Chart 3-5 (Cont'd)

Step	Procedure
	ANTENNA DIRECTO MOUNTING TYPE
	A. USING ANDREW VHLP TYPE BRACKET
	Azimuth Angle Adjustment
6-1	Loosen bolts (1 in Fig. 3-4 (1/4) A),
6-2	Adjust the azimuth angle by adjusting bolt (2 in Fig. 3-4 (1/4) A),
6-3	Secure bolts loosened in step 6-1,
	Elevation Angle Adjustment
6-4	Loosen bolts (3 in Fig. 3-4 (1/4) A),
6-5	Adjust the elevation angle by adjusting bolt (4 in Fig. 3-4 (1/4) A)
6-6	Secure bolts loosened in step 6-4,
	B. USING RFS SB1 TYPE BRACKET
	Azimuth Angle Adjustment
6-7	Loosen nuts (1 in Fig. 3-4-B),
6-8	Adjust the azimuth angle by adjusting the nuts (2 in Fig. 3-4 (1/4) B),
6-9	Secure nuts loosened in step 6-7,
	Elevation Angle Adjustment
6-10	Loosen bolt(s) (3 in Fig. 3-4 (1/4) B),
6-11	Adjust the elevation angle by adjusting the nuts (4 in Fig. 3-4 (1/4) B),
6-12	Secure nut loosened in step 6-7,
6-13	Secure nuts loosened in step 6-10.

Chart 3-5 (Cont'd)

Step	Procedure
	C. USING RFS C-Mount TYPE BRACKET
	Azimuth Angle Adjustment
6-14	Loosen 3 bolts (1 in Fig. 3-4 (2/4)),
6-15	Adjust azimuth angle by adjusting bolt (2 in Fig. 3-4 (2/4)),
6-16	Secure nuts loosened in step 6-14,
	Elevation Angle Adjustment
6-17	Loosen 4 bolts (3 in Fig. 3-4 (2/4)),
6-18	Adjust elevation angle by adjusting bolt (4 in Fig. 3-4 (2/4)),
6-19	Secure bolts loosened in step 6-17,
7	At each station, restore the "Antenna Alignment Mode" to "off" using the LCT,
8	At each station, reset control items to original using LCT,
9	At each station, restore the "MAINT Mode" to "off" position using the LCT,
10	At each station, disconnect the digital multimeter or NLite E Monitor from the RX LEV MON connector,
11	At each station, reconnect the cap removed in step 4,
	Note: The RX LEV MON connector must be capped for waterproof.

Chart 3-5 (Cont'd)

Step	Procedure

XPD Adjustment (For Antenna Directo Mounting Type)

Note: The XPD adjustment using cross-polarization signal should be done more carefully than using co-polarization signal because XPD changes sharply in the axial direction.

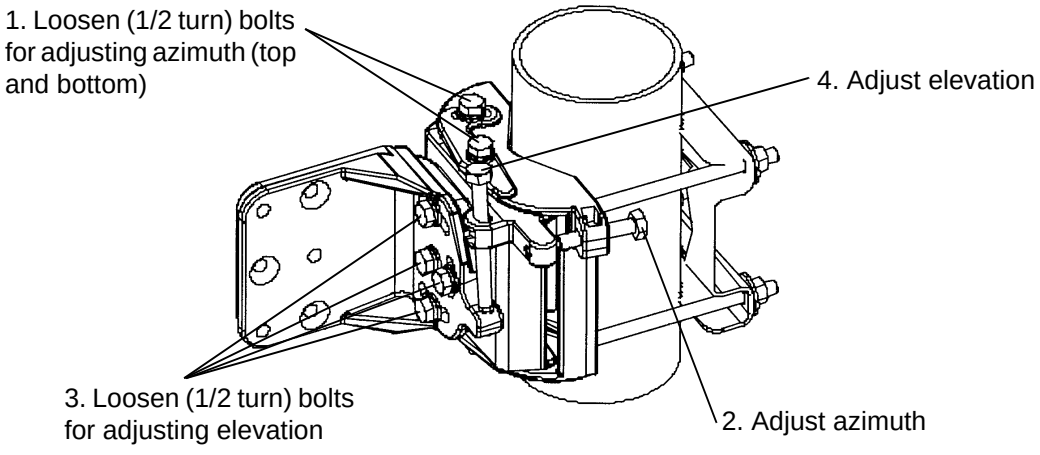
1' Loosen three screws (SCREW1, 2 and 3 in Fig. 3-4 (3/4)) and rotate antenna (connected OMT/ODU) so that the RX LEVEL MON indicates the maximum value at the ODU of the Main Master and Sub Master channels,

2' At opposite station, turns the ODU of the Sub Master channel power OFF (for both No.1 and No.2 Sub Master channels in 1+1 system),

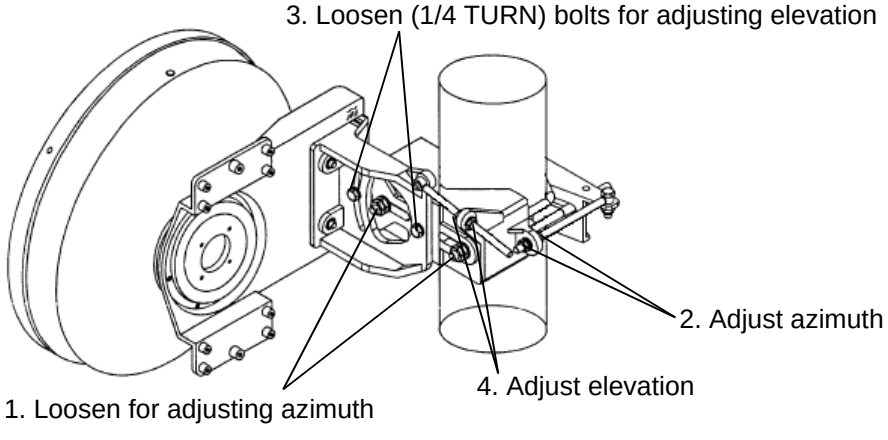
3' In this conditions, check the RX LEVEL MON indication value for XPD at the ODU of the Sub Master channel,

4' Confirm that the XPD is more than 25 dB, if not, repeat Azimuth Angle, Elevation Angle and XPD Adjustment,

5' At opposite station, turns the ODU of the Sub Master channel power ON,



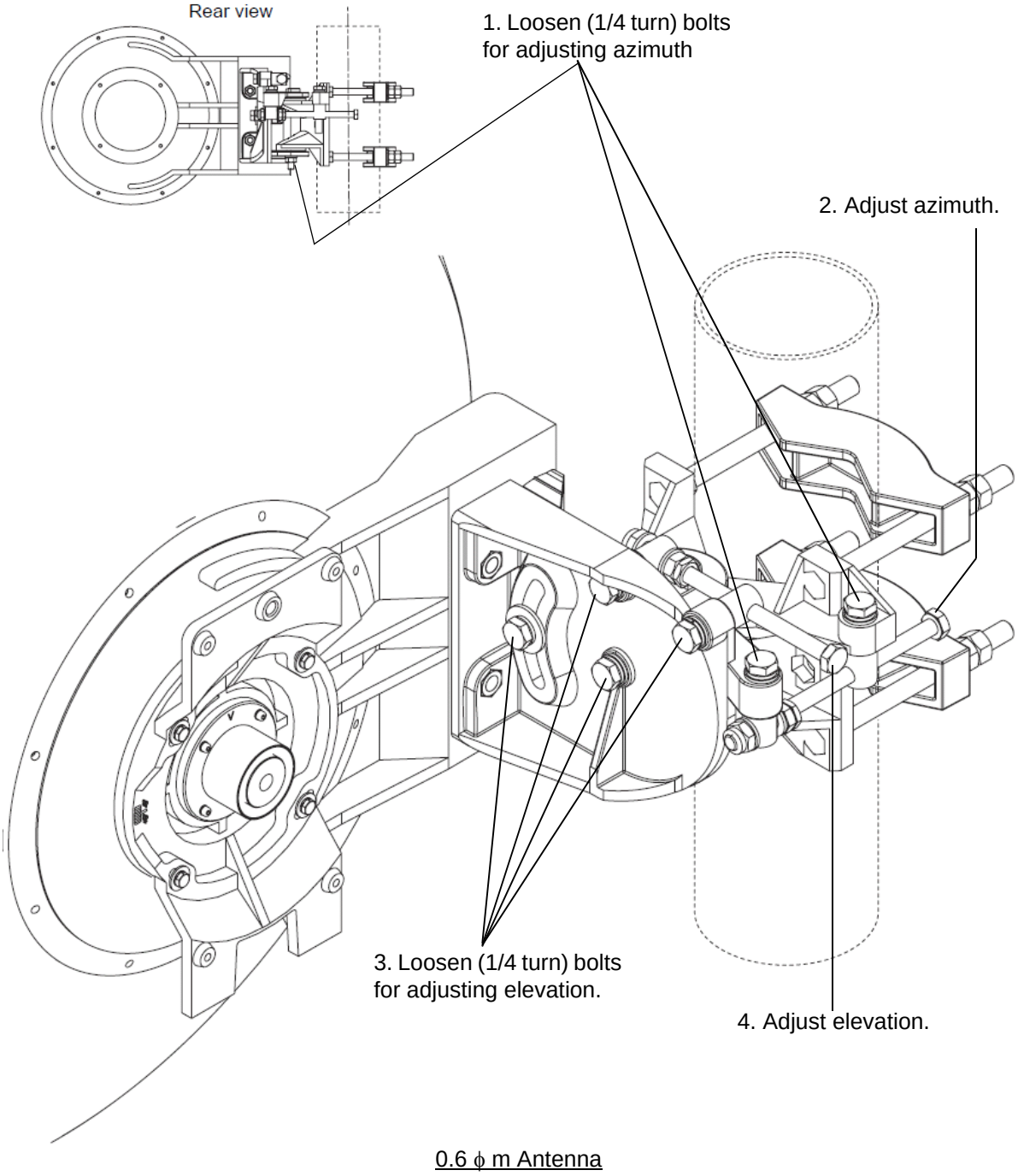
A. ANDREW VHLP TYPE BRACKET



0.3 ϕ m Antenna

B. RFS SB1 TYPE BRACKET

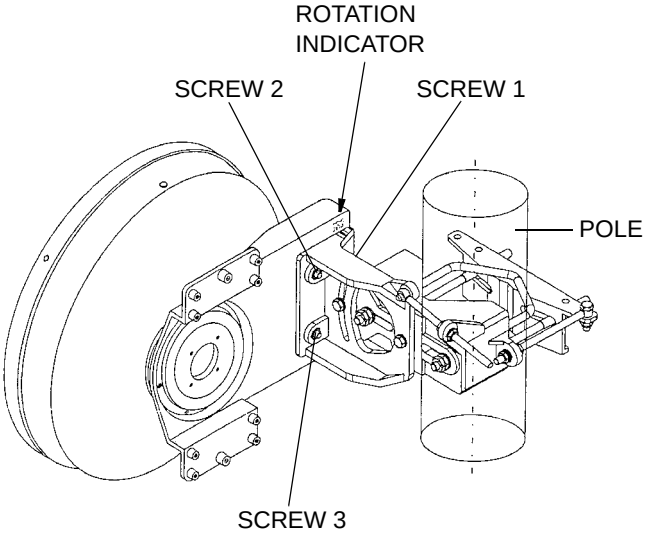
Fig. 3-4 Location of Adjusting Nuts and Bolts (1/4)



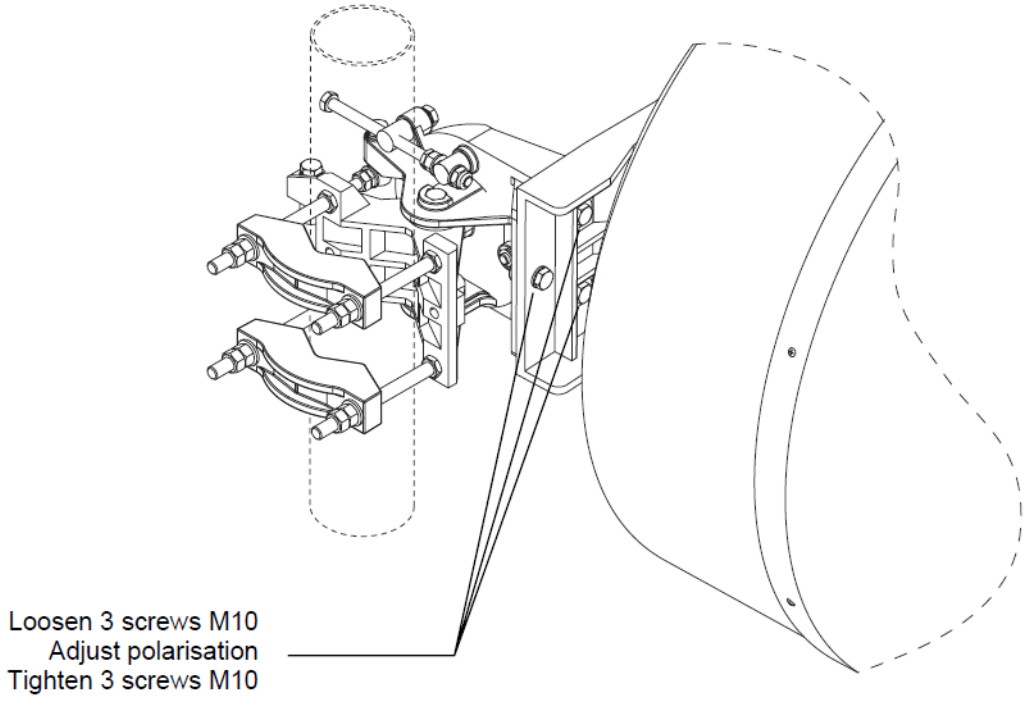
0.6 ϕ m Antenna

C. RFS C-Mount TYPE BRACKET

Fig. 3-4 Location of Adjusting Nuts and Bolts (2/4)



A. RFS SB1 TYPE BRACKET



B. RFS C-Mount TYPE BRACKET

Fig. 3-4 Location of Adjusting Nuts and Bolts (3/4)

Chart 3-5 (Cont'd)

Step	Procedure

WAVEGUIDE CONNECTION TYPE

Azimuth Angle Adjustment (Waveguide Connection Type)

Note: Take care that the flexible waveguide is not forcedly twisted by rotating the antenna.

When the HS/SD system is configured, alternately switchover the transmitter to the other channel (No.1 or No.2) at the opposite station and repeat adjustment of elevation and azimuth to obtain satisfactory results in both No.1 and No.2 CH. (Refer to Chart 3-8 for TX SW/RX SW Manual Switchover Operation).

1' Loosen all strut attachment hardware,

2' Loosen bolts indicated by arrows in Fig 3-4 (4/4)-A,

3' Loosen jam nuts and rotate turnbuckle-1 in Fig 3-4 (4/4)-A so that the RX LEVEL MON voltage obtains the maximum value,

4' Carefully, tighten turnbuckle-1 jam nuts and bolts indicated by arrows in Fig 3-4 (4/4)-A to hold the adjustment,

Elevation Angle Adjustment (Waveguide Connection Type)

5' Make sure that all strut attachment hardware is loosened,

6' Loosen bolts indicated by arrows in Fig 3-4 (4/4)-B,

7' Loosen jam nuts and rotate turnbuckle-2 in Fig 3-4 (4/4)-B so that the RX LEVEL MON voltage obtains the maximum value,

8' Carefully, tighten turnbuckle-2 jam nuts and bolts indicated by arrows in Fig 3-4 (4/4)-B,

XPD Adjustment (Waveguide Connection Type)

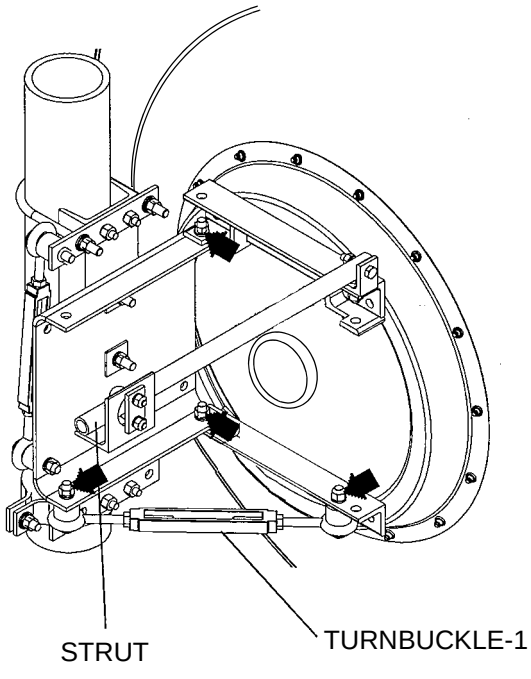
Note: This XPD adjustment using cross-polarization signal should be done more carefully than using co-polarization signal because XPD changes sharply in the axial direction.

9' At opposite station, turns the ODU of the Sub Master channel power OFF (for both No.1 and No.2 Sub Master channels in 1+1 system),

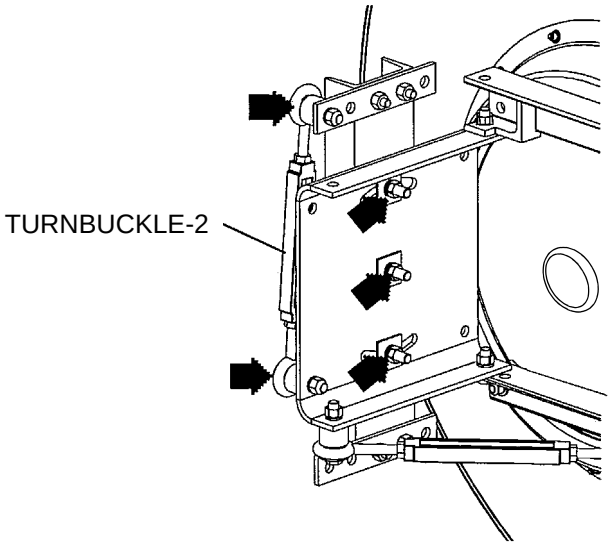
10' In this conditions, check the RX LEVEL MON indication value for XPD at the ODU of the Sub Master channel,

Chart 3-5 (Cont'd)

Step	Procedure
11'	Confirm that the XPD is more than 25 dB, if it is not obtained, repeat Azimuth Angle, Elevation Angle for the XPD Adjustment,
12'	Tighten all strut attachment hardware, turnbackle jam nuts and bolts indicated by arrows in Fig 3-4 (4/4) A and Fig 3-4 (4/4) B,
13'	At opposite station, turns the ODU of the Sub Master channel power ON (for both No.1 and No.2 slave channels in 1+1 system),
12	At each station, disconnect the digital multimeter or OW/RX LEV Monitor from the RX LEV MON connector,
13	At each station, reconnect the cap removed in step 4, *Note: The RX LEV MON connector must be capped for waterproof.*
14	At each station, restore the "Antenna Alignment Mode" to "off" position using the LCT,
15	At the Main Master station, when the TX power control is operated in ATPC, restore the TX Power Control item of System Configuration changed in step 1 to "ATPC" using the LCT,
16	At the Main Master , when the TX power control is operated in MTPC, restore MTPC TX PWR item of "Provisioning Data" changed in step 2 to original setting valu using the LCT.
17	At each station, reset Maintenance to "OFF".



A. Azimuth Adjustment



B. Elevation Adjustment

ANDREW VHLP4 TYPE BRACKET

Fig. 3-4 Location of Adjusting Nuts and Bolts (4/4)

3.5 Lineup Test

Lineup SONET NLite E test items between two stations are listed in Table 3-2.

Table 3-2 Lineup Test Items

Item	Chart No.
Orderwire Test	Chart 3-7
TX/RX SW Switchover Operation	Chart 3-8 *1
DADE Adjust	Chart 3-9 *2
BER Measurement	Chart 3-10
Meter Reading	Chart 3-11
PMON Clear	Chart 3-12 *3

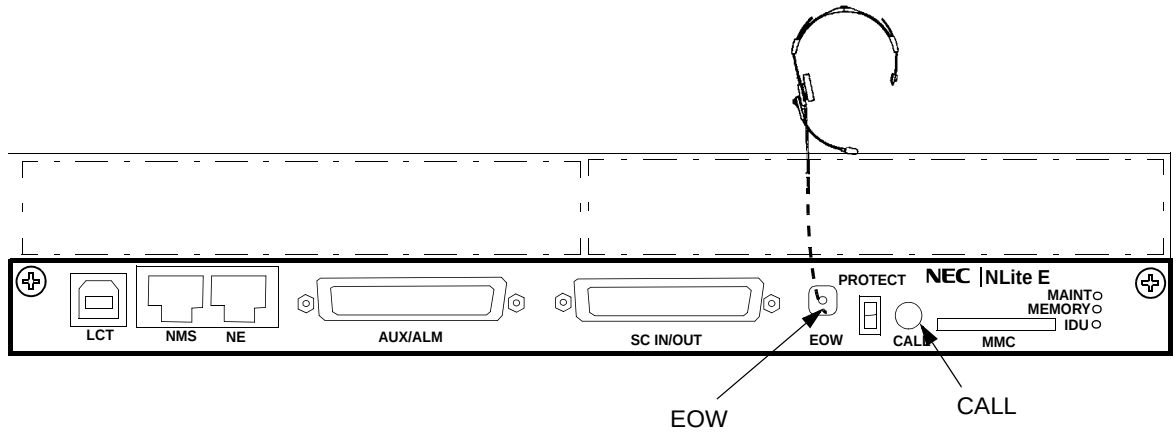
*Note: *1 Chart 3-8 is described about Manual Switchover Operation.*

**2 Chart 3-10 is needed only when INTFC is Out-phase in 1+1 configuration.*

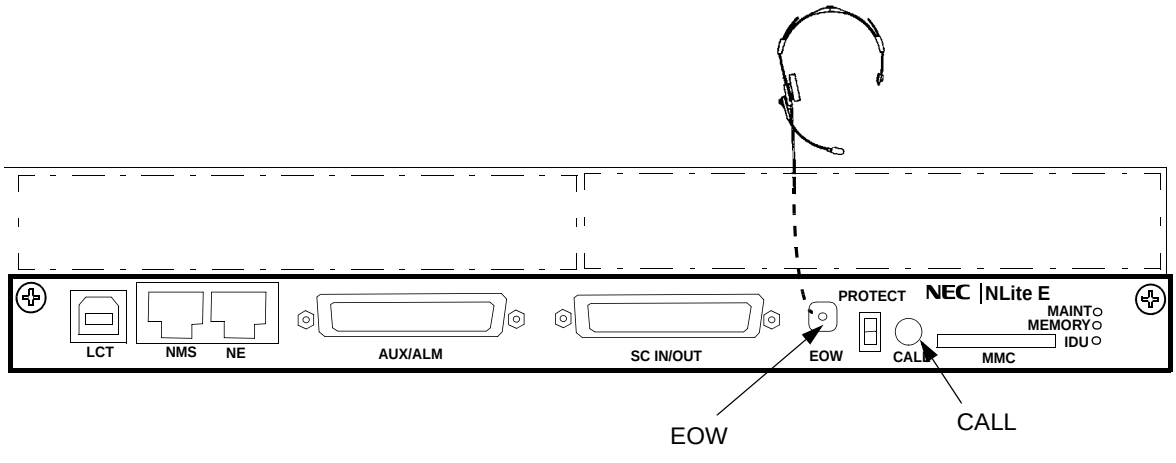
**3 After the intial lineup has been finished, clear PMON and RMON data for the start of service operation.*

Chart 3-7 Orderwire Test

Step	Procedure
1	Connect headset to the EOW jack on the IDU,
2	Press the CALL button on the IDU,
	Requirement: At the opposite station, the buzzer on the IDU sounds,
3	Check that the orderwire can be used between two stations with headsets,
4	Disconnect headset from EOW jack on the IDU at each station.



Local Station



Opposite Station

Fig. 3-5 OW Test Setup for IDU

Chart 3-8 TX/RX SW Switchover Operation

Step	Procedure

The TX/RX SW switchover operation is performed only in 1+1 configuration.

1 Connect the PC to the LCT port on the NLite E IDU using USB cable**,** (see Fig. 3-2)

2 Enter Login name “Admin”, enter Admin password and press the “Login” button,

3 LCT Open window will be displayed, then click “Maintenance” button in the LCT MENU, select “Maintenance1” on background menu,

LCT MENU

Alarm/Status
Equipment Setup
Inventory
AUX I/O
Maintenance
Provisioning
Metering
PMON(History)

Maintenance1
Maintenance2

4 Select “On” of the Maintenance setting button and click on “Set” button,

5 Select “No.1” or “No.2” of the TX SW setting button and click on “Set” button,

6 Select “No.1” or “No.2” of the RX SW setting button and click on “Set” button,

--- Maintenance 1 ---

Item	Value	Setting	
Maintenance	On	○ Off ● On	Set
TX SW Manual Control	No.1	○ Auto ● No.1 ○ No.2	Set
RX SW Manual Control	No.1	○ Auto ● No.1 ○ No.2	Set

7 Check that the “Value” box for each item turned to the required status.

Chart 3-9 DADE Adjustment

Step	Procedure

Note: The DADE control applies in 1+1 configuration to adjust delay time for RX hitless switching when the INTFC status is indicated Outphase.

1 Connect the USB cable to the USB port of PC and the LCT port of the IDU (see Fig. 3-2),

2 Login to LCT using Internet Explorer,

3 Enter Login name “Admin”, enter Admin password and press the “Login” button,

4 LCT Open window will be displayed, then click “Maintenance” button in the LCT Menu area, select “Maintenance1” on background menu,

5 Select “DADE Adjust” on the “Maintenance1” table,

6 Click on setting button “DADE”, “Off set DADE” or “DADE Off” and click on “Set” button,

---Maintenance1---

Item	Value	Setting	
	On	◯Off ●On	Set
DADE Adjust	---	●DADE ◯Offset DADE ◯DADE Off	Set

Note: The DADE adjustment is needed in initial lineup or when the IF CABLE is replaced. It is not needed readjustment when the INTFC status is indicated In-phase. The setting conditions are as follows:

DADE:Automatically adjust delay time based on either No.1 signal or No.2 signal which it is selected by RX SW under the Outphase condition of the INTFC status. The DADE control is processed assuring no interruption of traffic.

Offset DADE:Automatically adjust delay time based on either No.1 signal or No.2 signal which it is selected by RX SW under the Outphase condition of the INTFC status. Since the offset memory minimizes the latency delay, traffic interruption occurs at that moment. This Offset DADE controls the delay time difference to a minimum than DADE control.

DADE off: Set when DADE function is not used. For particularly, when low bit rate (10 to 20 MB) transmission is applied to the system, the DADE control is not required.

Chart 3-10 BER Measurement

In 1+1 system, BER measurement of both No.1 and No.2 channels should be performed between terminal stations.

