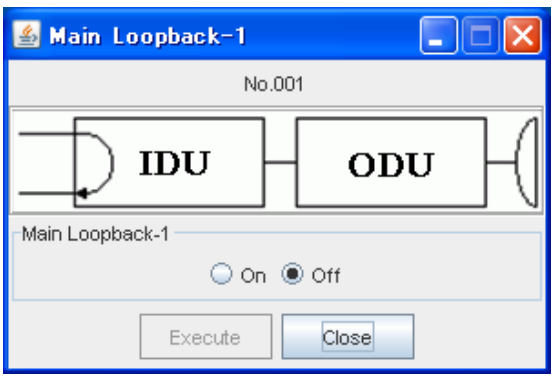
1. Click the **[Main CH Loopback-2 (DIR-A/DIR-B)]** button in **Maintenance window**.
2. Select the channel (01 - 48).
3. Click the **[Execute]** button to apply the loopback.
4. Click the **[Close]** button when finished.



2.17.16 Main Loopback-1

To set the STM-1 near-end loopback:

1. Click the **[Main Loopback-1]** 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.



2.17.17 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 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.

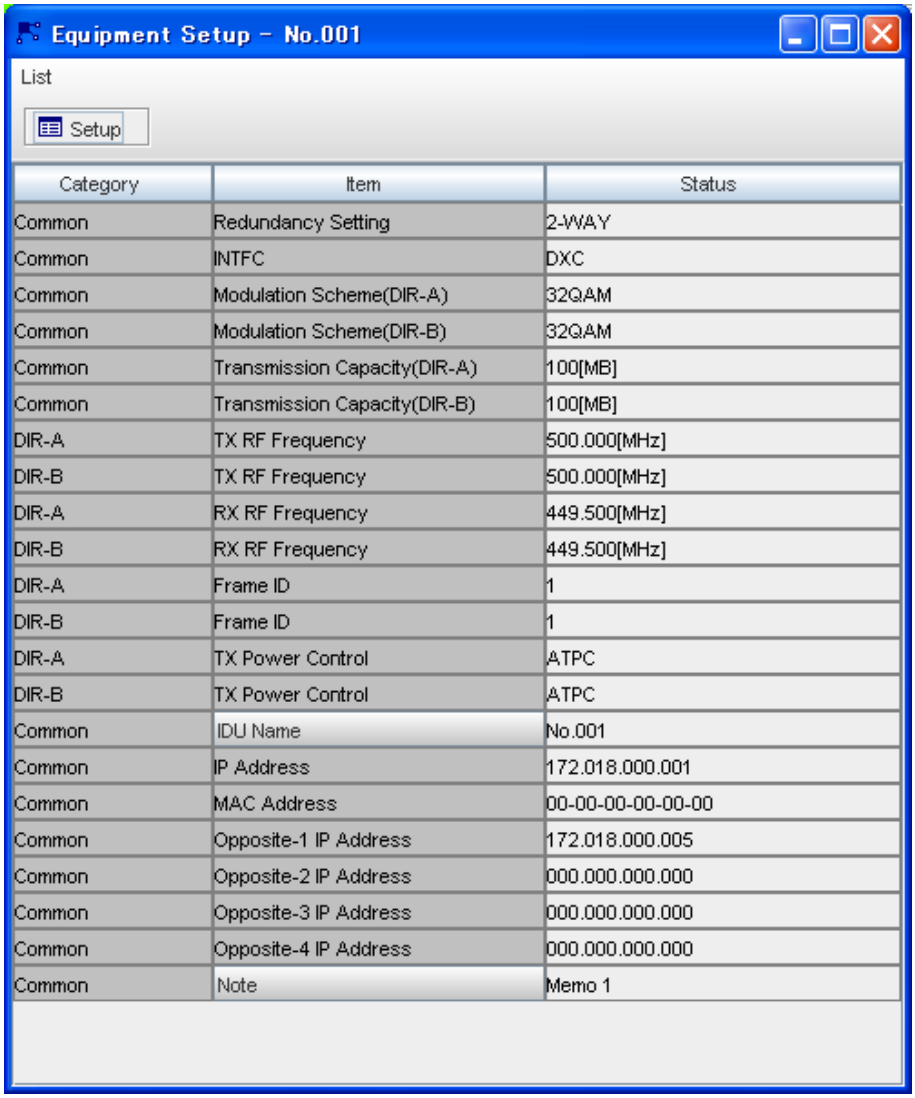
2.18 Equipment Setup

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

2.18.1 Equipment Setup window

To open the Equipment Configuration Monitor:

1. Select **Configuration → Equipment Setup** in the NE-specific menu bar.
2. This window contains the setup and control parameters for the ODU and the IDU. The **Equipment Setup window** is shown below.

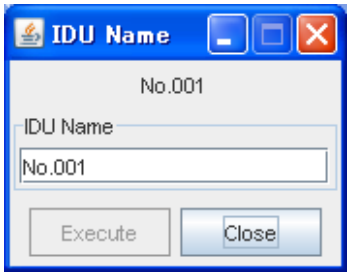


Category	Item	Status
Common	Redundancy Setting	2-WAY
Common	INTFC	DXC
Common	Modulation Scheme(DIR-A)	32QAM
Common	Modulation Scheme(DIR-B)	32QAM
Common	Transmission Capacity(DIR-A)	100[MB]
Common	Transmission Capacity(DIR-B)	100[MB]
DIR-A	TX RF Frequency	500.000[MHz]
DIR-B	TX RF Frequency	500.000[MHz]
DIR-A	RX RF Frequency	449.500[MHz]
DIR-B	RX RF Frequency	449.500[MHz]
DIR-A	Frame ID	1
DIR-B	Frame ID	1
DIR-A	TX Power Control	ATPC
DIR-B	TX Power Control	ATPC
Common	IDU Name	No.001
Common	IP Address	172.018.000.001
Common	MAC Address	00-00-00-00-00-00
Common	Opposite-1 IP Address	172.018.000.005
Common	Opposite-2 IP Address	000.000.000.000
Common	Opposite-3 IP Address	000.000.000.000
Common	Opposite-4 IP Address	000.000.000.000
Common	Note	Memo 1

Equipment Setup window (example shows 2-WAY Configuration)

2.18.2 Editing the IDU Name

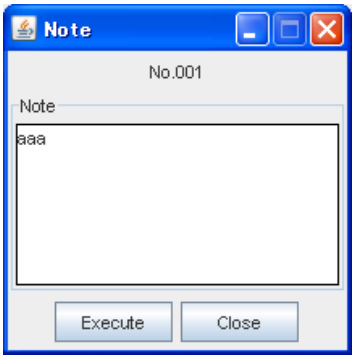
To edit the IDU name:



1. Click **[IDU Name]** button in **Equipment Setup window**.
2. Enter new IDU name in the **IDU 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.

2.18.3 Editing the Note for CTRL

To put an optional description on the current NE:

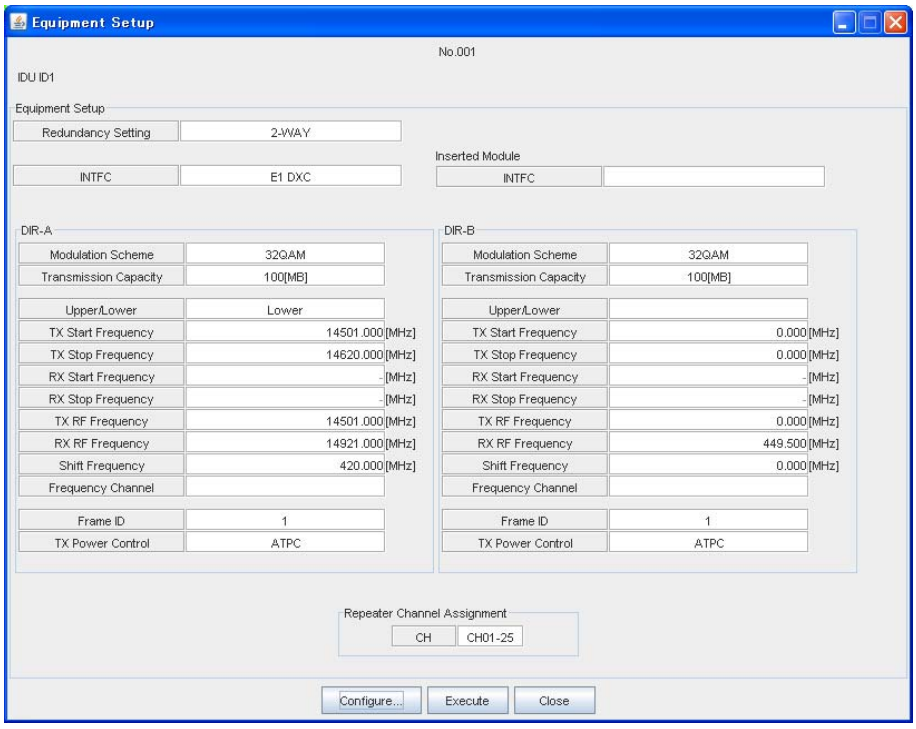


1. Click **[Note]** button in **Equipment Setup window**.
2. Enter the optional description for the specific NE in the **Note** dialog box. A maximum of 100 characters can be used in this field.
3. Click the **[Execute]** button when finished.
4. Click the **[Close]** button when finished.

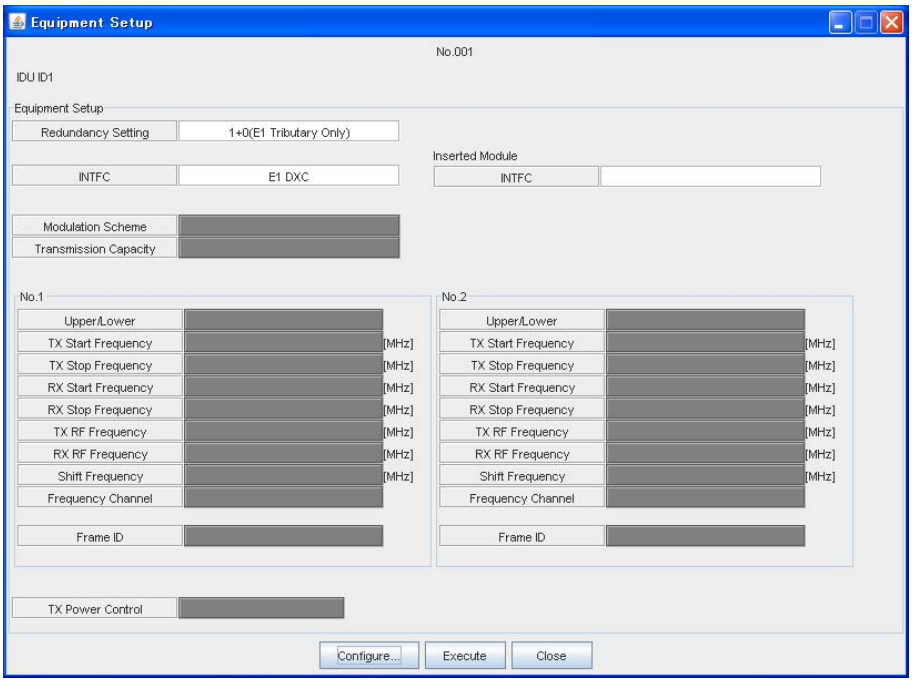
2.18.4 Setup

Setting the ODU and IDU parameters:

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



Equipment Setup Window (to verify settings)
INTFC = E1 DXC and 2-WAY configuration



Equipment Setup Window (to verify settings)
When INTFC = E1 DXC and 1+1 (E1 TRIBUTARY ONLY)

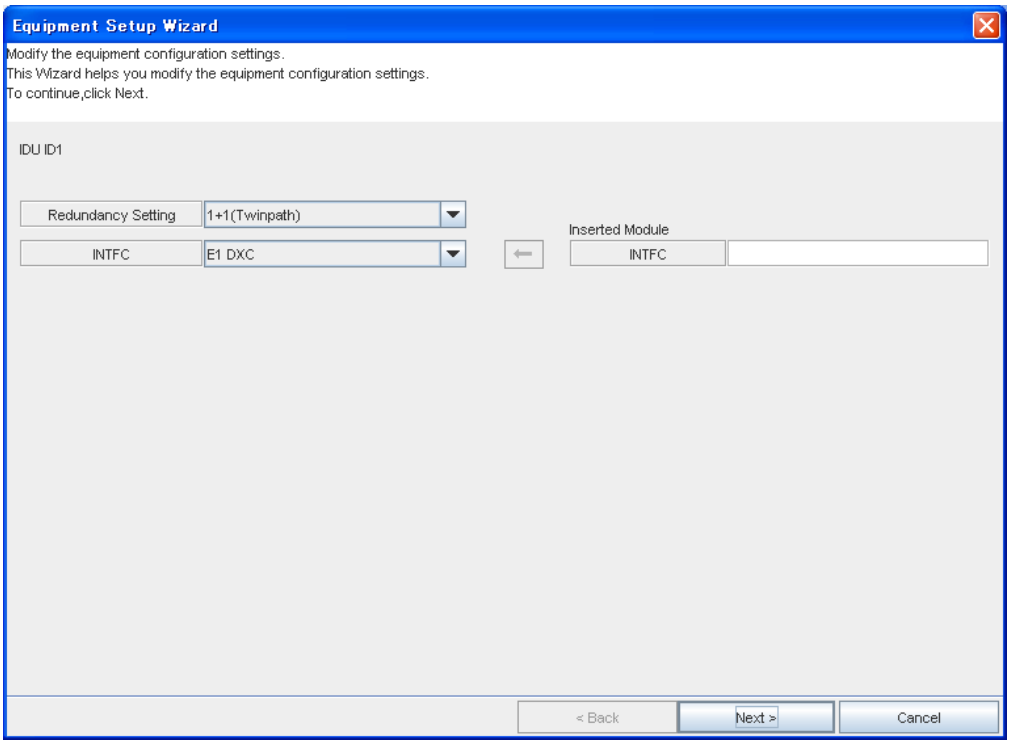
The following is an overview of the configurable items/parameters:

Item/feature	Description	Specific conditions for it to be displayed/configured
Redundancy setting	To select the desired redundancy setting.	None (displayed by default)
INTFC	To select INTFC (the available options depend on the selected User Interface).	None (displayed by default)
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.	Displayed when INTC cannot be identified.
Modulation scheme (DIR-A/DIR-B)	The type of modulation is set here.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*1 (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY.
Transmission capacity (DIR-A/DIR-B)	This value denotes the transmission capacity (in MB) of the selected interface and modulation type.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*1 (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY.
TX RF Frequency	The transmission frequency can be set within the range designated by the TX Start and TX Stop frequencies.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*1 (No.1/No.2) are displayed when Redundancy setting is 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY.

Item/feature	Description	Specific conditions for it to be displayed/configured
Frequency Channel	Enables the TX and RX frequencies for the channels to be set.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*1 (No.1/No.2) are displayed when Redundancy setting is 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY.
Frame ID:	Identification code for the transmission frames.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WA*1 (No.1/No.2) are displayed when Redundancy setting is 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY.
TX Power Control	The type of power control is set here.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*1 (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY.

*1 When 1+0 (E1 TRIBUTARY ONLY) or 1+1 (E1 TRIBUTARY ONLY) is selected, the window for configuring these settings does not appear.

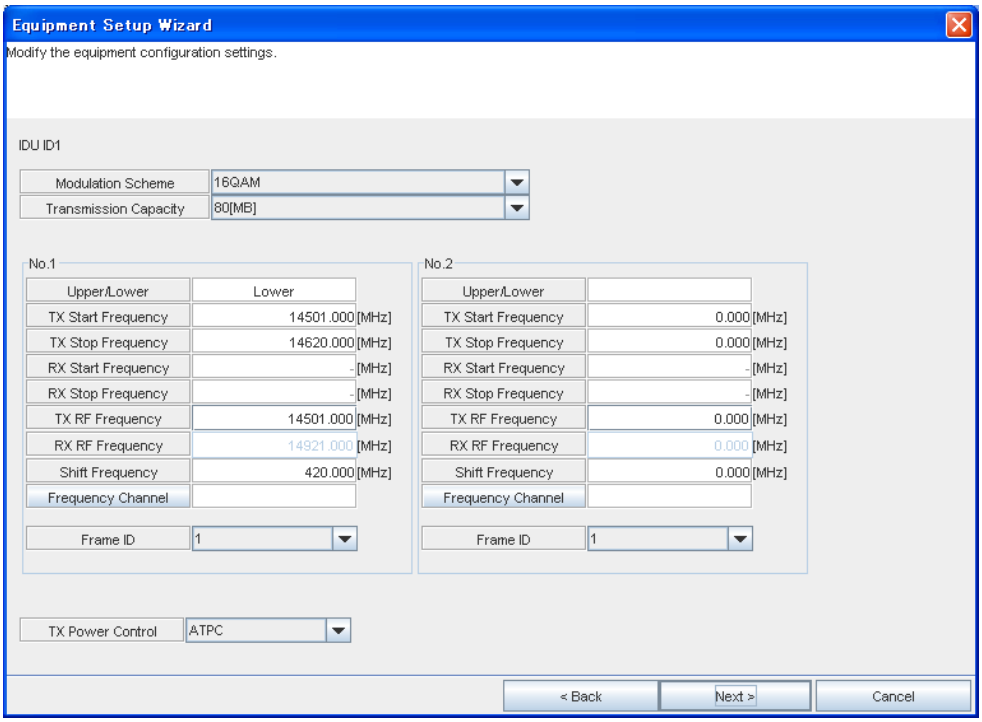
2. Clicking **[Configure]** opens the **Equipment Setup Wizard window(1/3)**.



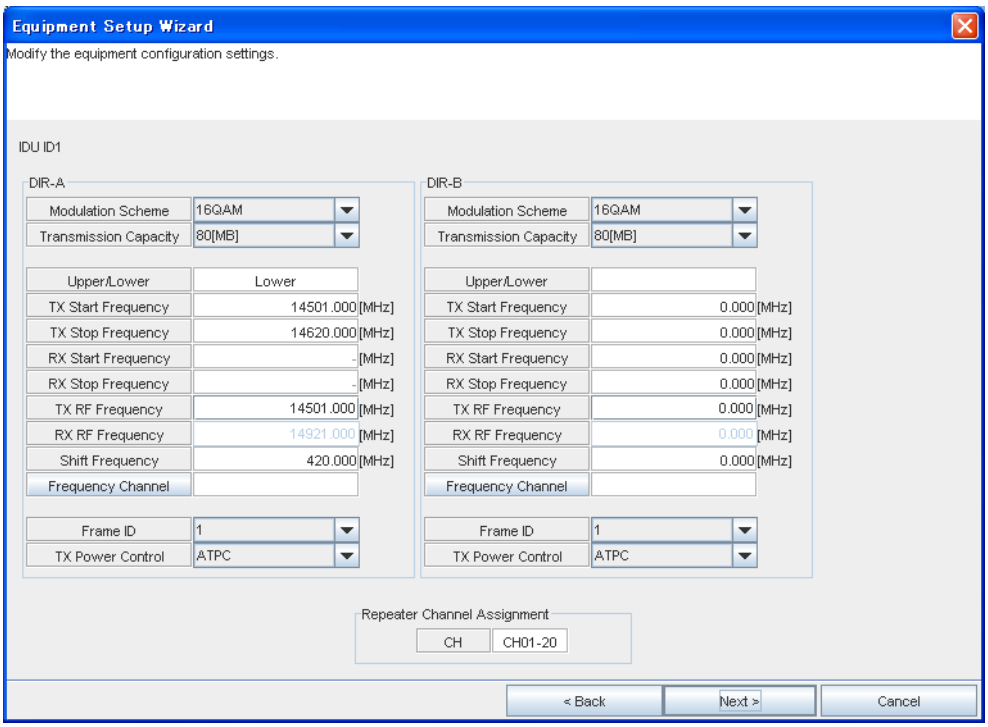
Equipment Setup Wizard window(1/3)

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

   *Does not apply for ***1+0(E1 TRIBUTARY ONLY), 1+1 (E1 TRIBUTARY ONLY);*** in which case, this window does not appear.

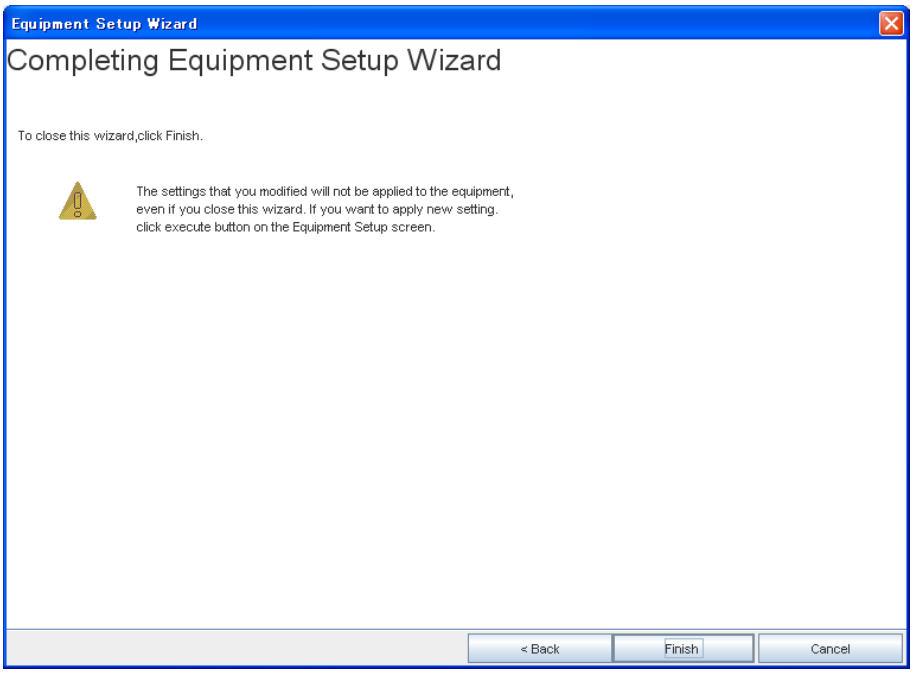


Equipment Setup Wizard window(2/3)
For 1+1 (TWINPATH) configuration



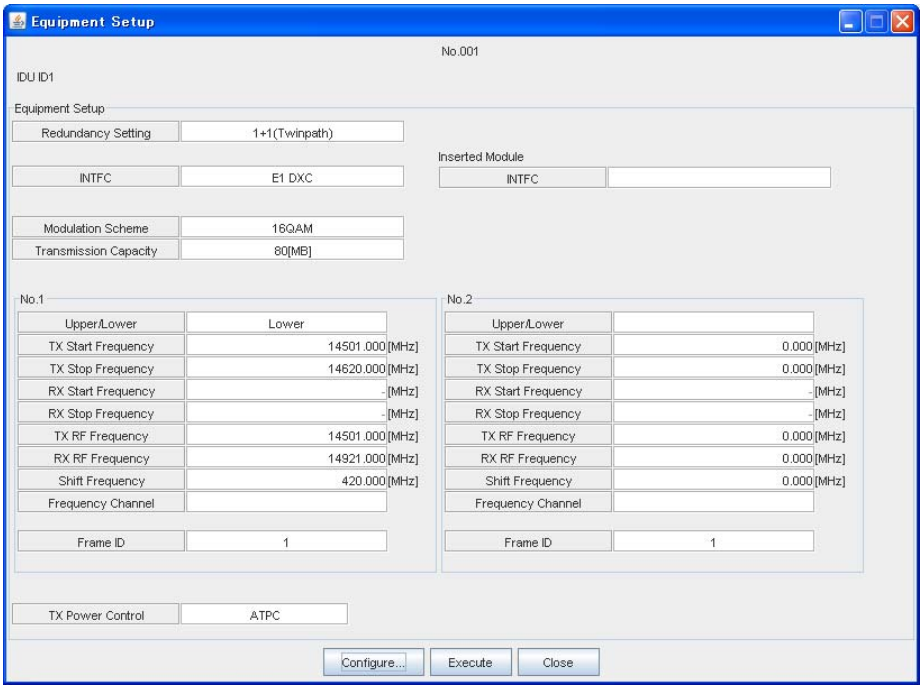
Equipment Setup Wizard window(2/3)
For 2-WAY configuration

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



Equipment Setup Wizard window(3/3)

5. 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.



