ROI-S07084-052E
110921

NEC

P N M T

PNMT (Java version) Operation Manual

(for 5000S)

NEC Corporation

Table of Contents

Document Warranty

1. The information contained in this document is subject to change without prior notice.
2. The PNMS/PNMT screen shots in this manual are only examples. Screens or windows will vary according to equipment configurations, equipment operation modes, setting parameters, PNMS/PNMT application program version, etc. Screens or windows contained in this manual are current at the moment of publishing; however, they may differ slightly from the actual ones of 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 Network Management Terminal system developed by NEC for management of NEC's SDH/PDH Radio Equipment wireless transmission network. The PNMT is a scaled down version of 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 5000S series short haul wireless equipment) is installed.

This software package remotely monitors and controls the status and configuration of an entire 5000S network with associated equipment as well as the performance of the actual microwave links.

1.2 Connectability to other NEC PDH/SDH Radio Equipment

The current PNMT application only supports connectability to 5000S wireless equipment. (Attempts to link to other NEC PDH/SDH Radio Equipment are liable to cause the application to not function properly and connection to fail)

1.3 Conventions Used in This Manual

Font	What the Font Represents	Example
Italic	For manual titles or related document names.	Please refer to *5000S 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 the item. When the item is followed by an arrow (→), a cascading menu follows.	Select **System → Login/Logout**
<username>	A command variable where the user must enter the appropriate value. This is also commonly used when asking for a password.	<password>
Keycap	Keyboard keys.	Press Enter key.

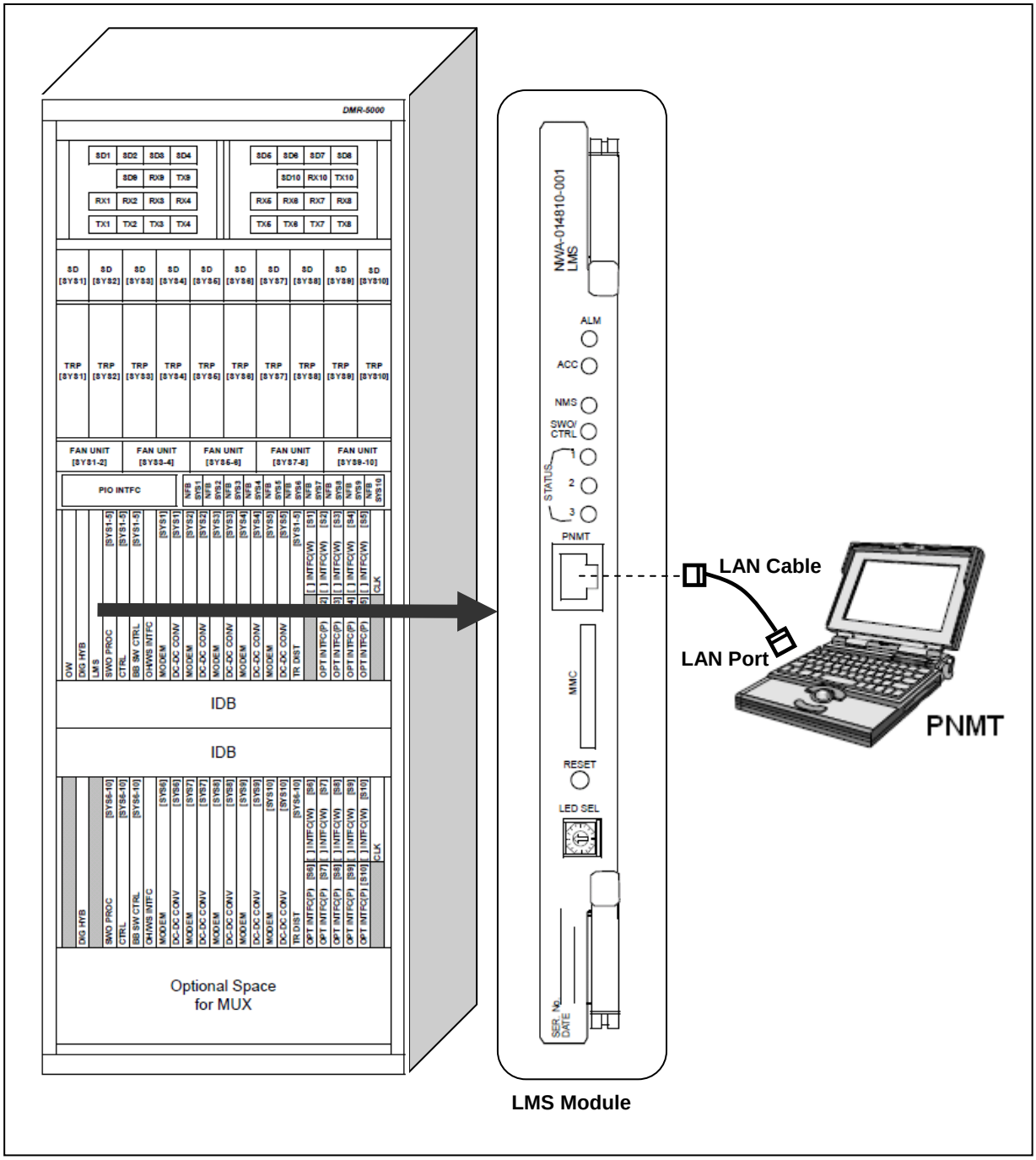
1.4 PNMT Communication Interfaces

1.4.1 Communications

Communication between the PNMT and the wireless network equipment is possible via the PNMT port on the LMS module of the NE.

1.4.2 PNMT Port Interface

The PNMT port on the LMS module can be accessed by opening the hatch of the MDP front panel.



PNMT – NE Connection

The LMS modules mounted on the PNMT and equipment are connected by LAN cable.

PNMT port specifications: PNMT connected to some 5000S may **not** be able to be linked to other 5000S equipment.

- 10BASE-T (fixed Half Duplex)

WARNING!!!

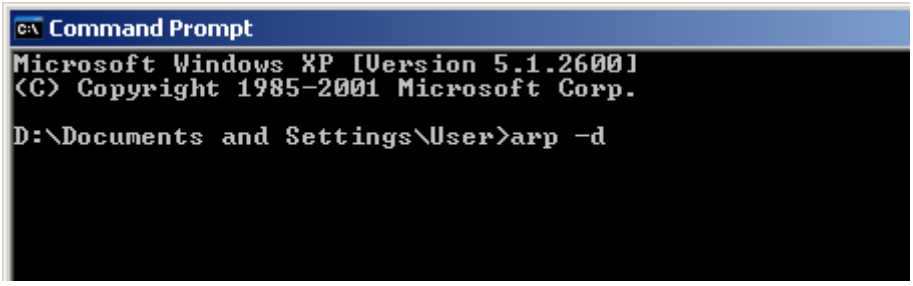
PNMT connected to certain 5000S may not be able to be connected to others.

If the ARP cache of 5000S equipment connected to the PNMT computer remains, the MAC address of the previously connected equipment would be used to connect to the present equipment.

The ARP cache is automatically cleared within about 10 seconds of the LAN cable being disconnected. Alternatively, it can also be cleared manually using the following procedure.

- Clearing the ARP cache

1. Launch the Command Prompt window.
2. Execute arp –d command.



1.4.3 PNMT network settings

When connecting NE (network elements) to PNMT, the following TCP/IP settings are to be used:

Item	Setting
IP Address	172.17.254.254
Subnet mask	255.255.255.252
Default gateway	172.17.254.253

1.5 Equipment Configuration of 5000S

The 5000S is configured as 4-11 GHz 64/128 QAM DMR-5000 SDH Microwave Radio Equipment (for details, please refer to: manual ROI-S06205-051E)

1.6 Hardware Requirements

Recommended configuration of PNMT mobile computer:

- CPU: Pentium M 2.26GHz or equivalent
- RAM: 1GB or more
- HD: 40GB or more
- Display: color LCD (1,024 × 768) or more
- FD drive
- CD-ROM drive
- Serial port (RS-232C)
- 10/100BASE-T (X) LAN port
- LAN Cable
- Internal sound system with speaker

1.7 Software Requirements

- OS: Windows XP Professional (English version) with SP2 or higher
  Windows Vista Business Edition (English version) with SP1 or higher
- Adobe Reader ver. 7.0/8.0 or higher
- PNMT Application software

2 SYSTEM OPERATION & MAINTENANCE

This chapter explains the menu structure and procedures for operating the PNMT. The explanation uses typical PNMT screens or windows 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 its title.

- Common Menu Bar

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

- Common Tool Bar

  In the Common Tool Bar, the NE connections (to the PNMT) as well as the screen display can be refreshed and the buzzer sound can be stopped.

- NE-specific Menu Bar

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

- Rack Summary

  The Rack Summary provides an overview of warning status, status values, and the state of maintenance for the respective rack.

- Module Summary

  The Module Summary provides an overview of the module mounting state, the warning status, and the relevant status values.

- Line Summary

  The Line Summary provides an overview of the warning status for each signal line of the N+1 configuration and the status summary as well as the switch status.

- Others

  The status of EXTERNAL DI/DO and LPM warnings, as well as the Status value summary, and the INVENTORY, are displayed in the **Others** column.

- Tabs

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

- Command Button

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

- Text Box

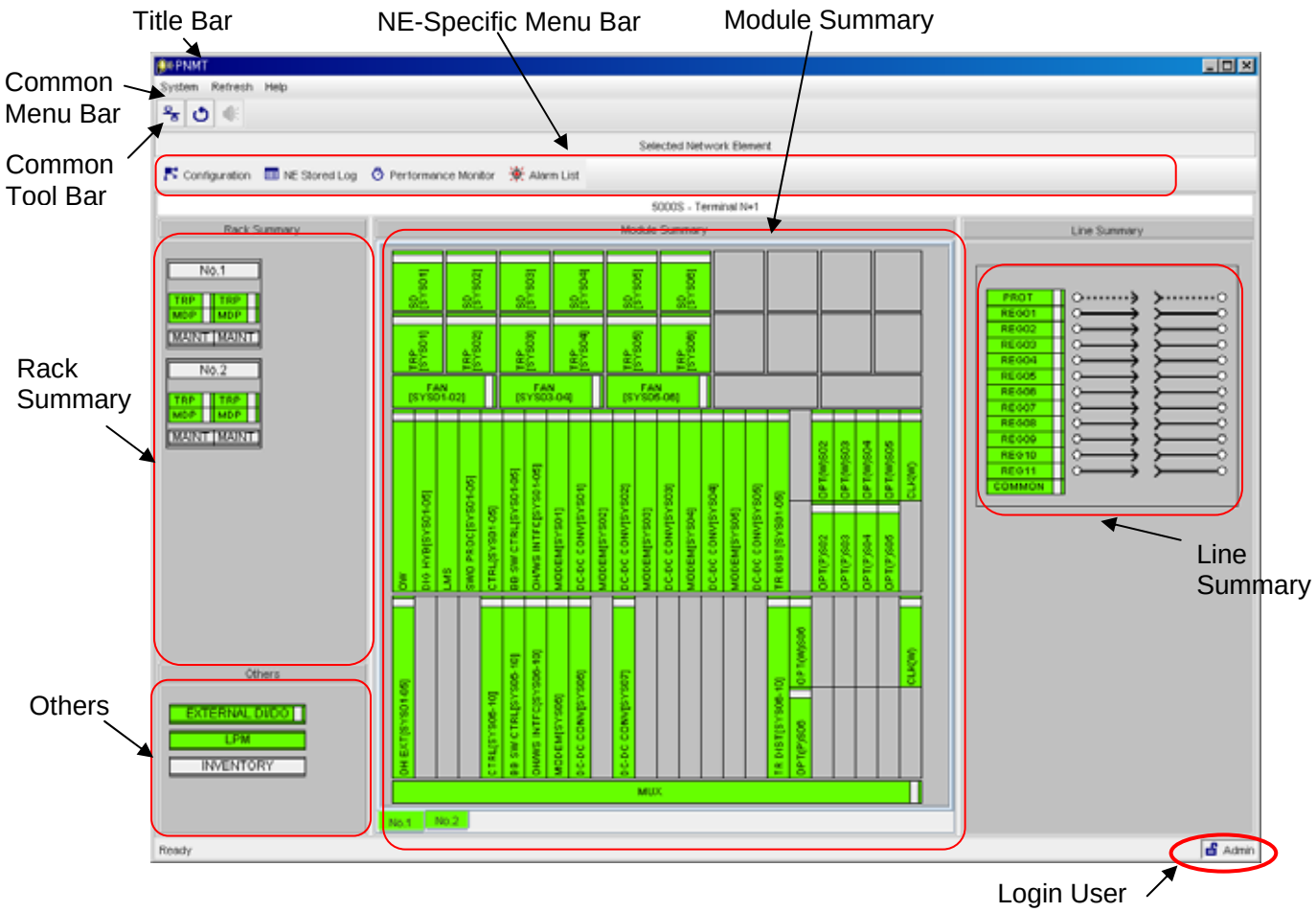
  This is a standard Windows dialog box where the user inputs the desired value.

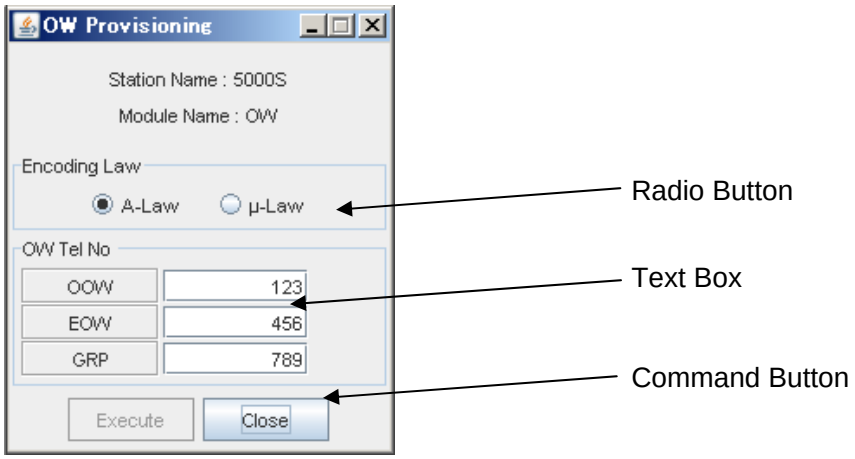
- Login User

  This indicates 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





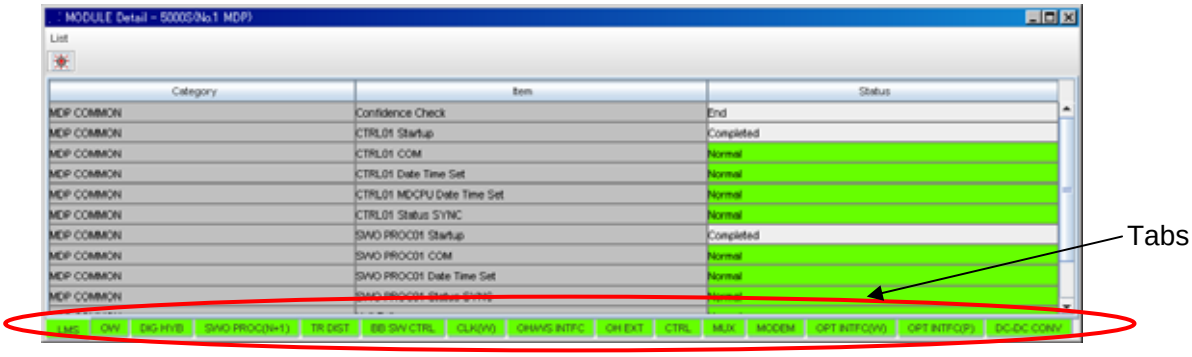


Figure 1 Standard Features of PNMT Window

2.2 Launching the PNMT Application

To start PNMT:

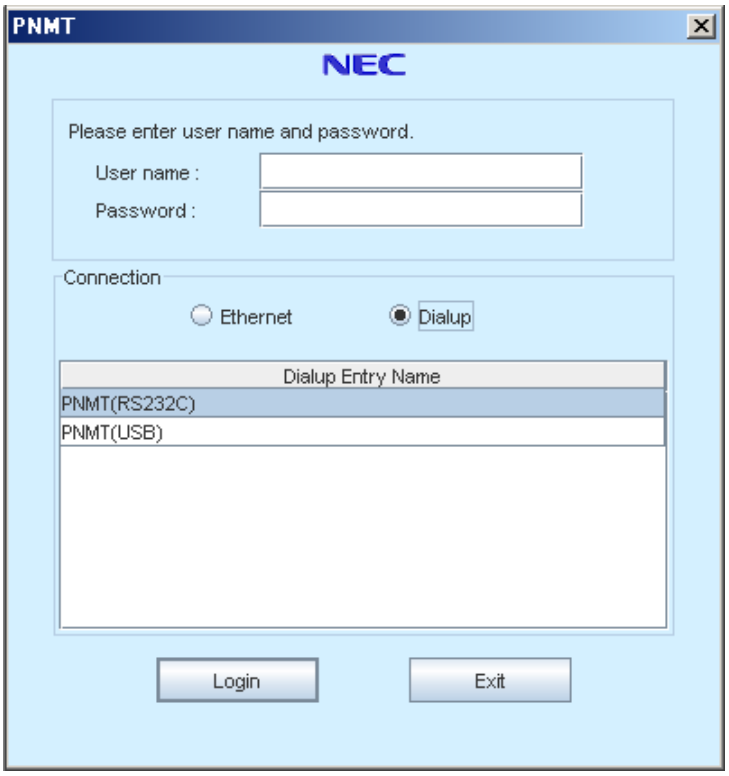
1. Turn ON the computer.

NOTE

Before logging in to the PNMT, be sure to connect the LAN cable to the LMS module's PNMT port.

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

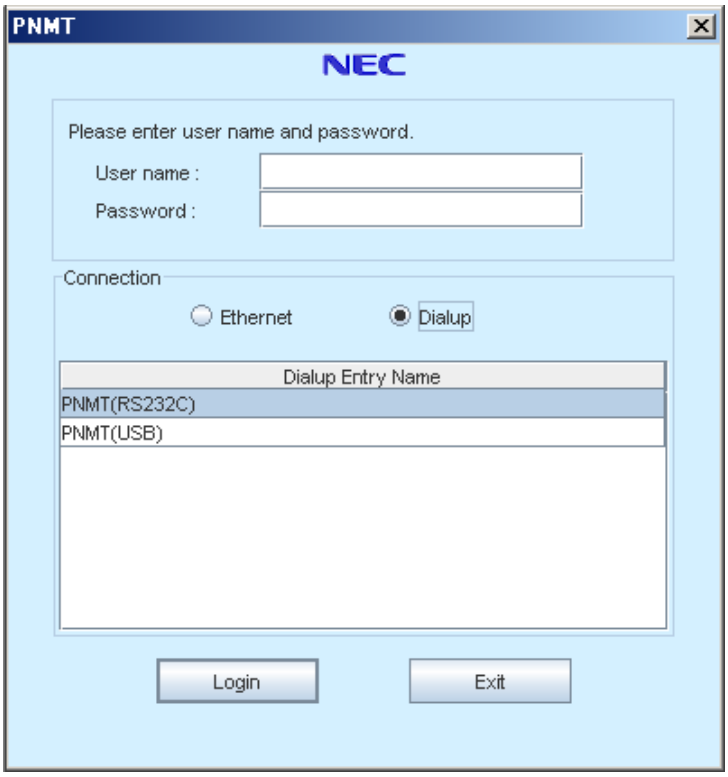
Users are registered by means of login name and password.

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, that determines which of the functions may (or may not) be carried out.

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

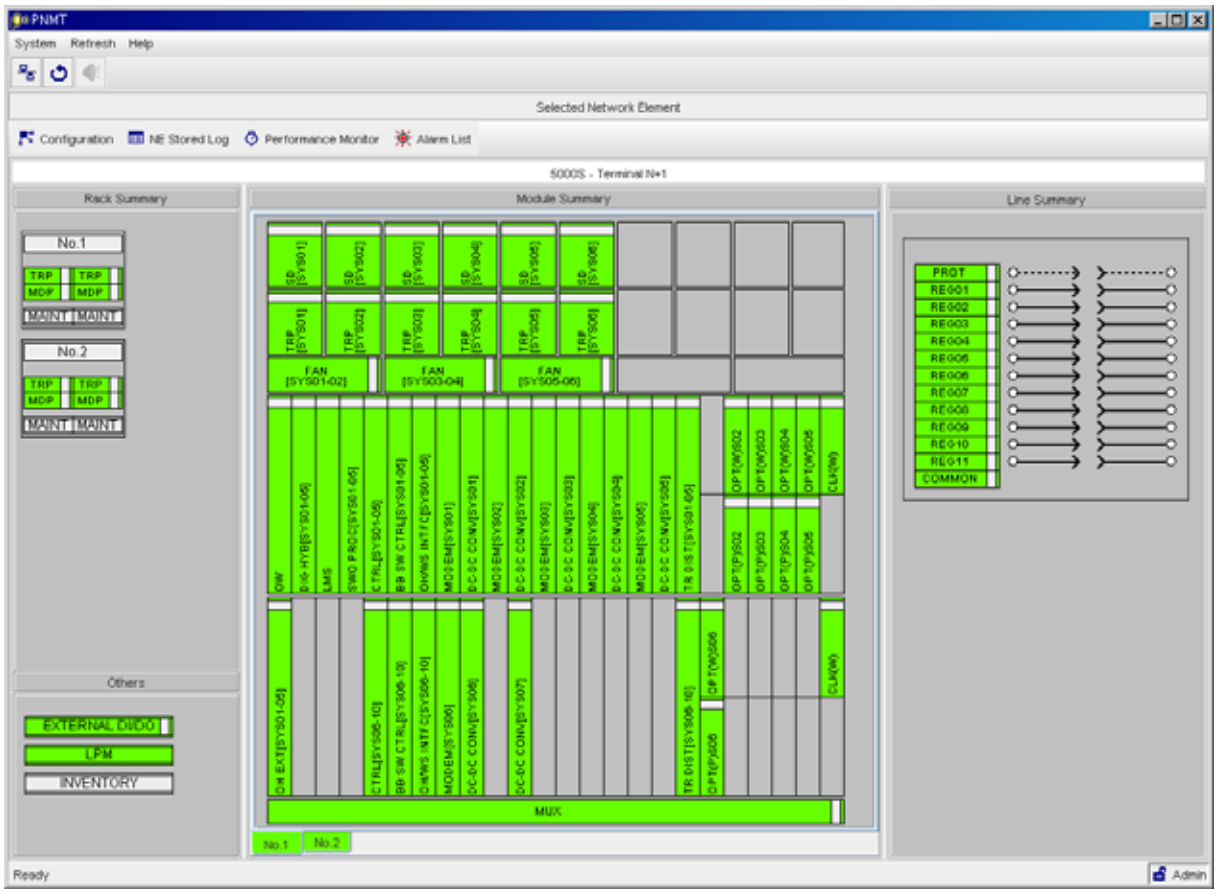
To login:

1. Start PNMT and the Login window appears.

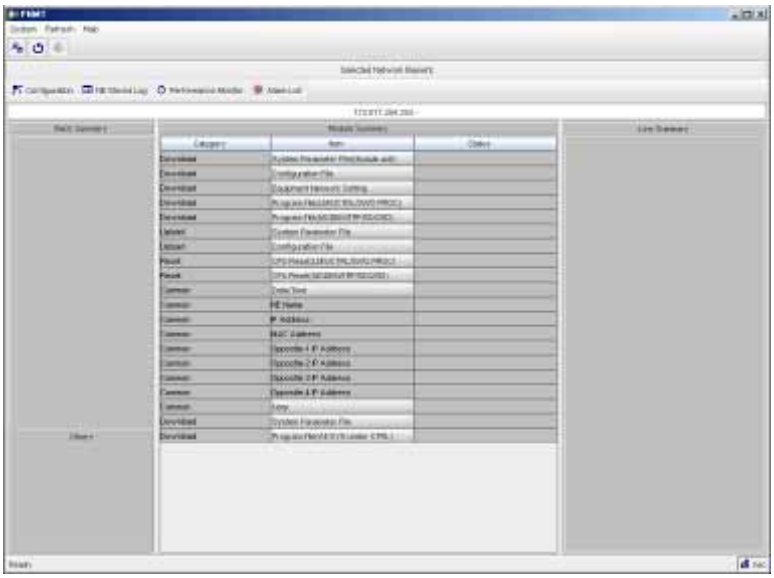


2. Enter the <user name>.
3. Enter the valid <password> for the specific user.
4. Select the Ethernet Radio Button in the Connection column.

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



If the Configuration File has not been downloaded to LMS, the following screen is displayed.



Because the same content as in the System Maintenance screen is displayed in the Module Summary, the Configuration File(s) can be downloaded here.

For details, refer to chapter 6. SYSTEM MAINTENANCE.

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)	-	-	-	✓	✓
PROVISIONING	OPT INTFC	ERR PLS	-	-	✓	✓	✓
		BER Alarm Threshold	-	-	✓	✓	✓
		ALS	-	-	✓	✓	✓
		Section Trace (J0) from/to MUX	-	-	✓	✓	✓
		Section Trace (J0) from/to DMR	-	-	✓	✓	✓
		PMON SES Threshold	-	-	✓	✓	✓
	150M INTFC	ERR PLS	-	-	✓	✓	✓
		BER Alarm Threshold	-	-	✓	✓	✓
		Section Trace (J0) from/to MUX	-	-	✓	✓	✓
		Section Trace (J0) from/to DMR	-	-	✓	✓	✓
		PMON SES Threshold	-	-	✓	✓	✓
	MODEM	BER Alarm Threshold	-	-	✓	✓	✓
		PMON SES Threshold	-	-	✓	✓	✓
		ATDE Setting	-	-	✓	✓	✓
	BB SW CTRL	Switching Mode	-	-	✓	✓	✓
	CTRL	Alarm Correlation	-	-	✓	✓	✓
		Provisioning CTRL External DO Configuration	-	✓	✓	✓	✓
	TRP	ATPC Condition	-	-	✓	✓	✓
		RSL for TCS	-	-	✓	✓	✓
	SWO PROC	SWO PROC Provisioning	-	-	✓	✓	✓
	OW	OW Provisioning	-	-	✓	✓	✓
	DIG HYB	DIG HYB Provisioning(Encoding Law)	-	-	✓	✓	✓
		DIG HYB Provisioning(DIGHYB Port Select)	-	-	✓	✓	✓
		DIG HYB Provisioning(CLK Mode)	-	-	✓	✓	✓
		DIG HYB Provisioning(CH2 Interface Select)	-	-	✓	✓	✓
	OH EXT	Port Setting for LAN(SC)	-	-	✓	✓	✓
		Port Setting for LAN(WS)	-	-	✓	✓	✓
	PMON	PMON Threshold Data-CTRL	-	✓	✓	✓	✓
		PMON Threshold Data-SWO PROC	-	✓	✓	✓	✓
MAINTENANCE CONTROL	OPT INTFC	Delay Adjust	-	-	✓	✓	✓
	150M INTFC	Delay Adjust	-	-	✓	✓	✓
	MODEM	Linear Equalizer Setting	-	-	✓	✓	✓
		Parabolic Equalizer Setting			✓	✓	✓
	OH/WC INTFC	Switching Control SYS A-B	-	-	✓	✓	✓
		Switching Control SYS C-D	-	-	✓	✓	✓
	SWO PROC	Switching Control(TX Side)	-	-	✓	✓	✓
		Switching Control(RX Side)	-	-	✓	✓	✓
		Switch Over Operation	-	-	✓	✓	✓
		Disable Operation	-	-	✓	✓	✓
		RCVY Operation	-	-	✓	✓	✓
		Counter Operation	-	-	✓	✓	✓
	BB SW CTRL	Control Mode SYS A	-	-	✓	✓	✓
		Control Mode SYS B	-	-	✓	✓	✓
		Control Mode SYS C	-	-	✓	✓	✓
		Control Mode SYS D	-	-	✓	✓	✓
		Control Mode SYS E	-	-	✓	✓	✓
		Lock-in Status Clear SYS A	-	-	✓	✓	✓
		Lock-in Status Clear SYS B	-	-	✓	✓	✓
		Lock-in Status Clear SYS C	-	-	✓	✓	✓
		Lock-in Status Clear SYS D	-	-	✓	✓	✓
		Lock-in Status Clear SYS E	-	-	✓	✓	✓
	TRP/SD/2SD	Manual Transmit Level Control	-	-	✓	✓	✓
	SD	DADE Adjust(Adjust)	-	-	✓	✓	✓
		DADE Adjust(Adjust Operation)	-	-	✓	✓	✓
	2SD	DADE Adjust(Adjust)	-	-	✓	✓	✓
		DADE Adjust(Adjust Operation)	-	-	✓	✓	✓

✓: Available, -: Not available

Functions			User Name and Accessible Functions				
Category		ITEM	Monitor	User	Local	Remote	Admin
MAINTENANCE TEST	OPT INTFC	Loopback Test	-	-	✓	✓	✓
	150M INTFC	Base Band Output Test	-	-	✓	✓	✓
		Loopback Test	-	-	✓	✓	✓
	MODEM	MOD Carrier Output	-	-	✓	✓	✓
		Loopback Test	-	-	✓	✓	✓
		DEM Carrier NORM/INV Select	-	-	✓	✓	✓
		Antenna Alignment Mode	-	-	✓	✓	✓
	OH/WS INTFC	Wayside Output Test SYS A-B	-	-	✓	✓	✓
		Wayside Output Test SYS C-D	-	-	✓	✓	✓
	BB SW CTRL	All Reset	-	-	✓	✓	✓
	TRP	Receive Level AGC Function	-	-	✓	✓	✓
		Carrier Sweep Function	-	-	✓	✓	✓
		Transmit Power Mute	-	-	✓	✓	✓
	SWO PROC	TX Test	-	-	✓	✓	✓
		Exercise	-	-	✓	✓	✓
	OH EXT	G703 Output Control	-	-	✓	✓	✓
		LAN SW Reset for LAN(SC)	-	-	✓	✓	✓
		LAN SW Reset for LAN(WS)	-	-	✓	✓	✓
		Link Down TEST	-	-	✓	✓	✓
		Wayside Output Control	-	-	✓	✓	✓
		Reset	-	-	✓	✓	✓
SYSTEM MAINTENANCE		CPU Reset<LMS/CTRL/SWO PROC>	-	-	✓	✓	✓
		CPU Reset<MODEM/TRP/SD/2SD>	-	-	✓	✓	✓
		Download Configuration File(Config File)	-	-	-	-	✓
		Download Configuration File(System Parameter File (Module Unit))	-	-	-	-	✓
		Upload Configuration File(Config File)	-	-	-	-	✓
		Upload Configuration File(System Parameter File)	-	-	-	-	✓
		Download Program File(LMS/CTRL/SWO PROC)	-	-	-	-	✓
		Download Program File(MODEM/TRP/SD/2SD)	-	-	-	-	✓
		CTRLxx Maintenance	-	✓	✓	✓	✓
		SWO PROCxx Maintenance	-	✓	✓	✓	✓
		Update Configuration File	-	-	-	-	✓
		Date/Time	-	-	✓	✓	✓
		Equipment Network Setting	-	-	-	-	✓
		Note	-	✓	✓	✓	✓
External DI/DO		External DI Configuration	-	✓	✓	✓	✓
		External DO Configuration	-	✓	✓	✓	✓
		External DO Control(Pulse)	-	✓	✓	✓	✓
		External DO Control(Latch)	-	✓	✓	✓	✓

*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 all Network Elements.
(Disabled from changing network configurations and changing/downloading programs)
*User: Enabled only to access items which do not affect the equipment.
*Monitor: Enabled only to monitor (disabled from control).

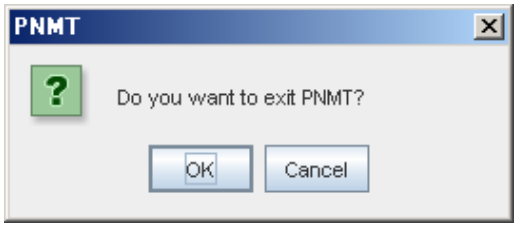
When Link Summary for opposite and remote NE are being displayed in PNMT and when Link Summary is displayed in PNMS with regards to functions listed below, these functions will be indicated as "Disabled".

MAINTENANCE CONTROL MODEM Linear Equalizer Setting
MAINTENANCE CONTROL MODEM Parabolic Equalizer Setting
MAINTENANCE CONTROL SD DADE Adjust(Adjust)
MAINTENANCE CONTROL SD DADE Adjust(Adjust Operation)
MAINTENANCE CONTROL 2SD DADE Adjust(Adjust)
MAINTENANCE CONTROL 2SD DADE Adjust(Adjust Operation)
MAINTENANCE TEST MODEM MOD Carrier Output
MAINTENANCE TEST MODEM Loopback Test(MODEM)
MAINTENANCE TEST TRP Receive Level AGC Function
MAINTENANCE TEST TRP Transmitter Power Mute

2.4 Shutting Down the PNMT

To close the PNMT application:

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

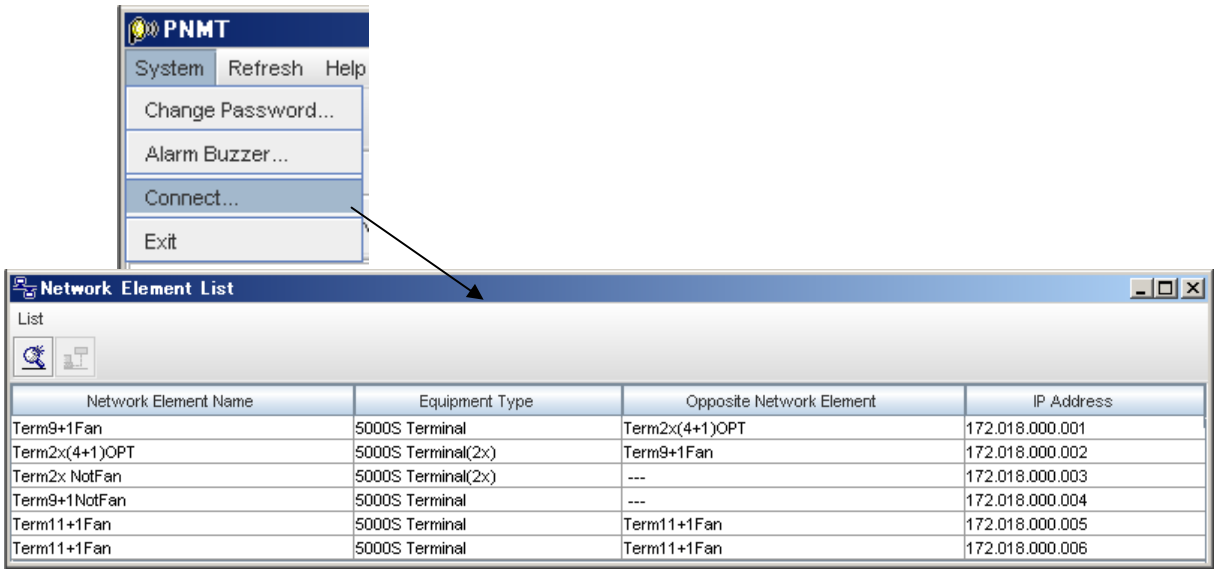


2.5 Searching for Network Elements and Connecting to Selected NE

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

To search for or connect to NE in the network:

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



Network Element Name	Equipment Type	Opposite Network Element	IP Address
Term9+1Fan	5000S Terminal	Term2x(4+1)OPT	172.018.000.001
Term2x(4+1)OPT	5000S Terminal(2x)	Term9+1Fan	172.018.000.002
Term2x NotFan	5000S Terminal(2x)	---	172.018.000.003
Term9+1NotFan	5000S Terminal	---	172.018.000.004
Term11+1Fan	5000S Terminal	Term11+1Fan	172.018.000.005
Term11+1Fan	5000S Terminal	Term11+1Fan	172.018.000.006

NOTE

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

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

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

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

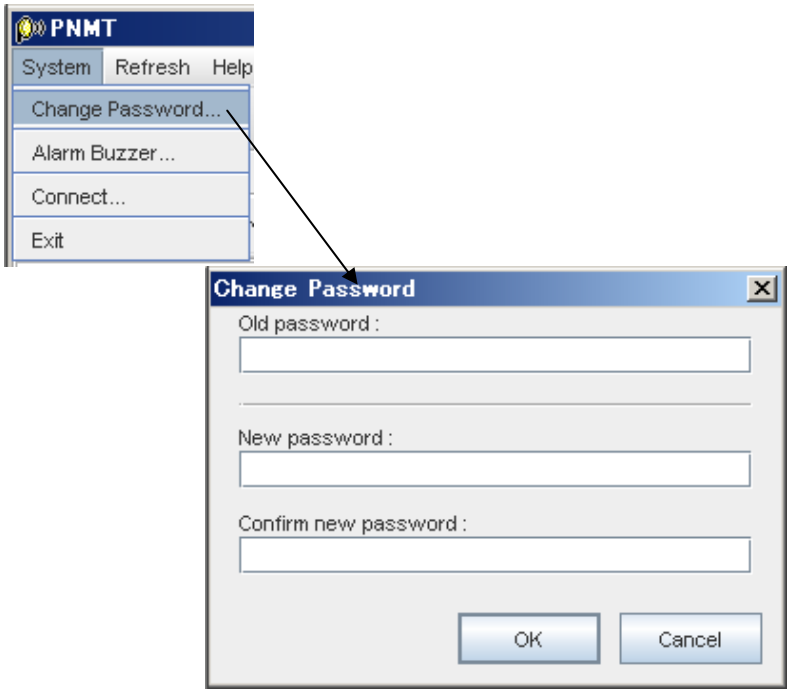
NOTE

Simultaneous connection from multiple PNMTs 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 counterpart)
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 on PNMT main window.



2. Enter the old <password>.
3. Enter new <password>.
4. Enter the new <password> again in the **Confirm New Password** box to confirm.
5. Click **[OK]** button.

NOTE

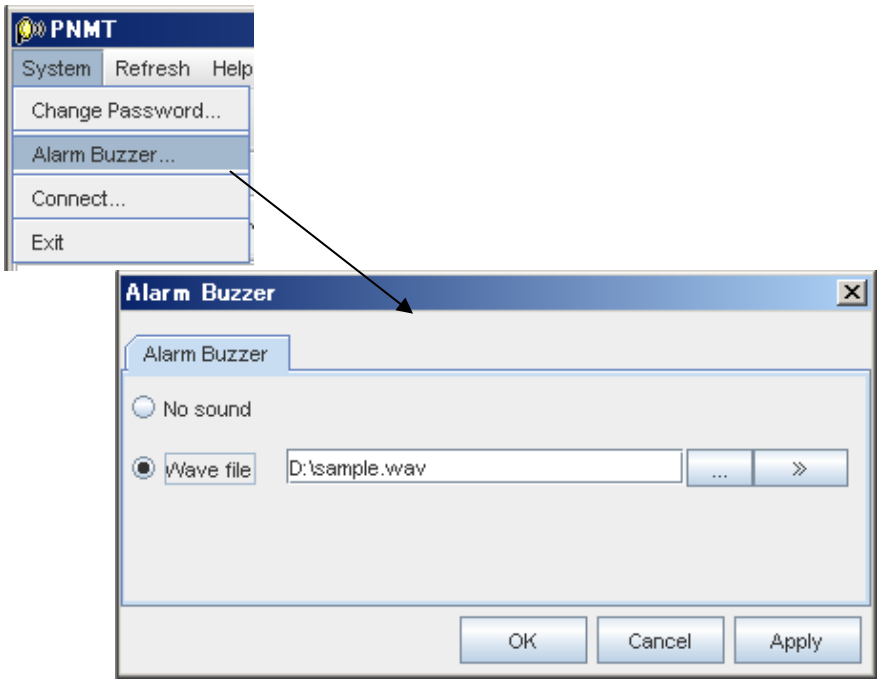
For details on initial user name and password, please refer to PNMT Installation Manual.

2.7 Alarm Buzzer Setting

This feature is used to activate and set the Alarm Buzzer. It can also be used to set the desired sound scheme.

To set the Alarm Buzzer:

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



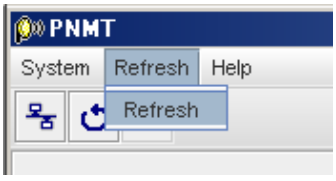
2. Select the **Wave file** to activate the buzzer. **No sound** is the initial factory setting of the PNMT.
3. If you select the **Wave file** box, enter the location of the sound file (*.wav) Otherwise; click the browse ... button to locate the desired file. You can also preview the *.wav file by clicking 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.

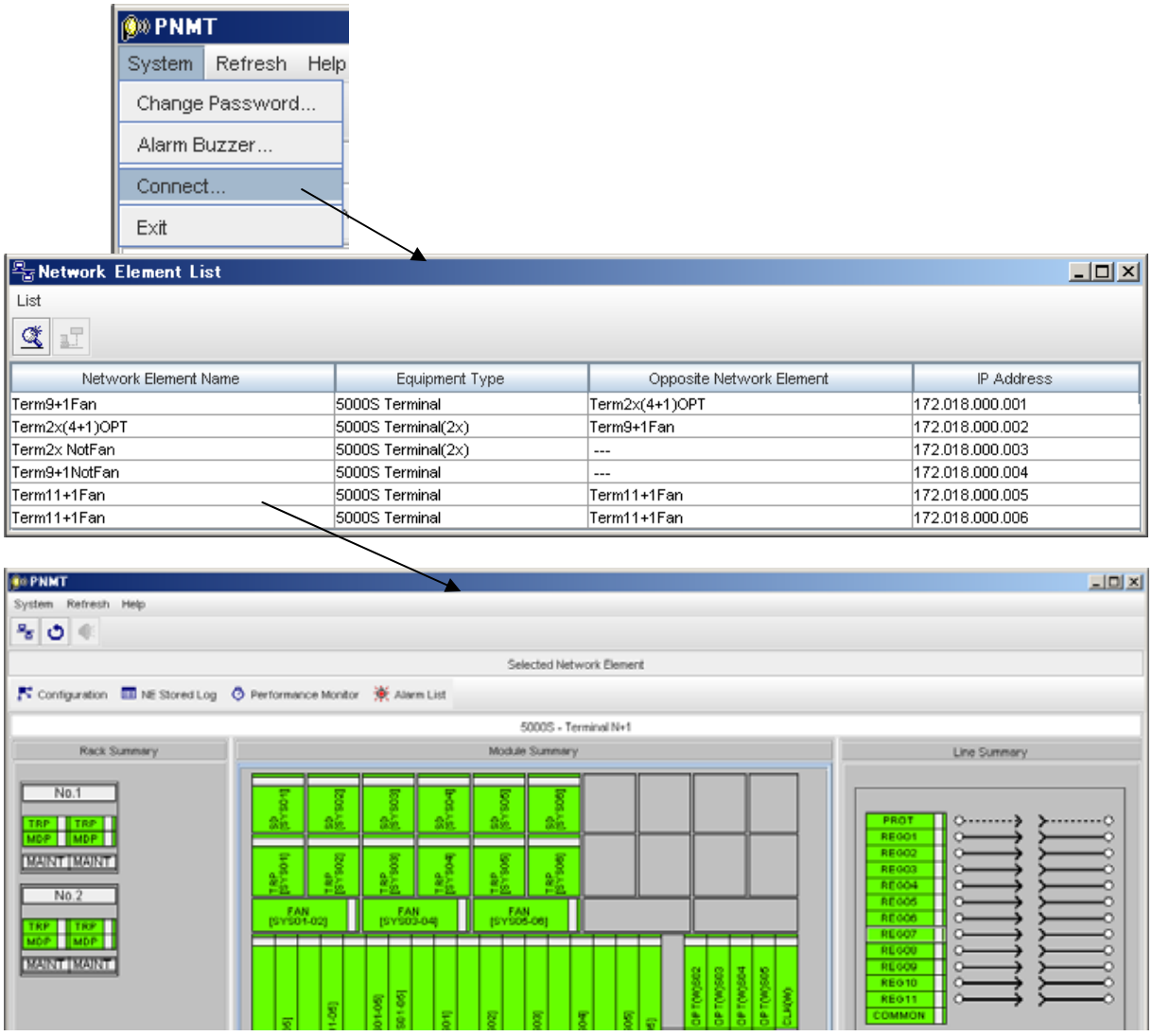
To Refresh:

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



2.9 Remote Viewing of PNMT Main Window

You can view the target link underlying the one Root NE in the managed network by determining (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 feature allows you to remotely connect to any NE in the network.



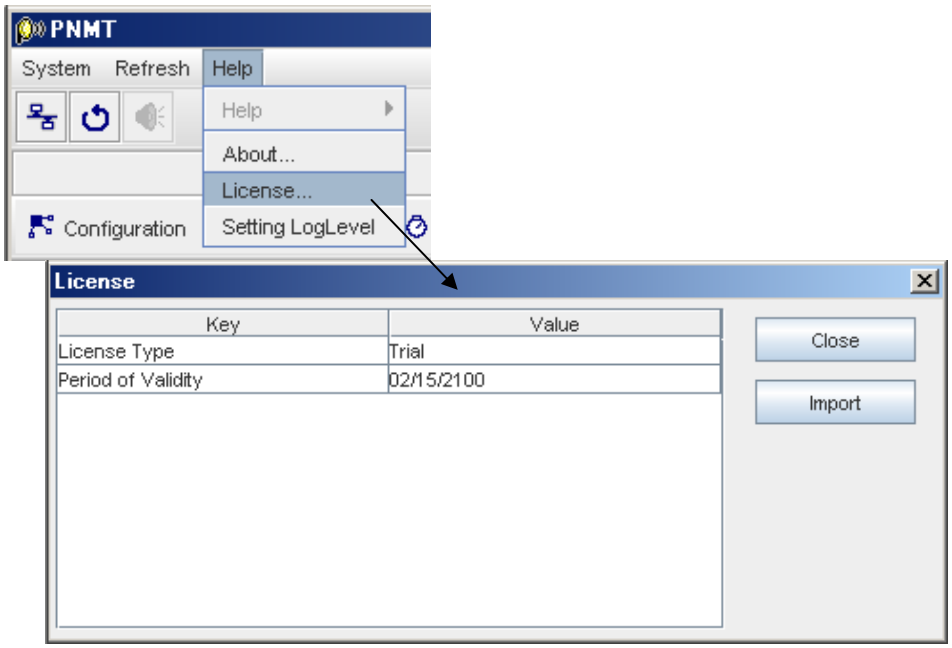
PNMT Main Window

2.10 License

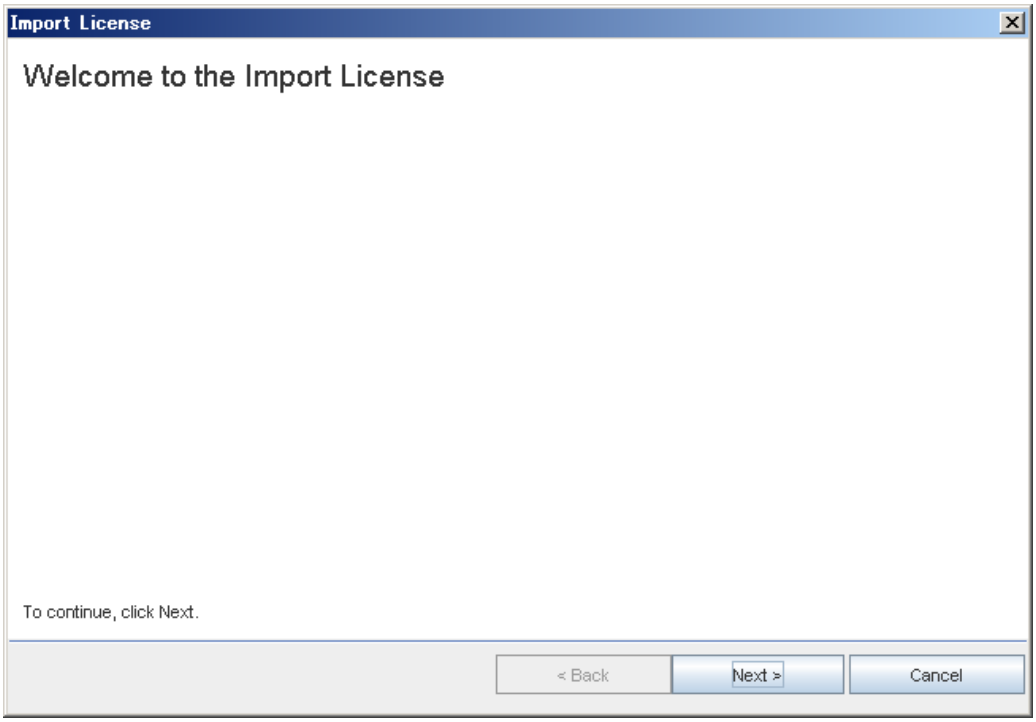
To protect PNMT functions, the PNMT application includes license files.

To display the current license status:

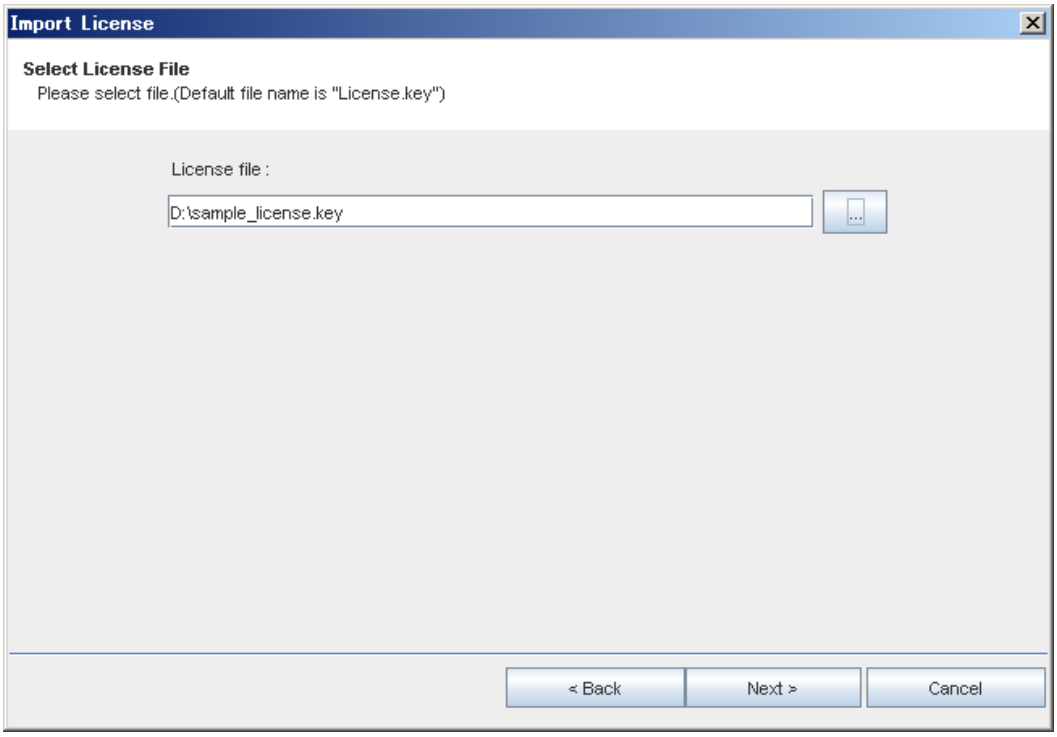
1. Click **Help → License** in the main window.



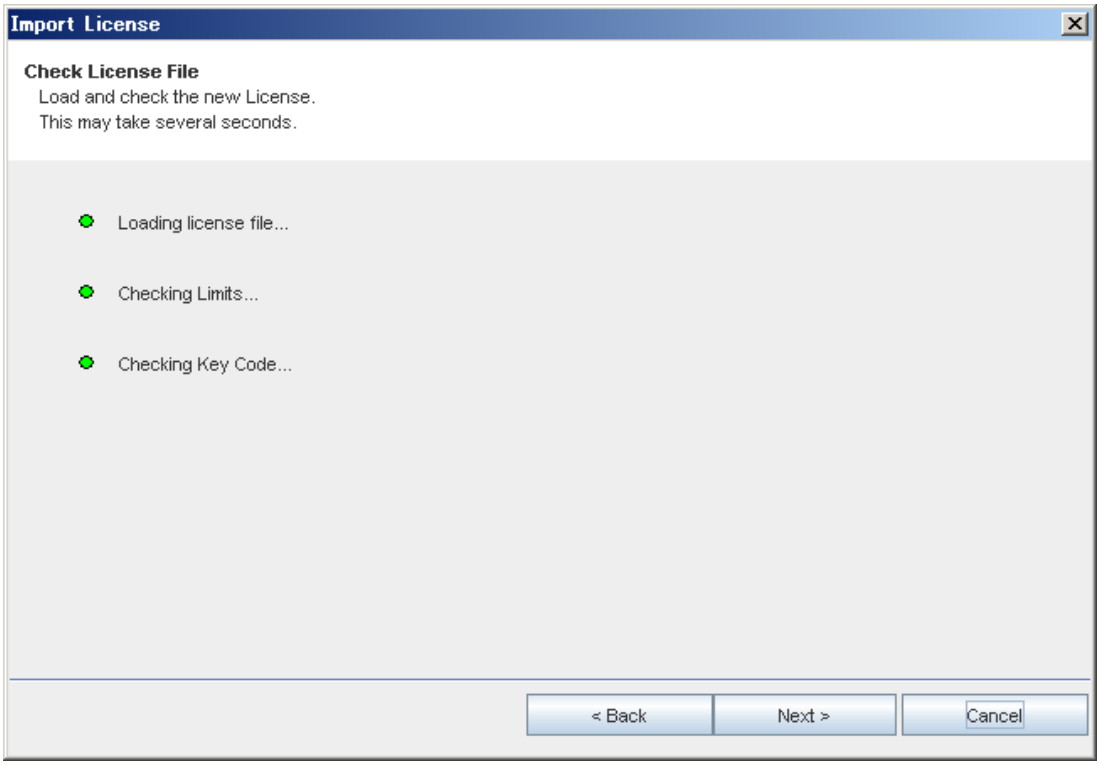
2. Click **[Close]** to shut this window. If you wish to change the license file, click **[Import]**, and proceed according to the following procedure. Click **[Next]** to continue.



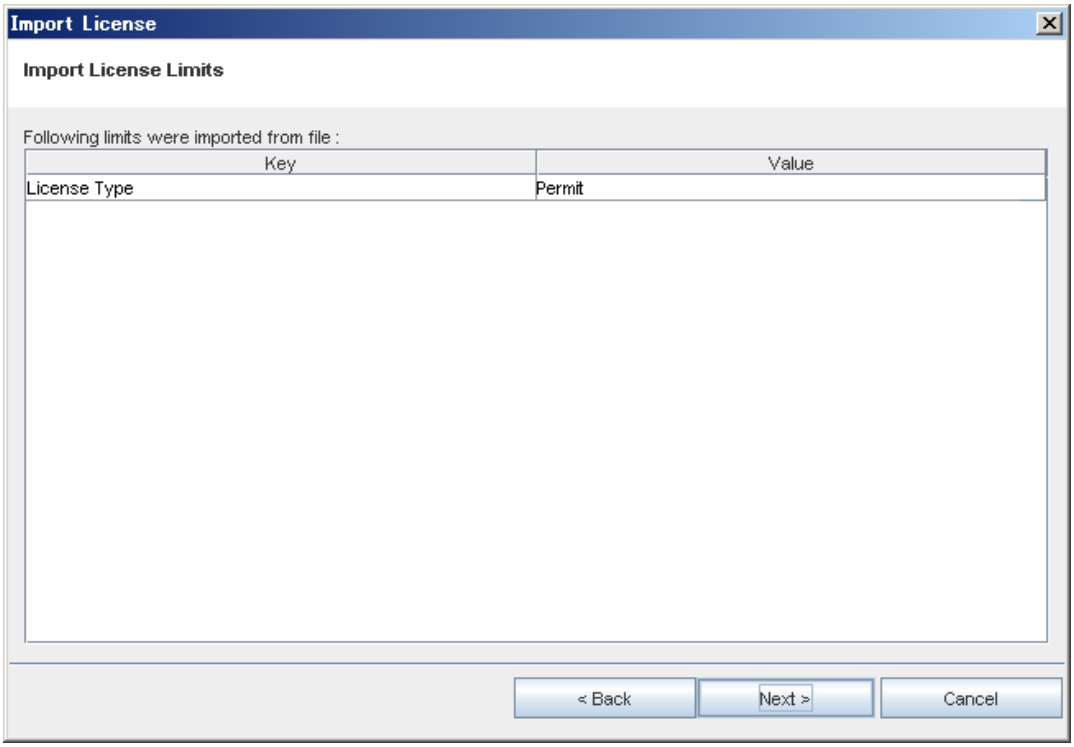
3. Specify the License Key file (if one is available). Click **[Next]**.



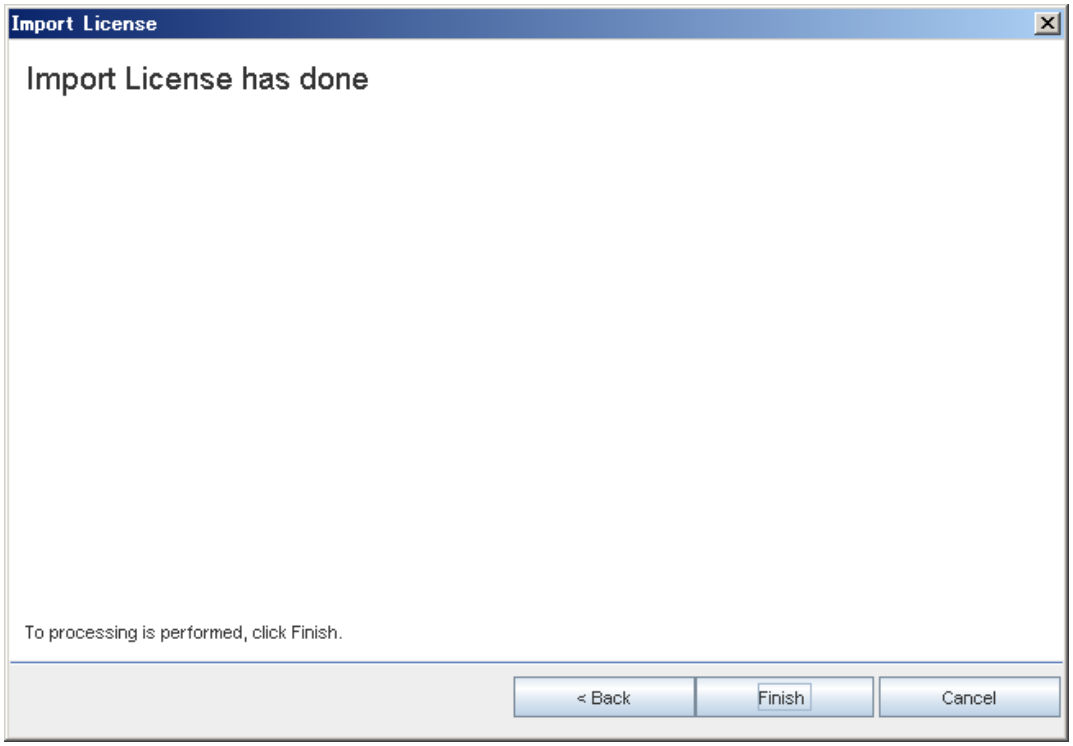
4. The progress of **Check License File** will be displayed. If no error is encountered during importing of the license file, click **[Next]** as soon as the button becomes available.