Apparatus :

Digital Multimeter with test leads

Screwdriver

SDH/SONET Analyzer

Optical Variable Attenuator

Headset

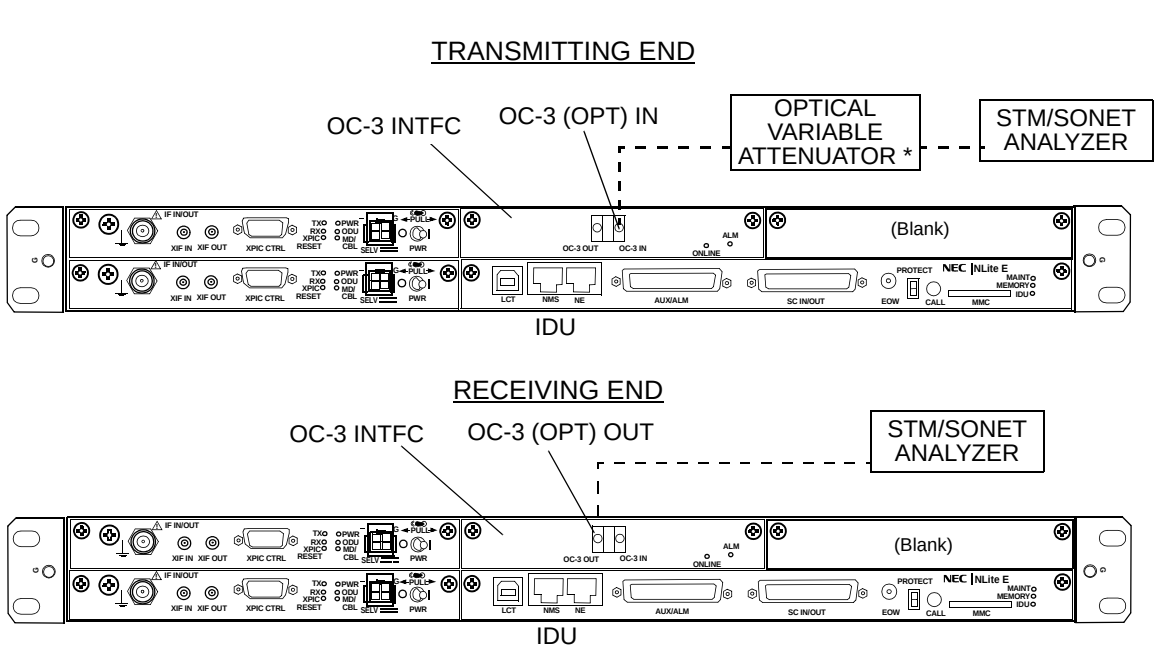
Chart 3-10 (Cont'd)

Step	Procedure

OPTICAL INTERFACE

Caution: Do not stare into laser beam or view directly with optical instruments. Otherwise, it may hurt eyes (Class 1 Laser Product).

1 At the transmitting end, disconnect OPT cable from the OC-3 IN connector on the OC-3 INTFC (see Fig. 3-8),



Equipped with OC-3 Optical Interface

Fig. 3-6 BER Measurement for OC-3 Signal

2 At the receiving end, disconnect the OPT cable from the OC-3 OUT connector on the OC-3 INTFC (see Fig. 3-8),

3 At both transmitting and receiving ends, set the STM/SONET Analyzer as follows:

Chart 3-10 (Cont'd)

Step	Procedure

OC-3 INTFC(OPTICAL)

- Bit rate : 155.52 Mbps
- Code format : OC-3, NRZ
- Level

	S-1.1	L-1.1
IN	: –8 to –28 dBm/	–10 to –34 dBm
OUT	: –8 to –15 dBm/	0 to –8 dBm

- Wave length
  IN : 1310 nm
  OUT : 1310 nm

Note: Operation of the TX SW and RX SW are not required in 1+0 system.

4 In HS system, set the TX SW to No.1 or No.2 to On condition at transmitting end, (refer to Chart 3-8)

5 At receiving end, set the RX SW to either No.1 or No.2 to On condition,

6 Measure BER and confirm that the values are indicated as follows:

Requirement: 1×10^{-12} or less

7 At receiving end, change setting of the RX SW to opposite No.1 or No.2 from it in step 5 and confirm that the measured value satisfies requirement given in step 6,

8 Change setting of the TX SW to opposite No.1 or No.2 from it in step 4 and confirm that the measured value satisfies requirement given in step 6,

9 At receiving end, change setting of the RX SW to opposite No.1 or No.2 from it in step 7 and confirm that the measured value satisfies requirement given in step 6,

10 Restore all connections and controls to normal.

Chart 3-11 Meter Reading

Step	Procedure

1 Connect the PC to the LCT port on the NLite E IDU using USB cable**,** (see Fig. 3-2)

2 Enter Login name “Admin”, enter Admin password and press the “Login” button,

3 Click “Metering” button in LCT Menu,

LCT MENU

Alarm/Status
Equipment Setup
Inventory
AUX I/O
Maintenance
Provisioning
Metering
PMON(History)

4 Then, the values of Metering items are displayed as follows:

1+1 Configuration

----Metering---

	No.1	No.2
TX Power [dBm]*1	+19	+19
RX Level [dBm]	-49.5	-49.7
Power Supply [V] *2	-45	-45
BER *3	0.0E-10	Calculating

1+0 Configuration

----Metering---

TX Power [dBm]*1	+19
RX Level [dBm]	-50
Power Supply[V] *2	-45
BER *3	1.10E-10

Chart 3-11 (Cont'd)

Step	Procedure

*Notes: *1:TX POWER Level is indicated in 1 dB step. The TX Power varies depending on the propagation condition within setup ATPC range in provisioning, therefore, TX Power may be displayed within limited values listed in Table 3-3. Add attenuation value for Max. and Min. level when additional attenuator is used.*

**2:Power supply voltage of the ODU input varies depending on the IF cable length.*

3: During total number of erroneous bits and total number of correctly received bits are calculating, "Calculating" and *E- are displayed.*

Table 3-3 TX Power Output Level

Modulation Mode	Frequency Band (GHz)	6	7-8	10-11	13	15	18	23	26	28	32	38	52
32QAM	Output Power Max. (dBm) (at ATPC 0 dB)	+25		+21			+19		+18		+17	+14.5	-
	Output Power Min. (dBm)	+2 (–3)		–2 (–7)			–4 (–9)		–5 (–10)	–5	–6	–6.5	-
	Additional attenuator (dB)	5								NA			
128QAM	Output Power Max. (dBm) (at ATPC 0 dB)	+25		+21			+19		+18		+17	+14.5	-
	Output Power Min. (dBm)	+5(0)		+1(–4)			–1(–6)		–2 (–7)	–2	–3	–5.5	-
	Additional attenuator (dB)	5								NA			
Tolerance	(dB)	+/–3 (except additional attenuator)											

Note: ( ) shows the values with additional attenuator.

Chart 3-12 PMON Clearing

Step	Procedure
1	Connect the PC to the LCT port on the NLite E IDU using USB cable**,** (see Fig. 3-2)
2	Enter Login name “Admin”, enter Admin password and press the “Login” button,
3	Click the “Maintenance” button in LCT Menu,
4	Click the Maintenance2 button,

LCT MENU

Alarm/Status
Equipment Setup
Inventory
AUX I/O
Maintenance
Provisioning
Metering
PMON(History)

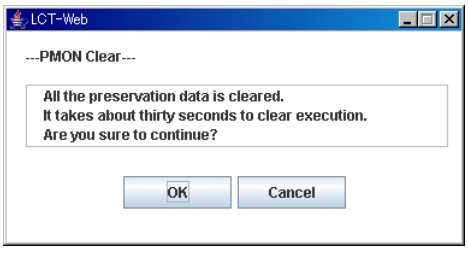
Maintenance1
Maintenance2

5	Then, the "PMON Clear" button is displayed in the Main Area,

---PMON Clear---

PMON Clear

6	Click the PMON Clear button,
7	Click on the "OK" button in the “WARNING” confirmation window,



8	Disconnect the LCT from the IDU after the PMON Clearing has been finished.

NLite E
6-38 GHz SONET DIGITAL RADIO SYSTEM

Section IV APPENDIX

NLite E LCT OPERATION

CONTENTS

1. Introduction

This Local Craft Terminal (LCT) Operation Manual describe how to setup, manage, monitor and controls NLITE E SONET microwave radio systems.

User should prepare the computer (PC), USB cable and necessary peripheral device used for equipment setup.

The following hardware and software for the PC are recommended. Use the latest updated version of the software.

Hardware requirement

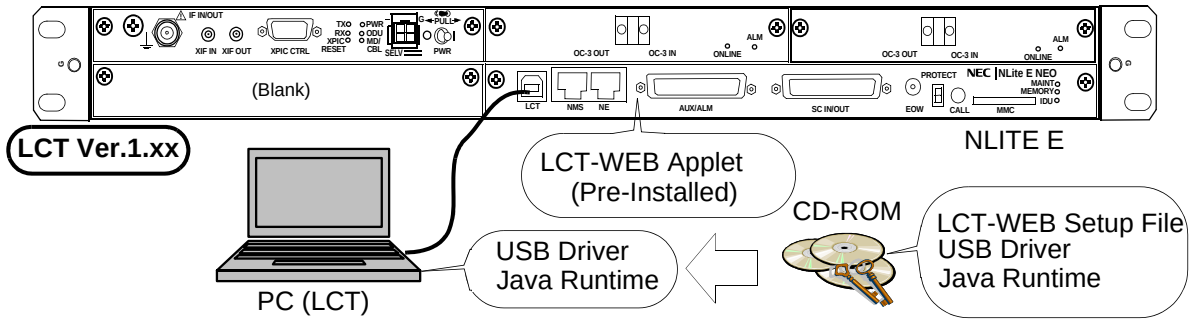
- HD: 100 MB or higher free capacity
- RAM: 512 MB
- Display: LCD 1,024 × 768
- CD-ROM drive
- Serial port
- USB port
- USB cable with USB-B connector

Software requirement (English version)

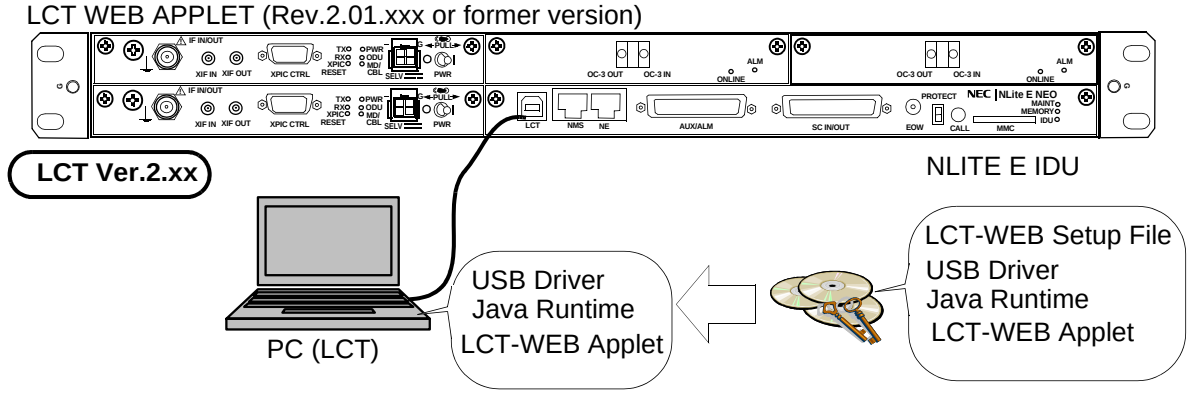
- OS: Windows 2000/Xp
- IE6.0 SP2 (LCTWEB Applet Version 1 (Rev.1.xx.xx))
- Java Runtime Environment: V1.5.0_05 is applied.
  (Refer to Chapter 12 for Java 2 Runtime installation.)
  It is required for the LCTWEB Applet Rev.2.01.xxx or former version.
  It is not required for the LCTWEB Applet Rev.2.03.xxx or later version.

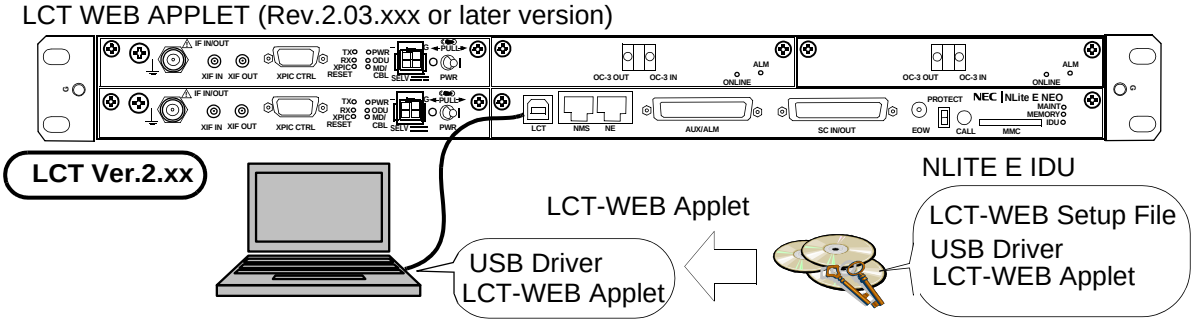
1.1 Accessing the NLITE E

There are two types LCT version corresponded to the IDU F/W version. Check the LCT type indicated on the LCT CD-ROM before connecting the PC to the IDU. The LCTWEB Pallet Version 1 (Rev.1.xx.xx) is installed into the IDU and the LCTWEB Applet Version 2 (Rev. 2.xx.xx) is installed into the PC as follows.



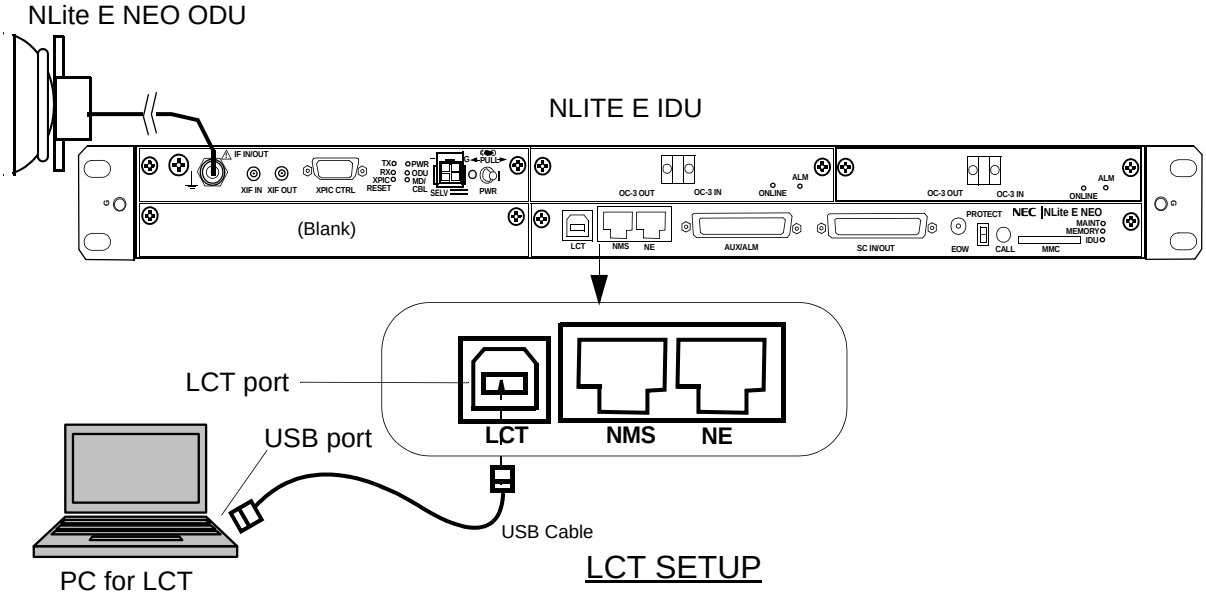
LCTWEB Applet	IDU	PC	CD-ROM
Version 1: Rev.1.xx.xx (IDU preinstalled)	CTRL F/W Version 2: Rev.2.x.x - PMC - SMU - LCT WEB Applet	- USB Driver - Java Runtime	Type 001 Version 1.0 LCT WEB Setup Files - USB Driver - Java Runtime
Version 2: Rev.2.xx.xx (Installation from CD-ROM to PC)	CTRL F/W Version 3: Rev. 3.x.x - PMC - SMU	- USB Driver - Java Runtime - LCT WEB Applet (Rev. 2.01.xxx or former)	Type 002 Version 2.x LCT WEB Setup Files - USB Driver - Java Runtime - LCT WEB Applet (Rev. 2.01.xxx or former)
		- USB Driver - LCT WEB Applet (Rev. 2.03.xxx or later)	Type 002 Version 2.x LCT WEB Setup Files - USB Driver - LCT WEB Applet (Rev. 2.03.xxx or later)





Note : For the later version of the LCT WEB Applet Rev. 2.03.xxx, the LCT WEB Applet includes Java Runtime.

1 Connect the Computer (PC) with a USB cable between the LCT port and the USB port,



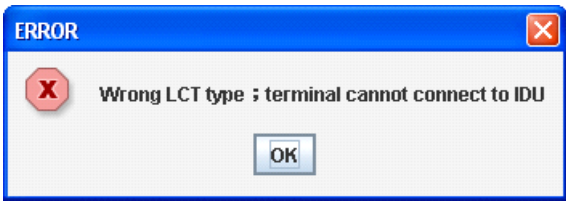
Notes: 1. Install the USB modem driver, Java 2 Run Time Module, LctWeb Run Time (for LCT Ver.2 IDU) and create the dial-up connection before trying to connect the LCT. For the details, refer to Chapter 10 to Chapter 13.

2. USB modem driver should be installed first before creating the dial-up connection.

3. The Java 2 Run Time installation is not required when the LCTWEB Applet Rev.2.03.xxx or later version is used.

2 Click on the “START” menu button, select “Connect to”, “LCT”, then, “Connect LCT” dial-up dialog is appeared,

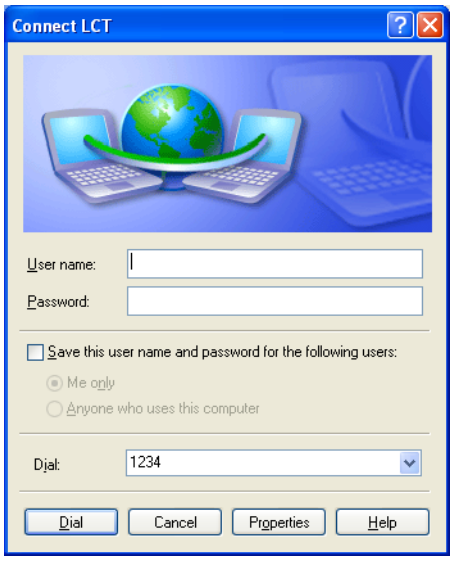
Note: When type of the LCTWEB and the F/W of the IDU differs, following “ERROR” alert appears.



For Version 1

3 The dialog box “Connect LCT” appears,

4 Click on the “Dial” button, then the PC is connected to the IDU,



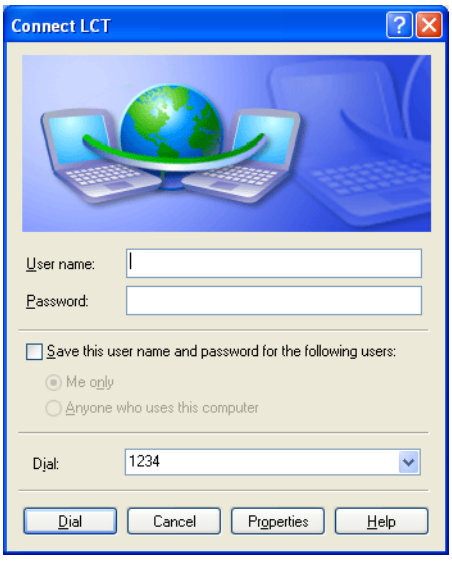
5 Open the Internet Explorer,

6 Enter URL address: **Http//172.17.254.253** on the Internet Explorer and press the “Enter” key,

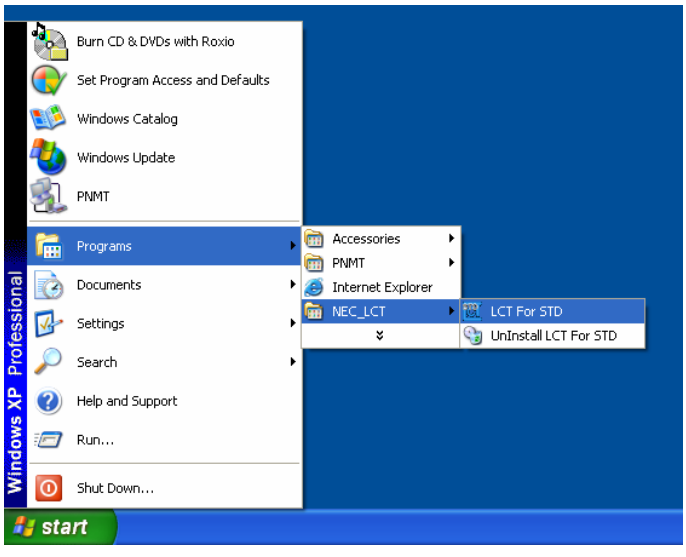
For Version 2 (Example)

7 The dialog box “Connect LCT” appears,

8 Click on the “Dial” button, then the PC is connected to the IDU,



9 Double click on the short-cut icon or select the **“Programs”** → **“NEC_ LCT”** → **“LCT For STD”** from the **“start”** menu,



Note: When type of the LCTWEB (ver. 2.xx) is applied for the F/W (ver. 2.xx) of the IDU, “ERROR Wrong LCT Type; terminal cannot connect to IDU” alert appears. In that case, start the Internet Explorer and enter URL address: ***Http//172.17.254.253*** *on the Internet Explorer and press the “Enter” key.*

When type of the LCTWEB (ver. 2.xx) is applied for the F/W (ver. 3.xx) of the IDU, double click on the short-cut icon or select the ***“Programs”*** → ***“NEC_ LCT”*** → ***“LCT For STD”*** *from the* ***“start”*** *menu as mentioned above.*

10 Enter User ID and password in User/Password entry fields and press the “Login” button,

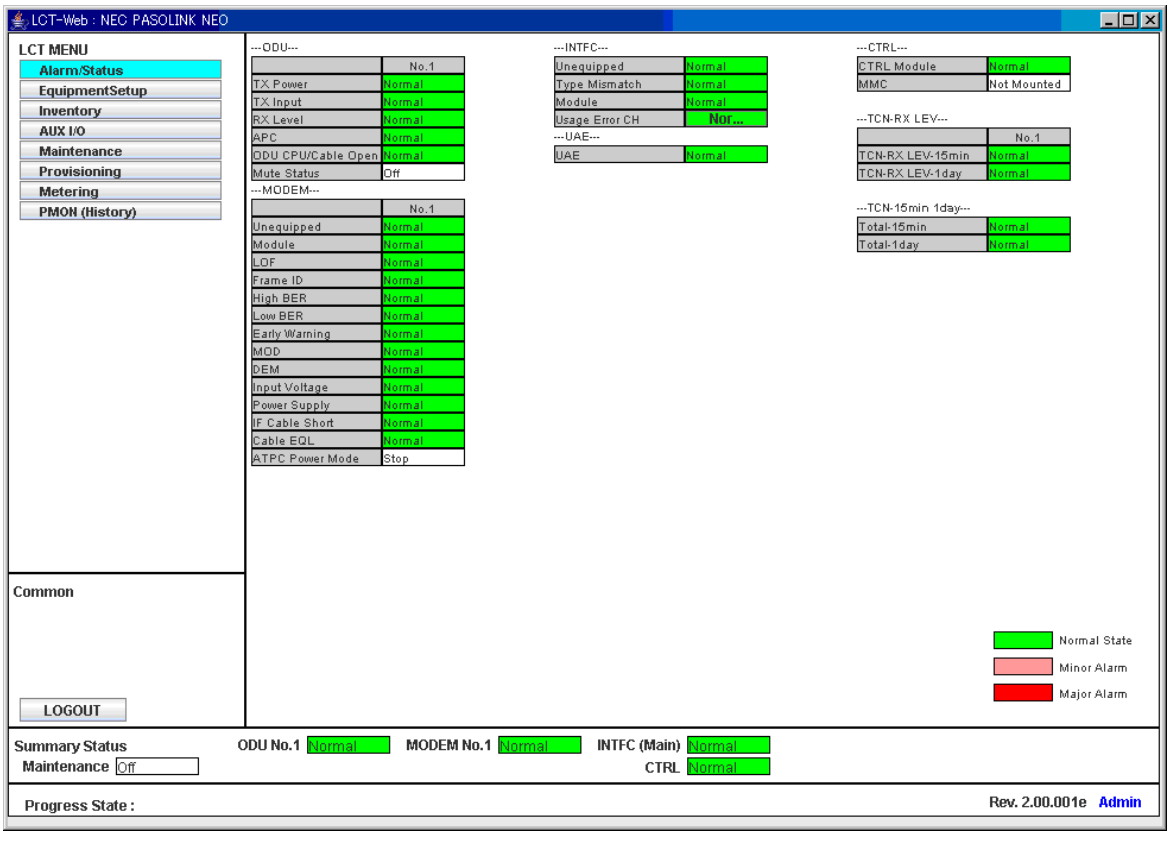
Default password of Admin is defined as “12345678”

User ID	Pass Word	Privilege
Admin	********	Access to the LCT and control
User	(non password)	Access to the LCT (monitor only)

The password can be changed by Administrator privilege. The LCT operator must have the security system privilege to control of NLITE E NEO systems. (The password change is described in Chapter 6.3 Maintenance 2)

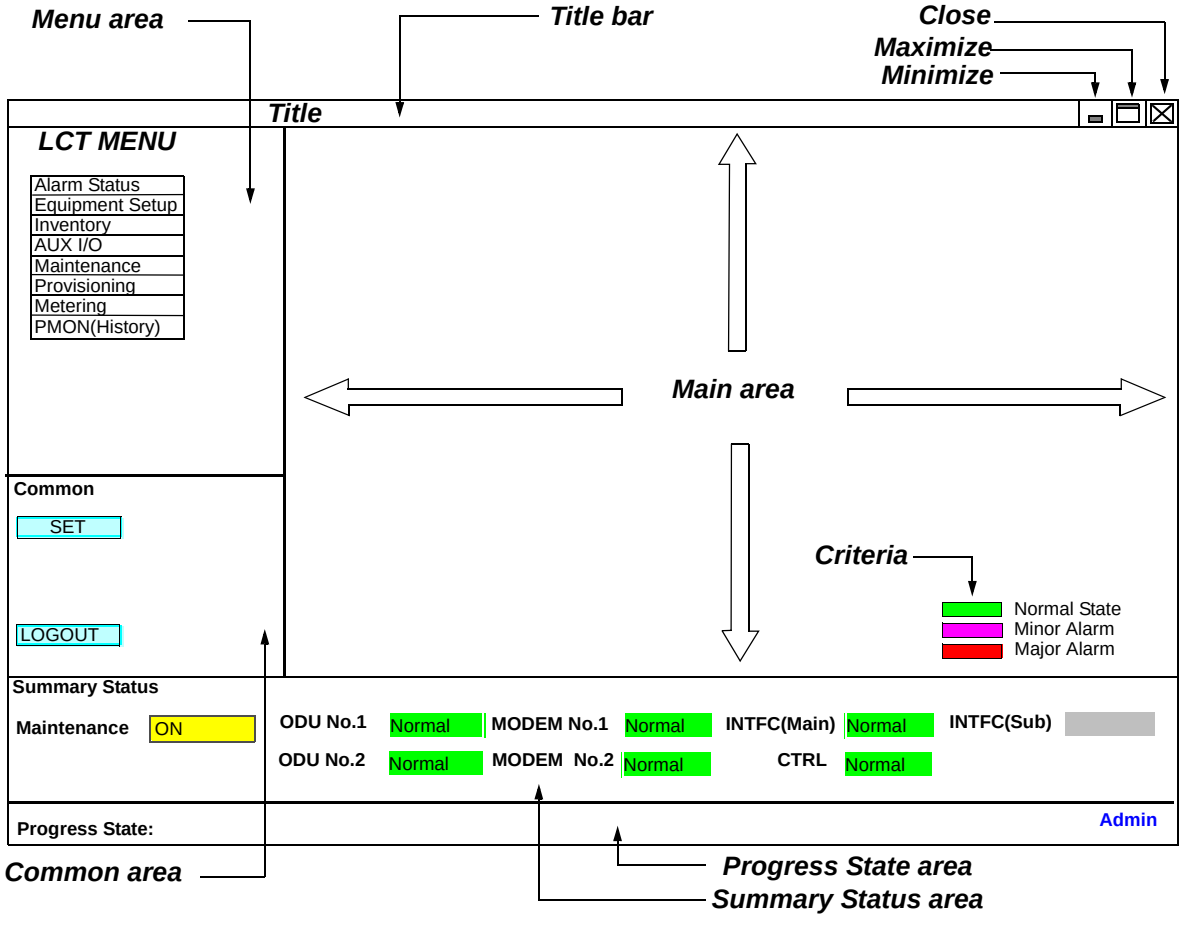
11 Following LCT Open View is displayed,
(Cascaded Alarm/Status items are displayed in Main area by default.)

