NLite N
6-38GHz DIGITAL RADIO SYSTEM

Section IV APPENDIX

NLite N LCT OPERATION

CONTENTS

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1. INTRODUCTION

This Local Craft Terminal (LCT) Operation Manual describe how to setup, manage, monitor and controls NLite N 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

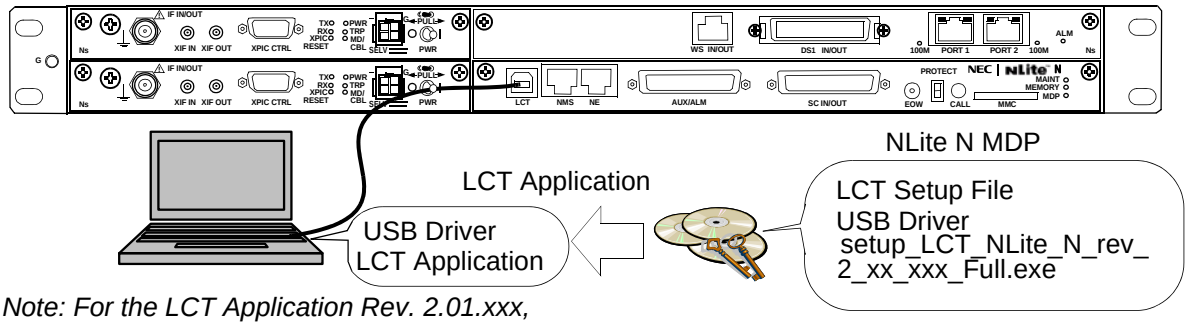
- HD: 100 MB or higher free capacity
- RAM: 512 MB
- Display: LCD 1,024 × 768
- CD-ROM drive
- Serial port
- USB port
- USB cable with USB-B connector

Software requirement (English version)

- OS: Windows 2000/XP/Vista

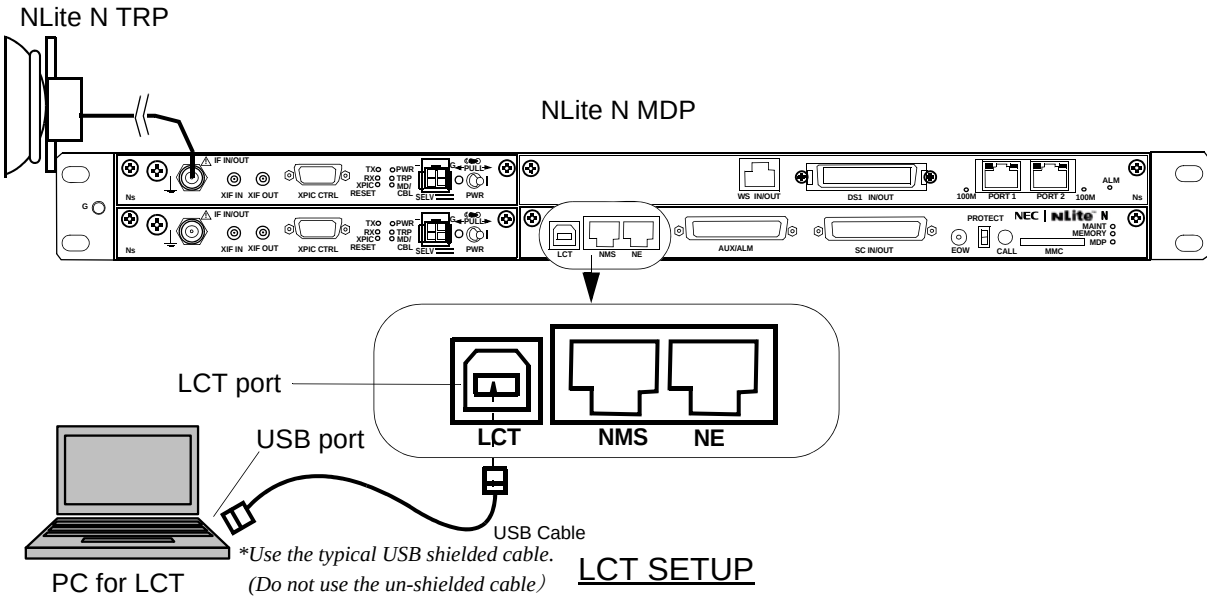
1.1 Accessing the NLite N

This section explains the LCT connections and Startup Method (Procedure) LCT software should be first installed in the PC from the supplied CD-ROM, referring to installation procedure in the chapters 10 to 12.