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



6. Click [Finish] in ensuing window to Import License Wizard.

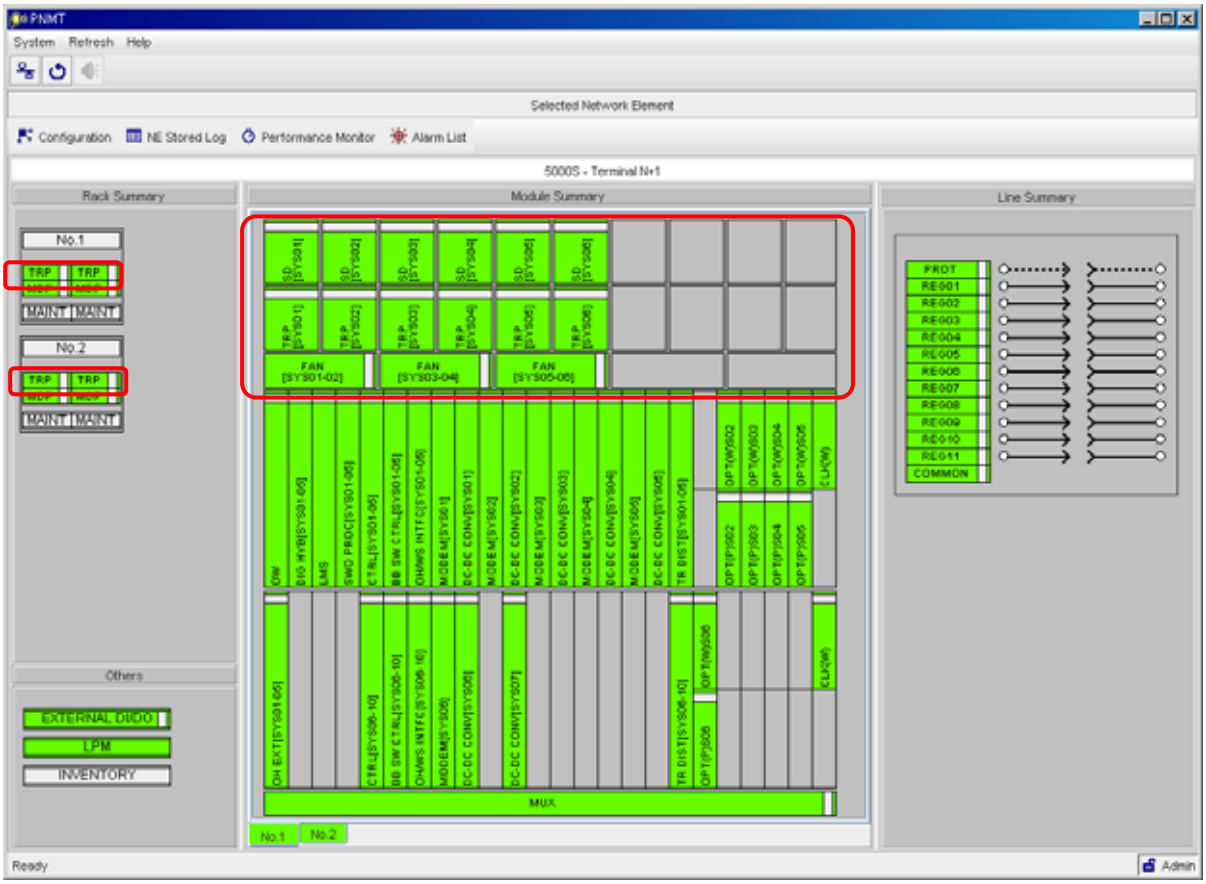


3 ALARM/STATUS

The Alarm/ Status feature allows the alarm monitoring status to be checked in the Detail window.

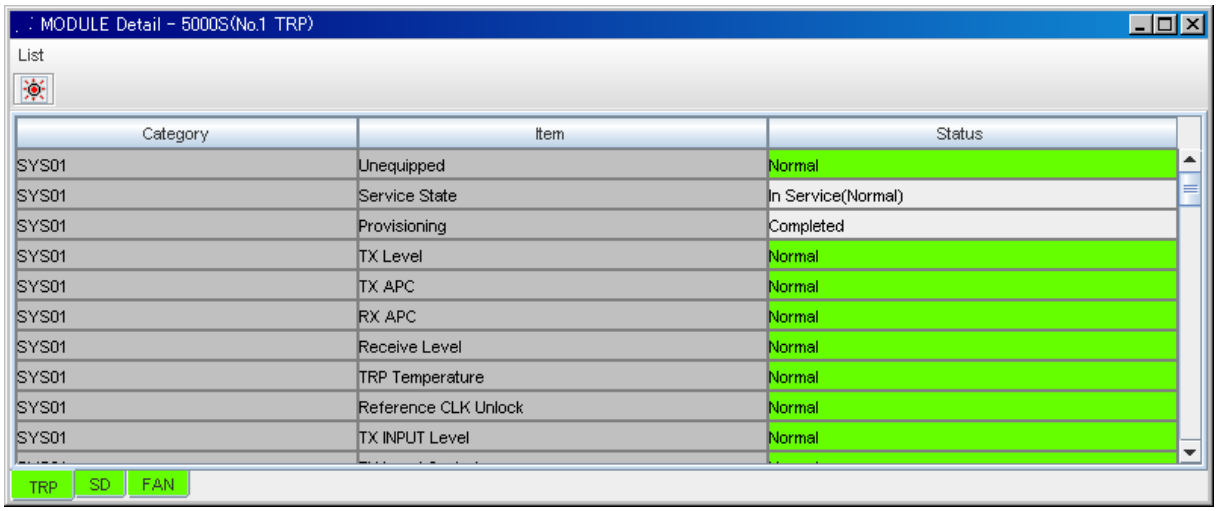
3.1 TRP Unit

In the TRP Unit's Detail window, the monitored items for the TRP/SD/2SD/FAN (mounted in the TRP Unit) are displayed (however, no actual functions are available from this window). However, two display options are available here: "Module Detail" and "SYS Detail".



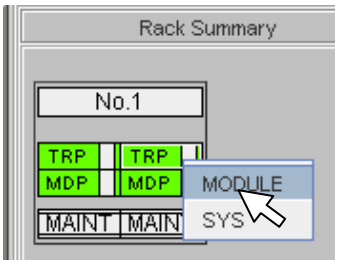
3.2 TRP Unit - Module Detail

The Module Detail format shows a list of the status of monitored items for the respective module.

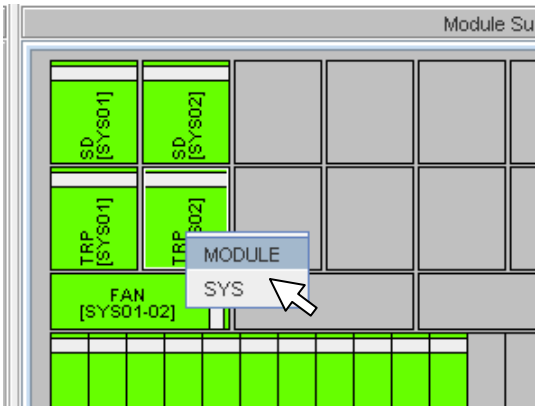


The MODULE Detail list can be displayed by either of the following methods:

- Left-click the TRP icon in the Rack Summary.
- After right-clicking the TRP icon in the Rack Summary, select [MODULE] from the ensuing shortcut menu.

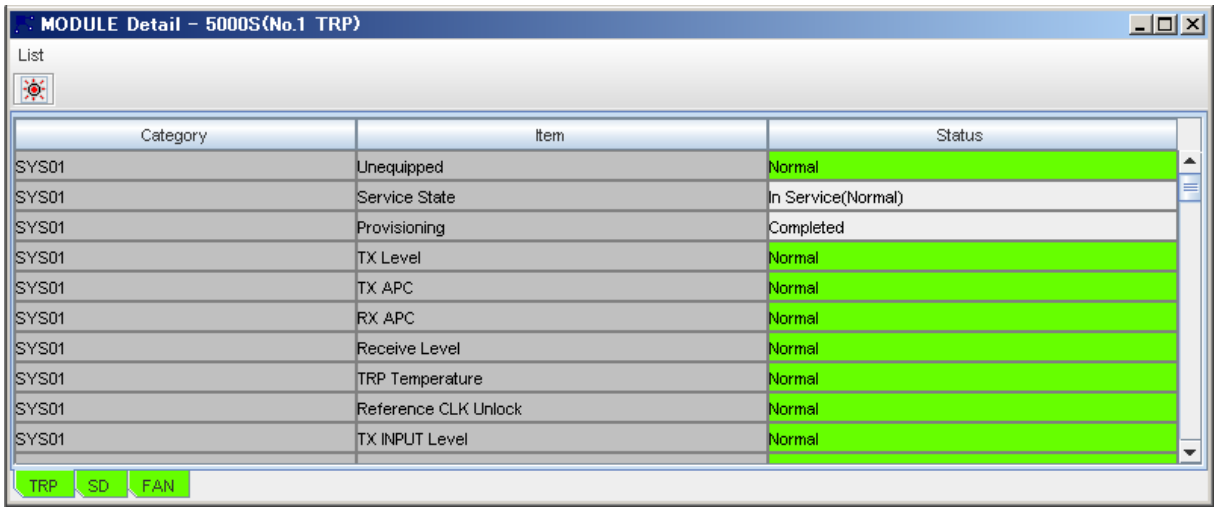


- Click the TRP/SD/2SD/FAN icon in the Module Summary.
- After right-clicking the TRP/SD/2SD/FAN icon in the Module Summary. Select [MODULE] from the ensuing shortcut menu.



3.2.1 TRP Tab

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

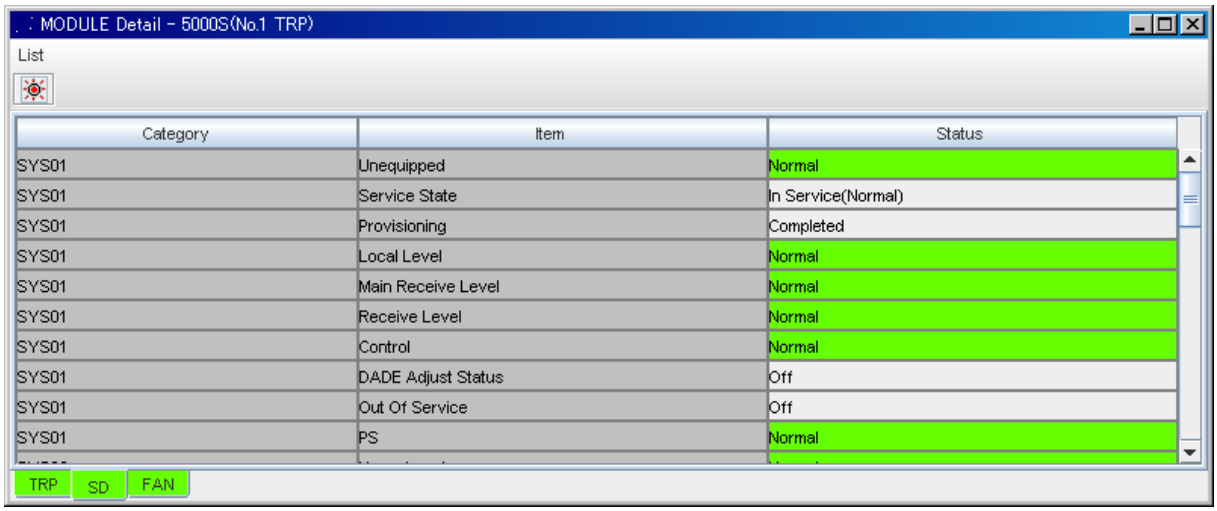


Overview and description of the items monitored with the TRP

Module	Item/Feature	Severity	Description	Status Indication
TRP	Unequipped	MJ	No response from TRP to CTRL.	Normal / Alarm
	TX Level	MJ	TX output power is outside the nominal range.	Normal / Alarm
	TX APC	MJ	TX APC (Automatic Phase Control) is outside the nominal range.	Normal / Alarm
	RX APC	MJ	RX APC is outside the nominal range.	Normal / Alarm
	Receive Level	MJ	Receive level is outside the nominal range.	Normal / Alarm
	TRP Temperature	MJ	Temperature for inside of TRP is outside the nominal range.	Normal / Alarm
	Reference CLK Unlock	MJ	When during XPIC configuration, it is not possible to synchronize with the CLK Reference from the modem	Normal / Alarm
	TX INPUT Level	MJ	Input level is down at TX IF IN.	Normal / Alarm
	TX Level Control	MJ	ATPC data communication error occurs or ATPC level is outside the nominal range.	Normal / Alarm
	PS	MJ	PS module failure/malfunction.	Normal / Alarm
	Service State	ST2 ST1 ST1	In Service (Normal): In working order. In Service (Abnormal): Occurred alarm of PM and/or DM. Out Of Service (Maintenance): Maintenance item in operation.	In Service (Normal) / In Service (Abnormal) / Out Of Service (Maintenance)
	Provisioning	ST	Provisioning has not been configured from CTRL to TRP	Completed / Standby
	Modulator Carrier Out Control	ST	When modulator (MOD) is under Carrier OUT control	Off / On
	Carrier Sweep Function Status	ST	When Carrier Sweep function is in operation	Off / On
	Out Of Service	ST	Test MODE (during shipping)	Off / On
	Mute Status	ST	During TX POWER MUTE	Off / On

3.2.2 SD Tab

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

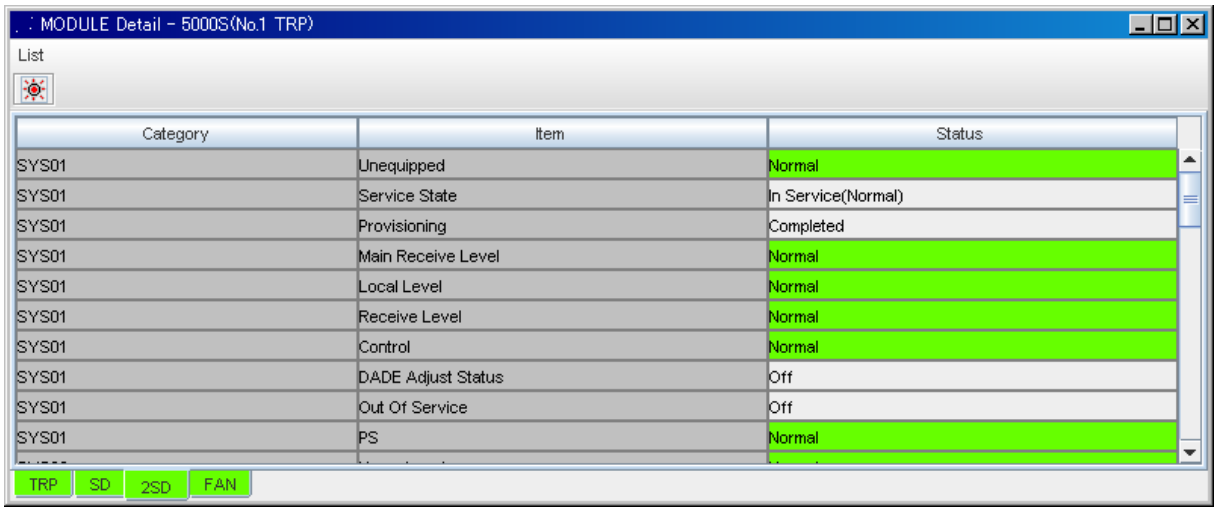


Overview and description of the items monitored with the SD

Module	Item/Feature	Severity	Description	Status Indication
SD	Unequipped	MJ	No response from SD to CTRL.	Normal / Alarm
	Local Level	MJ	SD RX Local level is outside the nominal range.	Normal / Alarm
	Main Receive Level	MJ	Receive level of MAIN signal is outside the nominal range.	Normal / Alarm
	Receive Level	MJ	Receive level of combine signal is outside the nominal range.	Normal / Alarm
	Control	MJ	When integrated control of MAIN and SD signal is not possible	Normal / Alarm
	PS	MJ	PS module failure/malfunction.	Normal / Alarm
	Service State	ST2 ST1 ST1	In Service (Normal): In working order. In Service (Abnormal): Occurred alarm of PM and/or DM. Out Of Service (Maintenance): Operated maintenance item.	In Service (Normal) / In Service (Abnormal) / Out Of Service (Maintenance)
	Provisioning	ST	Status of writing from CTRL to SD.	Completed / Standby
	DADE Adjust Status	ST	During DADE Adjust process	Off / On
	Out Of Service	ST	Test MODE (during shipping)	Off / On

3.2.3 2SD Tab

The 2SD tab displays the status of the monitored 2SD items. This window only displays current settings and no control functions are available here.

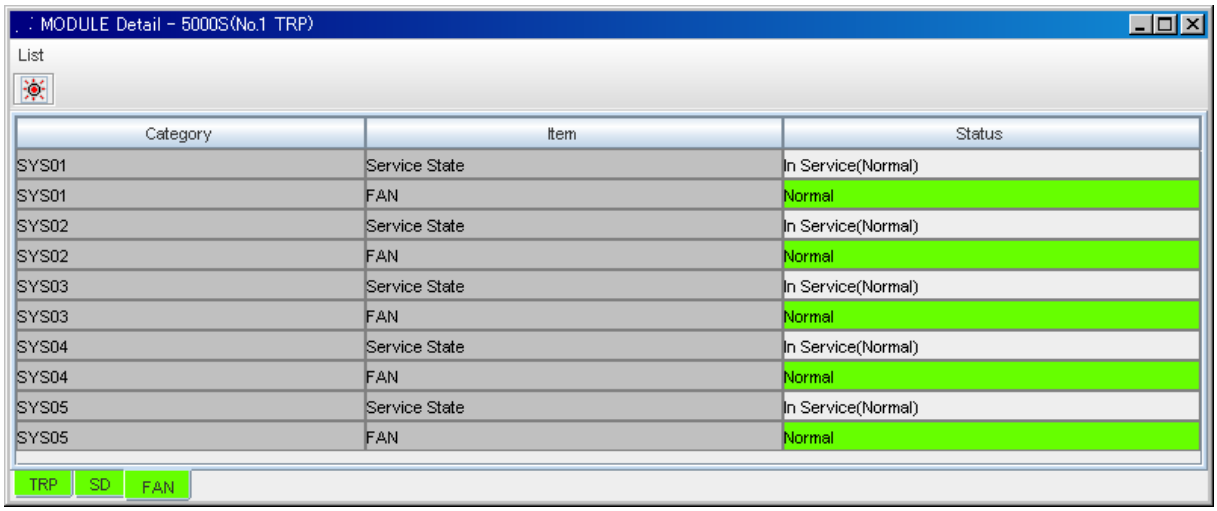


Overview and description of the items monitored with the 2SD

Module	Item/Feature	Severity	Description	Status Indication
2SD	Unequipped	MJ	Not equipped with 2SD module.	Normal / Alarm
	Main Receive Level	MJ	SD RX Local level is outside the nominal range.	Normal / Alarm
	Local Level	MJ	Receive level of MAIN signal is outside the nominal range.	Normal / Alarm
	Receive Level	MJ	Receive level of combine signal is outside the nominal range.	Normal / Alarm
	Control	MJ	When integrated control of MAIN and SD signal is not possible	Normal / Alarm
	PS	MJ	PS module failure/malfunction.	Normal / Alarm
	Service State	ST2 ST1 ST1	In Service (Normal): In working order. In Service (Abnormal): Occurred alarm of PM and/or DM. Out Of Service (Maintenance): Maintenance item in operation.	In Service (Normal) / In Service (Abnormal) / Out Of Service (Maintenance)
	Provisioning	ST	Status of writing from CTRL to SD.	Completed / Standby
	DADE Adjust Status	ST	During DADE Adjust process	Off / On
	Out Of Service	ST	Test MODE (during shipping)	Off / On

3.2.4 FAN Tab

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

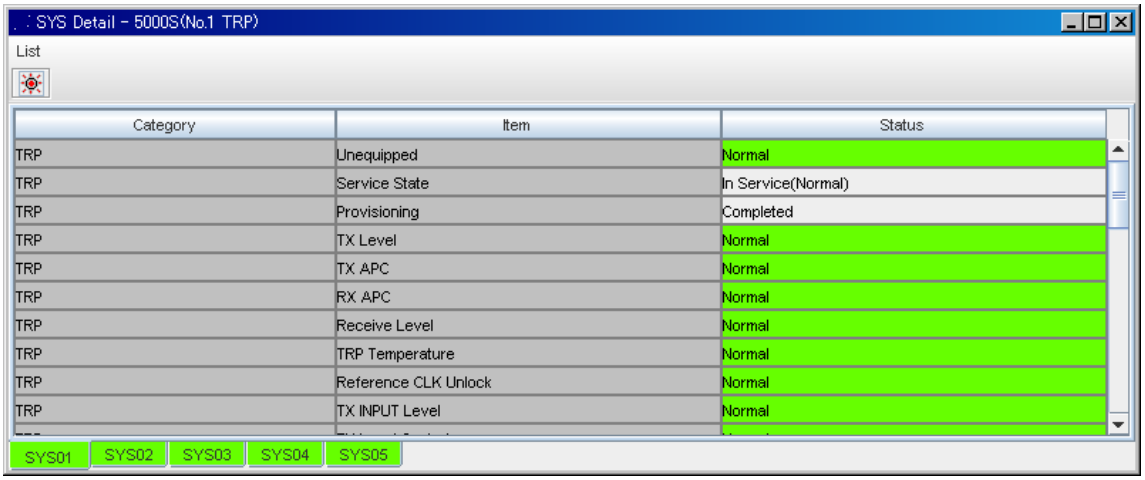


Overview and description of the items monitored with the FAN tab

Module	Item/Feature	Severity	Description	Status Indication
FAN	FAN	MJ	FAN unit failure.	Normal / Alarm
	Service State	ST2	In Service (Normal): In working order.	In Service (Normal) /
		ST1	In Service (Abnormal): Occurred alarm of PM and/or DM.	In Service (Abnormal) /
		ST1	Out Of Service (Maintenance): Maintenance item in operation.	Out Of Service (Maintenance)

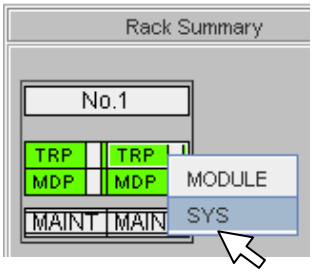
3.3 TRP Unit - SYS Detail

In the SYS Detail list, the monitoring status of each module in terms of specific systems (SYS) is displayed according to various tabs.

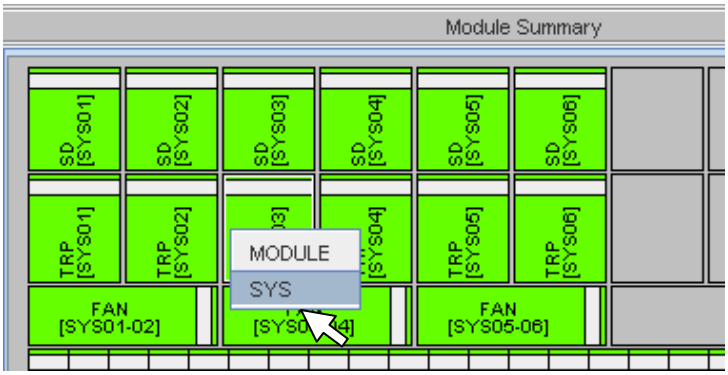


The SYS Detail list can be displayed by either of the following methods:

- After right-clicking the TRP icon in the Rack Summary, select [**SYS**] from the ensuing shortcut menu.



- After right-clicking the TRP/SD/2SD/FAN icon in the Module Summary. Select [SYS] from the ensuing short-cut menu.

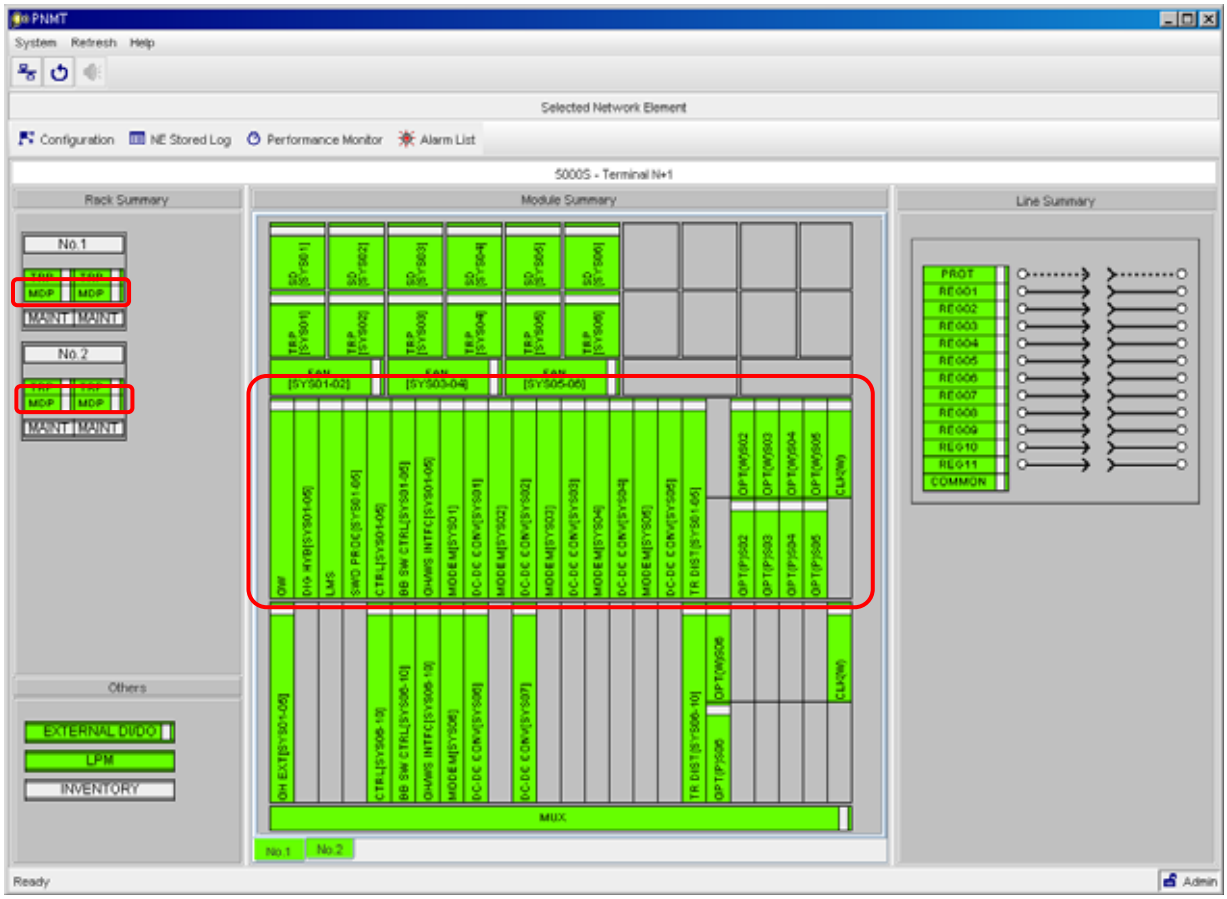


3.3.1 SYS** Tab

This status display shows only the SYS items selected via the tab; otherwise it is identical to the MODULE DETAIL feature.

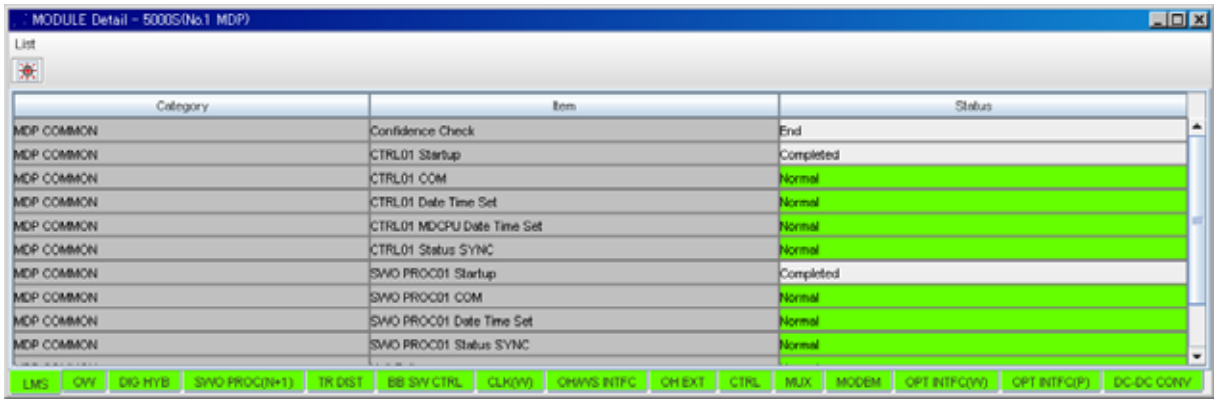
3.4 MDP [01-05] Unit

The Detail view for the MDP [01-05] Unit only displays the monitoring items for the modules actually mounted in the unit. However, two display options are available here: "Module Detail" and "SYS Detail".



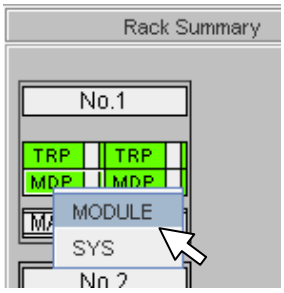
3.5 MDP [01-05] Unit - Module Detail

In the Module Detail list, the monitoring status of each module in terms of specific modules is displayed according to various tabs.

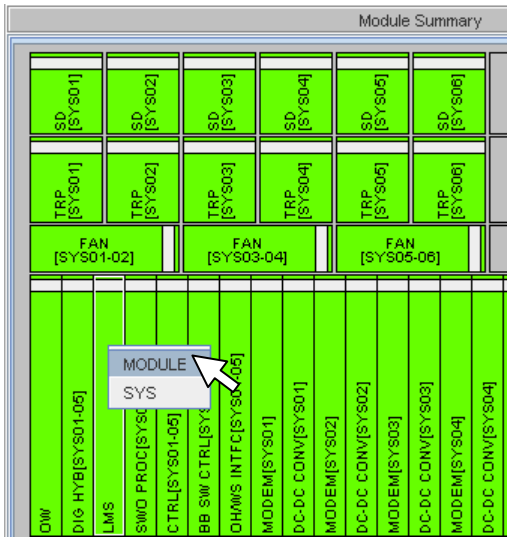


The MODULE Detail list can be displayed by either of the following methods:

- Left-click the MDP icon in the Rack Summary.
- After right-clicking the MDP icon in the Rack Summary, select [**MODULE**] from the ensuing shortcut menu.

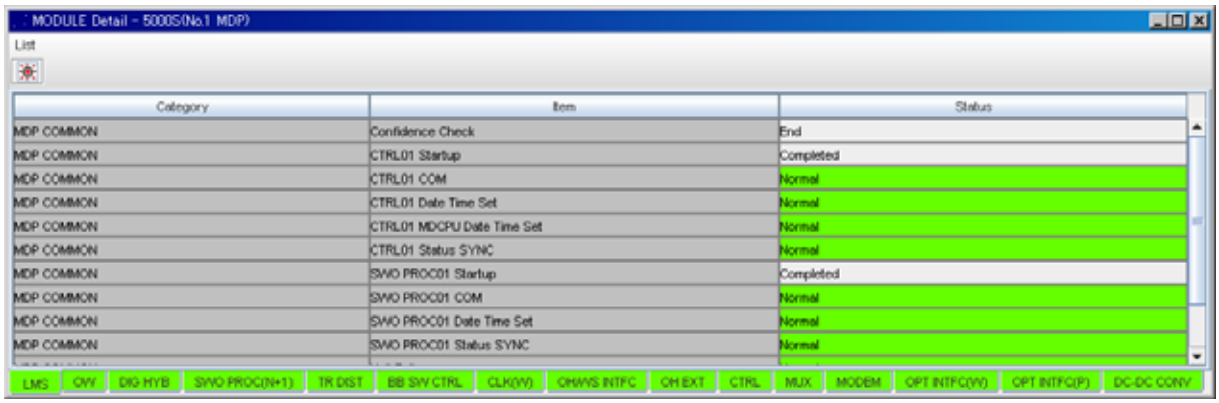


- Left-click the respective module icon in the MDP column of the Module Summary.
- After right-clicking the respective module icon in the Rack Summary, select [**MODULE**] from the ensuing shortcut menu.



3.5.1 LMS Tab

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

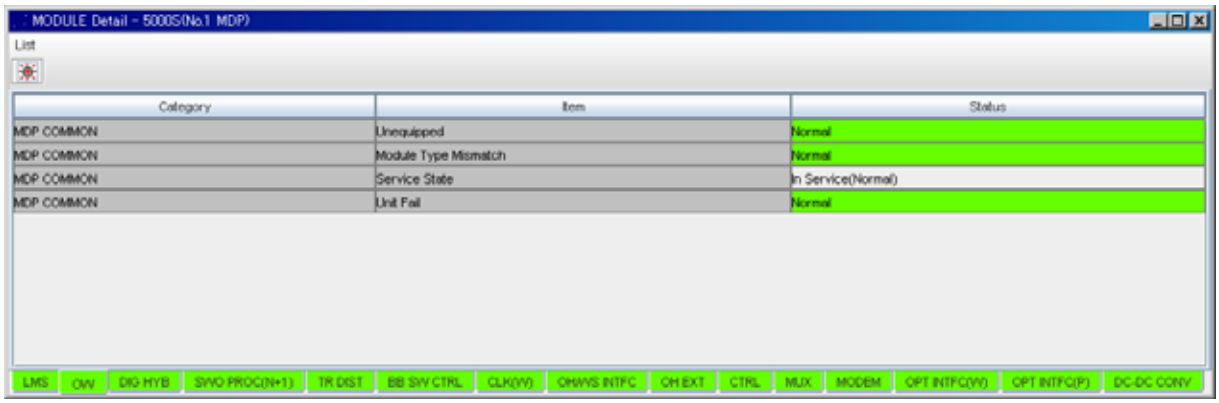


Overview and description of the items monitored with the LMS tab

Module	Item/Feature	Severity	Description	Status Indication
LMS	Confidence Check	ST1	LMS confidence check is being executed.	Start / End
	CTRL xx COM	MJ	Indicates the status of communication with CTRLxx	Normal / Alarm
	CTRL xx Date Time Set	MJ	Indicates whether CTRLxx clock was successfully set (or not)	Normal / Alarm
	CTRL xx MDCPU Date Time Set	MJ	Indicates whether MDCPU clock was successfully set (or not)	Normal / Alarm
	CTRL xx Status SYNC	MJ	Indicates whether status synchronization (SYNC) with CTRLxx was successful (or not)	Normal / Alarm
	SWO PROC xx COM	MJ	Indicates the status of communication with SWO PROCxx	Normal / Alarm
	SWO PROC xx Date Time Set	MJ	Indicates whether CTRLxx clock was successfully set (or not)	Normal / Alarm
	SWO PROC xx Status SYNC	MJ	Indicates whether status synchronization (SYNC) with SWO PROC xx was successful (or not)	Normal / Alarm
	Database Check	MJ	Indicates that Database Check is being performed	Normal / Alarm
	Unit Fail	MJ	Indicates LMS unit failure/malfunction.	Normal / Alarm
	CTRL xx Startup	ST1	Indicates CTRLxx startup status	Standby / Completed
	SWO PROC xx Startup	ST1	Indicates SWO PROC startup status	Standby / Completed
	Startup	ST1	Indicates LMS startup status	Standby / Completed

3.5.2 OW Tab

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

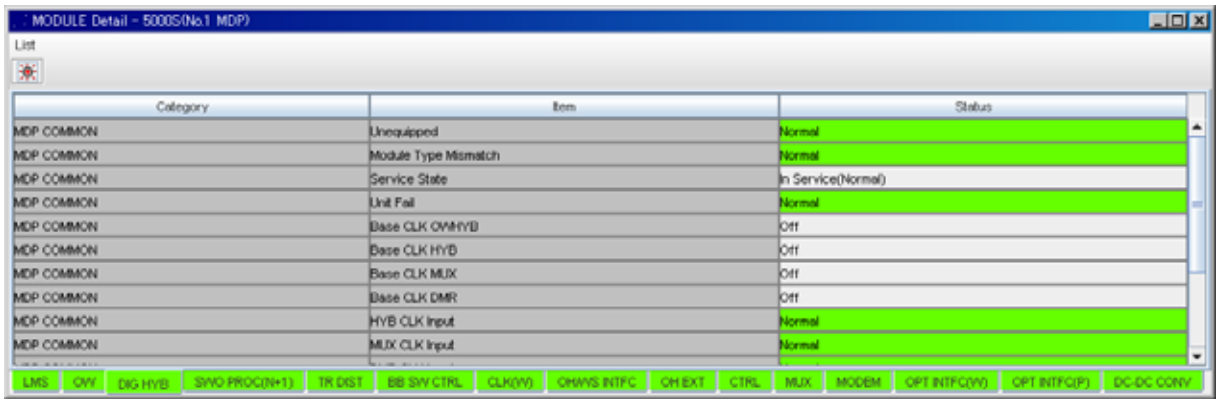


Overview and description of the items monitored with the OW tab

Module	Item/Feature	Severity	Description	Status Indication
OW	Unequipped	MJ	Not equipped with OW module. No response from OW to CTRL.	NORMAL / ALARM
	Module Type Mismatch	MJ	Module type does not match.	NORMAL / ALARM
	Unit Fail	MJ	OW unit failure.	NORMAL / ALARM
	Service State	ST2	In Service (Normal): In working order.	In Service (Normal) /
		ST1	In Service (Abnormal): Occurred alarm of PM and/or DM.	In Service (Abnormal) /
		ST1	Out Of Service (Maintenance): Maintenance item in operation.	Out Of Service (Maintenance)

3.5.3 DIGHYB Tab

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

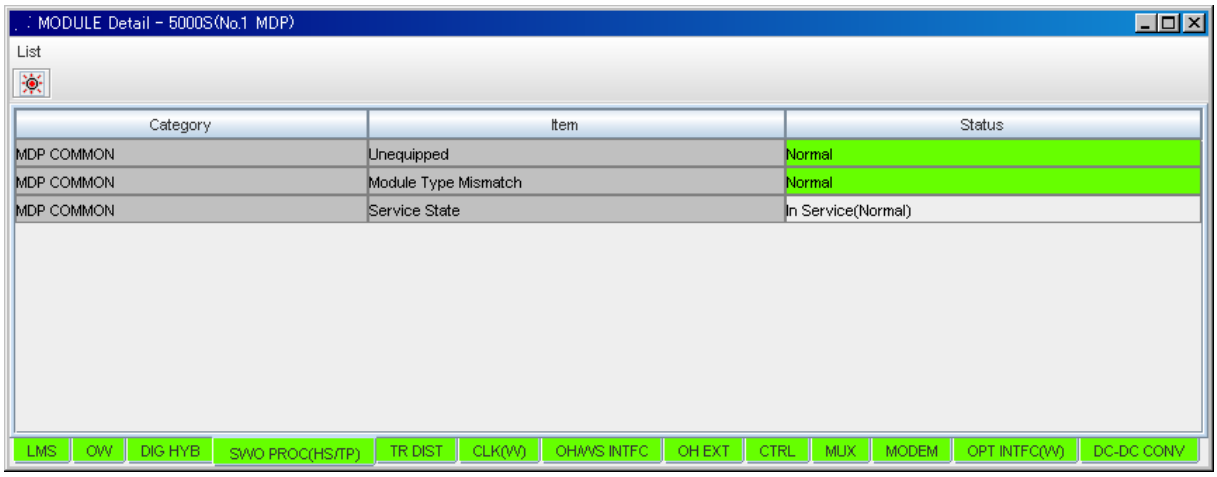


Overview and description of the items monitored with the DIGHYB tab

Module	Item/Feature	Severity	Description	Status Indication
DIG HYB	Unequipped	MJ	Not equipped with DIG HYB module. No response from DIG HYB to CTRL.	Normal / Alarm
	Module Type Mismatch	MJ	Module type does not match.	Normal / Alarm
	Unit Fail	MJ	DIGHYB unit failure.	Normal / Alarm
	HYB CLK Input	MN	Clock input to HYB interface	Normal / Alarm
	MUX CLK Input	MN	Clock input to MUX interface	Normal / Alarm
	DMR CLK Input	MN	Clock input to DMR interface	Normal / Alarm
	CH1 CLK Set Error	MN	CH1 (HYB) configuring error	Normal / Alarm
	CH2 CLK Set Error	MN	CH2 (MUX) configuring error	Normal / Alarm
	CH3 CLK Set Error	MN	CH3 (DMR) configuring error	Normal / Alarm
	CH4 CLK Set Error	MN	Unused	Normal / Alarm
	CH5 CLK Set Error	MN	Unused	Normal / Alarm
	Service State	ST2 ST1 ST1	In Service (Normal): In working order. In Service (Abnormal): Occurred alarm of PM and/or DM. Out Of Service (Maintenance): Maintenance item in operation.	In Service (Normal) / In Service (Abnormal) / Out Of Service (Maintenance)
	Base CLK OWHYB	ST2	Internal clock uses digital hybrid operating standard	Off / On
	Base CLK HYB	ST2	HYB input clock uses digital hybrid operating standard	Off / On
	Base CLK MUX	ST2	MUX input clock uses digital hybrid operating standard	Off / On
	Base CLK DMR	ST2	Internal clock uses digital hybrid operating standard	Off / On

3.5.4 SWO PROC (HS/TP) Tab

The SWO PROC (HS/TP) tab displays the status of the monitored SWO PROC (HS/TP) items. This window only displays current settings and no control functions are available here.

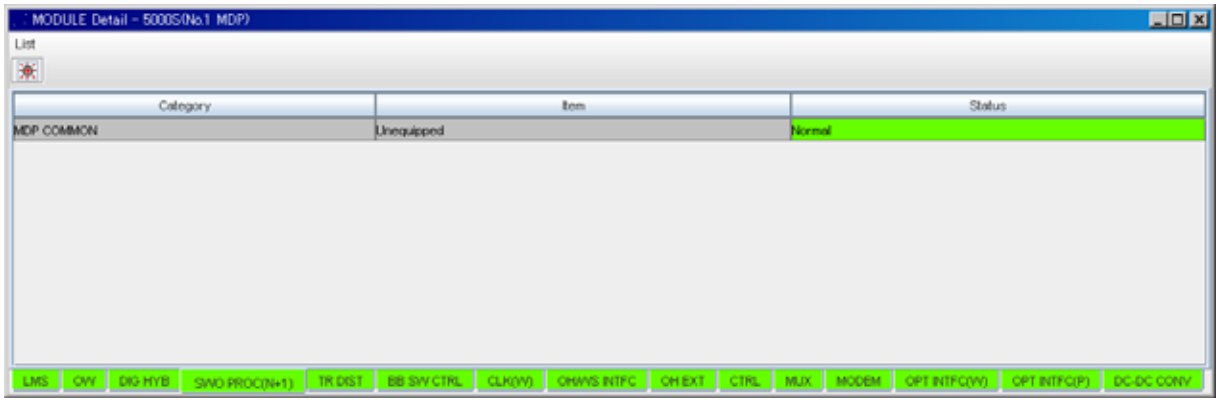


Overview and description of the items monitored with the SWO PROC (HS/TP) tab

Module	Item/Feature	Severity	Description	Status Indication
SWO PROC (HS/TP)	Unequipped	MJ	Not equipped with SWO PROC module. No response from SWO PROC to CTRL.	Normal/Alarm
	Module Type Mismatch	MJ	Module type does not match.	Normal/Alarm
	Service State	ST2	In Service (Normal): In working order.	In Service (Normal) /
		ST1	In Service (Abnormal): Occurred alarm of PM and/or DM.	In Service (Abnormal) /
		ST1	Out Of Service (Maintenance): Maintenance item in operation.	Out Of Service (Maintenance)

3.5.5 SWO PROC (N+1) Tab

The SWP PROC (N+1) tab displays the status of the monitored SWO PROC (N+1) items. This window only displays current settings and no control functions are available here.

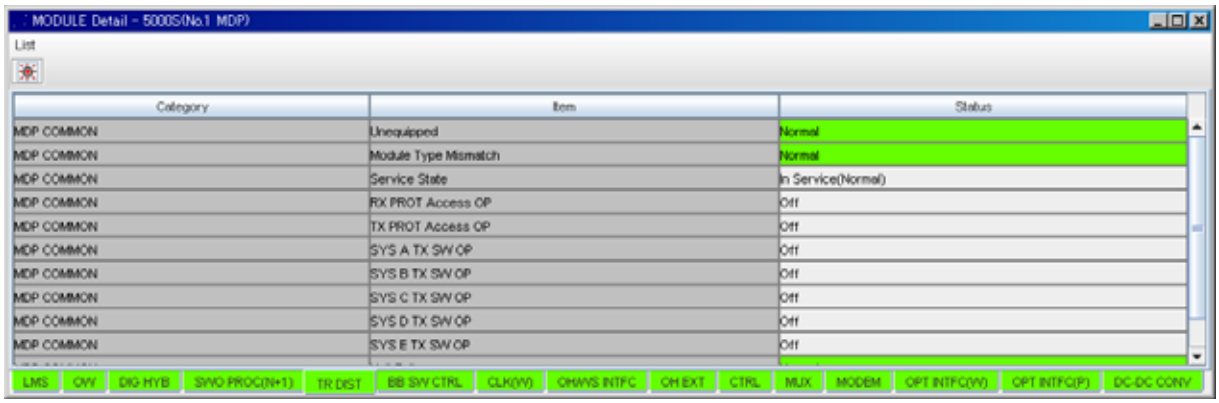


Overview and description of the items monitored with the SWO PROC (N+1) tab

Module	Item/Feature	Severity	Description	Status Indication
SWO PROC (N+1)	Unequipped	MJ	Not equipped with SWO PROC module. No response from SWO PROC to LMS.	Normal/Alarm

3.5.6 TR DIST Tab

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



Overview and description of the items monitored with the TR DIST tab

Module	Item/Feature	Severity	Description	Status Indication
TR DIST	Unequipped	MJ	Not equipped with TR DIST module. No response from TR DIST to CTRL.	Normal / Alarm
	Module Type Mismatch	MJ	Module type does not match.	Normal / Alarm
	Unit Fail	MJ	TR DIST unit failure.	Normal / Alarm
	AL INTFC	MJ	Status of communication with SWO PROC	Normal / Alarm
	Service State	ST2 ST1 ST1	In Service (Normal): In working order. In Service (Abnormal): Occurred alarm of PM and/or DM. Out Of Service (Maintenance): Maintenance item in operation.	In Service (Normal) / In Service (Abnormal) / Out Of Service (Maintenance)
	RX PROT Access OP	ST2	Protection access transmission is in operation. (TX side)	Off / On
	TX PROT Access OP	ST2	Protection access transmission is in operation. (RX side)	Off / On
	SYS A TX SW OP	ST2	SYS A switched to protection channel by TX SW.	Off / On
	SYS B TX SW OP	ST2	SYS B switched to protection channel by TX SW.	Off / On
	SYS C TX SW OP	ST2	SYS C switched to protection channel by TX SW.	Off / On
	SYS D TX SW OP	ST2	SYS D switched to protection channel by TX SW.	Off / On
	SYS E TX SW OP	ST2	SYS E switched to protection channel by TX SW.	Off / On

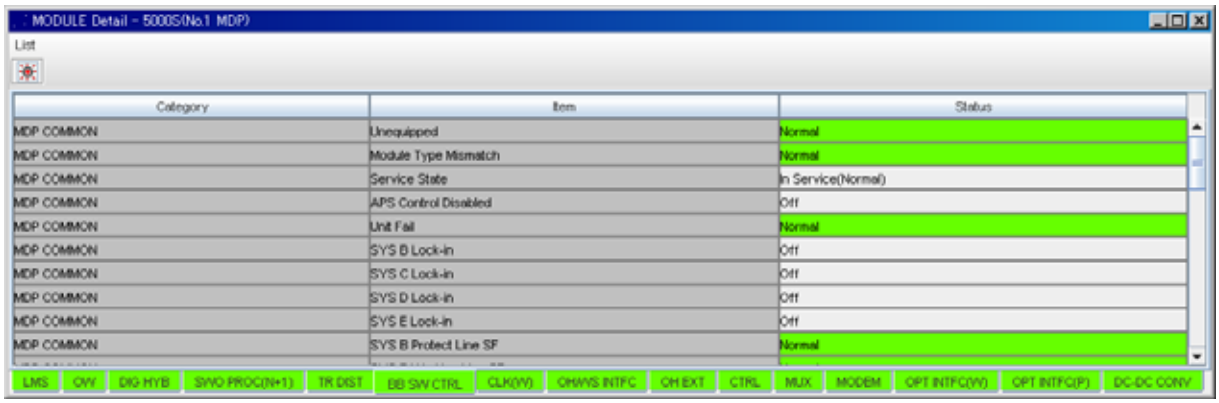
SYS A-E and SYS1-10 supportability

NE mounting position and display ability on PNMTj

CTRL No / SYS No	CTRL 1,3,5,7	CTRL 2,4,6,8
SYS A	SYS 1	SYS 6
SYS B	SYS 2	SYS 7
SYS C	SYS 3	SYS 8
SYS D	SYS 4	SYS 9
SYS E	SYS 5	SYS 10

3.5.7 BB SW CTRL Tab

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



Overview and description of the items monitored with the BB SW CTRL tab

Module	Item/Feature	Severity	Description	Status Indication
BB SW CTRL	Unequipped	MJ	Not equipped with BB SW CTRL module. No response from BB SW CTRL to CTRL.	Normal / Alarm
	Module Type Mismatch	MJ	Module type does not match.	Normal / Alarm
	Service State	ST2 ST1 ST1	In Service (Normal): In working order. In Service (Abnormal): Occurred alarm of PM and/or DM. Out Of Service (Maintenance): Maintenance item in operation.	In Service (Normal) / In Service (Abnormal) / Out Of Service (Maintenance)
	APS Control Disabled	ST1	APS control BUS is disabled.	Off / On
	Unit Fail	MJ	BB SW CTRL unit failure.	Normal / Alarm
	SYS A Lock-in	ST2	Lock-in control in operation [SYS A]	Off / On
	SYS B Lock-in	ST2	Lock-in control in operation [SYS B]	Off / On
	SYS C Lock-in	ST2	Lock-in control in operation [SYS C]	Off / On
	SYS D Lock-in	ST2	Lock-in control in operation [SYS D]	Off / On
	SYS E Lock-in	ST2	Lock-in control in operation [SYS E]	Off / On
	SYS A Protect Line SF	MJ	Protection Line Signal Failure detected. [SYS A]	Normal / Alarm
	SYS A Working Line SF	MJ	Working Line Signal Failure detected. [SYS A]	Normal / Alarm
	SYS A Protect Line SD	MN	Protection Line Signal Degraded detected. [SYS A]	Normal / Alarm
	SYS A Working Line SD	MN	Working Line Signal Degraded detected. [SYS A]	Normal / Alarm
	SYS A Switching Fail	CR	APS Switching failure [SYS A]	Normal / Alarm
	SYS A Protect Online	ST2	Protection Line Online [SYS A]	Off / On
	SYS A Working Online	ST2	Working Line Online [SYS A]	Off / On
	SYS A Local Wait To Restore	ST2	Wait To Restore status in operation [SYS A]	Off / On
	SYS B Protect Line SF	MJ	Protection Line Signal Failure detected. [SYS B]	Normal / Alarm
	SYS B Working Line SF	MJ	Working Line Signal Failure detected. [SYS B]	Normal / Alarm
	SYS B Protect Line SD	MN	Protection Line Signal Degraded detected. [SYS B]	Normal / Alarm
	SYS B Working Line SD	MN	Working Line Signal Degraded detected. [SYS B]	Normal / Alarm
	SYS B Switching Fail	CR	APS Switching failure [SYS B]	Normal / Alarm
	SYS B Protect Online	ST2	Protection Line Online [SYS B]	Off / On
	SYS B Working Online	ST2	Working Line Online [SYS B]	Off / On
	SYS B Local Wait To Restore	ST2	Wait To Restore status in operation [SYS B]	Off / On

Module	Item/Feature	Severity	Description	Status Indication
	SYS C Protect Line SF	MJ	Protection Line Signal Failure detected. [SYS C]	Normal / Alarm
	SYS C Working Line SF	MJ	Working Line Signal Failure detected. [SYS C]	Normal / Alarm
	SYS C Protect Line SD	MN	Protection Line Signal Degraded detected. [SYS C]	Normal / Alarm
	SYS C Working Line SD	MN	Working Line Signal Degraded detected. [SYS C]	Normal / Alarm
	SYS C Switching Fail	CR	APS Switching failure [SYS C]	Normal / Alarm
	SYS C Protect Online	ST2	Protection Line Online [SYS C]	Off / On
	SYS C Working Online	ST2	Working Line Online [SYS C]	Off / On
	SYS C Local Wait To Restore	ST2	Wait To Restore status in operation [SYS C]	Off / On
	SYS D Protect Line SF	MJ	Protection Line Signal Failure detected. [SYS D]	Normal / Alarm
	SYS D Working Line SF	MJ	Working Line Signal Failure detected. [SYS D]	Normal / Alarm
	SYS D Protect Line SD	MN	Protection Line Signal Degraded detected. [SYS D]	Normal / Alarm
	SYS D Working Line SD	MN	Working Line Signal Degraded detected. [SYS D]	Normal / Alarm
	SYS D Switching Fail	CR	APS Switching failure [SYS D]	Normal / Alarm
	SYS D Protect Online	ST2	Protection Line Online [SYS D]	Off / On
	SYS D Working Online	ST2	Working Line Online [SYS D]	Off / On
	SYS D Local Wait To Restore	ST2	Wait To Restore status in operation [SYS D]	Off / On
	SYS E Protect Line SF	MJ	Protection Line Signal Failure detected. [SYS E]	Normal / Alarm
	SYS E Working Line SF	MJ	Working Line Signal Failure detected. [SYS E]	Normal / Alarm
	SYS E Protect Line SD	MN	Protection Line Signal Degraded detected. [SYS E]	Normal / Alarm
	SYS E Working Line SD	MN	Working Line Signal Degraded detected. [SYS E]	Normal / Alarm
	SYS E Switching Fail	CR	APS Switching failure [SYS E]	Normal / Alarm
	SYS E Protect Online	ST2	Protection Line Online [SYS E]	Off / On
	SYS E Working Online	ST2	Working Line Online [SYS E]	Off / On
	SYS E Local Wait To Restore	ST2	Wait To Restore status in operation [SYS E]	Off / On

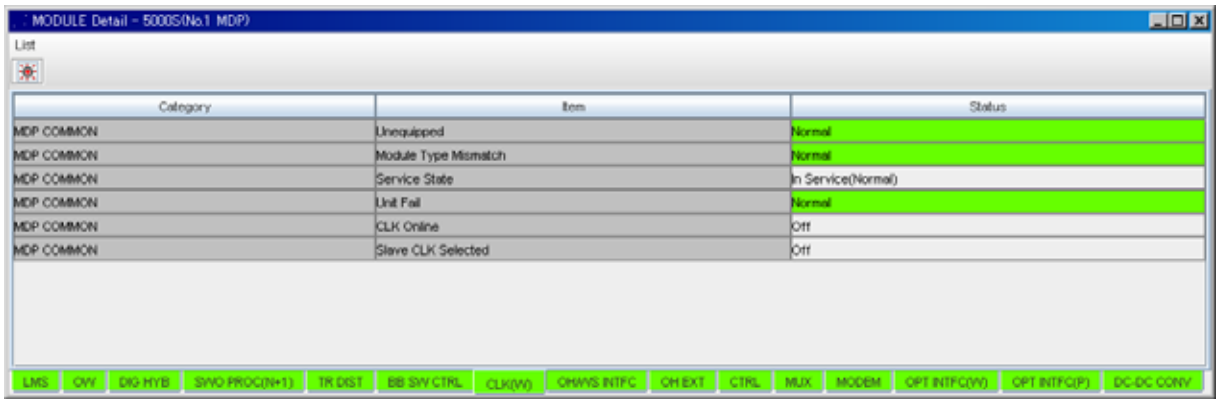
SYS A-E and SYS1-10 supportability

NE mounting position and display ability on PNMTj

CTRL No / SYS No	CTRL 1,3,5,7	CTRL 2,4,6,8
SYS A	SYS 1	SYS 6
SYS B	SYS 2	SYS 7
SYS C	SYS 3	SYS 8
SYS D	SYS 4	SYS 9
SYS E	SYS 5	SYS 10

3.5.8 CLK (W) Tab

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



Overview and description of the **items** monitored w**ith the** CLK tab

Module	Item/Feature	Severity	Description	Status Indication
CLK	Unequipped	MJ	Not equipped with CLK module. No response from CLK to CTRL.	Normal / Alarm
	Module Type Mismatch	MJ	Module type does not match.	Normal / Alarm
	Unit Fail	MJ	CLK unit failure.	Normal / Alarm
	Service State	ST2	In Service (Normal): In working order.	In Service (Normal) /
		ST1	In Service (Abnormal): Occurred alarm of PM and/or DM.	In Service (Abnormal) /
		ST1	Out Of Service (Maintenance): Maintenance item in operation.	Out Of Service (Maintenance)
	CLK Online	ST2	Indicates whether clock (CLK) is online (not used for RST)	Off / On
	Slave CLK Selected	ST1	Indicates the selection of a clock from 2RACK or higher (not used for RST)	Off / On

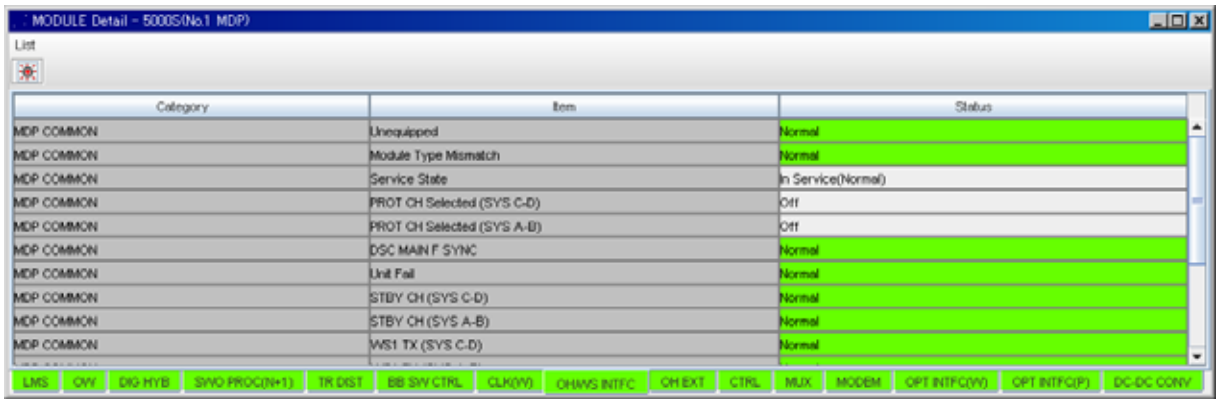
3.5.9 CLK (P) Tab

The same items are displayed for CLK (P) as for CLK (W).