NLITE E LCT Open View (Example)



Symbols in the Open View are described as follows.

Description of the LCT MENU Conventions



LCT MENU

"SET" button appears/disappears depending on the Menu item selected in the **"LCT MENU"**.

LCT MENU	SET
Alarm/Status	disappear
Equipment Setup	appear
Inventory	disappear
AUX I/O	appear
Maintenance	disappear
Provisioning	appear
Metering	disappear
PMON (History)	disappear

Common

SET ——— Execute all the changes made in the items shown in the main area by the selected **"**LCT MENU**"**.

LOGOUT ——— Displays confirmation box to Logout. Clicking LOG OUT button, the LCT-Web screen is logged out and the Login screen is displayed.

RELOAD ——— Reload recent data to display.

Summary Status Area

Following summary items show the operating status.

For 1+1 Configuration

Item	Status Indication			
Maintenance	On	(yellow)	Off	(white)
ODU No.1	Normal	(green)	Alarm	(red)
ODU No.2	Normal	(green)	Alarm	(red)
MODEM No.1	Normal	(green)	Alarm	(red)
MODEM No.2	Normal	(green)	Alarm	(red)
INTFC (Main)	Normal	(green)	Alarm	(red)
INTFC (Sub)	Normal	(green)	Alarm	(red)
CTRL	Normal	(green)	Alarm	(red)

For 1+0 Configuration

Item	Status Indication			
Maintenance	On	(yellow)	Off	(white)
ODU	Normal	(green)	Alarm	(red)
IDU	Normal	(green)	Alarm	(red)

Note: When the ODU No. 2, MODEM No. 2 or INTFC (Sub) is not mounted, corresponding item is colored gray.
INTFC (Main)/INTFC (Sub) are changed to INTFC (WORK)/INTFC(PROT) in APS system.

Progress State Area

Following Response is displayed. When **"Set"** button is clicked.

SET Control	Response
OK - Response	OK
NG - Response	NG

Symbol:

▼ : Menu Button displays pull-down menu

○ : No Selected

● : Selected

Set : Execute control/setup for each item

1.2 LCT MENU Items

LCT MENU is consisted of the following table.

LCT MENU	SUB-MENU	REMARKS
Alarm/Status		Refer to “2. Alarm/Status”
Equipment Setup		Refer to “3. Equipment Setup”
Inventory		Refer to “2. Inventory”
AUX I/O		Refer to “3. AUX. I/O”
Maintenance		Refer to “4. Maintenance”
	Maintenance1	
	Maintenance2	
Provisioning		Refer to “5. Provisioning”
	XC Setting	*6
	BER Threshold Setting	
	SUB Interface	For SONET only
	SC Assignment	
	LAN Port Setting	
	OC-3 Setting	For SONET only
	MS-AIS generation	For SONET only
	ALS Function	*1
	TX Power Control	
	Condition for TX/RX SW	*2
	Condition for APS	*3
	Relay Setting	
	TCN Threshold(15min)	
	TCN Threshold(1day)	
	PMON Select	
	Others	
Metering		Refer to “6. Metering”

LCT MENU	SUB-MENU	REMARKS
PMON (History)		Refer to “9. PMON”
	RX Level(24H/15min)	
	RX Level(7days/day)	
	Total(24H/15min)	*4
	Total(7days/day)	*4
	RMON(Line)(24H/15min)	*5
	RMON(Line)(7days/day)	*5
	RMON(DMR)(24H/15min)	*5
	RMON(DMR)(7days/day)	*5
	DMR(W)(7days/day)	For SONET only
	DMR(W)(24H/15min)	For SONET only
	DMR(P)(7days/day)	*3
	DMR(P)(24H/15min)	*3
	MUX(W)(7days/day)	For SONET only
	MUX(W)(24H/15min)	For SONET only
	MUX(P)(7days/day)	*3
	MUX(P)(24H/15min)	*3

*Notes:*1 Only provides for SONET OC-3 OPT interface.*

**2 Only provides for 1+1 configuration.*

**3 Only provides for APS in SONET for OC-3 OPT interface.*

**4 Only provides for LAN.*

*

1.3 Alarm Status (SONET)

When click on the "Alarm Status" button in **"**LCT MENU**"**, following items/status (sample) are displayed in Main Area.

ALM items of SONET are listed in Table 2-2.

Alarm/Status items are displayed in Main area in default when accessing the LCT.

Note: Alarm/Status indication varies depending on the system configuration.

---ODU---

Item Status

	No.1	No. 2	
TX Power	Normal	Normal	
TX Input	Normal	Normal	
RX Level	Normal	Normal	
APC	Normal	Normal	
ODU CPU/Cable Open	Normal	Normal	
Mute Status	OFF	OFF	
LO REF	Normal	Normal	(*1)
TX SW Status	No.1		(*2)
RX SW Status	No.2		(*3)

*Notes: Item (*1) is displayed in XPIC configuration only.*
*Item (*2) is displayed in Hot Standby configuration only.*
*Item (*3) is displayed in Hot Standby and Twinpath configuration.*

---MODEM---

Item Status

	No.1	No. 2	
Unequipped	Normal	Normal	
Module	Normal	Normal	
LOF	Normal	Normal	
Frame ID	Normal	Normal	
High BER	Normal	Normal	
Low BER	Normal	Normal	
Early Warning	Normal	Normal	
MOD	Normal	Normal	
DEM	Normal	Normal	
Input Voltage	Normal	Normal	
Power Supply	Normal	Normal	
IF Cable Short	Normal	Normal	
Cable EQL	Normal	Normal	
XIF	Normal	Normal	*(*1)*
XPIC Status	Normal	Normal	*(*1)*
XREF	Normal	Normal	*(*1)*
Linearizer Function	OPR	NON OPR	
Linearizer	Normal	Normal	
ATPC Power Mode	Active	Active	

*Note: Item (*1) is displayed in XPIC configuration only.*

---CTRL---

Item Status

CTRL Module	Normal	
MMC Mount	Not Mounted	
APS SW Fail	Normal	(*1)
APS Online Status	Working	(*1)
APS Lock in Status	Normal	(*1)
XCTRL	Normal	(*2)
XPIC Mode Mismatch	Normal	(*2)

*Notes: Item (*1) is displayed in APS configuration only.*
*Item (*2) is displayed in XPIC configuration only.*

---INTFC (Main) (1)---

Item Status

	Main
Unequipped	Normal
Type Mismatch	Normal
Module	Normal
LOS(MUX)	Normal
LOF(MUX)	Normal
E-BER(MUX)	Normal
SD(MUX)	Normal
LOS(DMR)	Normal
LOF(DMR)	Normal
E-BER(DMR)	Normal
SD(DMR)	Normal
LAN LINK	Normal (*1)
Speed & Duplex	Normal (*1)
Inphase	Inphase
TF	Normal
Output Control	Normal

*Note: Item (*1) is displayed in Main LAN configuration only.*
Click on the corresponding item in status block, following details LAN PORT status *in the LAN/WS INTFC appears.*

Item Status

	Link	Collision	LLF	Speed&Duplex
Main PORT1	Link	Normal	Normal	10M-Half(MDI)
Main PORT2	Link	Normal	Normal	10M-Half(MDIX)

Close

Link: *Displaying LINK status for respective Port.*
Collision: *Displaying occurrence of Collision status in Half Duplex mode for respective Port.*
LLF: *Forced LINK off control status detecting the link loss of the facing equipment for respective Port.*
Speed &Duplex:Displaying linked mode for respective Port.

Following Alarm Status of the INTFC (Sub) is displayed when the LAN/ WS INTFC is used.

---INTFC (Sub) (2)---

Item Status

	Main	
Unequipped	Normal	
Type Mismatch	Normal	
Module	Normal	
LAN Link	Normal (*1)	
Speed & Duplex	Normal (*1)	
WS In/out LOS	Normal	
WS AIS Generated	Generated	
WS AIS Received	Received	

Note: Click on the corresponding item in status block (*1), following details LAN PORT status *in the LAN/WS INTFC appears.*

Item Status

	Link	Collision	LLF	Speed&Duplex
Sub PORT1	Link	Normal	Normal	10M-Half(MDI)
Sub PORT2	Link	Normal	Normal	10M-Half(MDI)

Close

Link: *Displaying LINK status for respective Port.*
Collision: *Displaying occurrence of Collision status in Half Duplex mode for respective Port.*
LLF: *Forced LINK off control status detecting the link loss of the facing equipment for respective Port.*
Speed &Duplex: *Displaying linked mode for respective Port.*

Following Alarm Status of the INTFC is applied in the APS configuration.

---INTFC---

Item Status

	WORK	PROT
Unequipped	Normal	
Type Mismatch	Normal	Normal
Module	Normal	Normal
LOS(MUX)	Normal	Normal
LOF(MUX)	Normal	Normal
E-BER(MUX)	Normal	Normal
SD(MUX)	Normal	Normal
LOS(DMR)	Normal	Normal
LOF(DMR)	Normal	Normal
E-BER(DMR)	Normal	Normal
SD(DMR)	Normal	Normal
Inphase	Inphase	Inphase
TF	Normal	Normal
Output Control	Normal	Normal

---UAE---

Item Status

	WORK	PROT
OC-3(1) UAE(MUX)	Normal	Normal
OC-3(2) UAE(MUX)	Normal	Normal
OC-3(1) UAE(DMR)	Normal	Normal
OC-3(2) UAE(DMR)	Normal	Normal

---TCN RX LEV---

Item Status

	No.1	No.2
TCN-RX LEV-15min	Normal	Normal
TCN-RX LEV-1day	Normal	Normal

Item Status

---15min 1day ---	WORK	PROT
TCN-OFS-15min (DMR)	Normal	Normal
TCN-UAS-15min (DMR)	Normal	Normal
TCN-ES-15min (DMR)	Normal	Normal
TCN-SES-15min (DMR)	Normal	Normal
TCN-BBE-15min (DMR)	Normal	Normal
TCN-SEP-15min (DMR)	Normal	Normal
TCN-OFS-15min(MUX)	Normal	Normal
TCN-UAS-15min(MUX)	Normal	Normal
TCN-ES-15min(MUX)	Normal	Normal
TCN-SES-15min(MUX)	Normal	Normal
TCN-BBE-15min(MUX)	Normal	Normal
TCN-SEP-15min(MUX)	Normal	Normal
TCN-OFS-1day (DMR)	Normal	Normal
TCN-UAS-1day (DMR)	Normal	Normal
TCN-ES-1day (DMR)	Normal	Normal
TCN-SES-1day (DMR)	Normal	Normal
TCN-BBE-1day (DMR)	Normal	Normal
TCN-SEP-1day (DMR)	Normal	Normal
TCN-OFS-1day(MUX)	Normal	Normal
TCN-UAS-1day(MUX)	Normal	Normal
TCN-ES-1day(MUX)	Normal	Normal
TCN-SES-1day(MUX)	Normal	Normal
TCN-BBE-1day(MUX)	Normal	Normal
TCN-SEP-1day(MUX)	Normal	Normal

Notes: *OFS:Out of Frame Second*
UAS:Unavailable Second
ES:Errored Second
SES:Severely Errored Second
BBE:Background Block Error
SEP:Severely Errored Period

Table 1-1 ALM/STATUS List (SONET) (1/2)

No.	ALM/STATUS ITEM	EVENT STATUS	SOURCE OF EVENT	Configuration		Criteria Default
				1+0	1+1	
1	ODU CPU/Cable Open ALM1	ODU1 CPU failure or IF Cable is open	ODU No.1			Major
2	ODU CPU/Cable Open ALM2	ODU2 CPU failure or IF Cable is open	ODU No.2	*1		Major
3	ODU ALM1	ODU1 total alarm	ODU No.1			Major
4	ODU ALM2	ODU2 total alarm	ODU No.2	*1		Major
5	TX PWR ALM1	ODU1 output power decreased	ODU No.1			Major
6	TX PWR ALM2	ODU2 output power decreased	ODU No.2	*1		Major
7	TX INPUT ALM1	ODU1 TX IF input level decreased	ODU No.1			Major
8	TX INPUT ALM2	ODU2 TX IF input level decreased	ODU No.2	*1		Major
9	APC ALM1	ODU1 LO OSC APC loop out of lock	ODU No.1			Major
10	APC ALM2	ODU2 LO OSC APC loop out of lock	ODU No.2	*1		Major
11	RX LEVEL ALM1	ODU1 Received level decreased	ODU No.1			Major
12	RX LEVEL ALM2	ODU2 Received level decreased	ODU No.2	*1		Major
13	IF CABLE SHORT ALM1	IF cable connected to ODU1short	MODEM No.1			Major
14	IF CABLE SHORT ALM2	IF cable connected to ODU2 short	MODEM No.2	*1		Major
15	MUTE STATUS1	ODU1 Mute Status	ODU No.1			Status
16	MUTE STATUS2	ODU2 Mute Status	ODU No.2	*1		Status
17	LO REF ALM1	ODU1 LO reference signal is lost	ODU No.1	*2		Minor
18	LO REF ALM2	ODU2 LO reference signal is lost	ODU No.2	*1,*2	*2	Minor
19	IDU ALM	IDU total alarm	CTRL			Major
20	IDU CPU ALM	IDU CPU failure	CTRL	*1,*3	*3	Major
22	MEMORY ALM	MMC memory error	CTRL			Major
23	ATPC PWR MODE1	No.1 ATPC failure, Hold/Maximum/Minimum*5 poweroutput	CTRL			Status
24	ATPC PWR MODE2	No.2 ATPC failure, Hold//MaximumMinimum*5 poweroutput	CTRL	*1		Status
25	PS ALM1	No.1 power supply failure (only1+1)	MODEM No.1			Major
26	PS ALM2	No.2 power supply failure (only1+1)	MODEM No.2	*1		Major
27	MOD ALM1	PLL APC unlock, output level down, CLK loss in MODEM1	MODEM No.1			Major
28	MOD ALM2	PLL APC unlock, output level down, CLK loss in MODEM2	MODEM No.2	*1		Major
29	DEM ALM1	Carrier/Frame Asynchronous at MODEM1	MODEM No.1			Major
30	DEM ALM2	Carrier/Frame Asynchronous at MODEM2	MODEM No.2	*1		Major
33	EARLY WARNING1	EARLY WARNING is detected in No.1 CH	MODEM No.1	*1		Status
34	EARLY WARNING2	EARLY WARNING is detected in No.2 CH	MODEM No.2	*1		Status
35	HIGH BER ALM1	High BER (selectable) is detected in MODEM1	MODEM No.1			Major
36	HIGH BER ALM2	High BER (selectable) is detected inMODEM2	MODEM No.2	*1		Major
37	LOW BER ALM1	Low BER (selectable) is detected in MODEM1	MODEM No.1			Minor
38	LOW BER ALM2	Low BER (selectable) is detected in MODEM2	MODEM No.2	*1		Minor
39	LOF1	Loss of Radio frame synchronization in MODEM1	MODEM No.1			Major
40	LOF2	Loss of Radio frame synchronization in MODEM2	MODEM No.2	*1		Major
41	FRAME ID ALM1	ID is no coincidence in MODEM1	MODEM No.1			
42	FRAME ID ALM2	ID is no coincidence in MODEM2	MODEM No.2	*1		
43	CABLE EQL FAIL1	Cable EQL control is lost in MODEM1	MODEM No.1			Major
44	CABLE EQL FAIL2	Cable EQL control is lost in MODEM2	MODEM No.2	*1		Major
45	LINEARIZER FAIL1	BB LNZ control is lost in MODEM1	ODU No.1			Major
46	LINEARIZER FAIL2	BB LNZ control is lost in MODEM1	ODU No.2	*1		Major
47	XPIC STATUS1	No. 1 XPIC function is off	MODEM No.1	*2		Status
48	XPIC STATUS2	No. 2 XPIC function is off	MODEM No.2	*1,*2	*2	Status
49	XCTRL ALM1	No. 1 XPIC control failure	MODEM No.1	*2		Major
50	XCTRL ALM2	No. 2 XPIC control failure	MODEM No.2	*2		Major
51	XIF ALM1	No. 1 XIF signal is lost	MODEM No.1	*2		Major
52	XIF ALM2	No. 2 XIF signal is lost	MODEM No.2	*1,*2	*2	Major
53	XREF ALM1	No. 1 XPIC reference CLK is lost	MODEM No.1	*2		Minor
54	XREF ALM2	No. 2 XPIC reference CLK is lost	MODEM No.2	*1,*2	*2	Minor
55	INTFC(1) INPAHSE	Main INTFC inphase status	INTFC	*1		Status
56	INTFC(2) INPAHSE	Prot INTFC inphase status	OC-3 INTFC P	*1		Status
63	OC-3(1) UAE	No. 1 OC-3 INTFC UAS is generating	OC-3 INTFC W			Status
64	OC-3(2) UAE	No. 2 OC-3 INTFC UAS is generating	OC-3 INTFC P	*1		Status
65	OC-3(1) LOS(MUX)	No. 1 OC-3 from MUX, loss of signal is detected	OC-3 INTFC			Major

Table 1-1 ALM/STATUS List (SONET) (2/2)

No.	ALM/STATUS ITEM	EVENT STATUS	SOURCE OF EVENT	Configuration		Criteria Default
				1+0	1+1	
66	OC-3(2) LOS(MUX)	No. 2 OC-3 from MUX, loss of signal is detected	OC-3 INTFC	*1		Major
67	OC-3(1) LOF(MUX)	No. 1 OC-3 from MUX, loss of frame is detected	OC-3 INTFC			Major
68	OC-3(2) LOF(MUX)	No. 2 OC-3 from MUX, loss of frame is detected	OC-3 INTFC	*1		Major
69	OC-3(1) LOS(DMR)	No. 1 OC-3 from DMR, loss of signal is detected	OC-3 INTFC			Major
70	OC-3(2) LOS(DMR)	No. 2 OC-3 from DMR, loss of signal is detected	OC-3 INTFC			Major
71	OC-3(1) LOF(DMR)	No. 1 OC-3 from DMR, loss of frame is detected	OC-3 INTFC			Major
72	OC-3(2) LOF(DMR)	No. 2 OC-3 from DMR, loss of frame is detected	OC-3 INTFC	*1		Major
73	OC-3(1) E-BER(MUX)	No. 1 OC-3 from MUX, Excessive-BER is detected	OC-3 INTFC			Major
74	OC-3(2) E-BER(MUX)	No. 2 OC-3 from MUX, Excessive-BER is detected	OC-3 INTFC			Major
75	OC-3(1) SD(MUX)	No. 1 OC-3 from MUX, Signal Degrade is detected	OC-3 INTFC			Major
76	OC-3(2) SD(MUX)	No. 2 OC-3 from MUX, Signal Degrade is detected	OC-3 INTFC			Major
77	OC-3(1) E-BER(DMR)	No. 1 OC-3 from DMR, Excessive-BER is detected	OC-3 INTFC			Major
78	OC-3(2) E-BER(DMR)	No. 2 OC-3 from DMR, Excessive-BER is detected	OC-3 INTFC			Major
79	OC-3(1) SD(DMR)	No. 1 OC-3 from DMR, Signal Degrade is detected	OC-3 INTFC			Major
80	OC-3(2) SD(DMR)	No. 2 OC-3 from DMR, Signal Degrade is detected	OC-3 INTFC			Major
81	OC-3(1) TF ALM	No. 1 OC-3 output to MUX is failure	OC-3 INTFC			Major
82	OC-3(2) TF ALM	No. 2 OC-3 output to MUX is failure	OC-3 INTFC			Major
83	APS SW FAIL	APS switch is failure	CTRL	*4		Major
84	LAN LINK	LAN LINK status	Main INTFC	*6		Major
85	LAN COLLISION	LAN status	Main INTFC	*6		Status
86	LAN LLF ALM	LAN Link Loss Forwarding status	Main INTFC	*6		Status
87	SPEED & DUPLEX	LAN Port setting	Main INTFC	*6		Status
88	WS INPUT LOSS	WS Input signal is lost	Main INTFC	*6		Minor
89	WS AIS RCVD	WS AIS signal is received	Main INTFC	*6		Status
90	WS AIS GENERATED	WS AIS signal is generated	Main INTFC	*6		Status
95	MODEM ALM1	MODEM1 total alarm	MODEM			Major
96	MODEM ALM2	MODEM2 total alarm	MODEM	*1		Major
97	INTFC(1) ALM	Main INTFC total alarm	OC-3 INTFC			Major
98	INTFC(2) ALM	Main INTF Sub INTFC	OC-3 INTFC/ SUB INTFC			Major
99	CTRL ALM	CTRL UNIT total alarm	CTRL			Major
100	MODEM 1 UNEQUIP	MODEM1 is unequipped	CTRL			Major
101	MODEM 2 UNEQUIP	MODEM2 is unequipped	CTRL			Major
102	INTFC(1) UNEQUIP	MAIN INTFC is unequipped	CTRL			Major
103	INTFC(2) UNEQUIP	SUB INTFC is unequipped	CTRL			Minor
104	INPUT VOLTAGE ALM1	PS1 input over voltage/lower voltage	MODEM No.1			Major
105	INPUT VOLTAGE ALM2	PS2 input over voltage/lower voltage	MODEM No.2	*1		Major
106	INTFC (1) TYPE MISSMATCH	Mounted INTFC differs from configuration setting	Main INTFC			Major
107	INTFC (2) TYPE MISSMATCH	Mounted INTFC differs from configuration setting	Main INTFC			Major
108	OC-3 (1) OUTPUT CONTROL	MS-AIS control for MUX	Main INTFC	*5		Status
109	OC-3 (2) OUTPUT CONTROL	MS-AIS control for MUX	Main INTFC	*5		Status
110	OC-3 (1) APS LOCKIN STATUS	APS is in lockin	Main INTFC	*4		Status
111	OC-3 (2) APS LOCKIN STATUS	APS is in lockin	Main INTFC	*4		Status

Notes: **1. Not applied.*
**2. XPIC configuration only.*
**3. Not displayed on LCT.*
**4. APS configuration only.*
**5. Selectable.*
**6. LAN configuration only.*

1.4 Equipment Setup (SONET)

Note: Click on the "SET" button in Common area after every setting items has been entered.

OC-3 (OPTICAL) Equipment Setup (Sample)

User Interface	SONET OC-3 ▼
Redundancy Setting	1+1(Hot Standby TERM) ▼
INTFC(Main)	OC-3(OPTICAL) ▼
INTFC(Sub)	NOT USED ▼
XPIC Usage	○ Not Used ○ Used(Main Master) ○ Used(SUB Master)
APS Function	○ Unavailable ● Available
Modulation Scheme	128QAM ▼
Transmission Capacity	156MB ▼

TX RF Frequency [MHz]	6048.975
RX RF Frequency [MHz]	6301.015
Frame ID	ID1 ▼
TX Power Control	○ MTPC ● ATPC
LAN Port Usage	▼
LAN Capacity	▼

---ODU FREQ INFO---

TX Start Frequency [MHz]	5930.375
TX Stop Frequency [MHz]	6162.633
Frequency Step [MHz]	0.050
Shift Frequency [MHz]	252.040
Upper/Lower	LOWER
SUB Band	E

User Interface
Redundancy Setting
INTFC(Main)
INTFC(Sub)
XPIC Usage
APS Function
Modulation Scheme
Transmission Capacity

1 Click on the menu button "User Interface" and select corresponding item,

User Interface

User Interface	SONET OC-3 ▼
	SONET GbE OC-3

2 Click on the menu button “Redundancy Setting” and select corresponding item,

The “User Interface” item selected decides the selectable items that follows.

3 Setup can be performed by clicking on menu button to select setup item from pull-down menu, clicking setting button or entering values, then click on the “SET” button in Common area to complete and confirm the setup procedure.

Redundancy Setting

Redundancy Setting	1+0(TERM) ▼
	1+1(Hot Standby TERM)
	1+1(Twinpath TERM)

INTFC(Main) (*)

INTFC(Main)	OC-3(Optical) ▼ (*)
	GbE over OC-3

INTFC(Sub) (*)

INTFC(Sub)	Not Used ▼ (*)
	OC-3 (Optical)
	LAN

Note: Select OC-3 OPT for APS, when APS to be configured to the system.

XPIC Usage

XPIC Usage	Not Used ▼
	Used (Main Master)
	Used (Sub Master)

Note: When XPIC is configured to the system, polarization for Main Master/Sub Muster must not be setup crossed between two stations.