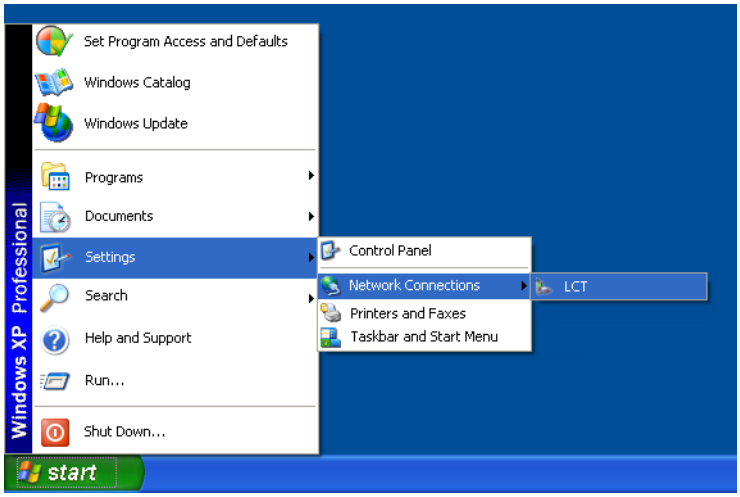
Note: For the LCT Application Rev. 2.01.xxx,
execute the installation with the"setup_LCT_NLite_N_rev_2_xx_xxx_Full.exe".

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



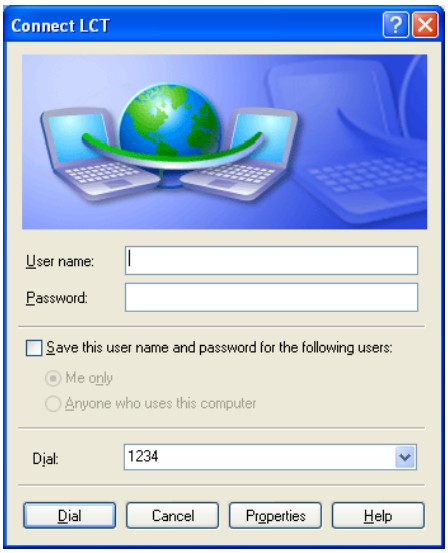
Notes: USB modem driver should be installed first before creating the dial-up connection.

2 Click on the "START" menu button, select "Settings", "Network Connections", "LCT", then, "Connect LCT" dial-up dialog is appeared.

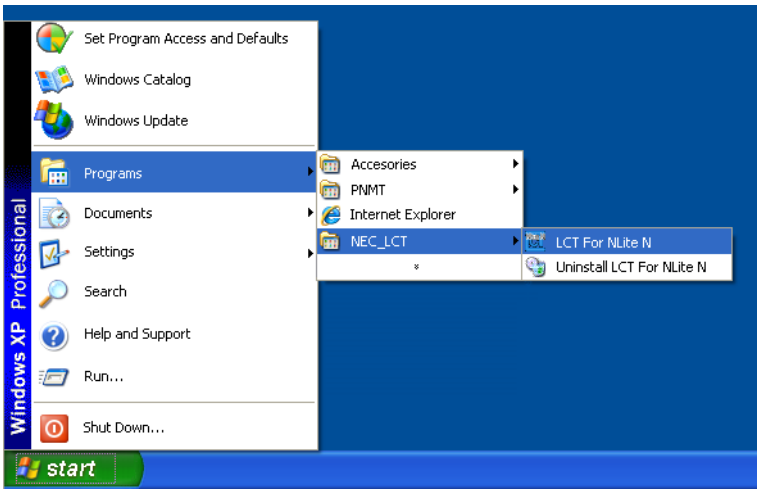


3 The dialog box “Connect LCT” appears.

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



5 Double click on the short-cut icon or select the **“Programs”** → **“NEC_ LCT”** → **“LCT For NLite N”** from the **“start”** menu.



Note: There is a possibility that the USB connection is dropped during a long-duration operation depending on the device type of computer. In the case of a connection failure, please reconnect the dial-up connection.