(However, it cannot be used for RST)

3.5.10 OH/WS INTFC Tab

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



Overview and description of the items monitored with the OH/WS INTFC tab

Module	Item/Feature	Severity	Description	Status Indication
OH/WS INTFC	Unequipped	MJ	Not equipped with OH/WS INTFC module. No response from OH/WS INTFC to CTRL.	Normal / Alarm
	Module Type Mismatch	MJ	Module type does not match.	Normal / Alarm
	DSC MAIN F SYNC	MJ	Frame synchronization lost after being selected.	Normal / Alarm
	Unit Fail	MJ	OH/WS INTFC unit failure. OH/WS INTFC unit failure/malfunction.	Normal / Alarm
	Service State	ST2 ST1 ST1	In Service (Normal): In working order. In Service (Abnormal): Occurred alarm of PM and/or DM. Out Of Service (Maintenance): Maintenance item in operation.	In Service (Normal) / In Service (Abnormal) / Out Of Service (Maintenance)
	PROT CH Selected (SYS C-D)	ST2	Protection channel is selected.[SYS C/D] (Available when WS configuration of SYS C/D is 1+1).	Off / On
	PROT CH Selected (SYS A-B)	ST2	Protection channel is selected.[SYS A/B]	Off / On
	STBY CH (SYS C-D)	MJ	Standby channel failure. [SYS C/D] (occurs when ALM reception is set for the unused channels; available when WS configuration of SYS C/D is 1+1)	Normal / Alarm
	STBY CH (SYS A-B)	MJ	Standby channel failure. [SYS A/B] (occurs when ALM reception is set for the unused channels)	Normal / Alarm
	WS1 TX (SYS x-y)	MJ	TX side failure is detected on WS1. (Input signal loss, Output signal to MODEM module is lost)	Normal / Alarm
	WS2 TX (SYS x-y)	MJ	TX side failure is detected on WS2. (Input signal loss, Output signal to MODEM module is lost) *WS ch2 is available in 64QAM (1+1/1+0) and 128QAM (1+0)	Normal / Alarm
	WS3 TX (SYS x-y)	MJ	TX side failure is detected on WS3. (Input signal loss, Output signal to MODEM module is lost) *WS ch3 is available in 64QAM (1+0)	Normal / Alarm
	WS4 TX (SYS x-y)	MJ	TX side failure is detected on WS4. (Input signal loss, Output signal to MODEM module is lost) *WS ch4 is available in 64QAM (1+0)	Normal / Alarm
	WS1 RX (SYS x-y)	MJ	RX side failure is detected on WS1 (loss of output signal condition).	Normal / Alarm

Module	Item/Feature	Severity	Description	Status Indication
	WS2 RX (SYS x-y)	MJ	RX side failure is detected on WS2 (loss of output signal condition). *WS ch2 is available in 64QAM (1+1/1+0) and 128QAM (1+0)	Normal / Alarm
	WS3 RX (SYS x-y)	MJ	RX side failure is detected on WS3 (Loss of output signal condition) *WS ch3 is available in 64QAM (1+0)	Normal / Alarm
	WS4 RX (SYS x-y)	MJ	RX side failure is detected on WS4 (Loss of output signal condition) *WS ch3 is available in 64QAM (1+0)	Normal / Alarm
	WS1 AIS Received (SYS x-y)	ST1	AIS is received on WS1 channel.	Off / On
	WS2 AIS Received (SYS x-y)	ST1	AIS is received on WS2 channel. *WS ch2 is available in 64QAM (1+1/1+0) and 128QAM (1+0)	Off / On
	WS3 AIS Received (SYS x-y)	ST1	AIS is received on WS3 channel. *WS ch3 is available in 64QAM (1+0)	Off / On
	WS4 AIS Received (SYS x-y)	ST1	AIS is received on WS4 channel. *WS ch4 is available in 64QAM (1+0)	Off / On
	WS1 AIS Send (SYS x-y)	ST1	AIS is sent on WS1 channel.	Off / On
	WS2 AIS Send (SYS x-y)	ST1	AIS is sent on WS2 channel. *WS ch2 is available in 64QAM (1+1/1+0) and 128QAM (1+0)	Off / On
	WS3 AIS Send (SYS x-y)	ST1	AIS is sent on WS3 channel. *WS ch2 is available in 64QAM (1+0)	Off / On
	WS4 AIS Send (SYS x-y)	ST1	AIS is sent on WS4 channel. *WS ch2 is available in 64QAM (1+0)	Off / On

Note: Depending on the NE configuration, some of the above items may not be displayed.

SYS A-D and SYS1-4, SYS6-9 supportability

NE mounting position and display ability on PNMTj

CTRL No / SYS No	CTRL 1,3,5,7,9,B,D	CTRL 2,4,6,8,A,C
SYS A-B	SYS 1-2	SYS 6-7
SYS C-D	SYS 3-4	SYS 8-9

Offline Tool, equipment interface supportability on PNMTj

(for 64QAM)

CTRL No / PNMTj WS No	CTRL 1,3,5,7,9,B,D		CTRL 2,4,6,8,A,C	
	Offline Tool	Equipment User Interface	Offline Tool	Equipment User Interface
(WS 1+1) SYS A-B WS1	SYS 01,02 WS CH 1	SYS1/2 WS DATA REG CH1	SYS 06,07 WS CH 1	SYS 6/7 WS DATA REG CH1
(WS 1+1) SYS A-B WS2	SYS 01,02 WS CH 2	SYS1/2 WS DATA REG CH2	SYS 06,07 WS CH 2	SYS 6/7 WS DATA REG CH2
(WS 1+1) SYS C-D WS1	SYS 03,04 WS CH 1	SYS 3/4 WS DATA REG CH1	SYS 08,09 WS CH 1	SYS 8/9 WS DATA REG CH1
(WS 1+1) SYS C-D WS2	SYS 03,04 WS CH 2	SYS 3/4 WS DATA REG CH2	SYS 08,09 WS CH 2	SYS 8/9 WS DATA REG CH2
(WS 1+0) SYS A-B WS1	SYS 01,02 WS CH 1	SYS 1/2 WS DATA REG CH1	SYS 06,07 WS CH 1	SYS 6/7 WS DATA REG CH1
(WS 1+0) SYS A-B WS2	SYS 01,02 WS CH 2	SYS 1/2 WS DATA REG CH2	SYS 06,07 WS CH 2	SYS 6/7 WS DATA REG CH2
(WS 1+0) SYS A-B WS3	SYS 01,02 WS CH 3	SYS 1/2 WS DATA PROT CH1	SYS 06,07 WS CH 3	SYS 6/7 WS DATA PROT CH1
(WS 1+0) SYS A-B WS4	SYS 01,02 WS CH 4	SYS 1/2 WS DATA PROT CH2	SYS 08,09 WS CH 4	SYS 6/7 WS DATA PROT CH2
(WS 1+0) SYS C-D WS1	SYS 03,04 WS CH 1	SYS 1/2 WS DATA REG CH1	SYS 08,09 WS CH 1	SYS 8/9 WS DATA REG CH1
(WS 1+0) SYS C-D WS2	SYS 03,04 WS CH 2	SYS 1/2 WS DATA REG CH2	SYS 08,09 WS CH 2	SYS 8/9 WS DATA REG CH2
(WS 1+0) SYS C-D WS3	SYS 03,04 WS CH 3	SYS 1/2 WS DATA PROT CH1	SYS 08,09 WS CH 3	SYS 8/9 WS DATA PROT CH1
(WS 1+0) SYS C-D WS4	SYS 03,04 WS CH 4	SYS 1/2 WS DATA PROT CH2	SYS 08,09 WS CH 4	SYS 8/9 WS DATA PROT CH2

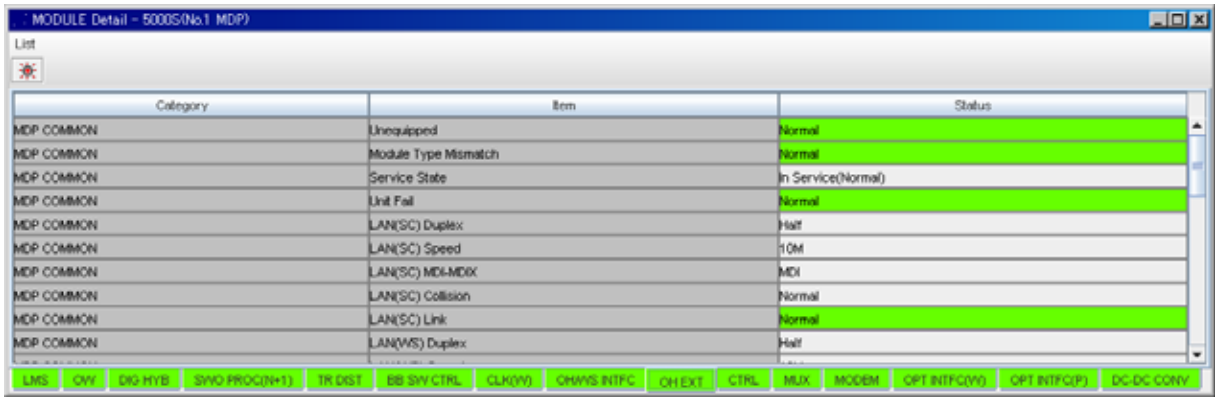
(for 128QAM)

CTRL No / PNMTj WS No	CTRL 1,3,5,7,9,B,D		CTRL 2,4,6,8,A,C	
	Offline Tool	Equipment User Interface	Offline Tool	Equipment User Interface
(WS 1+1) SYS A-B WS1	SYS 01,02 WS CH 1	SYS1/2 WS DATA REG CH1	SYS 06,07 WS CH 1	SYS 6/7 WS DATA REG CH1
(WS 1+1) SYS C-D WS1	SYS 03,04 WS CH 1	SYS 3/4 WS DATA REG CH1	SYS 08,09 WS CH 1	SYS 8/9 WS DATA REG CH1
(WS 1+0) SYS A-B WS1	SYS 01,02 WS CH 1	SYS 1/2 WS DATA REG CH1	SYS 06,07 WS CH 1	SYS 6/7 WS DATA REG CH1
(WS 1+0) SYS A-B WS2	SYS 01,02 WS CH 2	SYS 1/2 WS DATA PROT CH1	SYS 06,07 WS CH 2	SYS 6/7 WS DATA PROT CH1
(WS 1+0) SYS C-D WS1	SYS 03,04 WS1	SYS 1/2 WS DATA REG CH1	SYS 08,09 WS1	SYS 8/9 WS DATA REG CH1
(WS 1+0) SYS C-D WS2	SYS 03,04 WS2	SYS 1/2 WS DATA PROT CH1	SYS 08,09 WS2	SYS 8/9 WS DATA PROT CH1

3.5.11 OH EXT Tab

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

*** This tab will be displayed only when used in combination with LMS F/W Ver. 2.0.0 (or above).**



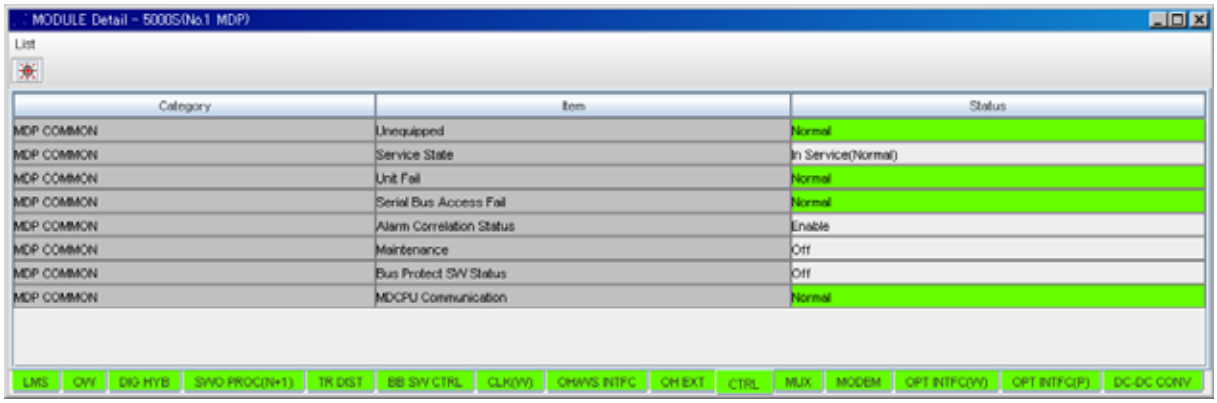
Overview and description of the items monitored with the OH EXT tab

Module	Item/Feature	Severity	Description	Status Indication
OH EXT	Unequipped	MJ	Not equipped with OH EXT module. No response from OH EXT to CTRL	Normal / Alarm
	Module Type Mismatch	MJ	Module type does not match.	Normal / Alarm
	Service State	ST2 ST1 ST1	In Service (Normal): In working order. In Service (Abnormal): Occurred alarm of PM and/or DM. Out Of Service (Maintenance): Maintenance item in operation.	In Service (Normal) / In Service (Abnormal) / Out Of Service (Maintenance)
	Unit Fail	MJ	OH EXT unit failure/malfunction.	Normal / Alarm
	LAN(WS) Duplex	ST2	Status of Duplex on LAN (WS) port.	Full/Half
	LAN(WS) SPEED	ST2	Status of Speed on LAN (WS) port.	10M/100M
	LAN(WS) MDI-MDIX	ST2	Status of MDI or MDIX on LAN (WS) port	MDIX/:MDI
	LAN(WS) Collision	ST1	Status of Collision on LAN (WS) port.	Collision/ Normal
	LAN(WS) Link	MJ	Link alarm detection on LAN (WS) port.	Normal / Alarm
	LAN(SC) Duplex	ST2	Status of Duplex on LAN (SC) port.	Full/Half
	LAN(SC) SPEED	ST2	Status of Speed on LAN (SC) port.	10M/100M
	LAN(SC) MDI-MDIX	ST2	Status of MDI or MDIX on LAN (SC) port.	MDIX/:MDI
	LAN(SC) Collision	ST1	Status of Collision on LAN (SC) port.	Collision/ Normal
	LAN(SC) Link	MJ	Link alarm detection on LAN (SC) port.	Normal / Alarm
	LAN(WS) F SYNC Loss	MJ	Loss of frame sync detected in WS path.(LAN(SC) use setting)	Normal / Alarm
	LAN(SC) F SYNC Loss	MJ	Loss of frame sync detected in WS path.(LAN (WS) use setting)	Normal / Alarm
	WS Input Loss	MJ	Input signal loss of WS port	Normal / Alarm
	WS Output Loss	MJ	Loss of output signal detected	Normal / Alarm
	WS AIS Received	ST1	AIS is received on WS port.	On/Off
	V11 TX 192k CLK LOS (TO DMR)	MN	Loss of clock detected to DMR insert direction	Normal / Alarm
	V11 RX 192k CLK LOS (FM MUX)	MN	Loss of clock detected from MUX drop direction	Normal / Alarm
	V11 TX 192k CLK LOS (TO MUX)	MN	Loss of clock detected to MUX insert direction	Normal / Alarm
	V11 RX 192k CLK LOS(FM DMR)	MN	Loss of clock detected from DMR drop direction	Normal / Alarm
	V11 TX 64k CLK LOS (TO DMR)	MN	Loss of clock detected to DMR insert direction	Normal / Alarm
	V11 RX 64k CLK LOS (FM MUX)	MN	Loss of clock detected from MUX drop direction	Normal / Alarm

Module	Item/Feature	Severity	Description	Status Indication
	V11 TX 64k CLK LOS (TO MUX)	MN	Loss of clock detected to MUX insert direction	Normal / Alarm
	V11 RX 64k CLK LOS (FM DMR)	MN	Loss of clock detected from DMR drop direction	Normal / Alarm
	G703 Input LOS (TO DMR)	MJ	Input signal loss of G.703 port to DMR direction	Normal / Alarm
	G703 Output LOS (FM MUX)	MJ	Output signal loss of G.703 port from DMR direction	Normal / Alarm
	G703 AIS Received (TO DMR)	ST1	AIS is received on G703 port to DMR direction.	On/Off
	G703 Input LOS (TO MUX)	MJ	Input signal loss of G.703 port to MUX direction	Normal / Alarm
	G703 Output LOS (FM DMR)	MJ	Output signal loss of G.703 port from DMR direction	Normal / Alarm
	G703 AIS Received (TO MUX)	ST1	AIS is received on G703 port to MUX direction.	On/Off
	EXT2 DIGHYB CLK Loss	MN	Input clock loss detection of external port 2.	Normal / Alarm
	EXT1 DIGHYB CLK Loss	MN	Input clock loss detection of external port 1.	Normal / Alarm

3.5.12 CTRL Tab

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

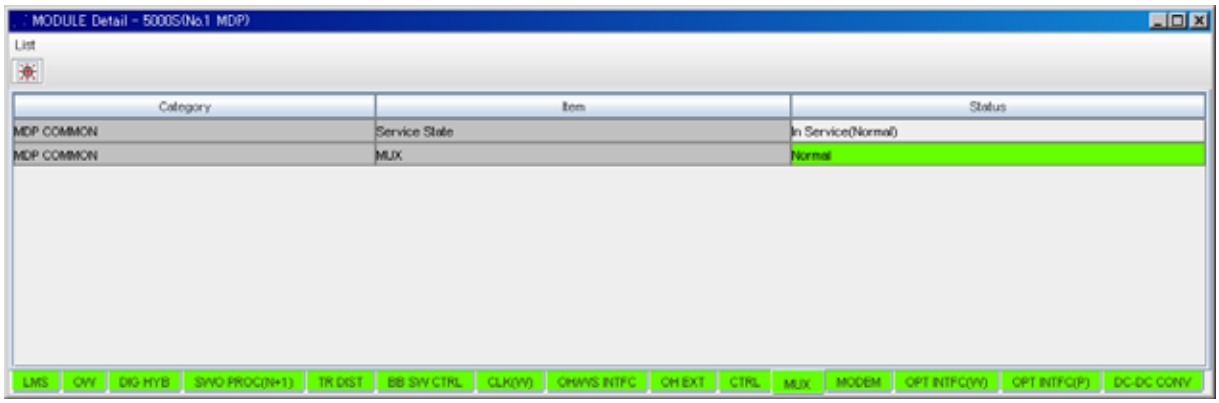


Overview and description of the items monitored with the CTRL tab

Module	Item/Feature	Severity	Description	Status Indication
CTRL	Unequipped	MJ	Not equipped with CTRL module. No response from CTRL to LMS.	Normal / Alarm
	Unit Fail	MJ	CTRL unit failure.	Normal / Alarm
	Serial Bus Access Fail	MJ	CTRL serial BUS access failure.	Normal / Alarm
	MDCPU Communication	MJ	Status of communication with MDCPU MODEM	Normal / Alarm
	Service State	ST2 ST1 ST1	In Service (Normal): In working order. In Service (Abnormal): Occurred alarm of PM and/or DM. Out Of Service (Maintenance): Maintenance item in operation.	In Service (Normal) / In Service (Abnormal) / Out Of Service (Maintenance)
	Alarm Correlation Status	ST1	Alarm Correlation Status (Enable: Off, Disable: On)	Off / On
	Maintenance	ST1	Equipment is under maintenance.	Off / On
	Bus Protect SW Status	ST1	CTRL serial BUS protection switch status.	Off / On

3.5.13 MUX Tab

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

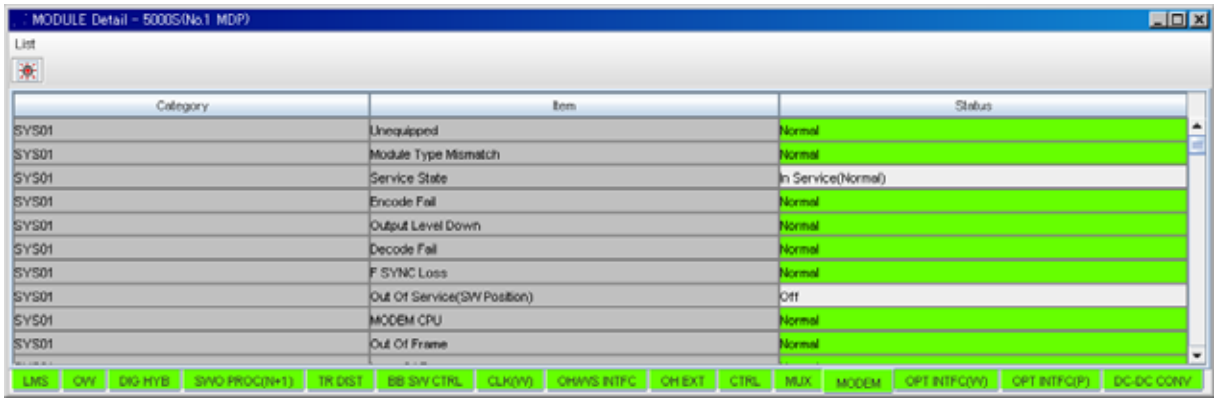


Overview and description of the items monitored with the MUX tab

Module	Item/Feature	Severity	Description	Status Indication
MUX	MUX	MJ	MUX Summary Alarm	Normal / Alarm
	Service State	ST2	In Service (Normal): In working order.	In Service (Normal) /
		ST1	In Service (Abnormal): Occurred alarm of PM and/or DM.	In Service (Abnormal) /
		ST1	Out Of Service (Maintenance): Maintenance item in operation.	Out Of Service (Maintenance)

3.5.14 MODEM Tab

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

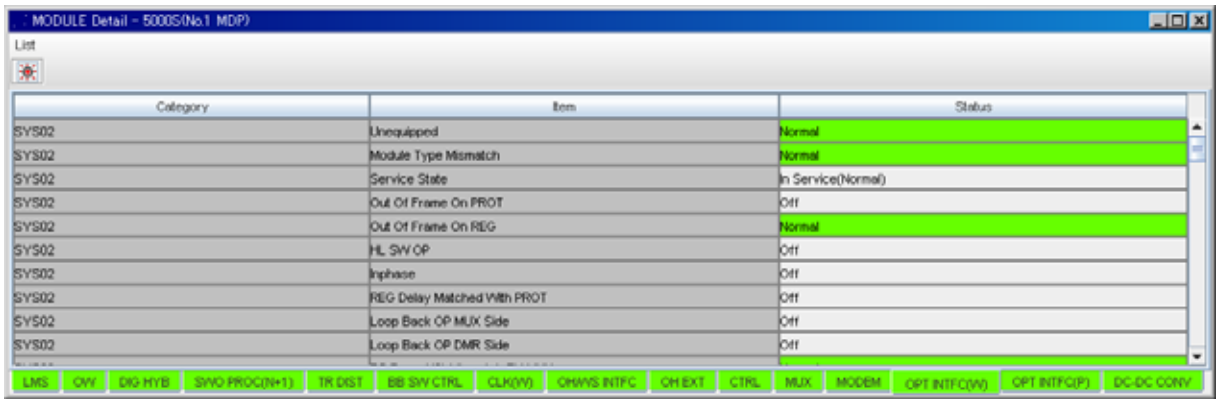


Overview and description of the items monitored with the MODEM tab

Module	Item/Feature	Severity	Description	Status Indication
MODEM	Unequipped	MJ	Not equipped with MODEM module. No response from MODEM to CTRL.	Normal / Alarm
	Module Type Mismatch	MJ	Module type does not match.	Normal / Alarm
	Encode Fail	MJ	Loss of oscillator clock or asynchronization with VCO clock detected.	Normal / Alarm
	Output Level Down	MJ	Output level down detected at modulator.	Normal / Alarm
	Decode Fail	MJ	Clock anomaly detected after partial recovery	Normal / Alarm
	F SYNC Loss	MJ	Loss of radio frame detected.	Normal / Alarm
	XPIC REF CLK	MJ	Clock anomaly detected in MODEM board set for XPIC usage	Normal / Alarm
	XPIC REF CLK Unlock	MJ	An asynchronous reference between the master MODEM board and the slave MODEM board detected	Normal / Alarm
	MODEM CPU	MJ	Anomalies detected in operation of MODEM CPU	Normal / Alarm
	XPIC	MJ	Input level down detected at cross-polarized demodulator.	Normal / Alarm
	Out Of Frame	MJ	Out of frame detected. [from DMR side]	Normal / Alarm
	Loss Of Frame	MJ	Loss of frame (LOF) detected. [from DMR side]	Normal / Alarm
	Early Warning	MN	BER exceeded the specified threshold level (10E-8 to 10E-12) or Loss of radio frame between terminals.	Normal / Alarm
	HOP High BER	MJ	BER exceeded the specified threshold level (10E-4 to 10E-6) or Loss of radio frame detected in one hop.	Normal / Alarm
	HOP Low BER	MN	BER exceeded the specified threshold level (10E-6 to 10E-10) or Loss of radio frame detected in one hop.	Normal / Alarm
	Section High BER	MJ	BER exceeded the specified threshold level (10E-4 to 10E-6) or Loss of radio frame between terminals.	Normal / Alarm
	Section Low BER	MN	BER exceeded the specified threshold level (10E-6 to 10E-10) or Loss of radio frame between terminals.	Normal / Alarm
	ATPC	MJ	Anomaly detected in input determination for the ATPC control operation or the ATPC control signal.	Normal / Alarm
	XPIC Control	MJ	Signal discrepancy detected between control signals from recovery board set for XPIC usage	Normal / Alarm
	Input Level Down	MJ	Input level down detected at demodulator or receiver.	Normal / Alarm
	Service State	ST2 ST1 ST1	In Service (Normal): In working order. In Service (Abnormal): Occurred alarm of PM and/or DM. Out Of Service (Maintenance): Maintenance item in operation.	In Service (Normal) / In Service (Abnormal) / Out Of Service (Maintenance)
	Provisioning	ST1	Provisioning Status	Completed / Standby
	Out Of Service (SW Position)	ST1	Front SW at position 1-F. (test mode) Normally at “0”.	Off / On
	IF Out Loopback Mode	ST1	Status when IF OUT Port is set to Loopback Mode	Off / On
	IF In Loopback Mode	ST1	Status when IF IN Port is set to Loopback Mode	Off / On
	XPIC Reset	ST1	Input level down at cross-polarized demodulator detected or remote reset control detected.	Off / On
	AGC Stop Status	ST1	STATUS that reception AGC control of the TRP/SD unit is set to "stop" detected.	Off / On

3.5.15 OPT INTFC (W) Tab

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



Overview and description of the items monitored with the OPT INTFC tab

Module	Item/Feature	Severity	Description	Status Indication
OPT INTFC	Unequipped	MJ	Not equipped with OPT INTFC module. No response from OPT INTFC to CTRL.	Normal / Alarm
	Module Type Mismatch	MJ	Module type does not match.	Normal / Alarm
	Out Of Frame On REG	MJ	Out of frame detected on Regular channel.	Normal / Alarm
	RS Trace (J0) Mismatch FM MUX	MJ	Signal level mismatch between received value and expected value. [from MUX side]***1**	Normal / Alarm
	RS Trace (J0) Mismatch FM DMR	MJ	Signal level mismatch between received value and expected value. [from DMR side]***1**	Normal / Alarm
	Loss Of Signal FM MUX	MJ	Input signal loss (LOS: Loss of Signal) detected. [from MUX side]	Normal / Alarm
	Loss Of Frame FM MUX	MJ	Loss of frame (LOF) detected. [from MUX Side]	Normal / Alarm
	Signal Degrade (B1) FM MUX	MJ	BER exceeded the specified threshold level (10E-5 to 10E-9). SD (B1) [from MUX side]	Normal / Alarm
	Loss Of Output TO MUX	MJ	Output signal loss detected. [to MUX side]	Normal / Alarm
	Loss Of Signal FM DMR	MJ	Input signal loss (LOS: Loss of Signal) detected. [from DMR side]	Normal / Alarm
	Loss Of Frame FM DMR	MJ	Loss of frame (LOF) detected. [from DMR side]	Normal / Alarm
	Excessive BER (B1) FM DMR	MJ	BER exceeded the specified threshold level (10E-3 to 10E-5). EBER (B1) [from DMR side]	Normal / Alarm
	Signal Degrade (B1) FM DMR	MN	BER exceeded the threshold level (10E-5 to 10E-9). SD (B1) [from DMR side]	Normal / Alarm
	Unit Fail	MJ	OPT INTFC unit failure.	Normal / Alarm
	Service State	ST2 ST1 ST1	In Service (Normal): In working order. In Service (Abnormal): Occurred alarm of PM and/or DM. Out Of Service (Maintenance): Maintenance item in operation.	In Service (Normal) / In Service (Abnormal) / Out Of Service (Maintenance)
	Out Of Frame On PROT	ST1	Out of frame detected on Protection channel.	Off / On
	HL SW OP	ST2	Hitless switch operation (Prot route selected)	Off / On
	Inphase	ST2	Inphase detected.	Off / On
	REG Delay Matched With PROT	ST2	Delay adjust monitor for hitless switch.	Off / On
	Loop Back OP MUX Side	ST1	Loop back operation status [MUX side]	Off / On
	Loop Back OP DMR Side	ST1	Loop back operation status [DMR side]	Off / On

Module	Item/Feature	Severity	Description	Status Indication
	ALS Implemented (*1)	ST1	Automatic Laser Shutdown is implemented.	Off / On

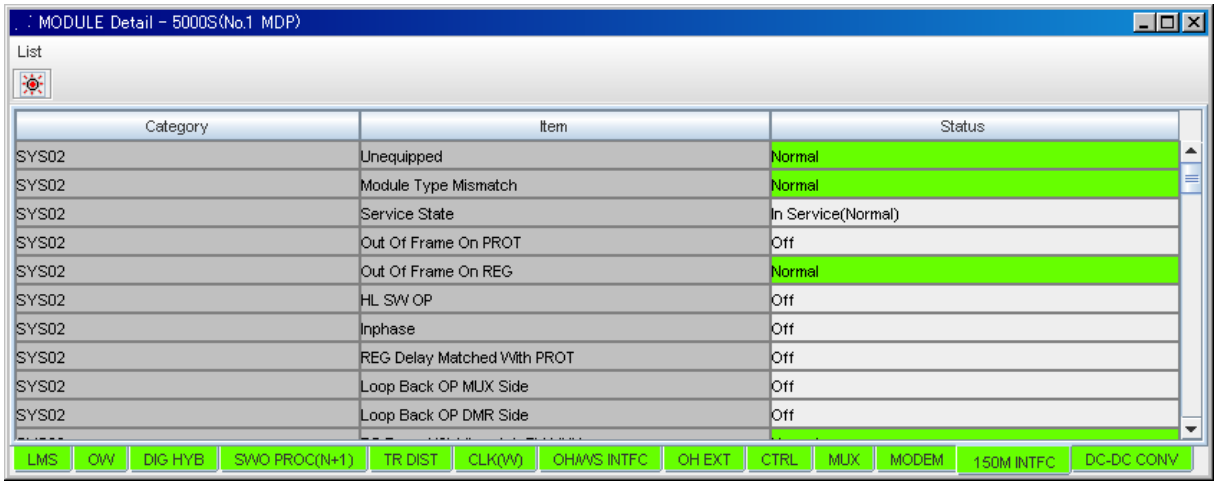
Note *1: available when NE and its opposite counterpart are set to "Enable"

3.5.16 OPT INTFC (P) Tab

Same as OPT INTFC (W) Tab.

3.5.17 150M INTFC Tab

The 150M INTFC tab displays the status of the monitored 150M INTFC items. This window only displays current settings and no control functions are available here.



Overview and description of the items monitored with the 150M INTFC tab

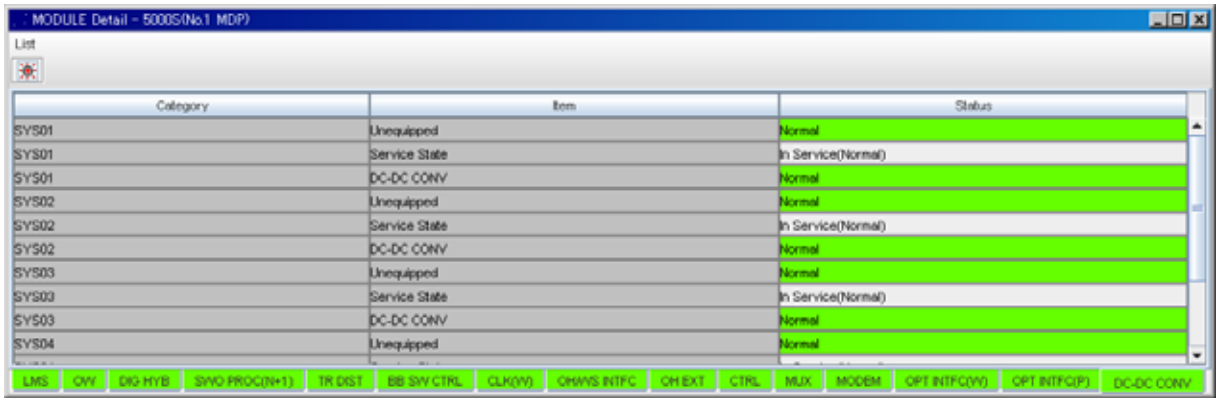
Module	Item/Feature	Severity	Description	Status Indication
150M INTFC	Unequipped	MJ	Not equipped with 150M INTFC module. No response from 150M INTFC to CTRL.	Normal / Alarm
	Module Type Mismatch	MJ	Module type does not match.	Normal / Alarm
	Out Of Frame On REG	MJ	Out of frame detected on Regular channel.	Normal / Alarm
	RS Trace (J0) Mismatch FM MUX	MJ	Signal level mismatch between received value and expected value. [from MUX side] ***1**	Normal / Alarm
	RS Trace (J0) Mismatch FM DMR	MJ	Signal level mismatch between received value and expected value. [from DMR side] ***1**	Normal / Alarm
	Loss Of Signal FM MUX	MJ	Input signal loss (LOS: Loss of Signal) detected. [from MUX side]	Normal / Alarm
	Loss Of Frame FM MUX	MJ	Loss of frame (LOF) detected. [from MUX Side]	Normal / Alarm
	Signal Degrade (B1) FM MUX	MJ	BER exceeded the specified threshold level (10E-5 to 10E-9). SD (B1) [from MUX side]	Normal / Alarm
	Loss Of Output TO MUX	MJ	Output signal loss detected. [to MUX side]	Normal / Alarm
	Loss Of Signal FM DMR	MJ	Input signal loss (LOS: Loss of Signal) detected. [from DMR side]	Normal / Alarm
	Loss Of Frame FM DMR	MJ	Loss of frame (LOF) detected. [from DMR side]	Normal / Alarm
	Excessive BER (B1) FM DMR	MJ	BER exceeded the specified threshold level (10E-3 to 10E-5). EBER (B1) [from DMR side]	Normal / Alarm
	Signal Degrade (B1) FM DMR	MN	BER exceeded the threshold level (10E-5 to 10E-9). SD (B1) [from DMR side]	Normal / Alarm
	Unit Fail	MJ	OPT INTFC unit failure.	Normal / Alarm

Module	Item/Feature	Severity	Description	Status Indication
	Service State	ST2	In Service (Normal): In working order.	In Service (Normal) /
		ST1	In Service (Abnormal): Occurred alarm of PM and/or DM.	In Service (Abnormal) /
		ST1	Out Of Service (Maintenance): Maintenance item in operation.	Out Of Service (Maintenance)
	Out Of Frame On PROT	ST1	Out of frame detected on Protection channel.	Off / On
	HL SW OP	ST2	Hitless switch operation (Prot route selected)	Off / On
	Inphase	ST2	Inphase detected.	Off / On
	REG Delay Matched With PROT	ST2	Delay adjust monitor for hitless switch.	Off / On
	Loop Back OP MUX Side	ST1	Loop back operation status [MUX side]	Off / On
	Loop Back OP DMR Side	ST1	Loop back operation status [DMR side]	Off / On

Note *****1**:** available when NE and its opposite counterpart are set to "Enable"

3.5.18 DC-DC CONV Tab

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

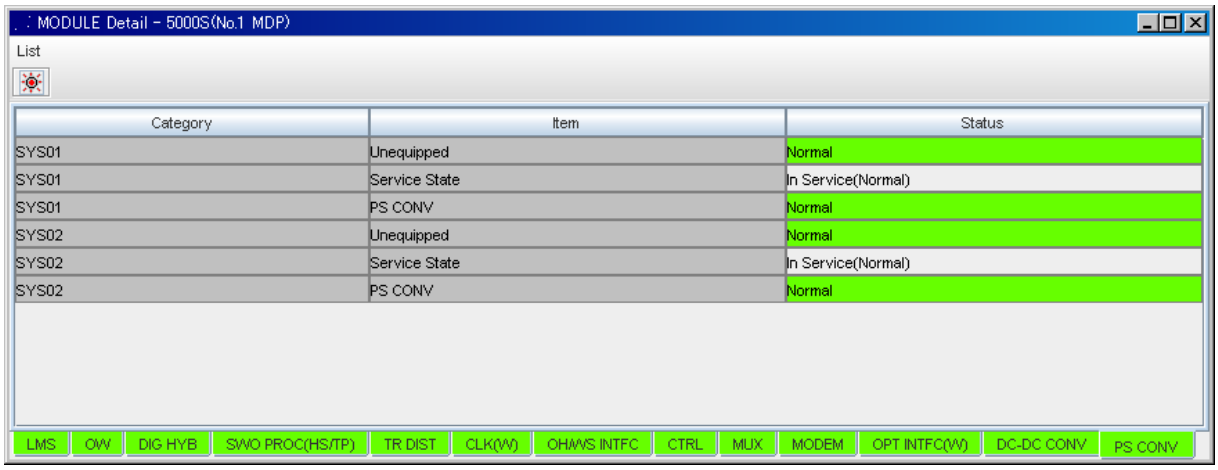


Overview and description of the items monitored with the DC-DC CONV tab

Module	Item/Feature	Severity	Description	Status Indication
DC-DC CONV	Unequipped	MJ	Not equipped with DC-DC CONV module No response from DC-DC CONV to CTRL.	Normal / Alarm
	DC-DC CONV	MJ	Unit Fail	Normal / Alarm
	Service State	ST2	In Service (Normal): In working order.	In Service (Normal) /
		ST1	In Service (Abnormal): Occurred PM and/or DM alarms.	In Service (Abnormal) /
		ST1	Out Of Service (Maintenance): Maintenance item in operation.	Out Of Service (Maintenance)

3.5.19 PS CONV Tab

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

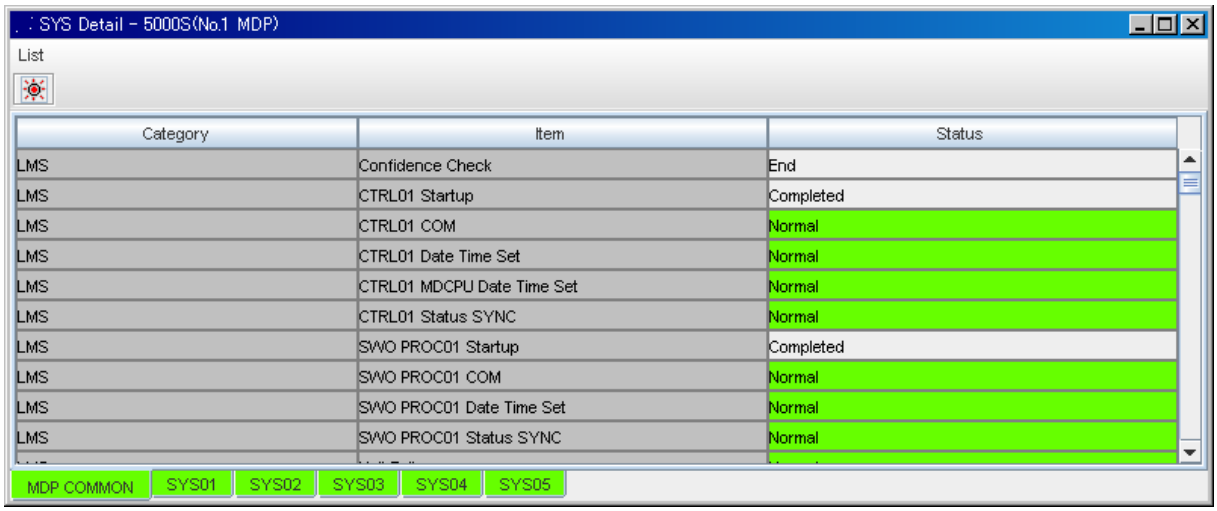


Overview and description of the items monitored with the PS CONV tab

Module	Item/Feature	Severity	Description	Status Indication
PS CONV	Unequipped	MJ	Not equipped with PS CONV module. No response from PS CONV to CTRL.	Normal / Alarm
	PS CONV	MJ	Unit Fail	Normal / Alarm
	Service State	ST2	In Service (Normal): In working order.	In Service (Normal) /
		ST1	In Service (Abnormal): Occurred alarm of PM and/or DM.	In Service (Abnormal) /
		ST1	Out Of Service (Maintenance): Maintenance item in operation.	Out Of Service (Maintenance)

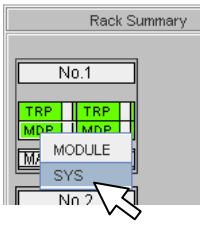
3.6 MDP [01-05] Unit -SYS Detail

In the SYS Detail list, the monitoring status of each module in terms of specific systems (SYS) is displayed according to various tabs.

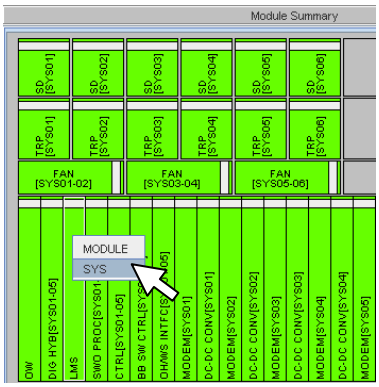


It can be launched by either of the following methods:

- After right-clicking the MDP icon in the Rack Summary, select [**SYS**] from the ensuing short-cut menu.



- After right-clicking the MDP icon in the Module Summary, select [**MODULE**] from the ensuing short-cut menu.



3.6.1 MDP COMMON Tab

The following is a common tab (for all configurations)

3.6.2 SYS** Tab

This status display shows only the SYS items selected via the tab; otherwise it is identical to the MODULE DETAIL feature.

3.7 MDP [06-10] Unit

The content displayed for the MDP 06-10 Unit is the same as for the MDP 01-05 Unit.

4 LINE UNIT

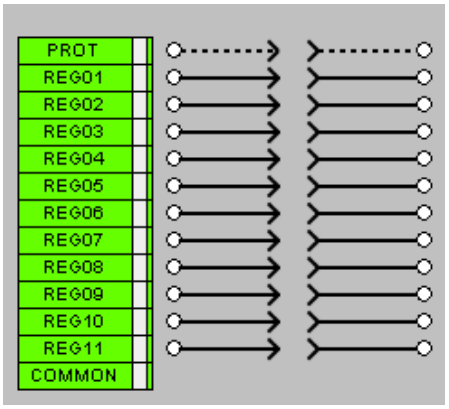
This feature enables status monitoring and redundancy configuration setting/control to be done.

4.1 Line Summary

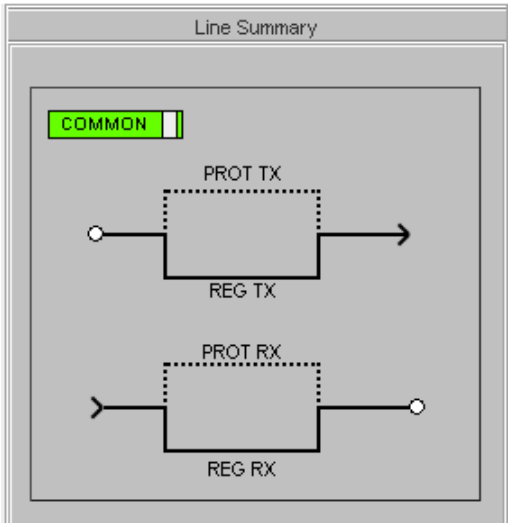
The Line Summary view displays the switch status for redundancy configuration.

The respective display is different for N+1, Hot Standby, and Twinpath.

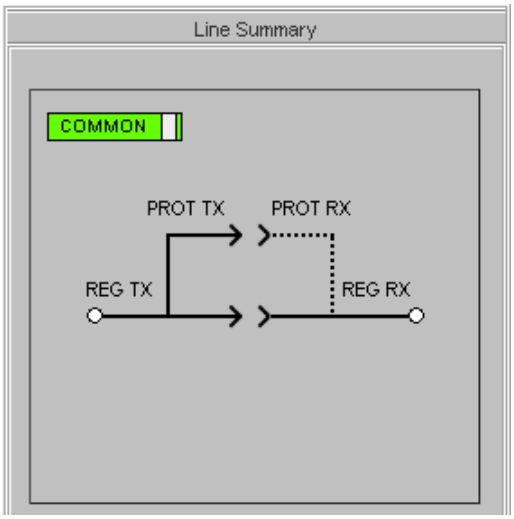
For N+1:



For Hot Standby:



For Twinpath:

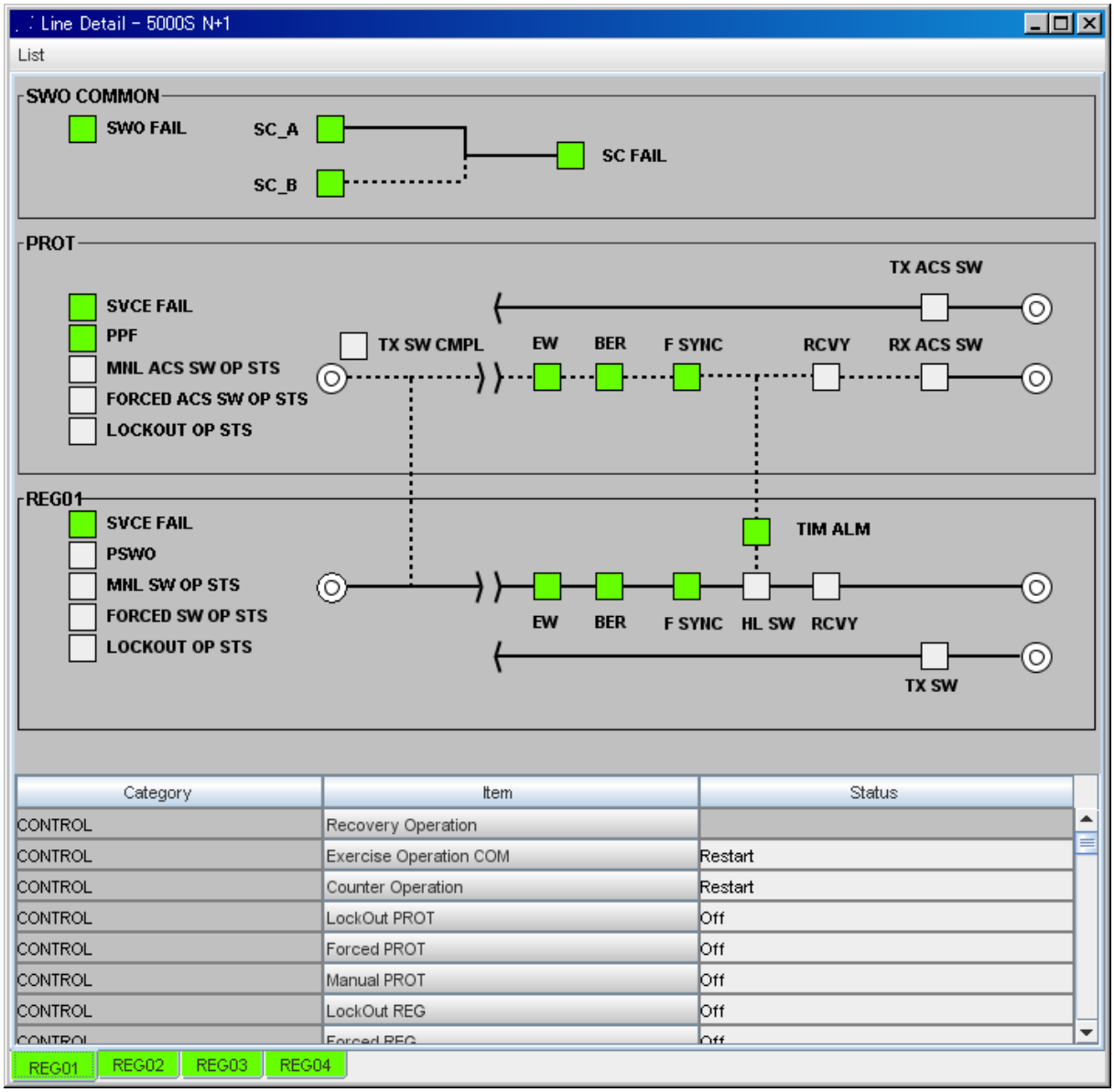


4.2 Line Detail

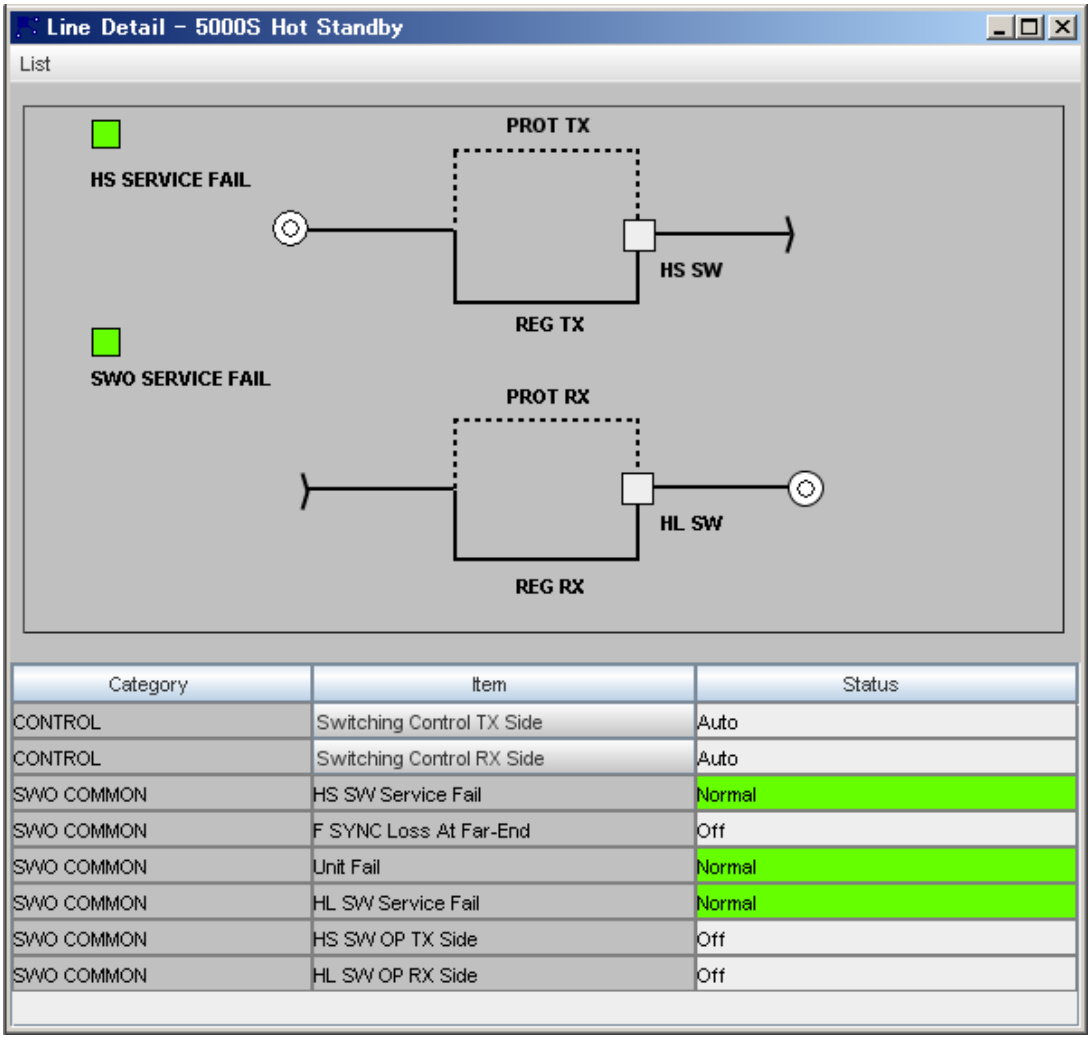
The Line Detail window shows the details for the redundancy switch functions.

The respective display is different for N+1, Hot Standby, and Twinpath.

For N+1

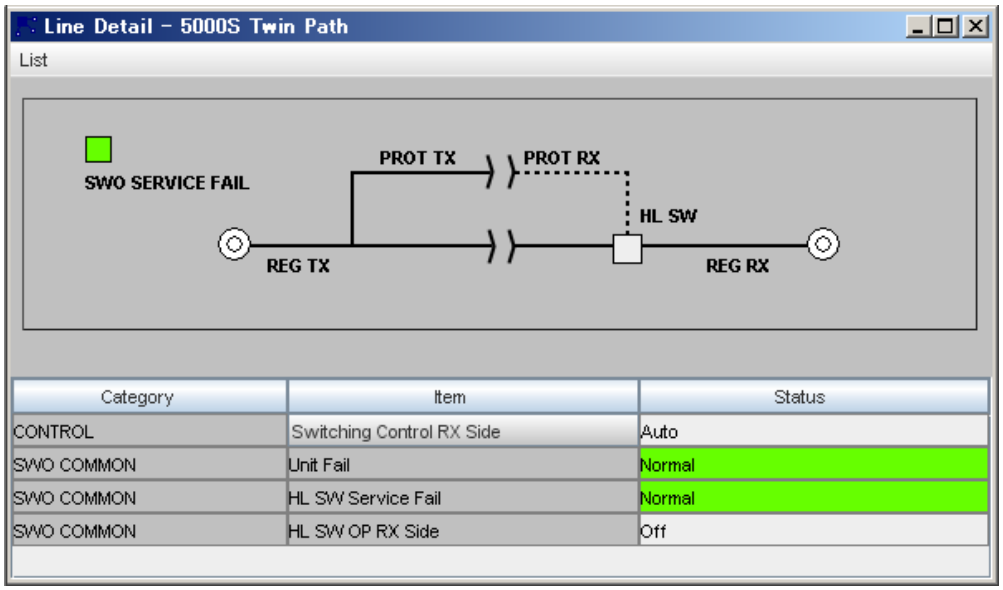


For Hot Standby:



Category	Item	Status
CONTROL	Switching Control TX Side	Auto
CONTROL	Switching Control RX Side	Auto
SWO COMMON	HS SW Service Fail	Normal
SWO COMMON	F SYNC Loss At Far-End	Off
SWO COMMON	Unit Fail	Normal
SWO COMMON	HL SW Service Fail	Normal
SWO COMMON	HS SW OP TX Side	Off
SWO COMMON	HL SW OP RX Side	Off

For TwinPath:



Category	Item	Status
CONTROL	Switching Control RX Side	Auto
SWO COMMON	Unit Fail	Normal
SWO COMMON	HL SW Service Fail	Normal
SWO COMMON	HL SW OP RX Side	Off

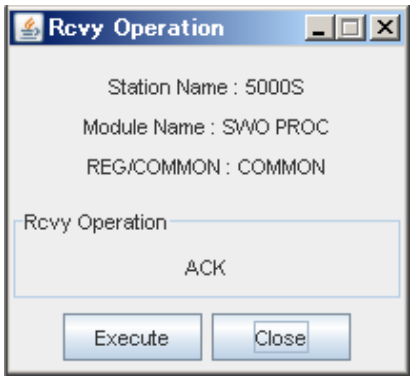
4.2.1 N+1(REGxx tab)

Module	Item/Feature	Severity	Description	Status Indication
REGxx	Recovery Operation	-	Alarm Recovery acknowledgment control.	-
	Exercise Operation	-	Exerciser control.	Restart / Stop
	Counter Operation	-	Controls the counter function operation.	Restart / Stop
	Lock Out PROT	-	Control to inhibit switchover of the all line.	Off / On
	Forced PROT	-	RX Access Switch control. (Forced mode)	Off / On
	Manual PROT	-	RX Access Switch control. (Manual mode)	Off / On
	Lock Out REG	-	Control to inhibit switchover of the line.	Off / On
	Forced REG	-	Hitless Switch control. (Forced mode)	Off / On
	Manual REG	-	Hitless Switch control. (Manual mode)	Off / On
	Disable Operation	-	Control to inhibit automatic switchover of the line.	Off / On
	TX Test Operation	-	Remote station Tx SW control.	Off / On
	COM Auto Exerciser Stop	ST1	Automatic exerciser stops.	Off / On
	COM Counter Stop	ST1	Protection channel counter stops.	Off / On
	SWO Fail	MJ	Protection switchover execution fails.	Normal / Alarm
	SC Fail	MJ	Associated control line is broken.	Normal / Alarm
	DSC A	MJ	Control line (DSC) #A fails.	Normal / Alarm
	DSC B	MJ	Control line (DSC) #B fails.	Normal / Alarm
	DSC A Selected	ST2	Control line (DSC) #A is selected.	Off / On
	DSC B Selected	ST2	Control line (DSC) #B is selected.	Off / On
	TR DIST1 I/F	MJ	Data signal associated with the TR DIST fails.	Normal / Alarm
	TR DIST2 I/F	MJ	Data signal associated with the TR DIST fails.	Normal / Alarm
	TR DIST3 I/F	MJ	Data signal associated with the TR DIST fails.	Normal / Alarm
	TR DIST4 I/F	MJ	Data signal associated with the TR DIST fails.	Normal / Alarm
	SWO Priority Manual	ST1	Switchover priority is set in Auto < Manual.	Auto / Manual
	SWO PROC Maintenance	ST1	Indicates it is under maintenance.	Off / On
	PPF	MJ	Protection channel alarm continues over the specified period. (Prolonged Protection Failure/malfunction)	Normal / Alarm
	Service Fail PROT	CR	Protection channel selection has provided, but there is no response. [PROT]	Normal / Alarm
	TX SW Complete PROT	ST1	TX SW ANS from the opposite TX station is confirmed. [PROT]	Off / On
	Recovery PROT	ST1	Some alarm events have occurred and then cleared all of them. [PROT]	Off / On
	Early Warning PROT	MJ	Early warning has occurred. [PROT]	Normal / Alarm
	BER PROT	MJ	Bit error rate ALM has occurred. [PROT]	Normal / Alarm
	F SYNC PROT	MJ	Frame synchronous ALM has occurred. [PROT]	Normal / Alarm
	RX ACS SW Answer	ST1	RX access SW response is confirmed. [PROT]	Off / On
	TX ACS SW Answer	ST1	TX access SW response is confirmed. [PROT]	Off / On
	Lockout OP STS	ST1	Under lockout operation. [PROT]	Off / On
	Forced ACS SW OP STS	ST1	Protection channel is forced to switch by the FORCED operation. [PROT]	Off / On
	Manual ACS SW OP STS	ST1	Protection channel is switched by the manual operation. [PROT]	Off / On
	TX SW Complete I PROT	ST1	TX SW ANS from opposite TX station is continuously confirmed for a specified interval. [PROT]	Off / On
	EARLY Warning I PROT	MJ	Early warning continued at a specified interval. [PROT]	Normal / Alarm
	BER I PROT	MJ	Bit error ALM has occurred for a specified interval. [PROT]	Normal / Alarm

Module	Item/Feature	Severity	Description	Status Indication
	FSYNC I PROT	MJ	Frame synchronous ALM occurred for a specified interval. [PROT]	Normal / Alarm
	Disable OP STS	ST1	Automatic switching is inhibited with control operation. [REG]	Off / On
	TX Test OP STS	ST1	The test condition in Parallel transmission is set by control operation. [REG]	Off / On
	Manual Exerciser	ST1	Exerciser is manually executed. [REG]	Off / On
	PSWO REG	ST1	Regular channel has automatically switched to protection channel for a specified interval. (Prolonged Switchover) [REG]	Off / On
	Service Fail REG	CR	Select control for regular channel has provided, but there is no response. [REG]	Normal / Alarm
	Timing REG	MJ	Synchronization of regular channel traffic has not established in the protection channel during the switching over operation and going back operation. [REG]	Normal / Alarm
	Recovery REG	ST1	Some alarm events have occurred and then cleared all of them. [REG]	Off / On
	Early Warning REG	MJ	Early warning has occurred. [REG]	Normal / Alarm
	BER REG	MJ	Bit error rate ALM has occurred. [REG]	Normal / Alarm
	F SYNC REG	MJ	Frame synchronous ALM has occurred. [REG]	Normal / Alarm
	HL SW Answer	ST1	Hit less switch response is confirmed. [REG]	Off / On
	TX SW Answer	ST1	TX switch response is confirmed.	Off / On
	Manual SW OP STS	ST1	Hitless switching control is executed manually. [REG]	Off / On
	Lockout OP STS	ST1	Under the LOCKOUT operation. [REG]	Off / On
	Forced SW OP STS	ST1	Regular channel is forced to switch by FORCED operation. [REG]	Off / On
	Exerciser Init TX	MJ	ALM events are detected during the Exerciser execution. [REG]	Normal / Alarm
	Exerciser TIM	MJ	Exerciser ALM has occurred in the caused of Timing ALM. [REG]	Normal / Alarm
	Exerciser RST TX	MJ	Exerciser is executed, ALM is then detected. [REG]	Normal / Alarm
	Exerciser Other	MJ	Exerciser ALM has occurred in the caused of excluding Timing ALM. [REG]	Normal / Alarm
	Exerciser Wait	ST1	Turned to WAIT by Exerciser execution. [REG]	Off / On
	Timing I REG	MJ	Timing ALM is detected during a specified interval. [REG]	Normal / Alarm
	Early Warning I REG	MJ	Early warning has occurred during a specified interval. [REG]	Normal / Alarm
	BER I REG	MJ	Bit error rate ALM has occurred during a specified interval. [REG]	Normal / Alarm
	F SYNC I REG	MJ	Frame synchronous ALM has occurred during a specified interval. [REG]	Normal / Alarm
	HL SW Answer I	ST1	Hit less switch response is confirmed during a specified interval. [REG]	Off / On
	TX SW Answer I	ST1	TX switch response is confirmed during a specified interval.[REG]	Off / On

4.2.1.1 Recovery (Rcvy) Operation

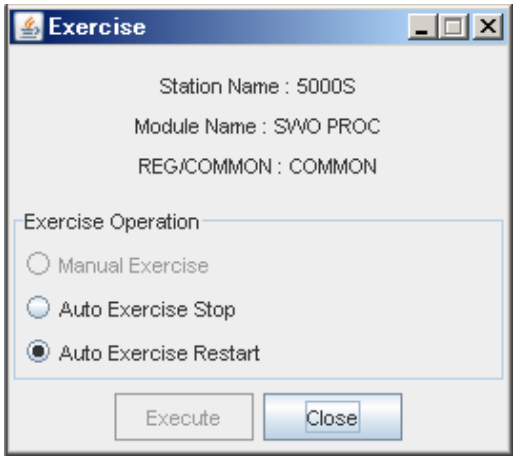
This feature provides Alarm Recovery (RCVY) acknowledgment control. When the “Execute” button is clicked, the PROT or REGn channel RCVY symbol changes to green. This means that alarm recovery has been confirmed.