For the XPIC Usage, set Main Master and Sub Master in the XPIC configuration. Set to Not Used in other configurations.
In the XPIC, define the IDU for the Main Master and Sub Master channels, they must be connected to one dual polarized antenna. The reference local frequency and the action control of the ATPC/MTPC are applied from the Main Master channel to the Sub Master

channel.

APS Function	○Unavailable ○Available

(*) INTFC(Main)/INTFC(Sub) are changed to INTFC (WORK)/INTFC(PROT) in APS system.

RF Frequency

TX RF Frequency(No.1) [MHz]
TX RF Frequency(No.2) [MHz]
RX RF Frequency(No.1) [MHz]
RX RF Frequency(No.2) [MHz]

Notes: 1 Set different values for No.1 TX frequency and No.2 TX frequency in the Twinpath configuration.

2 Depending on the ODU type, there are two modes for the RF frequency setup.

1. When the transmitting frequency is set, the receiving frequency is automatically assigned.

2. When the transmitting frequency is set, the receiving frequency is automatically assigned and assignment of it in manual is also available by changing the RX RF frequency values which is automatically assigned.

3 The transmitting frequency for the Main Master and Sub Master must be set the same and also the receiving frequency. The frequency setup must be performed at the Main Master station first and then, Sub Master station.

The entered TX RF frequency value should be within the Start and Stop frequency range of Sub-Band which is indicated on the Name Plate of each ODU. For details, refer to the Appendix RADIO FREQUENCY PLAN OF THE NLITE E NEO in Section 1.

Caution: For the 6/7/8/10 GHz band, the BPF of TX and RX of the ODU are adjusted to each assigned frequency. Then, to change the RF channel frequency, both BPFs replacement and LCT setup are required.

TX Frequency and RF Frequency for No.1 and No.2 are displayed in Twinpath configuration.

Frame ID

Frame ID(No.1)	▼
Frame ID(No.2)	▼

Note: The frame ID is set in order to discriminate the signal. As a signal with a different ID cannot be received, the ID of the opposite station should be set the same. The number of IDs which can be selected as follows;
ID1 through ID32 : XPIC is not used.
ID1 through ID16 : Main Master in the XPIC configuration.
ID17 through ID32 : Sub Master in the XPIC configuration.

TX Power Control

TX Power Control	○MTPC ○ATPC

Notes: 1 When the MTPC is selected, TX output level can be controlled by 1 dB step within MTPC range in Maintenance "On" state.

When the ATPC is selected, TX output level is automatically controlled by 1 dB step within ATPC range.

2 For the details of ATPC, refer to the 3.5.3 Automatic Transmitter Power Control in Section 2.

3 In the XPIC configuration, this setup is performed at the Main Master station.
The setup operation and ATPC/MTPC control of the Sub Master station are applied from the Main Master station.
The action control of the ATPC/MTPC are applied from the Main Master channel to the Sub Master channel.
The role of the Main Master channel is switched to the Sub Master channel when the Main Master channel is a failure.

LAN Port Usage (Main)

For GbE INTFC

LAN Port Usage (MAIN)	USED	▼
LAN Port Capacity (MAIN)	150Mbps	▼

Note: When the GbE INTFC is applied, LAN Port Usage (MAIN) is fixed to "USED" and also LAN Port Capacity (MAIN) is to 150Mbps.

For LAN/WS INTFC

LAN Port Usage (MAIN)	P1=75MB/P2=75MB	▼
	P1=100MB/P2=50MB	
	Best Effort	
	P1=100MB/P2=Not Used	
LAN Port Capacity (MAIN)	150Mbps	▼

Note: Select "SONET over OC-3" from User Interface in the Equipment Setup, LAN over OC-3 is assigned for the INTFC Main.

1. *LAN Port Usage (MAIN):*
   Setting for radio transmission band in each port.
   P1=75MB/P2=75MB (default)
   P1=100MB/P2=50MB
   Best Effort
   P1=100MB/P2=Not Used
2. *LAN Capacity (MAIN):*
   The LAN capacity is fixed to 150MB.

LAN Port Usage (SUB)	P1-2 Shared/1Port Only(WS)	▼
	P1-2 Shared/1Port Only(SC)	
LAN Capacity (SUB)	64kbps	▼
	128kbps	
	192kbps	
	256kbps	
	2Mbps	

Notes: 1. LAN Capacity may be set when WS/LAN is used.

2. *Selectable LAN capacity is depending on the main signal transmission capacity.*
   64kbps: SC and RSOH E1/F1 are usable.
   128kbps: SC1-2 are usable.
   192kbps: RSOH DCCr is usable.
   256kbps: SC1-4 are usable.
   2Mbitps: When LAN is used.

4 Click on the “SET” button in a Common area to execute setup.

---ODU FREQ INFO---

TX Start Frequency (No.1) [MHz]
TX Stop Frequency (No.1) [MHz]
Frequency Step (No.1) [MHz]
Shift Frequency (No.1)[MHz]
Upper/Lower (No.1)
Sub Band (No.1)
TX Start Frequency (No.2) [MHz]
TX Stop Frequency (No.2) [MHz]
Frequency Step (No.2) [MHz]
Shift Frequency (No.2) [MHz]
Upper/Lower (No.2)
Sub Band (No.2)

5 Click on the “SET” button in Common area, then “OK” is displayed in Progress area when the setup is properly executed.

Note: “NG” and error message are displayed in Progress State area, if there is invalid setting in the Equipment Setup.

2. Inventory

1 Click on the “Inventory” button in **“**LCT MENU**”** then Inventory Lists are displayed.

LCT MENU

Alarm/Status
Equipment Setup
Inventory
AUX I/O
Maintenance
Provisioning
Metering
PMON(History)

---ODU---

	Package Name	Code No.	Serial No.	Date	H/W Version	F/W Version
No.1	ODU	NWA-009034A	00001017	2005.12	210A	1.00
No.2	ODU	NWA-009034A	00001018	2005.12	210A	1.00

---IDU---

	Package Name	Code No.	Serial No.	Date	H/W Version	F/W Version
MODEM No.1	MODEM	MP0-0H2940-A000	00001073	2006.01	00.03	-
MODEM No.2	MODEM	MP0-0H2940-A000	00001074	2006.01	00.05	-
IDU(CTRL)	CTRL	MP0-0H2950-A000	00001010	2006.01	01.00	1.03
MAIN(WORK)	OC-3 INTFC(o)	MP0-0H2960-A000	00001053	2006.01	01.00	-

---FPGA---

	Package Name	Code No.	Version
MODEM No.1	-	-	01.00
MODEM No.2	-	-	01.00
CTRL	CTRL FPGA	NWA-P4061A-000	01.06
MAIN(WORK)	SONET-OC-3 FPGA	P4064A	01.04

---Modem Parameter Version---

MODEM No.1	11
MODEM No.2	11

---Internet Protocol Properties---

IP Address	
Subnet Mask	
Default Gateway	
MAC Address	00-00-00-00-00-00

---Software Key---

Category	Item	Status	
Category & Redundancy	Capacity	156 [MB]	*1
	Redundancy	1+1	
	Precheck Enable	ON	*5
	Capacity (previous)	156 [MB]	*6
	Redundancy (previous)	1+1	
Bit Rate Free	Bit Free	Free	*2
	Precheck Enable	ON	*5
	Bit Free (previous)	Free	*6
LAN INTFC	LAN	Available	*3
	Precheck Enable	ON	*5
	LAN (previous)	Available	*6
XPIC	XPIC	Available	*4
	Precheck Enable	ON	*5
	XPIC (previous)	Available	*6

*Notes: *1 Availability of Capacity & Redundancy Key at the present.*
**2 Availability of Bit Free Key at the present.*
**3 Availability of LAN INTFC Key at the present.*
**4 Availability of XPIC Key at the present.*
**5 Comparing contents of the former Software Key with Up dating one.*
**6 Former status of the Key is indicated as previous.*

3. AUX. I/O

Six input (photocoupler) and six output (relay) are provided in the IDU for external control and alarm outputs of Housekeeping and Cluster.

1 Click on the "AUX I/O" button in **"**LCT MENU**"**.

LCT MENU

Alarm/Status
Equipment Setup
Inventory
AUX I/O
Maintenance
Provisioning
Metering
PMON(History)

2 Click menu button of required number of OUTPUT,

---INPUT---

	CONDITION
INPUT1	Close
INPUT2	Close
INPUT3	Open
INPUT4	Open
INPUT5	Open
INPUT6	Open

3 Select "Open" or "Close" to decide output mode to apply for event output,

---OUTPUT---

	Value	
OUTPUT1	Open	▼
OUTPUT2	Open	▼
OUTPUT3	Open	▼
OUTPUT4	Open	▼
	Open	
	Close	

4 Click on the "SET" button in a Common area to execute setup.

Note: From INPUT 1 to INPUT 6 can be assigned to HK1 to HK6 input.

From INPUT 3 to INPUT 6 can be used to Cluster IN4 to Cluster IN1.

From OUTPUT 1 to OUTPUT 4 can be assigned to HK OUT1 to HK OUT 4.

From OUTPUT 1 to OUTPUT 4 can be used to Cluster OUT 1 to OUT 4.

Cluster can be used up to 4 and for each Cluster IN# corresponding Cluster OUT# should be set in the opposite station.

5 Click on the "SET" button in Common area, then "OK" is displayed in Progress area when the setup is properly executed.

Note: "NG" and error message are displayed in Progress State area, if there is invalid setting in the Aux I/O.

4. Maintenance

1 Click on the “Maintenance” button in **“**LCT MENU**”**,

LCT MENU

Alarm/Status
Equipment Setup
Inventory
AUX I/O
Maintenance
Provisioning
Metering
PMON(History)

Maintenance1
Maintenance2

2 Click on the “Maintenance1” pull-down menu to display control items,

3 Click on the setting button “On” for Maintenance and Click on the “Set” button, then value field turns to “On”,

---Maintenance1---

Item	Value	Setting	
Maintenance	On	○Off ●On	Set

Maintenance1 of the SONET system is described in Chapter 4.1 Maintenance1(SONET).

4 Click on the “Maintenance2” pull-down menu to upload/ download program file or reset CPU,

Maintenance2 is described in Chapter 4.2 Maintenance2.

4.1 Maintenance1(SONET)

---Maintenance1---

Item	Value	Setting		
Maintenance	On	○Off ●On		Set
TX SW Manual Control	Auto	●Auto ○No.1 ○No.2		Set
RX SW Manual Control	Auto	●Auto ○No.1 ○No.2		Set
RX SW Maintenance Mode	Manual			
ATPC Manual Control(No.1)	On	○Off ●On	[dB]	Set
ATPC Manual Control(No.2)	Off	●Off ○On		Set
TX Mute Control(No.1)	Off	●Off ○On		Set
TX Mute Control(No.2)	Off	●Off ○On		Set
CW Control(No.1)	Off	●Off ○On		Set
CW Control(No.2)	Off	●Off ○On		Set
APS Manual Control	Auto	●Auto ○Working ○Protection		Set
APS Maintenance Mode	Manual			
IF Loopback(No.1)	Off	●Off ○On		Set
IF Loopback(No.2)	Off	●Off ○On		Set
Main Loopback (Near End)	Off	●Off ○On		Set
Main Loopback (Far End)	Off	●Off ○On		Set
LAN Device Reset				Set
Linearizer Control(No.1)	Auto	●Auto ○Forced Reset		Set
Linearizer Control(No.2)	Auto	●Auto ○Forced Reset		Set
ALS Restart	---	●2sec ○90sec		Set
XPIC Control Local(No.1)	Auto	●Auto ○Forced Reset		Set
XPIC Control Local(No.2)	Auto	●Auto ○Forced Reset		Set
XPIC Control Remote(No.1)	Auto	●Auto ○Forced Reset		Set
XPIC Control Remote(No.2)	Auto	●Auto ○Forced Reset		Set

---Offline Maintenance---

DADE Adjust	---	●DADE ○Offset DADE ○DADE Off			Set
RF SUB Band Select(No.1)	---	A	▼		Set
RF SUB Band Select(No.2)	---	A	▼		Set
Antenna Alignment Mode(No.1)	Off	●Off ○On			Set
Antenna Alignment Mode(No.2)	Off	●Off ○On			Set

TX SW Manual Control

---Maintenance1---

Item	Value	Setting	
Maintenance	On	○Off ●On	Set
TX SW Manual Control	Auto	●Auto ○No.1 ○No.2	Set
RX SW Manual Control	Auto	●Auto ○No.1 ○No.2	Set

1 Click on the setting button “On” of the “Maintenance” and click on the “Set” button, then value field of the Maintenance turns from “Off” to “On”.

In Maintenance “On” mode, external parallel alarm outputs excepts CPU and PS ALM are masked and automatic control is inhibited.

Control operation using LCT must be performed in Maintenance “On” condition.

2 Click on the setting button “Auto”, “No. 1” or “No. 2” TX SW to select TX SW control mode and Click on the “Set” button, then the value field of the corresponding SW manual control change to the selected mode.

Auto: Normal operation mode

No. 1 or No. 2: Manual control mode

ATPC Manual Control

---Maintenance1---

Item	Value	Setting		
Maintenance	On	○Off ●On		Set
ATPC Manual Control(No.1)	On	○Off ●On	[dB]	Set
ATPC Manual Control(No.2)	Off	●Off ○On		Set

3 Click on the setting button “On” and enter attenuation value within ATPC range, then click on the “Set” button,

In the XPIC configuration, the ATPC/MTPC can not be set in the Sub Master station. The setup is applied from the Main Master station.

ATPC/MTPC Range (SONET)

Modulation Mode	Frequency Band (GHz)	6	7-8	10-11	13	15	18	23	26	28	32	38
128QAM	ATPC Range	0 to 20 dB								0 to 20 dB		
	MTPC Range	0 to 20 dB*1								0 to 20 dB		

*Note *1 Additional attenuator from 0 to 5 dB can be added.*

TX Mute Control

4 Click on the setting button “On” to select TX Mute Control,

5 Click on the “Set” button and the value field change to “On”,

Caution: The control affects the radio link connection.

---Maintenance1---

Item	Value	Setting	
Maintenance	On	○Off ●On	Set
TX Mute Control(No.1)	Off	●Off ○On	Set
TX Mute Control(No.2)	Off	●Off ○On	Set

CW Control

6 Click on the setting button “On” to set CW Control ( ) and click on the “Set” button, then value field turns to “On”,

Caution: The control affects the radio link connection.

---Maintenance1---

Item	Value	Setting	
Maintenance	On	○Off ●On	Set
CW Control(No.1)	Off	●Off ○On	Set
CW Control(No.2)	Off	●Off ○On	Set

Note: When set to CW Control “On”, unmodulated RF signal is emitted.

APS Manual Control

7 Click on the control button either “Working” or “Protection” of APS control and click on the “Set” button, then value field turns to selected value,

Normal setting mode is “Auto”, set to this mode after maintenance operation has been completed.
Select “Working” to keep the Working INTFC (the INTFC card is installed in Slot (1)) to Online in Manual,
Select “Protection” to keep the Protection INTFC (the INTFC card is installed in Slot (2)) to Online in Manual.

The Maintenance Mode of “Manual” or “Forced” is displayed underneath that is selected in “Provisioning”.

Note:The control applies only to APS configuration.

---Maintenance1---

Item	Value	Setting	
Maintenance	On	◯Off ●On	Set
APS Manual Control	Auto	●Auto ◯Working ◯Protection	Set
APS Maintenance Mode	Manual		

IF Loopback

8 Click on the setting button “On” for the IF Loopback ( ) and click on the “Set” button, then value field turns to “On”,

Caution: The control interrupts all traffic between 2 stations.

---Maintenance1---

Item	Value	Setting	
Maintenance	On	◯Off ●On	Set
IF Loopback(No.1)	Off	●Off ◯On	Set
IF Loopback(No.2)	Off	●Off ◯On	Set

Note: The control applies to IF loopback in local MODEM.

Main Loopback

9 Click on the setting button “On” of the required OC-3 INTFC to be looped back and click on the “Set” button, then controlled value appears in value field,

Caution: The control interrupts all traffic between 2 stations.

Caution: Far End Loopback control will be canceled if radio link failure occurs under the control has been executed.

For OC-3 (ELE)

---Maintenance1---

Item	Value	Setting	
Maintenance	On	◯Off ●On	Set
Main Loopback (Near End)	Off	●Off ◯On	Set
Main Loopback (Far End)	Off	●Off ◯On	Set

For OC-3 (OPT) (APS)

---Maintenance1---

Item	Value	Setting	
Maintenance	On	◯Off ●On	Set
Main Loopback (Near End) INTFC (1)	Off	●Off ◯On	Set
Main Loopback (Near End) INTFC (2)	Off	●Off ◯On	Set
Main Loopback (Far End)	Off	●Off ◯On	Set

DADE Adjust

10 Click on the setting button “Offset DADE” or “DADE” Off and click on the “Set” button,

---Maintenance1---

Item	Value	Setting	
Maintenance	On	◯Off ●On	Set
DADE Adjust	---	●DADE ◯Offset DADE ◯DADE Off	Set

Notes:1.The DADE control applies in 1+1 configuration to adjust delay time for RX hitless switching when the INTFC status is indicated Outphase.

2.The DADE adjustment is needed in initial lineup or when the IF CABLE is replaced. It does not require any readjustment when the INTFC status is indicated In-phase. The setting conditions are as follows:

DADE: Automatically adjust delay time based on either No.1 signal or No.2 signal selected by RX SW under the outphase condition of the INTFC status. The DADE control is processed assuring no interruption of traffic.

Offset DADE:Automatically adjust delay time based on either No.1 signal or No.2 signal selected by RX SW under the outphase condition of the INTFC status. Since the offset memory minimizes the latency delay, traffic interruption occurs at that moment. This Offset DADE controls the delay time difference to a minimum value than DADE control.

DADE off: Set when DADE function is not used. For particularly, when low bit rate (10 to 20 MB) transmission is applied to the system, the DADE control is not required.

Linearizer Control

11 Click on the setting button “Forced Reset” and click on the “Set” button to reset Linearizer ( ), then, selected mode appears in value field,

---Maintenance1---

Item	Value	Setting	
Maintenance	On	◯Off ●On	Set
Linearizer Control(No.1)	Auto	●Auto ◯Forced Reset	Set
Linearizer Control(No.2)	Auto	●Auto ◯Forced Reset	Set

ALS Restart

12 Click on the setting button to select value is to be specified and click on the “Set” button,

---Maintenance1---

Item	Value	Setting	
Maintenance	On	◯Off ●On	Set
ALS Restart	---	●2sec ◯90sec	Set

Note: The details operation of the ALS refer to Chapter 3.5.1 Automatic Laser Shutdown Control in Section 2.

XPIC Control Local

13 Click on the setting button “Forced Reset” and click on the “Set” button to reset XPIC function, then, selected mode appears in value field,

---Maintenance1---

Item	Value	Setting	
Maintenance	On	○Off ●On	Set
XPIC Control Local(No.1)	Auto	●Auto ○Forced Reset	Set
XPIC Control Local(No.2)	Auto	●Auto ○Forced Reset	Set

Notes:1 The control applies only to XPIC configuration for the local station. Select to “Forced Reset” for the local Main/Sub channel which is used online when the propagation is deteriorated, link test is performed or MODEM/ODU is replaced.

2 The control is simultaneously applied for the No.1 CH and No.2 CH in the Hot Standby system.

XPIC Control Remote

14 Click on the setting button “Forced Reset” and click on the “Set” button to reset XPIC function, then, selected mode appears in value field,

---Maintenance1---

Item	Value	Setting	
Maintenance	On	○Off ●On	Set
XPIC Control Remote(No.1)	Auto	●Auto ○Forced Reset	Set
XPIC Control Remote(No.2)	Auto	●Auto ○Forced Reset	Set

Notes:1 The control applies only to XPIC configuration for the remote station. Select to “Forced Reset” for the Main/Sub channel which is used online when the link test is performed or MODEM/ODU is replaced.

2. The control is simultaneously applied for the No.1 CH and No.2 CH in the Hot Standby system.

RF SUB Band Select

15 Click on the menu button, select required Sub-Band from pull-down menu, and click on the “Set” button,

---Maintenance1---

Item	Value	Setting			
Maintenance	On	○Off ●On			Set
RF SUB Band Select(No.1)	---	A	▼		Set
RF SUB Band Select(No.2)	---	A	▼		Set

A	▼
B	▲
C	
D	
E	
F	
G	
H	
J	▼

Note: This is an offline menu item to be carried out after a Sub-Band BPF change in the ODU. Refer to Appendix RF Frequency Plan in section 1 for details of Sub-Band versus Frequency Range.

Antenna Alignment Mode

16 Click on the setting button “On”, and click on the “Set” button, to apply Antenna Alignment Mode ( ), then, value field turns to “On”,

Notes: 1 The setting “On” is applied for antenna orientation or RX LEV reading when using NLITE E Monitor unit.

2 For the antenna orientation, set the TX power to the required level by ATPC Manual Control or MTPC mode at the opposite site.

3 The Antenna Alignment Mode is used for extending the dynamic range of the NLITE E Monitor unit. In order to measure in high range of AGC V, it is mandatory required to set Antenna Alignment Mode to ON. If not set to ON, the indicated AGC voltage is not guaranteed value.

4 No. 1 and No. 2 apply for 1+1 configuration.

---Maintenance1---

Item	Value	Setting	
Maintenance	On	○Off ●On	Set
Antenna Alignment Mode(No.1)	Off	●Off ○On	Set
Antenna Alignment Mode(No.2)	Off	●Off ○On	Set

4.2 Maintenance2

1 Click on the “Maintenance” button in **“**LCT MENU**”**.

LCT MENU

Alarm/Status
Equipment Setup
Inventory
AUX I/O
Maintenance
Provisioning
Metering
PMON(History)

Maintenance1
Maintenance2

2 Click on the “Maintenance1” pull-down menu,

3 Click on the setting button “On” for Maintenance item and click on the “Set” button, then value field turns to “On”,

---Maintenance1---

Item	Value	Setting	
Maintenance	On	○Off ●On	Set

4 Click on the “Maintenance” button and select “Maintenance2” pull-down menu,

Following control items are displayed in Main area.

--- Maintenance2 ---

---Control---

CPU Reset

---PMON Clear---

PMON Clear

---Download---

Configuration File
Program File
Equipment Config. File

---Upload---

Configuration File
Equipment Config. File

---Date/Time---

Date/Time Setting

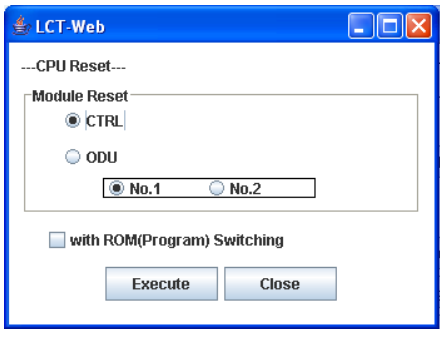
---Password---

Password Setting

Check that the “Maintenance” is “On” in the “Summary Status” area,

CPU Reset

5 Click on the “CPU Reset” button,



6 Click on the control button “CTRL” for IDU or “ODU” and “No. 1 or No. 2” (in 1+1 ODU only), and click “Execute” button in CPU Reset dialog box,

Caution: The control affects the radio link connection.

Check “with ROM (Program) Switching” check box when the program file for “CTRL” or “ODU” is newly down loaded and existing program file will be replaced with new one.

Note: When Click on the “Execute” button to reset CPU of the “CTRL”, then CTRL restarts, the LCT is disconnected.

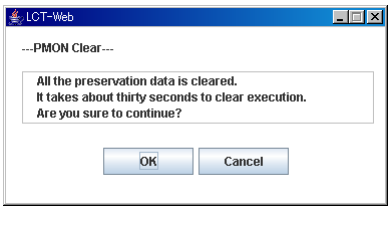
Access the LCT to the NLITE E NEO from the beginning.

7 Click on the “Close” button to dismiss the “CPU Reset” dialog box,

PMON Clear

8 Click on the “PMON Clear” button,

Perform this operation when beginning the service operation to delete all PMON and RMON data that were produced in installation,

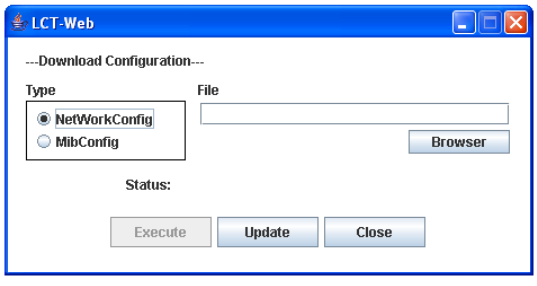


9 Click on the “Execute” button,

10 Click on the “Close” button when “OK” is displayed in Progress area,

Download Configuration File

11 Click on the “Configuration File” button “Download” menu,



12 Select the file Type “Net Work Config” or “Mib Config”,

13 Enter the location of the Configuration file in File field or click on the “Browser” button to display location in the hard disk or floppy disk,

14 Click on the “Execute” button to start down load,

Caution: The control affects the radio link connection.

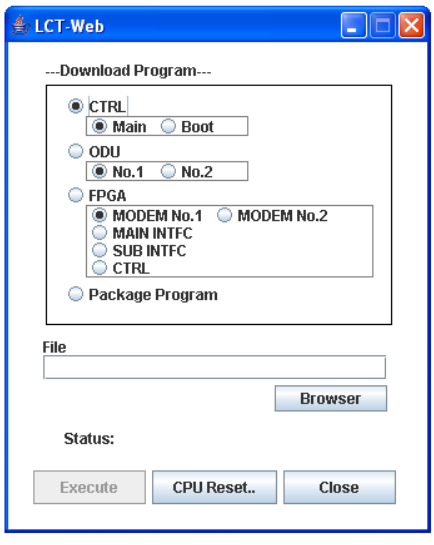
Caution: While data is being transmitted, do not remove the USB cable connecting the IDU with the PC.

15 After download has been completed, click on the “Update” button for the corresponding configuration will be operated with updated file,

16 Click on the “Close” button to dismiss the “Download Configuration” dialog box,

Download Program

17 Click on the “Program File” of “Download” menu,



18 Click on the “CTRL”, “ODU”, “FPGA” or “Package Program” and corresponding Sub-item control button,

19 Enter the location of the Program File in File field or click on the “Browser” to display location in the hard disk or floppy disk,

20 Click on the “Execute” button to start the download of program file,

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

21 After download has been completed, click on the “CPU Reset.” button,

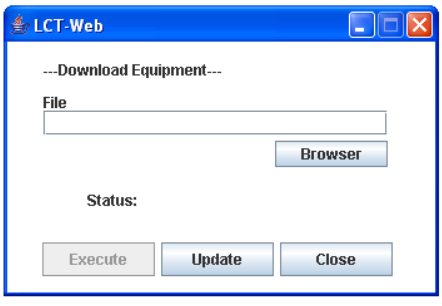
Caution: The control affects the radio link connection.