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

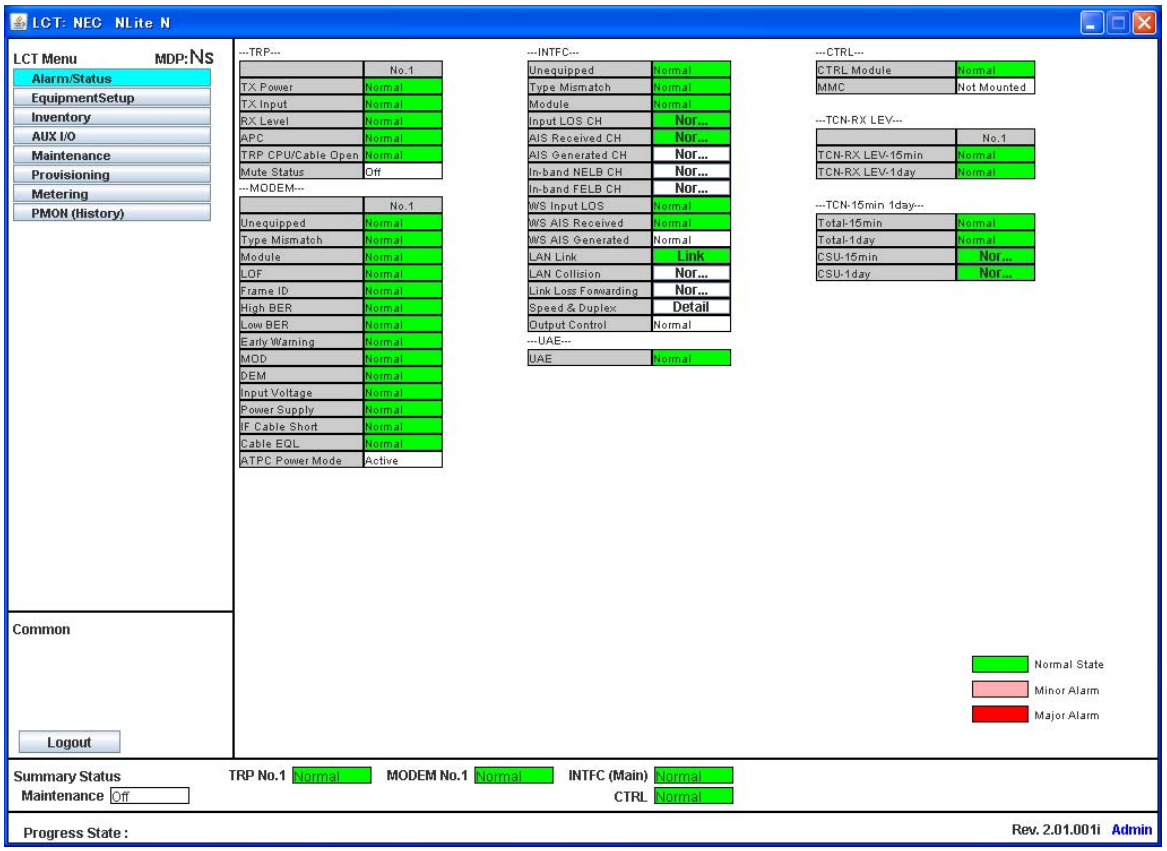
Default password of Admin is defined as “12345678”

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 N systems. (The password change is described in Chapter 6.2 Maintenance 2)

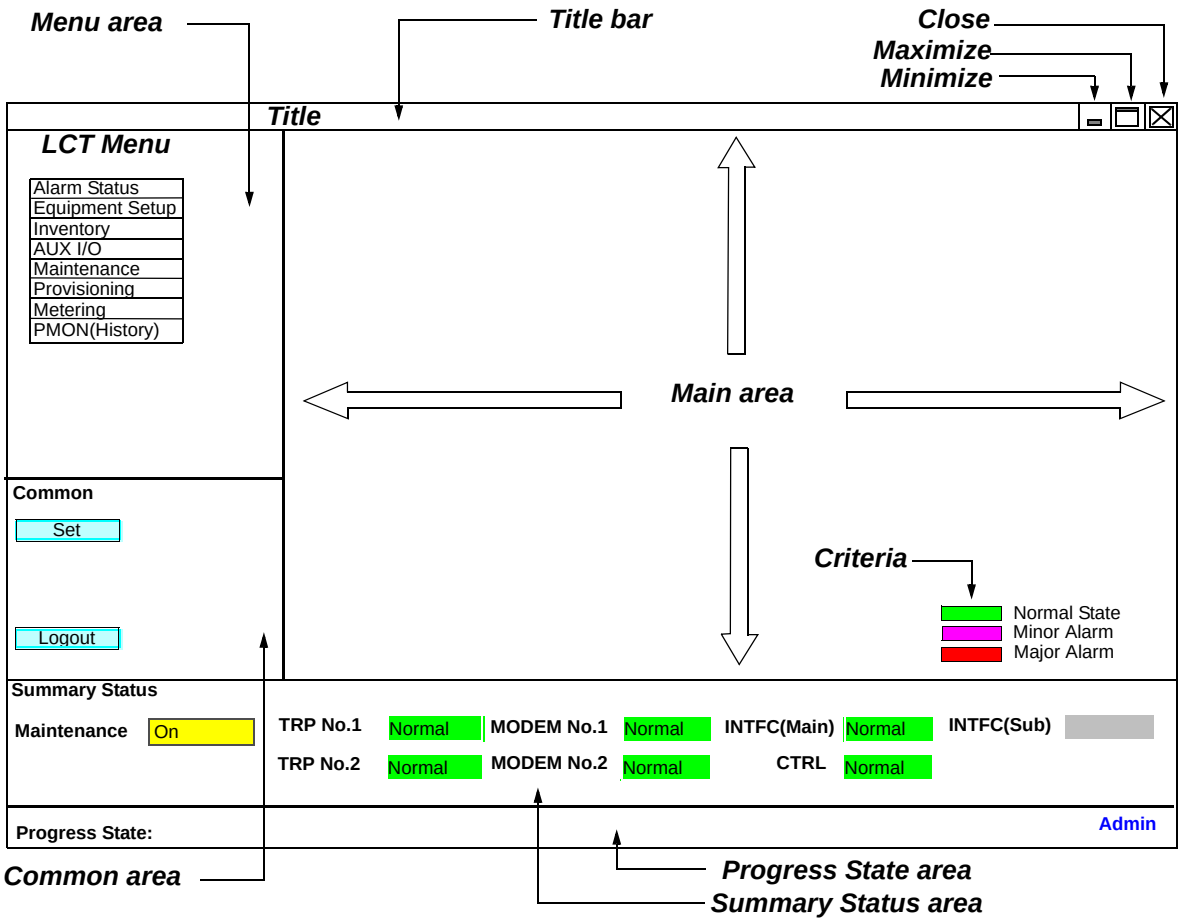
7 Following LCT Open View is displayed.
(Cascaded Alarm/Status items are displayed in Main area by default.)