1. Click the **[Recovery Operation]** button in the LINE Detail window.
2. Click the **[Execute]** button to execute control.
3. After completion, click the **[Close]** button.

4.2.1.2 Exercise

Enables automatic exerciser control.
Select the exerciser control to be performed; then click on the **[Execute]** button:



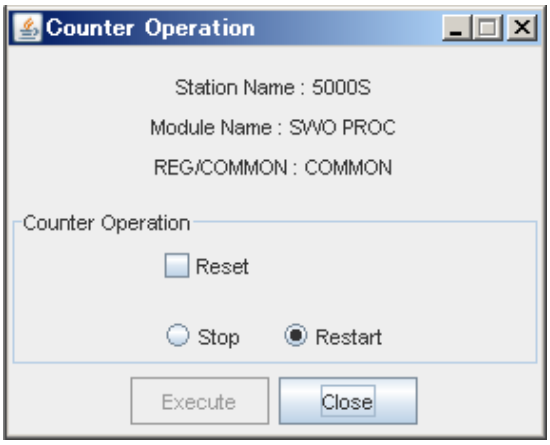
1. Click the **[Exercise Operation]** button in the LINE Detail window.
2. **Manual Exercise**, **Auto Exercise Stop** or **Auto Exercise Restart** is selected from the radio button in the Exercise Operation column.

   Auto Exercise Stop: Stops the Automatic Exerciser.

   Auto Exercise Restart:
   Restarts the Automatic Exerciser. The Auto Exerciser status indicator changes to “Green” when the Exerciser has restarted.
3. Click the **[Execute]** button to execute control.
4. After completion, click the **[Close]** button.

4.2.1.3 Counter Operation

This feature controls the counter function operation.



To initialize the counter:

1. Click the **[Exercise Operation]** button in the LINE Detail window.
2. Check the **Reset** check box in the Counter Operation column.
3. Click the **[Execute]** button to execute control.
4. After completion, click the **[Close]** button.

When you begin/stop the counter

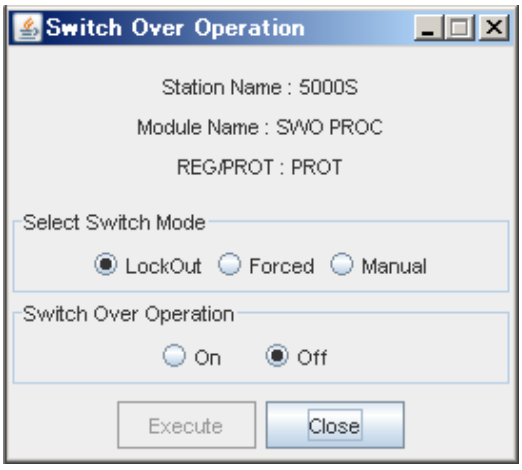
1. Click the **[Counter Operation]** button in the LINE Detail window.
2. Select the Counter control to be performed

   Stop: Stops the counter.
   Restart: Restarts the counter.

3. Click the **[Execute]** button to execute control.
4. After completion, click the **[Close]** button.

4.2.1.4 Switch Over Operation

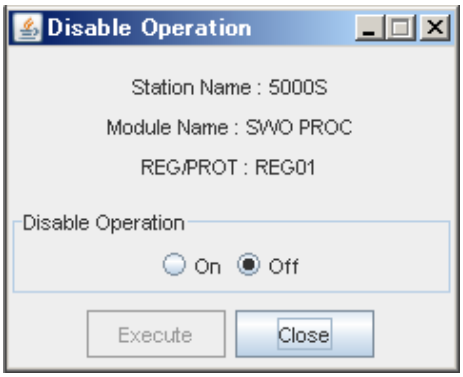
This feature enables Switch control to be done.



1. Click the **[Lock Out], [Forced],** or **[Manual] button** in the **LINE Detail** window.
2. With the radio button in the **Select Switch Mode** column, select **Lock Out**, **Forced**, or **Manual**
3. Switch Over Operation column, select **On (**configure the mode for the content to be selected in the Select Switch Mode column) or **Off (**quit the mode for the content to be selected in the Select Switch Mode column).
4. Click the **[Execute]** button to execute control.
5. After completion, click the **[Close]** button.

4.2.1.5 Disable Operation

This feature regulates automatic switchover of the line.

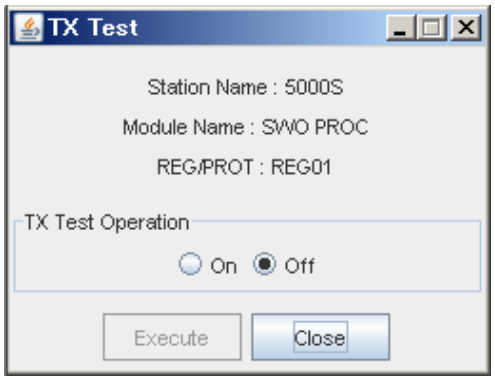


1. Click the **[Disable Operation]** button in the LINE **Detail window**.
2. With the radio button in the **Disable Operation** column, select either **On** or **Off**.

   ON: Inhibits automatic switchover.
   OFF: Enables automatic switchover.
3. Click the **[Execute]** button to execute control.
4. After completion, click the **[Close]** button.

4.2.1.6 TX Test Operation

Remote station Tx SW control.



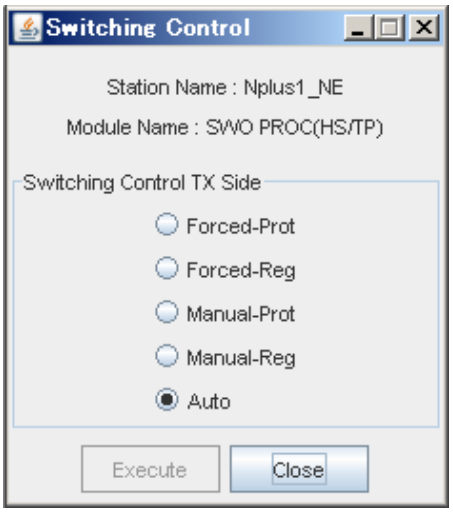
1. Click the **[TX Test Operation]** button in the **LINE Detail** window**.**
2. With the radio button in the **TX Test Operation** column, select either **On** or **Off**.

   ON: Manually switches the Tx SW at the remote station.
   OFF: Releases switchover operation of the Tx SW at the Remote station.
3. Click the **[Execute]** button to execute control.
4. After completion, click the **[Close]** button.

4.2.2 Hot Standby

Module	Item/Feature	Severity	Description	Status Indication
REGxx	Switching Control TX Side	-	Forced: Not switched in any condition. Manual: Not switched except alarm Auto : Switched by alarm	Forced Switch-Work / Forced Switch-Prot / Manual Switch-Work / Manual Switch-Prot / Auto
	Switching Control RX Side	-	Forced: Not switched in any condition. Manual: Not switched except alarm Auto : Switched by alarm	Forced Switch-Work / Forced Switch-Prot / Manual Switch-Work / Manual Switch-Prot / Auto
	HS SW OP TX Side	ST2	Hot standby switch operation (Prot route selected)	Off / On
	HL SW OP RX Side	ST2	Hitless switch operation (Prot route selected)	Off / On
	HS SW Service Fail	CR	Service fail is occurred in Hot standby switch.	Normal/Alarm
	F SYNC Loss At Far-End	ST1	Frame synchronous alarm has occurred at opposite station.	Off / On
	Unit Fail	MJ	SWO PROC unit failure.	Normal/Alarm
	HL SW Service Fail	CR	Service fail is occurred in Hitless switch.	Normal/Alarm

4.2.2.1 Switching Control TX Side



1. Click the **[Switching Control TX Side]** button in the **LINE Detail** window**.**
2. **Forced-Prot**, **Forced-Reg, Manual-Prot, Manual-Reg or Auto** is selected from the radio button in the Switching Control TX Side column.

   Forced-Prot: Not switched in any condition in the state of the Prot.
   Forced-Reg: Not switched in any condition in the state of the Reg.
   Manual-Prot: Not switched except alarm in the state of the Prot.
   Manual-Reg: Not switched except alarm in the state of the Reg.
   Auto: Switched by alarm
3. Click the **[Execute]** button to execute control.
4. After completion, click the **[Close]** button.

4.2.2.2 Switching Control RX Side

1. Click the **[Switching Control RX Side]** button in the **LINE Detail** window**.**
2. **Forced-Prot**, **Forced-Reg, Manual-Prot, Manual-Reg or Auto** is selected from the radio button in the Switching Control RX Side column.

   Forced-Prot: Not switched in any condition in the state of the Prot.
   Forced-Reg: Not switched in any condition in the state of the Reg.
   Manual-Prot: Not switched except alarm in the state of the Prot.
   Manual-Reg: Not switched except alarm in the state of the Reg.
   Auto: Switched by alarm
3. Click the **[Execute]** button to execute control.
4. After completion, click the **[Close]** button.

4.2.3 Twin Path

Module	Item/Feature	Severity	Description	Status Indication
REGxx	Switching Control RX Side	-	Forced: Not switched in any condition. Manual: Not switched except alarm Auto : Switched by alarm	Forced Switch-Work / Forced Switch-Prot / Manual Switch-Work / Manual Switch-Prot / Auto
	HL SW OP RX Side	ST2	Hitless switch operation (Prot route selected)	Off / On
	Unit Fail	MJ	SWO PROC unit failure.	Normal/Alarm
	HL SW Service Fail	CR	Service fail is occurred in Hitless switch.	Normal/Alarm

4.2.3.1 Switching Control RX Side

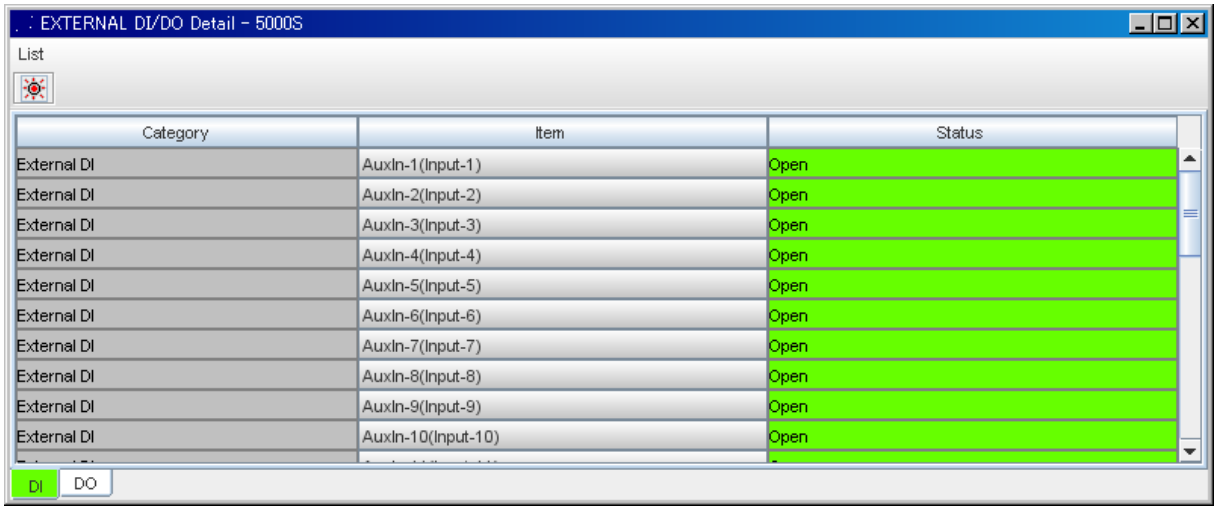
Please refer to Chapter "4.2.2.2 Switching Control RX Side".

5 EXTERNAL DI/DO

DI/DO item / control is done in the item status monitoring display.

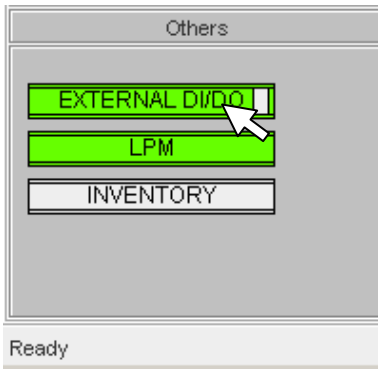
5.1 External DI/DO Detail

In the External DI/DO Detail window, the respective items can be displayed using the DI and DO tabs.



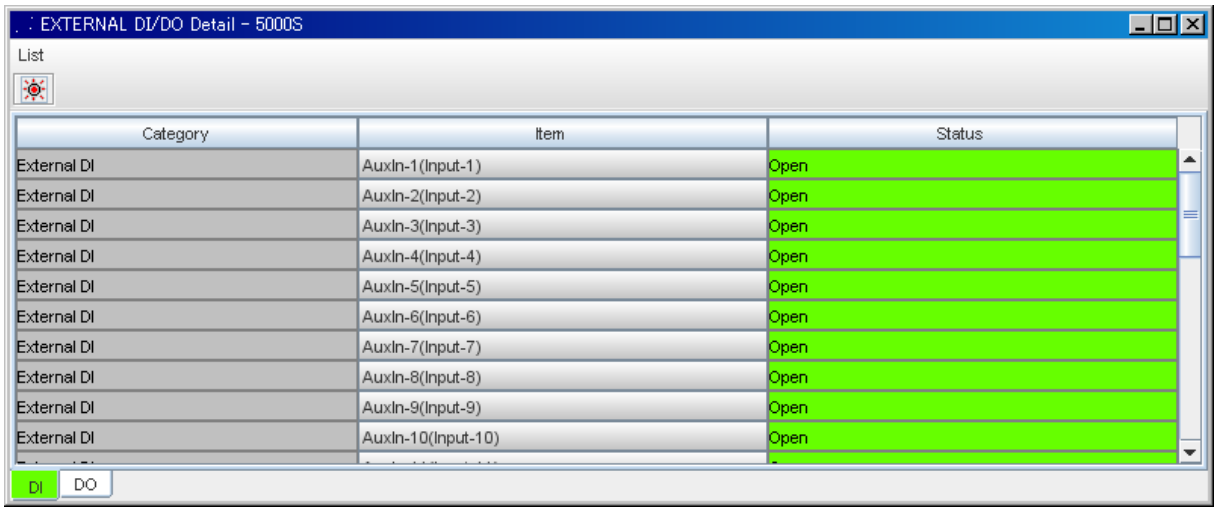
The External DI/DO Detail window can be displayed by the following means:

- Click on the [External DI/DO] icon in the **Others** column.



5.1.1 DI Tab

The DI Tab provides a list of DI configuration/control parameters.

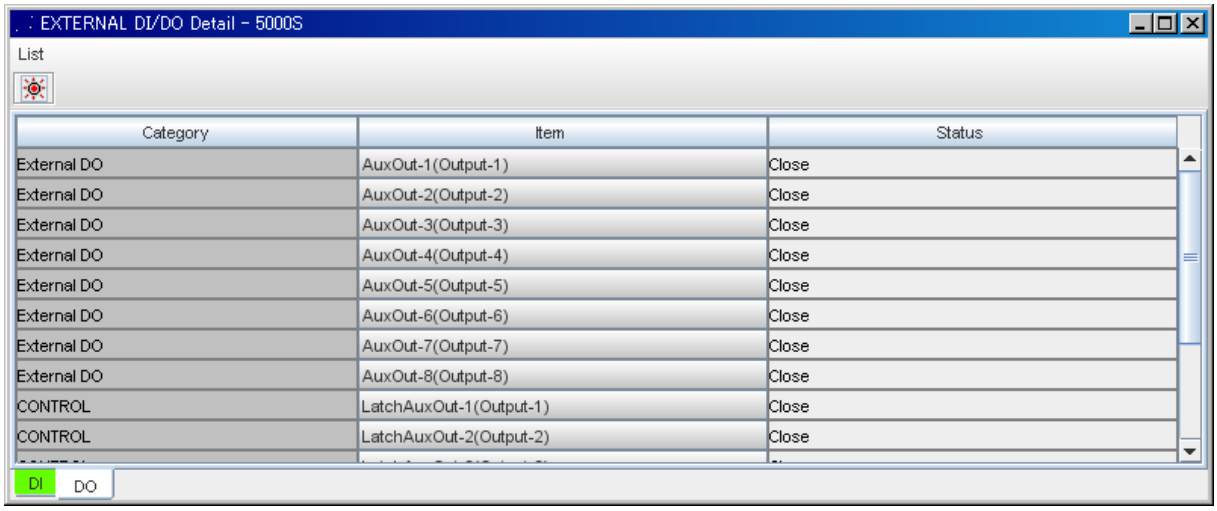


DI Window

Item/Feature	Description	Specific conditions for it to be displayed/configured
Input-x	DI input configuration	none

5.1.2 DO Tab

The DO Tab Provides a list of DO configuration/control parameters.



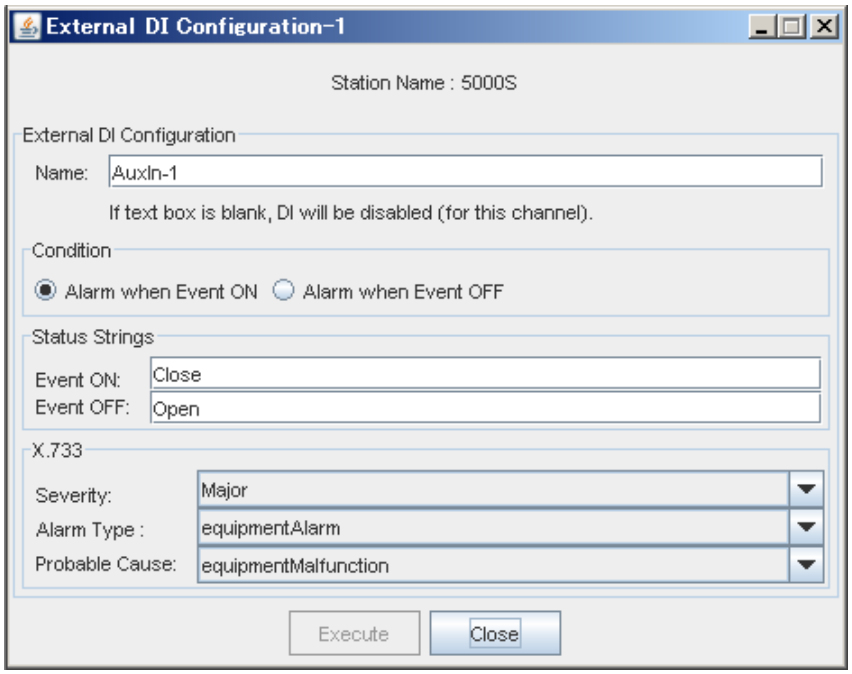
DO Window

Item/Feature	Description	Specific conditions for it to be displayed/configured
Output-x	DO output configuration	none
Latch Output	Latch output execution	Only when the Output Pattern is set to "Latch"
Pulse Output	Pulse output execution	Only when the Output Pattern is set to "Pulse"

5.1.2.1 External DI Configuration

The detailed DI configuration is performed via the External DI Configuration window.

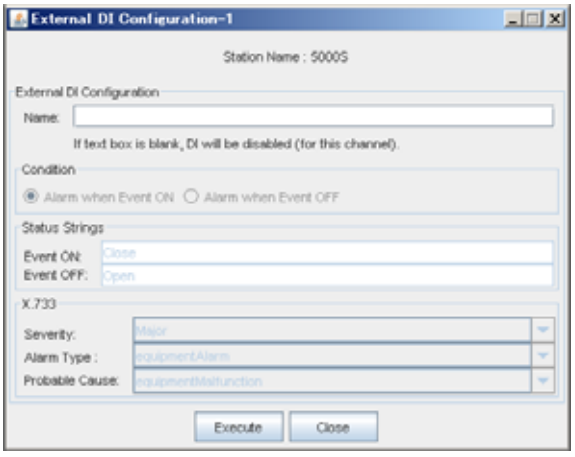
1. Click the [Input-n] button in the DI Window.
2. Input items are displayed in the following window.



5.1.2.1.1 Setting the Selected Input to Alarm or Status

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

   * By leaving the Name field blank, the Condition, Status Strings, and X.733 fields be inactive (displayed in gray shading); whereby, the DI will remain unused.



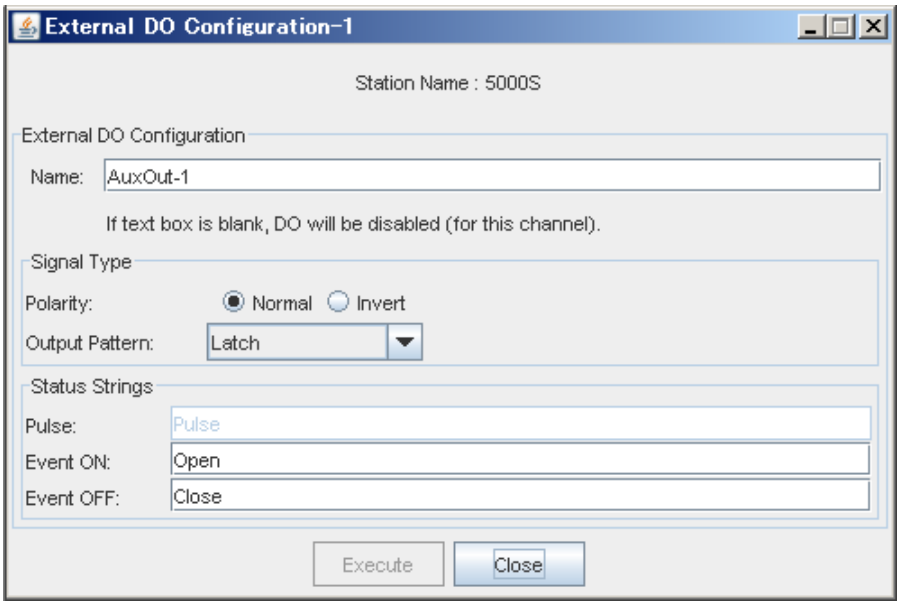
2. Select the desired input condition in the **Condition** section. You can select from the following two (2) choices such as “the alarm is reported when **Event ON** (the selected input terminal is closed loop condition)” or “the alarm is reported when **Event OFF** (the selected input terminal is open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

5.1.2.2 External DO Configuration

The detailed DO configuring is done in the External DO Configuration window.

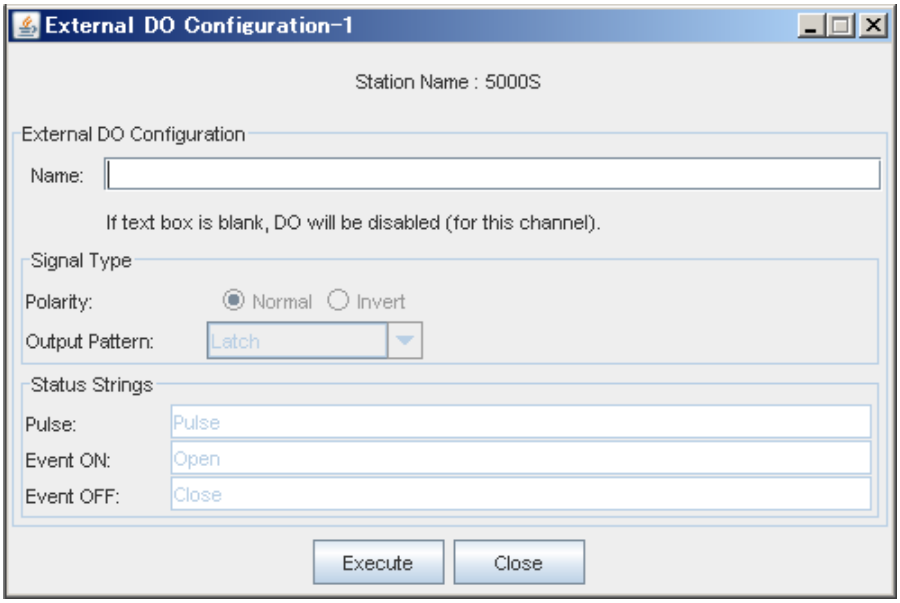
1. Click the **[Output-n]** button in the DO Window.
2. Input items are displayed in the following window:



5.1.2.2.1 Configuration of Output Signal Type and Status String

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

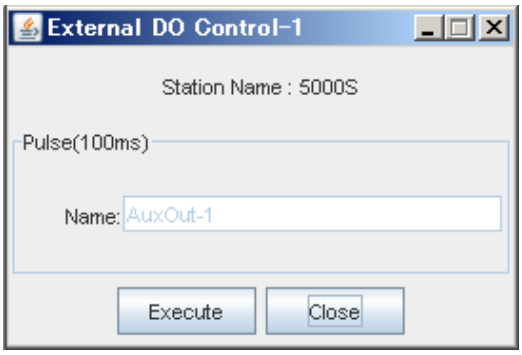
   *By leaving the Name field blank, the Signal Type and Status Strings fields be inactive (displayed in gray shading); whereby, the DO will remain unused.



2. Select from Normal or the desired Invert Polarity in the Polarity column.
3. In the Output Pattern Column, an output pattern is selected from Pulse 100ms, Pulse 1s, Pulse 10s, or Latch by clicking the ▼arrow.
4. When Pulse is selected as Output Pattern, input any desired character string (maximum: 32 characters) in the Pulse column of the Status Strings column.
5. When Latch is selected as Output Pattern, input the desired character string (maximum: 32 characters) corresponding to the field of Event ON of the Status Strings column, and Event OFF as the input status.
6. Click the [Execute] button and save the configuration.
7. After completion, click the **[Close]** button.

5.1.2.3 External DO Control (Pulse)

The DO pulse output is initiated in the External DO Control (Pulse) window.

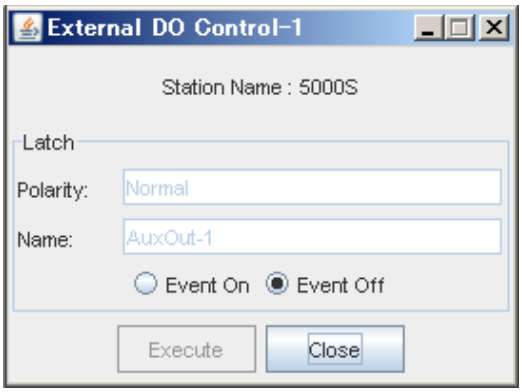


Initiating pulse output:

1. Click the **[Pulse Output-n]** button in DO window.
2. Click and perform the [Execute] button.
3. After completion, click the **[Close]** button.

5.1.2.4 External DO Control (Latch)

DO Latch output can be initiated from the External DO Control (Latch) window.



Initiating latch output:

1. Click the **[Latch Output-n]** button in the DO window.
2. With the radio button at the lowermost part of the Latch column, Event On or Event Off is selected.

LMS relay output configuration

Polarity setting	LMS relay output	
	Event On	Event Off
Normal	close	open
Invert	open	close

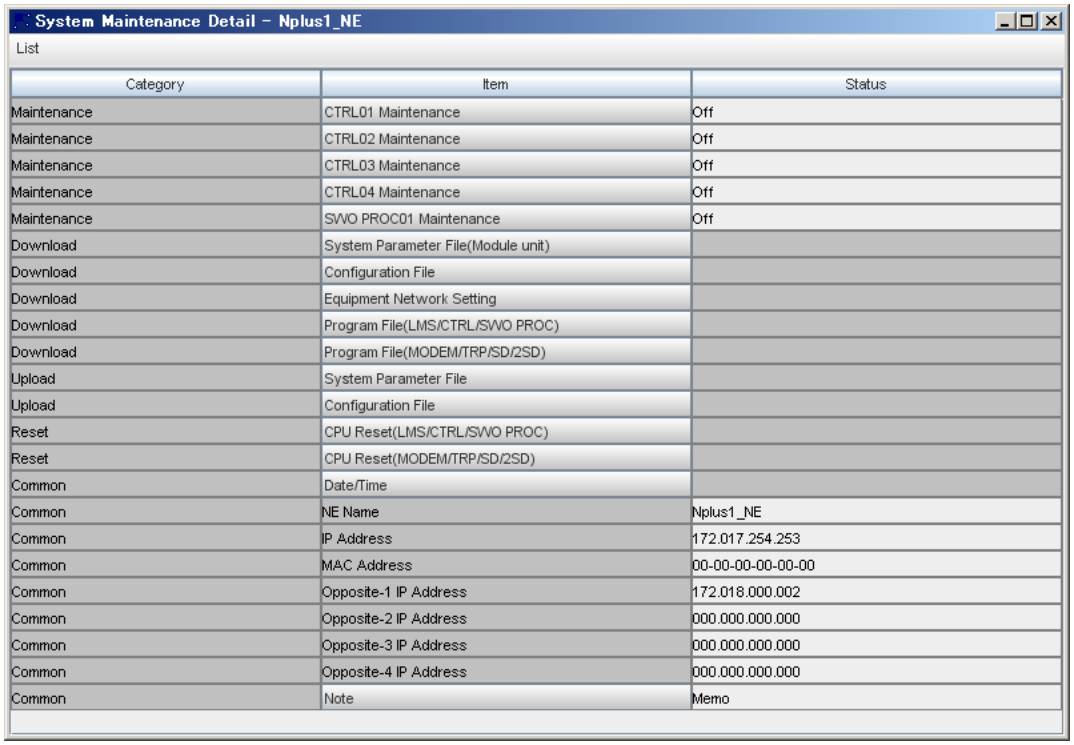
3. Click **[Execute]** button to initiate.
4. After completion click the [**Close**] button.

6 SYSTEM MAINTENANCE

System Maintenance provides functions, such as Maintenance configuration to download/upload equipment configuration files / program files, modular reset, CTRL, and SWO PROC.

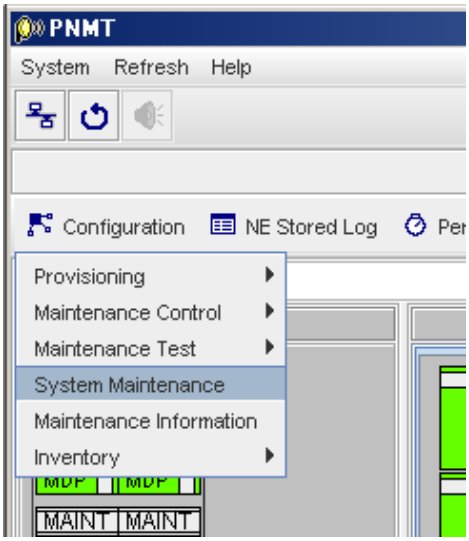
6.1 System Maintenance Detail

The list of system related functions is displayed in the **System Maintenance Detail** window.



Category	Item	Status
Maintenance	CTRL01 Maintenance	Off
Maintenance	CTRL02 Maintenance	Off
Maintenance	CTRL03 Maintenance	Off
Maintenance	CTRL04 Maintenance	Off
Maintenance	SWO PROC01 Maintenance	Off
Download	System Parameter File(Module unit)	
Download	Configuration File	
Download	Equipment Network Setting	
Download	Program File(LMS/CTRL/SWO PROC)	
Download	Program File(MODEM/TRP/SD/2SD)	
Upload	System Parameter File	
Upload	Configuration File	
Reset	CPU Reset(LMS/CTRL/SWO PROC)	
Reset	CPU Reset(MODEM/TRP/SD/2SD)	
Common	Date/Time	
Common	NE Name	Nplus1_NE
Common	IP Address	172.017.254.253
Common	MAC Address	00-00-00-00-00-00
Common	Opposite-1 IP Address	172.018.000.002
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

- It is displayed as follows: Select [Configuration]-[System Maintenance] in NE-Specific Menu Bar.

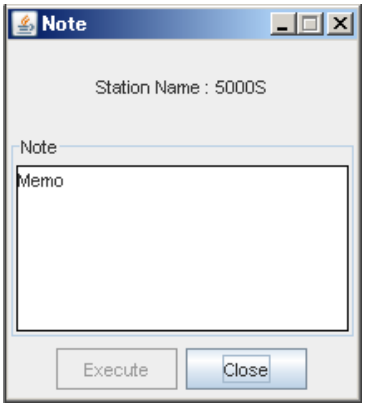


6.1.1 System Maintenance

Item/Feature	Description	Specific conditions for it to be displayed/configured
NE Name	Denotes the individual Network Element	-
IP Address	Denotes the IP Address	-
MAC Address	Denotes the MAC Address	-
Opposite-1 IP Address	Denotes the IP Address of Opposite NE1	-
Opposite-2 IP Address	Denotes the IP address of the Opposite NE2	-
Opposite-3 IP Address	Denotes the IP Address of Opposite NE3	-
Opposite-4 IP Address	Denotes the IP Address of Opposite NE4	-
Note	Denotes an explanatory/cautionary note pertaining to Network Elements	-
Configuration File DL	Denotes a Configuration File download	-
System Parameter File (Module unit)	Denotes a module Parameter File download	-
Program File (MODEM/TRP/SD/2SD)	Denotes download of the indicated program file	-
Program File (LMS/CTRL/SWO PROC)	Denotes download of the indicated program file	-
CPU Reset (LMS/CTRL/SWO PROC)	Denotes CPU module reset	-
CPU Reset (MODEM/TRP/SD/2SD)	Denotes CPU module reset	-
Configuration File UL	Denotes a Configuration File Upload	-
System Parameter File UL	System Parameter File Upload	-
Date/Time	Denotes the time and date setting	-
Equipment Network Setting	Denotes the Network Settings for the various NEs	-
CTRLxx Maintenance	Denotes Maintenance of the respective Control (CTRL)	Only the number of CTRL Modules that exist in the device configuration is displayed.
SWO PROCxx Maintenance	Denotes the Maintenance of SWO PROC	Only the number of SWO PROC Modules that exist in the equipment configuration is displayed.

6.1.1.1 Note

It is possible to input virtually any desired alphanumeric character strings (maximum: 100 characters) as a note.



Note Configuration:

1. Click the [Note] button in the System Maintenance window.
2. Input any desired character string (maximum: 100 characters) in the text field of the Note column within 100 characters.
3. By clicking the [Execute] button, the inputted content is saved in the NE.
4. After inputting is completed, click the [Close] button to close the window.

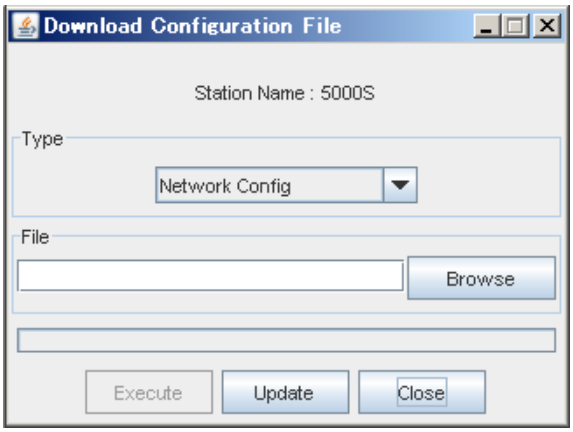
6.1.1.2 Download Configuration File (Network Config/MIB Config)

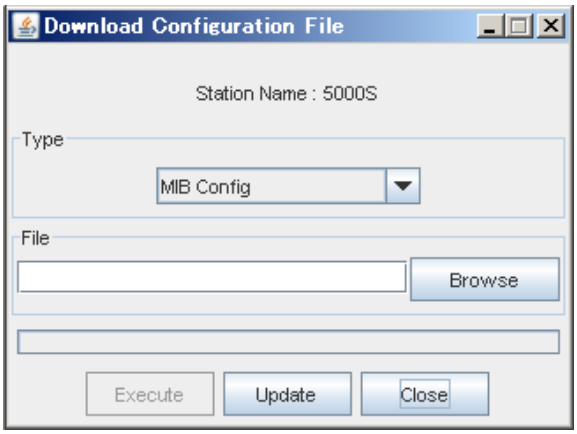
This function is used to download the network configuration files from the PNMT to the LMS module. The network configuration file **5S_network.cfg**, contains the IP address of the target NE and the information about the network where the target NE is located. The **MIB.cfg** file contains relevant information about the equipment (i.e. name, pm type, etc.) and housekeeping (External DI/DO).

*This window is not available when MAINT is OFF.

To download the new configuration file to the LMS:

1. Click **[DL Configuration File]** button in **System Maintenance** window.





2. Select the type of file to be downloaded in the **Type** list.
3. Enter the location of the configuration file in the **File** field, or click **[Browse]** to locate the file on the local hard disk or diskette.

WARNING!!!

Make sure that the correct configuration file is downloaded to the correct Control module. An incorrect configuration file may lead to LMS module or network malfunction/failure.

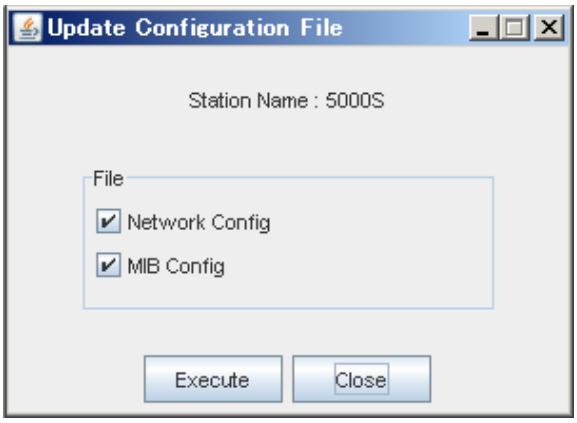
4. Click the **[Execute]** button to start the operation.

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

WARNING!!!

Make sure that you have successfully downloaded the configuration file before executing *Update*. Otherwise the LMS module will switch to an empty ROM that may cause LMS 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 that is to be updated. One or more configuration file (s) can be updated by checking the selection box of the configuration file name. Click **[Execute]** to start the operation.

NOTE

When updating the 5S_network.cfg file, NE-to-NE communication will be lost when the LMS 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 LMS module is reset.

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

6.1.1.3 Download Configuration File (System Parameter Config)

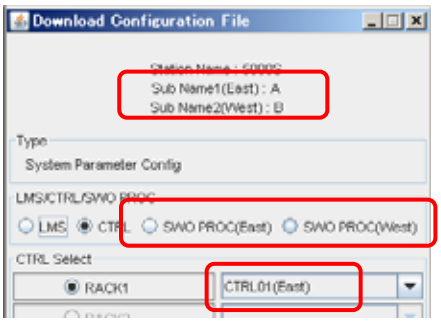
System Parameter files can be individually downloaded to LMS, CTRL, or SWO PROC.

When downloading file over NE already in operation, please Upload System Parameter Configuration File from LMS, CTRL and SWO PROC and Merge those files together by Offline Tool first and then download that merged file over the NE.

* For detail procedure of above mentioned Upload and Merge functions, please refer to "6.2 System Parameter File Setting Operation".

NOTE

For 2 x Terminal configurations, the Sub Name is displayed as shown in the figure below, with SWO PROC and CTRL indicating East and/or West.

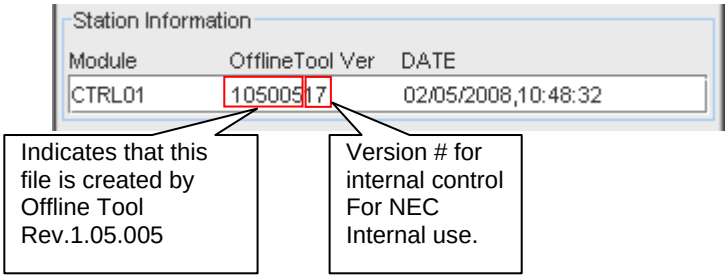


Downloading:

1. Click [DL System Parameter (Module unit)] in the System Maintenance window.
2. Select LMS, CTRL, and SWO PROC01 or SWO PROC02 in the LMS/CTRL/SWO PROC column.

NOTE

When Module is selected by radio button, created date of Configuration file applied to that Module and Version information of Offline Tool which created that file will appear in [Station Information] field.



---

3. When CTRL is selected, specify a Rack number and a CTRL number in the CTRL Select column.

   Input a path into the text field of the File column, or click the [Browse] button, and specify the file on a disk.

NOTE

When configuration file is selected by [Browse] button, selected file information will appear in [System Parameter Information] field. Nothing will appear when file is selected by direct input of path in the File field.

By comparing above information with information shown in Station Information field, version # of System Parameter contents currently loaded on NE and of contents about to be downloaded can be compared.

WARNING!!!

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

---

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

NOTE

During processing, the indicator light for the module being downloaded flashes green. When downloading is complete, the green light stops flashing.

NOTE

This operation may take several minutes depending on the configuration file size.

NOTE

If the download process fails or is disrupted, the indicator light for the respective module being downloaded turns red.

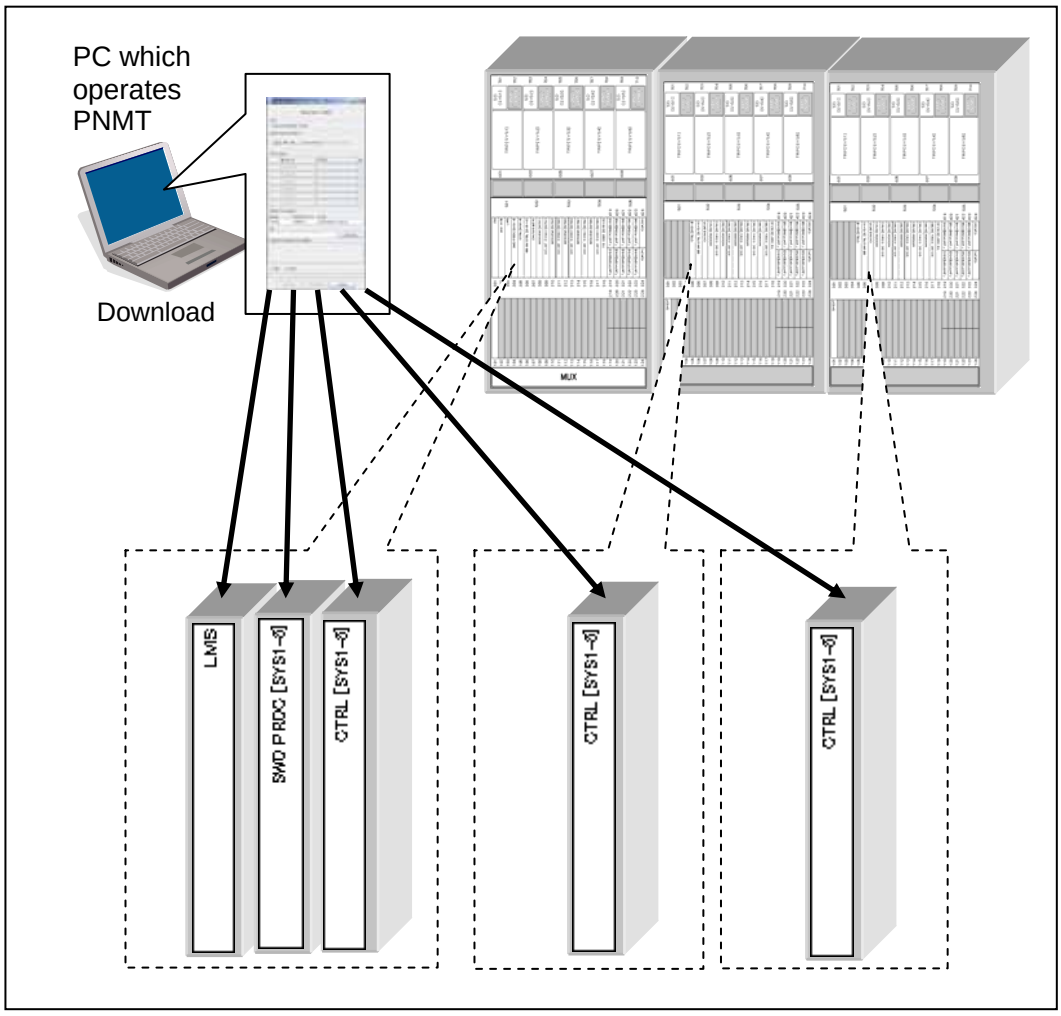
---

5. Since the LMS module will be in a standby state waiting for reset when LMS is selected, click the [CPU Reset] button to display the Reset Control window, and then reset the LMS.
6. After downloading is completed, click the [Close] button to close the window.

Illustrated image of Downloading System Parameter File:

System Parameter File needs to be downloaded to each and every LMS, CTRL and SWO PROC module loaded on NE. With this window, one of LMS, CTRL or SWO PROC is selected and System Parameter file is downloaded to that object.

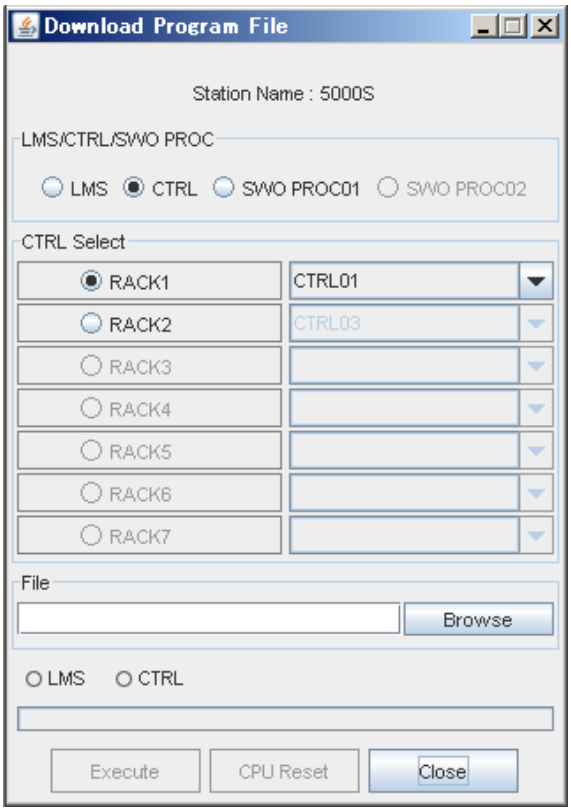
In the example below, 1 LMS, 1 SWO PROC and 3 CTRL are loaded in NE so total of 5 download operations must be done by selecting each module from the Download Configuration File window.



NE can not operate properly when there are discrepancies among System Parameter Files loaded on each module.

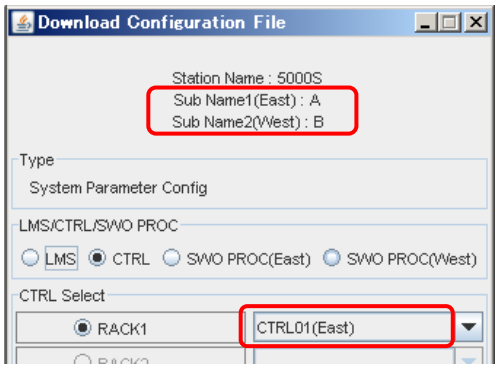
6.1.1.4 Download Program File

Programs can be downloaded to LMS, CTRL, or SWO PROC module.



NOTE

For 2 x Terminal configurations, the Sub Name is displayed as shown in the figure below, with CTRL indicating East or West.



Downloading:

1. Click [DL Program File (LMS/CTRL/SWO PROC)] in the System Maintenance window.

2. Select LMS, CTRL, and SWO PROC01 and SWO PROC02 in the LMS/CTRL/SWO PROC column.

4. When CTRL is selected, select CTRL number from the CTRL Select column.

   Input a path into the text field of the File column, or click the [Browse] button, and specify the file on a disk.

WARNING!!!

Make sure that the correct program file is downloaded to each module. Incorrect program files are liable to cause malfunctions.

---

5. Click the [Execute] button to start processing.

NOTE

During processing, the indicator light for the module being downloaded flashes green. When downloading is complete, the green light stops flashing.

NOTE

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

NOTE

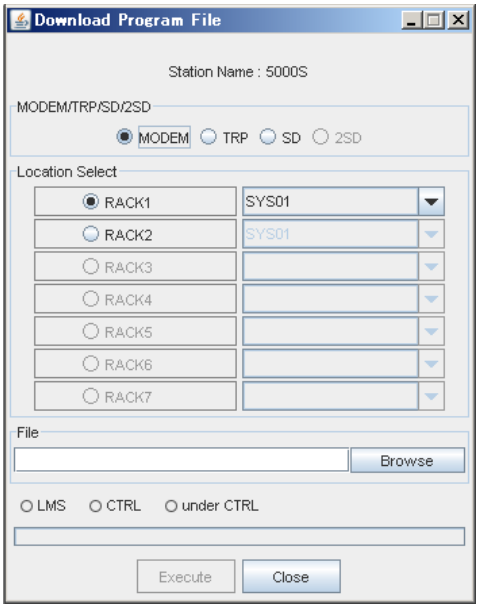
If the download process fails or is disrupted, the indicator light for the respective module being downloaded turns red.

---

6. After downloading is completed, click the [Close] button to close the window.

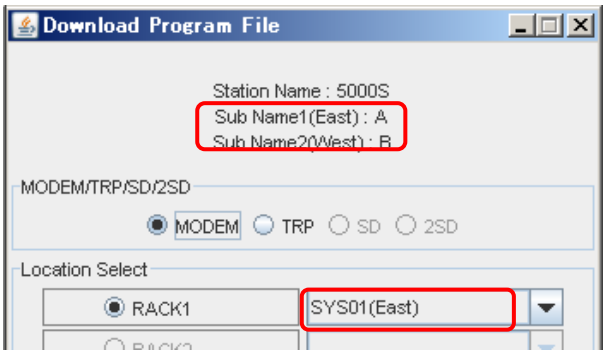
6.1.1.5 Download Program File

Programs from all modules of all SYS(s) can be downloaded to MODEM, TRP and SD, or 2SD.



NOTE

For 2 x Terminal configurations, the Sub Name is displayed as shown in the figure below, with SYS indicating East or West.



Downloading

1. Click [DL Program File (MODEM/TRP/SD/2SD)] in System Maintenance window.
2. Specify RACK Number and SYS Number in the Location Select Column.

   A path is inputted into the text field of the File column, or the [Browse] button is clicked, and the file on a disk is specified.

WARNING!!!

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

---

3. Click the [Execute] button to start processing.

NOTE

During processing, the indicator light for the module being downloaded flashes green. When downloading is complete, the green light stops flashing.

NOTE

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

NOTE

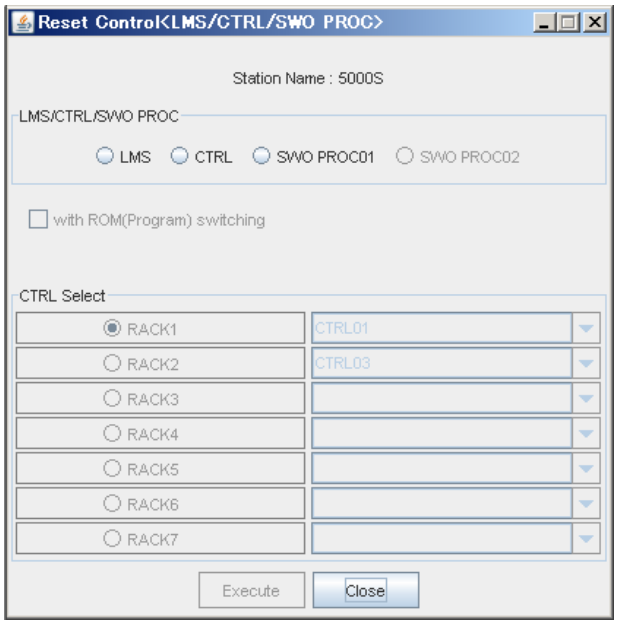
If the download process fails or is disrupted, the indicator light for the respective module being downloaded turns red.

---

4. After downloading is completed, click the [Close] button to close the window.

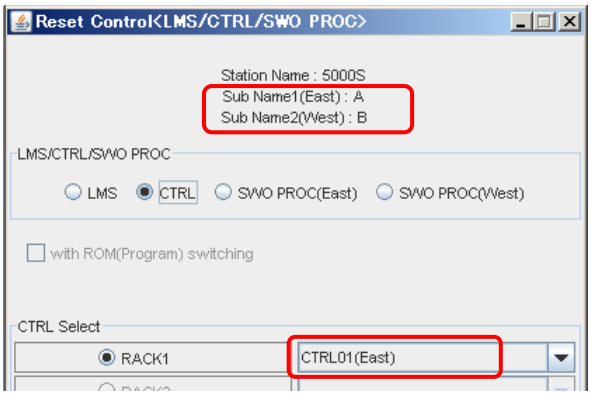
6.1.1.6 CPU Reset (LMS/CTRL/SWO PROC)

By selecting LMS, CTRL, or SWO PROC, the module is reset.



NOTE

For 2 x Terminal configurations, the Sub Name is displayed as shown in the figure below, with CTRL indicating East or West.



Resetting:

1. Click [CPU Reset (LMS/CTRL/SWO PRC)] in the System Maintenance window.
2. Select the module which carries out reset LMS, CTRL, and from SWO PROC01 and SWO PROC02 in the LMS/CTRL/SWO PROC column.
3. If a check is put into a "with ROM (Program) switching" check box when LMS is selected, bank will be changed after downloading.
4. When CTRL is selected, select a RACK number and a CTRL number from the CTRL Select column, and specify the CTRL module to be reset.
5. Click the [Execute] button and perform reset.

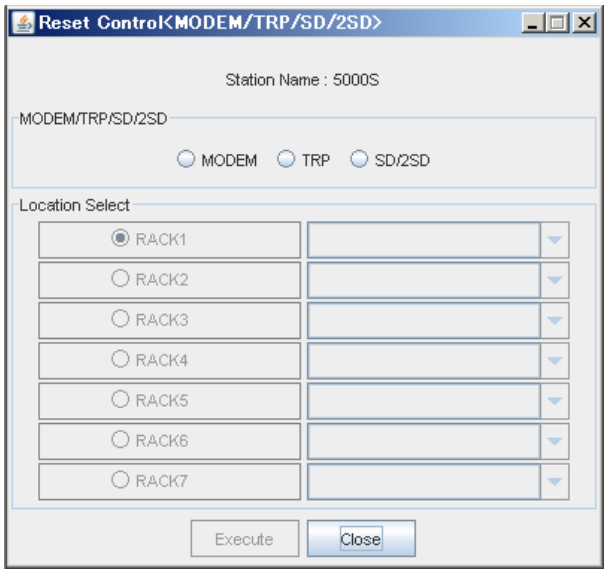
NOTE

When LMS is selected, connection with NE is disrupted for several minutes. When CTRL or SWO PROC is selected, connection between LMS~CTRL/SWO PROC is disrupted for several minutes.