22 Select on control button “CTRL” for IDU or “ODU” or “No. 1 or No. 2” (in 1+1 ODU only), and click “Execute” button in CPU Reset dialog box,

23 Click on the “Close” button to dismiss the “Download Configuration” dialog box,

Download Equipment

24 Click on the “Equipment Config File” of “Download” menu,



25 Enter the location of the “Equipment Config File” in File field or click on the “Browser” button to display location in the hard disk, floppy disk or MMC, click on the “Execute” button to start the download,

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

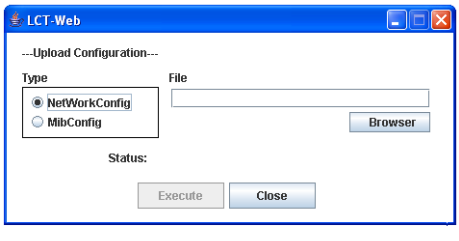
26 After download has been completed, click on the “Update” button for the CTRL will be operated with updated config file,

Caution: The control affects the radio link connection.

27 Click on the “Close” button to dismiss the “Download Equipment” dialog box,

Upload Configuration File

28 Click on the “Configuration File” of “Upload” menu,



29 Select the file Type “Net Work Config” or “Mib Config”,

30 Enter the directory of the file name where the uploaded file will be saved,

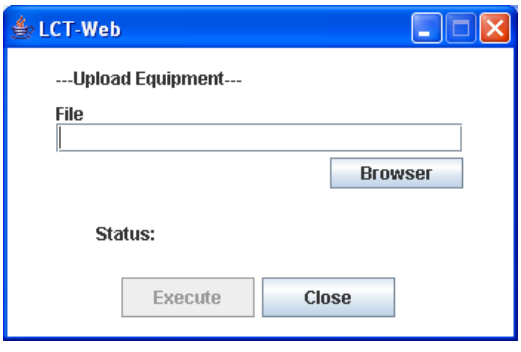
31 Click on the “Execute” button to start the uploading,

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

32 After Configuration File has been uploaded, click on the "Close" button to dismiss the "Upload Configuration" dialog box,

Upload Equipment Config File

33 Click on the "Equipment Config File" of "Upload" menu,



34 Enter the directory of the file name where the uploaded file will be saved,

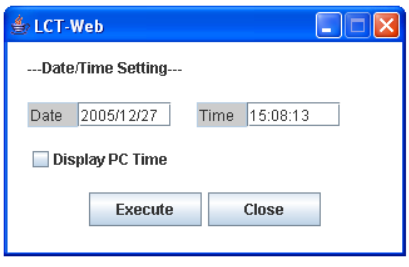
35 Click on the "Execute" button to start the uploading,

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

36 After Equipment Config File has been uploaded, click on the "Close" button to dismiss the "Upload Equipment" dialog box,

Date/Time Setting

37 Click on the “Date/Time Setting” button of “Network” menu,



38 Click on the “Display PC Time” button, then the PC “Date”and “Time” are indicated in the fields,

39 Click on the “Execute” button, then, Date/Time setting for the CTRL is performed,

40 Click on the “Close” button to dismiss the “Date/Time Setting” dialog box,

Password Setting

41 Click on the “Password Setting” button,

42 Enter the current password in “Old Password” entry field,

43 Enter the new password in “New Password” entry field,

44 Enter the same password written in “New Password” entry field in “Confirm new password” entry field,

45 Click on the “OK” button after confirmed “New Password” and “Confirm new password”,

46 Click on the Maintenance1, set Maintenance “Off” and click on the “Set” button, then value field turns to “Off”.

5. Provisioning

LCT MENU

Alarm/Status
Equipment Setup
Inventory
AUX I/O
Maintenance
Provisioning
Metering
PMON(History)

When Click on the "Provisioning" button in **"**LCT MENU**"**, Provisioning setup items are displayed in Main area.

Note: Provisioning setup must be performed after every setup items of the "Equipment Setup" has been completed. If it has any pending item or improper setting of the Equipment Setup, the "Provisioning Setup" will not be completed.

1 Click on the "Provisioning" button in the **"**LCT MENU**"**,

2 Continue to Chapter 7.1 Provisioning Setup for SONET.

5.1 Provisioning Setup (SONET)

Note: To execute setup for each item, every time Click on the "SET" button in common area.

BER Threshold Setting

1 Click on the "BER Threshold Setting" sub-menu button in "Provisioning",

2 Click on the control button of required BER threshold level for "High BER Threshold" and "LOW BER Threshold" of MODEM and E-BER (DMR)/E-BER (MUX) and SD (DMR)/ SD (MUX) of INTFC.

---BER Threshold Setting---

High BER Threshold	●1E-3 ○1E-4 ○1E-5
Low BER Threshold	●1E-6 ○1E-7 ○1E-8 ○1E-9
E-BER(DMR)	●1E-3 ○1E-4 ○1E-5
SD(DMR)	●1E-6 ○1E-7 ○1E-8 ○1E-9
E-BER(MUX)	●1E-3 ○1E-4 ○1E-5
SD(MUX)	●1E-6 ○1E-7 ○1E-8 ○1E-9

SC Assignment

3 Click on the "SC Assignment" sub-menu button in "Provisioning",

4 Click on the menu button of each RS-232C( ) and V-11-( ) and select item from pull down menu to assign a SC, SOH Byte or select Not used,

---SC Assignment---

RS-232C-1	SC1	▼
RS-232C-2	SC2	▼
V-11-1	SC3	▼
V-11-2	SC4	▼
V-11-1 Direction Setting	○ Co-directional	● Contra-directional
V-11-2 Direction Setting	○ Co-directional	● Contra-directional

Not Used	Not Used
SC1	SC1
SC2	SC2
SC3	SC3
SC4	SC4
E1(MUX)	E1(MUX)
F1(MUX)	F1(MUX)
E1(DMR)	DCCr(MUX)
F1(DMR)	E1(DMR)
	F1(DMR)
	DCCr(DMR)
*1	*2

*Notes: *1 assignable SC for RS-232C-1, -2.*
**2 assignable SC for V-11-1, -2.*

LAN Port Setting

5 Click on the “LAN Port Setting” sub-menu button in “Provisioning”,

6 Click on the setting button for each item,

Notes: 1. LAN Port Setting - Switching function (only for INTFC (SUB)):

This is a setup if the Switch Hub is used between Port1 and Port2 or it does not used when the signal domain of the radio link shares with the Port1 and Port2. (It can be used only Shared Mode, or not be used in the Separated Mode of the Port1 and Port2.)

Disabled: No use of Ports for the Switch Hub. (default value)
Enabled: Use of Ports for the Switch Hub.

2. *Clock Source Setting (only for INTFC (MAIN) default value: Internal Clock)*

This is a setup of Clock Source applied for framing into radio signal.
Generally, a clock is used independently for respective sending/receiving using Internal Clock.

Set to DMR=>Internal Clock when it makes synchronizing to the DMR. In this case, set to Internal Clock at the opposite site to avoid Timing Loop, because if it is set to DMR at the local and the opposite site, Timing Loop is caused by the setting.
In the DMR=>Internal Clock mode, the clock is synchronized to received signal when the radio link is normal state but it is switched to the Internal Clock if the radio link is interrupted.

3. *Port Usage: Use of LAN Port or no use.*
(default value is Not Used for MAIN, Used for SUB)

4. *Speed&Duplex:*

Setting for Port speed and Duplex.
Referring to the following table, set the Port mode according to the associated equipment which it is to be connected. Note that if the setting mode differs from associated equipment, it may be caused performance degradation or link loss. (default value is AUTONEG(Auto MDI/MDIX))

5. *Flow Control:*

On: Effective flow control (default value is On)
Off: Non-effective flow control.

6. *Collision Report:*

In HALF-Duplex mode, it is selected that is reported or not reported about Collision conditions at each port. (default value is Not Report)

7. *Link Loss Forwarding:*

Setting of the Link Loss Forwarding mode is effective or no effective. (See Link Loss Forwarding description in the Section II Operation) (default value is Disabled)

	EXTERNAL EQUIPMENT						
SETTING POSITION / IDU PORT SETTING POSITION	Auto Negotiation	10BASE-T/Half Duplex	10BASE-T/Full Duplex	100BASE-TX/Half Duplex	100BASE-TX/Full Duplex	10BASE-T/Half (FIX)	100BASE-TX/Half (FIX)
Auto Negotiation (Auto MDI/MDI-X)	√	—	—	—	—	√	√
10BASE-T/Half Duplex (MDI/MDI-X*)	—	√	—	—	—	—	—
10BASE-T/Full Duplex (MDI/MDI-X*)	—	—	√	—	—	—	—
100BASE-TX/Half Duplex (MDI/MDI-X*)	—	—	—	√	—	—	—
100BASE-TX/Full Duplex (MDI/MDI-X*)	—	—	—	—	√	—	—

√ : A setup is possible.

** MDI/MDI-X is selected according to the cable type or terminal type to be used (straight or cross type).*

(For LAN/WS INTFC in SUB)

---INTFC (SUB) Setting---

Switching Function	○ Disabled ○ Enabled	

---Port1---

Port Usage	○ Not Used ○ Used	
Speed & Duplex	AUTONEG (Auto-MDI/MDIX)	▼
Flow Control	○ Off ○ On	
Collision Report	○ Not Report ○ Report	
Link Loss Forwarding	○ Disabled ○ Enabled	

---Port2---

Port Usage	○ Not Used ○ Used	
Speed & Duplex	AUTONEG (Auto-MDI/MDIX)	▼
Flow Control	○ Off ○ On	
Collision Report	○ Not Report ○ Report	
Link Loss Forwarding	○ Disabled ○ Enabled	

(For LAN/WS INTFC in MAIN)

---INTFC (MAIN) Setting---

Switching Function	○ Disabled ○ Enabled	
Clock Source Setting	○ Internal Clock ○ DMR=>Internal Clock	

---Port1---

Port Usage	○ Not Used ○ Used	
Speed & Duplex	AUTONEG (Auto-MDI/MDIX)	▼
Flow Control	○ Off ○ On	
Collision Report	○ Not Report ○ Report	
Link Loss Forwarding	○ Disabled ○ Enabled	

---Port2---

Port Usage	○ Not Used ○ Used	
Speed & Duplex	AUTONEG (Auto-MDI/MDIX)	▼
Flow Control	○ Off ○ On	
Collision Report	○ Not Report ○ Report	
Link Loss Forwarding	○ Disabled ○ Enabled	

(For GbE INTFC)

---LAN Port Setting---

Switching Function	○ Disabled ○ Enabled	

---Port---

Media Type	○ SFP ○ RJ-45	
Speed & Duplex	AUTONEG (1000MB Full Duplex)	▼
Flow Control	○ Off ○ On	
Link Loss Forwarding	○ Disabled ○ Enabled	

Notes: 1. Media Type:

Selects interface connector type:

SEP: Optical Interface for 1000BASE-SX (default value)

RJ-45: Electrical Interface for 1000BASE-T

2. Speed&Duplex:

Setting for Port speed and Duplex:
AUTONEG(1000MB Full Duplex) (fixed)

4. Flow Control:

On: Effective flow control (default value is On)
Off: Non-effective flow control.

5. Link Loss Forwarding:

Setting of the Link Loss Forwarding mode is effective or no effective. (See Link Loss Forwarding description in the Section II Operation) (default value is Disabled)

OC-3 Setting

7 Click on the “OC-3 Setting” sub-menu button in “Provisioning”,

8 Click on the either “Disabled” or “Enabled” control button,

Note: Refer to Chapter “3.5.6 MS-AIS Generation” in Section 2 for the details.

9 Click on the “Disabled” control button of the ALS,

Note: ALS “Enabled” applies only for OC-3 Optical Interface.

10 Click on the “Enabled” and required ALS interval control button when the ALS is configured in the system,

Note: Refer to Chapter “3.5.1 Automatic Laser Shutdown Control” in Section 2 for the details.

---MS-AIS Generation---

MS-AIS Generation	●Disabled ○Enabled

---ALS---

---ALS---

ALS Function	●Disabled ○Enabled
ALS Interval	●60sec ○180sec ○300sec

TX Power Control

11 Click on the “TX Power Control” sub-menu button in “Provisioning”,

12 Enter required values in each control entry field within specified range,

(1) ATPC mode in 1+0 or Hot Standby configuration

---TX Power Control---		**Range**
ATPC Threshold Level [dBm]	-60.0	-73.0 to -30.0
Additional ATT[dB]	0	0 to 5
ATPC Range(MAX)[dB]	0	-24 to -0
ATPC Range(MIN)[dB]	-24	
ATPC Power Mode	◉Hold ○MAX ○MIN	

(2) ATPC mode in Twinpath configuration

---TX Power Control---		**Range**
ATPC Threshold Level(No.1) [dBm]	-60.0	-73.0 to -30.0
ATPC Threshold Level(No.2) [dBm]	-60.0	-73.0 to -30.0
Additional ATT(No.1) [dB]	0	0 to 5
Additional ATT(No.2) [dB]	0	0 to 5
ATPC Range(MAX)(No.1) [dB]	0	-20 to -0
ATPC Range(MIN)(No.1) [dB]	-20	
ATPC Range(MAX)(No.2) [dB]	0	-20 to -0
ATPC Range(MIN)(No.2) [dB]	-20	
ATPC Power Mode	◉Hold ○MAX ○MIN	

(3) MTPC mode in Twinpath configuration

---TX Power Control---		**Range**
MTPC TX Power(No.1) [dB]	-20	-20 to 0
MTPC TX Power(No.2) [dB]	-20	-20 to 0
ATPC Threshold Level(No.1) [dBm]	-60	-73 to -30
ATPC Threshold Level(No.2) [dBm]	-60	-73 to -30
Additional ATT(No.1) [dB]	0	0 to 5
Additional ATT(No.2) [dB]	0	0 to 5

Notes: 1 No.1 and No.2 are indicated in Twinpath configuration only.

2 For Hot Standby configuration, the TX Power Control effects both No. 1 and No. 2 ODUs.

3 ATPC/MTPC Range varies depending on RF frequency band and modulation scheme.

4 ATPC Threshold level Range varies depending on modulation scheme and RF signal channel separation.

5 ATPC power Mode selects the ATPC activation when ATPC function has been failed:

Hold: Maintain the current TX output level at the time of the ATPC is malfunction.

MAX: Maintain the ATPC maximum TX output level at the time of the ATPC is malfunction.

MIN: Maintain the ATPC minimum TX output level at the time of the ATPC is malfunction.

6 In the XPIC configuration, this setup is performed at the Main Master station, the ATPC/MTPC can not be set in the Sub Master station. The setup is applied from the Main Master station to the Sub Master station.

Condition for TX/RX SW (only for 1+1 configuration)

13 Click on the "Condition for TX/RX SW" sub-menu button in "Provisioning",

14 Click on the control button of required control mode for the TX SW and the RX SW,

----Condition for TX/RX SW---

TX SW Priority	●Non Priority ○ Priority No.1
RX SW Priority	●Non Priority ○ Priority No.1
RX SW Maintenance Mode	●Manual ○ Forced
RX SW Condition-Early Warning	●Included EW ○ Excluded EW

Notes: 1 TX SW control mode is applied only for Hot Standby configuration.
2 For TX and RX SW Priority, select Non Priority for Non-revertive operation at TX or RX alarm condition is restored.
3 Manual mode of RX SW Maintenance Mode, disables the RX SW operation under either No. 1 or No. 2 RX route is alarmed.
4 Forced mode of RX SW Maintenance Mode, enables the RX SW operation through either or both No. 1 or No. 2 RX route is alarmed.
5 Early Warning provides less than $1E^{-9}$.

Condition for APS

15 Click on the control button of required setting mode for the APS,

Note: For the details of Condition for APS setting, see the Automatic Protection Switching (APS) in the Section II Operation.

----Condition for APS---

APS Maintenance Mode	● Manual ○ Forced	
APS Condition-SF(PROT)	● Priority High ○ Priority Low	
APS Condition-SD(B1)	○ Included SD ● Excluded SD	
Lock in Usage	○ Not Used ● Used	
Lock in Count (times)	4	1 to 255
Lock in Detect Time(min)	10	1 to 60
Lock in Hold Time(min)	24	1 to 48

Relay Setting

16 Click on the "Relay Setting" sub-menu button in "Provisioning",

17 Click on the setting box crossed corresponding item and RL,

Note: Display or non-display of Relay Setting items depends on Redundancy Setting.

Example: When setting to (1+0) mode, the items of No.2 side become non-display. At this moment, contact information ("Out") set so far are all cleared regarding the items which become non-display due to the setting change. Accordingly, users are required to set the setting information again when these items are redisplayed after setting change.

Note: From RL3 to RL6 can be assigned to CLUSTER1 to 4 OUTPUT but the same number of CLUSTER1 to 4 INPUT can not be assigned which number has been assigned to CLUSTER OUTPUT, or the CLUSTER can be assigned only for following condition.

Cluster can be used: IN + OUT ≤ 4

---Relay---

	RL01	RL02	RL03	RL04	RL05	RL06
HK OUT1						HK
HK OUT2					HK	
HK OUT3				HK		
HK OUT4			HK			
MAINT	Out	Mask	Mask	Mask	Mask	Mask
IDU CPU ALM		Out				
PS ALM1		Out				
PS ALM2		Out				
ODU ALM1			Out			
ODU ALM2						
ODU CPU/Cable Open ALM1				Out		
ODU CPU/Cable Open ALM2						
TX PWR ALM1						
TX PWR ALM2						
TX INPUT ALM1						
TX INPUT ALM2						
APC ALM1						
APC ALM2						
RX LEVEL ALM1						
RX LEVEL ALM2						
IF CABLE SHORT ALM1						
IF CABLE SHORT ALM2						
IDU ALM					Out	
MOD ALM1						

Cluster1 Input	●Disabled ○Enabled
Cluster2 Input	○Disabled ●Enabled
Cluster3 Input	○Disabled ● Enabled
Cluster4 Input	○Disabled ●Enabled

Note: When the selected item for RL assignment is invalid, "NG" and error message are displayed in Progress State area.

The following are assignable items for external alarm output in SONET system.

HK OUT1
HK OUT2
HK OUT3
HK OUT4
MAINT
IDU CPU ALM
PS ALM1
PS ALM2
ODU ALM1
ODU ALM2
ODU CPU/CABLE OPEN ALM1
ODU CPU/CABLE OPEN ALM2
LO REF1
LO REF2
ODU CPU ALM2
TX PWR ALM1
TX PWR ALM2
TX INPUT ALM1
TX INPUT ALM2
APC ALM1
APC ALM2
RX LEVEL ALM1
RX LEVEL ALM2
IDU ALM
MOD ALM1
MOD ALM2
DEM ALM1
DEM ALM2
HIGH BER ALM1
HIGH BER ALM2
LOW BER ALM1
LOW BER ALM2
IF CABLE SHORT ALM1
IF CABLE SHORT ALM2
XIF ALM1
XIF ALM2
XREF ALM1
XREF ALM2
LOF1
LOF2
STM-1R LOS1-2
STM-1S LOS1-2
OC-3 TF ALM1-2
CLUSTER ALM OUT1
CLUSTER ALM OUT2
CLUSTER ALM OUT3
CLUSTER ALM OUT4

TCN Threshold (15min 1day)

18 Click on the "TCN Threshold (15min)" or "TCN Threshold (1day)" sub-menu button in "Provisioning",

19 Enter required values in threshold OCR (Alarm Occur) and RCVR (Alarm Recover) fields of performance item,

Note: Do not mistake the setting such as the OCR ≤ RCVR or RCVR=0

.

----TCN Threshold (15min)---

	DMR		MUX		
	OCR	RCVR	OCR	RCVR	**RANGE**
OFS	900	90	900	90	0 to 900
UAS	900	90	900	90	0 to 900
ES	900	90	900	90	0 to 900
SES	900	90	900	90	0 to 900
BBE	1410	150	1410	150	0 to 2159100
SEP	900	90	900	90	0 to 900

----TCN Threshold (1day)---

	DMR		MUX		
	OCR	RCVR	OCR	RCVR	**RANGE**
OFS	65534	650	65534	650	0 to 86400
UAS	65534	650	65534	650	0 to 86400
ES	65534	650	65534	650	0 to 86400
SES	65534	650	65534	650	0 to 86400
BBE	135360	13540	13560	13540	0 to 207273600
SEP	65534	650	65534	650	0 to 86400

PMON Select

20 Click on the "PMON Select" sub-menu button in "Provisioning",

21 Enter required "RX level TCN Thresholdt" level in text field,

22 Click on the control button of "SES Activation Condition",

---PMON Select---

RX Level TCN Threshold [dBm]	–82.0
SES Activation Condition	● 30[%] ○ 15[%]

Others

23 Click on the "Others" sub-menu button in "Provisioning",

XPIC Condition-Local Fail

---XPIC Condition- Local Fail---

XPIC Condition - Local Fail	●REF LO->Self LO ○ Mute

24 Click on the either "REF LO->Self LO" or "Mute" control button,

This setup defines the ODU operation when the reference LO signal from the IDU is lost.

Note: Select "REF LO → Self LO" when both V/H channels are used in degraded quality condition.
Local signal is generated by the self LO OSC in the ODU. Then, the local signal is not synchronized with the opposite polarization and the XPIC function is irregularly operated.

Select "Mute" when only normal channel is used in normal quality condition.
The TX output signal of the failure ODU is shut off by the mute control. The XPIC function is not operated absolutely in this mode.

EOW2 External Setting

---EOW2 External Setting---

EOW2 External Setting	●Normal ○ Invert

25 Click on the either "Normal" or "Invert" control button,

Note: Select "Invert" or "Normal" to set appropriate calling system for the associated system as follows.
Set "Normal" when the NEO IDU is connected to NLITE E IDU/ NEO IDU.
Set "Invert" when the NEO IDU is connected to NLITE E^+ IDU or Mx IDU.

Alarm Correlation Capability

---Alarm Correlation Capability---

Alarm Correlation Capability	●Off ○ On

26 Click on the either "On" or "Off" control button,

Note: Select "On" when really caused alarm is displayed.
Select "Off" when including derived alarm is displayed.

27 Click on the "SET" button in Common area to define the setup.

6. Metering

1 Click on the “Metering” in “LCT MENU”,

LCT MENU

Alarm/Status
Equipment Setup
Inventory
AUX I/O
Maintenance
Provisioning
Metering
PMON(History)

2 Check the values indicated in metering text fields for each metering item,

Notes: 1. No.1 and No.2 are indicated only for 1+1 configuration.
2. Both TX Power values of No.1 and No.2 are indicated in Twinpath configuration only.
*3. TX Power value * is indicated for standby ODU in Hot Standby configuration.*
4. Power Supply voltage of the ODU DC input varies depending on IF cable length.
5. During total number of erroneous bits and total number of correctly received bits are calculating, “Calculating” is displayed.
6. In the 2-WAY mode, the values are displayed for each DIR-A and DIR-B.