NLite N 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 Logout button, the LCT 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)
TRP No.1	Normal	(green)	Alarm	(red)
TRP 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)
CTRL	Normal	(green)	Alarm	(red)

For 1+0 Configuration

Item	Status Indication			
Maintenance	On	(yellow)	Off	(white)
TRP	Normal	(green)	Alarm	(red)
MODEM	Normal	(green)	Alarm	(red)
INTFC (Main)	Normal	(green)	Alarm	(red)
CTRL	Normal	(green)	Alarm	(red)

Note: When the TRP No. 2, MODEM No. 2 is not mounted, corresponding item is colored gray.

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/Sataus		Refer to “2.ALARM/STATUS”
Equipment Setup		Refer to “3.EQUIPMENT SETUP”
Inventory		Refer to “4.INVENTORY”
AUX I/O		Refer to “5.AUX.I/O”
Maintenance		Refer to “6.MAINTENANCE”
	Maintenence1	
	Maintenence2	
Provisioning		Refer to “7.PROVISIONING”
	DS1 Setting	
	WS Setting	
	BER Threshold Setting	
	SC Assignment	
	LAN Port Setting	
	TX Power Control	
	Condition for TX/RX SW	*1
	Relay Setting	
	TCN Threshold (15min)	
	TCN Threshold (1day)	
	PMON Select	
	In-band Loopback Setting	
	Others	
Metering		Refer to “8.METERING”
PMON (History)		Refer to “9.PMON”
	RX Level (24h/15min)	
	RX Level (7days/day)	
	Total (24h/15min)	
	Total (7days/day)	
	CSU (24h/15min)	
	CSU (7days/day)	
	RMON (Line)(24h/15min)	*2
	RMON (Line)(7days/day)	*2
	RMON (DMR)(24h/15min)	*2
	RMON (DMR)(7days/day)	*2

*Notes:*1:Only provides for 1+1 configuration.*

**2:Only provides for LAN.*

2. ALARM/STATUS

2.1 Alarm Status

LCT Menu

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

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

ALM items are listed in Table 2-1.

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

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

---TRP---

Item Status

	No.1	No.2	
TX Power	Normal	Normal	
TX Input	Normal	Normal	
RX Level	Normal	Normal	
APC	Normal	Normal	
TRP CPU/Cable Open	Normal	Normal	
Mute Status	Off	Off	
TX SW Lock in Status	Normal		(*1)
TX SW Reverse REQ	Normal		(*1)
TX SW Status	No.1		(*1)
RX SW Status	No.2		(*2)

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

---MODEM---

Item Status

	No.1	No. 2
Unequipped	Normal	Normal
Type mismatch	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	Alarm
Input Voltage	Normal	Normal
Power Supply	Normal	Normal
IF Cable Short	Normal	Normal
Cable EQL	Normal	Normal
Linearizer Function	OPR	NON OPR
Linearizer	Normal	Normal
ATPC Power Mode	Active	Active

---CTRL---

Item Status

CTRL Module	Normal
MMC	Not Mounted

---UAE---

Item Status

UAE	Normal

---INTFC---

Item	Status	
Unequiped	Normal	
Type Mismatch	Normal	
Module	Normal	
Input LOS CH	Normal	(*1)
AIS Received CH	Normal	
AIS Generated CH	Normal	
Usage Error CH	Normal	
In-band NELB CH	Normal	(*2)
In-band FELB CH	Normal	(*3)
WS Input LOS	Normal	
WS AIS Received	Normal	
WS AIS Generated	Normal	
LAN Link	Normal	(*4) (for LAN only)
LAN Collision	Normal	
Link Loss Forwarding	Normal	
Speed & Duplex	Detail...	
Inphase	Inphase	

Click on the corresponding item in status block (*1)(*2)(*3) details status for following “Alarm/Status (16CH)*” is displayed.

Click on the corresponding item in status block (*4) details status for following LAN PORT is displayed.