Equipment Setup window (for verifying the settings)

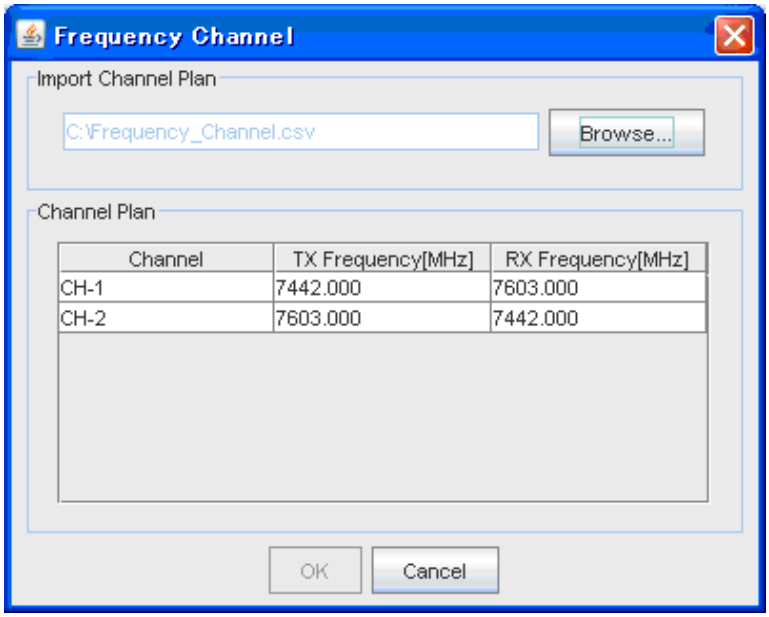
*1 When 1+0 (E1 TRIBUTARY ONLY) or 1+1 (E1 TRIBUTARY ONLY) is selected, the window for configuring these settings does not appear.

2.18.5 Frequency Channel

1. Click **[Frequency Channel] button** in **Equipment Setup Wizard window(2/3)**.
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



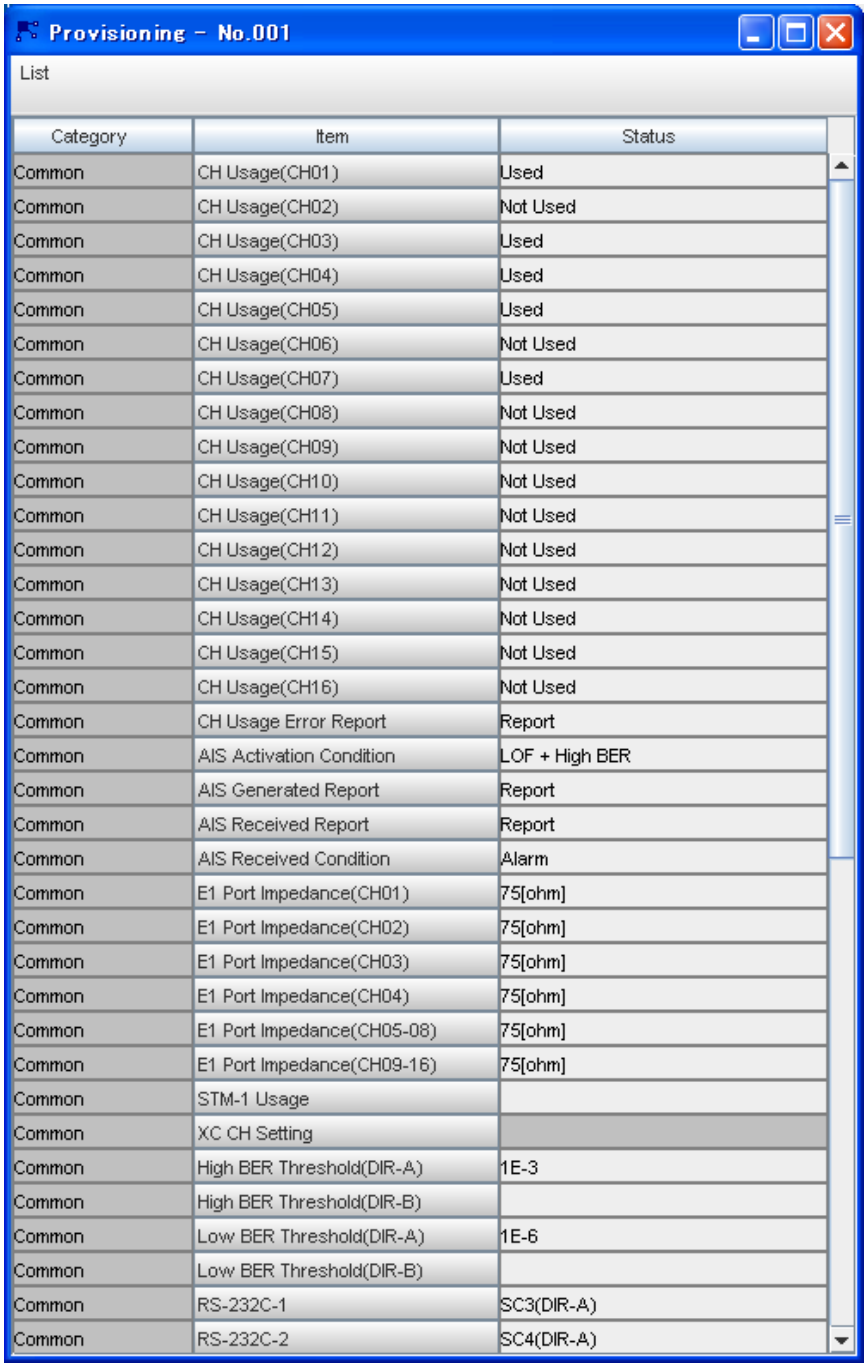
2.19 Provisioning

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

Provisioning window

To open the Equipment Configuration Monitor:

1. Select **Configuration → Provisioning** in the NE-specific menu bar.
2. This window contains the setup information of the MTPC, ATPC, BER Alarm Threshold, Cluster ALM Setting (Input), AIS Activation, Main Channel Setting, SC and Assignment. The **Provisioning window** is shown below.



Category	Item	Status
Common	CH Usage(CH01)	Used
Common	CH Usage(CH02)	Not Used
Common	CH Usage(CH03)	Used
Common	CH Usage(CH04)	Used
Common	CH Usage(CH05)	Used
Common	CH Usage(CH06)	Not Used
Common	CH Usage(CH07)	Used
Common	CH Usage(CH08)	Not Used
Common	CH Usage(CH09)	Not Used
Common	CH Usage(CH10)	Not Used
Common	CH Usage(CH11)	Not Used
Common	CH Usage(CH12)	Not Used
Common	CH Usage(CH13)	Not Used
Common	CH Usage(CH14)	Not Used
Common	CH Usage(CH15)	Not Used
Common	CH Usage(CH16)	Not Used
Common	CH Usage Error Report	Report
Common	AIS Activation Condition	LOF + High BER
Common	AIS Generated Report	Report
Common	AIS Received Report	Report
Common	AIS Received Condition	Alarm
Common	E1 Port Impedance(CH01)	75[ohm]
Common	E1 Port Impedance(CH02)	75[ohm]
Common	E1 Port Impedance(CH03)	75[ohm]
Common	E1 Port Impedance(CH04)	75[ohm]
Common	E1 Port Impedance(CH05-08)	75[ohm]
Common	E1 Port Impedance(CH09-16)	75[ohm]
Common	STM-1 Usage	
Common	XC CH Setting	
Common	High BER Threshold(DIR-A)	1E-3
Common	High BER Threshold(DIR-B)	
Common	Low BER Threshold(DIR-A)	1E-6
Common	Low BER Threshold(DIR-B)	
Common	RS-232C-1	SC3(DIR-A)
Common	RS-232C-2	SC4(DIR-A)

Provisioning window

The following is an overview of **Provisioning** items:

Item/feature	Description	Specific conditions for it to be displayed/configured
High/Low BER Threshold (DIR-A/DIR-B)	Allows the setting of the BER value that will trigger the alarm.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*1 (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY.
RS-232C-1 / 2, V11-1 / V11-2	Assigns the respective SC to an interface.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*1
V11-1 / V11-2 Direction Setting	Enables the V11-1 / V11-2 service channel clocking to be set (i.e. co-directional or contra-directional).	When V11-1 = SC1, SC2, SC3, SC4. When V11-2 = SC1, SC2, SC3, SC4.
MTPC TX Power	Allows the transmission power (dB) to be set for MTPC operation.	When TX POWER CONTROL = MTPC and Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*1 (No.1/No.2) are displayed when Redundancy setting is 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY.
ATPC Threshold Level	Allows the transmission power (dB) thresholds to be set for ATPC operation.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*1 (No.1/No.2) are displayed when Redundancy setting is 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY.
Additional ATT	For setting the additional attenuation parameters (dB).	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*1 (No.1/No.2) are displayed when Redundancy setting is 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY.
ATPC Range (MAX / MIN)	For setting the minimum and maximum ATPC transmission power (dB).	When TX POWER CONTROL = ATPC and Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*1 (No.1/No.2) are displayed when Redundancy setting is 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY.
ATPC Power Mode	For setting the power mode (Hold: maintaining present status, MIN: minimum level).	When TX POWER CONTROL = ATPC and Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*1 (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY.

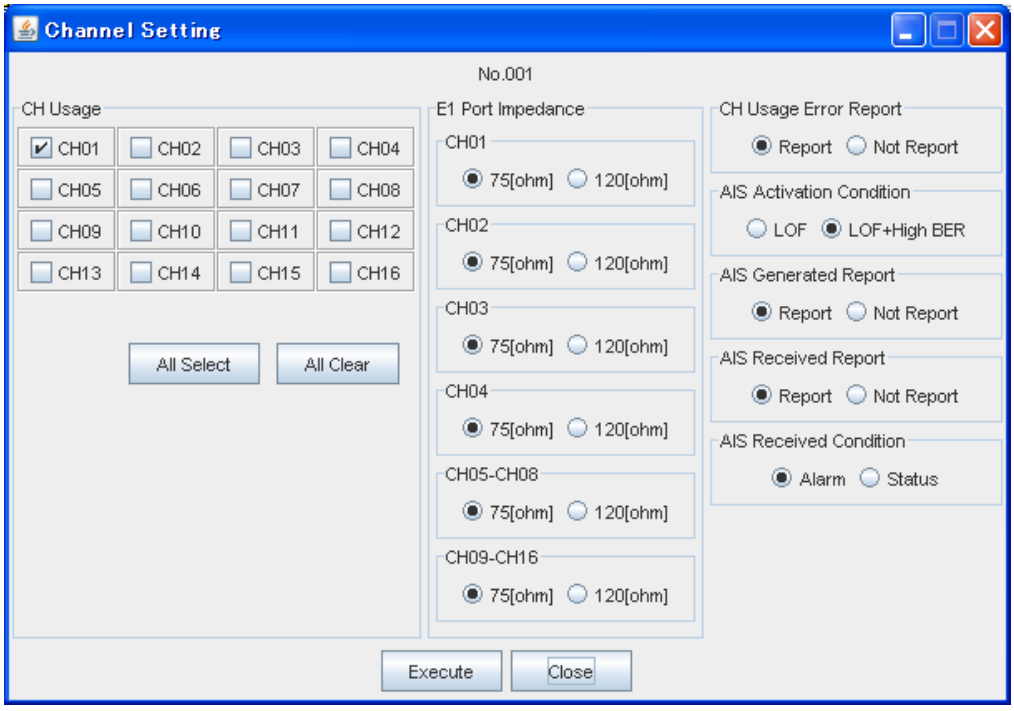
Item/feature	Description	Specific conditions for it to be displayed/configured
COMM Alarm Mode	Select ODU output power mode when the communication failes between IDU and ODU due to some problems.	When Mute is set, the ODU output power will be muted.(Default) When Hold is set, the ODU output power will be hold. (Should consider neighboring system)
TX / RX SW Priority	Enables the respective priority to be set (pre-alarm TX / RX route or No. 1).	When REDUNDANCY SETTING = 1+1 (HOT STANDBY).
RX SW Maintenance Mode	Has two settings: "manual" for disabling the RX switch and "forced" for overriding the disabled switch.	REDUNDANCY SETTING = 1+1 (HOT STANDBY).
RX SW Condition-Early Warning	For setting whether the EW (Early Warning) feature is to be included in the parameters.	REDUNDANCY SETTING = 1+1 (HOT STANDBY).
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 (displayed by default)
Cluster 1 - 4 Input	Allows the cluster alarm input to be enabled/ disabled.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*1
EOW2 External Setting	Enables appropriate EOW2 calling system signal polarity to be set: "normal" when the NEO IDU is connected to another NEO IDU or a PASOLINK IDU; "invert(ed)" when connected to PASOLINK+ IDU or Mx IDU.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*1
RX Level TCN Threshold (No.1/No.2) or (DIR-A/DIR-B)	For setting the threshold at which the TCN is displayed.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*1 (No.1/No.2) are displayed when Redundancy setting is 1+1 (TWINPATH). (DIR-A/DIR-B) are displayed when Redundancy setting is 2-WAY.
SES Activation Condition	Enables setting of the lower threshold (%) that activates SES.	None (displayed by default). However, when 1+0(E1 TRIBUTARY ONLY) or 1+1 (E1 TRIBUTARY ONLY)is selected, will only be displayed if INTFC = DXC with IDU ID = 1 and STM-1 Usage = Used.
Alarm Correlation Capability	Allows the suppression of secondary (downstream) alarms to be turned on/off.	None (displayed by default)
CH Usage (CH01-CH16)	For setting the respective usage of the 16 available channels.	None (displayed by default)
CH Usage Error Report	For enabling/disabling the CH Usage Error reporting function.	When CH USAGE (CHxx) = NOT USED: for at least one of the CH1-16.
AIS Activation Condition	For setting whether the AIS signal is activated by LOF, High BER or both alarm parameters.	When Redundancy setting is 1+1 (HOT STANDBY) 1+1 (TWINPATH) 1+0->1+1 2-WAY*1
AIS Generated Report	For enabling/disabling the **AIS Generated Report.**	When CH USAGE (CHxx) = USED: for at least one of the CH1-16.
AIS Received Report	For enabling/disabling the **AIS Received Report.**	When CH USAGE (CHxx) = USED: for at least one of the CH1-16.
AIS Received Condition	For setting the type of **AIS Received Condition.** parameters	When CH USAGE (CHxx) = USED: for at least one of the CH1-16.
E1 Port Impedance	For setting the impedance of the E1 interface port.	None (displayed by default)

Item/feature	Description	Specific conditions for it to be displayed/configured
XC CH Setting	E1 signal channel route/direction can be freely and individually set for each wireless tributary (TRIB) or STM-1*.	Control button is displayed/enabled when PNMT is locally linked (direct connection); otherwise: disabled.
E-BER (MUX)	Sets the E-BER threshold for the multiplexer (MUX).	When all the following applies: INTFC = DXC IDU ID = 1 STM-1 Usage = Used.
SD (MUX)	Sets the Signal Degrade threshold for the multiplexer (MUX).	When all the following applies: INTFC = DXC IDU ID = 1 STM-1 Usage = Used.
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").	When all the following applies: INTFC = DXC IDU ID = 1 STM-1 Usage = Used
ALS Interval	For setting the interval (from the start of LOS) until ALS Function is to be executed.	When ALS FUNCTION = ENABLED and STM-1 USAGE = USED.
STM-1 Usage	For setting the respective usage of the STM-1.	When INTFC = DXC and IDU ID = 1.
STM-1 Usage Error Reported	For enabling/disabling the STM-1 Usage Error reporting function.	When all the following applies: INTFC = DXC IDU ID = 1 STM-1 Usage = Not Used.

*1 When 1+0 (E1 TRIBUTARY ONLY) or 1+1 (E1 TRIBUTARY ONLY) is selected, the window for configuring these settings does not appear.

2.19.1 Channel Setting

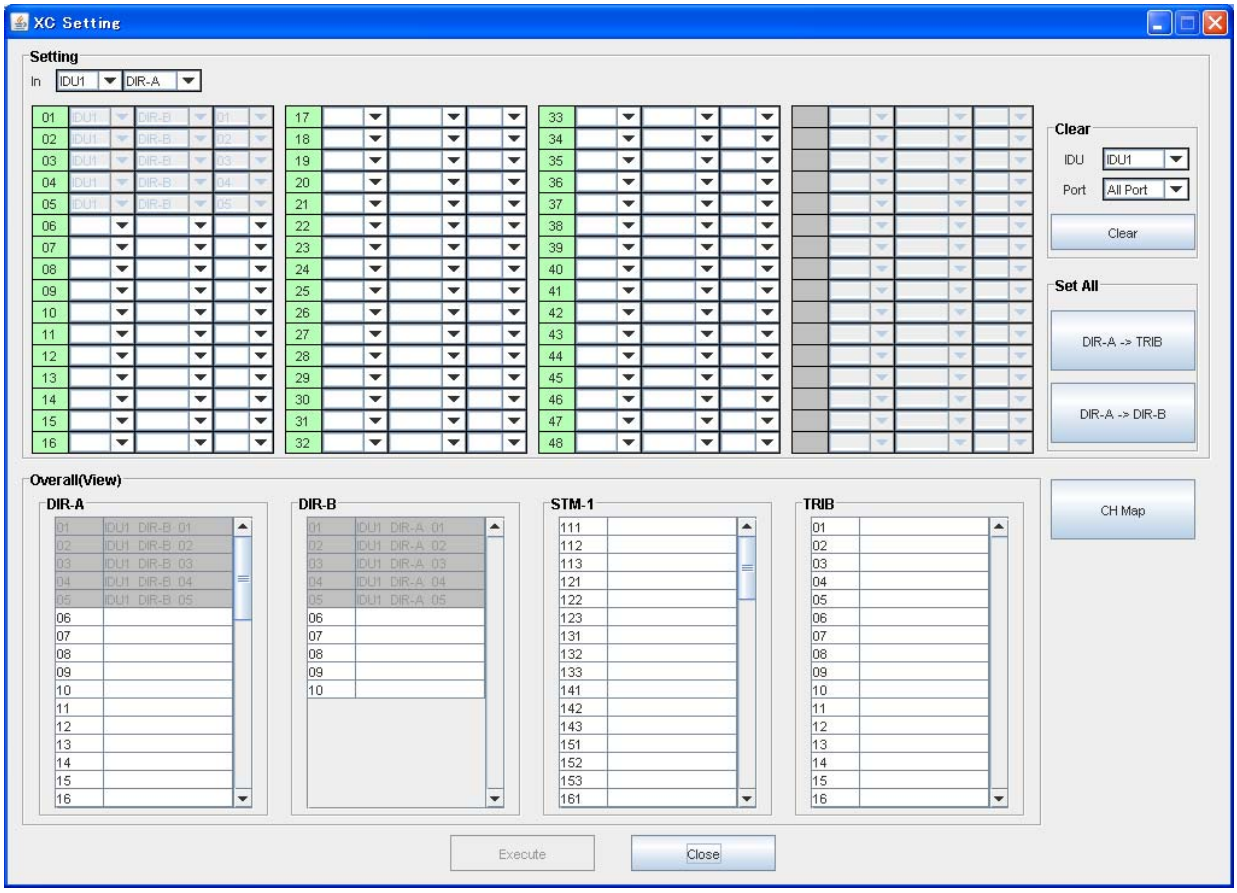
To set the necessary channels (refer to **Provisioning window**) click CH Usage (CHxx) etc. on **Provisioning window** to open the following window in which you can then select/activate the various channels.



2.19.2 XC Setting

The E1 signal channel route/direction can be freely and individually set for each wireless tributary (TRIB) or STM-1*.

*Note: Can only be set when INTFC = DXC and NE ID = 1.



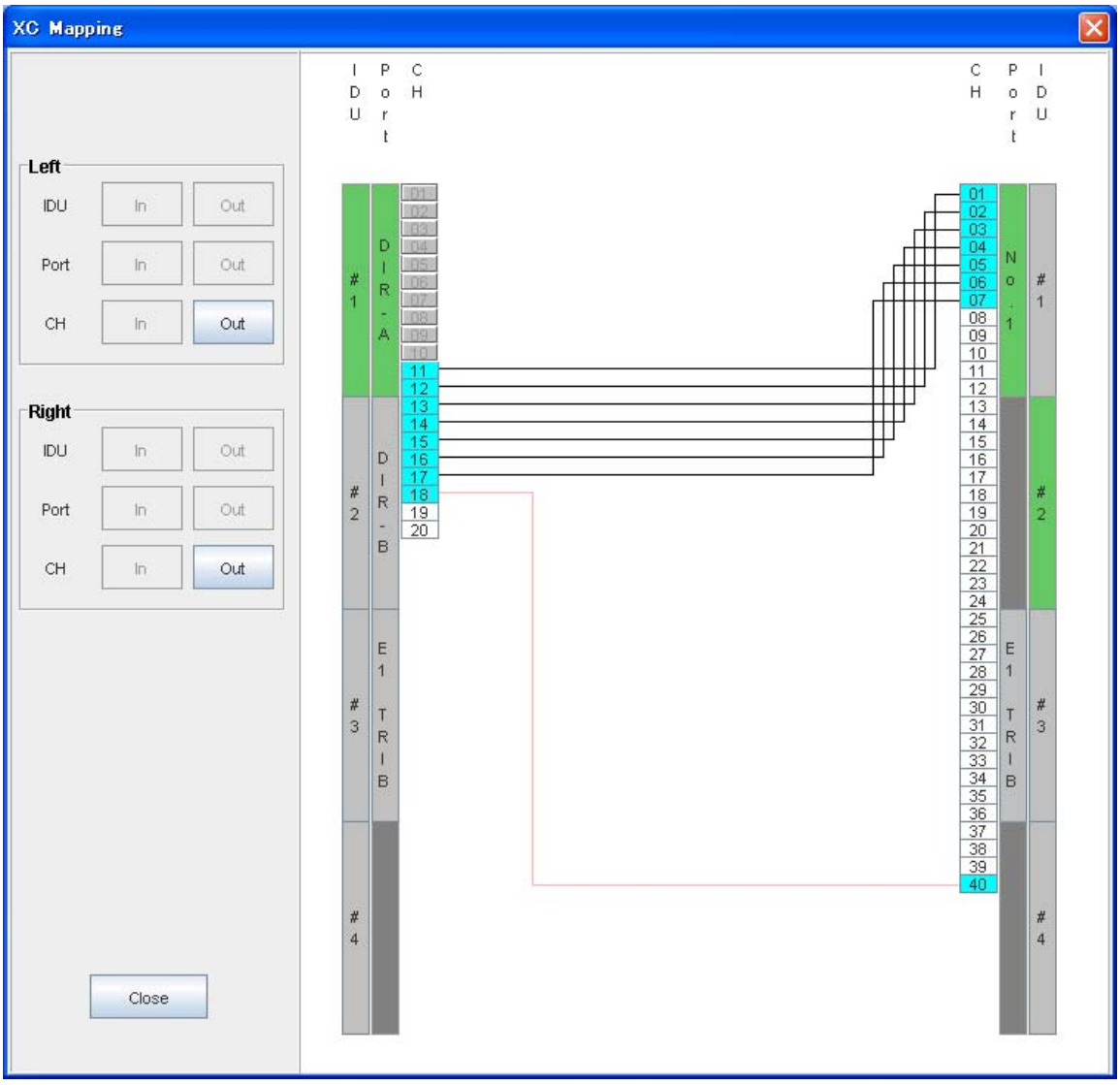
XC Setting window

To set the XC CH Setting:

1. Click the **[XC CH Setting]** button in **Provisioning** window.
2. Select the routing direction from the originating IDU.
3. Select the IDU, direction and channel (CH) for connecting to.
4. Click the **[Execute]** button.
5. Click the **[Close]** button when finished.

2.19.2.1 XC Setting CH Map

This window displays the cross-connect status during modification of the settings.



To display the XC Setting CH Map

1. Click the **[CH Map]** button in the XC Setting window.
2. By clicking an **[In]** button for selecting which parameters (IDU, Port, or CH) to show (and which not to show), the respective IDU, Port, or CH is shown. Clicking **[Out]** for the respective **IDU, Port,** or **CH** will conceal it. The XC display window shows the connection status.