----Metering---

	No.1	No.2
TX Power[dBm]	+0.7	*
RX Level[dBm]	-65.2	-70.0
Power Supply[V]	-45	-45
BER	*.*E-10	Calculating

RMON(DMR)(1day)

3 Click on the “RMON(DMR)(7days/day)” sub-menu button in “PMON (History)”,

---RMON(DMR)(1day)--- **Maintenance Mode: on**

Port1 ▼

Date	Time	Status	1	2	3	4	5	6

1: RX UNICAST
2: RX BROADCAST
3: RX MULTICAST
4: RX PAUSE
5: RX CEC ERR
6: RX FRAGMENTS
7: RX 64
8: RX 65-127
9: RX 128-255
10: RX 256-511
11: RX 512-1023
12: RX 1024-1536
13: RX 1537-MAX
14: RX JABBERS
15: TX UNICAST
16: TX BROADCAST
17: TX MULTICAST
18: TX PAUSE

6.1 PMON (SONET)

6.1.1 PMON (History)

1 Click on the “PMON (History)” in “LCT MENU”,

LCT MENU

Alarm/Status
Equipment Setup
Inventory
AUX I/O
Maintenance
Provisioning
Metering
PMON(History)

RX Level(24H/15min)
RX Level(7days/day)
DMR(W)(7days/day)
DMR(W)(24H/15min)
MUX(W)(7days/day)
MUX(W)(24H/15min)

2 Click on the “RELOAD” button in Common area,

RX Level(24H/15min)

3 Click on the “RX LEVEL(24H/15min)” sub-menu button in “PMON (History)”,

---RX Level (15min)--- ☐ **Maintenance Mode: on** ☐ **: Current Time**

Date	Time	Status	MIN(No.1)	MAX(No.1)	MIN(No.2)	MAX(No.2)
2006/01/05	15:30-15:45		-59.7	-58.6	-59.3	-58.1
2006/01/05	15:45-16:00		-59.8	-58.7	-58.7	-58.2
2006/01/05	16:00-16:15		-59.5	-59.0	-58.7	-58.2
2006/01/05	16:15-16:30		-59.5	-59.0	-58.7	-58.2
2006/01/05	16:30-16:45		-59.5	-59.0	-71.2	-58.2
2006/01/05	16:45-17:00		-74.2	-55.8	-58.8	-54.1
2006/01/05	17:00-17:15		-59.5	-57.9	-58.8	-58.1

RX Level(7days/day)

4 Click on the “RX LEVEL(7days/day)” sub-menu button in “PMON (History)”,

---RX Level (day)--- **Maintenance Mode: on**

Date	Status	MIN(No.1)	MAX(No.1)	MIN(No.2)	MAX(No.2)
2006/01/01		-59.7	-58.6	-59.3	-58.1
2006/01/02		-59.8	-58.7	-58.7	-58.2
2006/01/03		-59.5	-59.0	-58.7	-58.2
2006/01/04		-59.5	-59.0	-58.7	-58.2
2006/01/05		-59.5	-59.0	-71.2	-58.2
2006/01/06		-74.2	-55.8	-58.8	-54.1
2006/01/07		-59.5	-57.9	-58.8	-58.1

DMR(W)(24H/15min)

5 Click on the “DMR(W)(24H/15min)” sub-menu button in “PMON (History)”,

---DMR(W)(15min)---- **Maintenance Mode: on** **: Current Time**

Date	Time	Status	OFS	SEP	BBE	ES	SES	UAS
2006/01/05	15:30-15:45		0	0	0	0	0	0
2006/01/05	15:45-16:00		0	0	0	0	0	0
2006/01/05	16:00-16:15		0	0	0	0	0	0
2006/01/05	16:15-16:30		0	0	0	0	0	0
2006/01/05	16:30-16:45		0	0	0	0	0	0
2006/01/05	16:45-17:00		0	0	0	0	0	0
2006/01/05	17:00-17:15		0	0	0	0	0	0

DMR(W)(day)

6 Click on the “DMR(W)(7days/day)” sub-menu button in “PMON (History)”,

---DMR(W)(1day)--- **Maintenance Mode: on**

Date	Status	OFS	SEP	BBE	ES	SES	UAS
2006/01/01		0	0	0	0	0	0
2006/01/02		0	0	0	0	0	0
2006/01/03		0	0	0	0	0	0
2006/01/04		0	0	0	0	0	0
2006/01/05		0	0	0	0	0	0
2006/01/06		0	0	0	0	0	0
2006/01/07		0	0	0	0	0	0

MUX(W)(24H/15min)

7 Click on the "MUX(W)(24H/15min)" sub-menu button in "PMON (History)",

---MUX(W)(15min)---- ☐ **Maintenance Mode: on** ☐ **: Current Time**

Date	Time	Status	OFS	SEP	BBE	ES	SES	UAS
2006/01/05	15:30-15:45		0	0	0	0	0	0
2006/01/05	15:45-16:00		0	0	0	0	0	0
2006/01/05	16:00-16:15		0	0	0	0	0	0
2006/01/05	16:15-16:30		0	0	0	0	0	0
2006/01/05	16:30-16:45		0	0	0	0	0	0
2006/01/05	16:45-17:00		0	0	0	0	0	0
2006/01/05	17:00-17:15		0	0	0	0	0	0

MUX(W)(7days/day)

8 Click on the "MUX(W)(7days/day)" sub-menu button in "PMON (History)",

---MUX(W)(day)--- ☐ **Maintenance Mode: on**

Date	Status	OFS	SEP	BBE	ES	SES	UAS
2006/01/01		0	0	0	0	0	0
2006/01/02		0	0	0	0	0	0
2006/01/03		0	0	0	0	0	0
2006/01/04		0	0	0	0	0	0
2006/01/05		0	0	0	0	0	0
2006/01/06		0	0	0	0	0	0
2006/01/07		0	0	0	0	0	0

6.1.2 RMON (History)

RMON(Line)(15min)

9 Click on the “RMON(Line)(24H/15min)” sub-menu button in “PMON (History)”,

---RMON(Line)(15min)--- **Maintenance Mode: on** **: Current Time**

Main Port1 ▼

Date	Time	Status	1	2	3	4	5
2006/01/05	00:00-00:15						
2006/01/05	00:15-00:30						
2006/01/05	00:30-00:45						
2006/01/05	00:45-01:00						
2006/01/05	01:00-01:15						
2006/01/05	01:15-01:30						
2006/01/05	01:30-01:45						
2006/01/05	01:45-02:00						
2006/01/05	02:00-02:15						
2006/01/05	02:15-02:30						
2006/01/05	02:30-02:45						
2006/01/05	02:45-03:00						
2006/01/05	03:00-03:15						
2006/01/05	03:15-03:30						
2006/01/05	03:30-03:45						
2006/01/05	03:45-04:00						
2006/01/05	04:00-04:15						
2006/01/05	04:15-04:30						
2006/01/05	04:30-04:45						
2006/01/05	04:45-05:00						
2006/01/05	05:00-05:15						

1: RX UNICAST
2: RX BROADCAST
3: RX MULTICAST
4: RX PAUSE
5: RX CEC ERR
6: RX ALIGNMENT ERR
7: RX SYMBOL ERR
8: RX UNDERSIZE
9: RX FRAGMENTS
10: RX Pkts 64
11: RX Pkts 65-127
12: RX Pkts 128-255
13: RX Pkts 256-511
14: RX Pkts 512-1023
15: RX Pkts 1024-1536
16: RX Pkts 1537-MAX
17: RX JABBERS
18: TX UNICAST
19: TX BROADCAST
20: TX MULTICAST
21: TX PAUSE
22: TX COLLISION

Notes:

For the GbE INTFC, there are distinctions for the following functions from the 10BASE-T/100BASE-Tx

1. *RX Undersize: Unavailable.*
2. *RX Fragments: Unavailable.*
3. *RX Symbol Errors:*
   For SFP: Available
   For RJ-45: Unavailable (un-counting, only "0" is indicated.)
4. *TX Multicast PKts (Including number of the TX pause packets.)*
5. *RX Multicast PKts (Including number of the RX pause packets.)*
6. *Countable packet size for the following items shown in right side of the table and reading must be taken place as follows. (The indication will not be taken placed.)*

	Indication	Reading
15	RX Pkts 1024-1536	RX Pkts 1024-1518
16	RX Pkts 1537-MAX	RX Pkts 1519-MAX

7. *The RX Alignment Error is counted as an RX CRC ERR.*

RMON(Line)(1day)

10 Click on the “RMON(Line)(7days/day)” sub-menu button in “PMON (History)”,

---RMON(Line)(1day)--- **Maintenance Mode: on**

Main Port1 ▼

Date	Time	Status	1	2	3	4	5	6

1: RX UNICAST
2: RX BROADCAST
3: RX MULTICAST
4: RX PAUSE
5: RX CEC ERR
6: RX ALIGNMENT ERR
7: RX SYMBOL ERR
8: RX UNDERSIZE
9: RX FRAGMENTS
10: RX 64
11: RX 65-127
12: RX 128-255
13: RX 256-511
14: RX 512-1023
15: RX 1024-1536
16: RX 1537-MAX
17: RX JABBERS
18: TX UNICAST
19: TX BROADCAST
20: TX MULTICAST
21: TX PAUSE
22: TX COLLISION

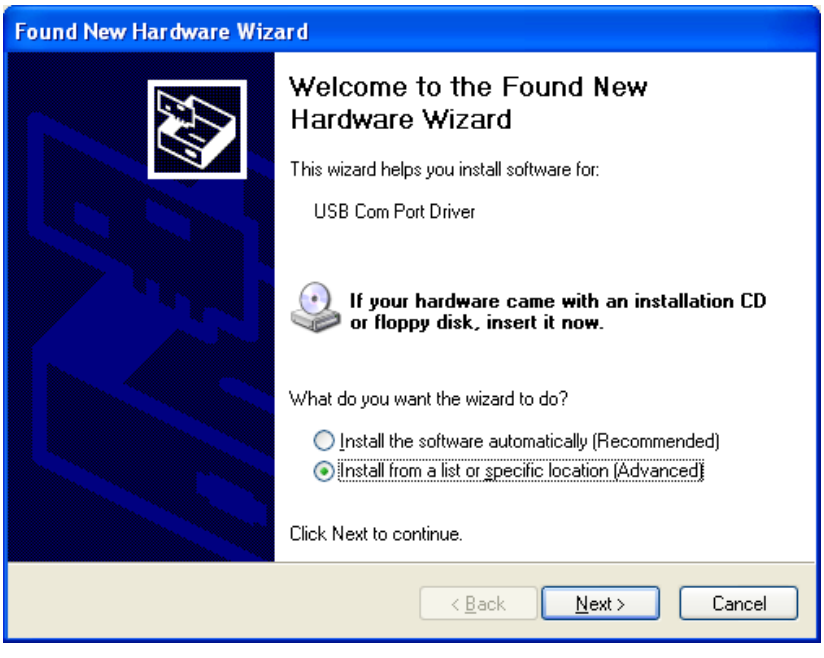
Note: For the GbE INTFC, there are distinctions for the functions from the 10BASE-T/100BASE-Tx. Refer to Notice of above “RMON(Line)(24H/15min)”.

7. Installation of USB

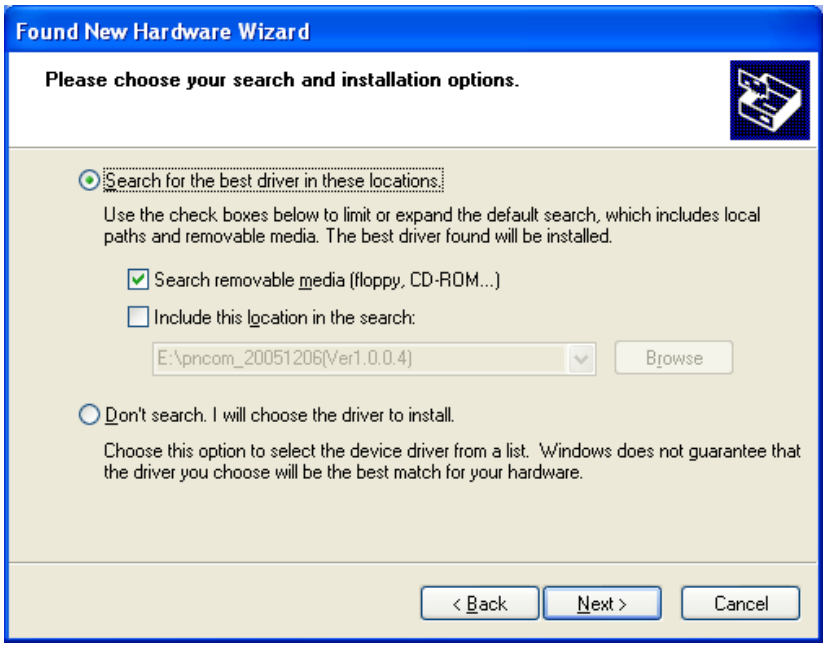
Following procedure explains how to install the USB modem driver to a windows XP PC.

1. Connect the PC with a USB cable between the LCT port and the USB port,

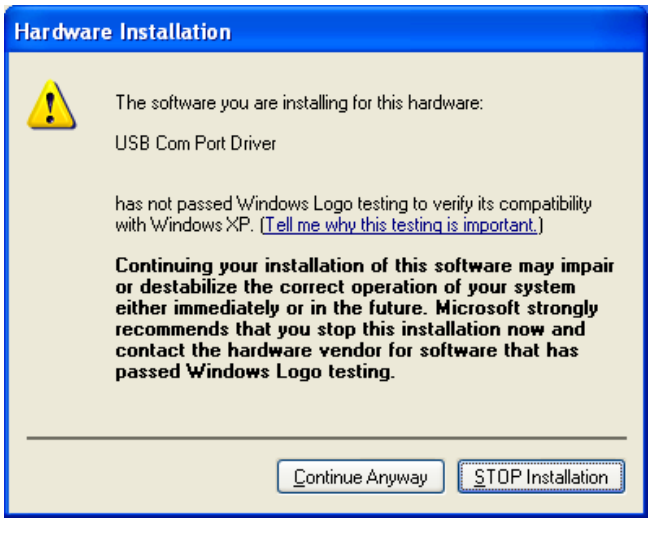
2. Select **"**Install from a list or specific location [Advanced]**"** and Click on the **"**Next**"** button,



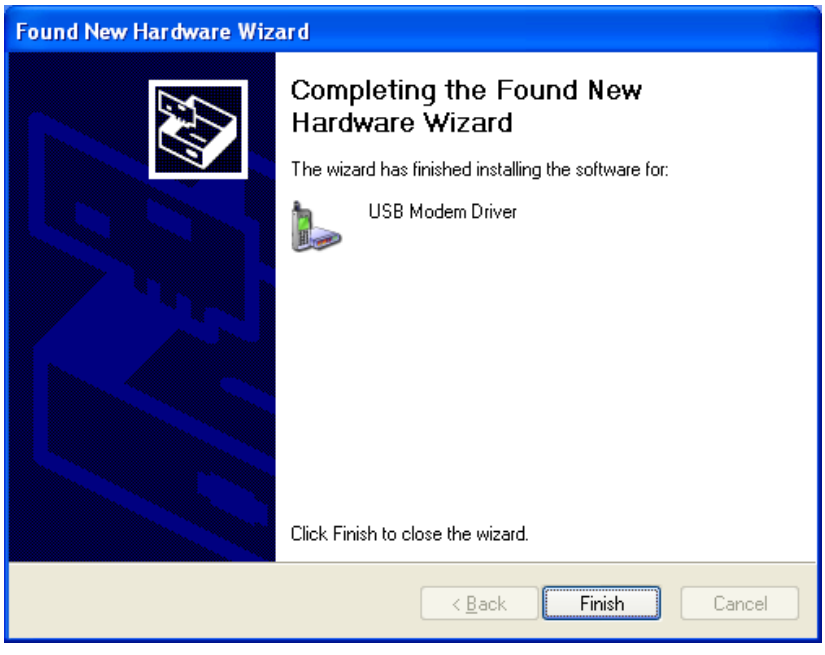
3. Insert the CD-ROM of the USB driver to the PC and select **"**Search for the best driver in these locations**"** and check **"**Search removal media [floppy, CD-ROM...],**"** then, Click on the **"**Next**"** button,



4. Click **"**Continue Anyway**"** button in the Hardware Installation alert pop-up,



5. USB driver installation will be started,

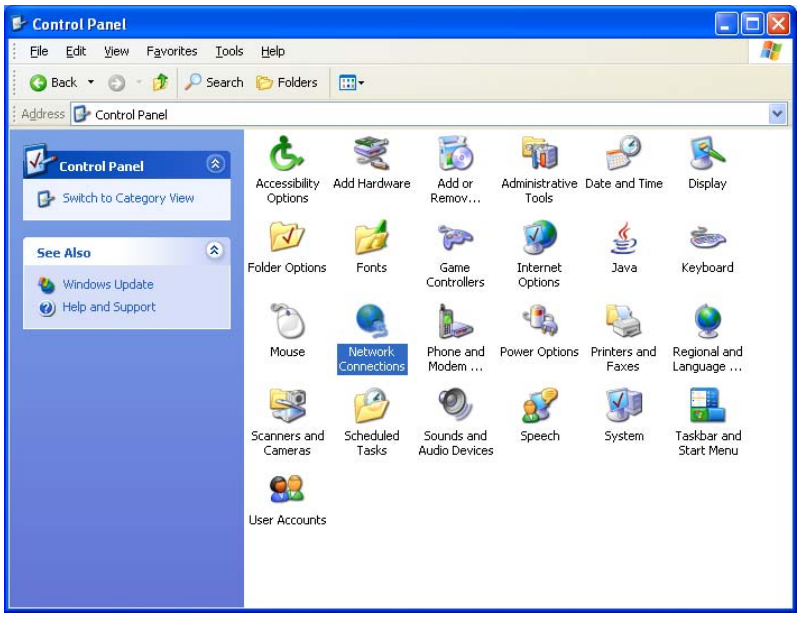


6. Click **"**Finish**"** button in the **"**Found New Hardware Wizard**"** after installation has been completed.

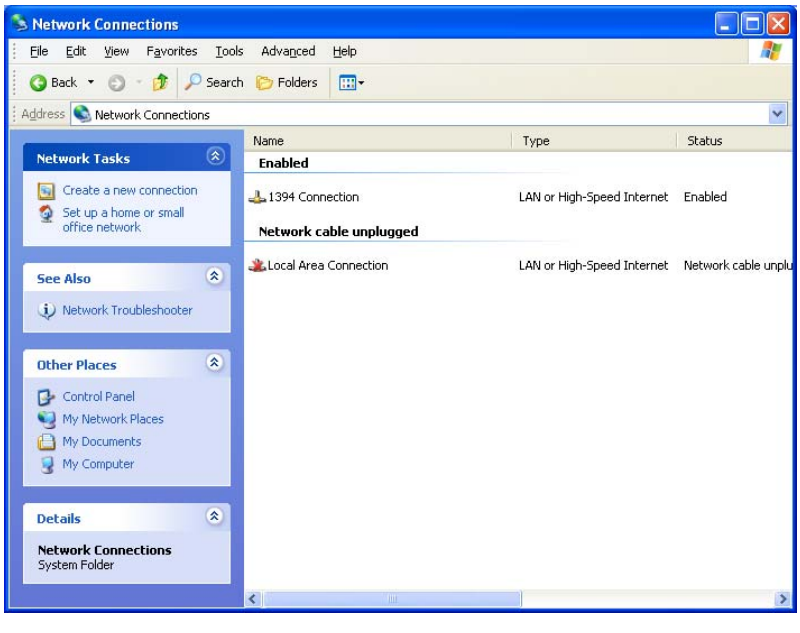
8. Dial-up Setting

Following procedure explains when the Dial-up is set to the PC on Windows Xp.

1. Click on **"Start"→"Setting"→"Control Panel"** and on **"Network Connections"** icon to start the Dialup setting.

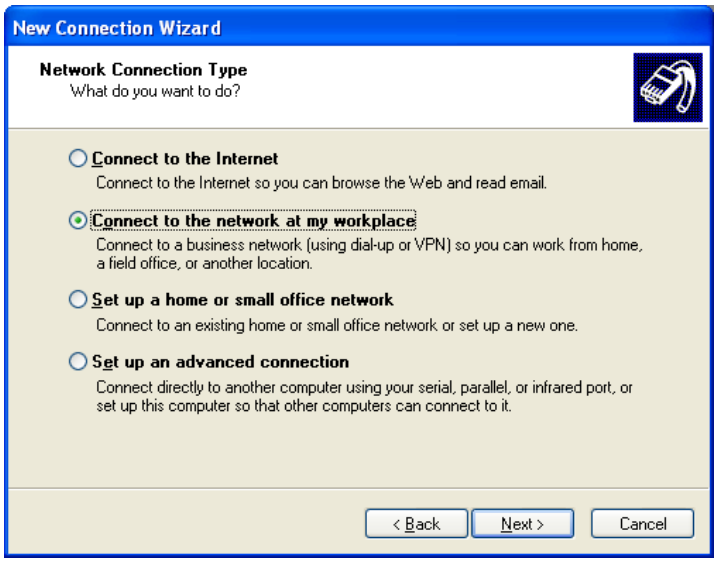


2. The **"Network Connections"** window appears. Click on the **"Create a new connection"** in the **Network Tasks** category.

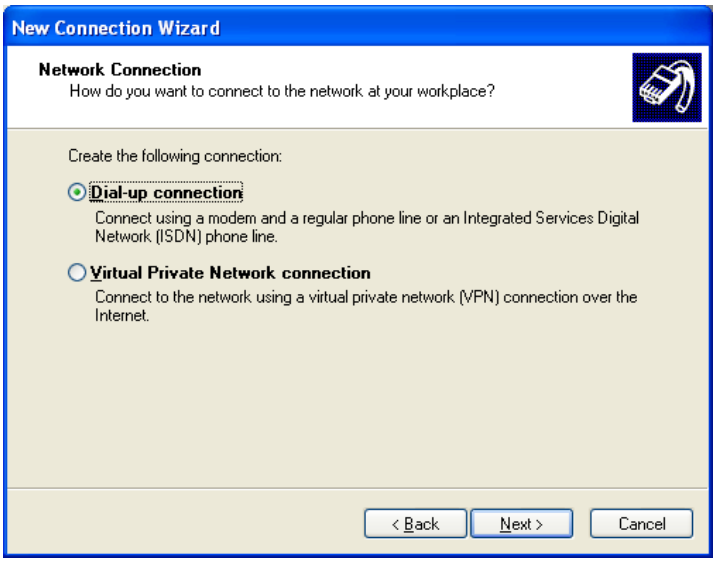


3. The **"Welcome to the New Connection Wizard"** window appears. Click on the **"Next"** button to continue.

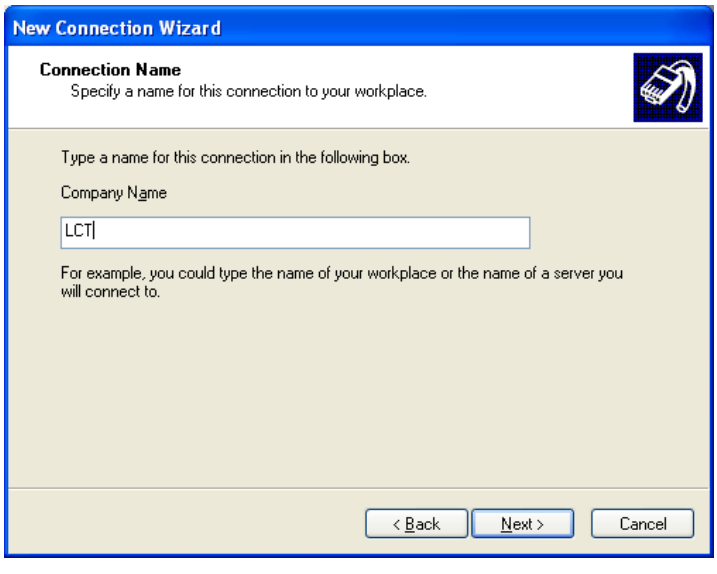
4. Select **"Connect to the network at my workplace"** and Click on the **"Next"** button to continue.



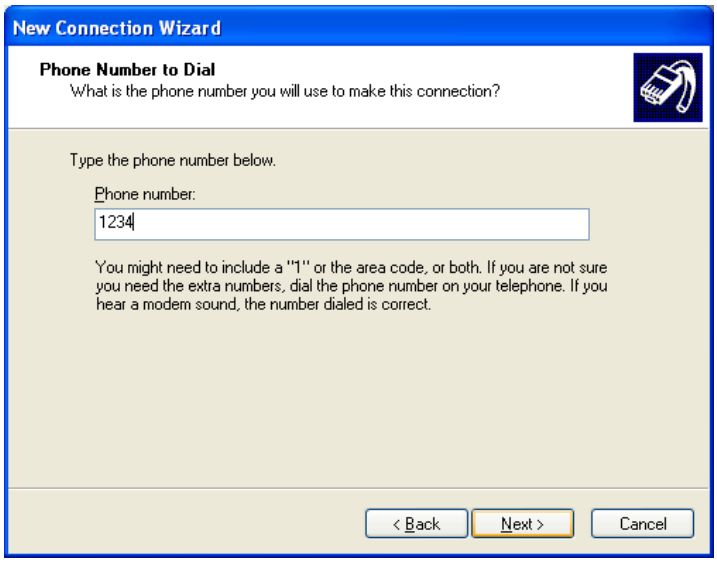
5. Select option **"Dial-up connection"** and Click on the **"Next"** button to continue.



6. On the **"New Connection Wizard"** window, enter **"LCT"** in the **"Company Name"** entry field and Click on the **"Next"** button to continue.

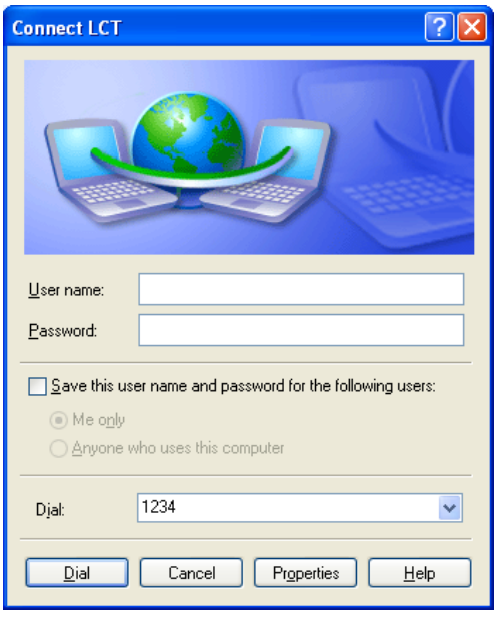


7. Enter phone number in the **“Phone number”** entry field and Click on the **“Next”** button to continue.

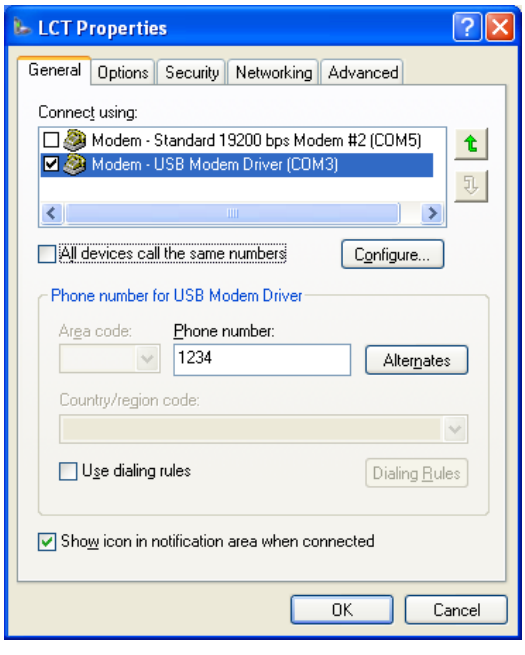


8. Verify that the connection **“LCT”** has displayed as the connection registered. You can also create a shortcut on your desktop if you need. Click on the **“Finish”** button.

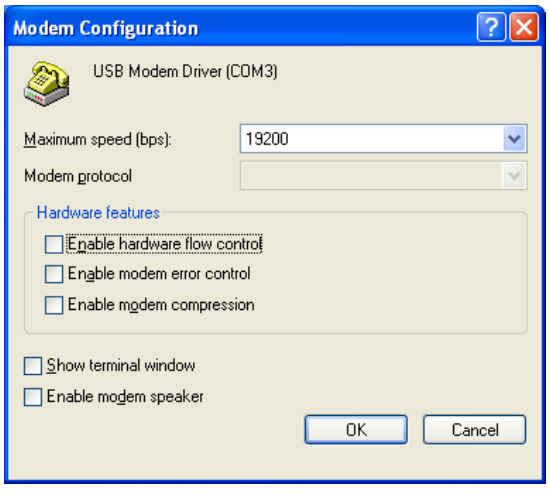
9. On **"**Connect LCT**"** dialog, click **"Properties"**,



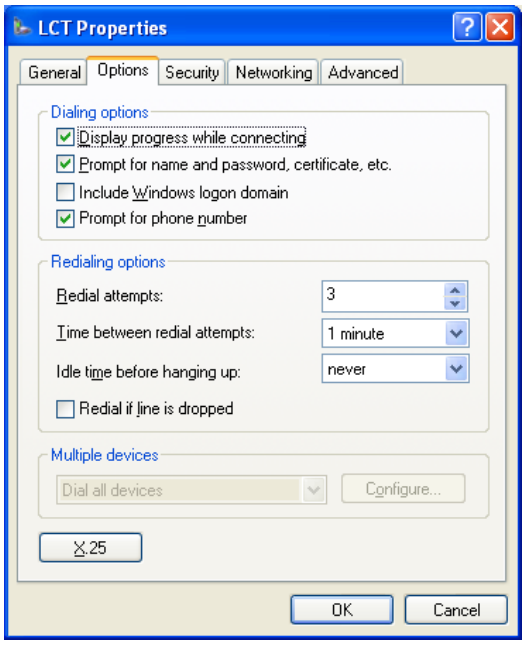
10. Verify that **"Modem-USB Modem Driver [COM(#)]"** is displayed on the General dialog box connect using check box, and select **"Show icon in notification area when connected"** in the LCT Properties dialog. Then, Click on the **"Configure"** button.