6. After completion, click the [Close] button to close the window.

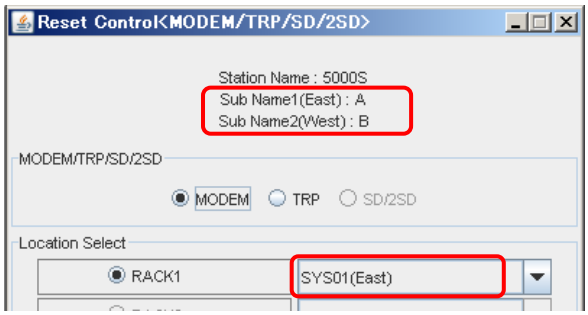
6.1.1.7 CPU Reset (MODEM/TRP/SD/2SD)

It resets to a certain MODEM of SYS, TRP, or SD/2SD.



NOTE

For 2 x Terminal configurations, the Sub Name is displayed as shown in the figure below, with SYS indicating East or West.



Resetting:

1. Click [CPU Reset (MODEM/TRP/SD/2SD)] from the System Maintenance window.
2. From the MODEM/TRP/SD / 2SD columns the classification of the module to be reset is selected by specifying MODEM, TRP, or SD/2SD.
3. Specify a RACK number and a SYS number in the Location Select column, and select the SYS to reset.
4. Click the [Execute] button and perform reset.

NOTE

The main signal is turned off when this operation is carried out.

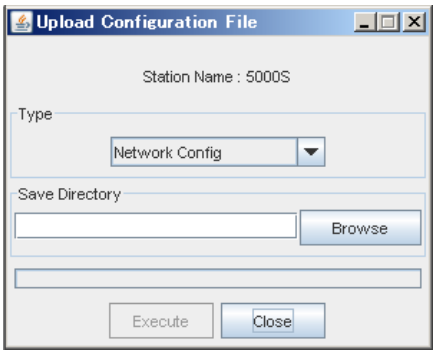
5. After completion, click the [Close] button to close the window.

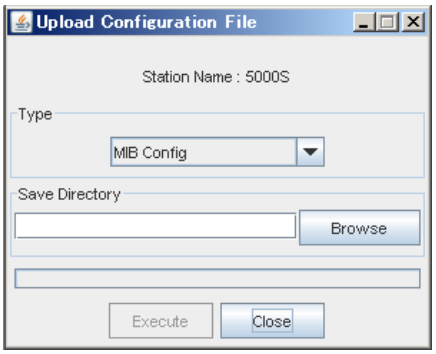
6.1.1.8 Upload Configuration File

This feature 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 System Maintenance window.



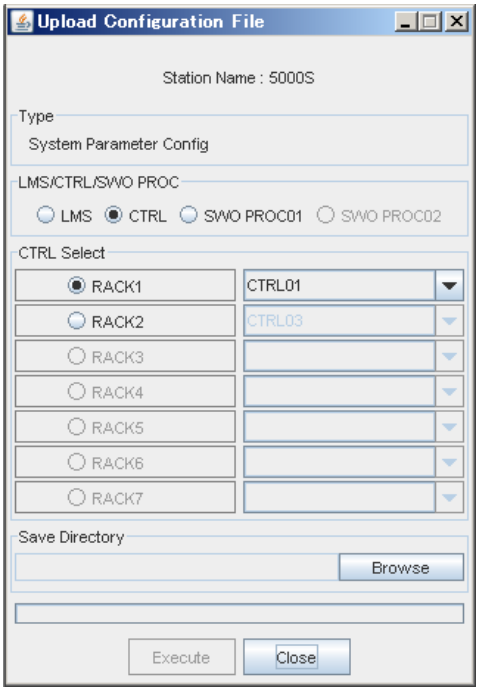


2. Select the type of file to be uploaded in the **Type** field.
3. Enter the desired file name for the uploaded file. Then, select directory where the uploaded file is to be saved.
4. Click the **[Execute]** button to start the operation.
5. A message window indicating the status of the operation will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

6.1.1.9 Upload Configuration File (System Parameter Config)

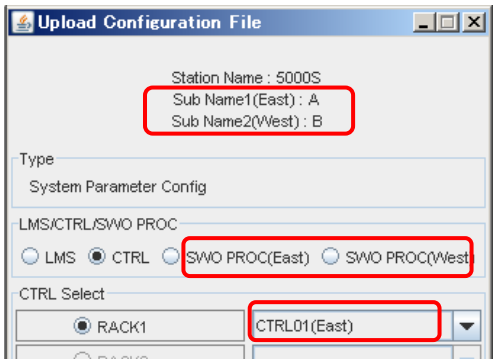
One module of LMS, CTRL, and SWO PROC is selected, and the required System Parameter file is uploaded.

Uploaded files include values which can only be configured by PNMTj and can not be handled by the Offline Tool. Thus, Upload function is needed in order to merge those values into the System Parameter Configuration file by the use of Merge function of the Offline Tool.



NOTE

For 2 x Terminal configurations, the Sub Name is displayed as shown in the figure below, with SWO PROC and CTRL indicating East and/or West.



Uploading

1. Click the [UL System Parameter File] button in the System Maintenance window.
2. Select the module to upload from the LMS/CTRL/SWO PROC column.
3. When CTRL is selected, select a RACK number and a CTRL number from the CTRL Select column, and specify CTRL for upload.

4. Click the **[Execute]** button to start the operation.
5. After the upload is finished, click the **[Close]** button.

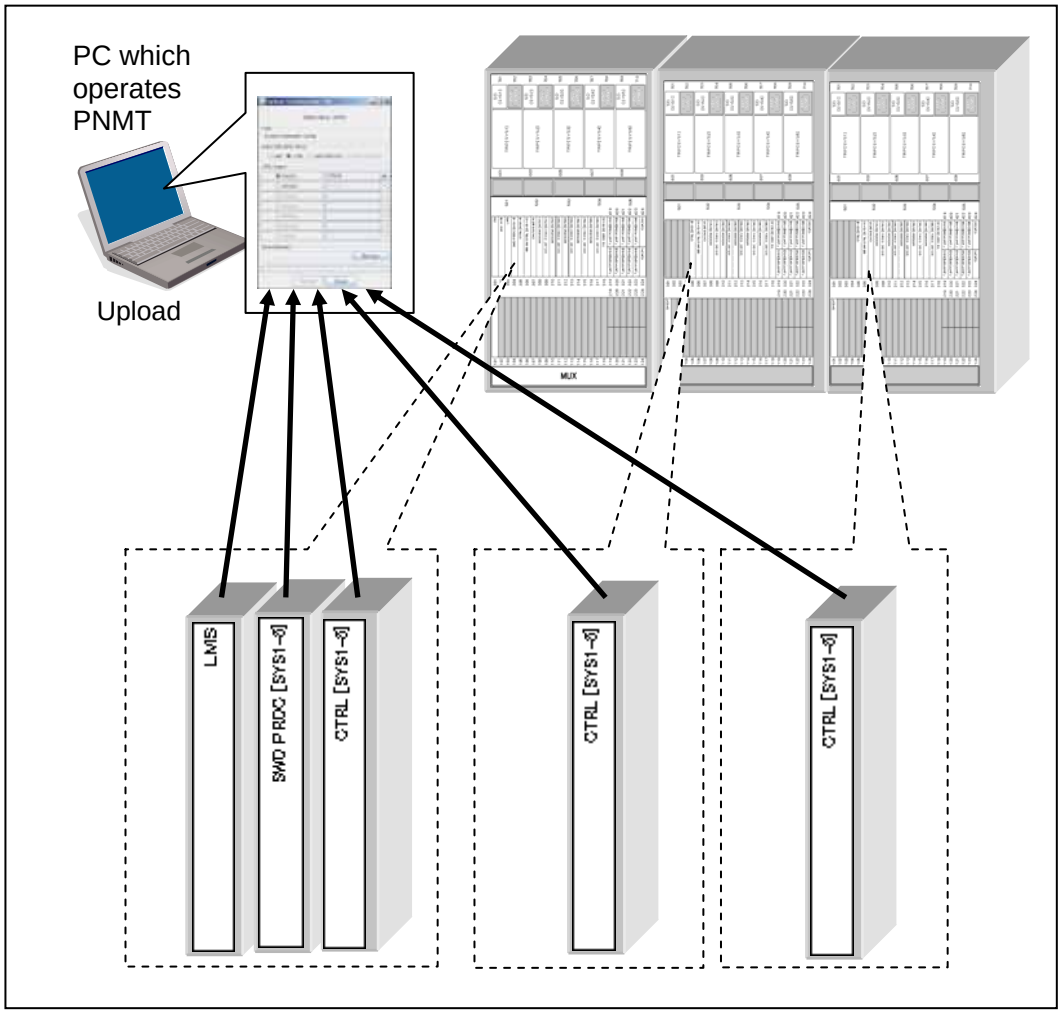
Illustrated Image of System Parameter File Upload:

With this window, System Parameter file can be uploaded from one single LMS, CTRL or SWO PROC selected. Since contents of system Parameter File kept in each module are different, Upload must be done from all LMS, CTRL and SWO PROC modules that are actually loaded on NE.

By using Merge function of Offline Tool, file obtained by Uploading can be restored into the original SysparaConf.dat file format.

* Please refer to section "3.5 Merge" of Offline Tool Operation Manual (for 5000S) for more details.

In the example below, since 1 LMS, 1 SWO PROC and 3 CTRL are loaded in NE, total of 5 upload operations must be done by selecting each module from Upload Configuration File window.

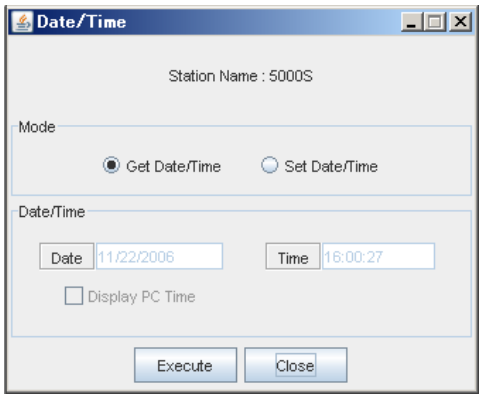


6.1.1.10 Date/Time

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

To set the Date/Time:

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



NOTE

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

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

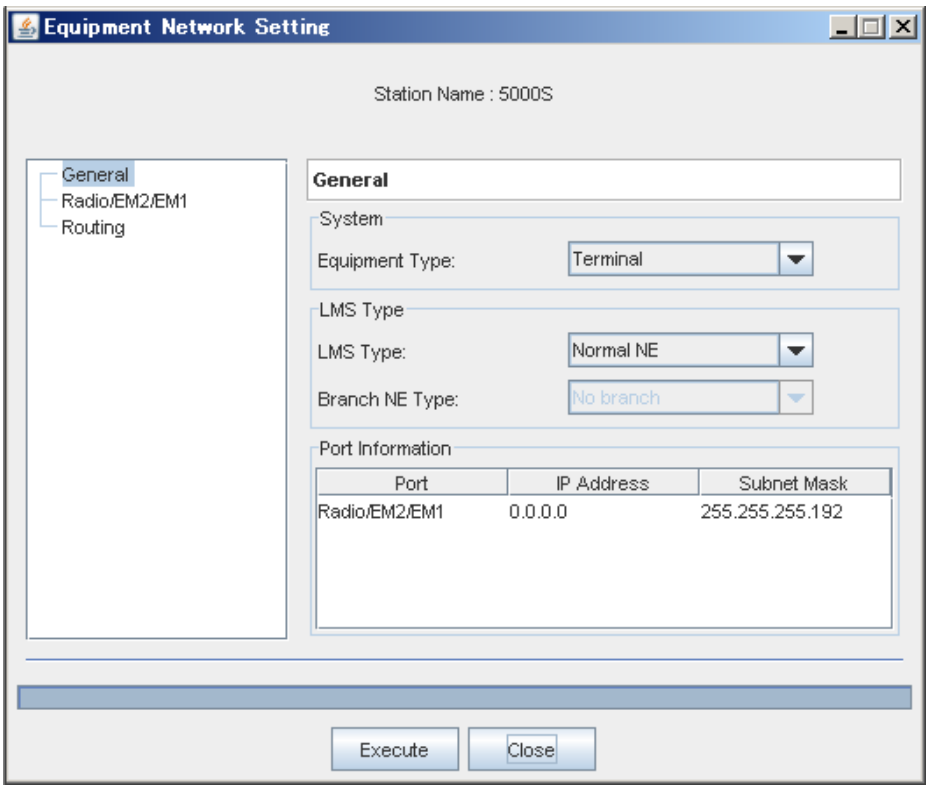
3. To set the Date and Time on the Control module:

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

6.1.1.11 Equipment Network Setting

In order to perform *Auto Discovery* or Network functions, respectively, on PNMS and PNMT, it is necessary to first connect PNMT to each NE to configure Network settings.

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



For details refer to **Appendix A**.

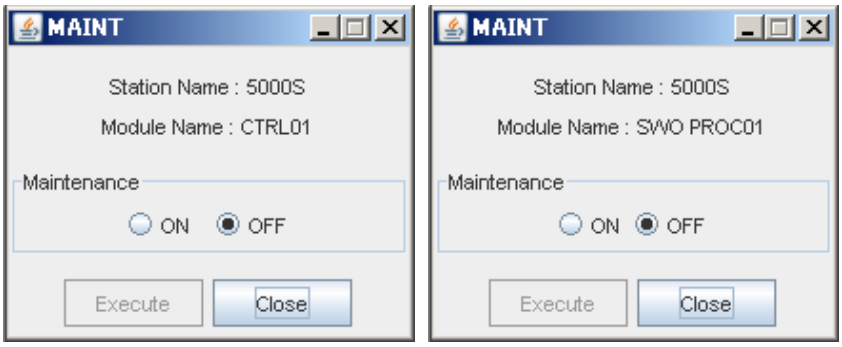
NOTE

Since, the following IP addresses are reserved for NEC's Radio Equipments, they cannot be set in this window's IP address column.

Reserved IP addresses	Item
172.17.251.XXX	Unnumbered PPP IP Address
172.17.252.XXX	Unnumbered Async/ LAN IP Address
172.17.254.253	PNMT IP Address
172.17.254.254	PNMT IP Address

6.1.1.12 MAINT

Configuration/release in Maintenance mode is performed on the CTRL or SWO PROC module.



The Maintenance mode setting:

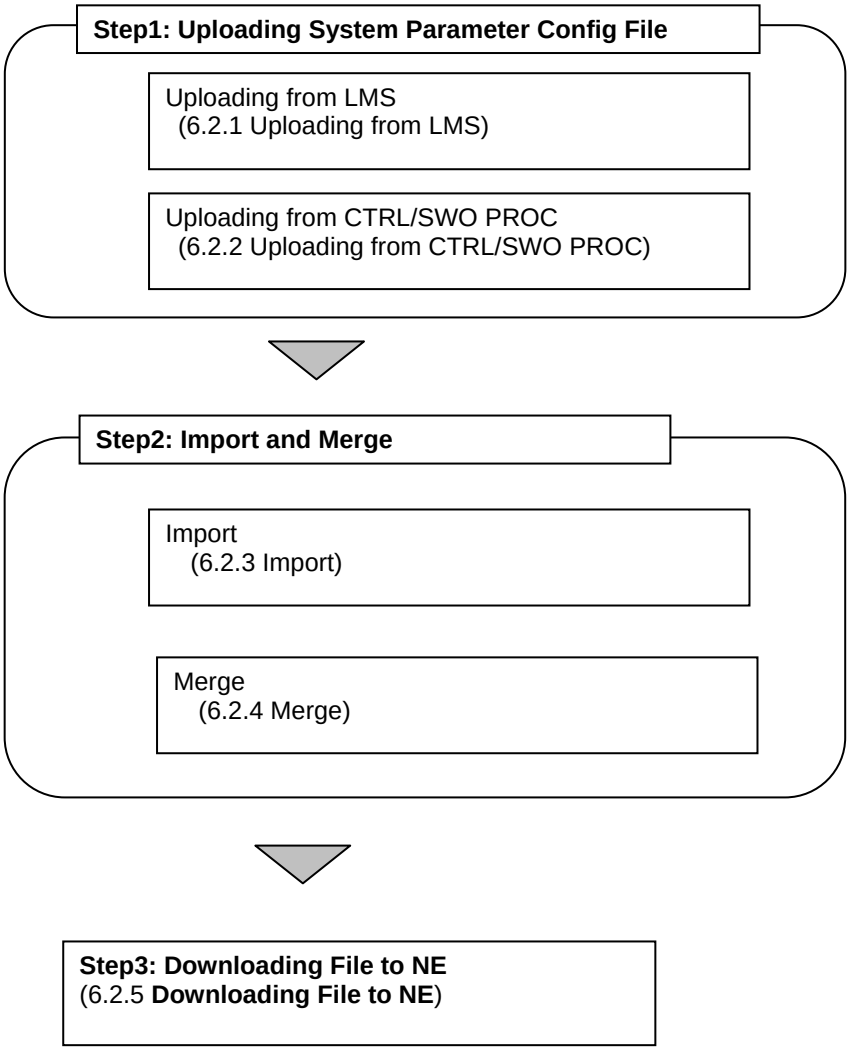
1. Click [CTRL** Maintenance] or [SWO PROC** Maintenance] button of System Maintenance window.
2. Select on **ON/OFF** depending on desired state.
3. Click the **[Execute]** to implement the command.
4. Click the **[Close]** button when finished.

6.2 System Parameter File Setting Operation

SysparaConf.dat downloaded to 5000S can be obtained by uploading from PNMT. By importing the obtained files into the Offline Tool, reconfiguration with the Offline Tool backed-up by the latest, up-to-date setting retrieved from NEs can be made possible.

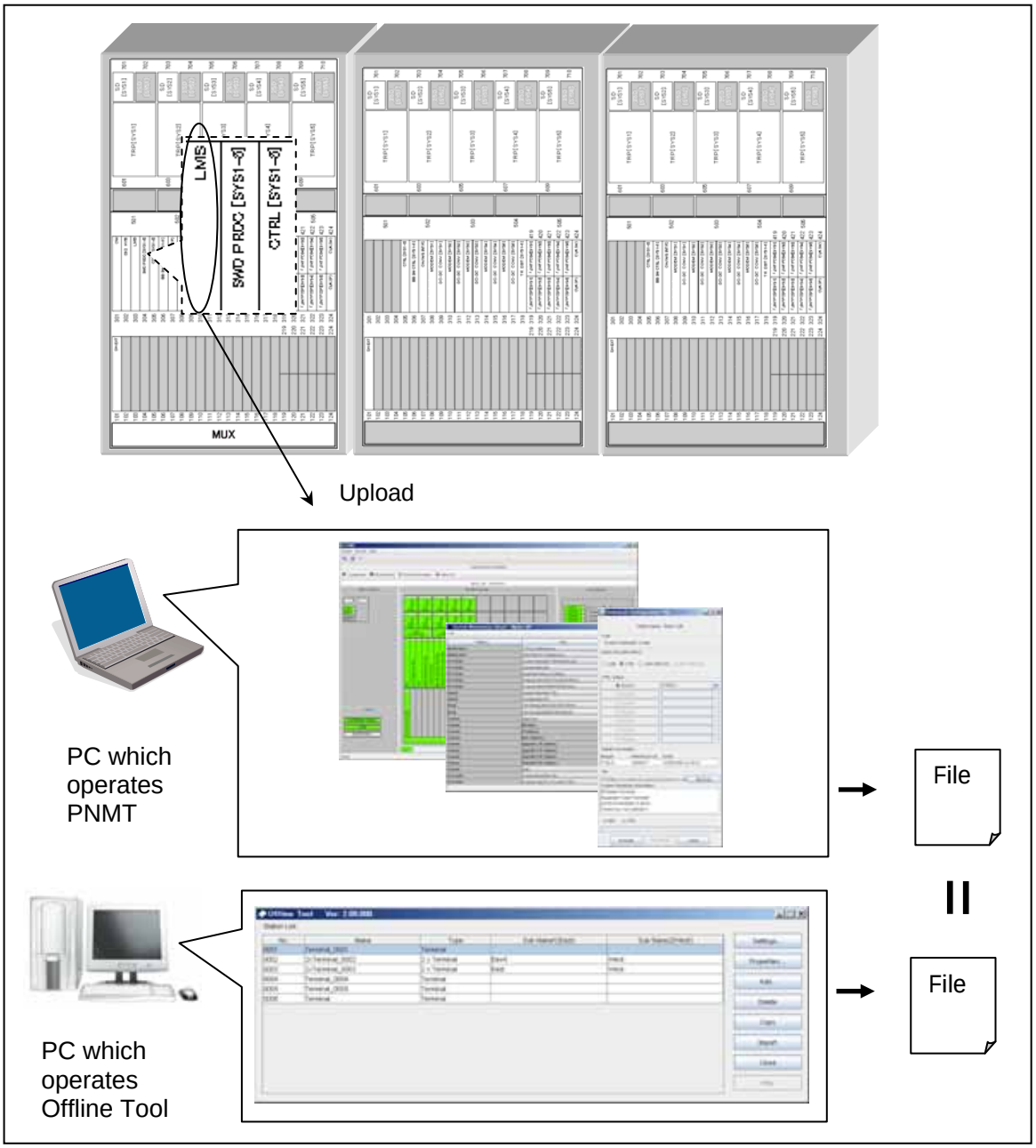
SysparaConf.dat uploaded from LMS is taken in by Import function.

SysparaConf.dat uploaded from CTRL/SWO PROC are taken in by Merge function.



6.2.1 Uploading from LMS

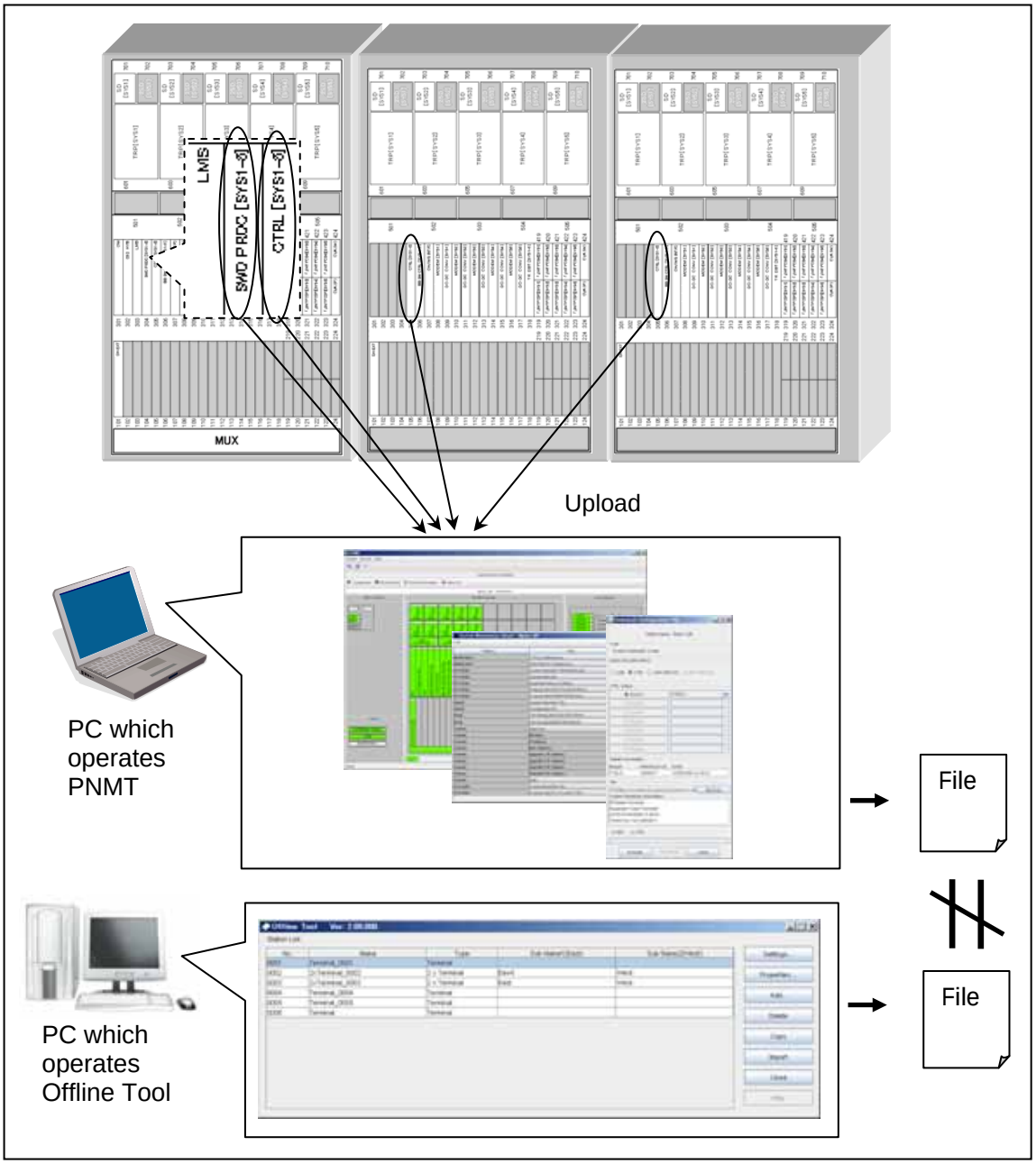
SysparaConf.dat files created by Offline Tool are kept within LMS exactly as is in the image those were created. Files obtained here can be taken into the Offline Tool just the way those are. To do so, Import function is used.



6.2.2 Uploading from CTRL/SWO PROC

Only a part of SysparaConf.dat created by Offline Tool related to each NE is stored within CTRL and SWO PROC. Even if those files are uploaded from PNMT, those can not be taken into the Offline Tool as is.

Those obtained files can be formatted into the original SysparaConf.dat format by using Merge function so that those can be uploaded into the Offline Tool.

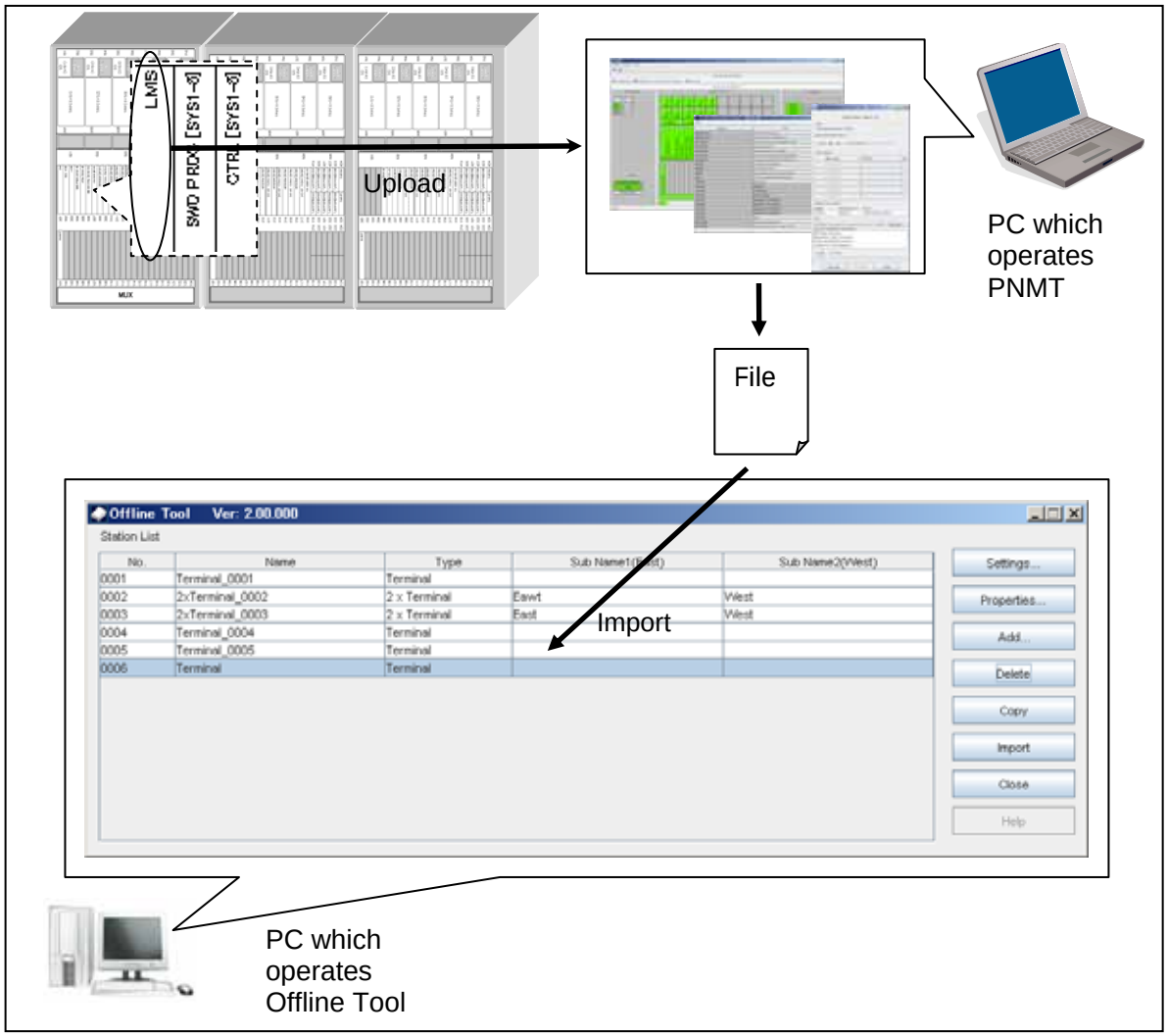


6.2.3 Import

This is a function to create a new station file in Offline Tool by using uploaded SyapraConf.dat file. In case the station file kept in Offline Tool is lost for any reason, if uploaded files from NE are available, it can be reinstated by using this function.

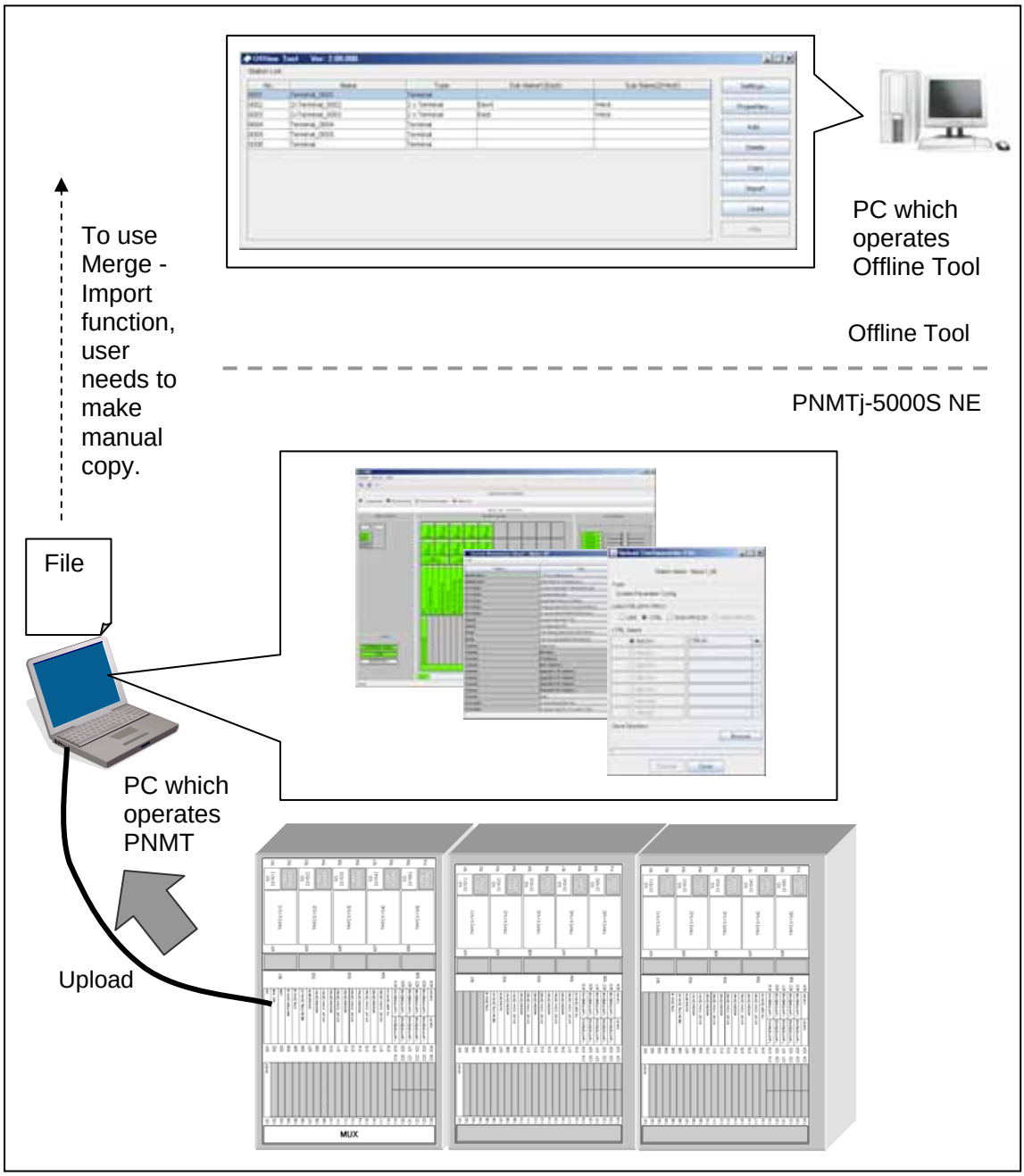
NOTE

To use this function, LMS F/W version of NE must be 2.0.0 or higher. Any files uploaded from LMS with prior version can not be used with Import function.



6.2.4 Merge

User needs to uploaded files from CTRL and SWO PROC onto PNMS/PNMT manually copy to the Merge folder of Offline Tool.

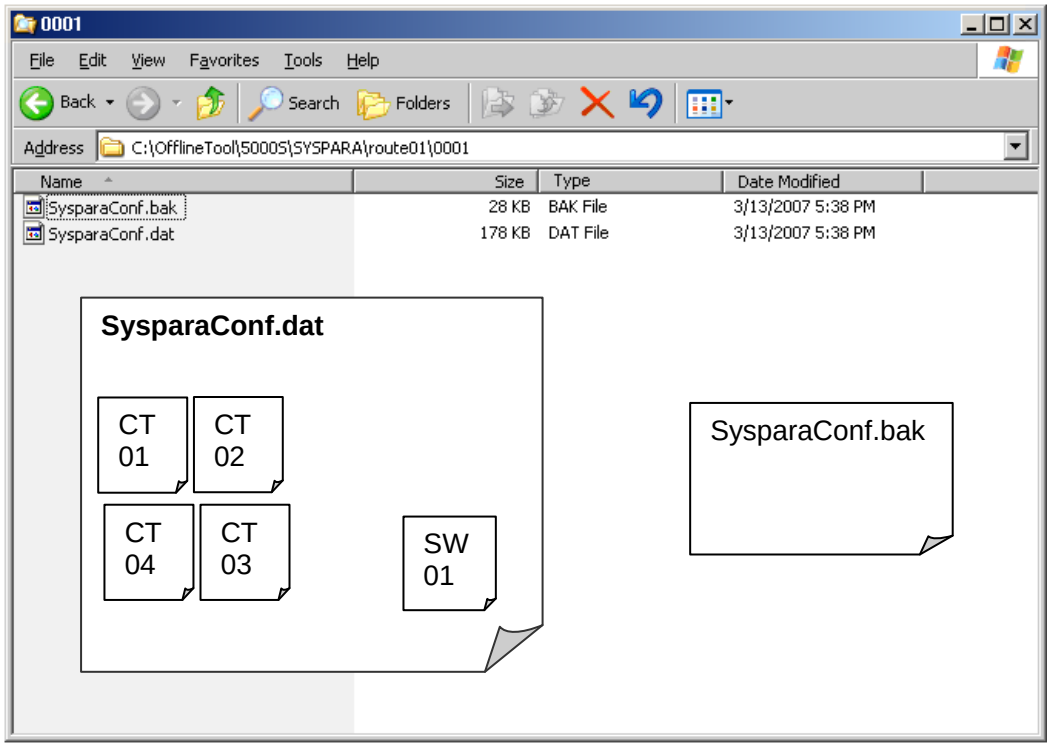


Merge folder will be created under the following name.

/<5000S Offline Tool installation folder>/5000S/SYSPARA/route01/Merge/

Depending on the NE configuration, there might be multiple numbers of CTRL and SWO PROC modules. It is recommended to prepare files from all panels and upload all at once but merge can be done with missing files. In that case, contents of missing modules will be all set to its default value.

After the merger, Online data(settings done by PNMS/PNMT) uploaded from NE are included in SysparaConf.dat. Also, the original SysparaConf.dat will be renamed and saved as SysparaConf.bak.

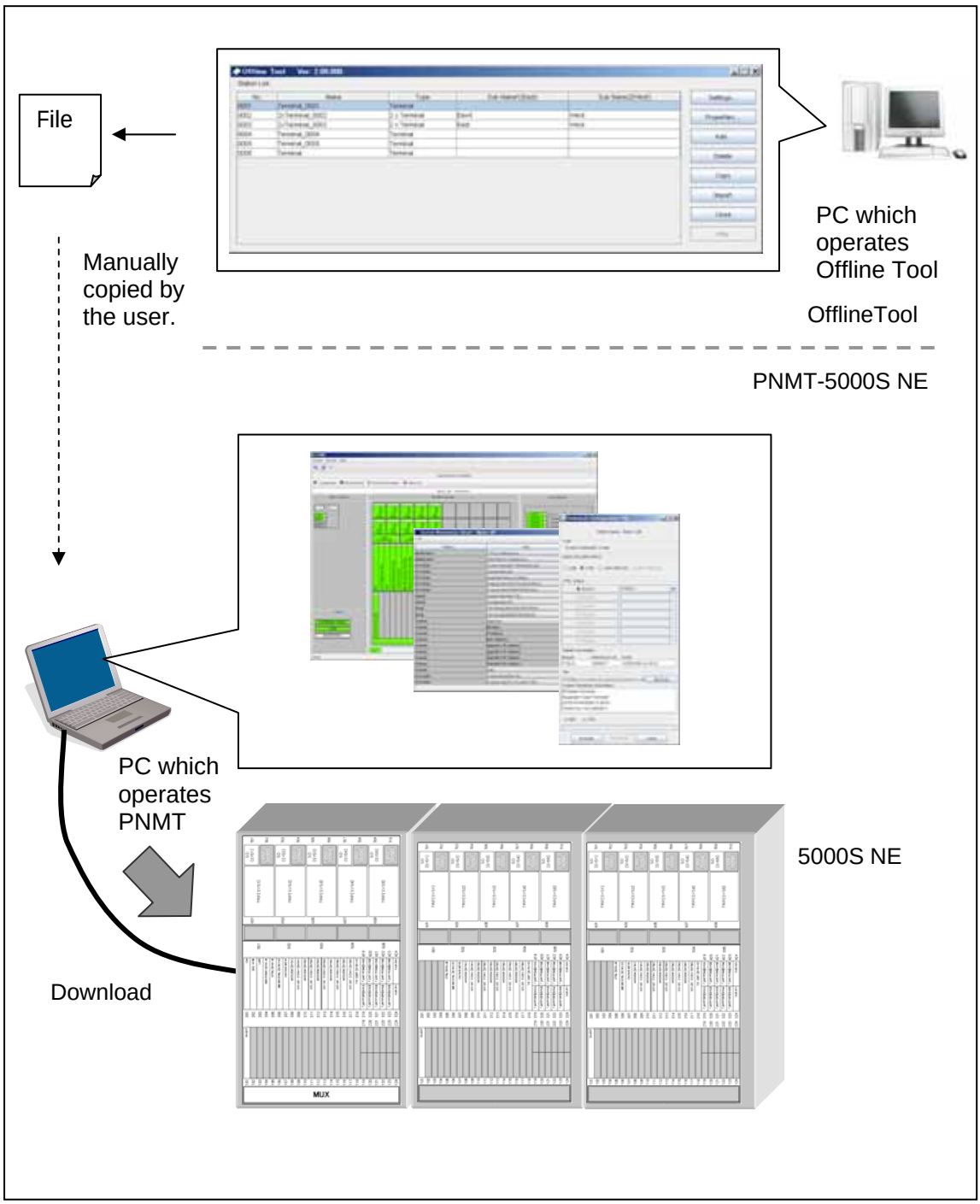


After Merge, Parameter changed by PNMS/PNMT will be kept in System Parameter File. Thus, if System Parameter File after application of Merge function is downloaded, any changes made by PNMS/PNMT can also be reflected over the system again.

6.2.5 Downloading files to the NE

By downloading the System Parameter File (created with the Offline Tool), via PNMT or PNMS to the NE the respective settings will become valid.

For detailed explanation of downloading, refer to *PNMT (Java version) Operation Manual (for 5000S).*



7 PROVISIONING

7.1 MENU

Following items are available for detailed setting

UNIT	MODULE	ITEM
TRP	TRP	RSL for TCS
		ATPC TX Minimum Level
		ATPC TX Maximum Level
		ATPC Alarm Action
MDP	OW	ATPC RSL Threshold Level
		Encoding Law
		OOW, EOW, GRP Call No.
	DIG HYB	Encoding Law
		OOW CH1-4
		EOW CH1-4
		CLK Mode
		CH2 Interface Select
	SWO PROC	Line Priority
		Sending End Line
		Receiving End Line
		Manual Switching
		Switch-Over Mode
		Counter Setting at Manual Switching
		PSWO Alarm Waiting Timer
		PPF Alarm Waiting Timer
		Exerciser Start Timer
		Exerciser Cycle
	BB SW CTRL	SYS A-E
		Lock-in Mode Usage
		Count
		Detect Time
		Hold Time
		Signal Fail (P) Priority
		Auto Exerciser
		Signal Degrade Usage
	CLK	(No Items in RST mode)
	OH EXT	LAN(SC) Speed & Duplex
		LAN(SC) Flow Control
		LAN(SC) Collision Report
		LAN(SC) Link Loss Forwarding
		LAN(SC) Link Down Control
		LAN(WS) Speed & Duplex
		LAN(WS) Flow Control
		LAN(WS) Collision Report
		LAN(WS) Link Loss Forwarding
		LAN(WS) Link Down Control
	CTRL	Alarm Correlation
		CTRL External DO Configuration
	MODEM	HOP High BER Alarm (50% Activation)
		Section Low BER Alarm (50% Activation)
		Section High BER Alarm (50% Activation)
		Early Warning (50% Activation)
		PMON SES Threshold
		ATDE Setting
		Error Pulse Selection

UNIT	MODULE	ITEM
	OPT INTFC/ 150M INTFC	Signal Degraded (B1) from MUX / DMR
		Excessive BER (B1) from MUX DMR
		Automatic Laser Shutdown
		Section Trace (J0) Mode (Fm/To MUX / DMR)
		J0 Select (Fm/To MUX / DMR)
		Transmit Pattern (Fm/To MUX / DMR)
		Expected Pattern (Fm/To MUX / DMR)
		Monitor Requirement (Fm/To MUX / DMR)
		PMON SES Threshold

7.2 CONFIGURATION METHOD

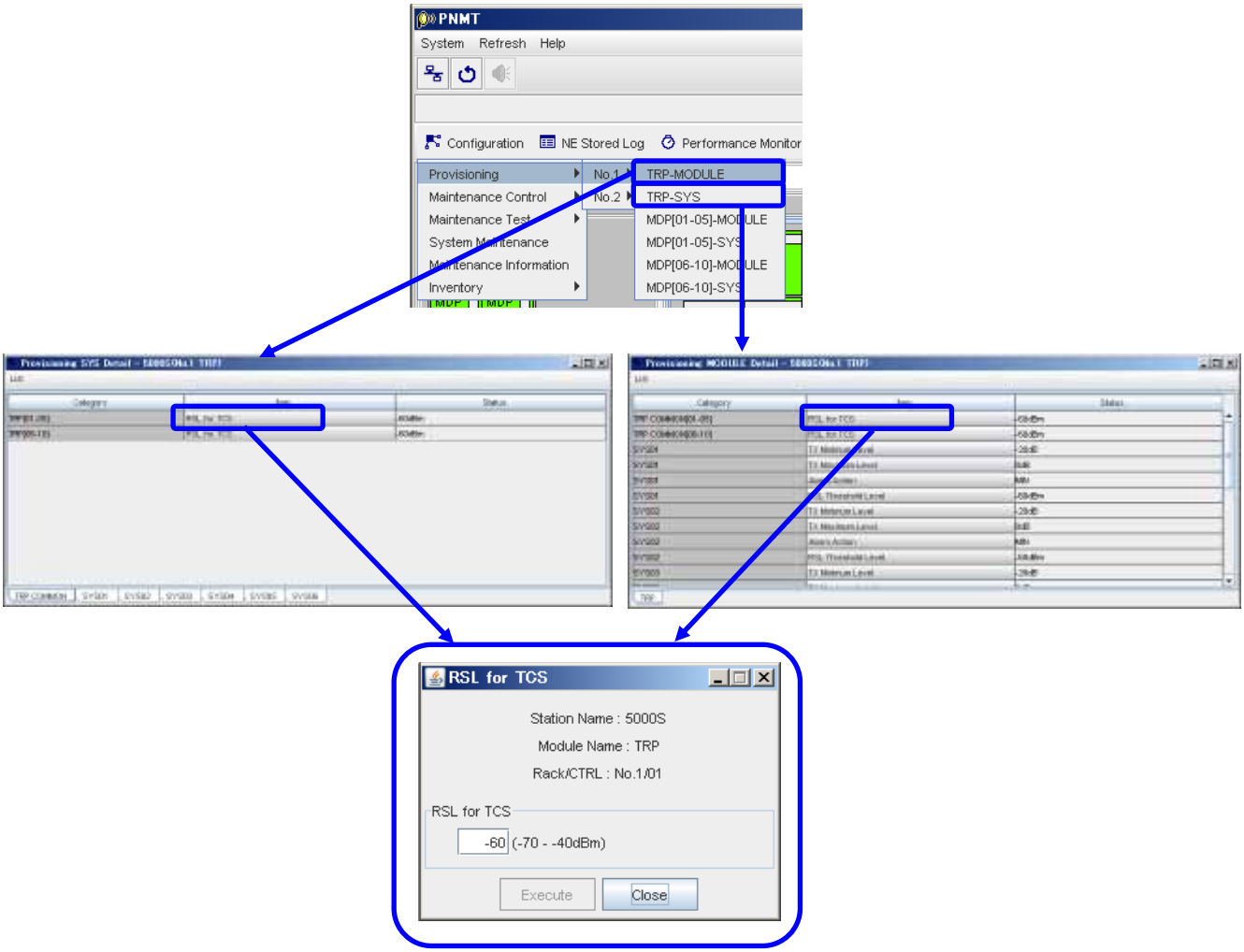
7.2.1 METHOD-1: Common configuring of all SYS

1. Select "Configuration" "Provisioning" "No. X" "TRP-MODULE" or "MDP [XX-XX]-MODULE" from NE Specific Menu Bar, then the following "MODULE Detail" window appears.
2. Select the MODULE Tab, and click the Item button, then the following Provisioning window appears.
3. Select the parameter or input the value and click "Execute" button then repeat for applicable items.

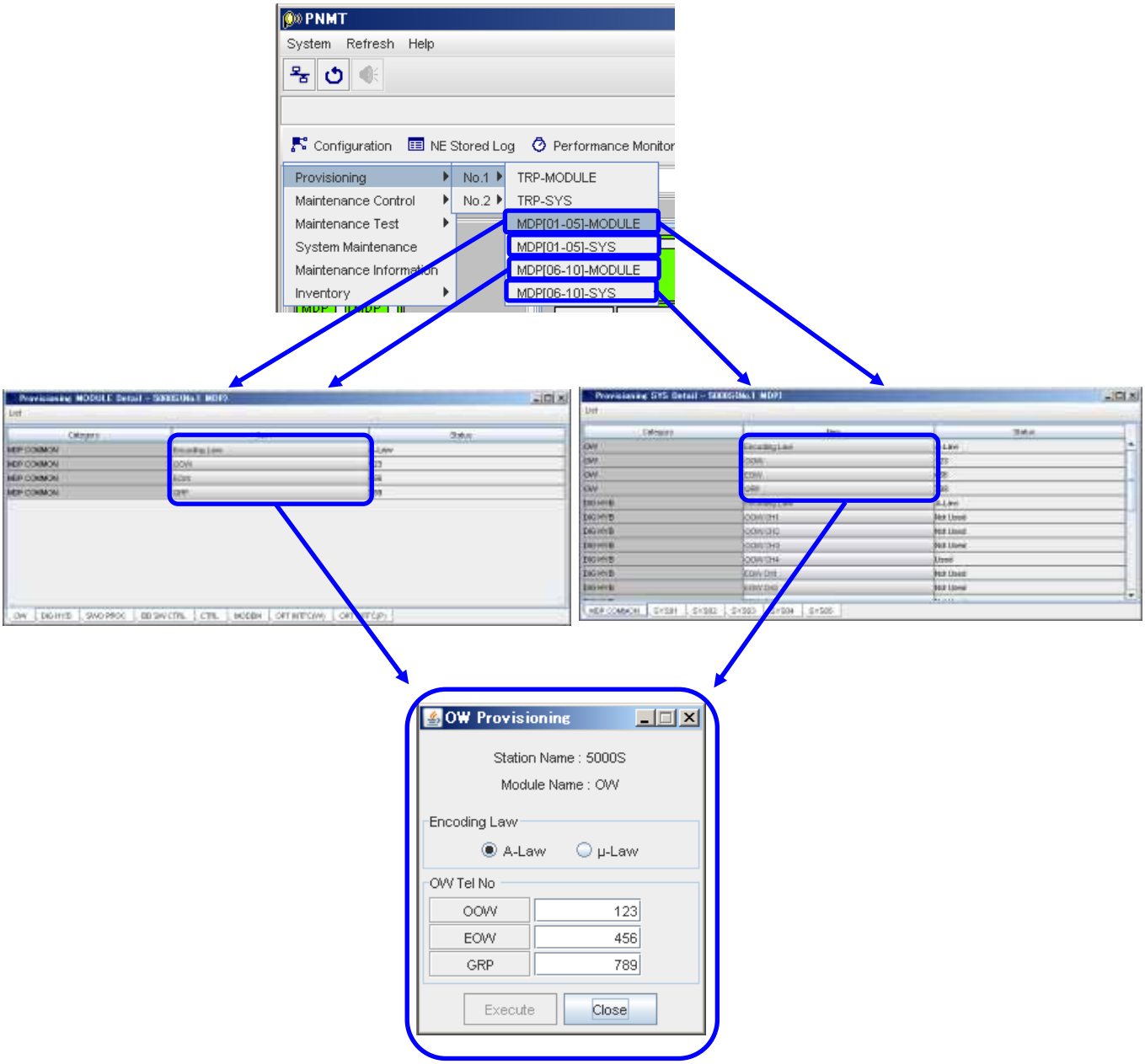
7.2.2 METHOD-2: Independent configuring of each SYS

1. Select "Configuration" "Provisioning" "No. X" "TRP-SYS" or "MDP [XX-XX]-SYS" from NE Specific Menu Bar, then the following "SYS Detail" window appears.
2. Select the SYS Tab, and click the Item button, then the following Provisioning window appears (same window as above).
3. Select the parameter or input the value and click "Execute" button then repeat for applicable items.

Example for moving module to TRP Provisioning window

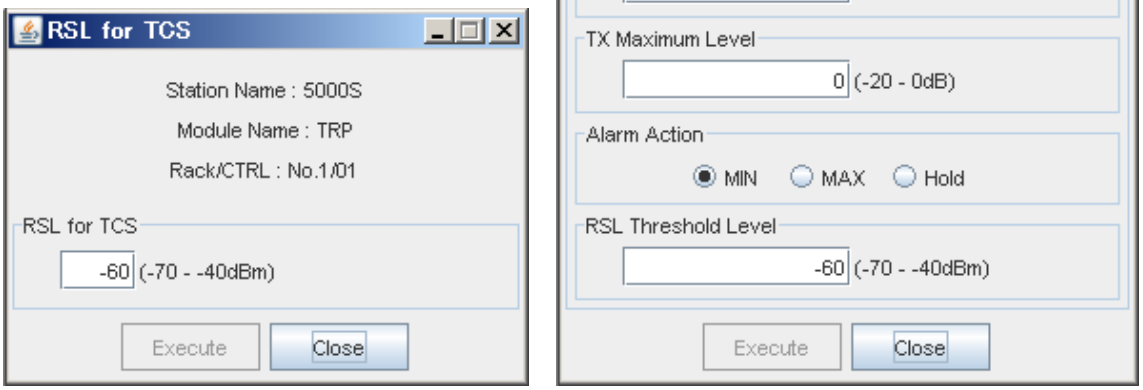


Example for moving module to MDP Provisioning window



7.3 Details

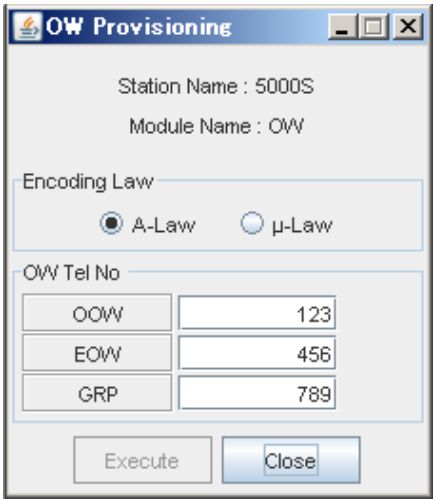
7.3.1 Transmitter and Receiver



UNIT	MODULE	ITEM	DESCRIPTION	PARAMETER
TRP	TRP	RSL for TCS	"Receive Signal Level" threshold for starting the Threshold Crossed Second counting	-70 to -40 dBm
		ATPC TX Minimum Level	Minimum TX level threshold for ATPC level decrease control from opposite equipment	Nominal Level -20 to 0 dB
		ATPC TX Maximum Level	Maximum TX level threshold for ATPC level increase control from opposite equipment	Nominal Level -20 to 0 dB
		ATPC Alarm Action	TX level control method during the ATPC alarm condition	MIN / MAX / Hold
		ATPC RSL Threshold Level	"Receive Signal Level" threshold for starting the ATPC	-70 to -40 dBm

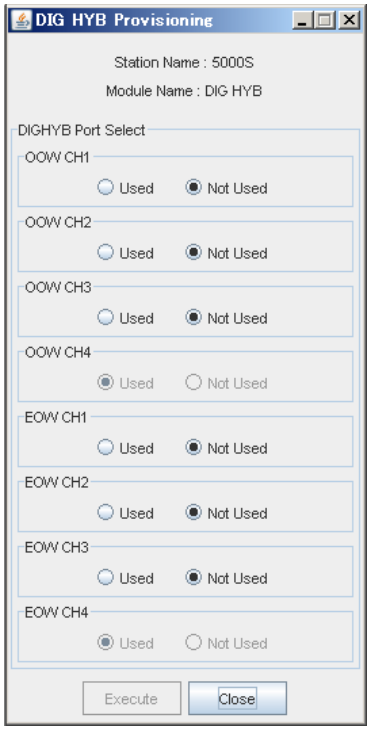
NOTE *1: ATPC TX Minimum Level < ATPC TX Maximum Level

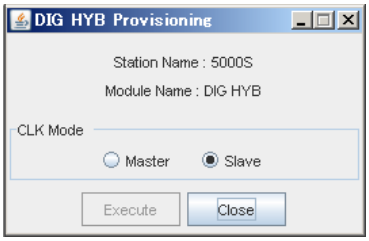
7.3.2 Orderwire

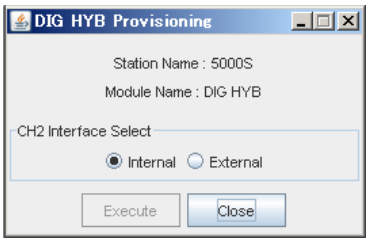


UNIT	MODULE	ITEM	DESCRIPTION	PARAMETER
MDP	OW	Encoding Law	Pulse code modulation law	A-Law / u-Law
		OOW	Omnibus Orderwire Calling No.	NNN (3 digit basis)
		EOW	Express Orderwire Calling No.	NNN (3 digit basis)
		GRP	Group Orderwire Calling No.	NNN (3 digit basis)

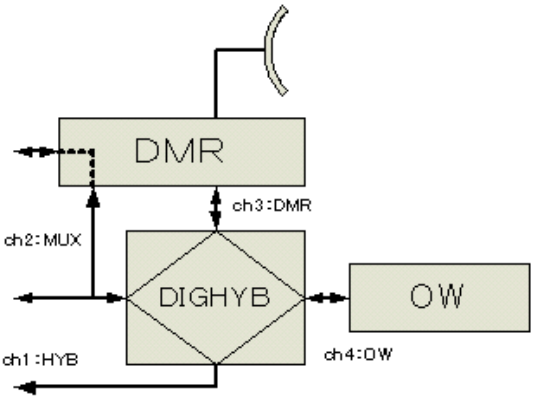
7.3.3 Orderwire Digital Hybrid



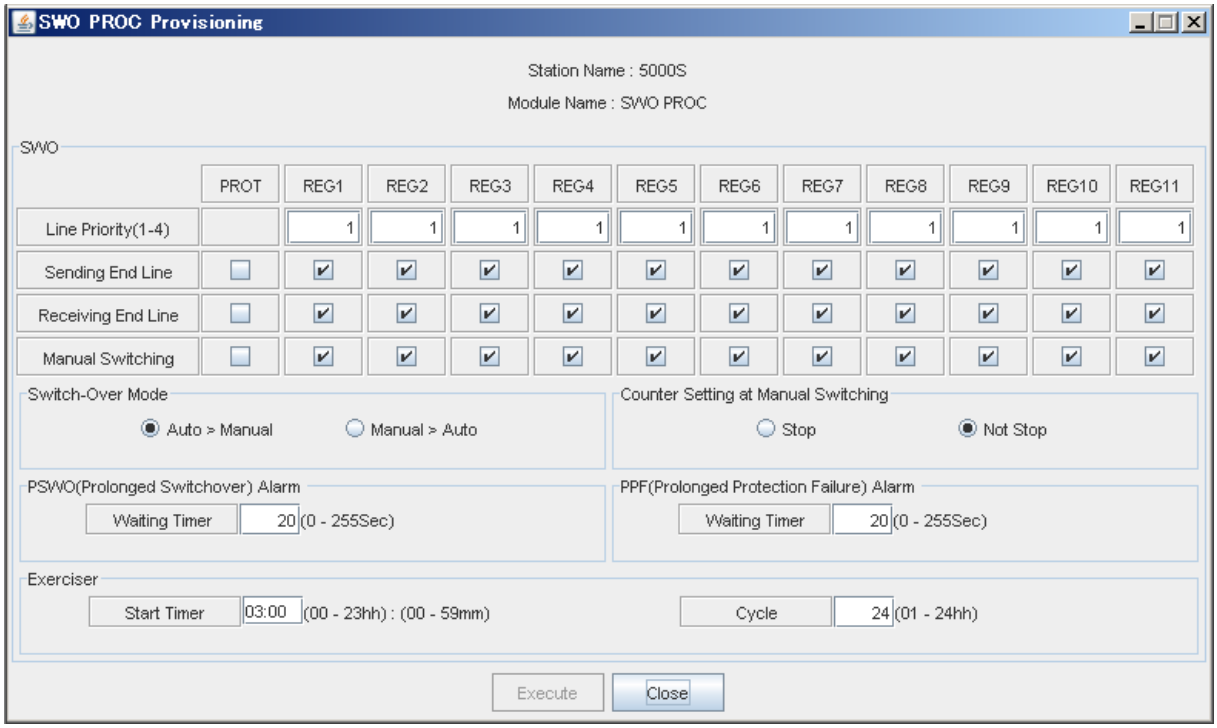




UNIT	MODULE	ITEM	DESCRIPTION	PARAMETER
MDP	DIG HYB	Encoding Law	Pulse code modulation law	A-Law / u-Law
		OOW CH1	OOW digital hybrid port 1 (Clock mode: Master/Slave, External port)	Used / Not Used
		OOW CH2	OOW digital hybrid port 2 (Clock mode: Slave, MUX direction port)	Used / Not Used
		OOW CH3	OOW digital hybrid port 3 (Clock mode: Slave, DMR direction port)	Used / Not Used
		OOW CH4	OOW digital hybrid port 4 (Clock mode: Master, OW module port)	Used / Not Used
		EOW CH1	EOW digital hybrid port 1 (Clock mode: Master/Slave, External port)	Used / Not Used
		EOW CH2	EOW digital hybrid port 2 (Clock mode: Slave, MUX direction port)	Used / Not Used
		EOW CH3	EOW digital hybrid port 3 (Clock mode: Slave, DMR direction port)	Used / Not Used
		EOW CH4	EOW digital hybrid port 4 (Clock mode: Master, OW module port)	Used / Not Used
		CLK Mode	Clock mode for OOW/EOW digital hybrid port 1	Master / Slave
		CH2 Interface Select	Switching the Port2 interface	Internal / External



7.3.4 Radio Protection Switchover for N+1 Configuration

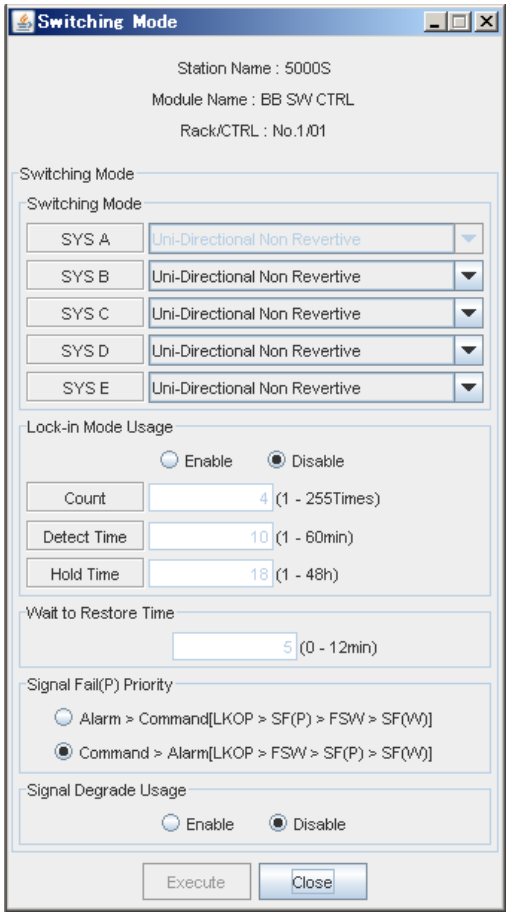


UNIT	MODULE	ITEM	DESCRIPTION	PARAMETER
MDP	SWO PROC	Line Priority	Line priority for switching to protection channel (Auto Switching Mode)	1 to 4
		Sending End Line	Transmission is available	Check
		Receiving End Line	Reception is Available	Check
		Manual Switching	Define whether or not manual switchover execution is included when the automatic protection switching has been performed by generating the PSWO alarms.	Check
		Switch-Over Mode	Switchover control priority	Auto > Manual / Manual > Auto
		Counter Setting at Manual Switching	Manual switching counting	Stop / Not Stop
		PSWO (Prolonged Switchover) Alarm Waiting Timer	Switchover alarm delay time	0 to 255 seconds
		PPF (Prolonged Protection Failure) Alarm Waiting Timer	Protection failure alarm delay time	0 to 255 seconds
		Exerciser Start Timer	Periodic automatic switching test start time	HH: MM (24 hours basis)
		Exerciser Cycle	Periodic automatic switching test cycle	HH (24 hours basis)

NOTE

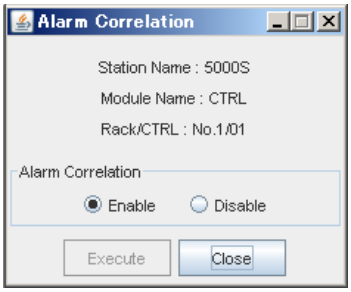
Along with the line status, be sure to check the Sending End Line and/or Receiving End Line boxes. Otherwise, SWOPROC may malfunction.