   Green: selected IDU, Port

   Gray: connections other than selected IDU, Port

   Blue: CH in used

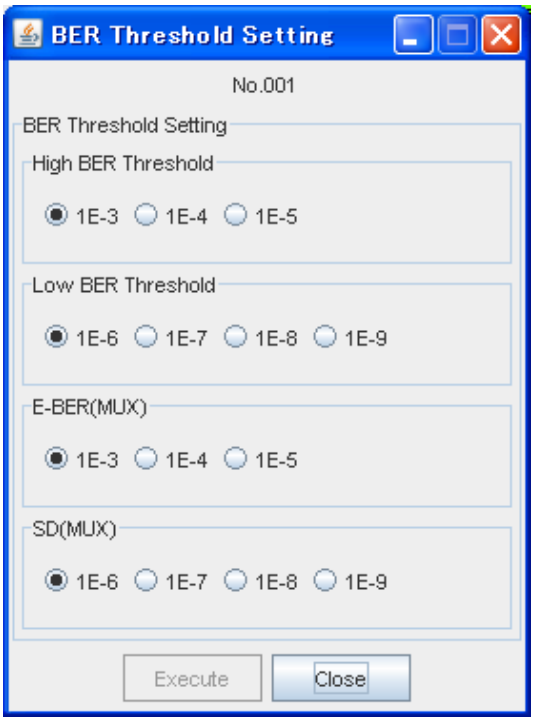
   White: unused (still available) CH

   Pink: connection data for CH freely selected by user

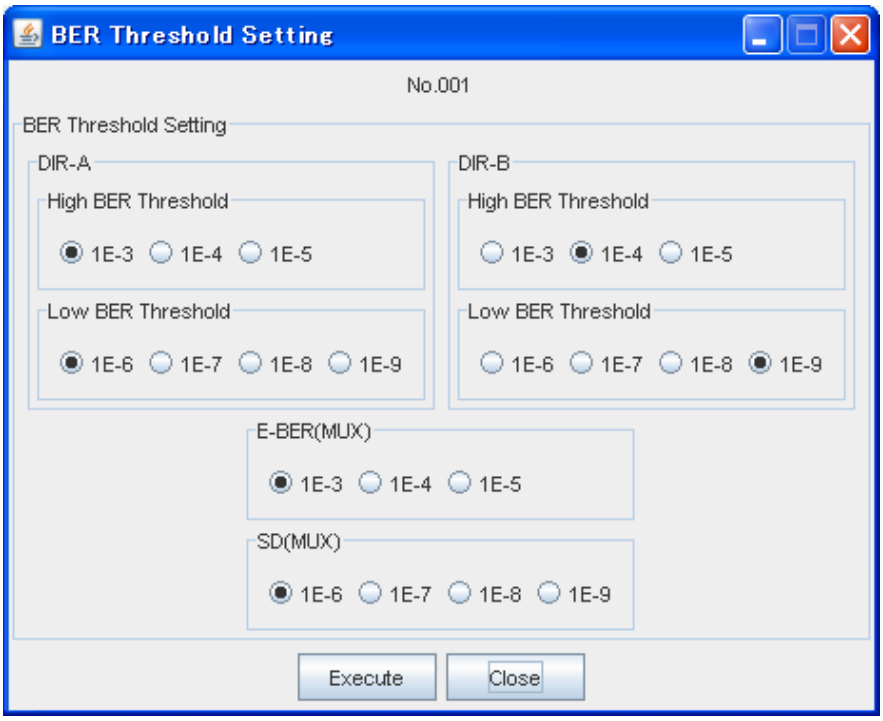
3. **By clicking [Close]** you will exit the XC Setting CH Mapping window and return to the XC Setting window.

2.19.3 BER Threshold Setting

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



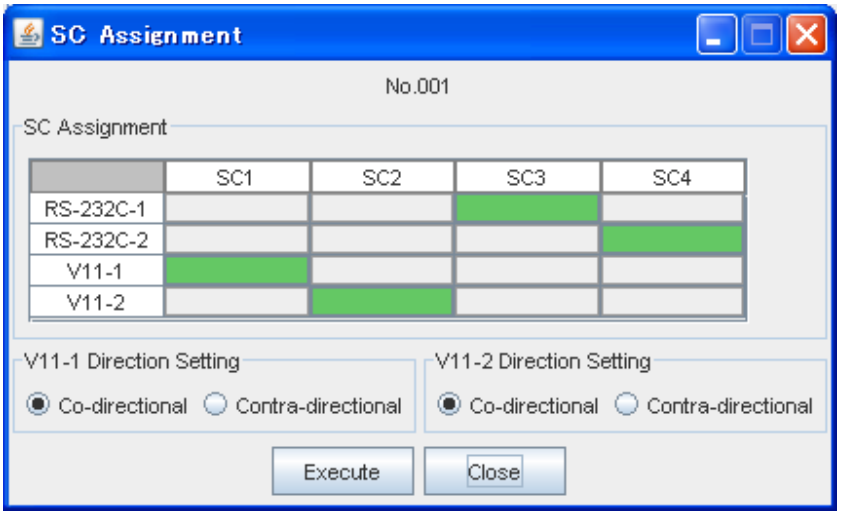
For INTFC = DXC and IDU ID = 1 and STM-1 Usage = Used and 1+1 (HOT STANDBY), 1+1 (TWINPATH), or 1+0->1+1 configuration



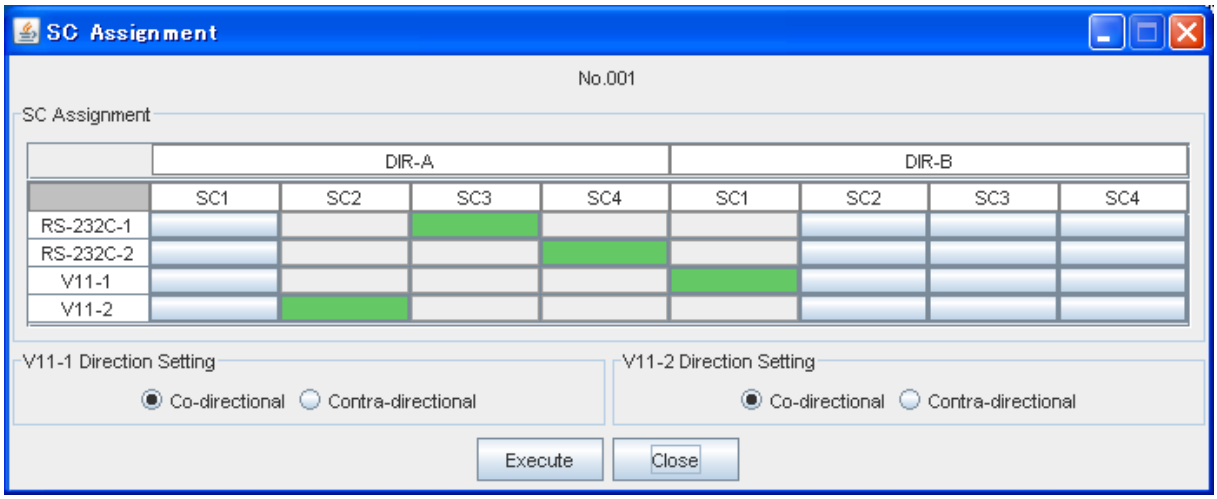
INTFC = DXC and IDU ID = 1 and STM-1 Usage = Used and 2-WAY configuration

2.19.4 SC Assignment

This feature displays the assigned interface type (e.g. **RS-232C**, **V11** in **Provisioning window**) that is available for user channels (DSC), and sets the type of directional interface for SC3 and SC4.



For 1+1 (HOT STANDBY) or 1+1 (TWINPATH) or 1+0->1+1 configuration



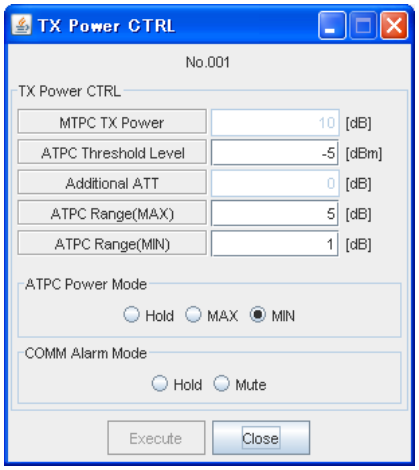
For 2-WAY configuration

2.19.5 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.

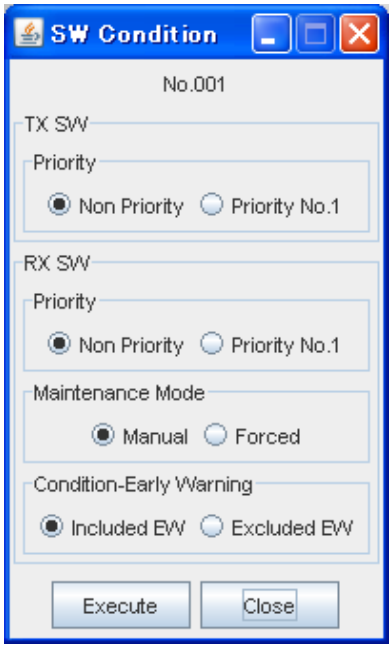
2.19.6 TX Power CTRL

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



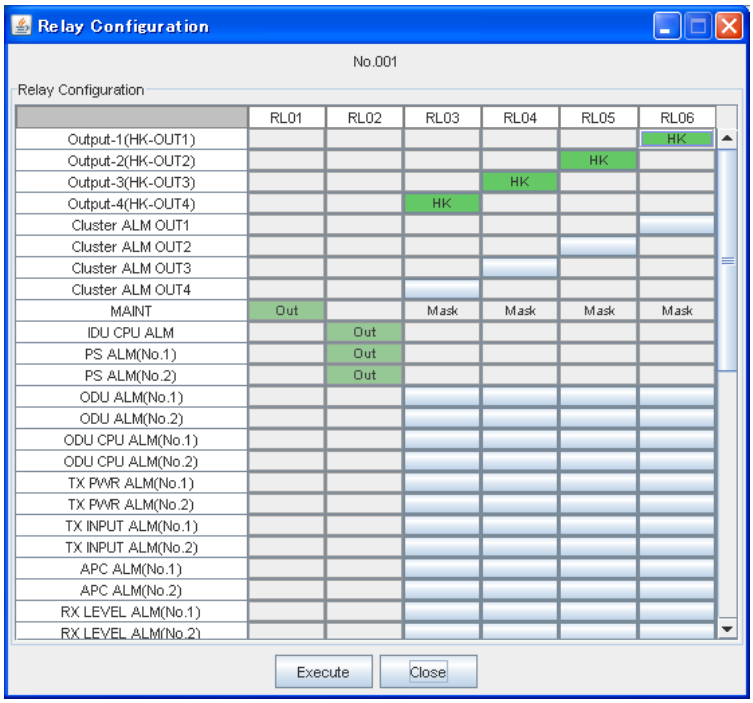
2.19.7 SW Condition

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



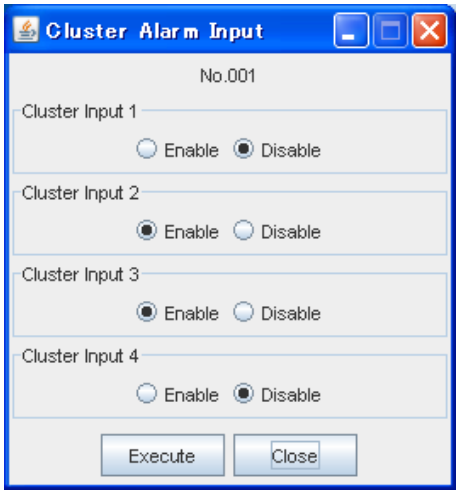
2.19.8 Relay Configuration

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.



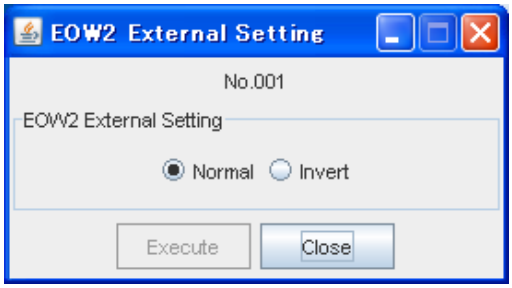
2.19.9 Cluster Alarm Input

Cluster alarms can be **Enable/Disable** in this window.



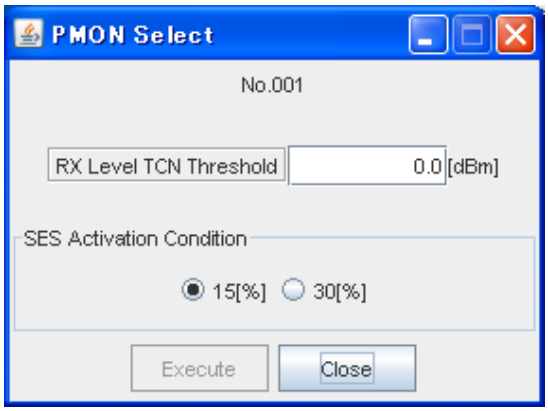
2.19.10 EOW2 External Setting

The EOW2 calling system signal polarity can be set here: **Normal** when the NEO IDU is connected to another NEO IDU or a PASOLINK IDU; **Invert** when connected to PASOLINK+ IDU or Mx IDU.



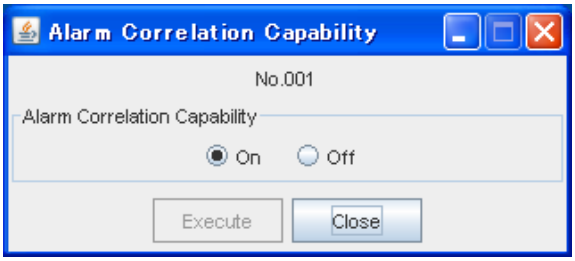
2.19.11 PMON Select

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



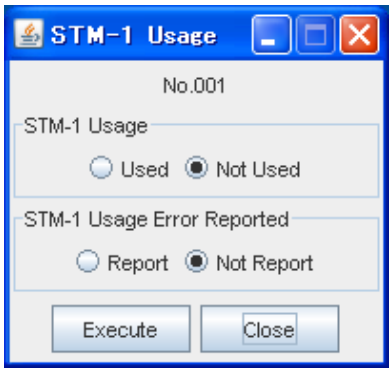
2.19.12 Alarm Correlation Capability

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

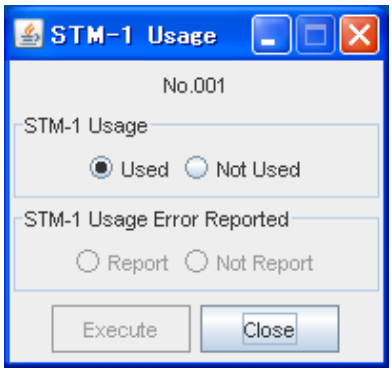


2.19.13 STM-1 Usage Error Reported

The *STM-1 Usage* and ***STM-1 Usage Error Reported*** **settings (*Used/Not Used*** or ***Report/*** *[Do]* ***Not Report*****)** can be configured in this window.



When **STM-1 Usage** is set to ***Not Used***, **STM-1 Usage Error Reported** can be set



When **STM-1 Usage** is set to ***Used***, **STM-1 Usage Error Reported** cannot be set

2.20 Link Performance Monitor

When Link Performance Monitor window is available/displayed for 1+1 (HOT STANDBY), 1+1 (TWINPATH), or 1+0->1+1, 2-WAY configurations.

For 1+0 (E1 TRIBUTARY ONLY), 1+1 (E1 TRIBUTARY ONLY) configurations, it will only be available/displayed if both INTFC = DXC and STM-1 USAGE = USED and IDU ID = 1.

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

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

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

2.20.1 Viewing Link Performance Monitor

To view Link Performance Monitor:

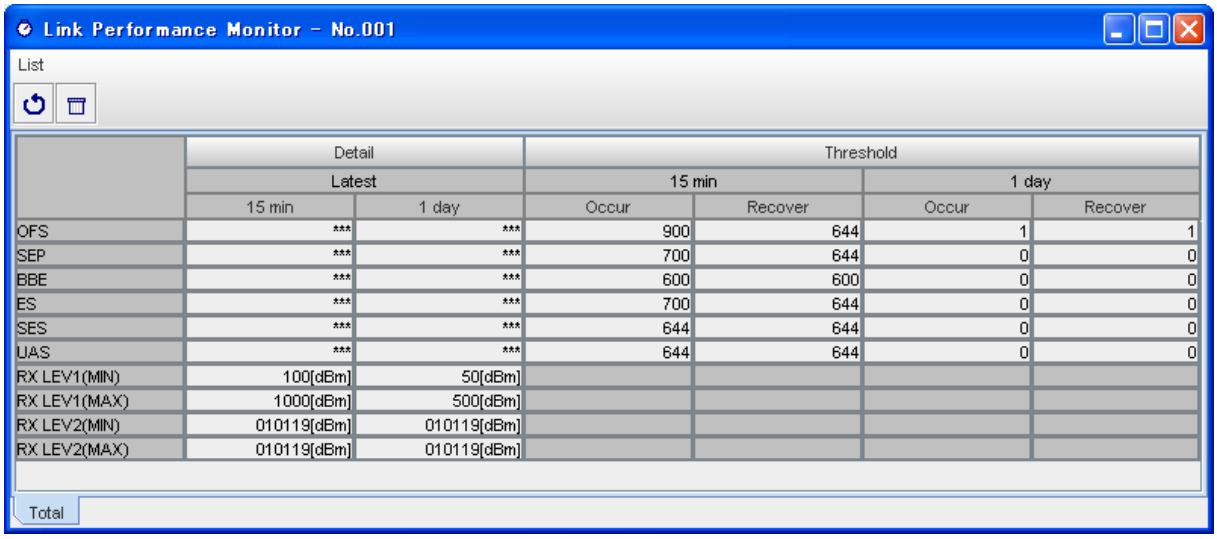
Click **Performance Monitor → Link Performance Monitor** in the NE-specific menu bar of the target NE that you intend to monitor (or alternatively **PNMT main window→ LPM** field).

Link Performance Monitor window

The following are the Requirements/Settings for displaying the respective tabs

Redundancy Setting	Tab Configuration for Link Performance Monitor Window				
	When INTFC = DXC, STM-1 USAGE = USED				For all other settings
	IDU-1	IDU-2	IDU-3	IDU-4	IDU-1/IDU-2/IDU-3/IDU-4
1+1 (HOT STANDBY)	Total	Total	Total	Total	Total
1+1 (TWINPATH)	Total	Total	Total	Total	Total
1+0->1+1	Total	Total	Total	Total	Total
2-WAY	DIR-A DIR-B MUX	DIR-A DIR-B	DIR-A DIR-B	DIR-A DIR-B	DIR-A DIR-B
1+0(E1 TRIBUTARY ONLY)	MUX	-	-	-	-
1+1 (E1 TRIBUTARY ONLY)	MUX	-	-	-	-

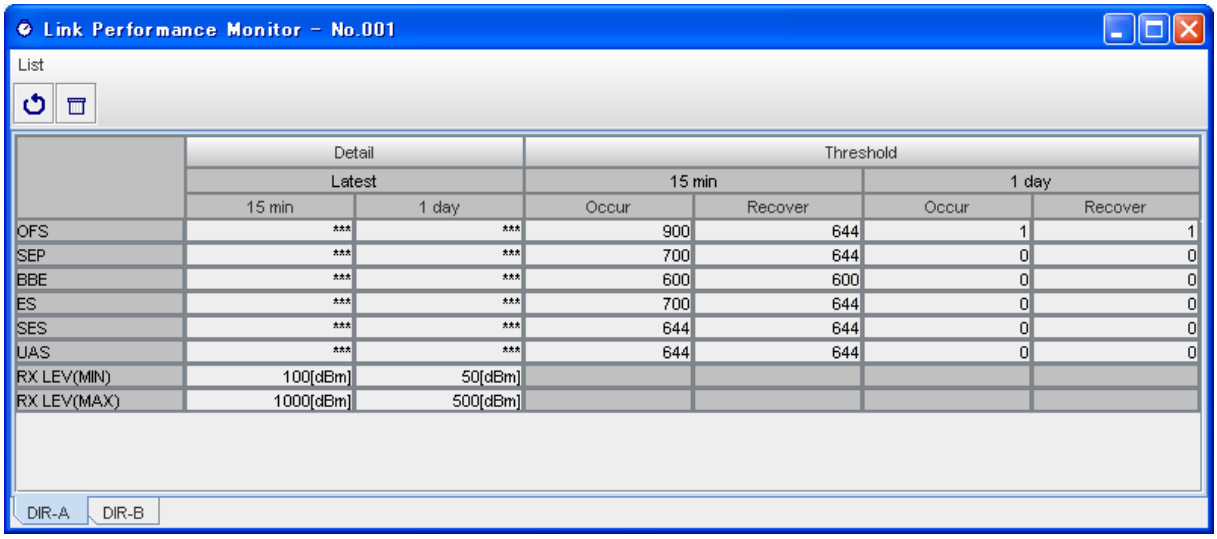
Displaying the **Total** tab



DXC - 1+1(HOT STANDBY) - STM-1 Usage=Not Used

For 1 +1 (HOT STANDBY), 1+1 (TWINPATH), or 1+0->1+1 configurations, the **Total** tab is displayed by default

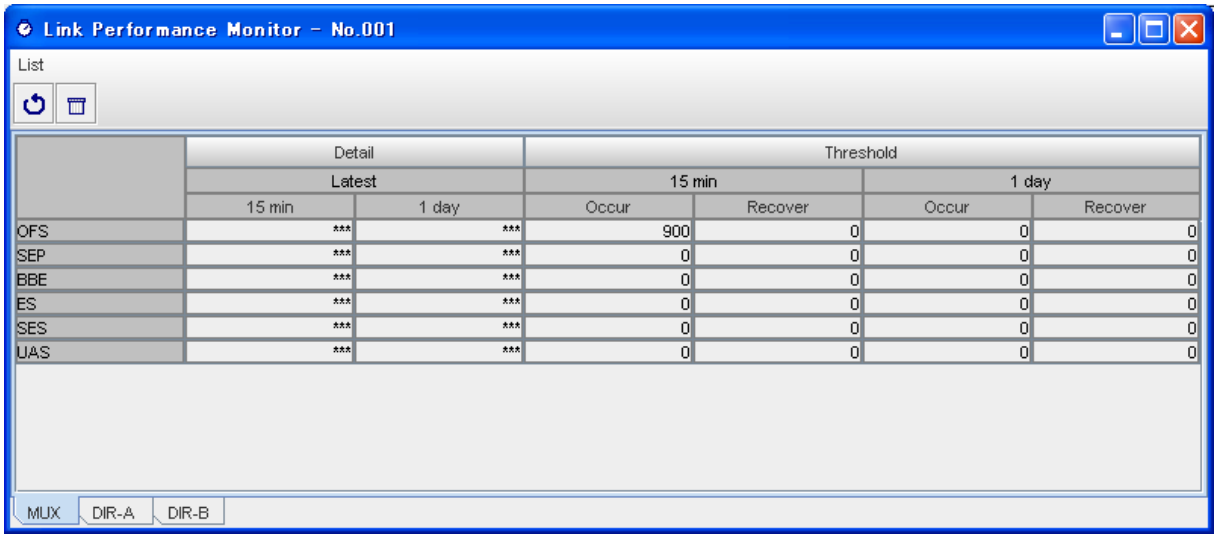
Displaying the **DIR-A/DIR-B** Tabs



DXC - 2-WAY - STM-1 Usage=Not Used

For 2-WAY configurations, the DIR-A/DIR-B tabs are displayed by default

Displaying the **MUX** tab



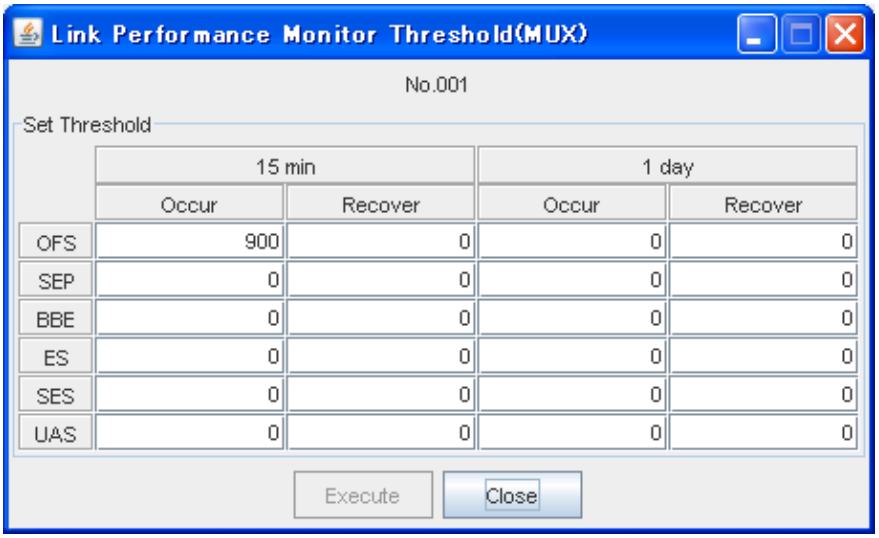
DXC - 2-WAY - IDU ID=1 - STM-1 Usage=Used

The MUX tab will be displayed for the settings: INTFC = DXC and IDU ID=1 and STM-1 USAGE = USED

2.20.2 Threshold Setting

To set the threshold values:

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



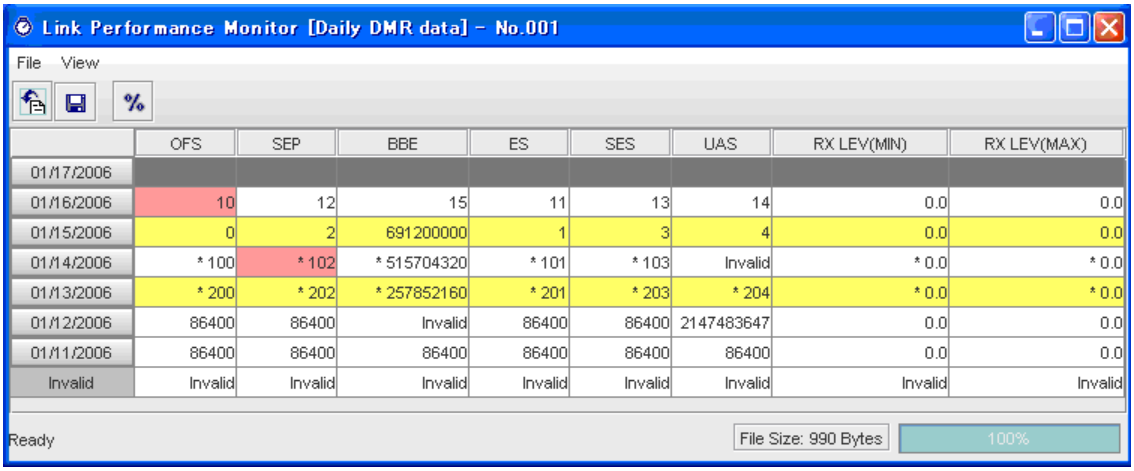
Link Performance Monitor Threshold window

2. Select the performance item that is to be configured in the table shown above. The G.826 measure becomes available for setting when selected.
3. Set the monitoring values (the alarm **Occur** and **Recover**) in the appropriate field. The alarm status will be monitored when it reaches the ***alarm occur*** value and issue an ***alarm clear status*** when the ***recover value*** set in the threshold table is reached.
4. Click **[Execute]** button to activate the new settings.
5. Click **[Close]** button when finished.