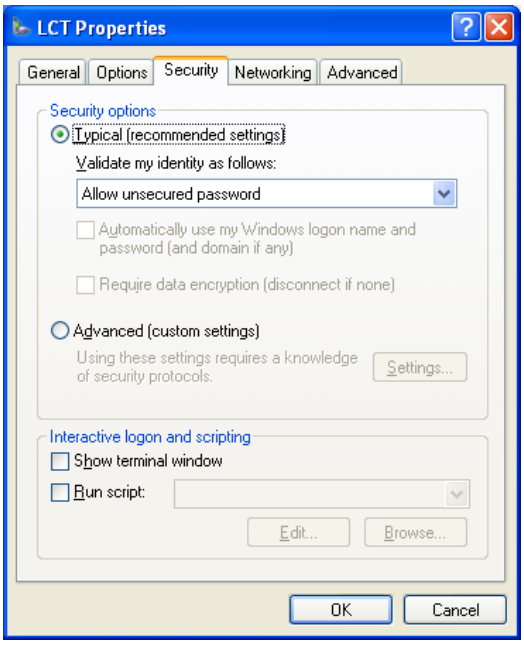
11. On **"Modem Configuration"** dialog, check that unchecked all five boxes, then Click on the **"OK"** button,



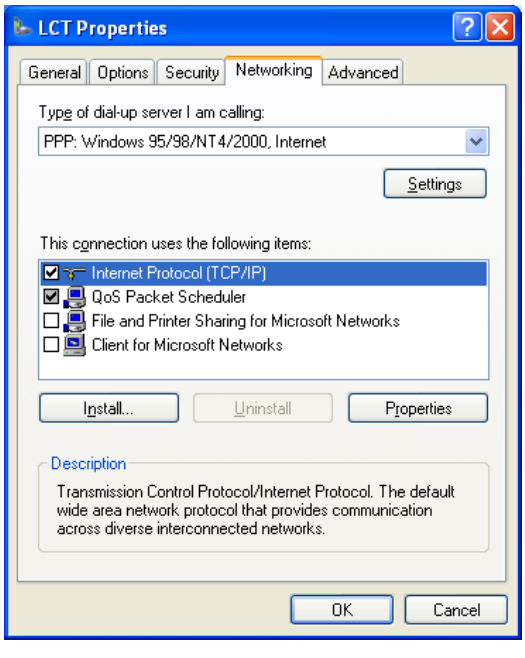
12. Retain the default setting on the **"Options"** tab, click the **"Security"** tab.



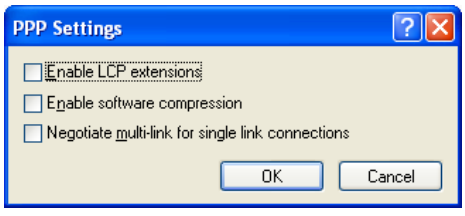
13. Retain the default setting on the **"Security"** tab, click the **"Networking"** tab.



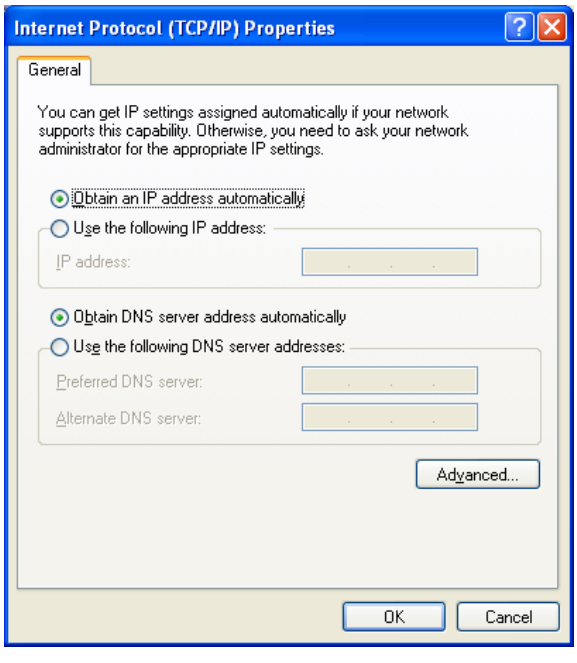
14. On the Networking tab, verify that PPP... is displayed in the **"Type of dial-up server I am calling"** setting field, unchecked "File and Printer... and Client for Microsoft....", "Client for Microsoft Networks".



15. Click **"Settings"** button, unchecked all the boxes in the **"**PPP Settings**"** dialog as shown below. Click **"OK"** to go back to the previous window. Point **"Internet Protocol (TCP/IP)"** and then click **"Properties"**.

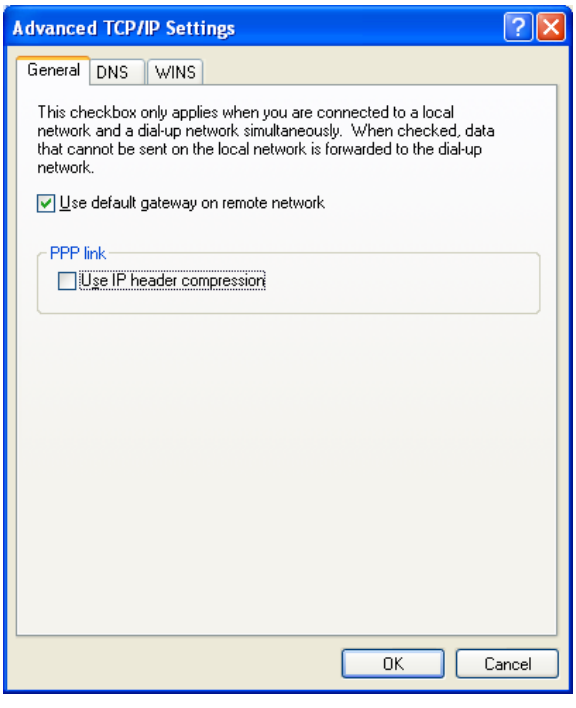


16. Verify that both **"Obtain an IP address automatically"** and **"Obtain DNS server address automatically"** are selected.

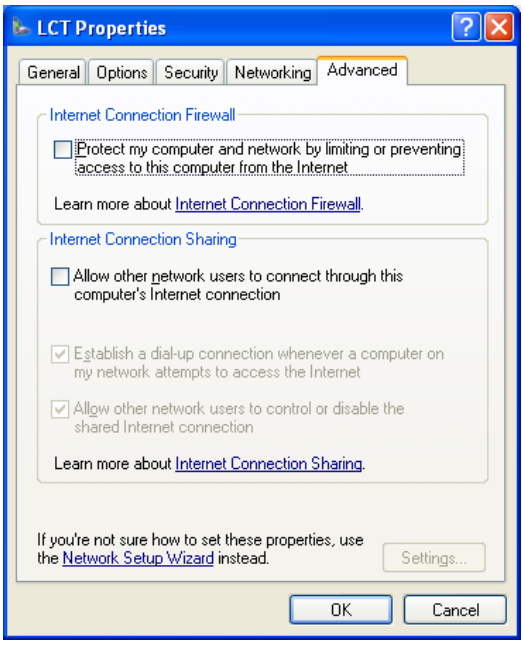


17. Click on the **"Advanced"** button,

18. In the **"Advanced TCP/IP Settings"** dialog, mark check box of **"Use default gateway on remote network"** and for the PPP link is unchecked, then Click **"OK"**.



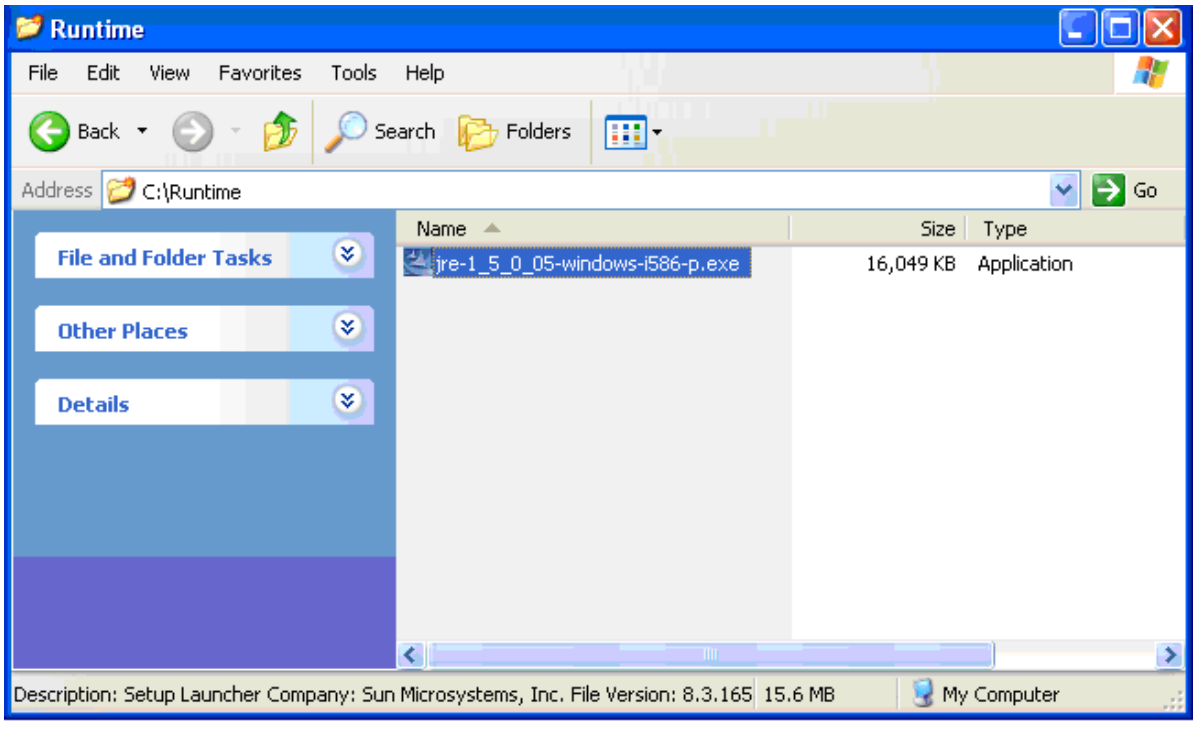
19. Retain the default setting on the **"Advanced"** tab and click **"OK"**.



9. Java Runtime Install

1. Install Java Runtime by double-click on the file name (highlighted below).

Note: The Java Runtime installation is required for the LCTWEB Applet Rev.2.01.xxx or former version.
For the LCTWEB Applet Rev.2.03.xxx or later version, the Java Runtime is included in the LCT WEB Applet, this installation is then not required.



10. LCTWEB (Version 2) Install

Installation of the LCTWEB (Version 2.xx) to your PC is required when the F/W Version 3.x.x of the IDU is used. The LCTWEB (Version 2) for standard IDU is found in the CD-ROM which is attached to the IDU equipment.

LCTWEB Install

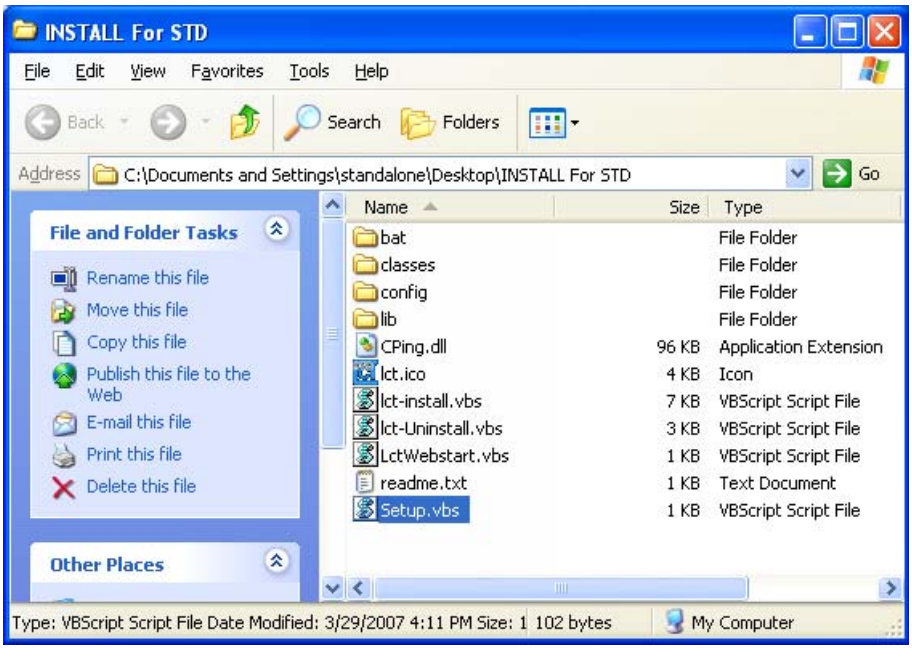
Close LCT application and other applications that may be running on the PC. (It can be installed wrong when other applications are working on the PC.)

When the LCT WEB Applet has been installed, uninstall it and perform the re-installation.

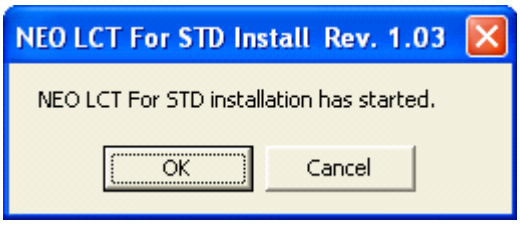
1. Insert the CD-ROM to the CD-ROM player of the PC used for LCT,

2. Double click on the **"INSTALL For STD"** in the **"LCTWEB SETUP FILES"** in the CD-ROM, then data is extracted,

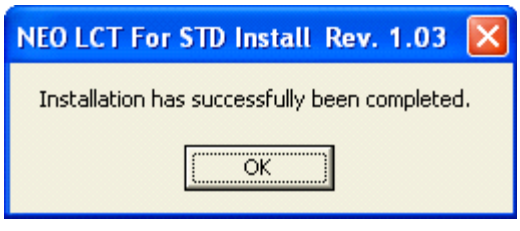
3. Double click on the **"Setup.vbs"** icon**,** then the installer is started up and the installation of the LCTWEB into the PC is executed,



4. Click on the **"OK"** button**,** when following prompt appears,

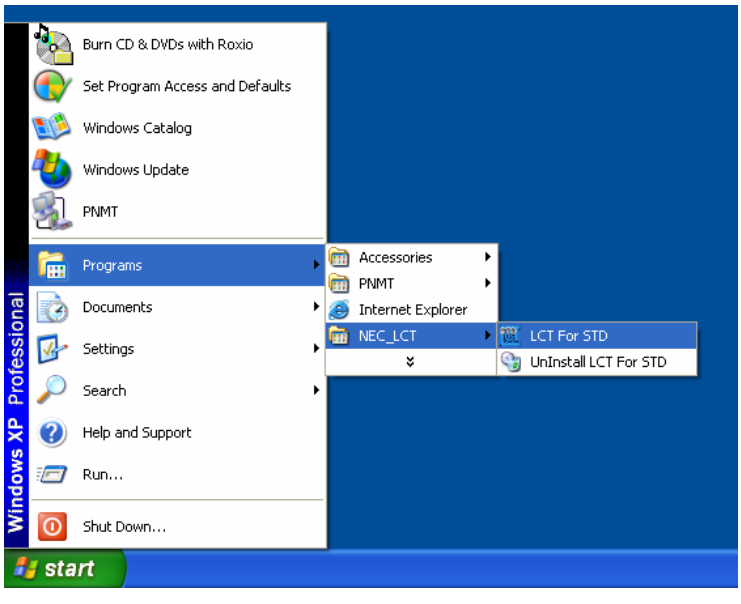


5. Click on the **"OK"** button in the prompt after the installation has been completed,

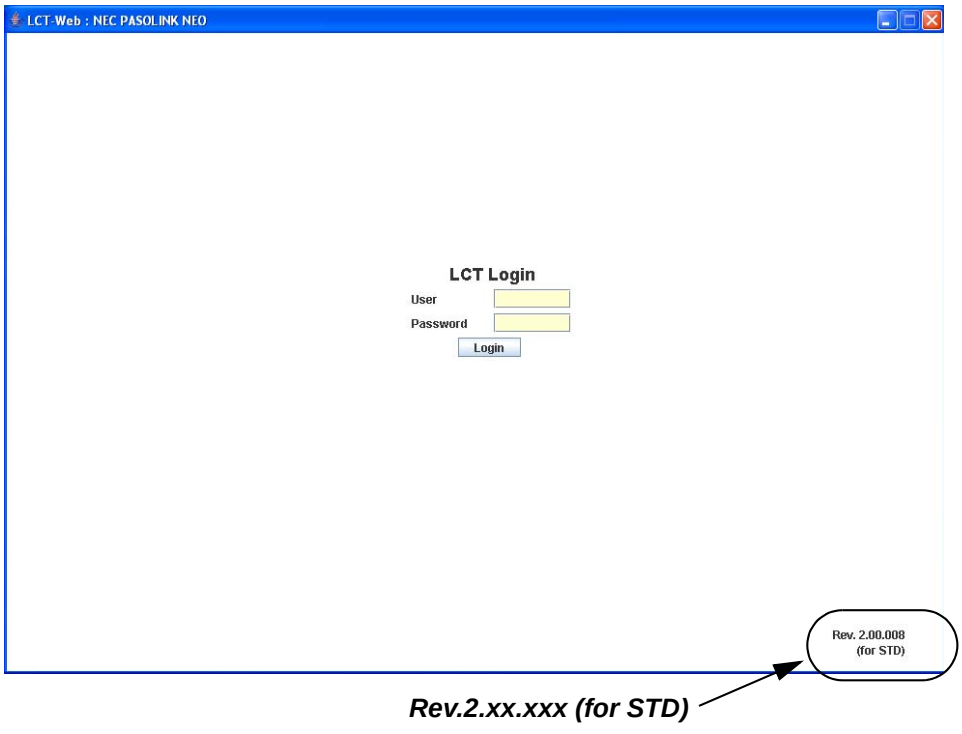


Following short-cut icon is made on the desktop,

6. Click on the short-cut icon or select the **"Programs"** → **"NEC_ LCT"** → **"LCT For STD"** from the **"start"** menu,



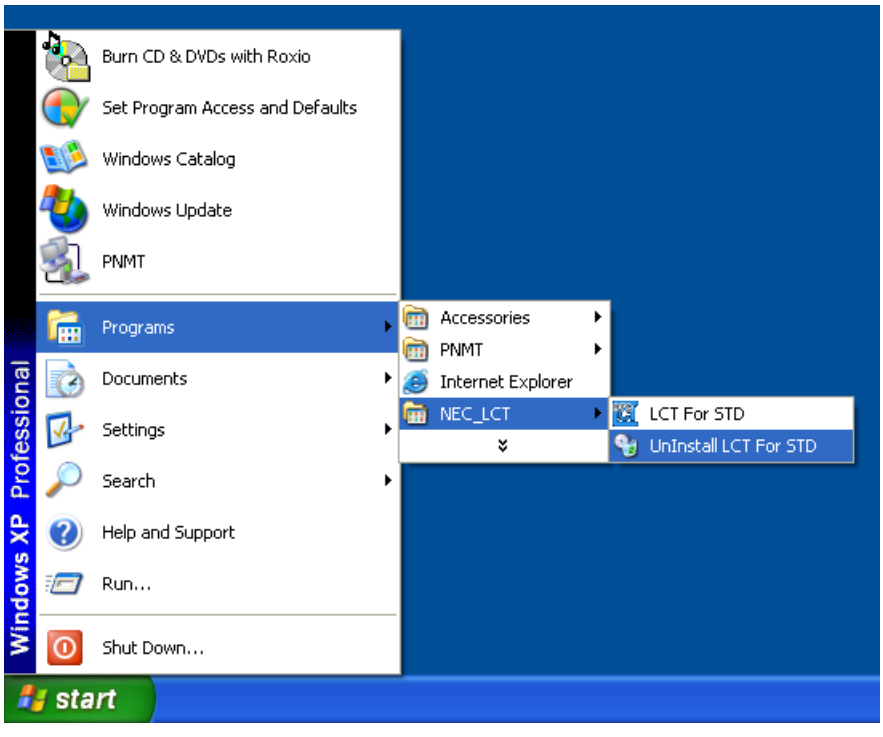
7. The LCTWEB is started up and **“Login”** dialog appears,
8. Confirm that the LCTWEB Version is **“Rev. 2.xx.xxx” (for STD).**



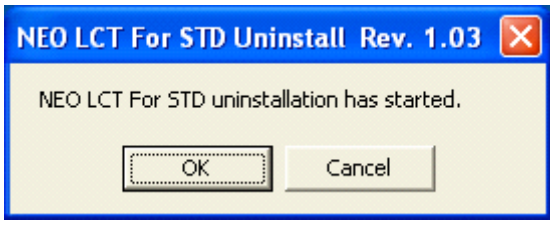
LCTWEB Uninstall

Close LCT application and other applications that may be running on the PC. (It can be uninstalled wrong when other applications are working on the PC.)

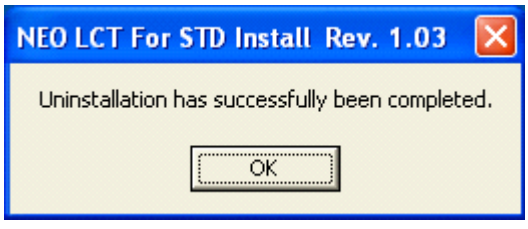
1. Select the **"Programs"** → **"NEC_ LCT"** → **"Uninstall LCT For STD"** from the **"start"** menu for uninstall LCTWEB,



2. Click on the **"OK"** button, when following prompt appears,



3. Click on the **"OK"** button, when following prompt appears,



4. Uninstall finishes.

NLITE E
6-38 GHz SONET DIGITAL RADIO SYSTEM

Section IV MAINTENANCE

CONTENTS

1. GENERAL

This section provides instructions for maintenance of the NLITE E used for 6-38 GHz SONET microwave radio system.

This section provides instructions on the precautions, test setup and accessories, routine maintenance, corrective maintenance and mounting of optional modules.

2. PRECAUTIONS

The following precautions must be carefully observed during maintenance.

(a) The maintenance personnel should report arrival and departure from a station to the relevant station. The following are dangers and warnings to the maintenance personnel.

Warning: 1. The –48 V DC power is superimposed on the centre conductor of the coaxial cable between the IDU and the ODU. Connecting test equipment directly to this terminal may damage it and touching the coaxial cable core may cause electrical shock.

2. Persons performing maintenance must take necessary steps to avoid Electro-static Discharge (ESD) which may damage the modules on the IDU or cause error. Wear a conductive wrist strap connected to the grounded (G) jack on the front of the equipment shelf. This will minimize static build-up during maintenance. (see Fig. 2-1).

3. Do not remove/connect the IF cable with the IDU power ON. Turn the IDU power OFF before connecting/ disconnecting the IF cable, or equipment may be damaged.

4. After turning ON the equipment, wait at least 1 minute before turning it OFF again. Repeatedly turning the power ON and OFF within a short interval may cause the IDU to fail.

5. Do not allow open or short circuit of ODU TX output with the TX power on conditions. Perform the TX Mute control in the Maintenance mode or turn the PWR switch off at the IDU before disconnecting cable or feeder from the ODU TX output.

6. Contact NEC before program download on the LCT is performed. Equipment may not function correctly with improper operation.

Caution: 1. In a system using the OPTICAL OC-3 INTFC, do not stare at the laser beam or look at it directly with optical instruments. Otherwise, it may hurt your eyes (Class 1 Laser Product).

2. The top surface of the IDU above MODEM is hot in operation.

3. When replacing the MODEM, OC-3 INTFC, or DC-DC CONV (optional) turn off the PWR switch and disconnect all cables connected to the module which is to be replaced.

(b) During maintenance, the IDU should be set to Maintenance "On" condition by the local craft terminal (LCT).

(c) To avoid traffic interruption, under the maintenance, perform TX/RX SW manual switching in 1+1 system,.

Note: When TX/RX SW has been automatically switched during a fault, keep this condition by manual switching operation.

(d) While the CPU is initialized by the CPU RESET switch, alarm(s) status is reset to normal. After initialization, the alarm information is properly provided through relay contacts.

(e) Information on the maintenance and the control such as Mute, CW, LB, etc. is released if the power is turned off.

(f) If each setup item of “Equipment Setup” or “Provisioning” is changed during in operation, traffic will be momentarily interrupted.

(g) When the TX SW is activated, momentary traffic interruption may occurs.

(h) Before removing or installing the IDU/ODU, turn off the power switch on the MODEM.

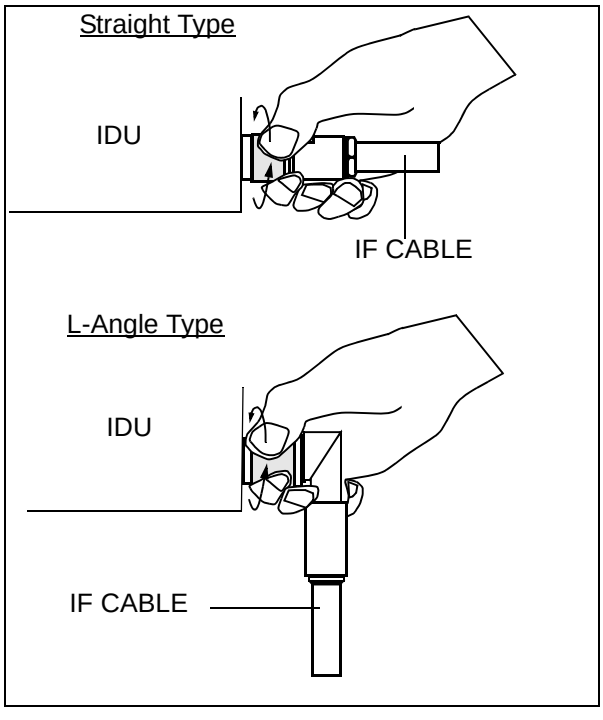
(i) After completing maintenance, restore all connections, manual control settings to normal and confirm that all alarm LEDs are unlit.

(j) When replacing the MODEM, OC-3 INTFC, or E3 INTFC with spare, disconnect every cables connected to the module which is to be replaced, then turn off the power switch on the MODEM, surely.

(k) After equipment start-up, allow the equipment to warm up at least 30 minutes.

(l) In the XPIC system, polarization for the Main Master and Sub Master channel must be coincided between the local station and the opposite station.

(m) In the XPIC system, when the MODEM or ODU is replaced, set the XPIC Control Local and XPIC Control Remote to Forced Reset for the channel to be used for online.

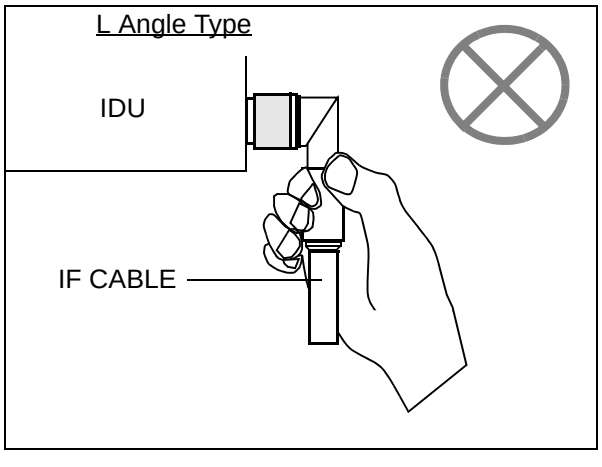


Caution

Tighten the TNC-male connector of IF cable to the IDU with engage connector nut only using fingers and holding the cable with another hand.