(*1)

CH No.	Status			
	Input LOS	AIS Received	AIS Generated	Usage Error
CH01	Normal	Normal	Normal	Normal
CH02	Normal	Normal	Normal	Normal
CH03	Normal	Normal	Normal	Normal
CH04	Normal	Normal	Normal	Normal
CH05	Normal	Normal	Normal	Normal
:	:	:	:	:
:	:	:	:	:
CH15	Normal	Normal	Normal	Normal
CH16	Normal	Normal	Normal	Normal

Close

Clicking “Close” button dismisses the “Alarm/Status” table.
Note: Maximum 16 CH*

(*2)
---In-band Near End Loopback Status CH---

CH No. Status

	Status
CH01	Normal
CH02	Normal
CH03	Normal
CH04	Normal
CH05	Normal
CH06	Normal
CH07	Normal
CH08	Normal
CH09	Normal
CH10	Normal
CH11	Normal
CH12	Normal
CH13	Normal
CH14	Normal
CH15	Normal
CH16	Normal

Close

Clicking Close button dismisses the Alarm/Status table.
Note:Maximum 16CH*

(*3)
---In-band Far End Loopback Status CH---

CH No. Status

	Status
CH01	Normal
CH02	Normal
CH03	Normal
CH04	Normal
CH05	Normal
CH06	Normal
CH07	Normal
CH08	Normal
CH09	Normal
CH10	Normal
CH11	Normal
CH12	Normal
CH13	Normal
CH14	Normal
CH15	Normal
CH16	Normal

Close

Clicking Close button dismisses the Alarm/Status table.
Note:Maximum 16CH*

These items (*) are displayed only when LAN transmission is configured to the system. For the details, refer to Appendix LAN INTFC (10/100BASE-T(X)) Application and Setting in this Section IV.

Item Status

LAN Link	Normal	(*)
LAN Collision	Normal	(*)
Link Loss Forwarding (LLF)	Normal	(*)
Speed & Duplex	Detail.	(*)

(*4)

Port No. Status

	Link	Collision	LLF	Speed & Duplex
Port1	Link	Normal	Normal	100M-Half(MDI)
Port2	Link	Normal	Normal	100M-Half(MDI)

Close

Note: 1.Link:
Displaying LINK Status for respective Port.
2.Collision:
Displaying occurrence of Collision status in Half Duplex mode for respective Port.
3.LLF:
Forced LINK off control status detecting the link loss of the facing equipment for respective Port.
4.Speed & Duplex:
Displaying linked mode for respective Port.

Clicking “Close” button dismisses the LAN PORT table.

---TCN-RX LEV---

Item Status

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

---TCN 15min 1day---

Item Status

Total-15min	Normal	
Total-1day	Normal	
CSU-15min	Normal	(*1)
CSU-1day	Normal	(*2)

(*1)
---CSU-15min---

CH No. Status

	Incoming CV-L	Incoming CV-P	Outgoing CV-P
CH01	Normal	Normal	Normal
CH02	Normal	Normal	Normal
CH03	Normal	Normal	Normal
CH04	Normal	Normal	Normal
CH05	Normal	Normal	Normal
CH06	Normal	Normal	Normal
CH07	Normal	Normal	Normal
CH08	Normal	Normal	Normal
CH09	Normal	Normal	Normal
CH10	Normal	Normal	Normal
CH11	Normal	Normal	Normal
CH12	Normal	Normal	Normal
CH13	Normal	Normal	Normal
CH14	Normal	Normal	Normal
CH15	Normal	Normal	Normal
CH16	Normal	Normal	Normal

Close

(*2)
---CSU-1day---

CH No. Status

	Incoming CV-L	Incoming CV-P	Outgoing CV-P
CH01	Normal	Normal	Normal
CH02	Normal	Normal	Normal
CH03	Normal	Normal	Normal
CH04	Normal	Normal	Normal
CH05	Normal	Normal	Normal
CH06	Normal	Normal	Normal
CH07	Normal	Normal	Normal
CH08	Normal	Normal	Normal
CH09	Normal	Normal	Normal
CH10	Normal	Normal	Normal
CH11	Normal	Normal	Normal
CH12	Normal	Normal	Normal
CH13	Normal	Normal	Normal
CH14	Normal	Normal	Normal
CH15	Normal	Normal	Normal
CH16	Normal	Normal	Normal

Close

Table 2-1 ALM/Status List (1/3)