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

To view the 1day Data:

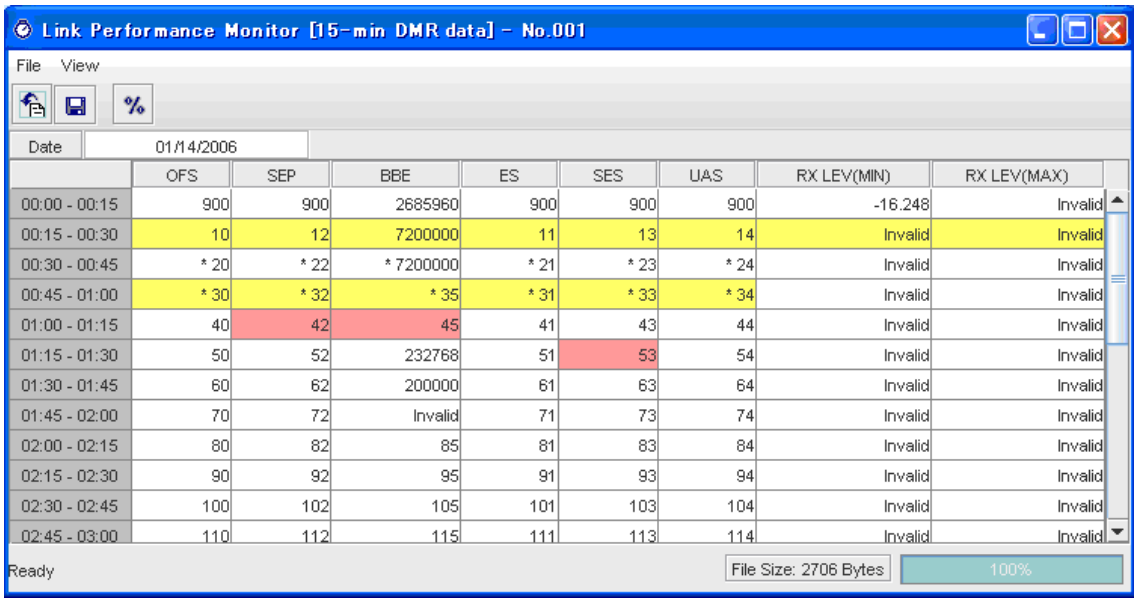
1. Click **[Detail]** button in **Link Performance Monitor window**.



Link Performance Monitor (1 day Data) window

To view the 15-min. Data:

1. Click button of the target date in **Link Performance Monitor (1 day 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 click **File→Save As**). Or it can be refreshed by clicking on the ***reload (refresh)*** icon (or click **File→Reload**). By clicking the ***Ratio/Count*** icon (or by the procedure: **View→Ratio/Count**) you can switch from "%" to "count" (or vice versa).

WARNING!!!

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

2.21 Event Log

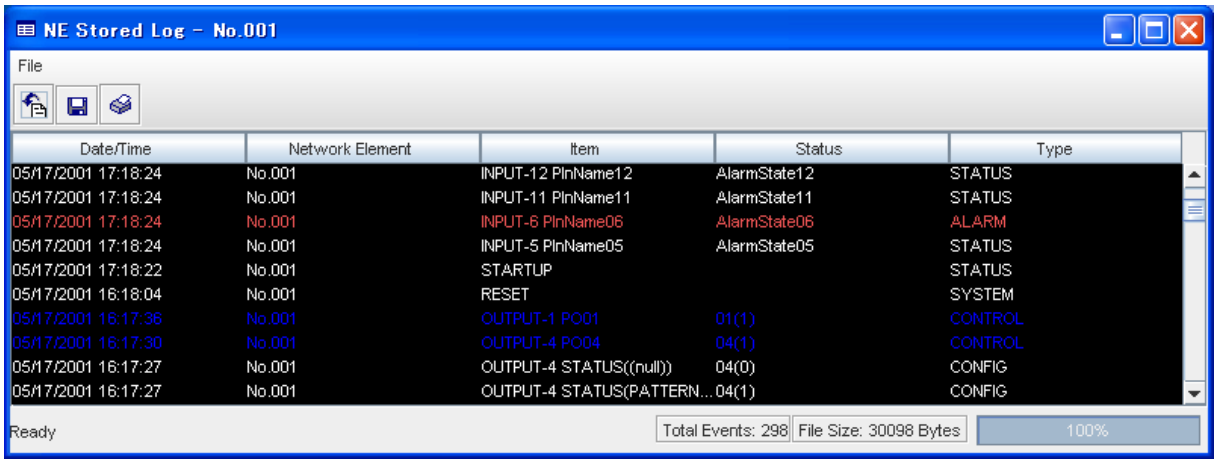
The Event Log window displays the date/time when the event data was received, item, and status.

2.21.1 Event Log monitor

1. Click **[NE Stored Log]** in the NE-specific menu bar of the target NE that you intend to monitor.
2. A message window showing the progress of the uploading of the Event Log data will appear on the screen. Wait until the PNMT finishes the uploading of the data. The progress window will automatically close once the uploading is completed.
3. **NE Stored Log window** 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 **NE Stored Log window**.
5. The date shown in **NE Stored 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.



NE Stored Log window

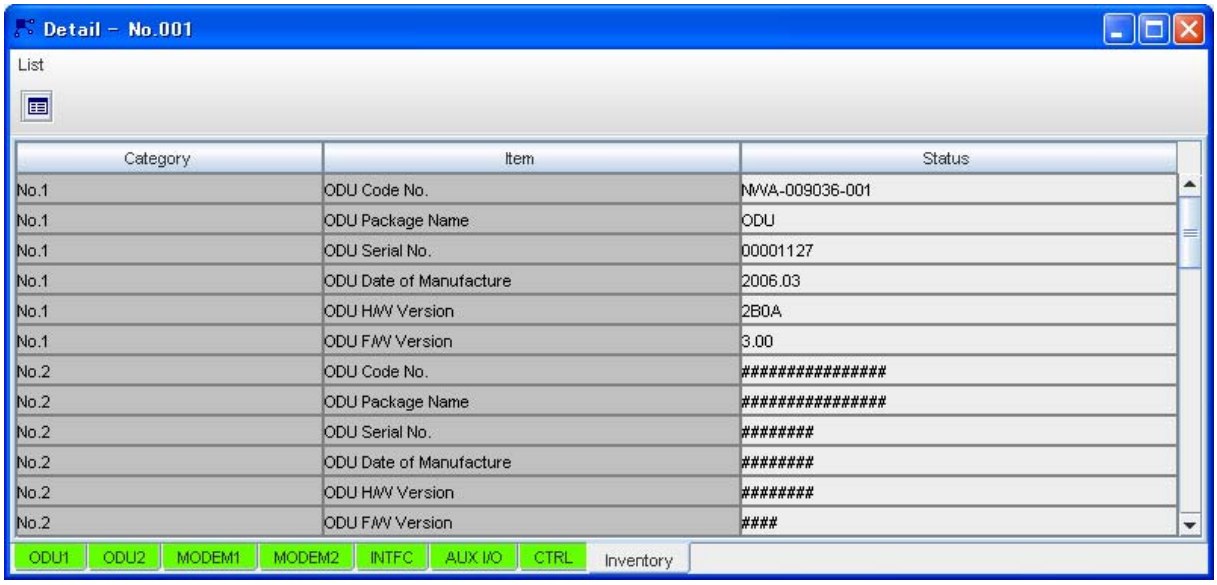
2.22 Inventory Tab

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

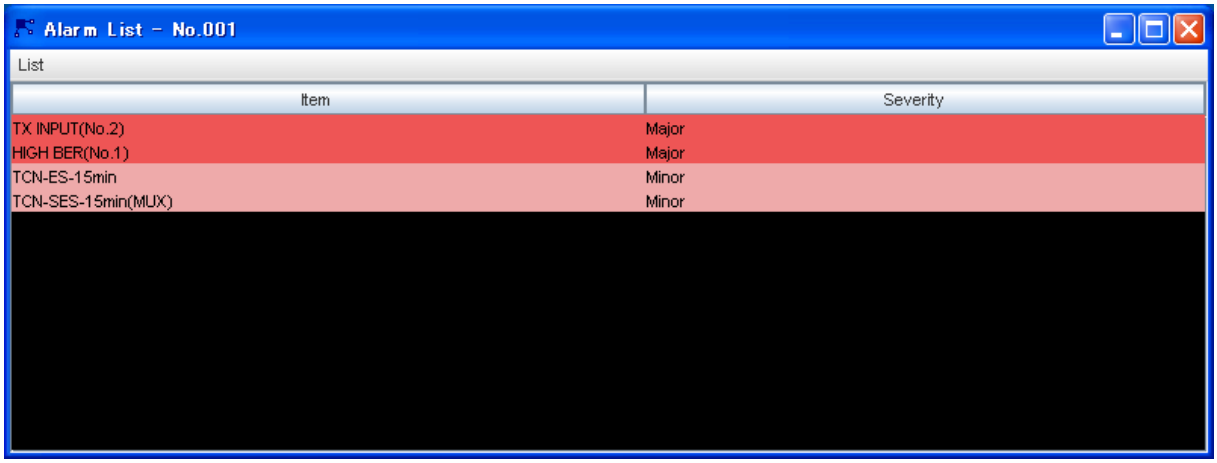
2.22.1 Inventory Monitor

To display the equipment version:

1. Select the **Inventory** field in **PNMT main window** of the selected IDU.
2. **Inventory tab** shows the Code No., Date of Manufacture, Serial No., Hardware Type and Software Version of the equipment.



3. The Alarm List Window can be displayed by clicking the Alarm List icon (or by the procedure: **List→Alarm List**). The **Alarm List window** will show any Alarms occurring in the selected **IDU**.



Alarm List window

Appendix A: Equipment Network Settings (Terminal)

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

CTRL Type (General)			Category	Input Item
CTRL Type	IDU	Branch NE Type		
Root NE	top	Not selectable	General	CTRL Type
				Branch NE Type
			Radio/EM2	IP Address
				Subnet Mask
			PNMS(EM1)	IP Address
				Subnet Mask
			Routing	Default Gateway
				Static Routing Table
			NODAL	IP Address
Root NE(Bridge)	top	Not selectable	General	CTRL Type
				Branch NE Type
			Radio/EM2/EM1	IP Address
				Subnet Mask
			Routing	Default Gateway
				Static Routing Table
			NODAL	IP Address
Branch NE	top bottom	2 Branches	General	CTRL Type
				Branch NE Type
			Radio	IP Address
				Subnet Mask
			EM2/EM1	IP Address
				Subnet Mask
			Routing	Default Gateway
				Static Routing Table
			NODAL	IP Address
		3 Branches	General	CTRL Type
				Branch NE Type
			Radio	IP Address
				Subnet Mask
			EM2	IP Address
				Subnet Mask
			EM1	IP Address
				Subnet Mask
			Routing	Default Gateway
				Static Routing Table
			NODAL	IP Address
	intermediate	2 Branches	General	CTRL Type
				Branch NE Type
			Radio	IP Address
				Subnet Mask
			EM2/EM1	IP Address
				Subnet Mask
			Routing	Default Gateway
				Static Routing Table

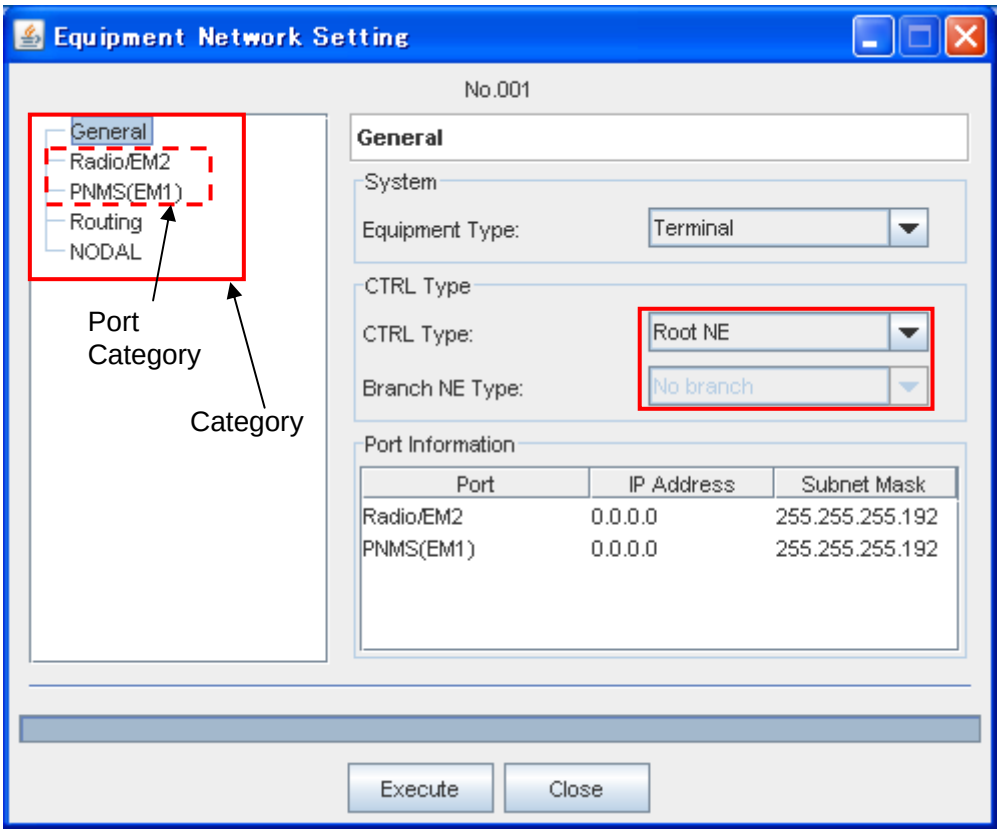
CTRL Type (General)			Category	Input Item
CTRL Type	**IDU**	**Branch NE Type**		
			NODAL	IP Address
Normal NE	top intermediate bottom	Not selectable	General	CTRL Type
				Branch NE Type
			Radio/EM2/EM1	IP Address
				Subnet Mask
			Routing	Default Gateway
				Static Routing Table
			NODAL	IP Address

Note1: Here **EM1** / **EM2** indicate IDUs front interface **NMS/ NE** ports respectively

Note2: The NODAL Group comprises a maximum of four (4) IDUs. Each IDUs functions differ according to its position within the group: top, intermediate or bottom (end); as below:

top : IDU#1
intermediate : IDU #2 in a three IDU configuration
IDUs #2 / #3 in a four IDU configuration
bottom : IDU #2 in a two IDU configuration
IDU #3 in a three IDU configuration
IDU #4 in a four IDU configuration

1. In *Category* → **General** and select there **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

- Branch NE (2 Branches)

  Subnet diverges in two ways

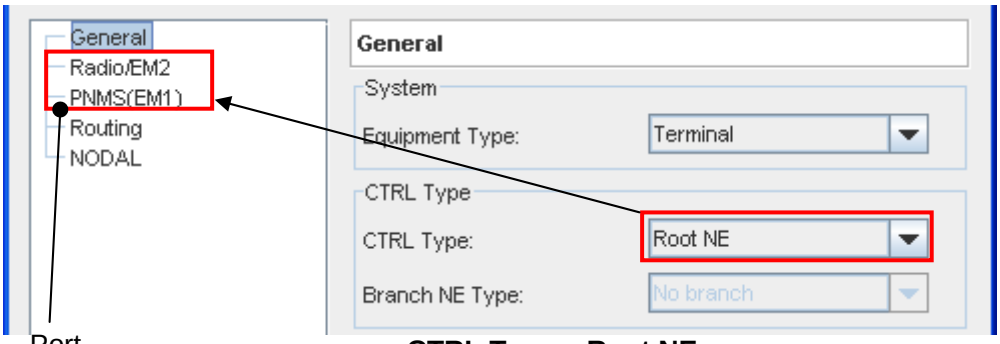
- Branch NE (3 Branches)

  Subnet diverges in three ways

- Normal NE

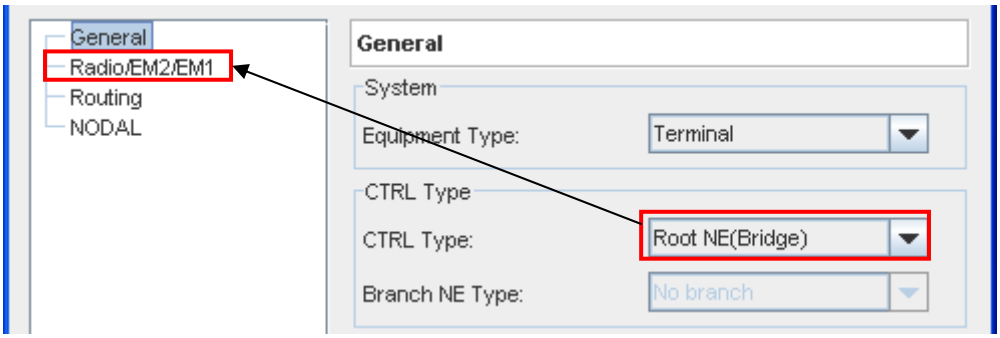
  The rest of all NE (except above mentioned) is Normal NE

1-1 **Port Category** item changes according to **CTRL Type** (**CTRL Type** and **Branch NE Type**).

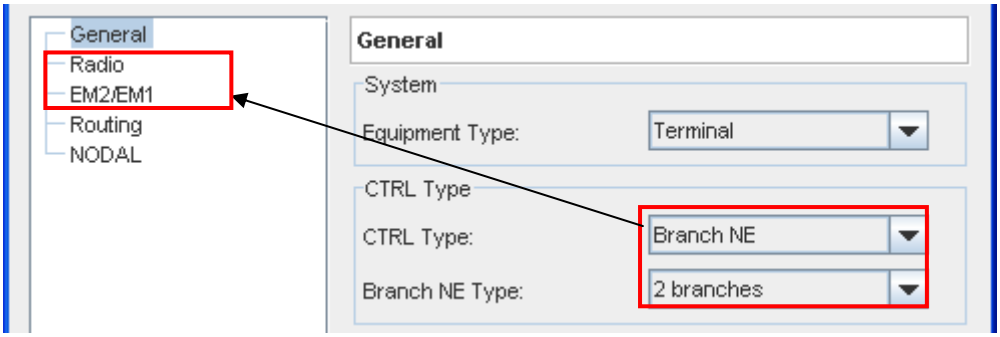


Port Category

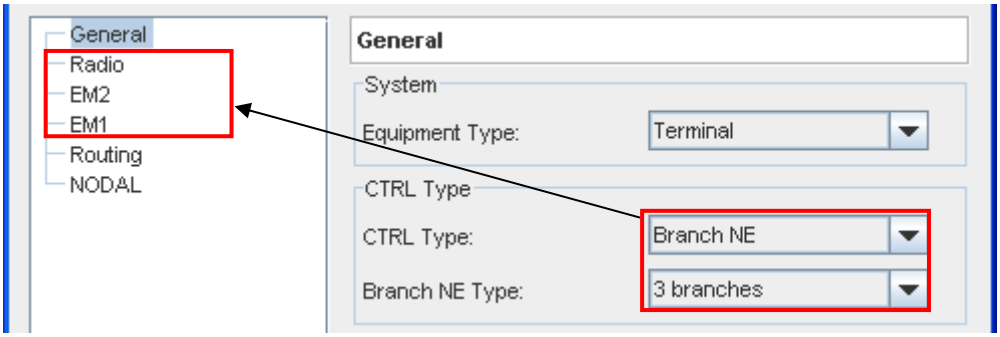
CTRL Type = Root NE



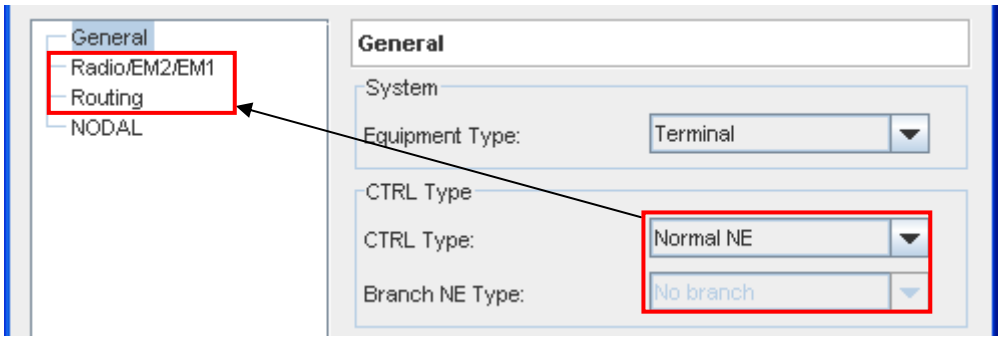
CTRL Type = Root NE(Bridge)



CTRL Type = Branch NE or Branch NE Type = 2 Braches



CTRL Type = Branch NE or Branch NE Type = 3 Branches



CTRL Type = Normal NE

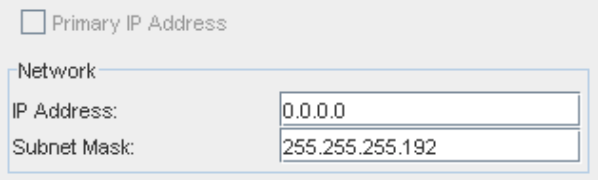
2. Set and select **Port category** and **Routing**. The right hand screen will change according to the selected item in **Category**.