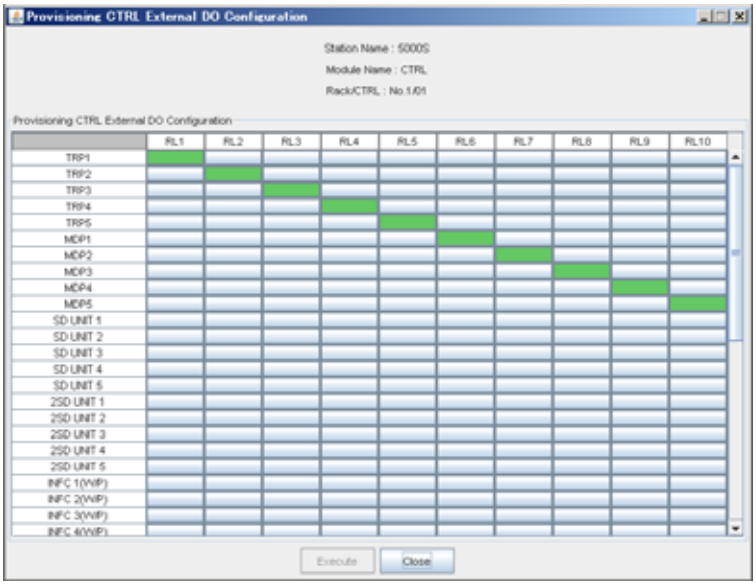
7.3.5 Automatic Protection Switching for Optical Interface Redundancy



UNIT	MODULE	ITEM	DESCRIPTION	PARAMETER
MDP	BB SW CTRL	SYS A	SYS A Automatic protection switching method	Uni-Directional Non Revertive /Uni-Directional Revertive
		SYS B	SYS B Automatic protection switching method	Uni-Directional Non Revertive /Uni-Directional Revertive
		SYS C	SYSC Automatic protection switching method	Uni-Directional Non Revertive /Uni-Directional Revertive
		SYS D	SYS D Automatic protection switching method	Uni-Directional Non Revertive /Uni-Directional Revertive
		SYS E	SYS E Automatic protection switching method	Uni-Directional Non Revertive /Uni-Directional Revertive
		Lock-in Mode Usage	To set whether Lock-in Mode is to be used (or not)	Enable / Disable
		Count	To set the number of times increment after which Lock-in is to be activated.	1 to 255 times
		Detect Time	To set the amount of time after which Lock-in is to be activated	1 to 60 minutes
		Hold Time	To set the length of time for which Lock-in is to be maintained	1 to 48 hours
		Signal Fail (P) Priority	Setting of switching priority configuration	Alarm > Command [LKOP>SF (P)>FSW>SF (W)] Command > Alarm [LKOP>FSW>SF (P)>SF (W)]
		Signal Degrade Usage	To set whether the function is to be used for the Main Signal when switching	Enable / Disable

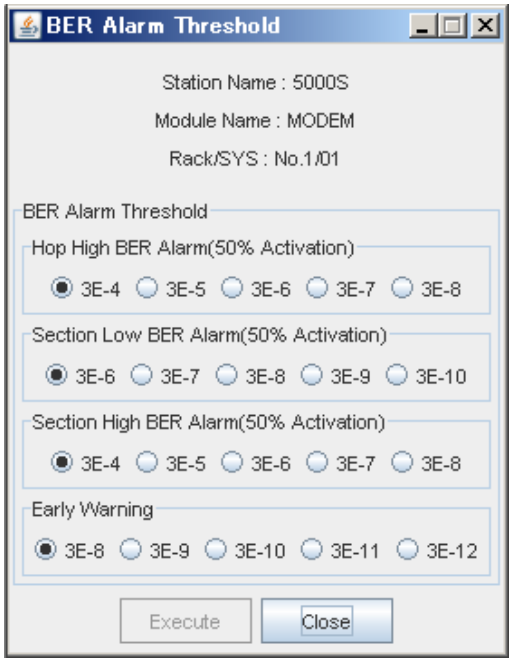
7.3.6 Alarm Reporting and External Relay Output

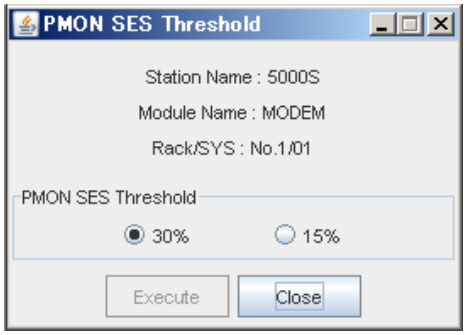


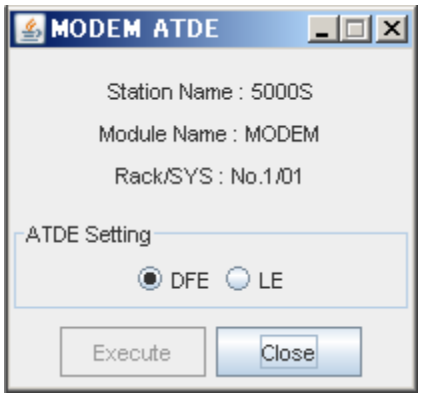


UNIT	MODULE	ITEM	DESCRIPTION	PARAMETER
MDP	CTRL	Alarm Correlation	Secondary alarm mask	Enable / Disable
		CTRL External DO Configuration	Total alarm assignment for external relay output	(Assignment in table)

7.3.7 Radio Frame Performance Monitor



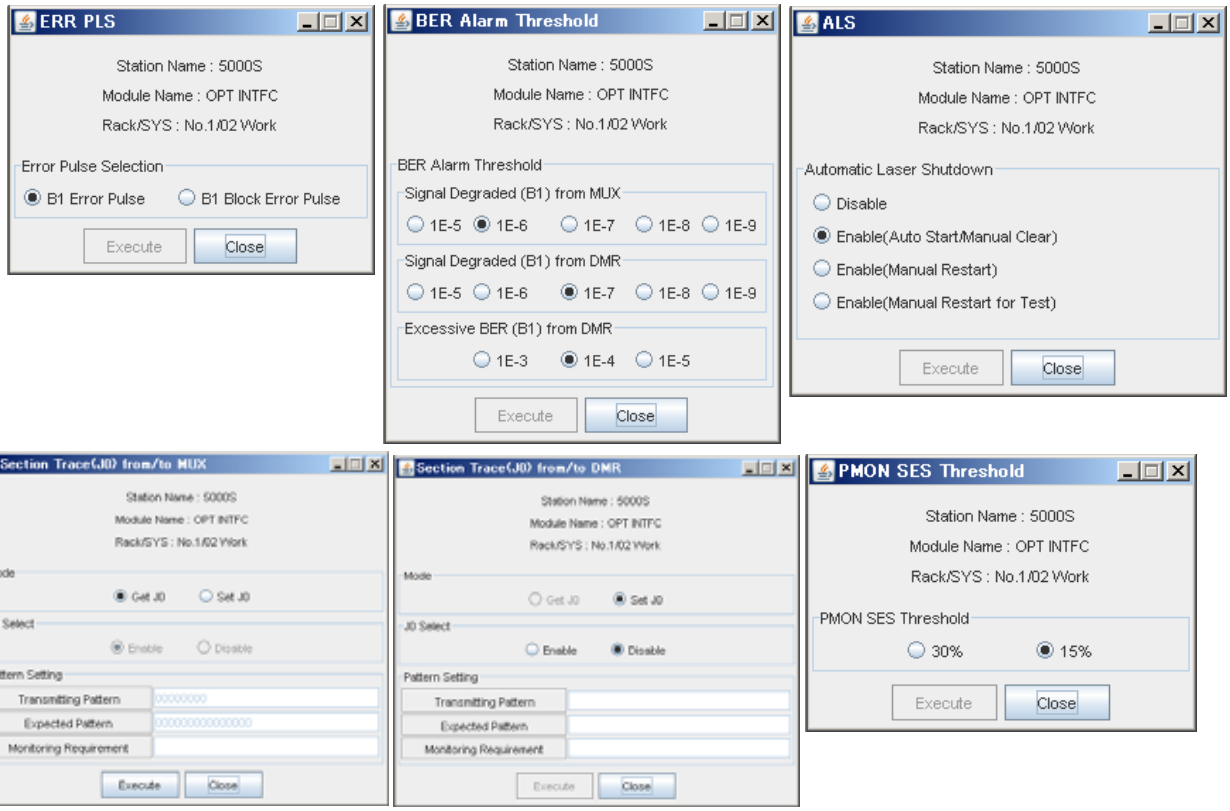




UNIT	MODULE	ITEM	DESCRIPTION	PARAMETER
MDP	MODEM	HOP High BER Alarm (50% Activation)	Hop High BER alarm threshold for the incoming signal from DMR direction	3E-4/5/6/7/8
		Section Low BER Alarm (50% Activation)	Section Low BER alarm threshold for the incoming signal from the DMR direction	3E-6/7/8/9/10
		Section High BER Alarm (50% Activation)	Section High BER alarm threshold for the incoming signal from the DMR direction	3E-4/5/6/7/8
		Early Warning	Early Warning threshold for the incoming signal from the DMR direction (used for Hitless Switch)	3E-8/9/10/11/12
		PMON SES Threshold	BER threshold for starting the HOP gave Severe Error for Second counting	30% / 15%
		ATDE Setting *1	Adaptive Time Domain Equalizer selection(select only 128QAM)	DFE / LE

***1 This function will be displayed only when used in combination with LMS F/W Ver. 2.0.0 (or above).**

7.3.8 STM-1 Frame Performance Monitor

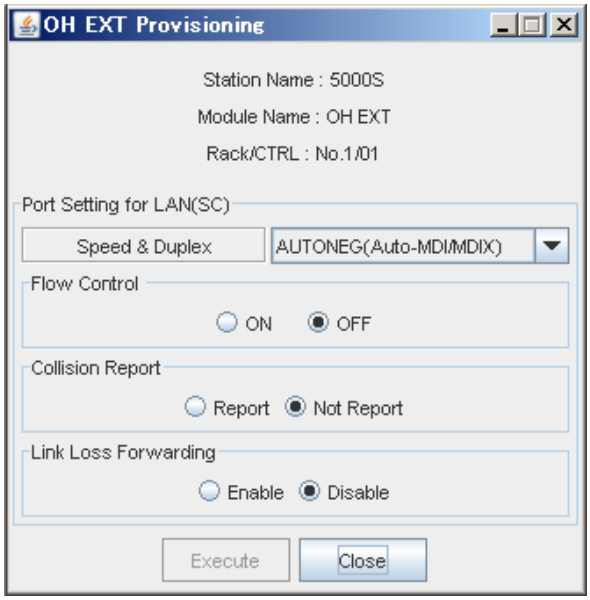


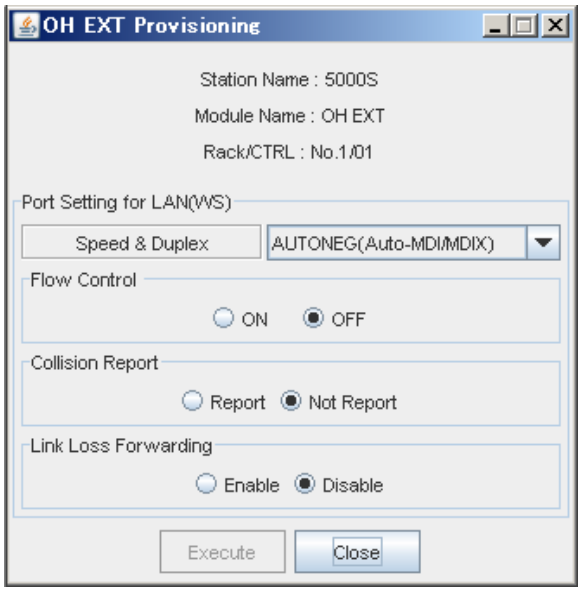
UNIT	MODULE	ITEM	DESCRIPTION	PARAMETER
MDP	OPT INTFC / 150M INTFC	Error Pulse Selection	Error pulse selection for the external output	B1 Error Pulse/ B1 Block Error Pulse
		Signal Degraded (B1) from MUX	STM-1 signal Degradation (B1) alarm threshold for the incoming signal from MUX direction	1E-5/6/7/8/9
		Signal Degraded (B1) from DMR	STM-1 signal Degradation (B1) alarm threshold for the incoming signal from DMR direction	1E-5/6/7/8/9
		Excessive BER (B1) from DMR	STM-1 excessive BER (B1) alarm threshold for the incoming signal from DMR direction	1E-3/4/5
		Automatic Laser Shutdown *1	Automatic laser shutdown mode	Disable/ Enable (Auto Start/Manual Clear)/ Enable (Manual Start)/ Enable (Manual Restart for Test)
		Disable	When Automatic Laser Shutdown is not to be used.	-
		Enable (Auto Start/Manual Clear)	When Automatic Laser Shutdown is to be used. Must be selected to clear controls after performing Manual Control	-
		Enable (Manual Start) *2	Optical output between 2sec is selected and Execute is performed; an optical output is stopped between 1min. Operation is repeated in 1min. intervals	-
		Enable (Manual Restart for	Optical output between 90sec is selected and Execute is	-

UNIT	MODULE	ITEM	DESCRIPTION	PARAMETER
		Test) *2	performed; an optical output is stopped between 1min. Then output is resumed for 2sec. Operation is repeated in 1min. intervals.	
		Section Trace (J0) Mode (Fm/To MUX)	For adjusting the JO pattern for From/To	Get J0 / Set J0
		J0 Select (Fm/To MUX)	For setting whether JO is to be used (or not) for From/To MUX	Enable / Disable
		Transmit Pattern (Fm/To MUX)	For setting From/To transmitting pattern	ASCII 15Characters
		Expected Pattern (Fm/To MUX)	For setting expected From/To MUX pattern	ASCII 15Characters
		Monitor Requirement (Fm/To MUX)	Monitor for From/To MUX receiving pattern	-
		Section Trace (J0) Mode (Fm/To DMR)	For setting JO pattern for From/To DMR	Get J0 / Set J0
		J0 Select (Fm/To DMR)	For setting whether JO is to be used (or not) for From/To DMR Enable / Disable	Enable / Disable
		Transmit Pattern (Fm/To DMR)	For setting transmitting pattern for From/To DMR	ASCII 15Characters
		Expected Pattern (Fm/To DMR)	For setting expected pattern for From/To DMR	ASCII 15Characters
		Monitor Requirement (Fm/To DMR)	Monitor for From/To DMR receiving pattern	-
		PMON SES Threshold	BER threshold for starting the STM-1 gave Severe Error for Second (B1) counting	30% / 15%

NOTES) *1 "Automatic Laser Shutdown" is NOT applicable to 150M INTFC.
*2 MAINT control is necessary (for CTRL)

7.3.9 OH EXT Provisioning





UNIT	MODULE	ITEM	DESCRIPTION	PARAMETER
MDP	OH EXT	Speed & Duplex	For setting the speed and duplex parameters of LAN port.	AUTONEG(Auto-MDI/MDIX) / 10M-Half(MDI) / 10M-Full(MDI) / 100M-Half(MDI) / 100M-Full(MDI) / 10M-Half(MDIX) / 10M-Full(MDIX) / 100M-Half(MDIX) / 100M-Full(MDIX)
		Flow Control	For setting the flow control parameter of LAN port.	ON / OFF
		Collision Report	For setting whether collision status is reported (or not) for LAN port.	Report / Not Report
		Link Loss Forwarding	For enabling/disabling the Link Loss Forwarding function for LAN port.	Enable / Disable

*** These windows will be displayed only when used in combination with LMS F/W Ver. 2.0.0 (or above).**

8 MAINTENANCE CONTROL

Following items are used to adjust and simulate during installation and maintenance.

8.1 Menu

UNIT	MODULE	ITEM
TRP	TRP	Fixed Transmit Level Setting for occasional operation without ATPC
	SD/2SD	MAIN-SD Delay Adjustment for IF signal combiner
MDP	MODEM	XPIC Reset
		Linear Equalizer
		Parabolic Equalizer
	OPT INTFC / 150M INTFC	PROT-REG Delay Adjustment for Hitless Switching
	OH/WS INTFC	Wayside Switchover Manual Control
	CLK	(No Items in RST mode)
	SWO PROC	Radio Protection Switchover Manual Control
	BB SW CTRL	Automatic Protection Switchover Manual Control

CAUTION: When executing TEST ITEMS, Loss of Signal will occur. Moreover, when SYS1/SYS2 are both remote controlled, a remote deletion is not possible!

8.2 Configuration Method

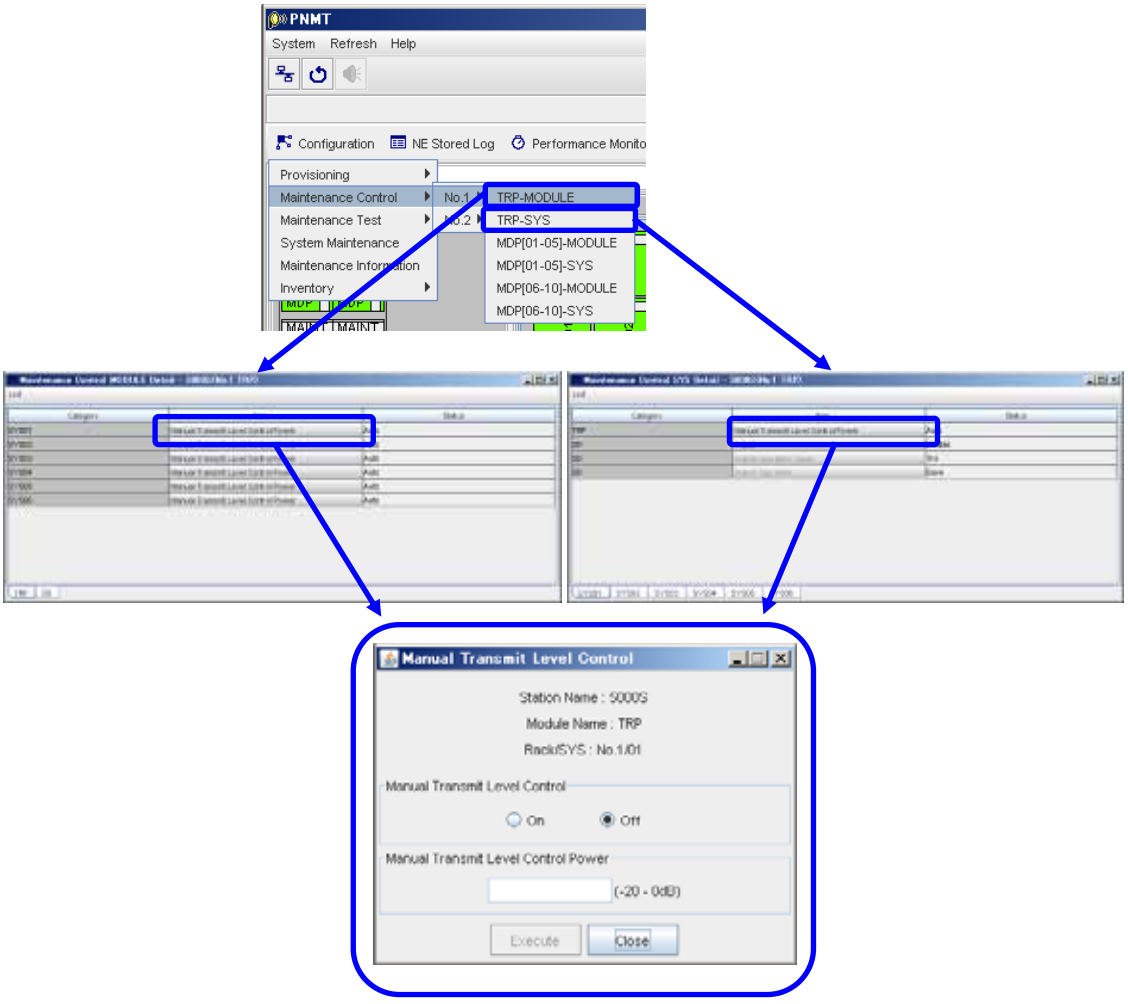
8.2.1 METHOD-1: MODULE basis operation

1. Select "Configuration" "Maintenance Control" "No. X" "TRP-MODULE" or "MDP [XX-XX]-MODULE" from NE Specific Menu Bar; then following "MODULE Detail" screen appears.
2. Select the MODULE Tab, and click the Item button; then following setting screen appears.
3. Select the parameter, or input the value, and click "Execute" button, then click "Close" button to finish.
4. Repeat for applicable items.

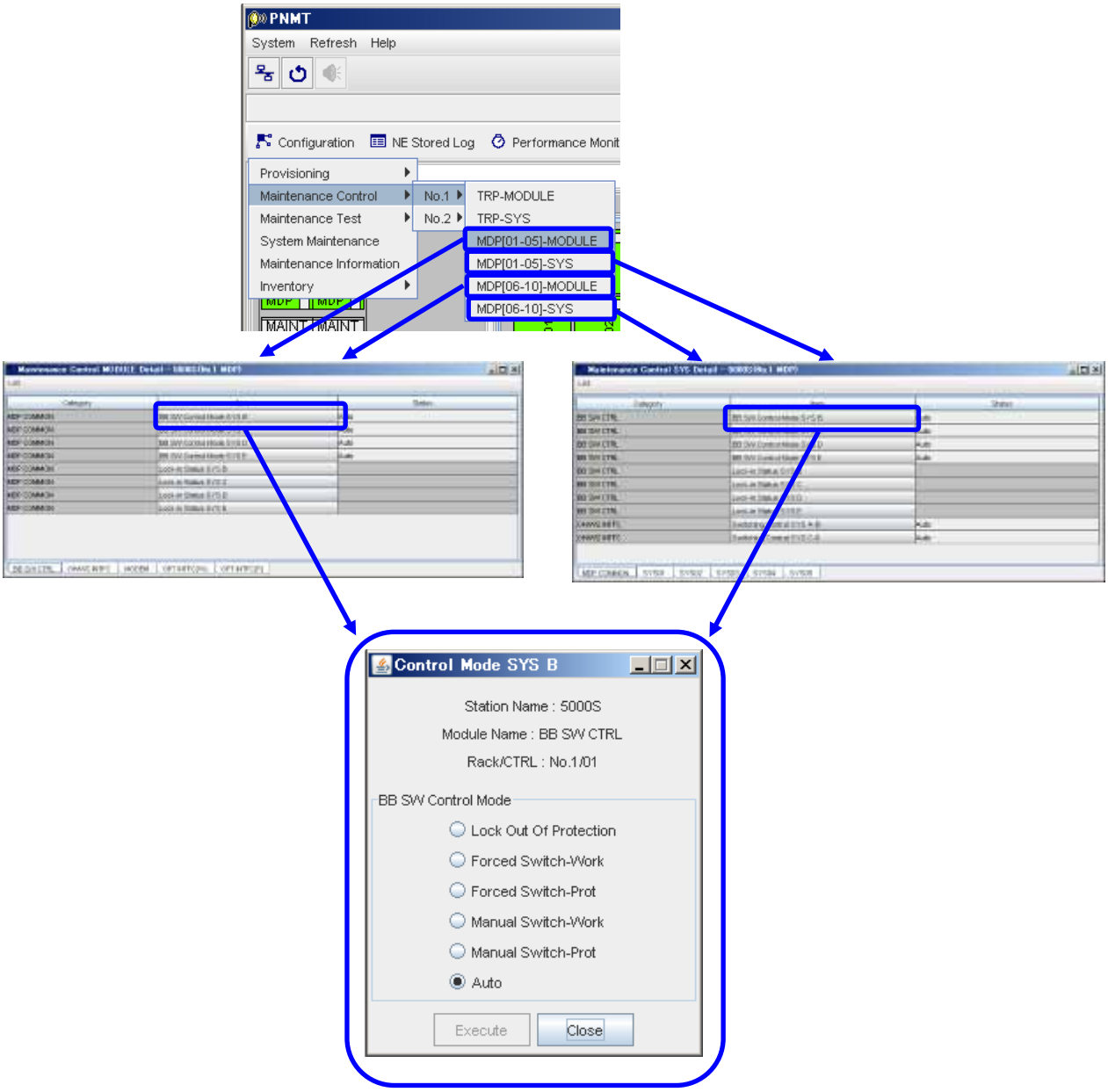
8.2.2 METHOD-2: SYS basis operation

1. Select "Configuration" "Maintenance Control" "No. X" "TRP-SYS" or "MDP [XX-XX]-SYS"
2. Select the SYS Tab, and click the Item button, then the following configuring screen appears. (same screen as above)
3. Select the parameter, or input the value, and click the "Execute" button; then click "Close" button to finish.
4. Repeat for all applicable items.

Example of moving module to TRP menu

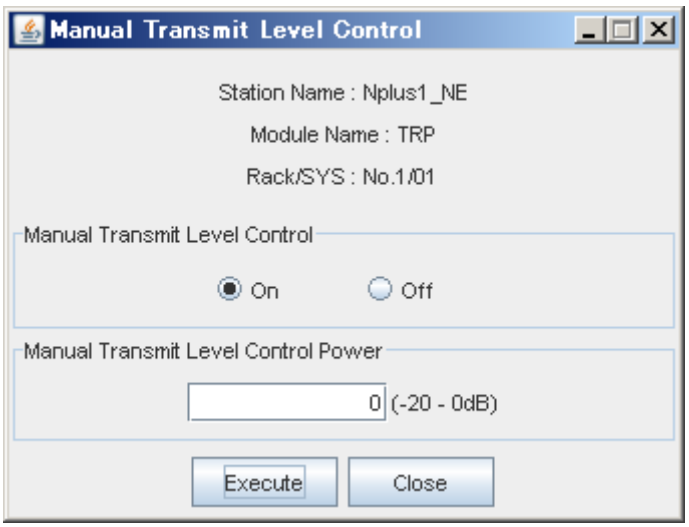


Example of moving module to MDP menu



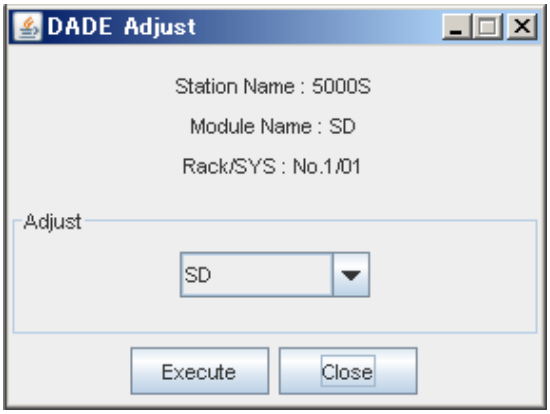
8.3 Details

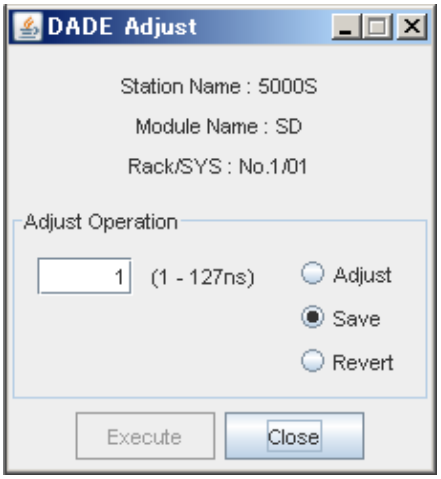
8.3.1 Fixed Transmit Level Setting for occasional operation without ATPC



UNIT	MODULE	ITEM	DESCRIPTION	PARAMETER
TRP	TRP	Manual Transmit Level Control	Manual control usage	On / Off
		Manual Transmit Level Control Power	TX Level for manual control	Nominal Level -20 to 0 dB

8.3.2 MAIN-SD Delay Adjustment for IF signal combiner

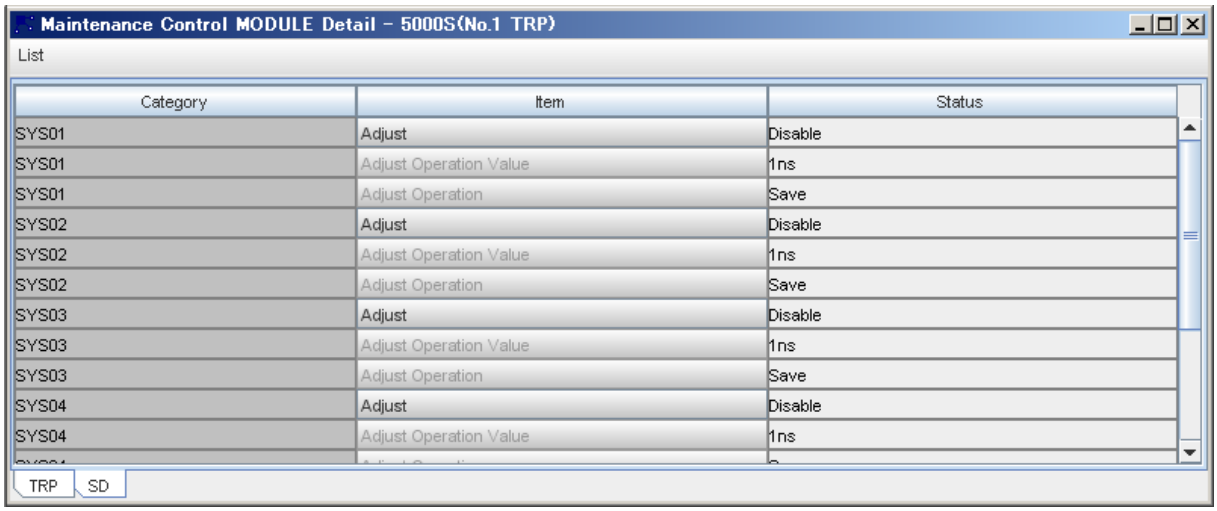




UNIT	MODULE	ITEM	DESCRIPTION	PARAMETER
TRP	SD/ 2SD	Adjust	Delay Equalizer Insert Side Selection SD: SD side, Main: MAIN side, Disable: Not used	SD / Main / Disable
		Adjust Operation value	Delay Adjust Value Selection	1 to 127 nanosecond
		Adjust Operation mode	Delay Adjust Mode Selection Adjust: Occasional adjust, Save: Eternal Adjust, Revert: to default value	Adjust / Save / Revert

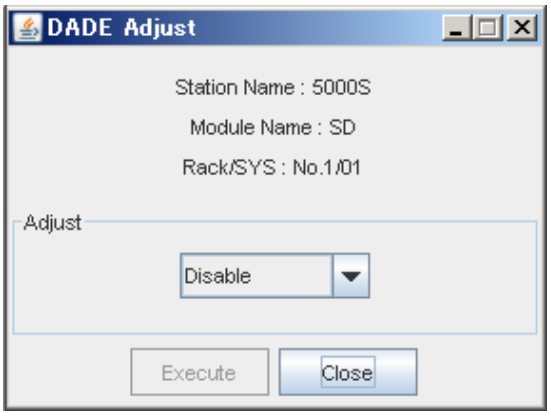
8.3.2.1 Adjust

Before configuring the DADE Adjust tool, only the [Adjust] button is enabled (clickable) in the Detail Window; the [Adjust Operation Value] and the [Adjust Operation] buttons are disabled (not clickable).



In order to perform the DADE Adjust tool, first open the DADE Adjust window according to the following procedure, and select the Adjust mode. Then, actual DADE adjust configuration can be carried out.

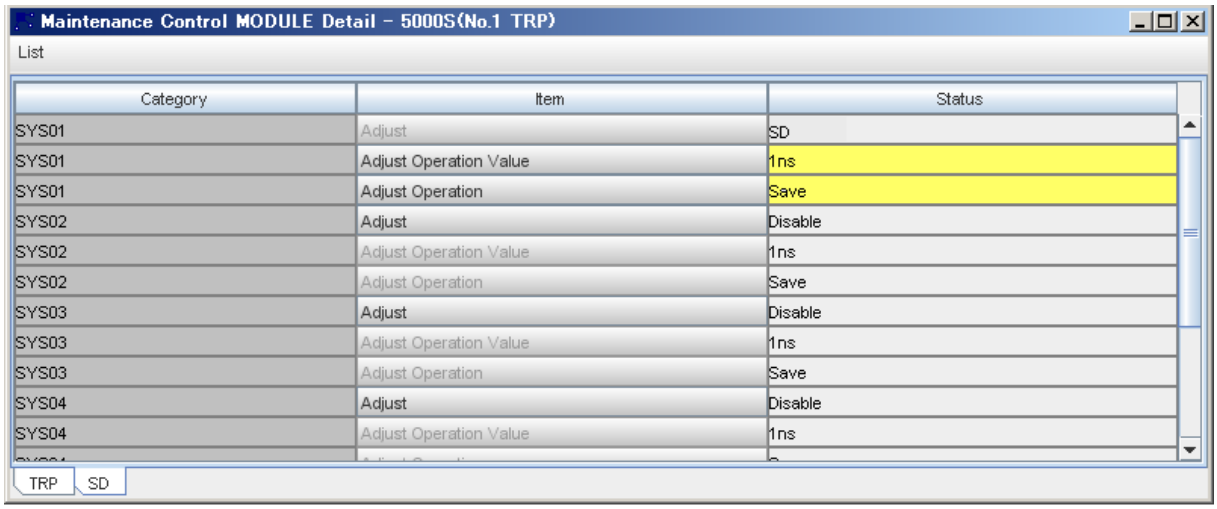
Configuration:



1. Click the [Adjust] Button of Maintenance Control Window.
2. Select SD, Main, and Disable by the list box in the Adjust column.
3. Click [Execute] button.
4. After completion, the [Close] button will be clicked and a window will be closed.

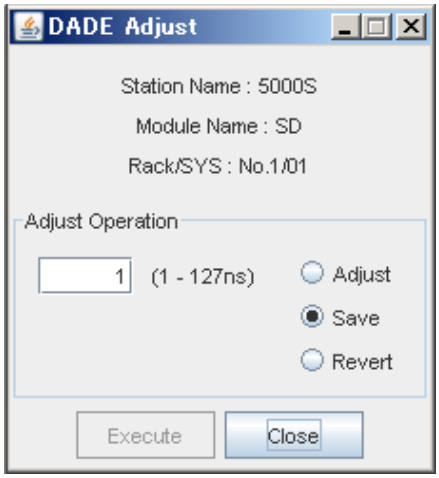
8.3.2.2 Adjust Operation

If selection in adjustment mode is performed on the DADE Adjust window, selection of the [Adjust Operation Value] button and the [Adjust Operation] button will be attained in Detail Window (selection of the [Adjust] button becomes impossible).



The following is the DADE Adjust procedure.

Configuration:



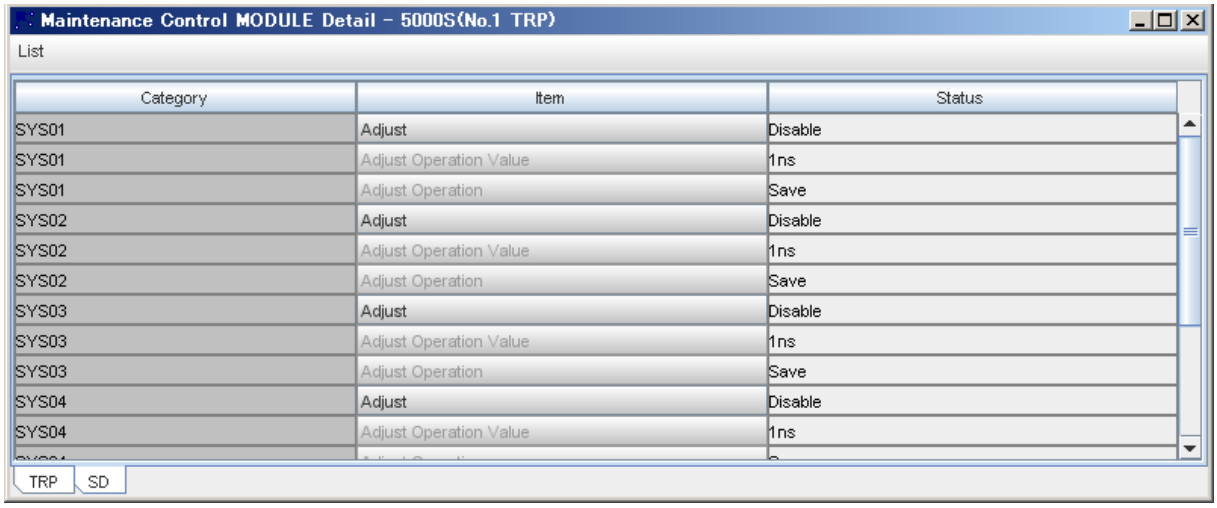
1. Click the [Adjust Operation Value] button of a Maintenance Control window, or [Adjust Operation].
2. Input a setting value into the text box of the Adjust Operation column in 1-127.
3. Select Adjust, Save, and Revert with a radio button in the Adjust Operation column.
4. [Click the [Execute] button.

NOTE

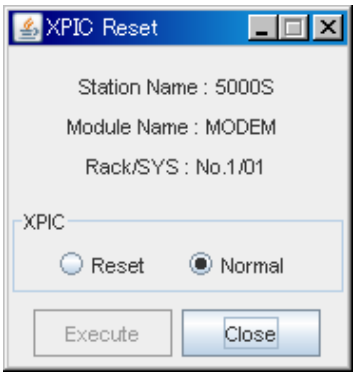
When text inputted in a text box exceeds 127 characters, a warning message is displayed when the [Execute] button is clicked, and the entered text is invalid.

5. After completion, the [Close] button will be clicked and a window will be closed.

If selection in adjustment mode is performed on the DADE Adjust window and Detail DADE adjustment will be finished, in Detail Window, it will be in the state which can choose only the [Adjust] button again.

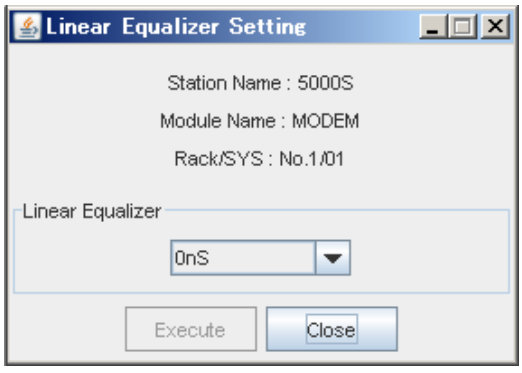


8.3.3 Cross Polarization Interference Canceller Reset



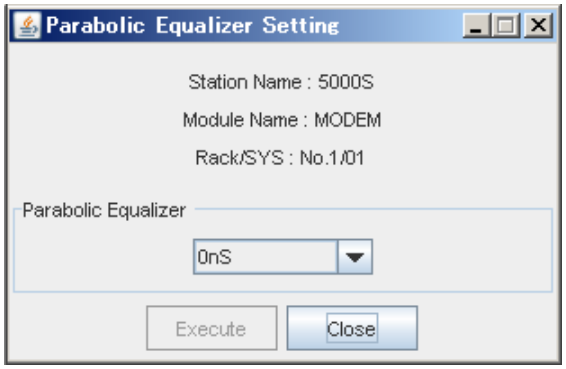
UNIT	MODULE	ITEM	DESCRIPTION	PARAMETER
MDP	MODEM	XPIC Reset	ATPC action reset	Reset/Normal

8.3.4 Linear Equalizer



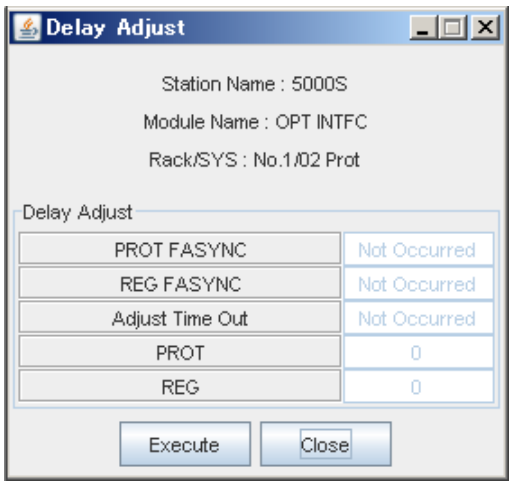
UNIT	MODULE	ITEM	DESCRIPTION	PARAMETER
MDP	MODEM	Linear Equalizer	Linear Delay Equalizer Setting for Contiguous BR CKT	-70 to +70 nanosecond

8.3.5 Parabolic Equalizer



UNIT	MODULE	ITEM	DESCRIPTION	PARAMETER
MDP	MODEM	Parabolic Equalizer	Parabolic Delay Equalizer Setting for Contiguous BR CKT	0 to +70 nanosecond

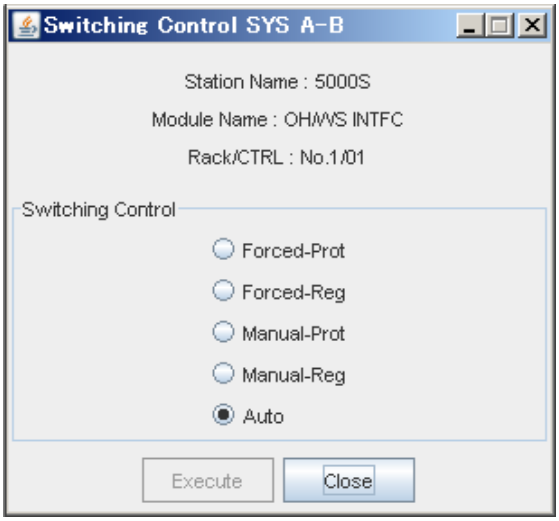
8.3.6 PROT-REG Delay Adjustment for Hitless Switching



UNIT	MODULE	ITEM	DESCRIPTION	PARAMETER
MDP	OPT INTFC / 150M INTFC	Delay Adjust	Delay adjust between PROT and REG CH	Execute
		PROT FASYNC	STM-1 Frame synchronization monitor	(To be displayed after execute)
		REG FASYNC	STM-1 Frame synchronization monitor	(To be displayed after execute)
		Adjust Time Out	Adjust time out monitor	(To be displayed after execute)
		PROT	Adjusted bit number monitor	(To be displayed after execute)
		REG	Adjusted bit number monitor	(To be displayed after execute)

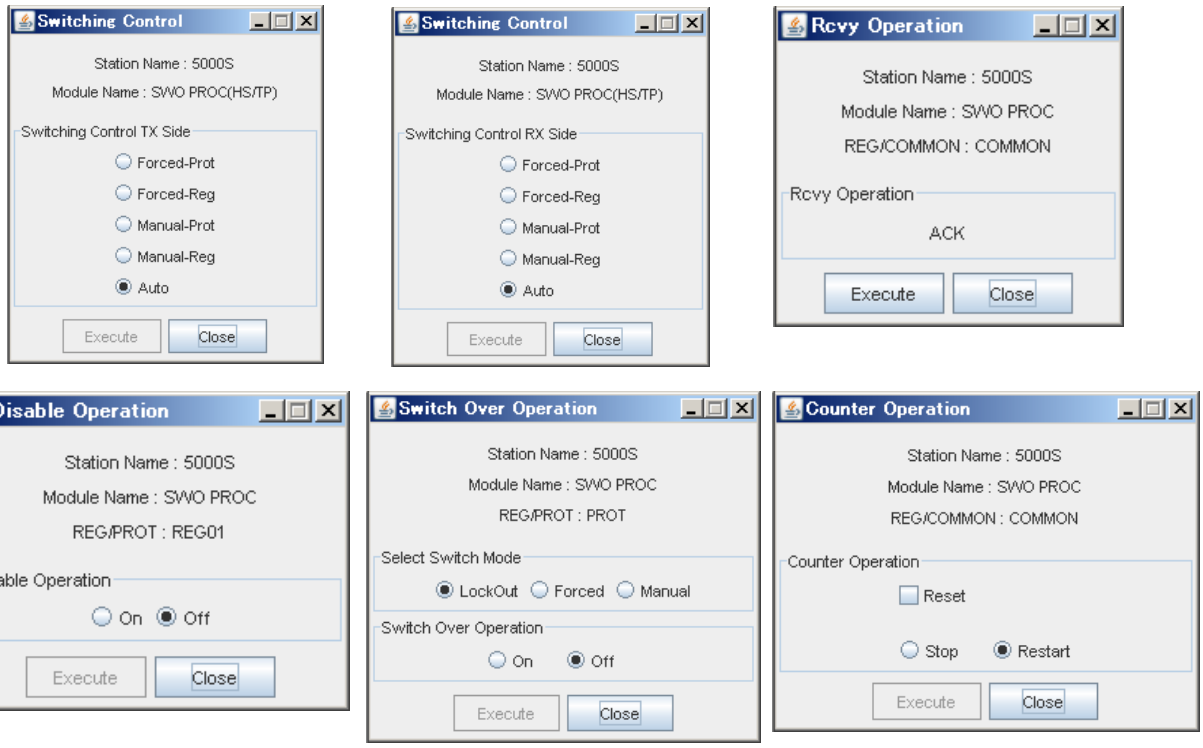
Note) Please do not operate the Delay Adjust tool until 4.2.1.6 TX Test Operation has been carried out!

8.3.7 Wayside Switchover Manual Control



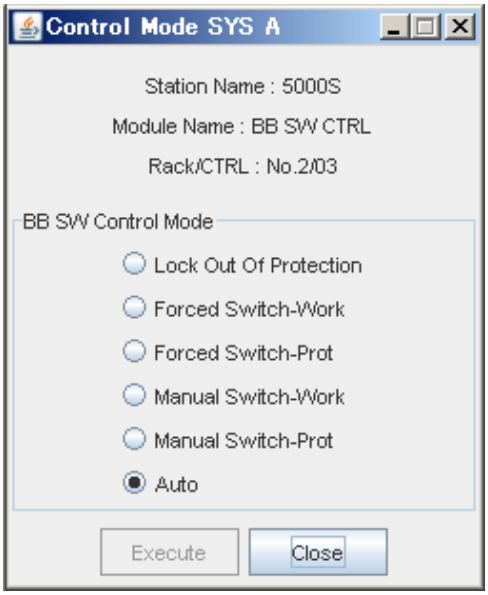
UNIT	MODULE	ITEM	DESCRIPTION	PARAMETER
MDP	OH/WS INTFC	Switching Control	**Forced**: Not switched in any condition. **Manual**: Not switched except alarm **Auto** : Switched by alarm	Forced-Prot / Forced-Reg / Manual-Prot / Manual-Reg / Auto

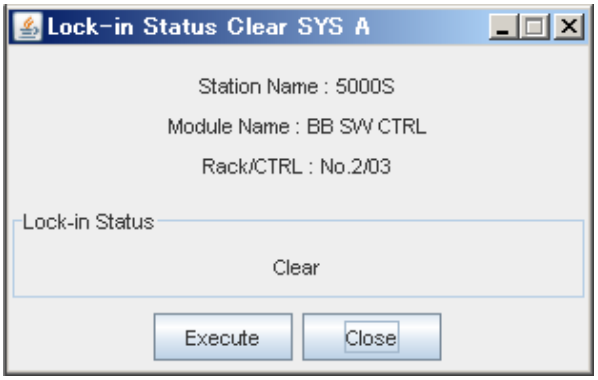
8.3.8 Radio Protection Switchover Manual Control



UNIT	MODULE	ITEM	DESCRIPTION	PARAMETER
MDP	SWO PROC	Switching Control (TX Side)	Forced: Not switched in any condition. Manual: Not switched except alarm Auto : Switched by alarm	Forced Switch-Work / Forced Switch-Prot / Manual Switch-Work / Manual Switch-Prot / Auto
		Switching Control (RX Side)	Forced: Not switched in any condition. Manual: Not switched except alarm Auto : Switched by alarm	Forced Switch-Work / Forced Switch-Prot / Manual Switch-Work / Manual Switch-Prot / Auto
		Switchover Operation	Lock Out: Lock of Protection Forced: Not switched in any condition Manual: Not switched except alarm	ON/OFF
		Disable Operation	Control to inhibit automatic switchover of the line.	ON/OFF
		RCVY Operation	Some alarm events have occurred and then cleared all of them.	ON/OFF
		Counter Operation	Controls the counter function operation.	Reset Stop/Restart

8.3.9 Automatic Protection Switchover Manual Control





UNIT	MODULE	ITEM	DESCRIPTION	PARAMETER
MDP	BB SW CTRL	BB SW Control Mode (SYS A/B/C/D/E)	Lock Of Protection: Lock of Protection Forced: Not switched in any condition. Manual: Not switched except alarm Auto: Switched by alarm When Lock-in is On, "Lock-in Detected" is displayed, and the setting cannot be changed.	Lock Of Protection / Forced Switch-Work / Forced Switch-Prot / Manual Switch-Work / Manual Switch-Prot / Auto
		Lock-in Status (SYS A/B/C/D/E)	To clear Lock-in Status	Clear

SYS A-E and SYS1-10supportability

NE mounting position and display ability on PNMTj

CTRL No / SYS No	CTRL 1,3,5,7	CTRL 2,4,6,8
SYS A	SYS 1	SYS 6
SYS B	SYS 2	SYS 7
SYS C	SYS 3	SYS 8
SYS D	SYS 4	SYS 9
SYS E	SYS 5	SYS 10

9 MAINTENANCE TEST

Following items are used to test in installation and maintenance time.

9.1 Menu

UNIT	MODULE	ITEM	PURPOSE
TRP	TRP	Receive AGC stop	Noise Figure Measurement
		Carrier Sweep Function	MAIN-SD Delay Adjustment
		TX Level Muting	TX Level Muting Test
		Frequency Setting	Frequency Setting Test
MDP	MODEM	Modulation Stoppage for output the carrier signal	TX Frequency Measurement
		IF and Baseband Loopback	IF or Baseband Loopback Test
		Demodulation Carrier Phase Inverting	Carrier Phase Inverting Test
		Antenna Alignment mode	Antenna Alignment Test
	OPT INTFC/ 150M INTFC	Baseband Loopback	Baseband Loopback Test
		STM-1 Fixed Pattern Output mode	STM-1 Pulse Mask Measurement
	OH/WS INTFC	WS Fixed Pattern Output mode	WS Pulse Mask Measurement
	OH EXT	OH EXT G703 OUTPUT CONTROL	G.703 Pulse Mask Measurement
		LAN SW RESET FOR LAN(SC)	Reset for LAN (SC) port test.
		LAN SW RESET FOR LAN(WS)	Reset for LAN (WS) port test.
		LINK DOWN TEST	Link Down Test
		WAYSIDE OUTPUT CONTROL	WS Pulse Mask Measurement
		RESET	Module Test
	SWO PROC	Switchover Test mode	Switchover Test
	BB SW CTRL	Switchover Reset	Module Test

CAUTION: When executing TEST ITEMs, Loss of Signal will occur. Moreover, when SYS1/SYS2are both remote controlled, a remote deletion is not possible!

9.2 Setting Method

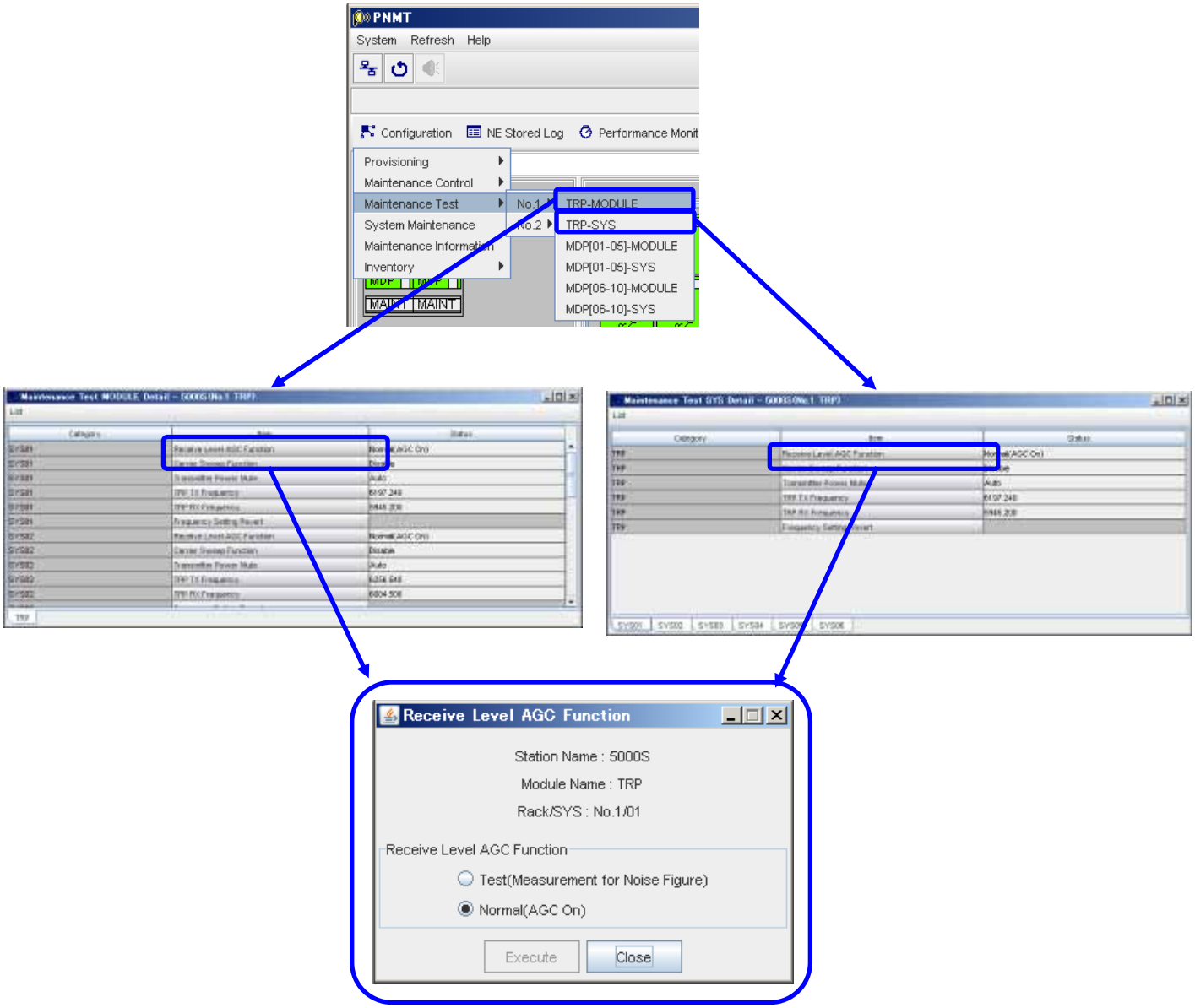
9.2.1 METHOD-1: MODULE basis operation

1. Select "Configuration" "Maintenance Test" "No. X" "TRP-MODULE" or "MDP [XX-XX]-MODULE" from NE Specific Menu Bar, then following "MODULE Detail" configuration window appears.
2. Select the MODULE Tab, and click the Item button, then the following setting configuration window appears.
3. Select the parameter, or input the value, and click "Execute" button, then click "Close" button to finish.
4. Repeat for applicable items.