No.	Alarm/Status Item	Event Status	Source of Event	Criteria Default	1+0	1+1
TRP						
1	TX PWR ALM1	TRP1 output power decreased	TRP No.1	Major		
2	TX PWR ALM2	TRP2 output power decreased	TRP No.2	Major	*1	
3	TX Iunpt ALM1	TRP1 TX IF input level decreased	TRP No.1	Major		
4	TX Input ALM2	TRP2 TX IF input level decreased	TRP No.2	Major	*1	
5	RX Level ALM1	TRP1 Received level decreased	TRP No.1	Major		
6	RX Level ALM2	TRP2 Received level decreased	TRP No.2	Major	*1	
7	APC ALM1	TRP1 LO OSC APC loop out of lock	TRP No.1	Major		
8	APC ALM2	TRP2 LO OSC APC loop out of lock	TRP No.2	Major	*1	
9	TRP CPU/CBL OPN ALM1	TRP1 CPU failure or IF cable is open	TRP No.1	Major		
10	TRP CPU/CBL OPN ALM2	TRP2 CPU failure or IF cable is open	TRP No.2	Major	*1	
11	Mute Status1	TRP1 Mute status	TRP No.1	Status		
12	Mute Status2	TRP2 Mute status	TRP No.2	Status	*1	
13	TX SW Lock in Status	Status of TX SW Lock in function	CTRL	Status	*1	
14	TX SW Reverse Request	Status of Reverse Function	CTRL	Status	*1	
15	TX SW Status	Status of TX SW function	CTRL	Status	*1	
16	RX SW Status	Status of RX SW function	CTRL	Status	*1	

Table 2-1 ALM/Status List (2/3)

No.	Alarm/Status Item	Event Status	Source of Event	Criteria Default	1+0	1+1
MODEM						
17	MODEM 1 UNEQUIP	Unequipped or loose contact of the MODEM1	CTRL	Major		
18	MODEM 2 UNEQUIP	Unequipped or loose contact of the MODEM2	CTRL	Major	*1	
19	MODEM Type Mismatch1	Improper MODEM1 Type is installed	CTRL	Major		
20	MODEM Type Mismatch2	Improper MODEM2 Type is installed	CTRL	Major	*1	
21	MODEM ALM1	The MODEM1 failure	CTRL	Major		
22	MODEM ALM2	The MODEM2 failure	CTRL	Major	*1	
23	LOF1	Loss of Radio frame synchronization in MODEM1	MODEM No.1	Major		
24	LOF2	Loss of Radio frame synchronization in MODEM2	MODEM No.2	Major	*1	
25	Frame ID1	ID is no coincidence in MODEM1	MODEM No.1	Major		
26	Frame ID2	ID is no coincidence in MODEM2	MODEM No.2	Major	*1	
27	High BER ALM1	High BER (selectable) is detected in MODEM1	MODEM No.1	Major		
28	High BER ALM2	High BER (selectable) is detected in MODEM2	MODEM No.2	Major	*1	
29	Low BER ALM1	Low BER (selectable) is detected in MODEM1	MODEM No.1	Minor		
30	Low BER ALM2	Low BER (selectable) is detected in MODEM2	MODEM No.2	Minor	*1	
31	Early Warning1	EARLY WARNING is detected in No.1 CH	MODEM No.1	Minor		
32	Early Warning2	EARLY WARNING is detected in No.2 CH	MODEM No.2	Minor	*1	
33	MOD ALM1	PLL APC unlock output level down CLK loss in MODEM1	MODEM No.1	Major		
34	MOD ALM2	PLL APC unlock output level down CLK loss in MODEM2	MODEM No.2	Major	*1	
35	DEM ALM1	Carrier/Frame Asynchronous at MODEM1	MODEM No.1	Major		
36	DEM ALM2	Carrier/Frame Asynchronous at MODEM2	MODEM No.2	Major	*1	
37	Input Voltage ALM1	ALM1 PS1 input over voltage/lower voltage	MODEM No.1	Major		
38	Input Voltage ALM2	ALM2 PS2 input over voltage/lower voltage	MODEM No.2	Major	*1	
39	PS ALM1	No.1 power supply failure (only1+1)	MODEM No.1	Major		
40	PS ALM2	No.2 power supply failure (only1+1)	MODEM No.2	Major	*1	
41	IF Cable Short ALM1	IF cable connected to TRP1 short	MODEM No.1	Major		
42	IF Cable Short ALM2	IF cable connected to TRP2 short	MODEM No.2	Major	*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	Major	*1	
45	Linearizer Function1	Status of linearizer function in MODEM1	CTRL	Status		
46	Linearizer Function2	Status of linearizer function in MODEM2	CTRL	Status	*1	
47	Linearizer Fail1	BB LNZ control is lost in MODEM1	CTRL	Major		
48	Linearizer Fail2	BB LNZ control is lost in MODEM1	CTRL	Major	*1	
49	ATPC PWR MODE1	No.1 ATPC failure Hold/Maximum/Minimum*2 power output	CTRL	Status		
50	ATPC PWR MODE2	No.2 ATPC failure Hold/Maximum/Minimum*2 power output	CTRL	Status	*1	

Table 2-1 ALM/Status List (3/3)