- Primary IP Address

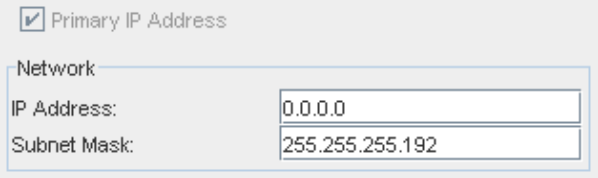
  PNMS identify a NE with using the IP address in NE. The check can be applied only to 1**port category** of several **Port categories** that exists in **CTRL Type** when **Branch NE** is selected.

- IP Address & Subnet Mask

  The following items are set to each Port



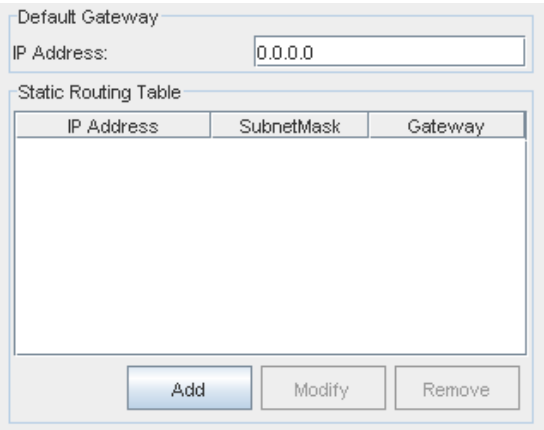
PNMS(E1) or Radio or EM1



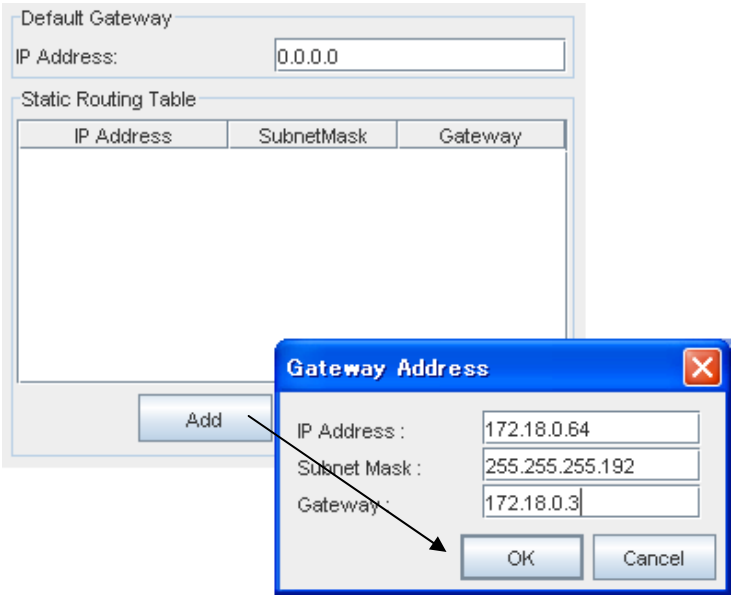
Radio/EM2 or Radio/EM2/EM1 or EM2 or EM2/EM1

3. Select and set **Routing**.

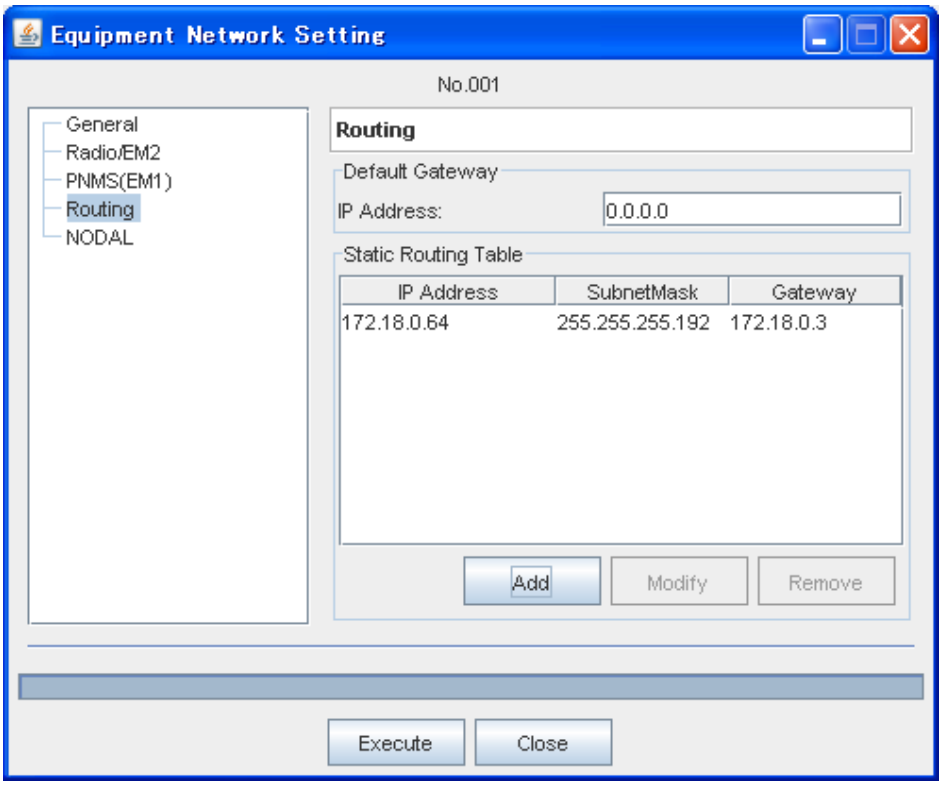
   3-1 If there is not subnet in the network, **Static Routing table** will not show any entries.



3-2 In case of several subnet in the Network click **[Add]** to entry the required value in **Static Routing Table**



3-3 Click **[OK]** button to activate the address setting.



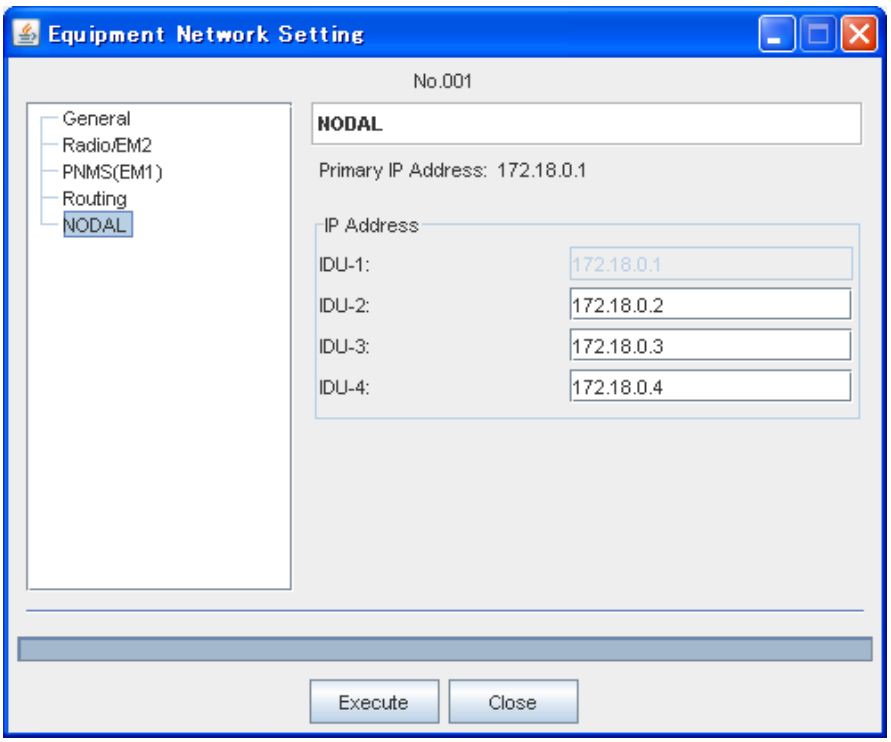
3-4 **[Modify]** is clicked to correct the registered value in **Static Routing table**.

3-5 **[Remove]** is clicked to delete the registered value in **Static Routing table**.

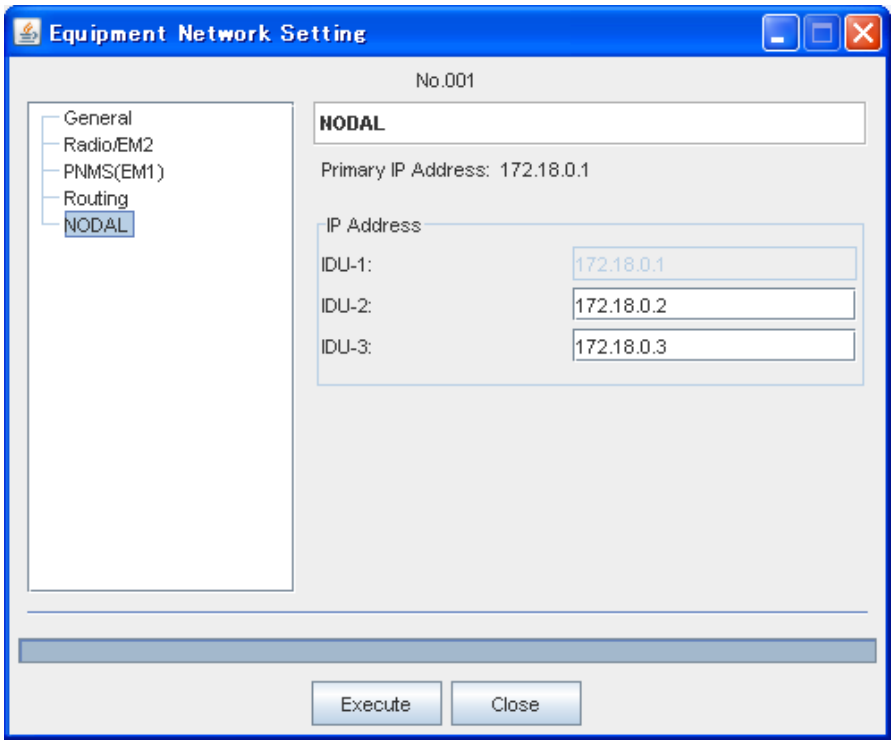
4. Select and set **NODAL**.

   In this window, you can set the IP addresses for all IDUs you wish to include in the same Station.

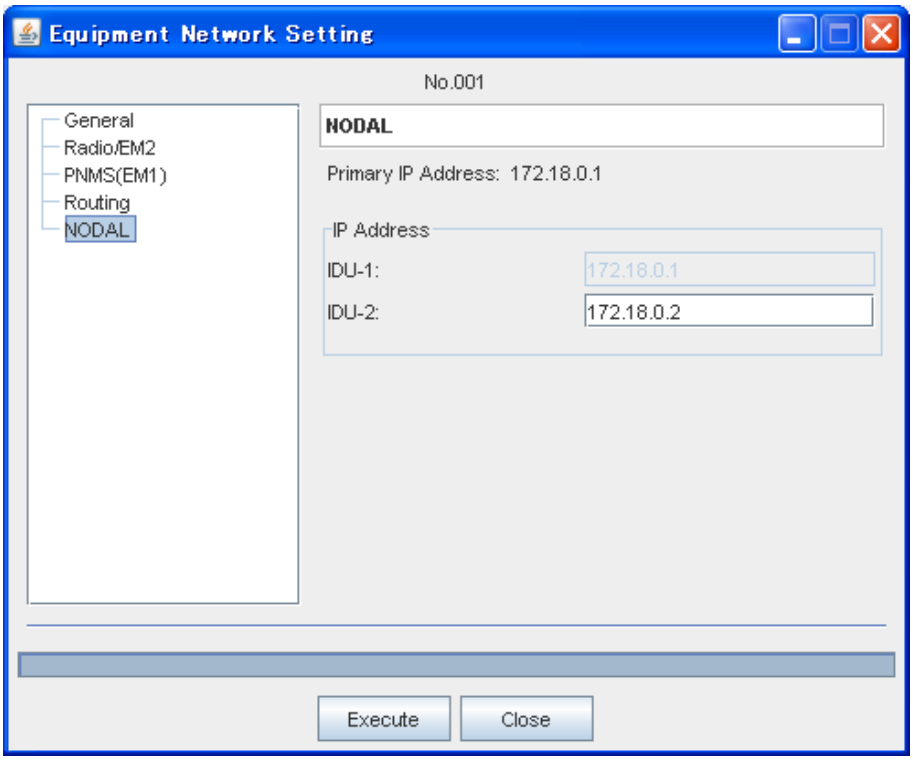
   When an IDU Tab is selected in the Station, the IP address of the corresponding IDU is disabled.



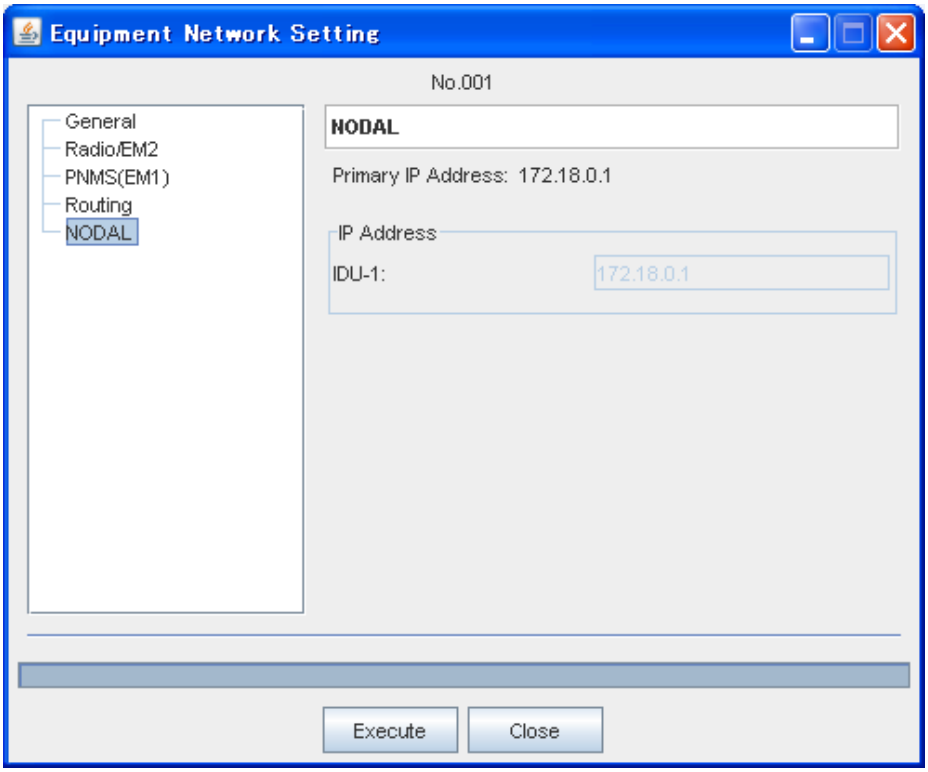
This example shows IDU-1 Tab selected (when there are four IDUs in the Station)



This example shows IDU-1 Tab selected (when there are three IDUs in the Station)



This example shows IDU-1 Tab selected (when there are two IDUs in the Station)



This example shows IDU-1 Tab selected (when there are one IDUs in the Station)

5. Click **[Execute]** button to activate the Equipment Networking setting.
6. Click **[Close]** button when finished.

NOTE:

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

Appendix B: Equipment Network Settings (2-WAY)

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

CTRL Type (General)			Category	Input Item
CTRL Type	**IDU**	**Branch NE Type**		
Root NE	top	Not selectable	General	CTRL Type
				Branch NE Type
			DIR-A/DIR-B/EM2	IP Address
				Subnet Mask
			PNMS (EM1)	IP Address
				Subnet Mask
			Routing	Default Gateway
				Static Routing Table
			NODAL	IP Address
Root NE(Bridge)	top	Not selectable	General	CTRL Type
				Branch NE Type
				Equipment Type
			DIR-A/DIR-B/EM2/EM1	IP Address
				Subnet Mask
			Routing	Default Gateway
				Static Routing Table
			NODAL	IP Address
Branch NE	top bottom	2 Branches	General	CTRL Type
				Branch NE Type
			DIR-A	IP Address
				Subnet Mask
			DIR-B/EM1/EM2	IP Address
				Subnet Mask
			Routing	Default Gateway
				Static Routing Table
			NODAL	IP Address
		3 Branches	General	CTRL Type
				Branch NE Type
			DIR-A	IP Address
				Subnet Mask
			DIR-B	IP Address
				Subnet Mask
			EM2/EM1	IP Address
				Subnet Mask
			Routing	Default Gateway
				Static Routing Table
			NODAL	IP Address
		4 Branches	General	CTRL Type
				Branch NE Type
			DIR-A	IP Address
				Subnet Mask
			DIR-B	IP Address
				Subnet Mask

CTRL Type (General)			Category	Input Item
CTRL Type	**IDU**	**Branch NE Type**		
			EM2	IP Address
				Subnet Mask
			EM1	IP Address
				Subnet Mask
			Routing	Default Gateway
				Static Routing Table
			NODAL	IP Address
	intermediate	2 Branches	General	CTRL Type
				Branch NE Type
			DIR-A	IP Address
				Subnet Mask
			DIR-B/EM1/EM2	IP Address
				Subnet Mask
			Routing	Default Gateway
				Static Routing Table
			NODAL	IP Address
		3 Branches	General	CTRL Type
				Branch NE Type
			DIR-A	IP Address
				Subnet Mask
			DIR-B	IP Address
				Subnet Mask
			EM2/EM1	IP Address
				Subnet Mask
			Routing	Default Gateway
				Static Routing Table
			NODAL	IP Address
Normal NE	top intermediate bottom	Not selectable	General	CTRL Type
				Branch NE Type
			DIR-A/DIR-B/ EM2/EM1	IP Address
				Subnet Mask
			Routing	Default Gateway
				Static Routing Table
			NODAL	IP Address

Note1: Here **EM1** / **EM2** indicate IDUs front interface **NMS/ NE** ports respectively

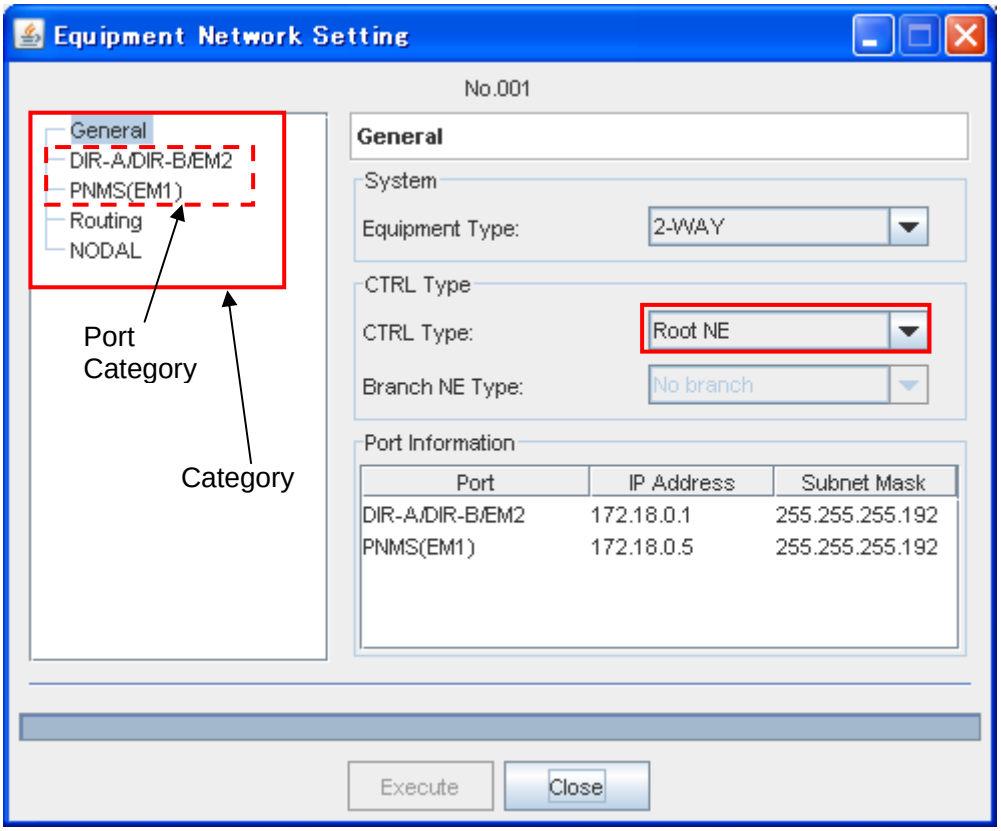
Note2: The NODAL Group comprises a maximum of four (4) IDUs. Each IDUs functions differ according to its position within the group: top, intermediate or bottom (end); as below:

top : IDU#1

intermediate : IDU #2 in a three IDU configuration
IDUs #2 / #3 in a four IDU configuration

bottom : IDU #2 in a two IDU configuration
IDU #3 in a three IDU configuration
IDU #4 in a four IDU configuration

1. In *Category* → **General**, select the **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

- Branch NE (2 Branches)

  Subnet diverges in two ways

- Branch NE (3 Branches)

  Subnet diverges in three ways

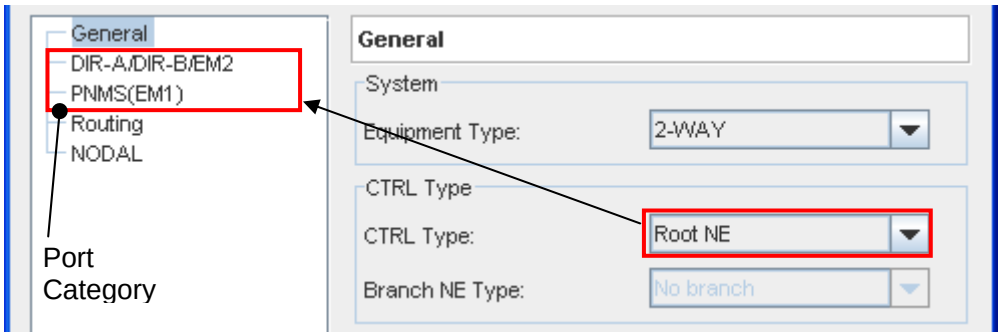
- Branch NE (4 Branches)

  Subnet diverges in four ways

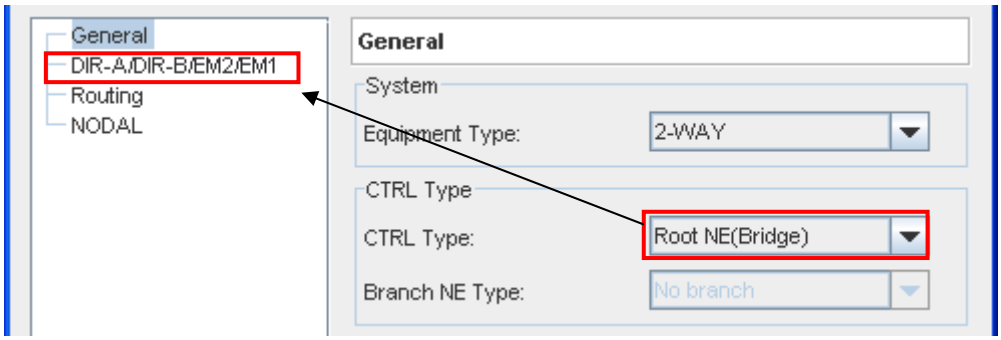
- Normal NE

  The rest of all NE (except above mentioned) are Normal NE .