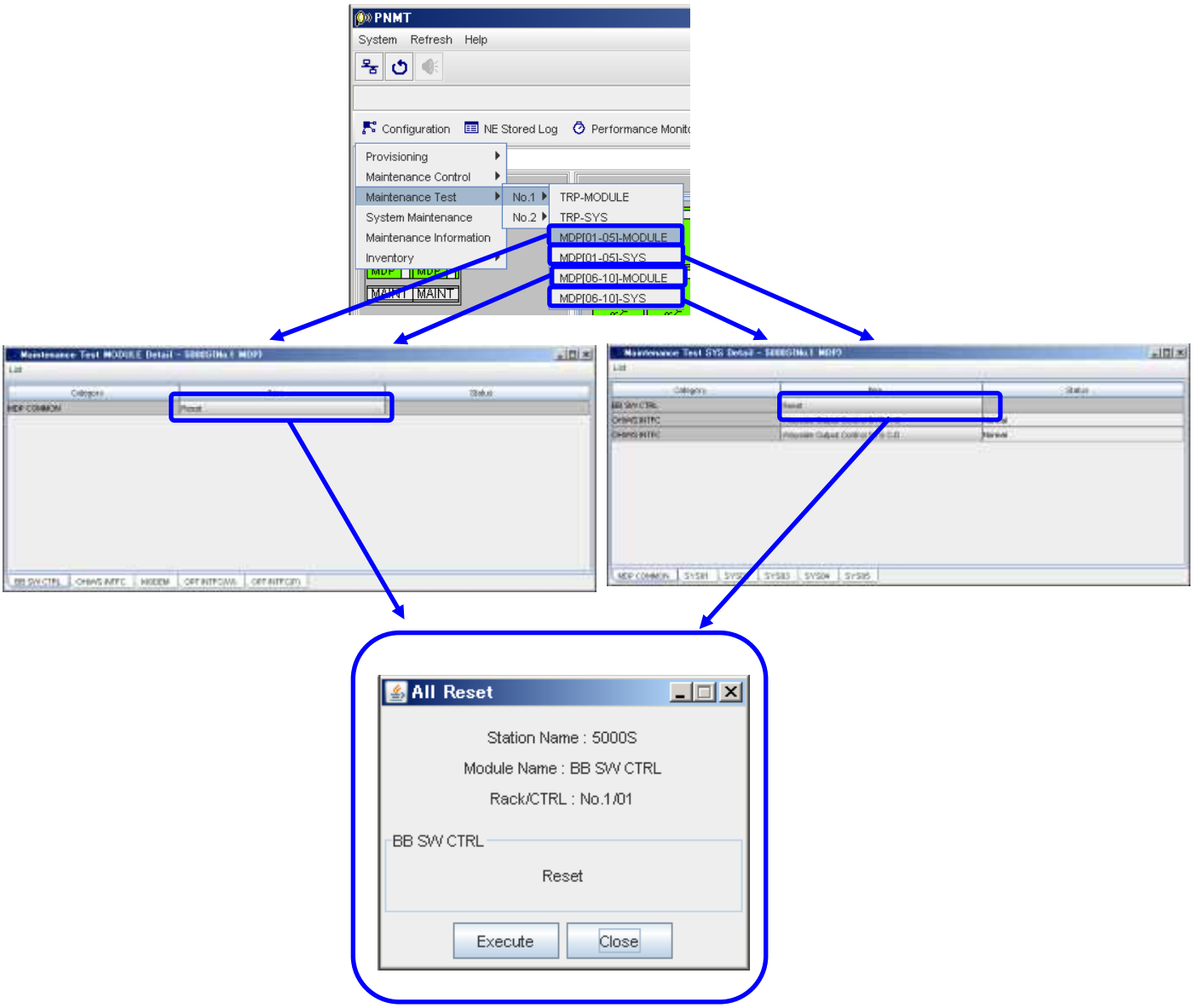
9.2.2 METHOD-2: SYS basis operation

1. Select "Configuration" "Maintenance Test" "No. X" "TRP-SYS" or "MDP[XX-XX]-SYS"
2. Select the SYS Tab, and click the Item button, then following setting configuration window appears. (same screen as above)
3. Select the parameter, or input the value, and click "Execute" button, then click "Close" button to finish.
4. Repeat for applicable items.

Example for moving module to TRP menu

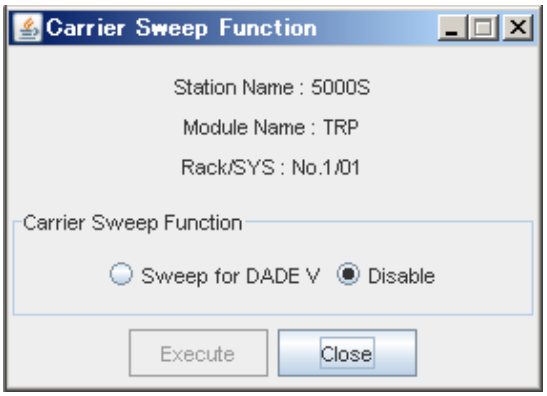


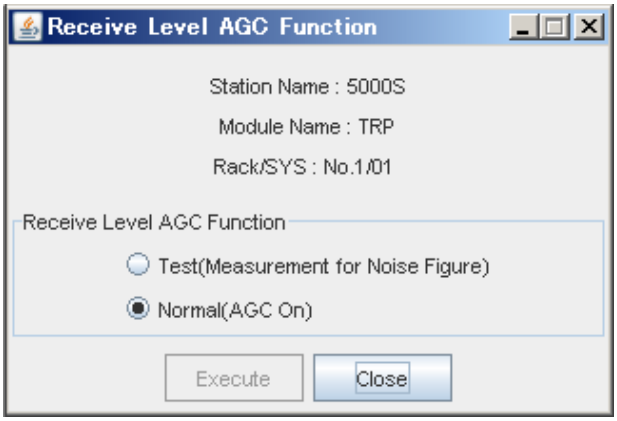
Example for moving module to MDP menu

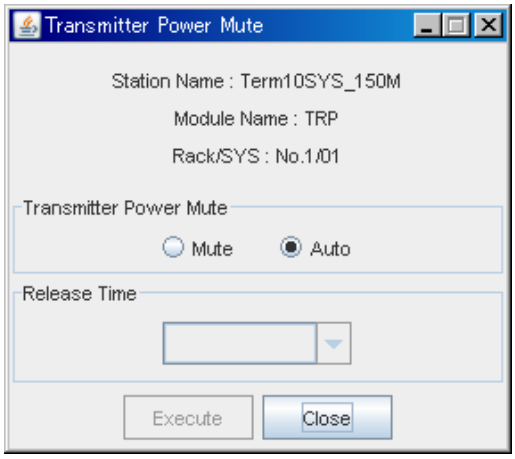


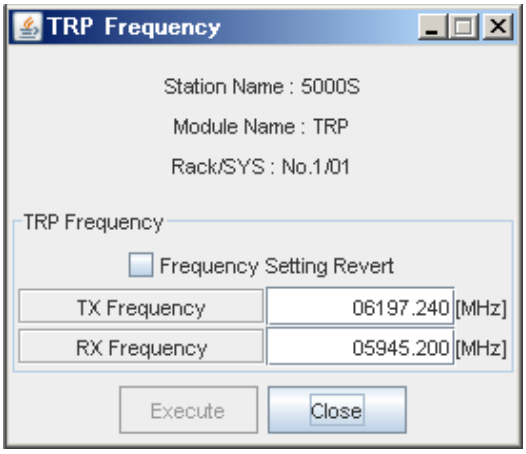
9.3 Details

9.3.1 TRP Test Function







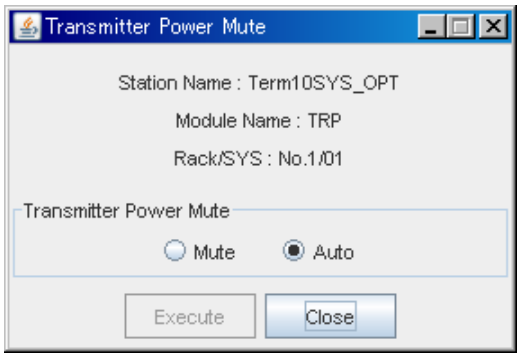


UNIT	MODULE	ITEM	DESCRIPTION	PARAMETER
	TRP	Receive Level AGC Function	AGC stoppage for Noise Figure measurement	Test (Noise Figure) / Normal (AGC On)
		Carrier Sweep Function	Carrier sweeping for MAIN-SD Delay Adjustment	Sweep for DADE V / Disable
		Transmitter Power Mute	TX Level muting	Mute / Auto / ReleaseTime
		Frequency Setting Revert	Last memorized setting reverting	(To be checked and executed)
		TX Frequency	TX frequency setting	(To be input as MHz basis)
		RX Frequency	RX frequency setting	(To be input as MHz basis)

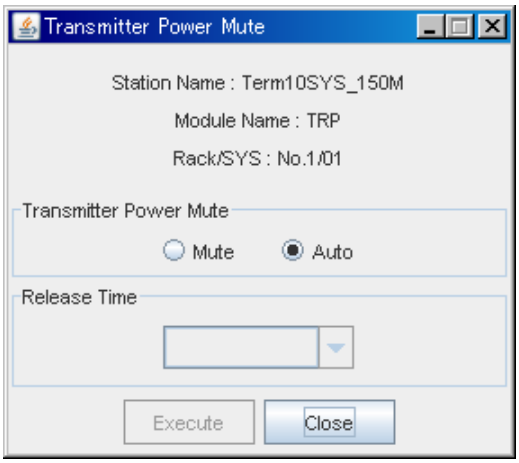
(* TX/RX Frequency settings are designed for NEC factory use.)

9.3.1.1 Transmitter Power Mute

Local connection



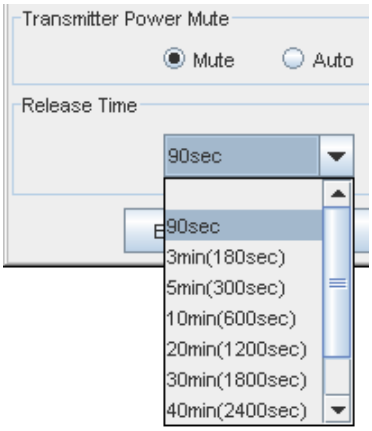
Remote connection



*** Remote connection window will be displayed only when used in combination with LMS F/W Ver. 2.0.2 (or above).**

1. With local connection, only possible selections are **[Mute]** or **[Auto]**. With remote connection, **[Release Time]** selection box appears.

2. If **[Mute]** is selected during remote connection, **[Release Time]** becomes enabled and time until automatic switch back to Auto can be selected.



With Remote connection, **[Release Time]** must always be selected. Mute without setting up automatic cancellation timer cannot be executed.

NOTE

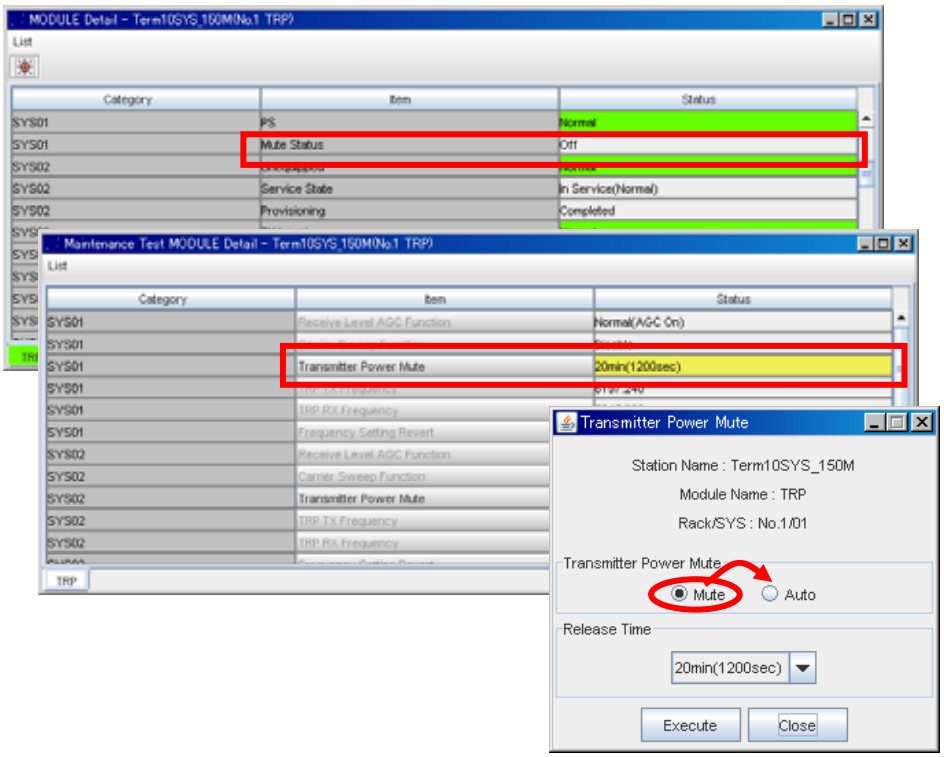
In some cases, PNMTj disconnects when Mute is set on remotely connected NE and cannot switch back to Auto. Timer is preventive measure to avoid this situation.

3. Click **[Execute]** button to execute control.

4. After completion, click **[Close]** button.

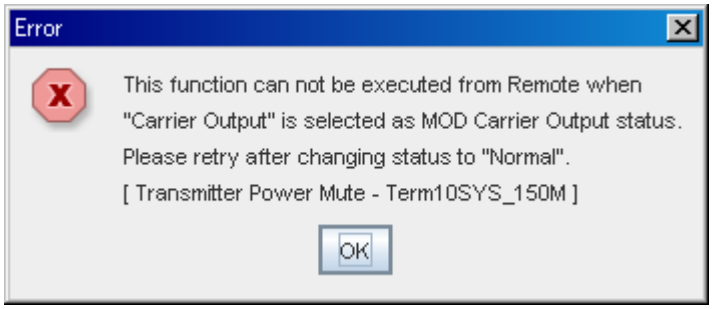
WARNING!!!

Even after Release Time has lapsed and TRP Mute setup is cancelled, Transmitter Power Mute setup will be kept as Mute. Thus, upon expiration of timer and Mute status, after confirming that there are no problems, setup must be manually returned back to Auto.

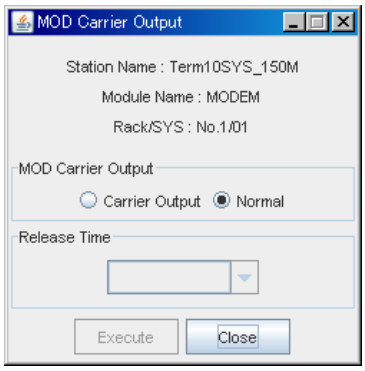


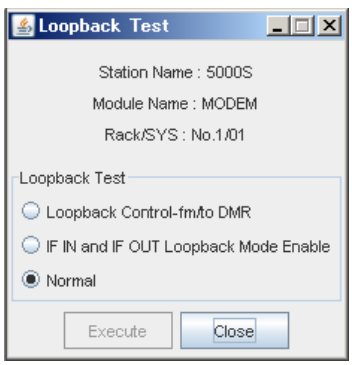
WARNING!!!

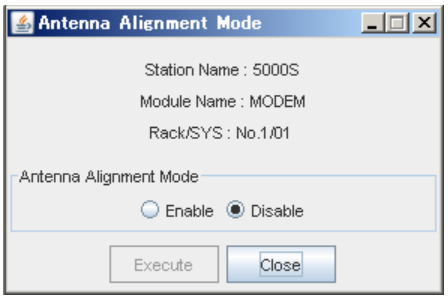
While controlling NE by Release Time set in MOD Carrier Output, controlling by Release Time set in Transmitter Power Mute cannot be done and instead, following warning message will appear.



9.3.2 MODEM Test Function





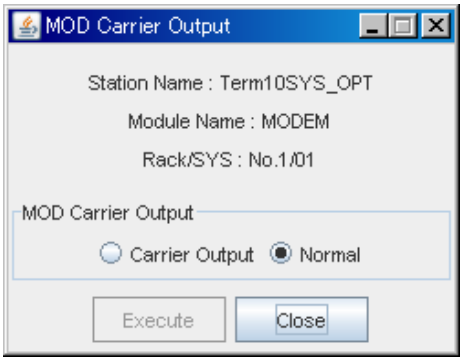


UNIT	MODULE	ITEM	DESCRIPTION	PARAMETER
MDP	MODEM	MOD Carrier Output	Modulation stopping for output the carrier signal	Carrier Output / Normal /Release Time
		Loopback Test	IF and Baseband Loopback	BB Loopback (Fm/To DMR) / IF Loopback (Fm/To MUX)/ Normal
		Antenna Alignment Mode ***1**	IF Input Level Monitoring Output High Speed Renewal mode	Enable / Disable

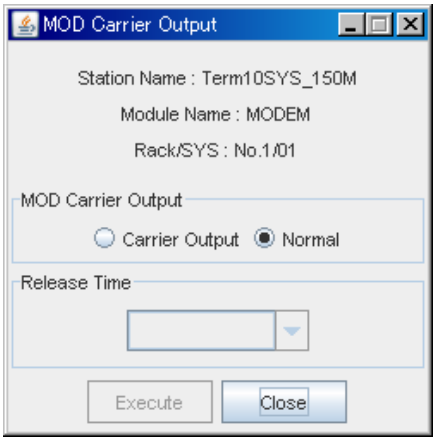
NOTE *1: Mode switchover may take a while.

9.3.2.1 MOD Carrier Output

Local Connection



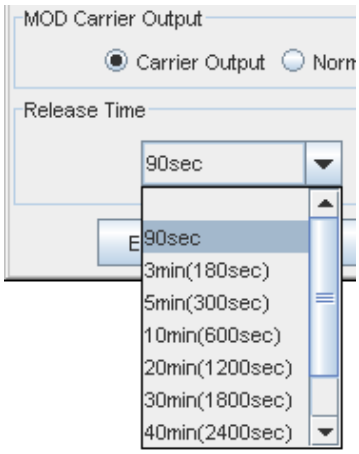
Remote connection



*** Remote connection window will be displayed only when used in combination with LMS F/W Ver. 2.0.2 (or above).**

1. With Local connection, only possible selections are **[Carrier Output]** or **[Normal]**. With remote connection, **[Release Time]** selection box appears.

2. If **[Carrier Output]** is selected during remote connection, **[Release Time]** becomes enabled and time until automatic switch back to Auto can be selected.



With remote connected, **[Release Time]** must always be selected. Mute without setting up automatic cancellation timer cannot be executed.

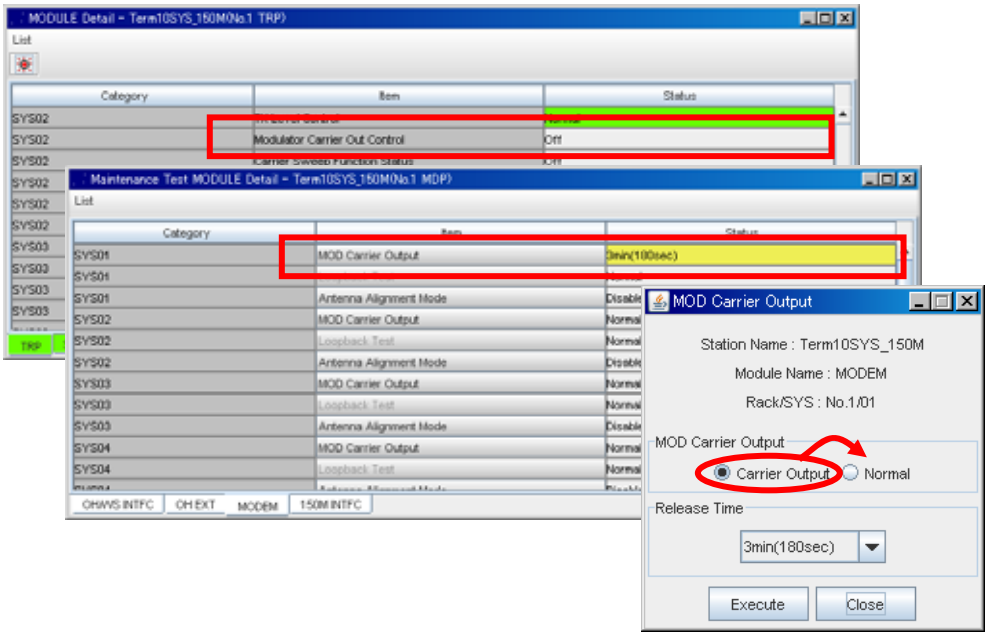
NOTE

In some cases, PNMTj disconnects when Carrier Output is set on remotely connected NE and cannot switch back to Normal. Timer is a preventive measure to avoid this situation.

3. Click **[Execute]** button to execute control.
4. After completion, click **[Close]** button.

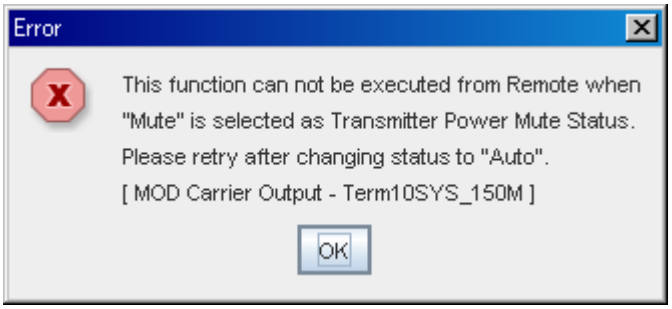
WARNING!!!

Even after Release Time has lapsed and Carrier Output setup for MODEM is cancelled, MOD Carrier Output setup will be kept as Carrier Output. Thus, upon expiration of timer and Carrier Output, after confirming that there are no problems, setup must be manually reset back to Normal.

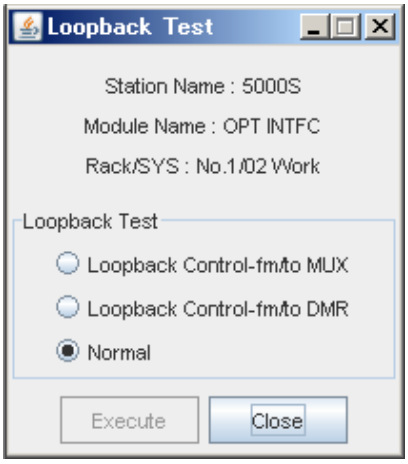


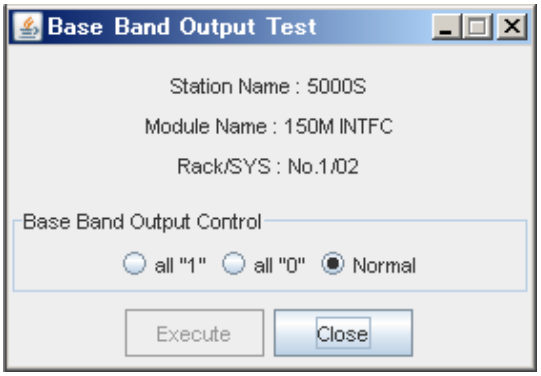
WARNING!!!

While controlling NE by Release Time set in Transmitter Power Mute, controlling by Release Time set in MOD Carrier Output cannot be done and instead, following warning message will appear.



9.3.3 Baseband Loopback Test and STM-1 Pulse Mask Measurement

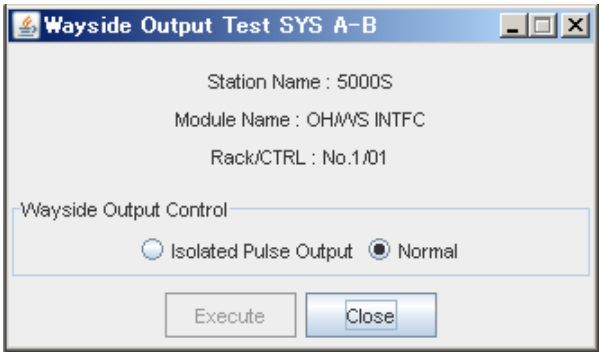




UNIT	MODULE	ITEM	DESCRIPTION	PARAMETER
MDP	OPT INTFC / 150M INTFC	Loopback Test	Loopback mode	BB Loopback Fm/To MUX / BB Loopback Fm/To DMR / Normal
		Base Band Output Control	Fixed pattern output for STM-1 Pulse Mask measurement	all"1" / all"0" / Normal

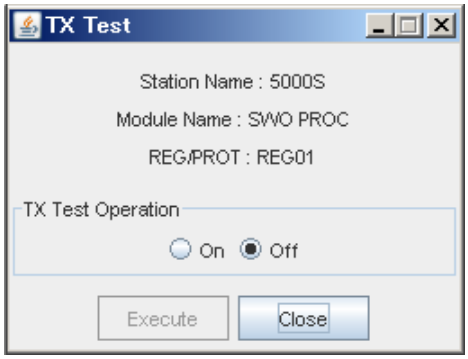
NOTES) "Base Band Output Control" is NOT applicable to OPT INTFC.

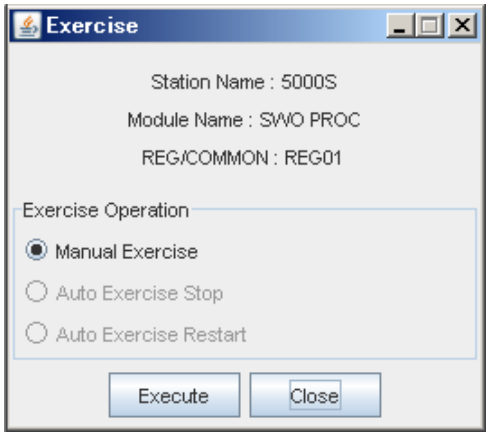
9.3.4 WS Pulse Mask Measurement



UNIT	MODULE	ITEM	DESCRIPTION	PARAMETER
MDP	OH/WS INTFC	Wayside Output Control	Fixed pattern output for T1 (1.5MB) Pulse Mask measurement	Isolated Pulse Output / Normal

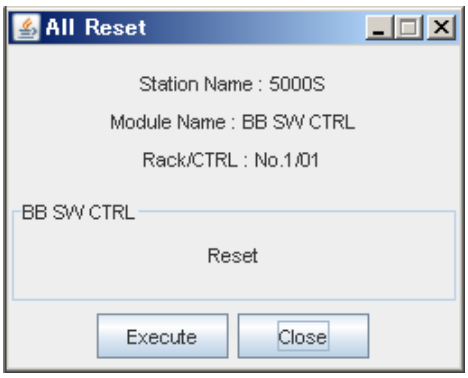
9.3.5 Radio Protection Switchover Test





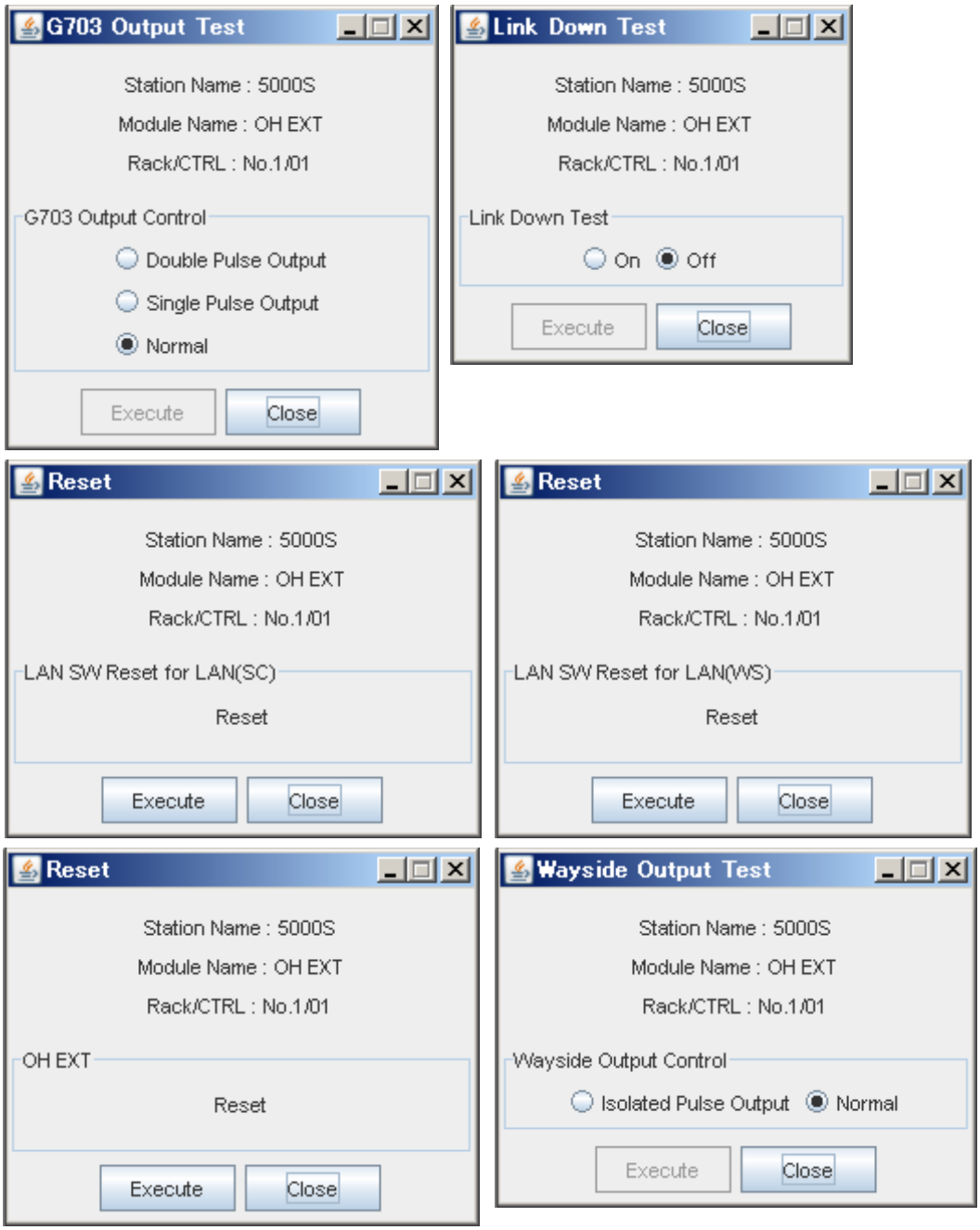
UNIT	MODULE	ITEM	DESCRIPTION	PARAMETER
MDP	SWO PROC	TX Test	Remote station Tx SW control.	ON/OFF
		Exercise	Manual Exercise Control	Manual Exercise

9.3.6 Automatic Protection Switchover Reset



UNIT	MODULE	ITEM	DESCRIPTION	PARAMETER
MDP	BB SW CTRL	BB SW CTRL Reset	Module action reset	Reset

9.3.7 OH EXT Test



UNIT	MODULE	ITEM	DESCRIPTION	PARAMETER
MDP	OH EXT	G703 Output Test	Fixed pattern output for G703 Pulse Mask measurement	Double Pulse Output / Single Pulse Output / Normal
		Link Down Test	Link Down Test	On / Off
		LAN SW Reset for LAN(SC)	Reset for LAN(SC) port	Reset
		LAN SW Reset for LAN(WS)	Reset for LAN(WS) port	Reset
		Wayside Output Control	Fixed pattern output for T1 (1.5MB) Pulse Mask measurement	Isolated Pulse Output / Normal
		OH EXT	Module action reset	Reset

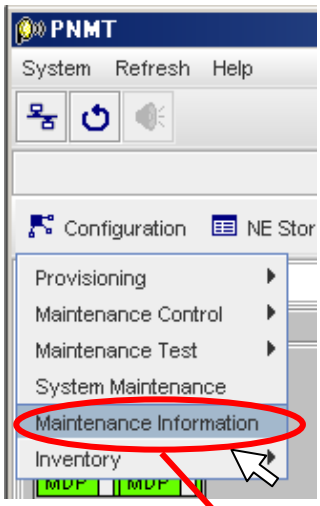
*** These windows will be displayed only when used in combination with LMS F/W Ver. 2.0.0 (or above).**

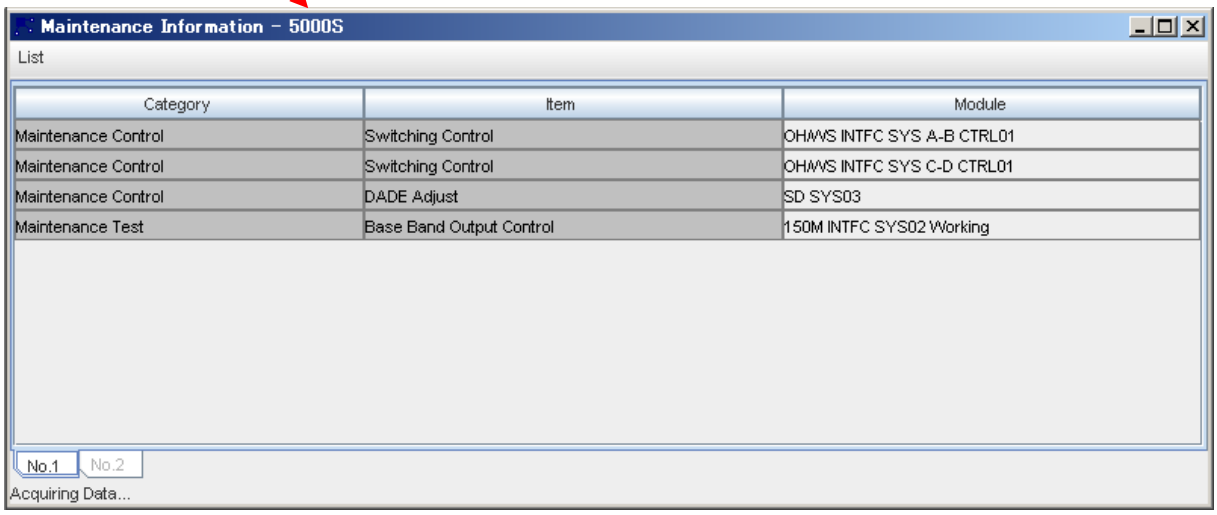
10 MAINTENANCE INFORMATION

In a Maintenance Information screen, it is a control item while carrying out a CTRL-related maintenance configuration. Item is displayed by list. Unless all configuration currently displayed here is canceled, Maintenance of CTRL cannot be set as OFF.

It is displayed as follows:

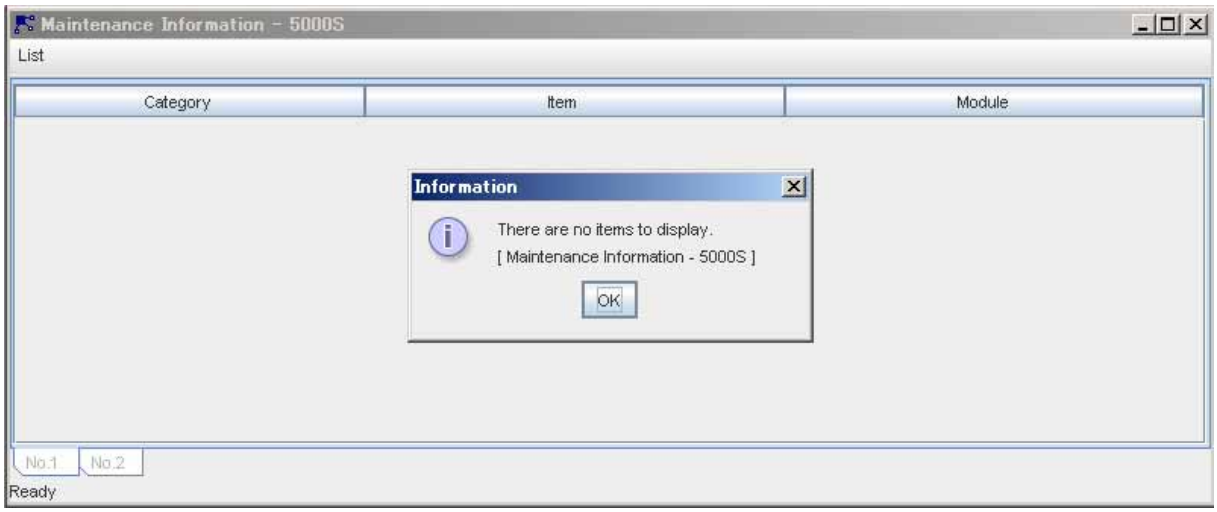
[Configuration]- [Maintenance Information] is selected in NE-Specific Menu Bar.





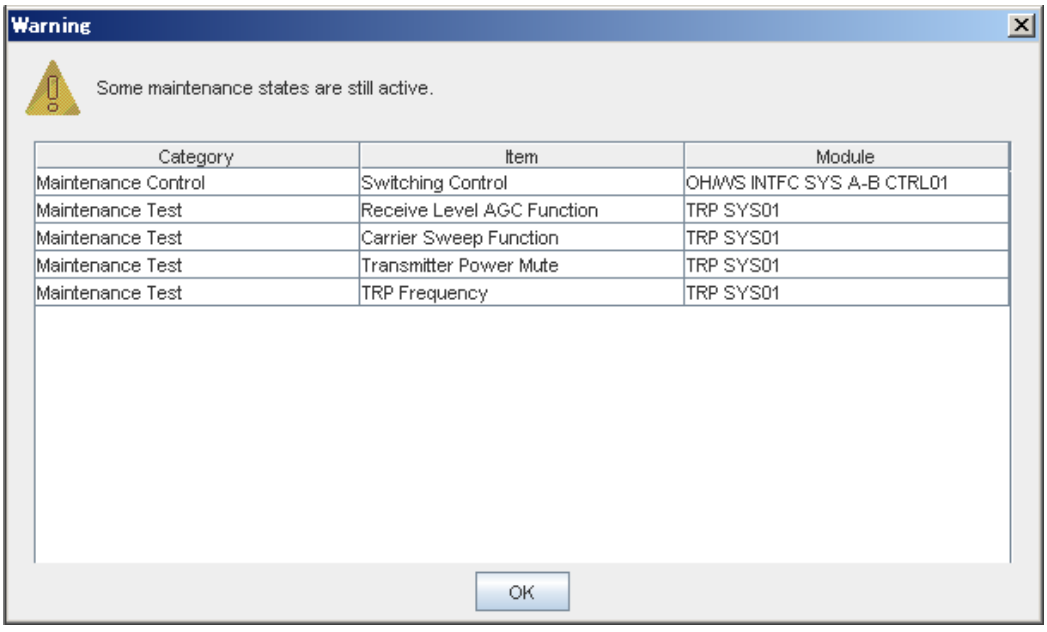
NOTE

When nothing displays on screen or when there is no Item, the following dialogs are displayed, and if [O.K.] is clicked, the screen will close.



NOTE

When Items under control are set to OFF for Maintenance CTRL, although they actually exist, the following warning dialogs are displayed and they cannot be set to OFF. The contents displayed here are the same as for Maintenance Information.



11 LINK PERFORMANCE MONITOR

Performance-related items defined by G.ITU-T 826 standard for every module are displayed (according to Link Performance Monitor. Display item changes with selected modules.

The items applicable to 5000S are displayed as follows:

(1) OPT INTFC/150M INTFC (WORK)

Title	Function	15min. register range	1day register range
OFS (R)	R facing Out of Frame Second	0-900	0-86400
RS NBBE (R B1)	R facing B1 Near-end Background Block Error	0-2160000	0-207360000
RS NES (R B1)	R facing B1 Near-end Errored Second	0-900	0-86400
RS NSES (R B1)	R facing B1 Near-end Severely Errored Second	0-900	0-86400
RS NSEP (R B1)	R facing B1 Near-end Severely Errored Period	0-900	0-86400
RS NUAS (R B1)	R facing RST (B1) Near-end Unavailable Second	0-900	0-86400
OFS (S)	S facing Out of Frame Second	0-900	0-86400
RS NBBE (S B1)	S facing B1 Near-end Background Block Error	0-2160000	0-207360000
RS NES (S B1)	S facing B1 Near-end Errored Second	0-900	0-86400
RS NSES (S B1)	S facing B1 Near-end Severely Errored Second	0-900	0-86400
RS NSEP (S B1)	S facing B1 Near-end Severely Errored Period	0-900	0-86400
RS NUAS (S B1)	S facing RST (B1) Near-end Unavailable Second	0-900	0-86400

(2) OPT INTFC (PROT)

Title	Function	15min. register range	1day register range
OFS (R)	R facing Out of Frame Second	0-900	0-86400
RS NBBE (R B1)	R facing B1 Near-end Background Block Error	0-2160000	0-207360000
RS NES (R B1)	R facing B1 Near-end Errored Second	0-900	0-86400
RS NSES (R B1)	R facing B1 Near-end Severely Errored Second	0-900	0-86400
RS NSEP (R B1)	R facing B1 Near-end Severely Errored Period	0-900	0-86400
RS NUAS (R B1)	R facing RST (B1) Near-end Unavailable Second	0-900	0-86400
OFS (S)	S facing Out of Frame Second	0-900	0-86400
RS NBBE (S B1)	S facing B1 Near-end Background Block Error	0-2160000	0-207360000
RS NES (S B1)	S facing B1 Near-end Errored Second	0-900	0-86400
RS NSES (S B1)	S facing B1 Near-end Severely Errored Second	0-900	0-86400
RS NSEP (S B1)	S facing B1 Near-end Severely Errored Period	0-900	0-86400
RS NUAS (S B1)	S facing RST (B1) Near-end Unavailable Second	0-900	0-86400

(3) MODEM

Title	Function	15min. register range	1day register range
OFS	Out of Frame Second	0-900	0-86400
BBE	Background Block Error	0-900	0-86400
ES	Errored Second	0-2380500	0-228528000
SES	Severely Errored Second	0-2252700	0-216259200
SEP	Severely Errored Period	0-900	0-86400
UAS	Unavailable Second	0-900	0-86400

(4) TRP/SD/2SD

Title	Function	15min. register range	1day register range
RX Level TCS	RX Level Threshold Crossed Seconds Count	1-900	1-86400
MAIN Level TCS	Main RX Level Threshold Crossed Seconds Count	1-900	1-86400
SD Level TCS	SD RX Level Threshold Crossed Seconds Count	1-900	1-86400
2SD Level TCS	SD RX Level Threshold Crossed Seconds Count	1-900	1-86400
RX Level MIN	Receive Level Minimum	-	-
RX Level MAX	Receive Level Maximum	-	-
RX Level AVRG	Receive Level Average	-	-

(5) BB SW CTRL

Title	Function	15min. register range	1day register range
PSC	Protection Switching Count	1-900	1-86400
PSD	Protection Switching Duration	1-900	1-86400

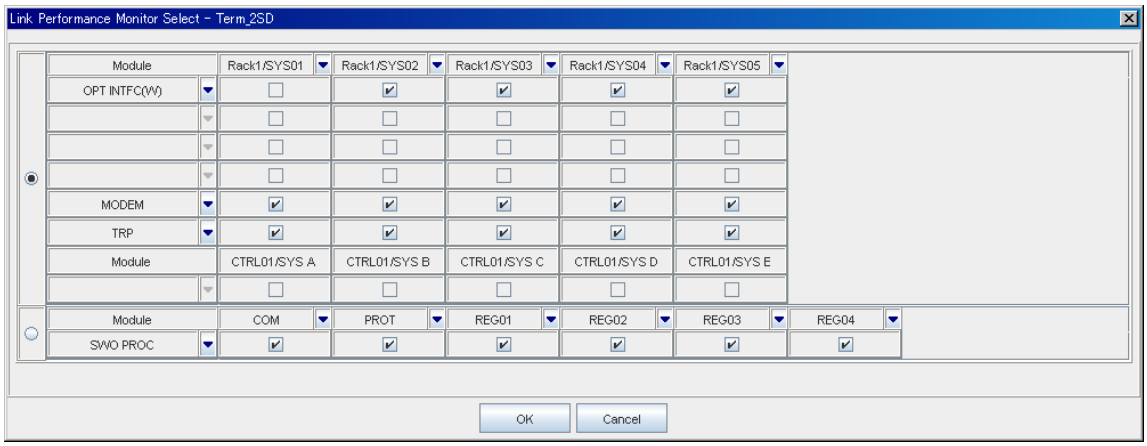
(6) SWO PROC

Title	15min. register range	1day register range
Switching Count	0-4095	0-4095
Switching Duration	0-900	0-1440
Switching Fail Count	0-4095	0-4095
Switching Fail Duration	0-900	0-1440
Switching Count	0-4095	0-4095
Switching Duration	0-900	0-1440
Switching Fail Count	0-4095	0-4095
Switching Fail Duration	0-900	0-1440
Early Warning Count	0-4095	0-4095
Early Warning Duration	0-900	0-1440
BER ALM Count	0-4095	0-4095
BER ALM Duration	0-900	0-1440
FSYNC ALM Count	0-4095	0-4095
FSYNC ALM Duration	0-900	0-1440

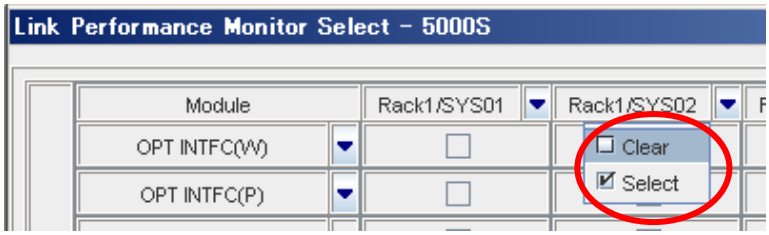
11.1 Viewing Summary Link Performance Monitor

It is displayed as follows:

1. If [Performance Monitor]-[Link Performance Monitor]-[LPM] is selected in NE-Specific Menu Bar, a Link Performance Monitor Select screen will be displayed.

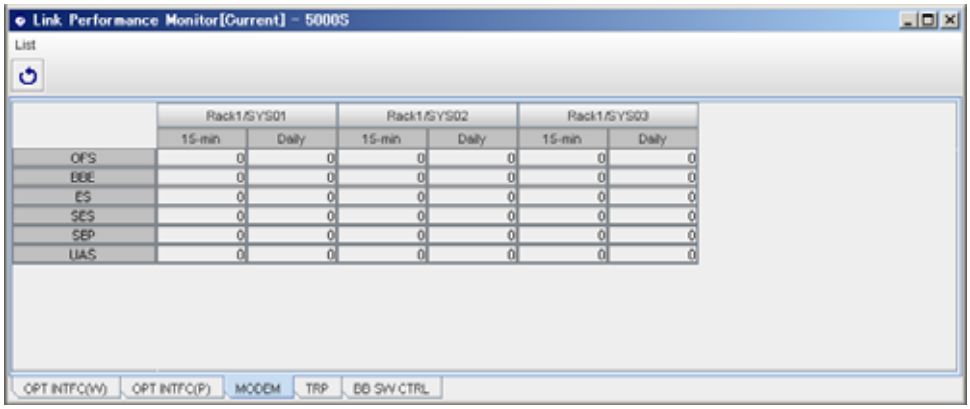


2. A pull down button can be selected for each system showing 2 options: **Clear** or **Select** - If Clear button is selected, all modules for that system will be unselected.



If Select button is selected, all modules for that system will be selected.

3. After checking the intended item to display on Link Performance Monitor Select screen, if the [O.K.] button is clicked, the respective Link Performance Monitor [Current] screen will be displayed.



For the displayed performance-related items, different background colors and symbols are used to designate the following conditions:

Item which TCN alarm has generated

Item acquired in Maintenance

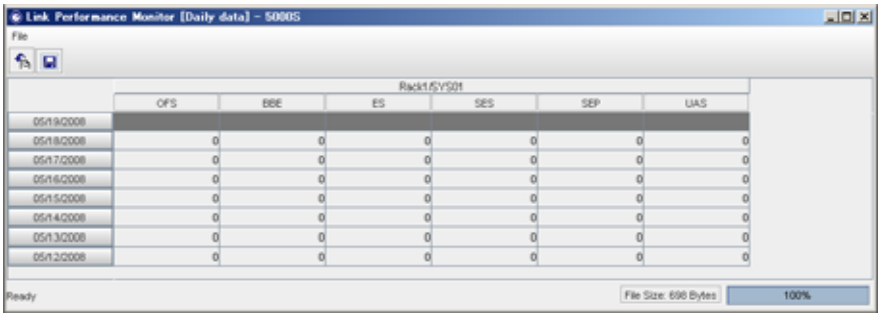
* Invalid data

\+ Item which exceeded the PMON register

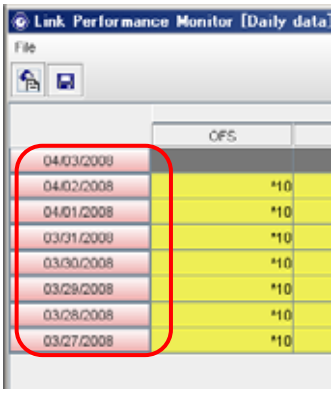
11.1.1 Link Performance Monitor (1day / 15 min. Data) window

To view the 1day Data:

1. The Link Performance Monitor [Daily Data] screen is displayed by clicking the button portion of a SYS name on a Link Performance Monitor [Current] screen.



Link Performance Monitor (1 day Data) window

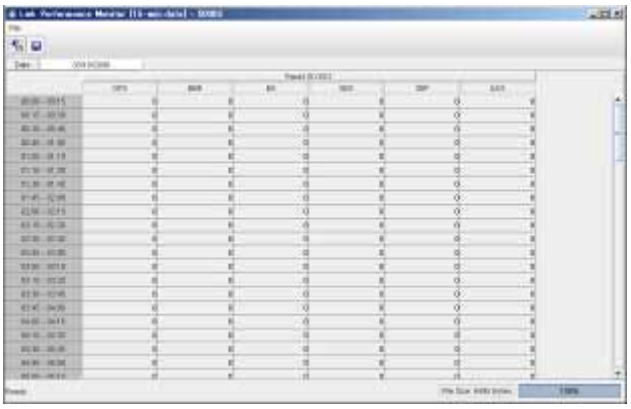


NOTE

When a TCN alarm occurs during 15-minute performance data mode, the background of the date button is displayed in the respective alarm color.

To view the 15-min. Data:

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



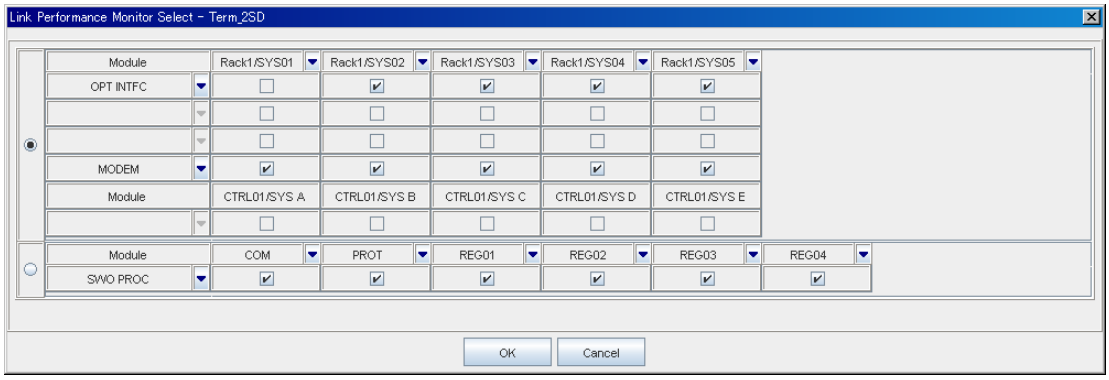
Link Performance Monitor (15-min. Data) window

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

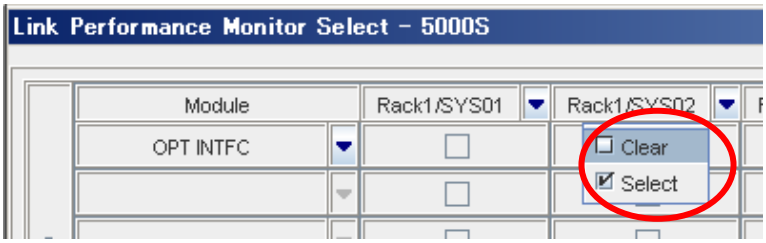
11.2 Threshold Setting

It is displayed as follows:

1. If [Performance Monitor]-[Link Performance Monitor]-[Threshold] is selected in NE-Specific Menu Bar, a Link Performance Monitor Select screen will be displayed.

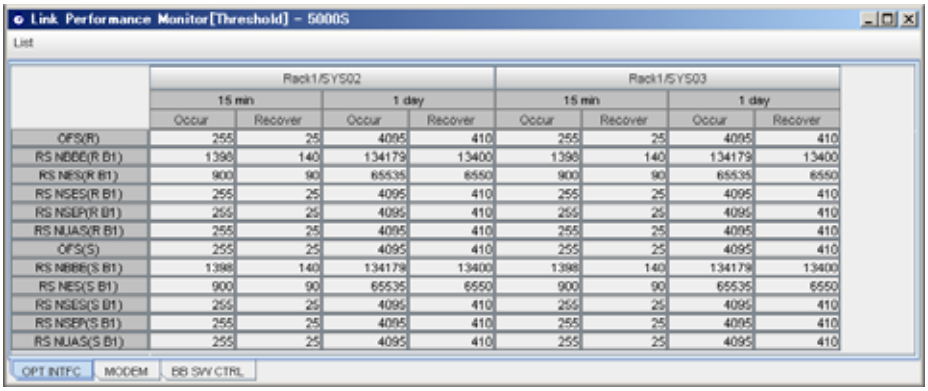


2. If a SYS pull down is clicked on a Link Performance Monitor Select screen, the sub menu of Clear/Select will be displayed as follows.



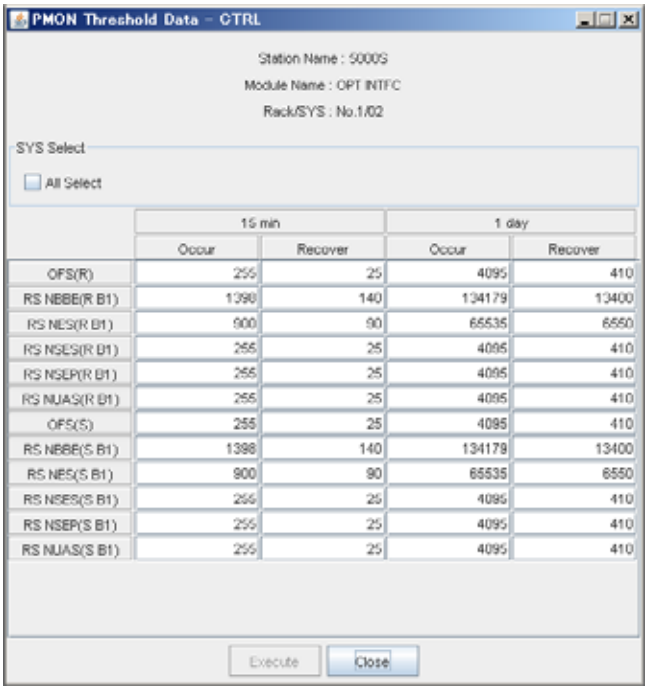
If a check is put in **Clear box**, the checks of all the modules for the selected SYS will be deleted. If a check is put in **Select**, the check of all the modules for the selected SYS will be entered accordingly.

3. After checking the intended item to display on Link Performance Monitor Select screen, if the [O.K.] button is clicked, the respective Link Performance Monitor [Current] screen will be displayed.



	Rack1/SYS02				Rack1/SYS03			
	15 min		1 day		15 min		1 day	
	Occur	Recover	Occur	Recover	Occur	Recover	Occur	Recover
OFS(R)	255	25	4095	410	255	25	4095	410
RS NBBE(R B1)	1398	140	134179	13400	1398	140	134179	13400
RS NES(R B1)	900	90	65535	6550	900	90	65535	6550
RS NSES(R B1)	255	25	4095	410	255	25	4095	410
RS NSEP(R B1)	255	25	4095	410	255	25	4095	410
RS NUAS(R B1)	255	25	4095	410	255	25	4095	410
OFS(S)	255	25	4095	410	255	25	4095	410
RS NBBE(S B1)	1398	140	134179	13400	1398	140	134179	13400
RS NES(S B1)	900	90	65535	6550	900	90	65535	6550
RS NSES(S B1)	255	25	4095	410	255	25	4095	410
RS NSEP(S B1)	255	25	4095	410	255	25	4095	410
RS NUAS(S B1)	255	25	4095	410	255	25	4095	410

4. TCN configuring screen is displayed by clicking the button with the appropriate SYS name.



	15 min		1 day	
	Occur	Recover	Occur	Recover
OFS(R)	255	25	4095	410
RS NBBE(R B1)	1398	140	134179	13400
RS NES(R B1)	900	90	65535	6550
RS NSES(R B1)	255	25	4095	410
RS NSEP(R B1)	255	25	4095	410
RS NUAS(R B1)	255	25	4095	410
OFS(S)	255	25	4095	410
RS NBBE(S B1)	1398	140	134179	13400
RS NES(S B1)	900	90	65535	6550
RS NSES(S B1)	255	25	4095	410
RS NSEP(S B1)	255	25	4095	410
RS NUAS(S B1)	255	25	4095	410

5. When a TCN value is inputted in a TCN configuring screen and the [O.K.] button is clicked, the TCN value is saved to the NE

6. When the **All Select** box is checked, and the [OK] button is clicked, the same **TCN** value will be set for all existing **SYS**.