No.	Alarm/Status Item	Event Status	Source of Event	Criteria Default	1+0	1+1
INTFC Main (1)						
51	INTFC (1) UNEQUIP	MAIN INTFC is unequipped	CTRL	Major		
52	INTFC (1) Type Mismatch	Mounted INTFC differs from configuration setting	CTRL	Major		
53	INTFC (1) ALM	Main INTFC total alarm	Main INTFC	Major		
54	INPUT LOS CH01-16	Input signal of CH01-CH16 is lost	Main INTFC	Major		
55	AIS Received CH01-16	AIS in CH01-CH16 is received	Main INTFC	Status		
56	AIS Generated CH01-16	AIS in CH01-CH16 is generated	Main INTFC	Status		
57	CH Usage Error CH01-16	Input signal is detected in unused CH01-CH16	Main INTFC	Minor		
58	In-band NELB Status CH01-16	DS1 In-band near end loopback status in CH01-16	Main INTFC	Status		
59	In-band FELB Status CH01-16	DS1 In-band far end loopback status in CH01-16	Main INTFC	Status		
60	WS Input LOS	WS Input signal is lost	Main INTFC	Minor		
61	WS AIS Received	WS AIS signal is received	Main INTFC	Status		
62	WS AIS Generated	WS AIS signal is generated	Main INTFC	Status		
63	LAN Link Port1-2	LAN LINK status	Main INTFC	Major		
64	LAN Collision Port1-2	LAN status	Main INTFC	Status		
65	LAN Link Loss Forwarding Port1-2	ALM LAN Link Loss Forwarding status	Main INTFC	Status		
66	Speed & Duplex Port1-2	LAN Port setting	Main INTFC	Status		
67	INTFC Inphase	Main INTFC Inphase status	Main INTFC	Status	*1	
CTRL						
68	CTRL UNIT ALM	CTRL UNIT total alarm	CTRL	Major		
69	MMC Mount Status	MMC memory mounted status	CTRL	Status		
UAE						
70	UAE	Indicates whether UAS were monitored	Main INTFC	Minor		
TCN-RX LEV						
71	TCN-RX LEV-15min No.1	TRP1 RX level is over threshold (15min)	CTRL	Minor		
72	TCN-RX LEV-15min No.2	TRP2 RX level is over threshold (15min)	CTRL	Minor	*1	
73	TCN-RX LEV-1day No.1	TRP1 RX level is over threshold (1day)	CTRL	Minor		
74	TCN-RX LEV-1day No.2	TRP2 RX level is over threshold (1day)	CTRL	Minor	*1	
TCN-15min 1day						
75	Total-15min	Total error is over threshold (15min)	CTRL	Minor		
76	Total-1day	Total error is over threshold (1day)	CTRL	Minor		
77	CSU-15min	DS1 CSU error is over threshold (15min)	CTRL	Minor		
78	CSU-1day	DS1 CSU error is over threshold (1day)	CTRL	Minor		

*Notes: *1: Not applied.*

3. EQUIPMENT SETUP

1 Click on the “Equipment Setup” button in “LCT Menu”, then “Equipment Setup” menu is displayed.

LCT Menu

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

2 Continue to Chapter 3.1 Equipment Setup.

3.1 Equipment Setup

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

Equipment Setup (Sample)

Redundancy Setting			1+1 (Hot Standby Term)		▼
			Inserted Module		
INTFC Main (WORK)	2Port LAN PKG (e/w DS1)	▼	<<	Main (WORK)	2Port LAN PKG (e/w DS1)
INTFC Sub (PROT)	Not Used	▼	<<	Sub (PROT)	Not Used

XPIC Usage	Not Used	▼
APS Function	○ Unavailable ○ Available	
Modulation Scheme	QPSK	▼
Transmission Capacity	48 [MB]	▼

TX RF Frequency [MHz]		0.000	
RX RF Frequency [MHz]		0.000	
Frame ID		ID1	▼
TX Power Control		● MTPC ○ ATPC	
TRP Type		Split Type	▼
TX SW Type		○ Mute ○ RF SW Type	
LAN Port Usage		P1-2 Separated (Main+SC)	▼
LAN Capacity1	P1	24Mbps	▼
LAN Capacity2	P2	64kbps	▼

--- TRP FREQ INFO ---

TX Start Frequency [MHz]	0.000
TX Stop Frequency [MHz]	0.000
RX Start Frequency [MHz]	0.000
RX Stop Frequency [MHz]	0.000
Frequency Step [MHz]	0.000
Shift Frequency [MHz]	0.000
Upper/Lower	Upper
Sub Band	
RF Frequency Type	TX/RX

Redundancy Setting	
INTFC Main (WORK)	
INTFC Sub (PROT)	(*1)
XPIC Usage	(*2)
APS Function	(*3)
Modulation Scheme	
Transmission Capacity	

*Note: Item (*1) is selected when the INTFC Sub is applied.*
*Item (*2) is selected when the XPIC is applied.*
*Item (*3) is selected when the APS is applied.*

1 Click on the menu button “Redundancy Setting” and select corresponding item.

2 Setup can be performed by clicking the 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 (WORK)

				Inserted Module	
INTFC Main (WORK)	2Port LAN PKG (e/w DS1)	▼	<<	Main (WORK)	2Port LAN PKG (e/w DS1)

Modulation Scheme

Modulation Scheme	QPSK	▼
	16QAM	
	64QAM	
	128QAM	

The modulation scheme must be setup with relative transmission capacity. Refer to following Transmission Capacity item.