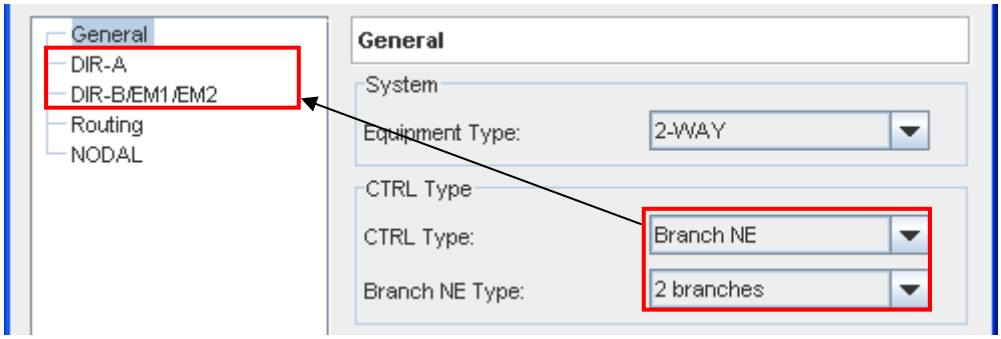
1-1 **Port Category** item changes according to **CTRL Type** (**CTRL Type** and **Branch NE Type**).



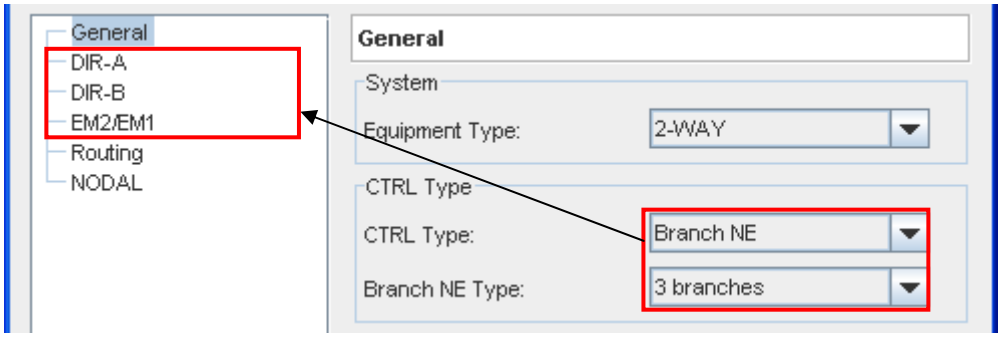
CTRL Type = Root NE



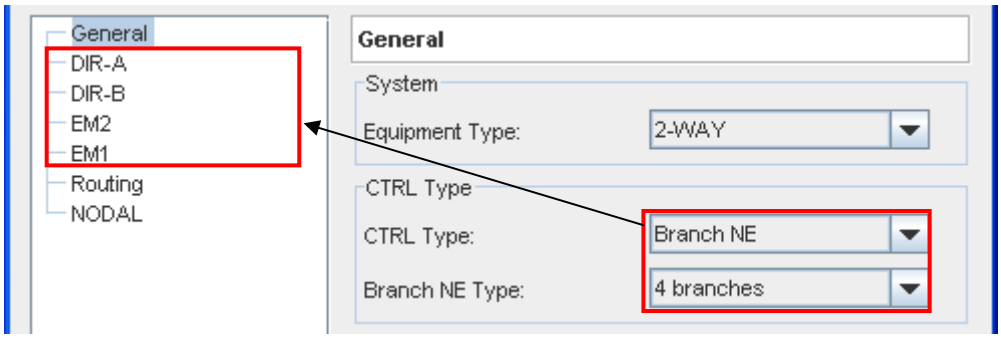
CTRL Type = Root NE (Bridge)



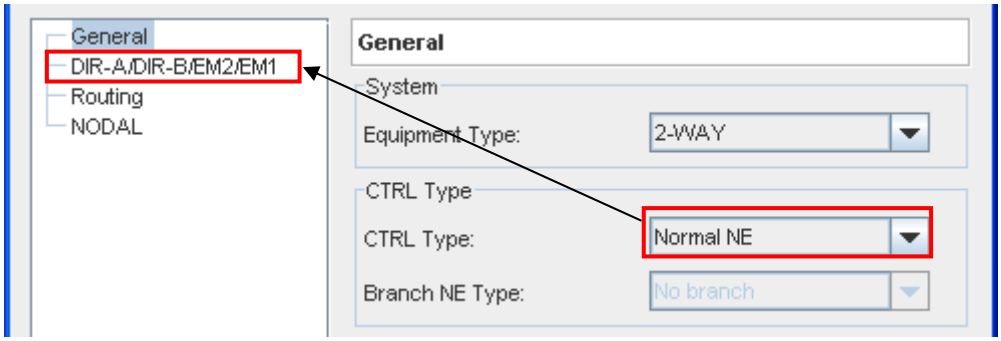
CTRL Type = Branch NE or Branch NE Type = 2 Branches



CTRL Type = Branch NE or Branch NE Type = 3 Branches



CTRL Type = Branch NE or Branch NE Type = 4 Branches



CTRL Type = Normal NE

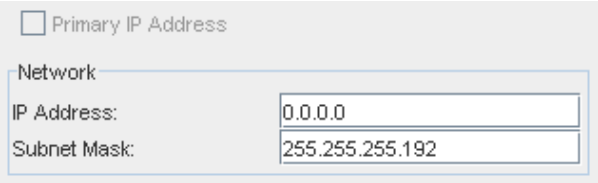
2. Set and select **Port category** and **Routing**. The right hand screen will change according to the selected item in **Category**.

- Primary IP Address

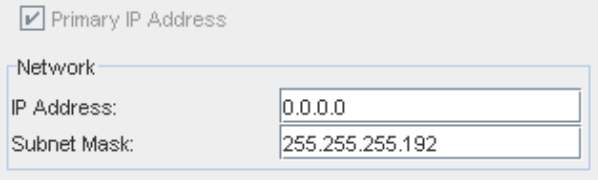
  PNMS identify a NE with using the IP address in NE. The check can be applied only to 1**port category** of several **Port categories** that exists in **CTRL Type** when **Branch NE** is selected.

- IP Address & Subnet Mask

  The following items are set to each Port.



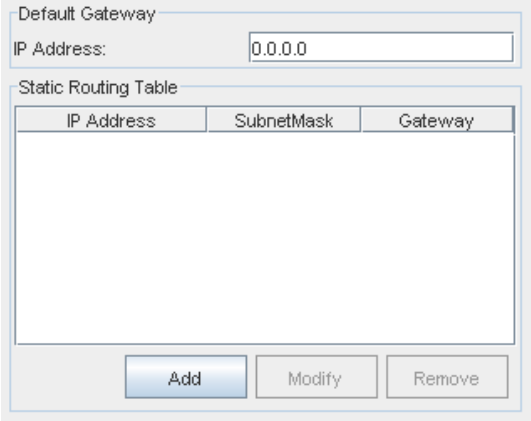
PNMS(E1) or DIR-A or DIR-B or EM1



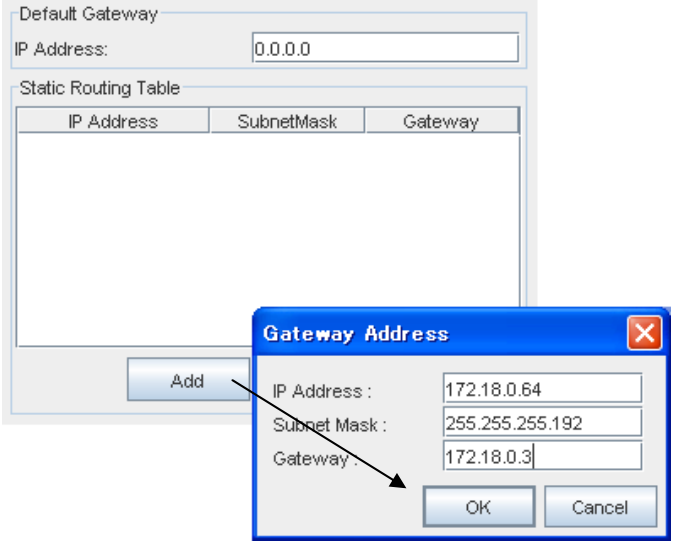
DIR-A/DIR-B/EM2 or DIR-A/DIR-B/EM2/EM1 or DIR-B/EM1/EM2 or EM2/EM1 or EM2

3. Select and set **Routing**.

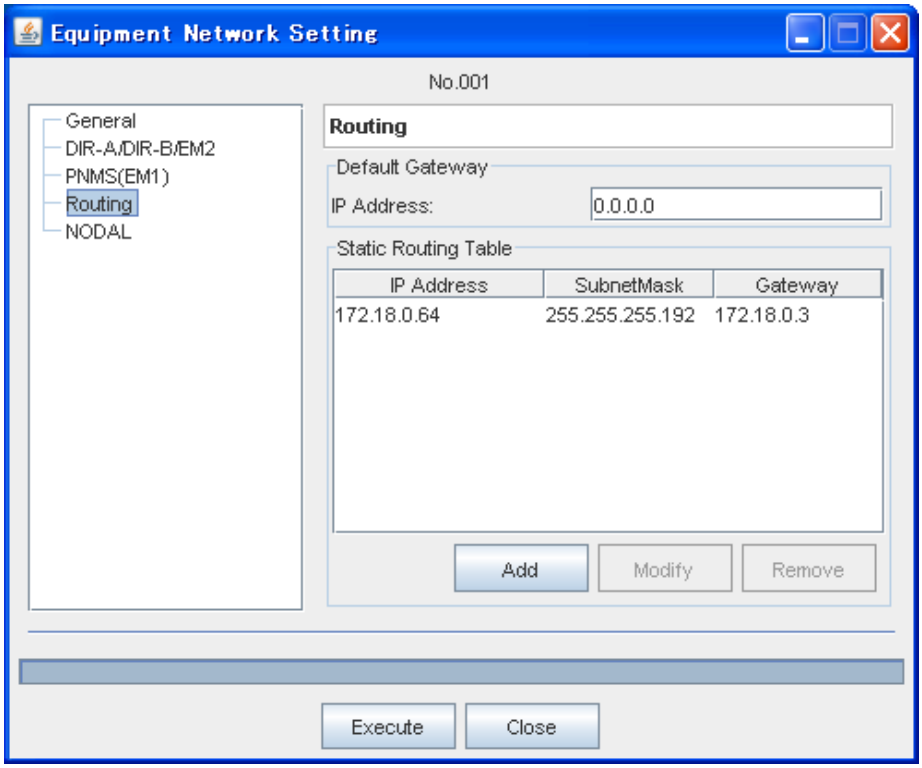
   3-1 If there is not subnet in the network, **Static Routing table** will not show any entries.



   3-2 In case of several subnet in the Network click **[Add]** to entry the required value in **Static Routing Table**.



3-3 Click **[OK]** button to activate the address setting.



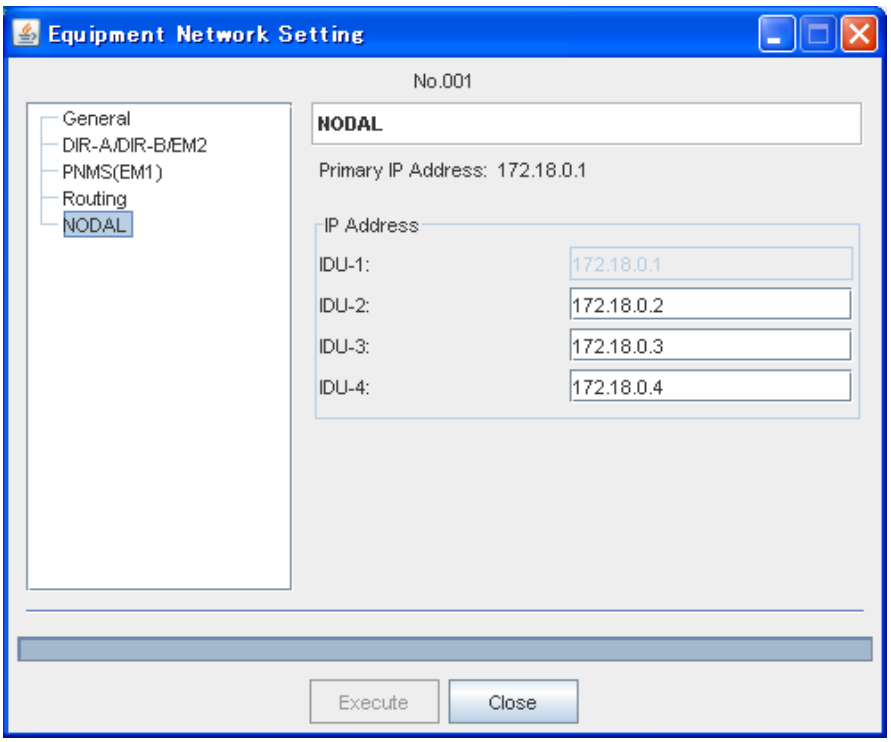
3-4 **[Modify]** is clicked to correct the registered value in **Static Routing table**.

3-5 **[Remove]** is clicked to delete the registered value in **Static Routing table**.

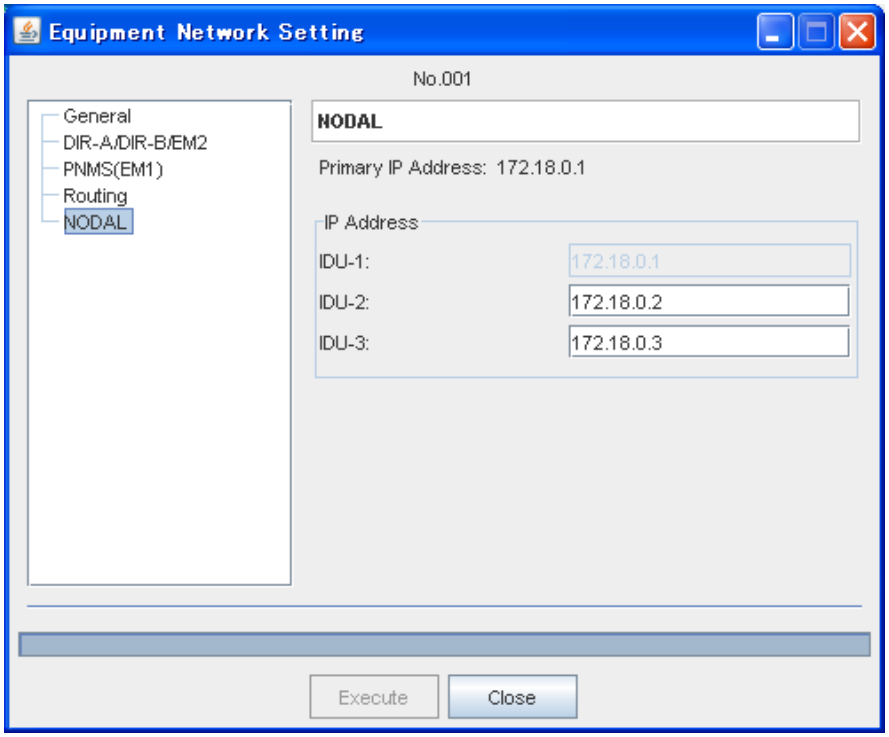
4. Select and set **NODAL**.

   In this window, you can set the IP addresses for all IDUs you wish to include in the same Station.

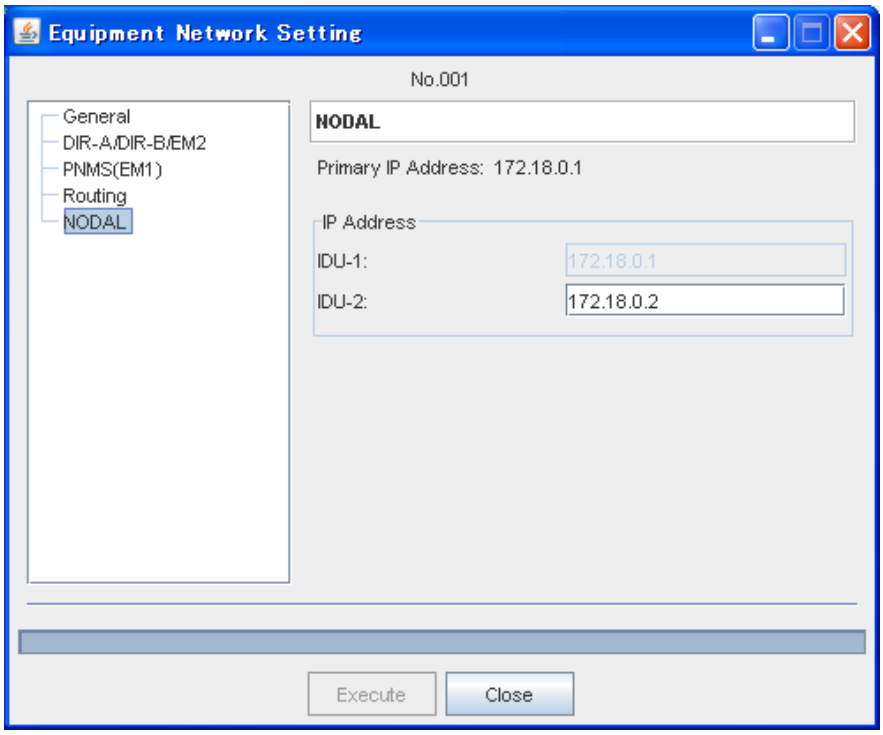
   When an IDU Tab is selected in the Station, the IP address of the corresponding IDU is disabled.



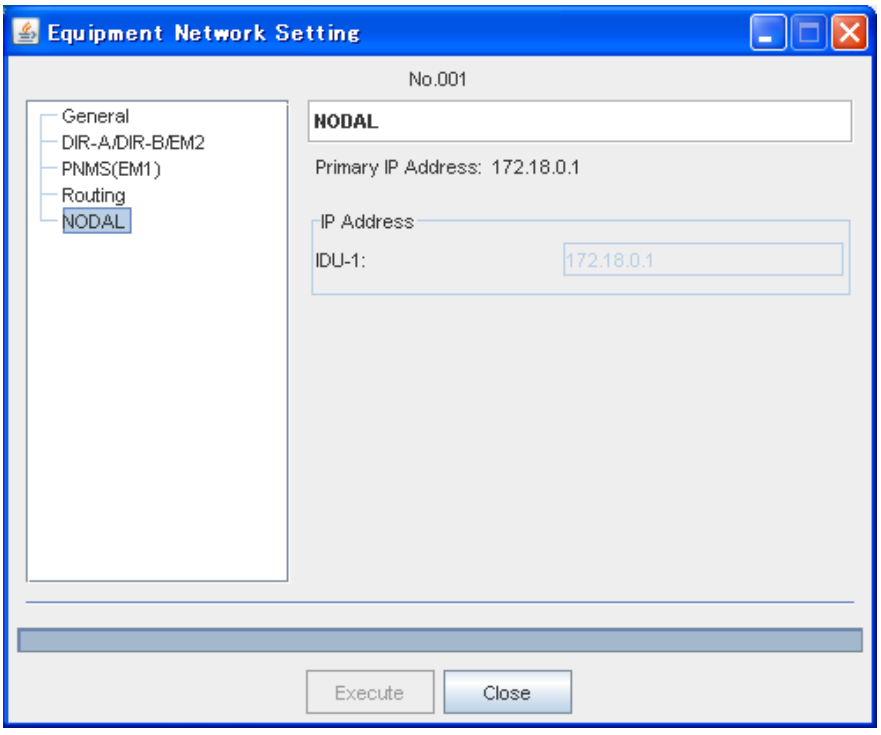
This example shows IDU-1 Tab selected (when there are four IDUs in the Station)



This example shows IDU-1 Tab selected (when there are three IDUs in the Station)



This example shows IDU-1 Tab selected (when there are two IDUs in the Station)



This example shows IDU-1 Tab selected (when there are one IDUs in the Station)

5. Click **[Execute]** button to activate the Equipment Networking setting.
6. Click **[Close]** button when finished.

NOTE:

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

Appendix C: Equipment Network Settings (TRIBUTARY ONLY)

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

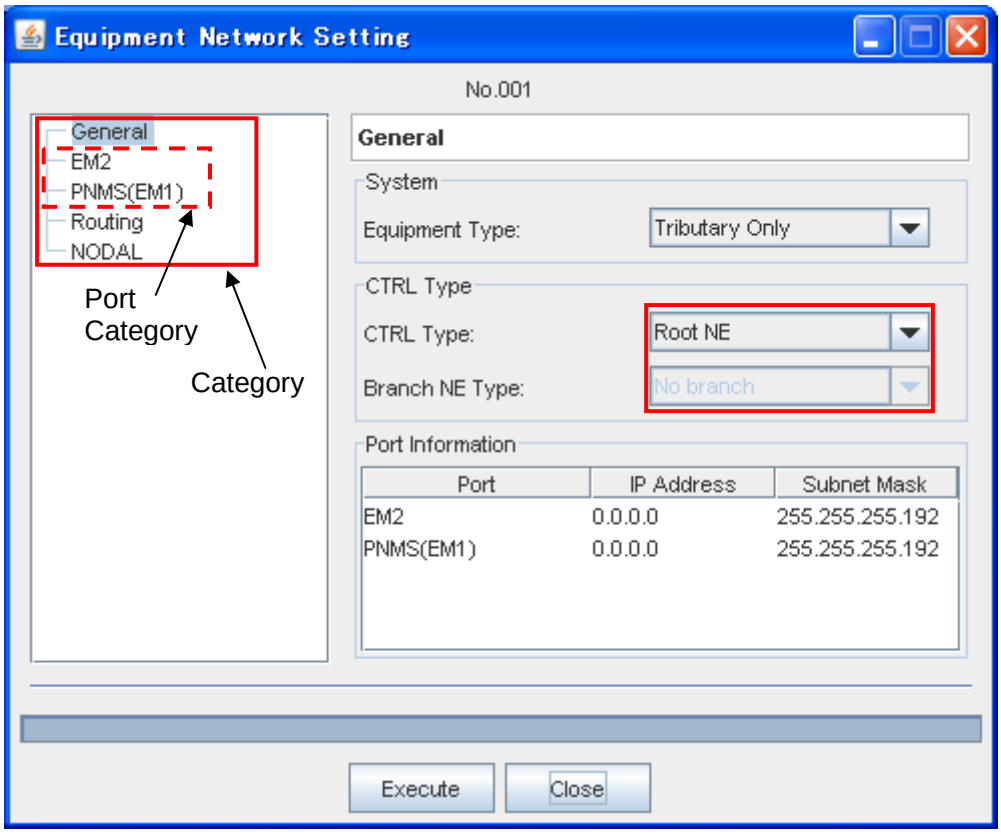
CTRL Type (General)			Category	Input Item
CTRL Type	**IDU**	**Branch NE Type**		
Root NE	top	Not selectable	General	CTRL Type
				Branch NE Type
			EM2	IP Address
				Subnet Mask
			PNMS(EM1)	IP Address
				Subnet Mask
			Routing	Default Gateway
				Static Routing Table
			NODAL	IP Address
Root NE(Bridge)	top	Not selectable	General	CTRL Type
				Branch NE Type
			EM2/EM1	IP Address
				Subnet Mask
			Routing	Default Gateway
				Static Routing Table
			NODAL	IP Address
Branch NE	top bottom	2 Branches	General	CTRL Type
				Branch NE Type
			EM2	IP Address
				Subnet Mask
			EM1	IP Address
				Subnet Mask
			Routing	Default Gateway
				Static Routing Table
			NODAL	IP Address
Normal NE	top intermediate bottom	Not selectable	General	CTRL Type
				Branch NE Type
			EM2/EM1	IP Address
				Subnet Mask
			Routing	Default Gateway
				Static Routing Table
			NODAL	IP Address

Note1: Here **EM1** / **EM2** indicate IDUs front interface **NMS/ NE** ports respectively

Note2: The NODAL Group comprises a maximum of four (4) IDUs. Each IDUs functions differ according to its position within the group: top, intermediate or bottom (end); as below:

top : IDU#1
intermediate : IDU #2 in a three IDU configuration
IDUs #2 / #3 in a four IDU configuration
bottom : IDU #2 in a two IDU configuration
IDU #3 in a three IDU configuration
IDU #4 in a four IDU configuration

1. In *Category* → General and select there 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

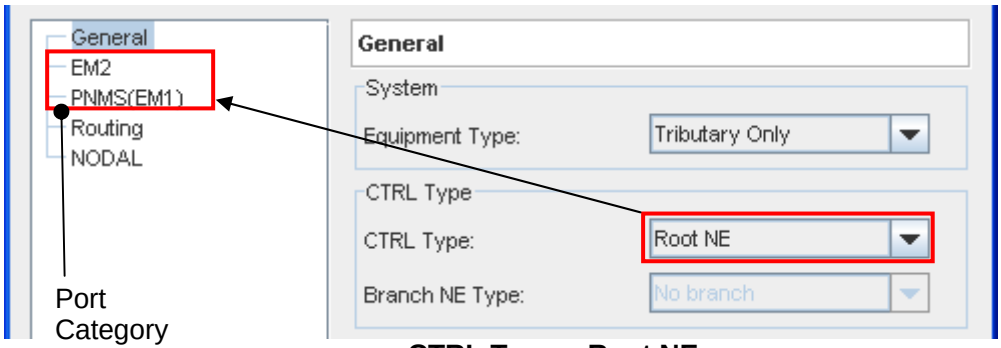
- Branch NE (2 Branches)

  Subnet diverges in two ways

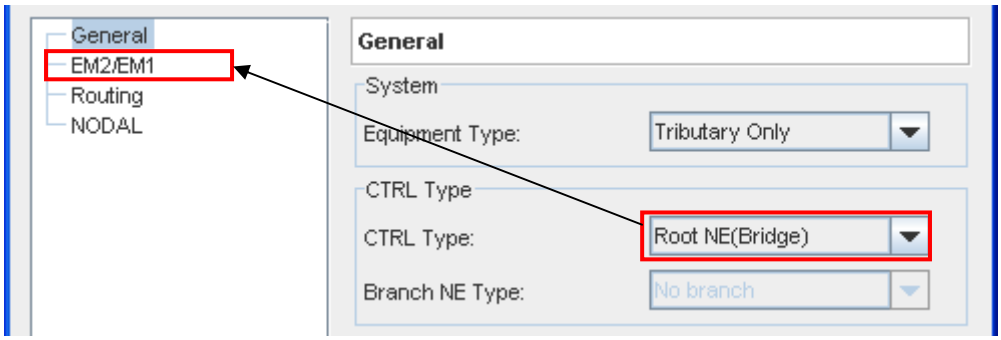
- Normal NE

  The rest of all NE (except above mentioned) is Normal NE

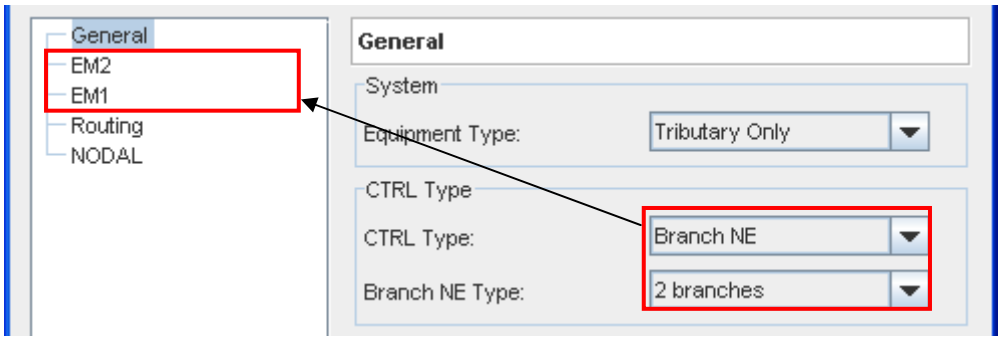
1-1 Port Category item changes according to CTRL Type (CTRL Type and Branch NE Type).