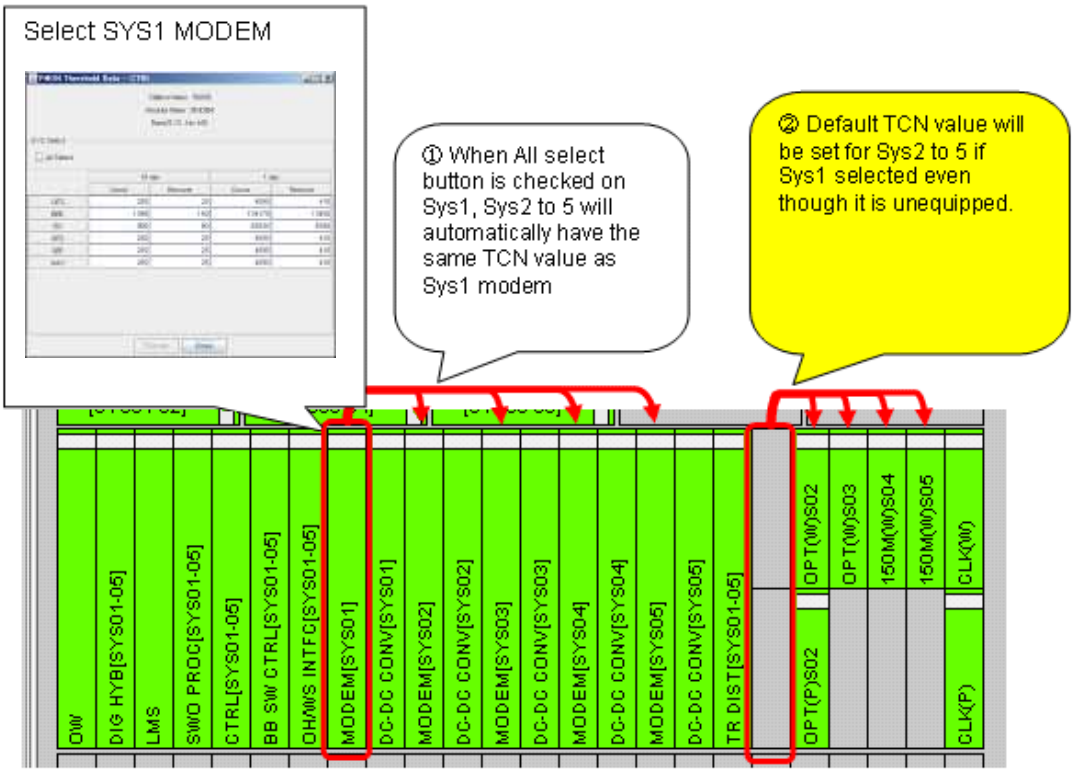
NOTE

*When the **All Select** box is checked, there are certain limitations on the operations that can be performed (see below for details).*

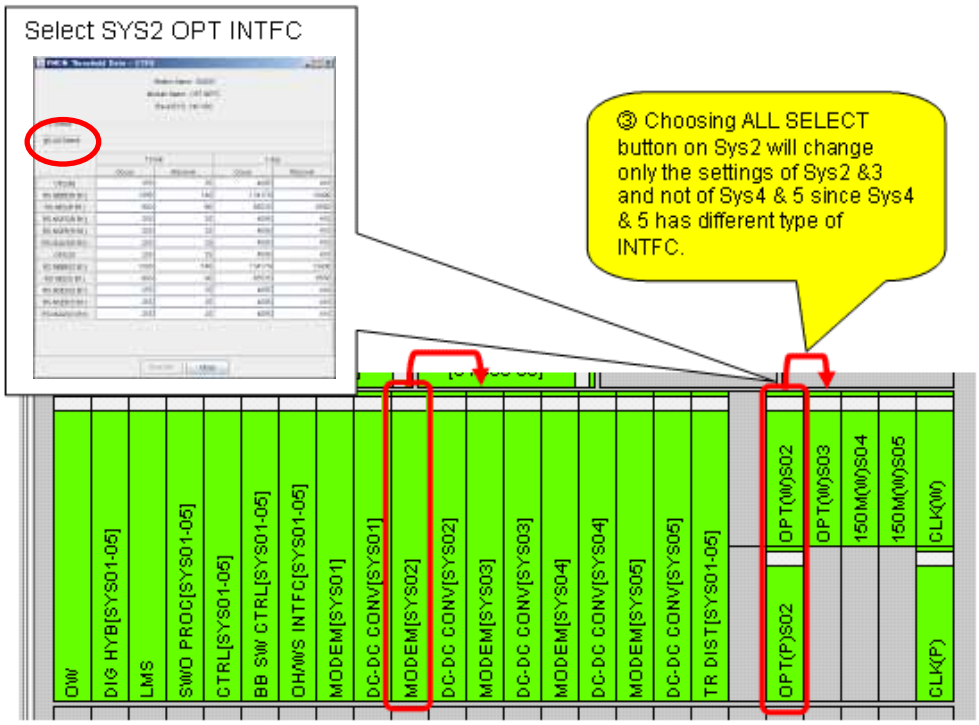
ALL SELECT should be used when all actually mounted SYS modules are identical.

---

1) All select button is checked when you wish to have the same TCN value for all similar systems.



2) When a module is selected that is mounted only in designated SYS



3) Close window by clicking the [Close] button.

12 METERING

A metering function is a function for monitoring the modular measurement data.

By specifying the desired panel/values from PNMT, it is possible to monitor the values in real time.

Item used as the candidate for metering data monitoring essentially are the following items of a MODEM module.

- TRANSMIT LEVEL
- RECEIVE LEVEL
- MAIN RECEIVE LEVEL
- SD RECEIVE LEVEL
- BER

At 10 second intervals, data for the stipulated item is retrieved, numerically converted and displayed on the screen.

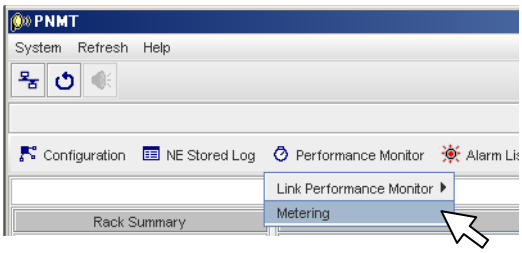
The following table provides a brief description of the displayed items:

Item/Feature	Description
Transmit Level	Level of Transmitter Output Power at Antenna port
Receive Level	Level of Received Signal (where an SD signal is present, it is the level of the combined signal)
Main Receive Level	Level of Received Main Signal
SD Receive Level output	Level of Received SD Signal
BER	Hop Bit Error Rate

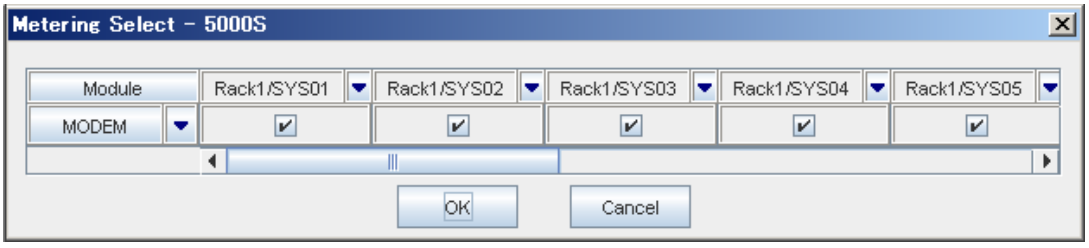
12.1 Viewing Summary Metering Window

To view Summary Metering Window:

1. Select [Performance Monitor]-[Metering] in NE-Specific Menu Bar.

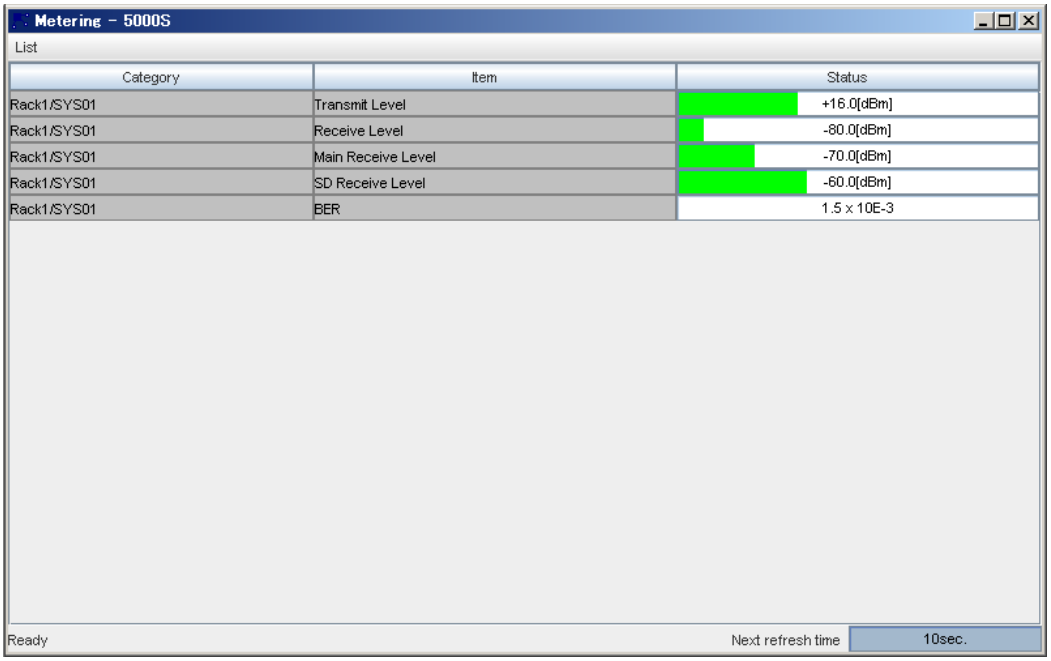


2. Select the SYS you wish to display and click [OK].



Summary Metering Select window

3. Acquire data automatically every 10 seconds and display the newest status.



Summary Metering window

The exact metered value is displayed on a green bar graph in the status column.

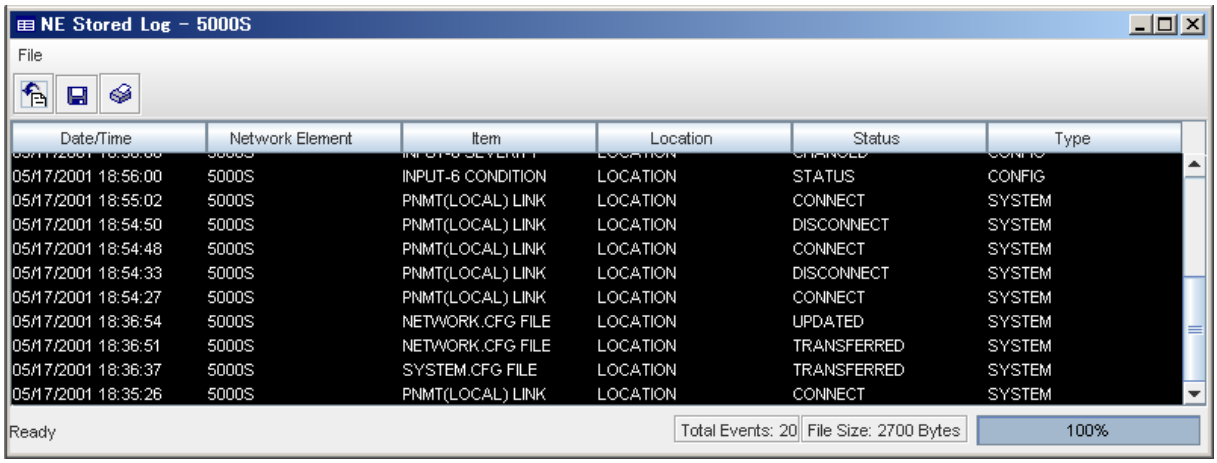
"***" is displayed for values outside the measurement range of the respective item. When no metered value can be acquired from the NE, the Status column remains blank; but, is shaded in grey.

13 EVENT LOG

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

13.1 Event Log monitor

1. Click [NE Stored Log] in the NE-specific menu bar.
2. Wait until the PNMT finishes the uploading of the data.
3. The **NE Stored Log View** will be displayed. The event log is presented in a table form showing the date of the event, the item that triggered the event and the status change.
4. Sorting is possible for every column in the Event Log window.
5. The date shown in the Event Log window will be in the format of the OS.
6. The data can be refreshed by clicking on the upload (Reload) icon.

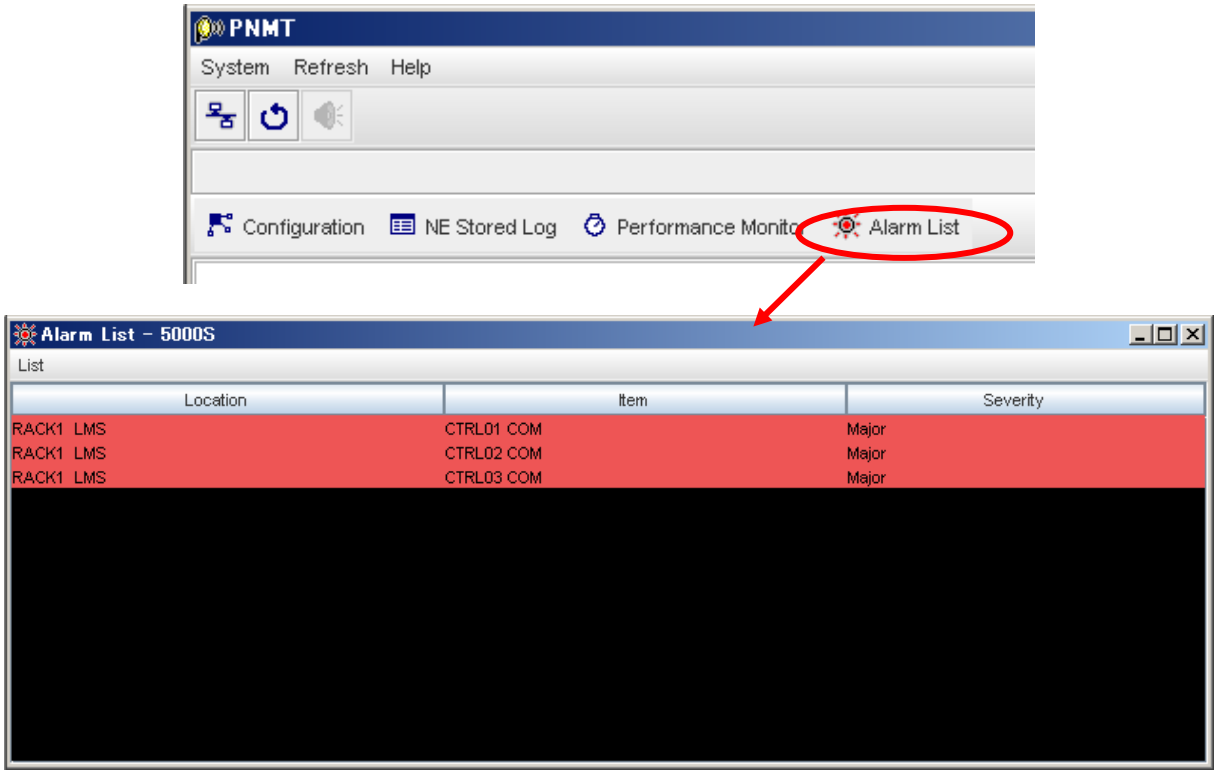


14 ALARM LIST

The alarm under present generating is expressed as an Alarm List screen in list form.

14.1 Alarm List Window

1. The alarm under present generating is expressed as an Alarm List screen in list form.



2. The alarm generated / restored is automatically reflected in the contents of Alarm List.
3. It is each item by clicking the column name area of Location, Item, and Severity. Sorting by Item is possible.
4. Exit this screen by choosing [List]-[Close] from a menu.

15 INVENTORY

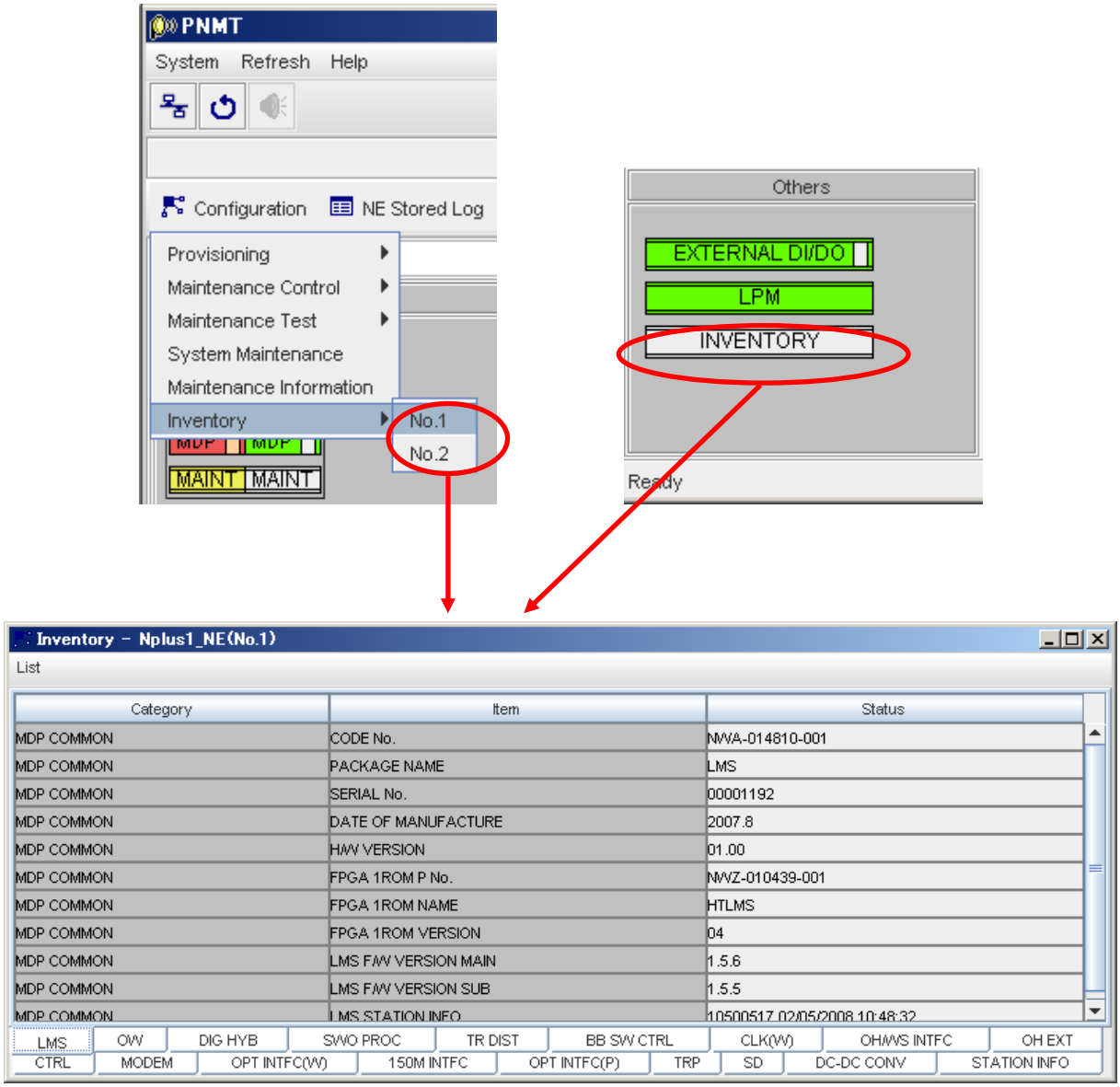
The relevant inventory information for the equipment can be viewed using this function.

15.1 Inventory Monitor

To display the equipment version:

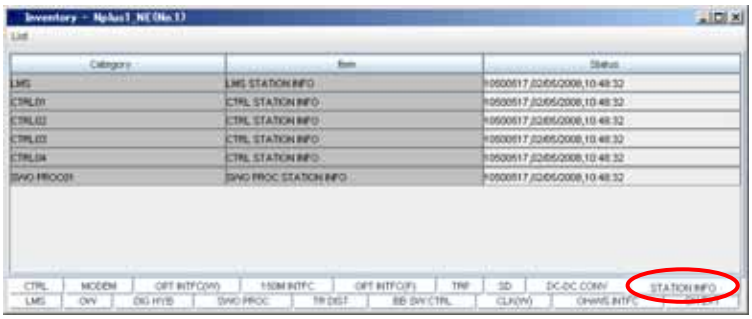
[Configuration]- [Inventory]-[No. xx] is selected in NE-Specific Menu Bar

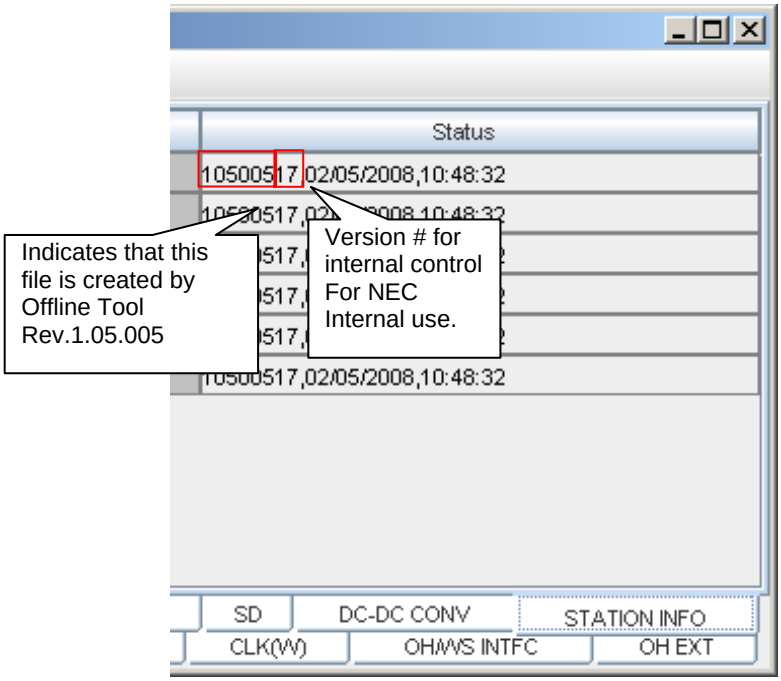
Alternatively, click the INVENTORY icon in the ***Others*** column



NOTE

When [STATION INFO] tab is selected, creation date of configuration file and Version information of Offline Tool applied to each Module (LMS, CTRL and SWO PROC) can be confirmed.

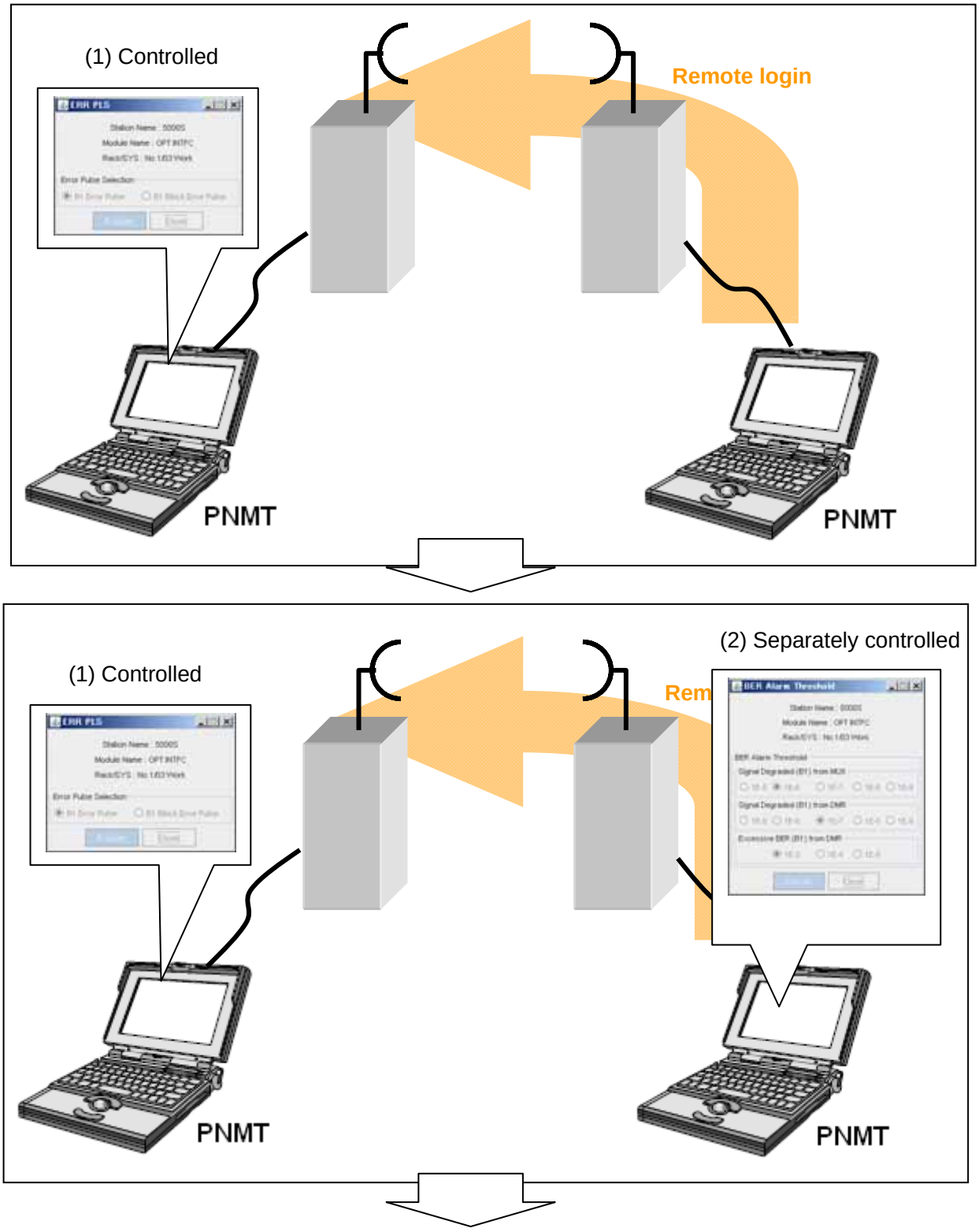


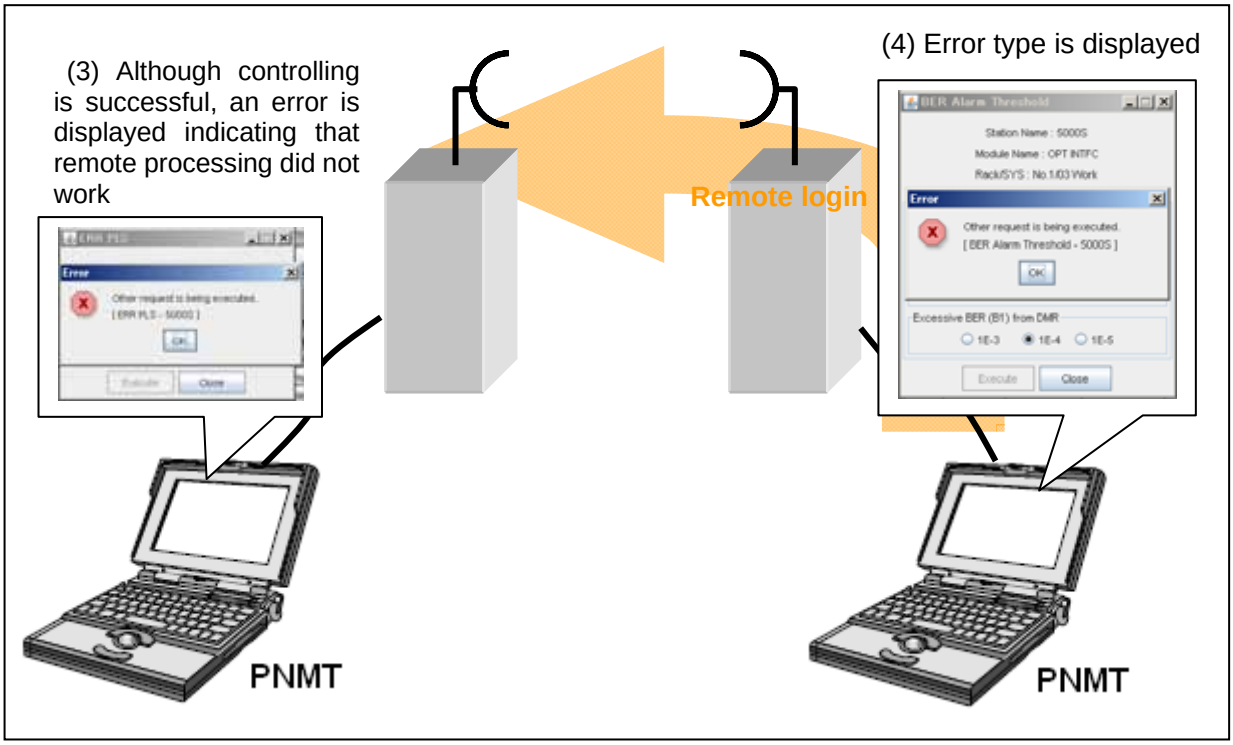


16 Cautionary Notes

16.1 Error message when multiple controlling operations are underway

When another control operation is initiated in PNMT before a previous one is completed, the following error message will be displayed on both control screens: "Other request is being executed." (The earlier one will be properly completed nonetheless).




(3) Although controlling is successful, an error is displayed indicating that remote processing did not work
Remote login
(4) Error type is displayed
PNMT
PNMT

Appendix A: Equipment Network Settings

In *Equipment Network Setting*, the setting parameters for each NE are different. They depend on the LMS Type selection (Equipment Type, LMS Type, and Branch NE Type).

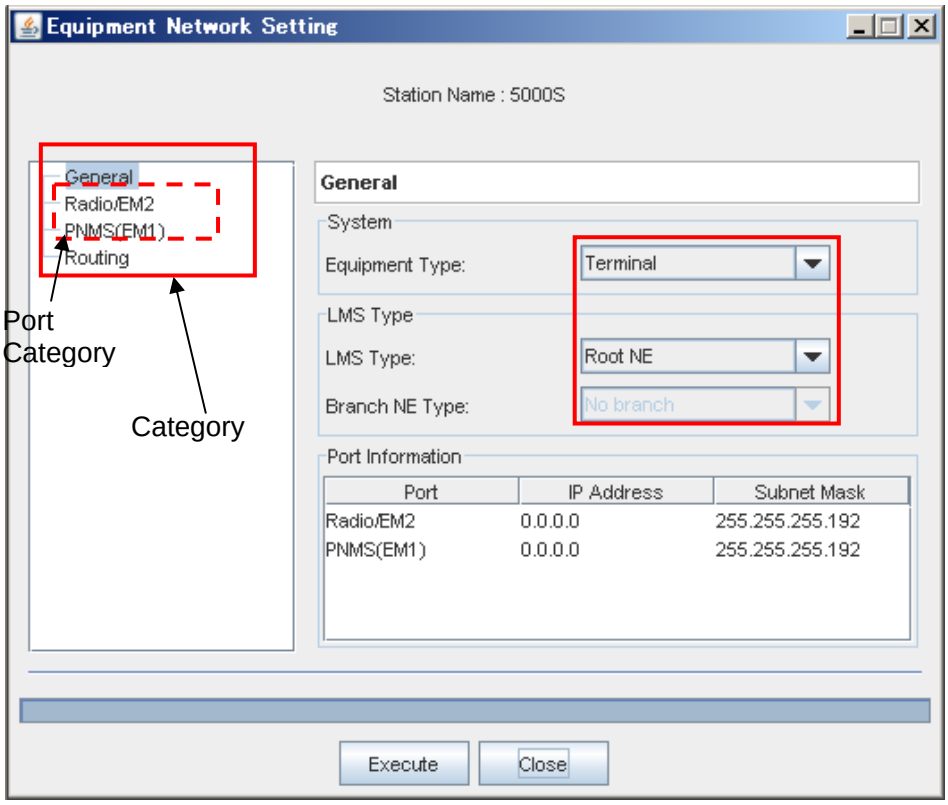
LMS Type (General)			Category	Input Item
Equipment Type	**LMS Type**	**Branch NE Type**		
Terminal	Root NE	Not selectable	General	Equipment Type
				LMS Type
				Branch NE Type
			DIR-A/EM2	IP Address
				Subnet Mask
			PNMS (EM1)	IP Address
				Subnet Mask
			Routing	Default Gateway
				Static Routing Table
	Root NE (Bridge)	Not selectable	General	Equipment Type
				LMS Type
				Branch NE Type
			DIR-A/EM2/EM1	IP Address
				Subnet Mask
			Routing	Default Gateway
				Static Routing Table
	Branch NE	No Branch (Not used)	General	Equipment Type
				LMS Type
				Branch NE Type
			DIR-A/EM2/EM1	IP Address
				Subnet Mask
			Routing	Default Gateway
				Static Routing Table
		2 Branches	General	Equipment Type
				LMS Type
				Branch NE Type
			DIR-A	IP Address
				Subnet Mask
			EM1/EM2	IP Address
				Subnet Mask
			Routing	Default Gateway
				Static Routing Table
		3 Branches	General	Equipment Type
				LMS Type
				Branch NE Type
			DIR-A	IP Address
				Subnet Mask
			EM1	IP Address
				Subnet Mask
			EM2	IP Address
				Subnet Mask

LMS Type (General)			Category	Input Item
Equipment Type	**LMS Type**	**Branch NE Type**		
Terminal	Branch NE	3 Branches	Routing	Default Gateway
				Static Routing Table
	Normal NE	Not selectable	General	Equipment Type
				LMS Type
				Branch NE Type
			Radio/EM1/EM2	IP Address
				Subnet Mask
			Routing	Default Gateway
				Static Routing Table
2xTerminal/Repeater	Root NE	Not selectable	General	Equipment Type
				LMS 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
	Root NE (Bridge)	Not selectable	General	Equipment Type
				LMS Type
				Branch NE Type
			DIR-A/ DIR-B EM2/EM1	IP Address
				Subnet Mask
			Routing	Default Gateway
				Static Routing Table
			General	Equipment Type
				LMS Type
	Branch NE	No Branch (Not used)	DIR-A /DIR-B/EM2/EM1	Branch NE Type
				IP Address
				Subnet Mask
			Routing	Default Gateway
				Static Routing Table
			General	Equipment Type
				LMS Type
		2 Branches	DIR-A	Branch NE Type
				IP Address
				Subnet Mask
			DIR-B/EM1/EM2	IP Address
				Subnet Mask
			Routing	Default Gateway
				Static Routing Table

LMS Type (General)			Category	Input Item
Equipment Type	**LMS Type**	**Branch NE Type**		
2xTerminal/Repeater	Branch NE	3 Branches	General	Equipment Type
				LMS 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
		4 Branches	General	Equipment Type
				LMS Type
				Branch NE Type
			DIR-A	IP Address
				Subnet Mask
			DIR-B	IP Address
				Subnet Mask
			EM2	IP Address
				Subnet Mask
			EM1	IP Address
				Subnet Mask
			Routing	Default Gateway
				Static Routing Table
	Normal NE	Not selectable	General	Equipment Type
				LMS Type
				Branch NE Type
			Radio/EM1/EM2	IP Address
				Subnet Mask
			Routing	Default Gateway
				Static Routing Table

Note: Here **EM1** / **EM2** indicate the IDU front interface **NMS/ NE** ports respectively

In *Category* → General and select there Equipment Type and LMS Type (LMS 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 (No subnet diverges)

- Branch NE (No Branch)

  Not used

- Branch NE (2 Branch)

  Subnet diverges in two ways

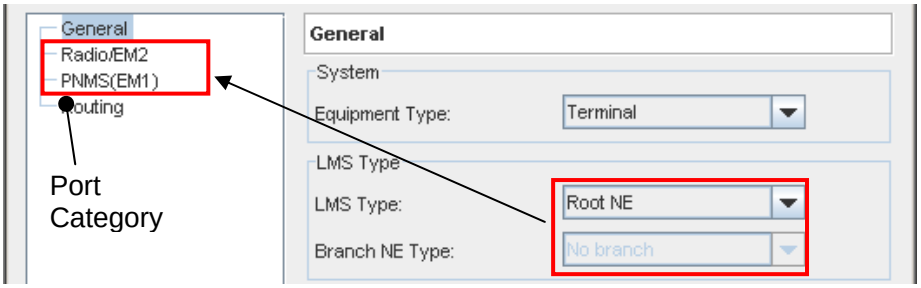
- Branch NE (3 Branch)

  Subnet diverges in three ways

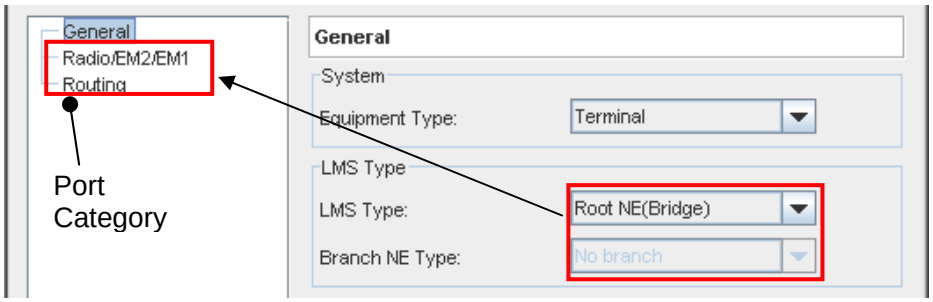
- Normal NE

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

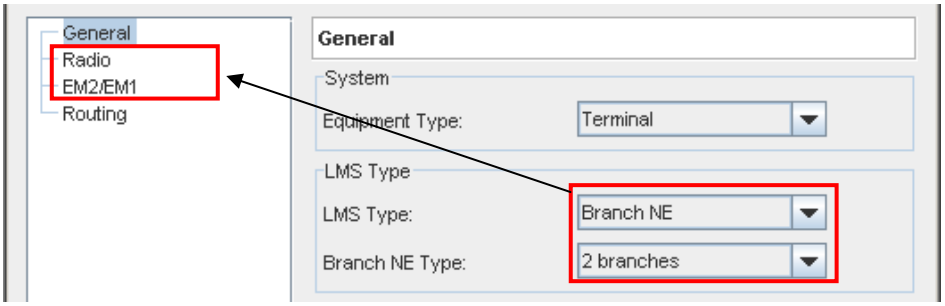
1. The **Port Category** item changes according to **LMS Type** (**LMS Type** and **Branch NE Type**).



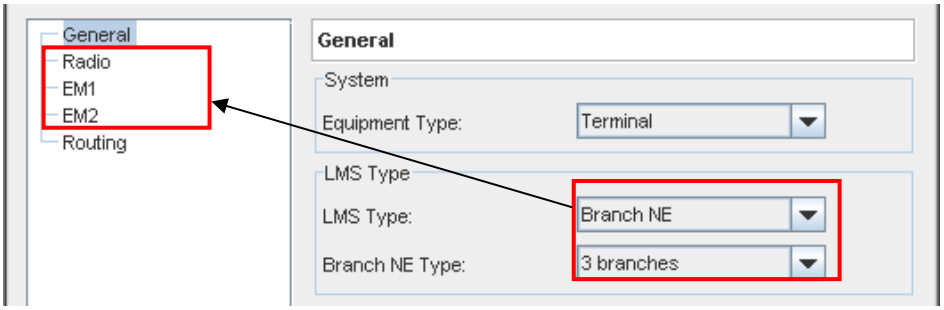
LMS Type = Root NE



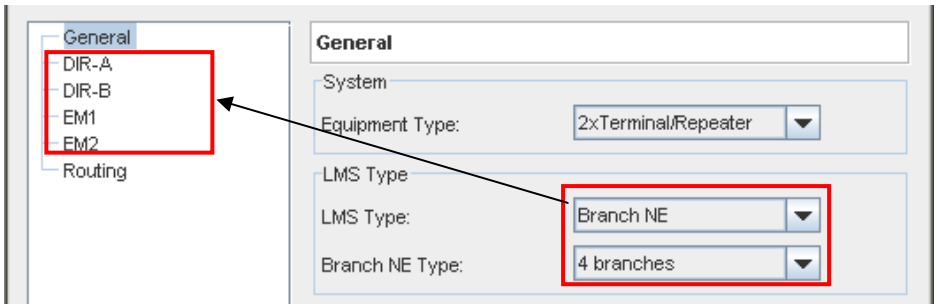
LMS Type = Root NE (Bridge)



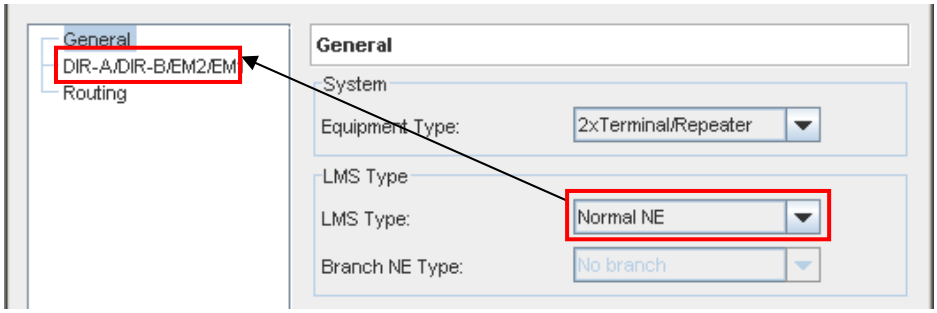
LMS Type = Branch NE or Branch NE Type = 2 Branches



LMS Type = Branch NE or Branch NE Type = 3 Branches



LMS Type = Branch NE or Branch NE Type = 4 Branches



LMS Type = Normal NE

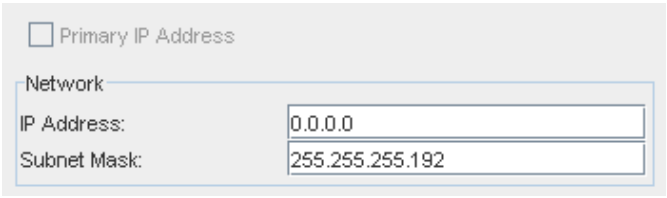
2. Set and select **Port category** and **Routing**. The right hand screen will change according to the selected item in **Category**.

- Primary IP Address

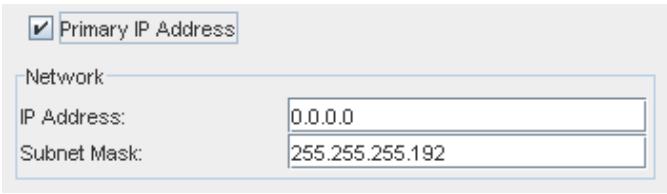
  PNMS identify a NE with using the IP address in NE. The check can be applied only to 1 **port category** of several **Port categories** that exists in **LMS Type** when **Branch NE** is selected.

- IP Address & Subnet Mask

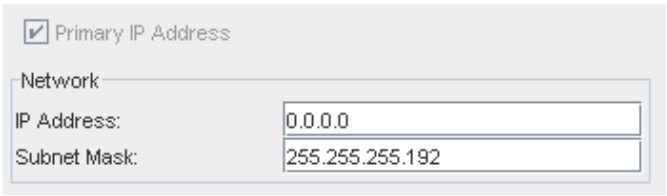
  The following items are set to each Port



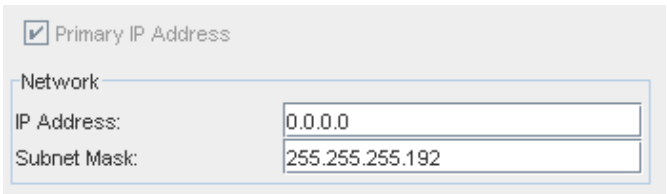
PNMS (E1)



Radio or EM1 or EM2 or EM1/EM2



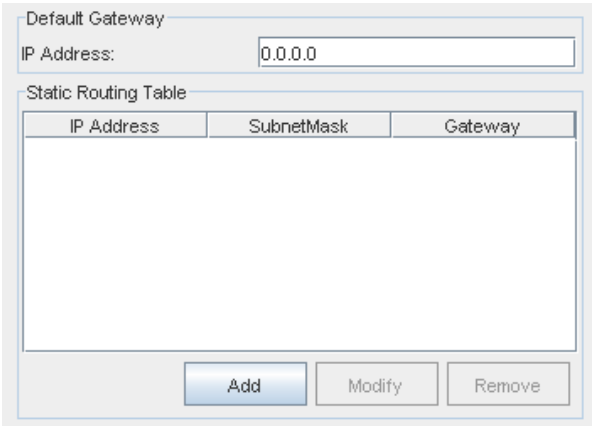
Radio/EM2



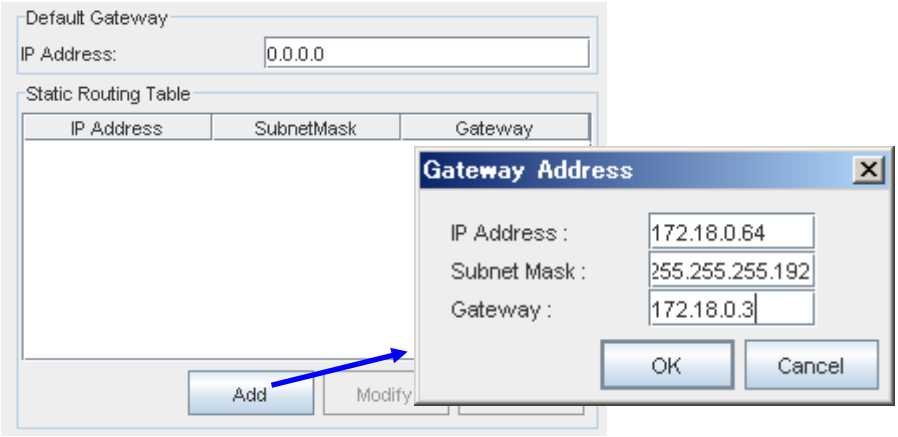
Radio/EM1/EM2

3. Select and set Routing.

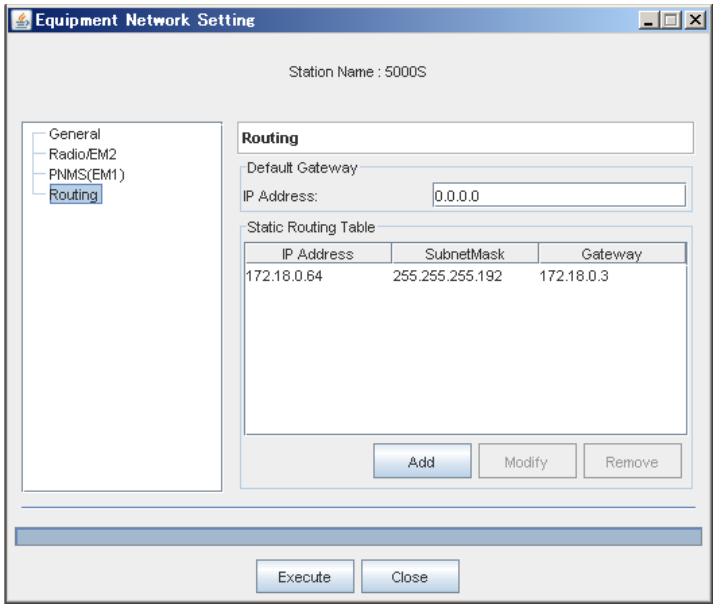
3-1 If there is no subnet in the network, the **Static Routing table** will not show any entries.



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



4. Click [OK] button to activate the address setting.



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

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

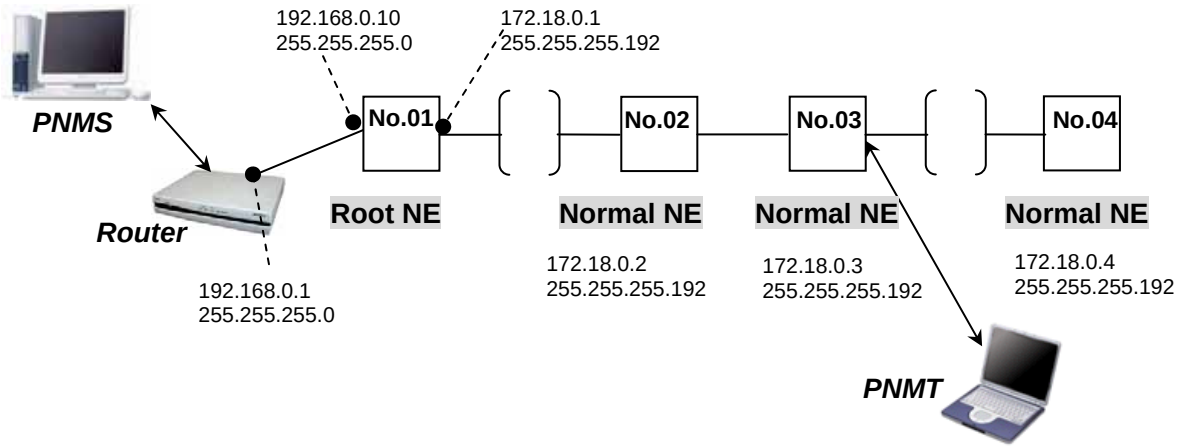
5. Click **[Execute]** button to activate the Equipment Networking setting.

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 reconnected after the Control module resets.

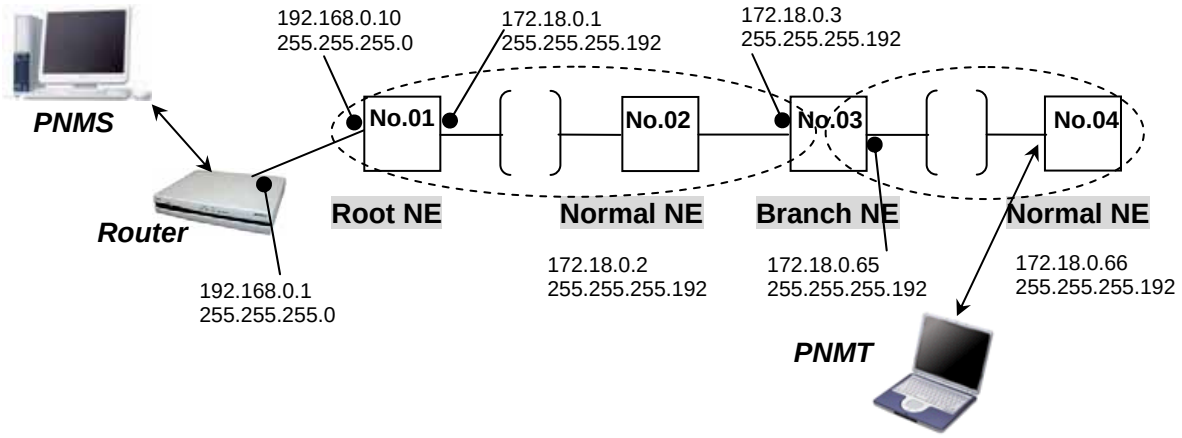
< Sample Network Configuration >

The Network Configuration when subnet is connected.



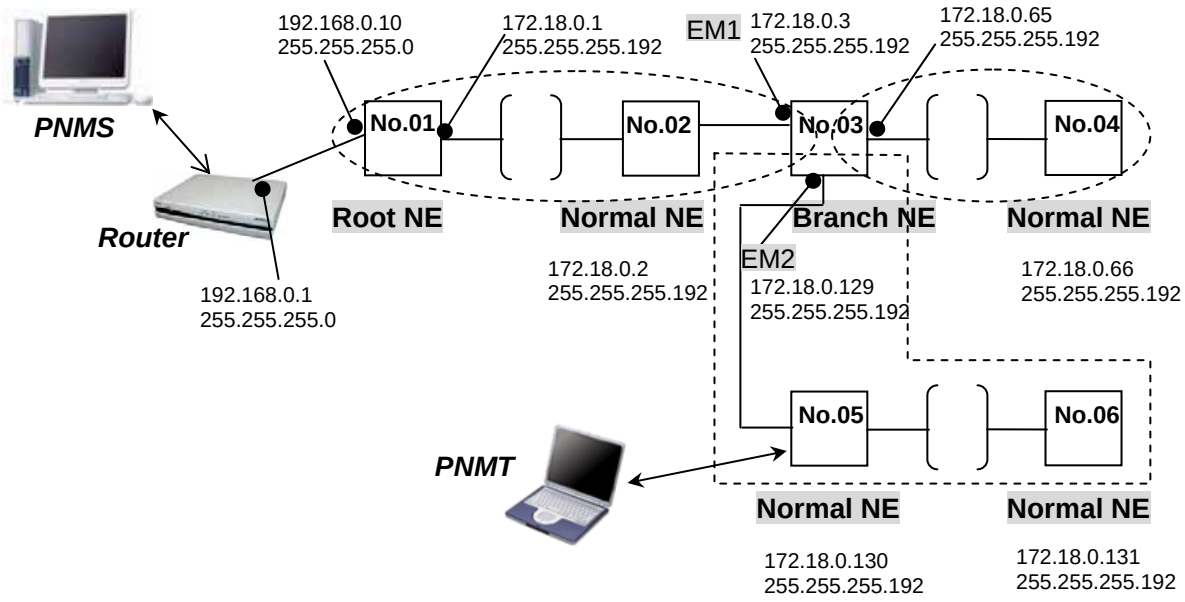
NE	General (Category)			Category	Item Name	Input data
	Equipment Type	LMS Type	Branch NE Type			
No.01	Terminal	Root NE	Not selectable	Radio/EM2	IP Address	172.18.0.1
					Subnet Mask	255.255.255.192
				PNMS (EM1)	IP Address	192.168.0.10
					Subnet Mask	255.255.255.0
				Routing	Default Gateway	192.168.0.1
					Static Routing Table	-
No.02	Terminal	Normal NE	Not selectable	Radio/EM1/EM2	IP Address	172.18.0.2
					Subnet Mask	255.255.255.192
				Routing	Default Gateway	192.168.0.1
					Static Routing Table	-
No.03	Terminal	Normal NE	Not selectable	Radio/EM1/EM2	IP Address	172.18.0.3
					Subnet Mask	255.255.255.192
				Routing	Default Gateway	172.18.0.1
					Static Routing Table	-
No.04	Terminal	Normal NE	Not selectable	Radio/EM1/EM2	IP Address	172.18.0.4
					Subnet Mask	255.255.255.192
				Routing	Default Gateway	172.18.0.1
					Static Routing Table	-

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



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

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

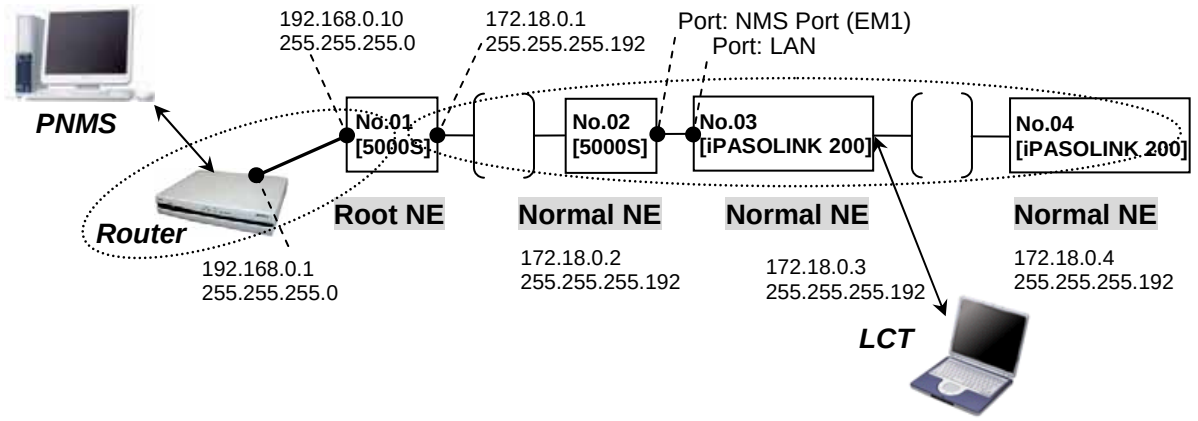


NE	General (Category)			Category	Item Name	Input data
	Equipment Type	LMS Type	Branch NE Type			
No.01	Terminal	Root NE	Not selectable	Radio/EM2	IP Address	172.18.0.1
					Subnet Mask	255.255.255.192
				PNMS (EM1)	IP Address	192.168.0.10
					Subnet Mask	255.255.255.0
				Routing	Default Gateway	192.168.0.1
					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	Terminal	Normal NE	Not selectable	Radio/EM1/EM2	IP Address	172.18.0.2
					Subnet Mask	255.255.255.192
				Routing	Default Gateway	192.168.0.1
					Static Routing Table	-
No.03	Terminal	Branch NE	3 Branches	Radio	IP Address	172.18.0.65
					Subnet Mask	255.255.255.192
				EM1	IP Address	172.18.0.3
					Subnet Mask	255.255.255.192
				EM2	IP Address	172.18.0.129
					Subnet Mask	255.255.255.192
				Routing	Default Gateway	172.18.0.1
					Static Routing Table	-
No.04	Terminal	Normal NE	Not selectable	Radio/EM1/EM2	IP Address	172.18.0.66
					Subnet Mask	255.255.255.192
				Routing	Default Gateway	172.18.0.1
					Static Routing Table	-

NE	General (Category)			Category	Item Name	Input data
	Equipment Type	LMS Type	Branch NE Type			
No.05	Terminal	Normal NE	Not selectable	Radio/EM1/EM2	IP Address	172.18.0.130
					Subnet Mask	255.255.255.192
				Routing	Default Gateway	172.18.0.1
					Static Routing Table	-
No.06	Terminal	Normal NE	Not selectable	Radio/EM1/EM2	IP Address	172.18.0.131
					Subnet Mask	255.255.255.192
				Routing	Default Gateway	172.18.0.1
					Static Routing Table	-

Using AutoDiscovery on 5000S & iPASOLINK 200 Mixed Network.

Ether EM1 or EM2 of boundary equipment with 5000S / iPASOLINK 200 can be set.
5000S and iPASOLINK 200 are connected with each other through LAN.



NE	TYPE	General (Category)		Category	Item Name		Input data
		CTRL Type	Branch NE Type				
No.01	5000S	Root NE	Not selectable	Radio/EM2	IP Address		172.18.0.1
					Subnet Mask		255.255.255.192
					LLDP	NE Port(EM2)	Disable
						NMS Port(EM1)	Disable
				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	5000S	Normal NE	Not selectable	Radio/EM1/EM2	IP Address		172.18.0.2
					Subnet Mask		255.255.255.192
					LLDP	NE Port(EM2)	Disable
						NMS Port(EM1)	Enable
				Routing	Default Gateway		172.18.0.1
					Static Routing Table		-
No.03	iPASOLINK 200	Normal NE	Not selectable	General Setting	IP Address		172.18.0.3
					Subnet Mask		255.255.255.192
					Default Gateway		172.18.0.1
				Routing Setting	Static Routing Table		-
No.04	iPASOLINK 200	Normal NE	Not selectable	General Setting	IP Address		172.18.0.4
					Subnet Mask		255.255.255.192
					Default Gateway		172.18.0.1
				Routing Setting	Static Routing Table		-