Tighten the engage connector nut only for the L-angle connector also.

(Tightening Torque : 0.3 to 0.5 N•m (3 to 5kg•cm))



If rotate other parts of the L-angle connector as illustrated left, it can cause connector damage.

Chart 2-1 Wrist Strap Connection

Step	Procedure
1	Connect the wrist strap to the ESD ground terminal (G),

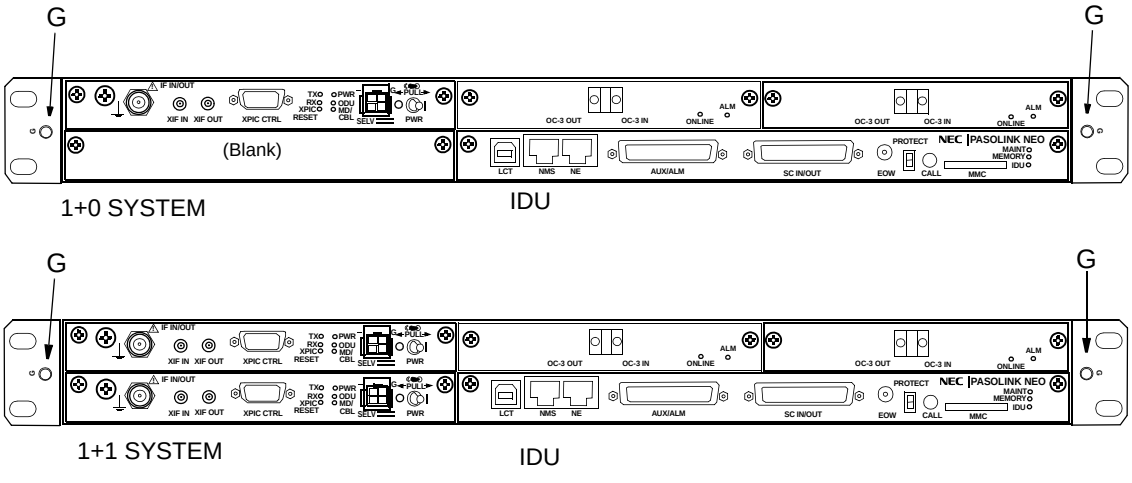


Fig. 2-1 ESD Ground Terminal Location

Chart 2-2 Maintenance Mode Setting

Step	Procedure

For the LCT operation, refer to Chapter 6 of LCT Operation in Appendix of this Section IV.

Maintenance Mode Setting

1 Connect the USB port and the LCT port of the PC and the LCT using a USB cable, (see Fig. 2-2)

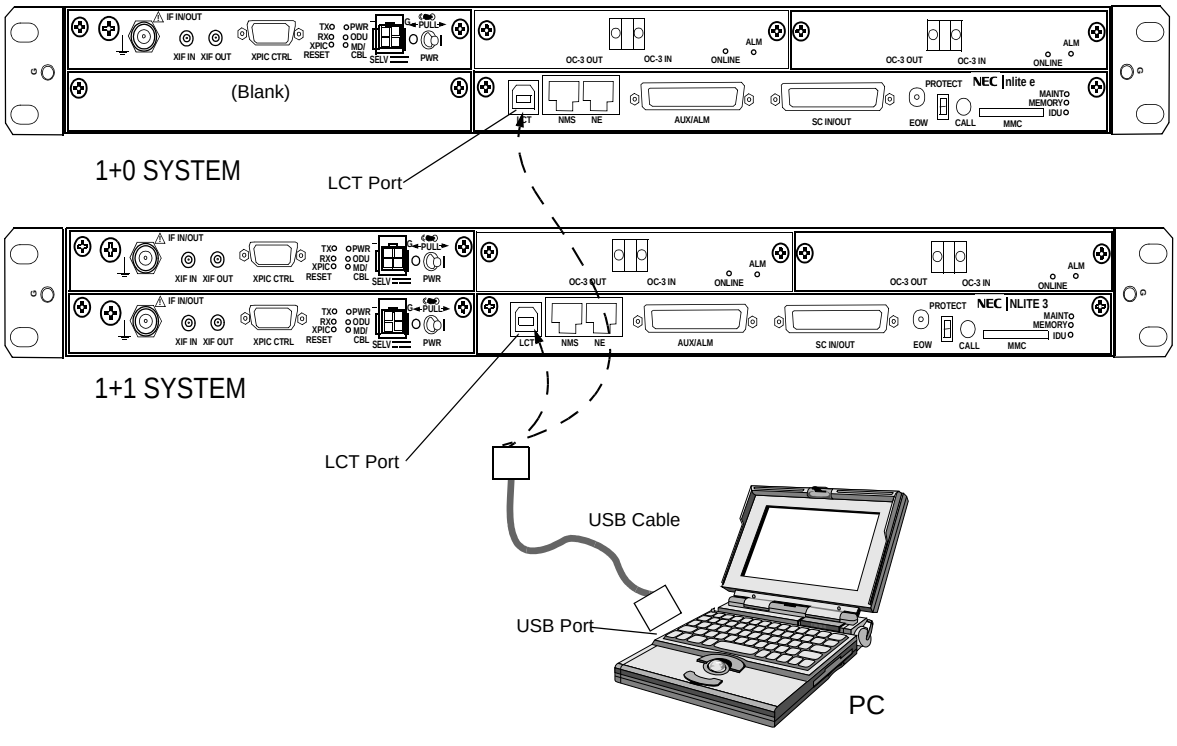


Fig. 2-2 LCT Setup

Chart 2-2 Maintenance Mode Setting (Cont'd)

Step	Procedure
2	Enter User name "Admin" and enter the valid Password,
3	Click on "Login" button,

4	Click on "Maintenance" button in "LCT MENU",

LCT MENU

Alarm/Status
Equipment Setup
Inventory
AUX I/O
Maintenance
Maintenance1
Maintenance2
Provisioning
Metering
PMON(History)

5	Click on "Maintenance1" button in "Maintenance" background menu,

---Maintenance1---

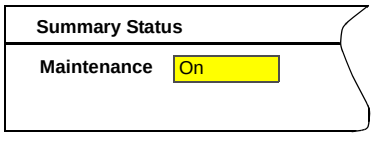
Item	Value	Setting	
Maintenance	Off	●Off ○ On	Set

Chart 2-2 Maintenance Mode Setting (Cont'd)

Step	Procedure
6	Click on "On" Setting button of the Maintenance, click on "Set" button, then Maintenance Value turns to "On" and Maintenance status in "Summary Status area turns to "On".

---Maintenance1---

Item	Value	Setting	
Maintenance	On	○Off ●On	Set



Notes: 1. To perform setup and control the equipment, it must be set to Maintenance "On" mode using LCT.

2. In Maintenance "On" mode, RL3 to RL6 external alarm outputs are masked and automatic control is inhibited.

Restoring to Normal Mode

7 Click on "Maintenance1" button,

8 Click on "Off" or "Auto" control button and click "Set" button for each control item which has been manually controlled,

9 Click on "Off" setting button of Maintenance,

10 Check that there is not coloured yellow items and Maintenance "Off", is displayed in Progress Status.

Note: To restore the Maintenance mode to normal mode, first reset the control from control "On" to control "Off" (or Auto), then set the mode to Maintenance "Off".

Chart 2-3 Manual Switchover Operation (only 1+1Configuration)

Step	Procedure
	For the LCT operation, refer to Chapter 6 of LCT Operation in Appendix of this Section IV.
1	Connect the USB port and the LCT port of the PC and the LCT using a USB cable, (see Fig. 2-2)
2	Login to the LCT with User name “Admin” and Admin “Password”,
3	Click on “Maintenance” button in “LCT MENU” and click on “Maintenance1” button in Maintenance background menu,
	Note: Control items can be performed only when the MAINT mode is “On”.
	Note: Control items displayed on the LCT vary depending on system configuration.
4	Click on TX SW and/or RX SW to desired “No.1”, “No.2” or “Auto” button,
5	Click on “Set” button,

---Maintenance1---

Item	Value	Setting	
Maintenance	On	◯Off ●On	Set
TX SW Manual Control	No.1	◯Auto ●No.1 ◯No.2	Set
RX SW Manual Control	Auto	●Auto ◯No.1 ◯No.2	Set

6	After test has been completed, set the TX SW and RX SW to “Auto” position,
7	Set maintenance mode to “Off” according to Chart 2-2.

Chart 2-4 APS Manual Switchover Operation (only APS Configuration in SONET)

Step	Procedure
	For the LCT operation, refer to Chapter 6 of LCT Operation in Appendix of this Section IV.
1	Connect the USB port and the LCT port of the PC and the LCT using a USB cable, (see Fig. 2-2)
2	Login to the LCT with User name “Admin” and Admin “Password”,
3	Click on “Maintenance” button in “LCT MENU” and click on “Maintenance1” button in Maintenance background menu,
	Note: Control items can be performed only when the MAINT mode is “On”.
	Note: Control items displayed on the LCT vary depending on system configuration.
4	Click on desired “Auto”, “Working” or “Protection” button,
5	Click on “Set” button,

---Maintenance1---

Item	Value	Setting	
Maintenance	On	◯Off ●On	Set
APS Manual Control	Working	◯Auto ●Working ◯Protection	Set
APS Maintenance Mode	Manual		

6	After test has been completed, set the APS Manual control to “Auto” position,
7	Set maintenance mode to “Off” according to Chart 2-2.

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3. TEST SETS AND ACCESSORIES

The test sets and special accessories listed in Table 3-1 are required for maintenance. If recommended test sets and accessories are not available, equivalents may be used.

Table 3-1 Test Sets and Accessories

No.	Model Type	Model Number	Manufacture
1	SONET Analyzer	MP1570A	ANRITSU
2	Optical Variable Attenuator	MN95D	ANRITSU
3	Digital Multimeter	34401A	Agilent
4	Screwdriver	—	—
5	T Type Hexagonal Driver	—	—
6	Torque Wrench	—	—
7	PC for Local Craft Terminal (LCT)**	—	—

*Notes:1. * The NLite E Monitor operates on a dry battery (6F22/9V). When the NLite E Monitor will not be used for a long period, remove the battery to avoid damage from battery leakage and corrosion.*

*2. ** Refer LCT Operation in Appendix in this Section IV.*

4.SONET ROUTINE MAINTENANCE

This chapter provides the routine (annual) maintenance procedures to ensure the satisfactory operation of the equipment. During routine maintenance, carefully observe the precautions given in Chapter 2.

4.1 Meter Reading

Chart 4-1 Meter Reading

Step	Procedure
	For the LCT operation, refer to Chapter 6 of LCT Operation in Appendix of this Section IV.
1	Connect the PC to the IDU using USB cable, (Refer to Fig. 2-2 in Chart 2-2)
2	Login to the LCT with User name “User”,
3	Click on “Metering” button in “LCT MENU”,

LCT MENU

Alarm/Status
Equipment Setup
Inventory
AUX I/O
Maintenance
Provisioning
Metering
PMON(History)

----Metering---

	No.1	No.2
TX Power[dBm]	+0.7	*
RX Level[dBm]	-65.2	-70.0
Power Supply[V]	-45	-45
BER	1.0E-10	Calculating

Notes: 1. If an abnormal indication appears, check Alarm/ Status, performance monitor and perform loopback test to distinguish sections of normal and alarmed.

2. RX LEV varies depending on received RF signal level.

3. Power Supply voltage at ODU varies depending on IF cable length between the IDU and ODU.

4. During total number of erroneous bits and total number of correctly received bits are calculating, “Calculating” is displayed.

5. 1.0E-10 is indicted equal to 1×10^{-10}.

4.2 Performance Monitoring

Chart 4-2 Performance Monitoring

Step	Procedure
	LCT MENU

Alarm/Status
Equipment Setup
Inventory
AUX I/O
Maintenance
Provisioning
Metering
PMON(History)

	For the LCT operation, refer to Chapter 6 of LCT Operation in Appendix of this Section IV.
1	Connect the PC to the IDU using USB cable, (Refer to Fig. 2-2 in Chart 2-2)
2	Login to the LCT with User name “User”,
3	Click on “PMON (History)” in “LCT MENU”,

PMON(History)
RX Level(24H/15min)
RX Level(7days/day)
Total(7days/day)
Total(24H/15min)
RMON(Line)(24H/15min)
RMON(Line)(7days/day)
RMON(DMR)(24H/15min)
RMON(DMR)(7days/day)

4	Click on “RX level (24H/15min)” sub-menu button in “PMON (History)”,

---RX Level (15min)--- **Maintenance Mode: on** **: Current Time**

Date	Time	Status	MIN(No.1)	MAX(No.1)	MIN(No.2)	MAX(No.2)
2006/01/05	15:30-15:45		-59.7	-58.6	-59.3	-58.1
2006/01/05	15:45-16:00		-59.8	-58.7	-58.7	-58.2
2006/01/05	16:00-16:15		-59.5	-59.0	-58.7	-58.2
2006/01/05	16:15-16:30		-59.5	-59.0	-58.7	-58.2
2006/01/05	16:30-16:45		-59.5	-59.0	-71.2	-58.2
2006/01/05	16:45-17:00		-74.2	-55.8	-58.8	-54.1
2006/01/05	17:00-17:15		-59.5	-57.9	-58.8	-58.1

Detailed 24 hours 15min RX Level performance monitor data are displayed,

Chart 4-2 (Cont'd)

Step	Procedure

5 Click on "RX level (7days/day)" sub-menu button in "PMON (History)",

---RX Level (day)--- **Maintenance Mode: on**

Date	Status	MIN(No.1)	MAX(No.1)	MIN(No.2)	MAX(No.2)
2006/01/01		-59.7	-58.6	-59.3	-58.1
2006/01/02		-59.8	-58.7	-58.7	-58.2
2006/01/03		-59.5	-59.0	-58.7	-58.2
2006/01/04		-59.5	-59.0	-58.7	-58.2
2006/01/05		-59.5	-59.0	-71.2	-58.2
2006/01/06		-74.2	-55.8	-58.8	-54.1
2006/01/07		-59.5	-57.9	-58.8	-58.1

Detailed 7days daily RX Level performance monitor data are displayed,

6 Click on "Total(24H/15min)" sub-menu button in "PMON (History)",

---Total(15min)---- **Maintenance Mode: on** **: Current Time**

Date	Time	Status	OFS	SEP	BBE	ES	SES	UAS
2006/01/05	15:30-15:45		0	0	0	0	0	0
2006/01/05	15:45-16:00		0	0	0	0	0	0
2006/01/05	16:00-16:15		0	0	0	0	0	0
2006/01/05	16:15-16:30		0	0	0	0	0	0
2006/01/05	16:30-16:45		0	0	0	0	0	0
2006/01/05	16:45-17:00		0	0	0	0	0	0
2006/01/05	17:00-17:15		0	0	0	0	0	0

Detailed 24 hours 15min Total performance data are displayed.

7 Click on "Total(7days/day)" sub-menu button in "PMON (History)",

Chart 4-2 (Cont'd)

Step	Procedure

---Total(1day)--- ☐ **Maintenance Mode: on**

Date	Status	OFS	SEP	BBE	ES	SES	UAS
2006/01/01		0	0	0	0	0	0
2006/01/02		0	0	0	0	0	0
2006/01/03		0	0	0	0	0	0
2006/01/04		0	0	0	0	0	0
2006/01/05		0	0	0	0	0	0
2006/01/06		0	0	0	0	0	0
2006/01/07		0	0	0	0	0	0

Detailed 7days daily total performance monitor data are displayed,

8 Click on "RMON(Line)(24H/15min)" sub-menu button in "PMON (History)",

---RMON(Line)(15min)--- ☐ **Maintenance Mode: on** ☐ **: Current Time**

Port1 ▼

Date	Time	Status	1	2	3	4	5
2006/01/05	00:00-00:15						
2006/01/05	00:15-00:30						
2006/01/05	00:30-00:45						
2006/01/05	00:45-01:00						
2006/01/05	01:00-01:15						
2006/01/05	01:15-01:30						
2006/01/05	01:30-01:45						
2006/01/05	01:45-02:00						
2006/01/05	02:00-02:15						
2006/01/05	02:15-02:30						
2006/01/05	02:30-02:45						
2006/01/05	02:45-03:00						
2006/01/05	03:00-03:15						
2006/01/05	03:15-03:30						
2006/01/05	03:30-03:45						
2006/01/05	03:45-04:00						
2006/01/05	04:00-04:15						
2006/01/05	04:15-04:30						
2006/01/05	04:30-04:45						
2006/01/05	04:45-05:00						
2006/01/05	05:00-05:15						

1: RX UNICAST
2: RX BROADCAST
3: RX MULTICAST
4: RX PAUSE
5: RX CEC ERR
6: RX ALIGNMENT ERR
7: RX SYMBOL ERR
8: RX UNDERSIZE
9: RX FRAGMENTS
10: RX 64
11: RX 65-127
12: RX 128-255
13: RX 256-511
14: RX 512-1023
15: RX 1024-1536
16: RX 1537-MAX
17: RX JABBERS
18: TX UNICAST
19: TX BROADCAST
20: TX MULTICAST
21: TX PAUSE
22: TX COLLISION

Detailed 24 hours 15min Line (LAN) RMON (Remote Network Monitoring) data are displayed.

Chart 4-2 (Cont'd)

Step	Procedure
9	Click on "RMON(Line)(7days/day)" sub-menu button in "PMON (History)",

---RMON(Line)(1day)--- **Maintenance Mode: on**

Port1 ▼

Date	Time	Status	1	2	3	4	5	6

1: RX UNICAST
2: RX BROADCAST
3: RX MULTICAST
4: RX PAUSE
5: RX CEC ERR
6: RX ALIGNMENT ERR
7: RX SYMBOL ERR
8: RX UNDERSIZE
9: RX FRAGMENTS
10: RX 64
11: RX 65-127
12: RX 128-255
13: RX 256-511
14: RX 512-1023
15: RX 1024-1536
16: RX 1537-MAX
17: RX JABBERS
18: TX UNICAST
19: TX BROADCAST
20: TX MULTICAST
21: TX PAUSE
22: TX COLLISION

Detailed daily Line (LAN) RMON (Remote Network Monitoring) data are displayed.

Chart 4-2 (Cont'd)

Step	Procedure
10	Click on "RMON(DMR)(24H/15min)" sub-menu button in "PMON (History)",

---RMON(DMR)(15min)--- **Maintenance Mode: on** **: Current Time**

Port1 ▼

Date	Time	Status	1	2	3	4	5
2006/01/05	00:00-00:15						
2006/01/05	00:15-00:30						
2006/01/05	00:30-00:45						
2006/01/05	00:45-01:00						
2006/01/05	01:00-01:15						
2006/01/05	01:15-01:30						
2006/01/05	01:30-01:45						
2006/01/05	01:45-02:00						
2006/01/05	02:00-02:15						
2006/01/05	02:15-02:30						
2006/01/05	02:30-02:45						
2006/01/05	02:45-03:00						
2006/01/05	03:00-03:15						
2006/01/05	03:15-03:30						
2006/01/05	03:30-03:45						
2006/01/05	03:45-04:00						

1: RX UNICAST
2: RX BROADCAST
3: RX MULTICAST
4: RX PAUSE
5: RX CEC ERR
6: RX FRAGMENTS
7: RX 64
8: RX 65-127
9: RX 128-255
10: RX 256-511
11: RX 512-1023
12: RX 1024-1536
13: RX 1537-MAX
14: RX JABBERS
15: TX UNICAST
16: TX BROADCAST
17: TX MULTICAST
18: TX PAUSE

Detailed 15 minutes DMR (LAN) RMON (Remote Network Monitoring) data are displayed.

Chart 4-2 (Cont'd)

Step	Procedure
11	Click on "RMON(DMR)(7days/day)" sub-menu button in "PMON (History)",

---RMON(DMR)(1day)--- **Maintenance Mode: on**

Port1 ▼

Date	Time	Status	1	2	3	4	5	6

1: RX UNICAST
2: RX BROADCAST
3: RX MULTICAST
4: RX PAUSE
5: RX CEC ERR
6: RX FRAGMENTS
7: RX 64
8: RX 65-127
9: RX 128-255
10: RX 256-511
11: RX 512-1023
12: RX 1024-1536
13: RX 1537-MAX
14: RX JABBERS
15: TX UNICAST
16: TX BROADCAST
17: TX MULTICAST
18: TX PAUSE

Detailed daily DMR (LAN) RMON (Remote Network Monitoring) data are displayed.

Chart 4-2 (Cont'd)

Step	Procedure

For the LCT operation, refer to Chapter 6 of LCT Operation in Appendix of this Section IV.

1 Connect the PC to the IDU using USB cable, (Refer to Fig. 2-2 in Chart 2-2)

2 Login to the LCT with User name "User",

3 Click on "PMON (History)" in "LCT MENU",

LCT MENU

Alarm/Status
Equipment Setup
Inventory
AUX I/O
Maintenance
Provisioning
Metering
PMON(History)

RX Level(24H/15min)
RX Level(7days/day)
DMR(W)(7days/day)
DMR(W)(24H/15min)
MUX(W)(7days/day)
MUX(W)(24H/15min)

4 Click on "DMR(W)(24H/15min)" sub-menu button (for SONET) in "PMON (History)",

---DMR(W)(15min)---- **Maintenance Mode: on** **: Current Time**

Date	Time	Status	OFS	SEP	BBE	ES	SES	UAS
2006/01/05	15:30-15:45		0	0	0	0	0	0
2006/01/05	15:45-16:00		0	0	0	0	0	0
2006/01/05	16:00-16:15		0	0	0	0	0	0
2006/01/05	16:15-16:30		0	0	0	0	0	0
2006/01/05	16:30-16:45		0	0	0	0	0	0
2006/01/05	16:45-17:00		0	0	0	0	0	0
2006/01/05	17:00-17:15		0	0	0	0	0	0

Detailed 15min 24 hours DMR(W) performance data are displayed,

Chart 4-2 (Cont'd)

Step	Procedure

5 Click on "DMR(W)(7days/day)" sub-menu button (for SONET) in "PMON (History)",

---DMR(W)(1day)--- ☐ **Maintenance Mode: on**

Port1 ▼

Date	Time	Status	1	2	3	4	5	6

1: RX UNICAST
2: RX BROADCAST
3: RX MULTICAST
4: RX PAUSE
5: RX CEC ERR
6: RX FRAGMENTS
7: RX 64
8: RX 65-127
9: RX 128-255
10: RX 256-511
11: RX 512-1023
12: RX 1024-1536
13: RX 1537-MAX
14: RX JABBERS
15: TX UNICAST
16: TX BROADCAST
17: TX MULTICAST
18: TX PAUSE

Detailed daily DMR(W) performance monitor data are displayed,

6 Click on "MUX(W)(7days/day)" sub-menu button (for SONET) in "PMON (History)",

---MUX(W)(day)--- ☐ **Maintenance Mode: on**

Date	Status	OFS	SEP	BBE	ES	SES	UAS
2006/01/01		0	0	0	0	0	0
2006/01/02		0	0	0	0	0	0
2006/01/03		0	0	0	0	0	0
2006/01/04		0	0	0	0	0	0
2006/01/05		0	0	0	0	0	0
2006/01/06		0	0	0	0	0	0
2006/01/07		0	0	0	0	0	0

Detailed daily 7days MUX(W) performance data are displayed.

Chart 4-2 (Cont'd)

Step	Procedure

7 Click on "MUX(W)(24H/15min)" sub-menu button in "PMON (History)",

---MUX(W)(15min)---- **Maintenance Mode: on** **: Current Time**

Date	Time	Status	OFS	SEP	BBE	ES	SES	UAS
2006/01/05	15:30-15:45		0	0	0	0	0	0
2006/01/05	15:45-16:00		0	0	0	0	0	0
2006/01/05	16:00-16:15		0	0	0	0	0	0
2006/01/05	16:15-16:30		0	0	0	0	0	0
2006/01/05	16:30-16:45		0	0	0	0	0	0
2006/01/05	16:45-17:00		0	0	0	0	0	0
2006/01/05	17:00-17:15		0	0	0	0	0	0

Detailed 15min 24 hours MUX(W) performance data are displayed,

8 Click on "RMON(Line)(24H/15min)" sub-menu button in "PMON (History)",

---RMON(Line)(15min)--- **Maintenance Mode: on** **: Current Time**

Port1 ▼

Date	Time	Status	1	2	3	4	5
2006/01/05	00:00-00:15						
2006/01/05	00:15-00:30						
2006/01/05	00:30-00:45						
2006/01/05	00:45-01:00						
2006/01/05	01:00-01:15						
2006/01/05	01:15-01:30						
2006/01/05	01:30-01:45						
2006/01/05	01:45-02:00						
2006/01/05	02:00-02:15						
2006/01/05	02:15-02:30						
2006/01/05	02:30-02:45						
2006/01/05	02:45-03:00						
2006/01/05	03:00-03:15						
2006/01/05	03:15-03:30						
2006/01/05	03:30-03:45						
2006/01/05	03:45-04:00						
2006/01/05	04:00-04:15						
2006/01/05	04:15-04:30						
2006/01/05	04:30-04:45						
2006/01/05	04:45-05:00						
2006/01/05	05:00-05:15						

1: RX UNICAST
2: RX BROADCAST
3: RX MULTICAST
4: RX PAUSE
5: RX CEC ERR
6: RX ALIGNMENT ERR
7: RX SYMBOL ERR
8: RX UNDERSIZE
9: RX FRAGMENTS
10: RX 64
11: RX 65-127
12: RX 128-255
13: RX 256-511
14: RX 512-1023
15: RX 1024-1536
16: RX 1537-MAX
17: RX JABBERS
18: TX UNICAST
19: TX BROADCAST
20: TX MULTICAST
21: TX PAUSE
22: TX COLLISION

Chart 4-2 (Cont'd)

Step	Procedure

Detailed 24 hours 15min Line (LAN) RMON (Remote Network Monitoring) data are displayed.

Notes:For the GbE INTFC, there are distinctions for the following functions from the 10BASE-T/100BASE-Tx

1. *RX Undersize: Unavailable.*
2. *RX Fragments: Unavailable.*
3. *RX Symbol Errors:*
   For SFP: Available
   For RJ-45: Unavailable (un-counting, only "0" is indicated.)
4. *TX Multicast PKts (Including number of the TX pause packets.)*
5. *RX Multicast PKts (Including number of the RX pause packets.)*
6. *Countable packet size for the following items shown in right side of the table and reading must be taken place as follows. (The indication will not be taken placed.)*

	Indication	Reading
15	RX Pkts 1024-1536	RX Pkts 1024-1518
16	RX Pkts 1537-MAX	RX Pkts 1519-MAX

7. *The RX Alignement Error is counted as an RX CRC ERR.*