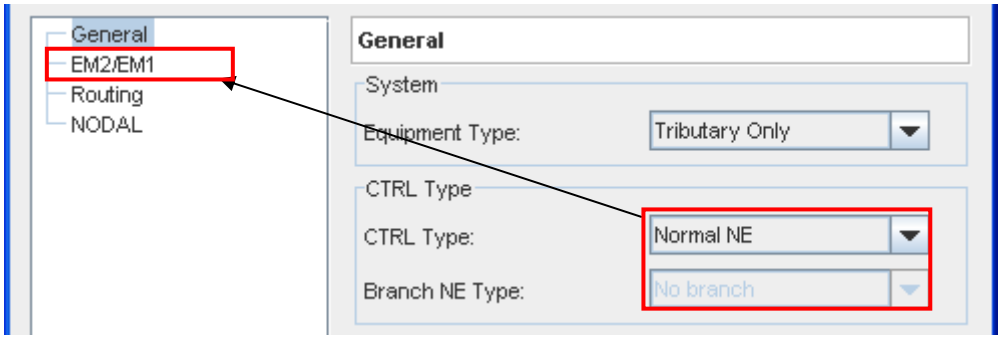
CTRL Type = Root NE



CTRL Type = Root NE(Bridge)



CTRL Type = Branch NE or Branch NE Type = 2 Branches



CTRL Type = Normal NE

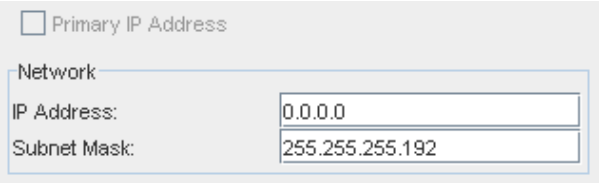
2. Set and select **Port category** and **Routing**. The right hand screen will change according to the selected item in **Category**.

   - Primary IP Address

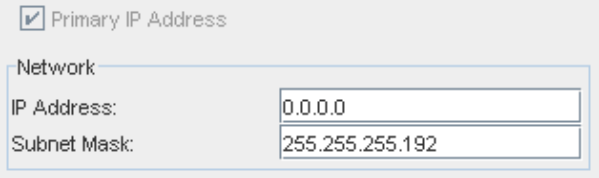
     PNMS identify a NE with using the IP address in NE. The check can be applied only to 1**port category** of several **Port categories** that exists in **CTRL Type** when **Branch NE** is selected.

   - IP Address & Subnet Mask

     The following items are set to each Port



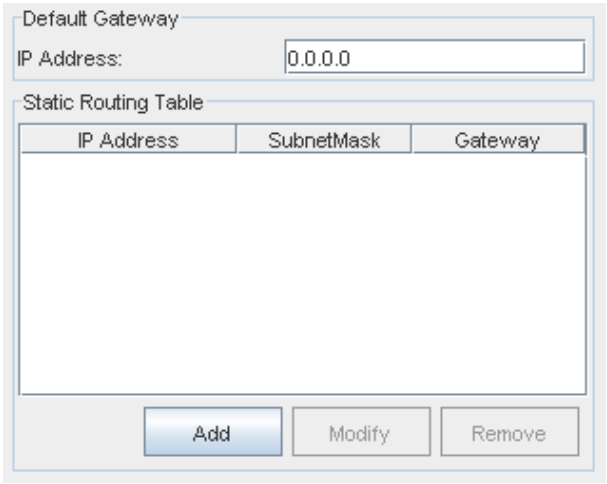
PNMS(E1) or EM1



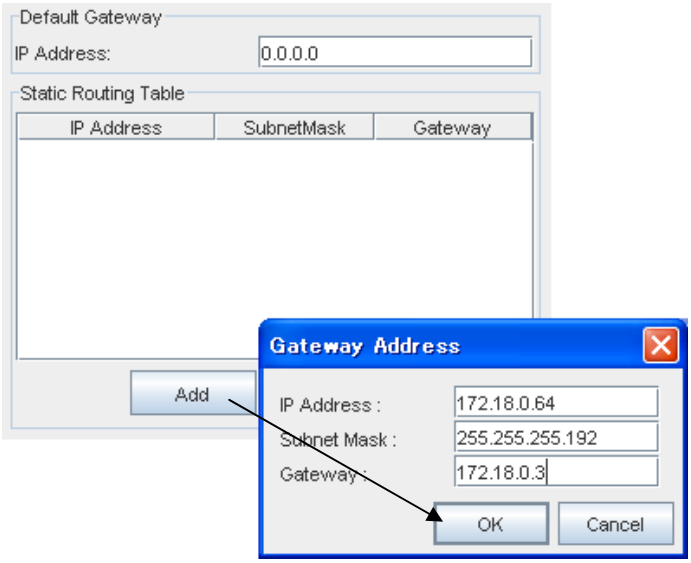
EM2/EM1 or EM2

3. Select and set **Routing**.

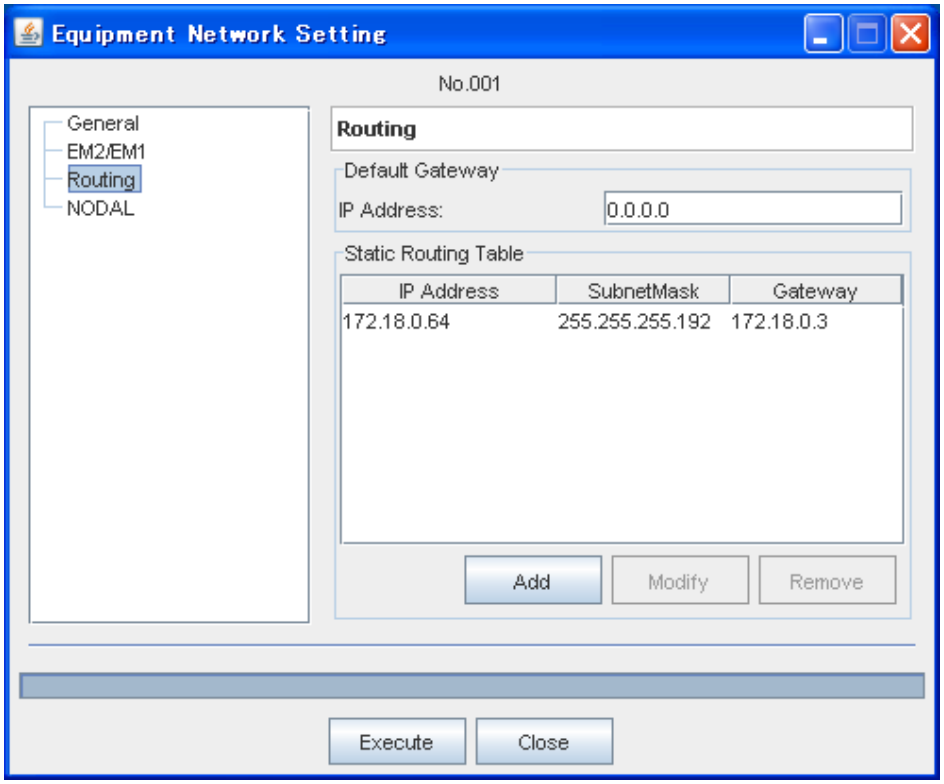
   3-1 If there is not subnet in the network, **Static Routing table** will not show any entries.



3-2 In case of several subnet in the Network click **[Add]** to entry the required value in **Static Routing Table**



3-3 Click **[OK]** button to activate the address setting.



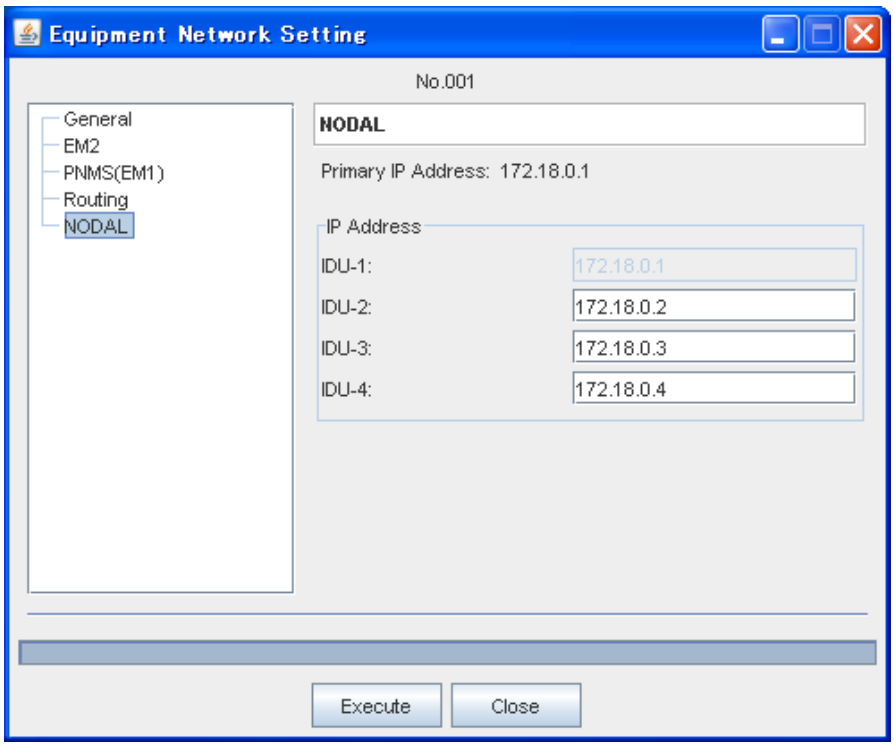
3-4 **[Modify]** is clicked to correct the registered value in **Static Routing table**.

3-5 **[Remove]** is clicked to delete the registered value in **Static Routing table**.

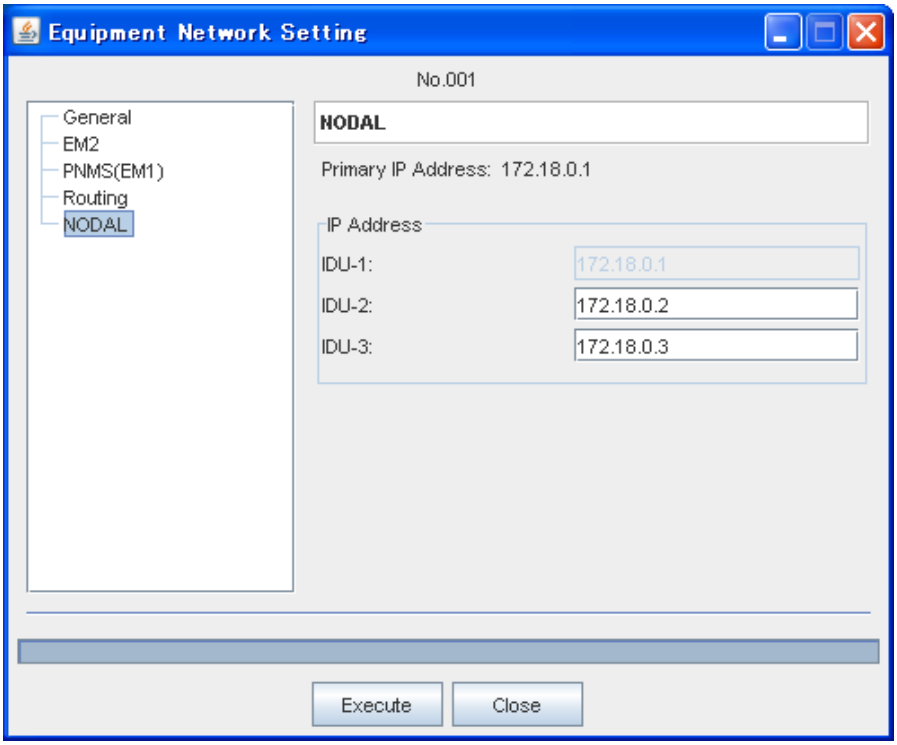
4. Select and set **NODAL**.

   In this window, you can set the IP addresses for all IDUs you wish to include in the same Station.

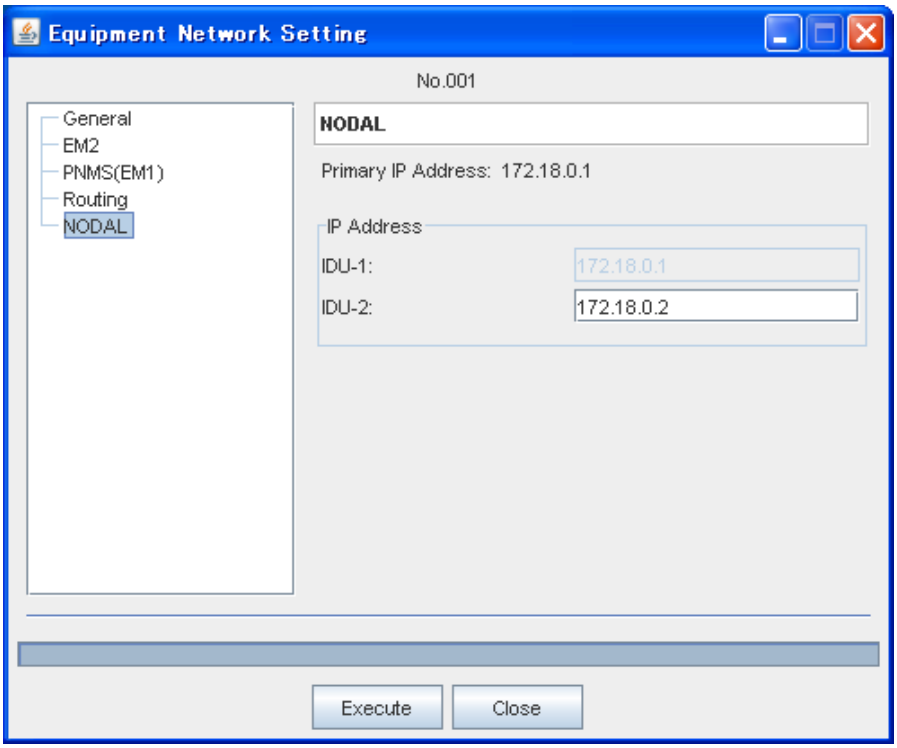
   When an IDU Tab is selected in the Station, the IP address of the corresponding IDU is disabled.



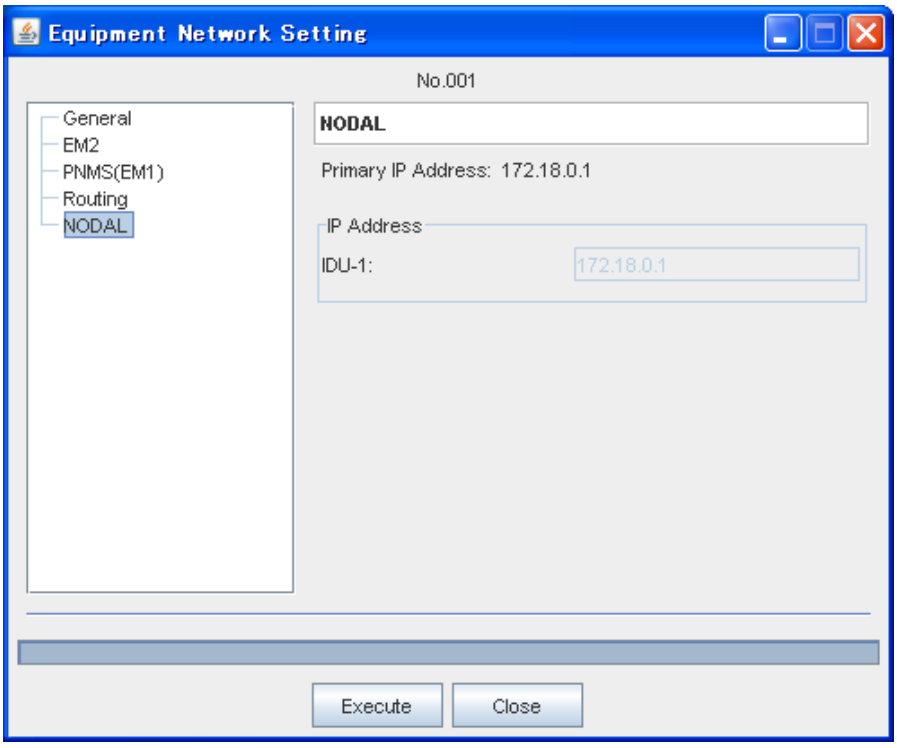
This example shows IDU-1 Tab selected (when there are four IDUs in the Station)



This example shows IDU-1 Tab selected (when there are three IDUs in the Station)



This example shows IDU-1 Tab selected (when there are two IDUs in the Station)



This example shows IDU-1 Tab selected (when there are one IDUs in the Station)

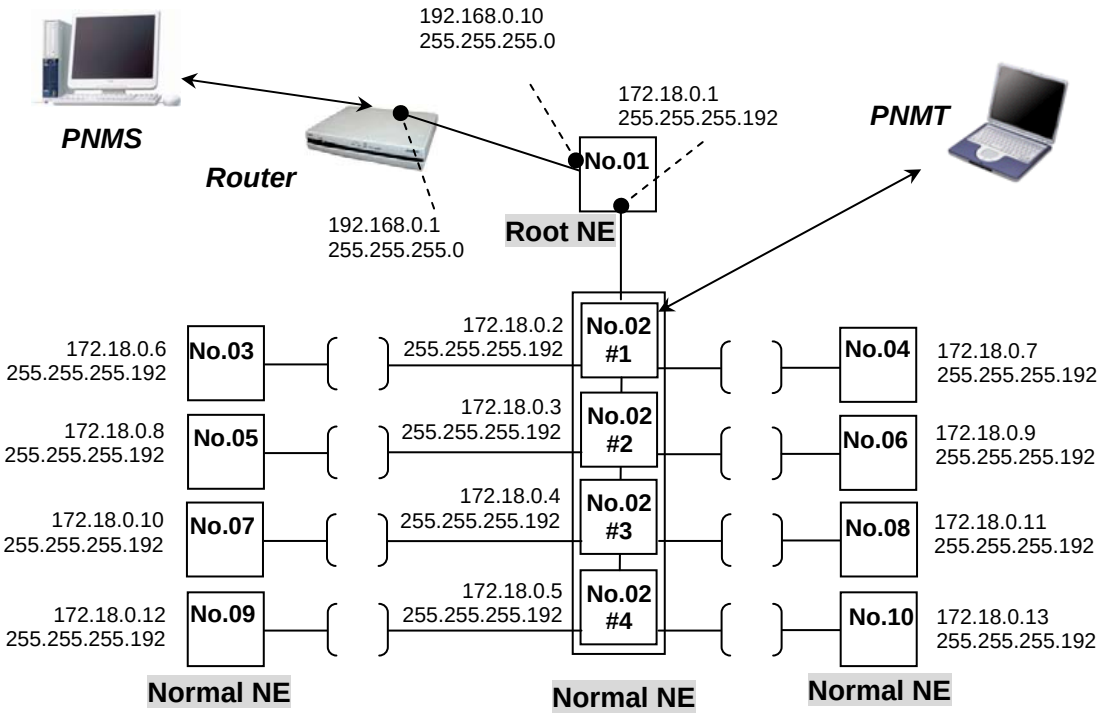
5. Click **[Execute]** button to activate the Equipment Networking setting.
6. Click **[Close]** button when finished.

NOTE:

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

< Sample Network Configuration >

1. The Network Configuration when subnet is connected.

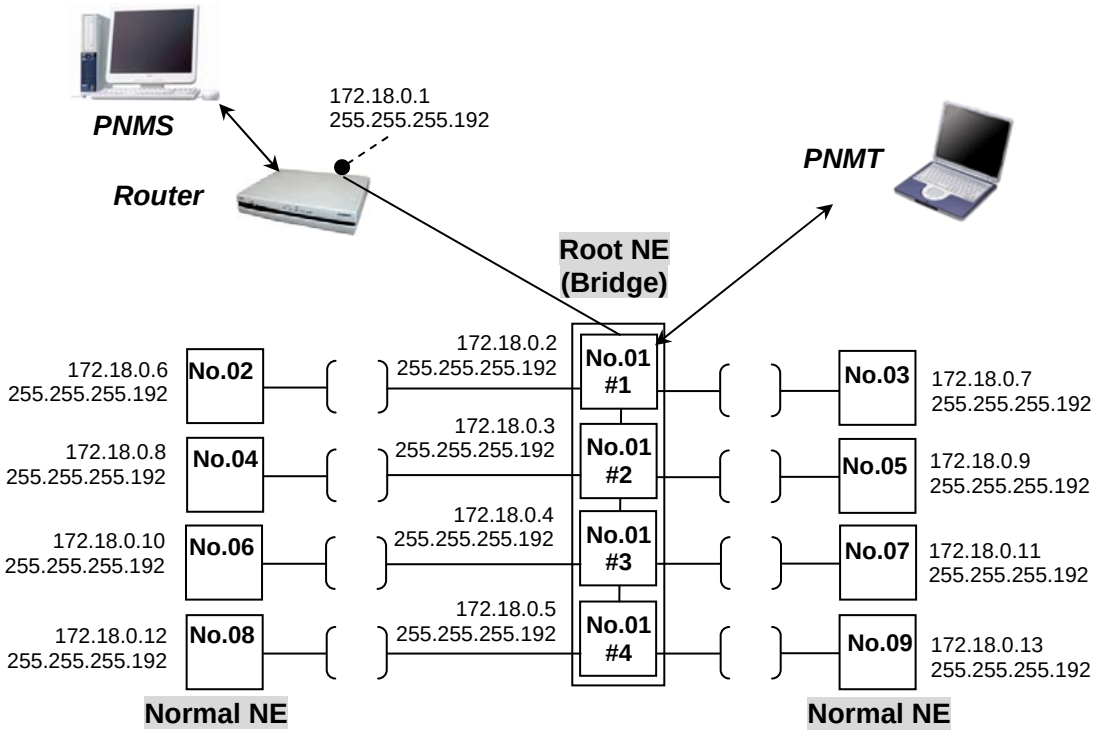


*NE No.02is NEO NODAL

*All other NEs are either PASOLINK NEO, PASOLINK NEO CPV, or PASOLINK NEO NODAL.

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	#1	DIR-A/DIR-B/EM2/EM1	IP Address	172.18.0.2
					Subnet Mask	255.255.255.192
				Routing	Default Gateway	172.18.0.1
					Static Routing Table	-
	Normal NE	Not selectable	#2	DIR-A/DIR-B/EM2/EM1	IP Address	172.18.0.3
					Subnet Mask	255.255.255.192
				Routing	Default Gateway	172.18.0.1
					Static Routing Table	-
	Normal NE	Not selectable	#3	DIR-A/DIR-B/EM2/EM1	IP Address	172.18.0.4
					Subnet Mask	255.255.255.192
				Routing	Default Gateway	172.18.0.1
					Static Routing Table	-
	Normal NE	Not selectable	#4	DIR-A/DIR-B/EM2/EM1	IP Address	172.18.0.5
					Subnet Mask	255.255.255.192
				Routing	Default Gateway	172.18.0.1
					Static Routing Table	-
No.03	Normal NE	Not selectable	Radio/EM2/EM1		IP Address	172.18.0.6
					Subnet Mask	255.255.255.192
			Routing		Default Gateway	172.18.0.1
					Static Routing Table	-
No.04	Normal NE	Not selectable	Radio/EM2/EM1		IP Address	172.18.0.7
					Subnet Mask	255.255.255.192
			Routing		Default Gateway	172.18.0.1
					Static Routing Table	-
No.05	Normal NE	Not selectable	Radio/EM2/EM1		IP Address	172.18.0.8
					Subnet Mask	255.255.255.192
			Routing		Default Gateway	172.18.0.1
					Static Routing Table	-
No.06	Normal NE	Not selectable	Radio/EM2/EM1		IP Address	172.18.0.9
					Subnet Mask	255.255.255.192
			Routing		Default Gateway	172.18.0.1
					Static Routing Table	-
No.07	Normal NE	Not selectable	Radio/EM2/EM1		IP Address	172.18.0.10
					Subnet Mask	255.255.255.192
			Routing		Default Gateway	172.18.0.1
					Static Routing Table	-
No.08	Normal NE	Not selectable	Radio/EM2/EM1		IP Address	172.18.0.11
					Subnet Mask	255.255.255.192
			Routing		Default Gateway	172.18.0.1
					Static Routing Table	-
No.09	Normal NE	Not selectable	Radio/EM2/EM1		IP Address	172.18.0.12
					Subnet Mask	255.255.255.192
			Routing		Default Gateway	172.18.0.1
					Static Routing Table	-
No.10	Normal NE	Not selectable	Radio/EM2/EM1		IP Address	172.18.0.13
					Subnet Mask	255.255.255.192
			Routing		Default Gateway	172.18.0.1
					Static Routing Table	-

2. The Network Configuration when subnet is connected.

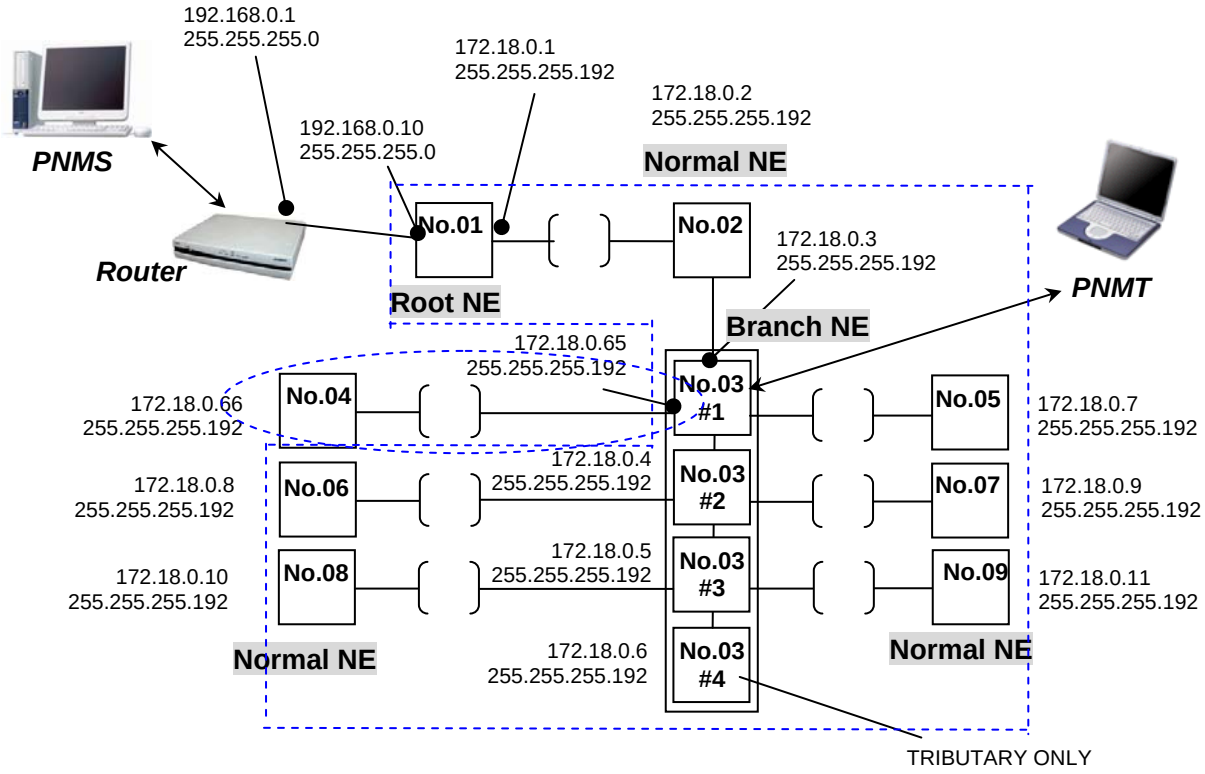


*NE No.01 is NEO NODAL

*All other NEs are either PASOLINK NEO, PASOLINK NEO CPV, or PASOLINK NEO NODAL.

NE	General (Category)		Category		Item Name	Input data
	CTRL Type	Branch NE Type				
No.01	Root NE (Bridge)	Not selectable	#1	DIR-A/DIR-B/EM2/EM1	IP Address	172.18.0.2
					Subnet Mask	255.255.255.192
				Routing	Default Gateway	172.18.0.1
					Static Routing Table	-
	Normal NE	Not selectable	#2	DIR-A/DIR-B/EM2/EM1	IP Address	172.18.0.3
					Subnet Mask	255.255.255.192
				Routing	Default Gateway	172.18.0.1
					Static Routing Table	-
	Normal NE	Not selectable	#3	DIR-A/DIR-B/EM2/EM1	IP Address	172.18.0.4
					Subnet Mask	255.255.255.192
				Routing	Default Gateway	172.18.0.1
					Static Routing Table	-
	Normal NE	Not selectable	#4	DIR-A/DIR-B/EM2/EM1	IP Address	172.18.0.5
					Subnet Mask	255.255.255.192
				Routing	Default Gateway	172.18.0.1
					Static Routing Table	-
No.02	Normal NE	Not selectable	Radio/EM2/EM1		IP Address	172.18.0.6
					Subnet Mask	255.255.255.192
			Routing		Default Gateway	172.18.0.1
					Static Routing Table	-
No.03	Normal NE	Not selectable	Radio/EM2/EM1		IP Address	172.18.0.7
					Subnet Mask	255.255.255.192
			Routing		Default Gateway	172.18.0.1
					Static Routing Table	-
No.04	Normal NE	Not selectable	Radio/EM2/EM1		IP Address	172.18.0.8
					Subnet Mask	255.255.255.192
			Routing		Default Gateway	172.18.0.1
					Static Routing Table	-
No.05	Normal NE	Not selectable	Radio/EM2/EM1		IP Address	172.18.0.9
					Subnet Mask	255.255.255.192
			Routing		Default Gateway	172.18.0.1
					Static Routing Table	-
No.06	Normal NE	Not selectable	Radio/EM2/EM1		IP Address	172.18.0.10
					Subnet Mask	255.255.255.192
			Routing		Default Gateway	172.18.0.1
					Static Routing Table	-
No.07	Normal NE	Not selectable	Radio/EM2/EM1		IP Address	172.18.0.11
					Subnet Mask	255.255.255.192
			Routing		Default Gateway	172.18.0.1
					Static Routing Table	-
No.08	Normal NE	Not selectable	Radio/EM2/EM1		IP Address	172.18.0.12
					Subnet Mask	255.255.255.192
			Routing		Default Gateway	172.18.0.1
					Static Routing Table	-
No.09	Normal NE	Not selectable	Radio/EM2/EM1		IP Address	172.18.0.13
					Subnet Mask	255.255.255.192
			Routing		Default Gateway	172.18.0.1
					Static Routing Table	-

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

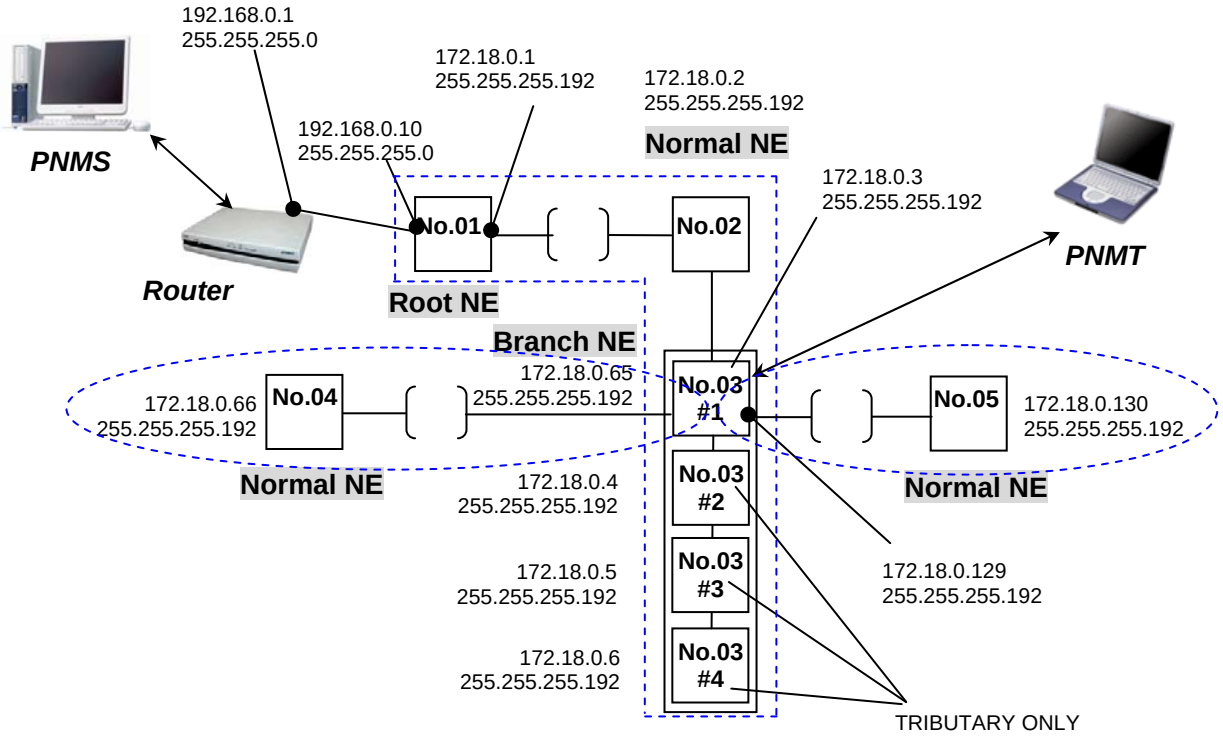


*NE No.03 is NEO NODAL

*All other NEs are either PASOLINK NEO, PASOLINK NEO CPV, or PASOLINK NEO NODAL.

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	172.168.0.10	
					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/EM2/EM1		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	#1	DIR-A	IP Address	172.18.0.65	
					Subnet Mask	255.255.255.192	
				DIR-B/EM1/EM2	IP Address	172.18.0.3	
					Subnet Mask	255.255.255.192	
				Routing	Default Gateway	172.18.0.1	
					Static Routing Table	-	
	Normal NE	Not selectable	#2	DIR-A /DIR-B/EM2/EM1	IP Address	172.18.0.4	
					Subnet Mask	255.255.255.192	
				Routing	Default Gateway	172.18.0.1	
					Static Routing Table	-	
	Normal NE	Not selectable	#3	DIR-A /DIR-B/EM2/EM1	IP Address	172.18.0.5	
					Subnet Mask	255.255.255.192	
				Routing	Default Gateway	172.18.0.1	
					Static Routing Table	-	
	Normal NE	Not selectable	#4	EM2/EM1	IP Address	172.18.0.6	
					Subnet Mask	255.255.255.192	
				Routing	Default Gateway	172.18.0.1	
					Static Routing Table	-	
No.04	Normal NE	Not selectable	Radio/EM2/EM1		IP Address	172.18.0.66	
					Subnet Mask	255.255.255.192	
			Routing		Default Gateway	172.18.0.65	
					Static Routing Table	-	
No.05	Normal NE	Not selectable	Radio/EM2/EM1		IP Address	172.18.0.7	
					Subnet Mask	255.255.255.192	
			Routing		Default Gateway	172.18.0.1	
					Static Routing Table	-	
No.06	Normal NE	Not selectable	Radio/EM2/EM1		IP Address	172.18.0.8	
					Subnet Mask	255.255.255.192	
			Routing		Default Gateway	172.18.0.1	
					Static Routing Table	-	
No.07	Normal NE	Not selectable	Radio/EM2/EM1		IP Address	172.18.0.9	
					Subnet Mask	255.255.255.192	
			Routing		Default Gateway	172.18.0.1	
					Static Routing Table	-	
No.08	Normal NE	Not selectable	Radio/EM2/EM1		IP Address	172.18.0.10	
					Subnet Mask	255.255.255.192	
			Routing		Default Gateway	172.18.0.1	
					Static Routing Table	-	
No.09	Normal NE	Not selectable	Radio/EM2/EM1		IP Address	172.18.0.11	
					Subnet Mask	255.255.255.192	
			Routing		Default Gateway	172.18.0.1	
					Static Routing Table	-	

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

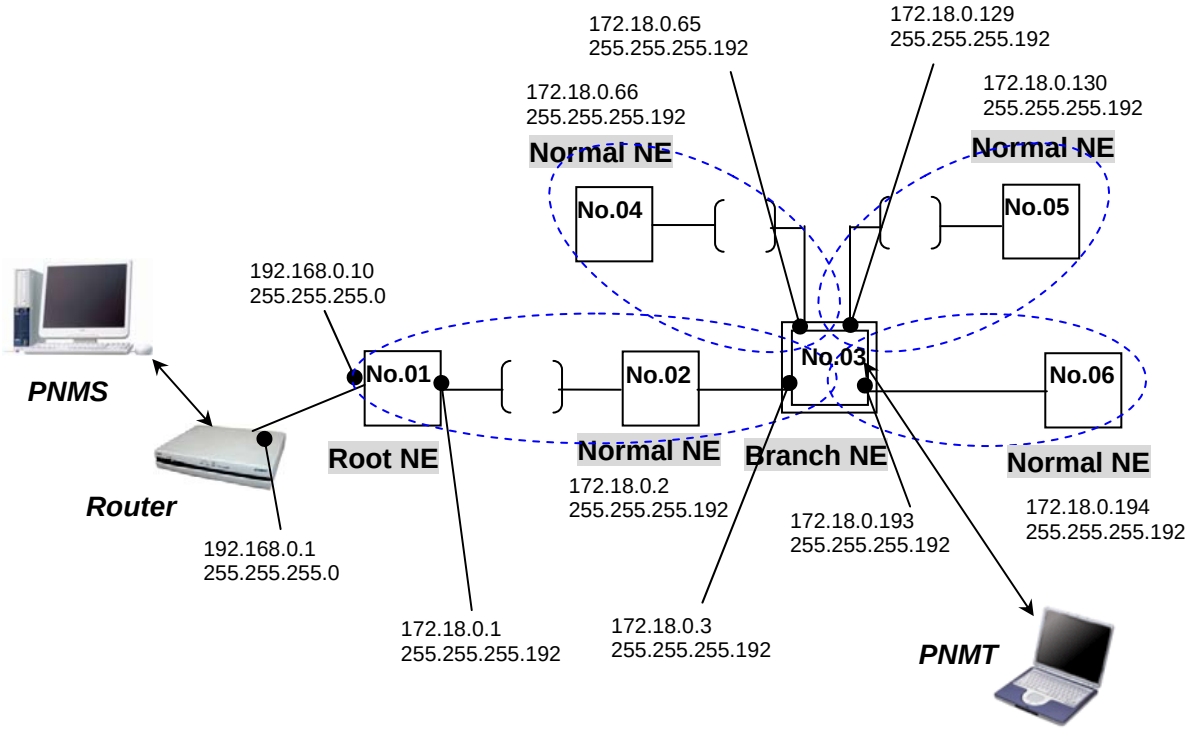


*NE No.03 is NEO NODAL

*All other NEs are either PASOLINK NEO, PASOLINK NEO CPV, or PASOLINK NEO NODAL.

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/EM2/EM1		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	#1	DIR-A	IP Address	172.18.0.65	
					Subnet Mask	255.255.255.192	
				DIR-B	IP Address	172.18.0.129	
					Subnet Mask	255.255.255.192	
				EM2/EM1	IP Address	172.18.0.3	
					Subnet Mask	255.255.255.192	
				Routing	Default Gateway	172.18.0.1	
					Static Routing Table	-	
	Normal NE	Not selectable	#2	EM2/EM1	IP Address	172.18.0.4	
					Subnet Mask	255.255.255.192	
				Routing	Default Gateway	172.18.0.1	
					Static Routing Table	-	
	Normal NE	Not selectable	#3	EM2/EM1	IP Address	172.18.0.5	
					Subnet Mask	255.255.255.192	
				Routing	Default Gateway	172.18.0.1	
					Static Routing Table	-	
	Normal NE	Not selectable	#4	EM2/EM1	IP Address	172.18.0.6	
					Subnet Mask	255.255.255.192	
				Routing	Default Gateway	172.18.0.1	
					Static Routing Table	-	
No.04	Normal NE	Not selectable	Radio/EM2/EM1		IP Address	172.18.0.66	
					Subnet Mask	255.255.255.192	
			Routing		Default Gateway	172.18.0.65	
					Static Routing Table	-	
No.05	Normal NE	Not selectable	Radio/EM2/EM1		IP Address	172.18.0.130	
					Subnet Mask	255.255.255.192	
			Routing		Default Gateway	172.18.0.129	
					Static Routing Table	-	

5. The Network configuration in case of several subnets
(**Branch NE Type = 4 Branches**)



*NE No.03 is NEO NODAL

*All other NEs are either PASOLINK NEO, PASOLINK NEO CPV, or PASOLINK NEO NODAL.

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
					IP Address	172.18.0.192
					Subnet Mask	255.255.255.192
					Default Gateway	172.18.0.3
No.02	Normal NE	Not selectable	Radio/EM2/EM1	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	4 Branches	DIR-A	IP Address	172.18.0.65	
				Subnet Mask	255.255.255.192	
			DIR-B	IP Address	172.18.0.129	
				Subnet Mask	255.255.255.192	
			EM2	IP Address	172.18.0.193	
				Subnet Mask	255.255.255.192	
			EM1	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/EM2/EM1	IP Address	172.18.0.66	
				Subnet Mask	255.255.255.192	
			Routing	Default Gateway	172.18.0.65	
				Static Routing Table	-	
No.05	Normal NE	Not selectable	Radio/EM2/EM1	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/EM2/EM1	IP Address	172.18.0.194	
				Subnet Mask	255.255.255.192	
			Routing	Default Gateway	172.18.0.193	
				Static Routing Table	-	

Appendix D: How to Avoid Losing Setting Values during Downloading

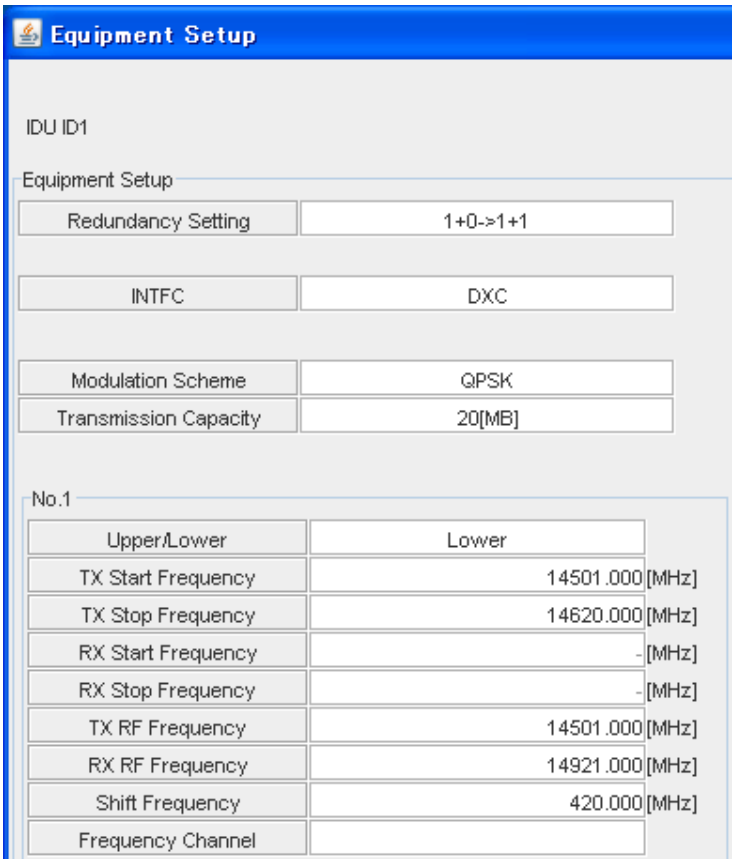
After setting the correct OfflineTool TX RF Frequency and RX RF Frequency, try downloading the ”pn_equip_0x”(x:1-4) file to the PNMT again.

<Calculating the frequency setting values>

Obtain the Upper/Lower and Shift Frequency data via the *LCT MENU-Equipment Setup* window. On the basis of the displayed TX RF Frequency range (TX Start Frequency - TX Stop Frequency) use equations (a)/(b) below to calculate the RX RF Frequency. (Where **TX RF, RX RF**, and **Shift** frequencies can be individually set, this does not apply).

(a) When **Lower/Upper** setting is ***Upper***
RX RF Frequency = TX RF Frequency – Shift Frequency value

(b) When **Lower/Upper** setting is ***Lower***
RX RF Frequency = TX RF Frequency + Shift Frequency value



If downloading is disrupted at IDU ID1 the above PNMT verification window appears.

Use the thus obtained **TX RF Frequency** and **RX RF Frequency** as the OfflineTool Equipment Setup TX RF and RX RF frequencies and try downloading again. Usually this will work.