Transmission Capacity

For QPSK Modulation Scheme, following pull-down menu is displayed.

Transmission Capacity	48 [MB]	▼

For 16QAM Modulation Scheme, following pull-down menu is displayed.

Transmission Capacity	156 [MB]	▼

For 64QAM Modulation Scheme, following menu is displayed.

Transmission Capacity	42 [MB]	▼
	156 [MB]	

For 128QAM Modulation Scheme, following menu is displayed.

Transmission Capacity	156 [MB]	▼

Note: Select appropriate Modulation Scheme from pull-down menu for the required transmission capacity from table below.

RF CH Separation	Modulation Scheme			
	QPSK	16QAM	64QAM	128QAM
10MHz	–	–	42 MB	–
30MHz	–	–	–	156 MB
40MHz	48 MB	–	156 MB	–
50MHz	–	156 MB	–	–

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

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 TRP 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 or setting of it in manual is also available. In this type, change the RF frequency values which is automatically assigned.

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 TRP. For details, refer to the Appendix RADIO FREQUENCY PLAN FOR NLite N in Section 1.

Caution: For the 6 GHz band of NHG, the BPF of TX and RX of the TRP are adjusted to each assigned frequency. Then, to change the RF channel frequency over the variable range, both BPFs replacement and LCT setup are required.

Frame ID

Frame ID (No.1)		▼
Frame ID (No.2)		▼

Note: Click menu button and set the frame ID 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 set up; ID1 through ID 32.

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.
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 Chapter 3.5.3 Automatic Transmitter Power Control in Section 2.

LAN Port Usage

Note: LAN Port Usage may be set when LAN is used. For the details, refer to Appendix LAN INTFC (10/100BASE-T(X)) Application and Setting in this Section IV.

LAN Port Usage (Main)	Not Used ▼
	P1:P2=1:0
	P1:P2=1:1
	Best Effort
	P1=Fixed/P2
	P1-2 Shared/1Port Only (Main)
	P1 Only (Main)
	P1-2 Separated (Main)
	P1-2 Separated (Main+WS)
	P1-2 Separated (Main+SC)

Note: Settable parameters in the LAN Port Usage, depends on the Modulation scheme and transmission capacity setting.

LAN Capacity1

Notes: 1. LAN Port1 Capacity may be set when LAN is used.
2. Selectable LAN Port1 capacity is depending on the main signal transmission capacity. For the details, refer to Appendix LAN INTFC (10/100BASE-T(X)) Application and Setting in this Section IV.

(sample)

LAN Capacity1	P1	18Mbps ▼
		19.5Mbps
		21Mbps
		22.5Mbps
		. . .
		37.5Mbps
		39Mbps
		40.5Mbps
		42Mbps

Note: Settable parameters in the LAN Port# Capacity, depends on the settings in the Modulation scheme, Transmission Capacity and LAN port Usage.

LAN Capacity2

Notes: 1.LAN Port2 Capacity may be set when LAN is used.
2.Selectable LAN Port2 Capacity is depending on the main signal transmission capacity. For the details, refer to Appendix LAN INTFC (10/100 BASE-T(X)) Application and Setting in this Section IV.

(sample)

LAN Capacity2	P2	1.5Mbps (WS) ▼

Note: Settable parameters in the LAN Port# Capacity, depends on the settings in the Modulation scheme, Transmission Capacity and LAN port Usage.

Possible Combinations for LAN Usage parameter settings are shown in below table.

Modulation Scheme	Transmission Capacity	LAN Port Usage	LAN Capacity1	LAN Capacity2
64QAM	42MB	Not Used	–	–
		P1-2 Shared/1Port Only (Main)	18Mbps – 42Mbps (*1)	–
		P1 Only (Main)	18Mbps 42Mbps	–
		P1-2 Separated (Main)	9Mbps 21Mbps	–
		P1-2 Separated (Main+WS)	18Mbps 42Mbps	1.5Mbps (WS)
		P1-2 Separated (Main+SC)	18Mbps 42Mbps	64Kbps 128Kbps 256Kbps
QPSK	48MB	Not Used	–	–
		P1-2 Shared/1Port Only (Main)	24Mbps – 48Mbps (*1)	–
		P1 Only (Main)	24Mbps 48Mbps	–
		P1-2 Separated (Main)	12Mbps 24Mbps	–
		P1-2 Separated (Main+WS)	24Mbps 48Mbps	1.5Mbps (WS)
		P1-2 Separated (Main+SC)	24Mbps 48Mbps	64Kbps 128Kbps 256Kbps
16QAM 64QAM 128QAM	156MB	Not Used	–	–
		P1:P2=1:0	100Mbps	–
		P1:P2=1:1	63Mbps 75Mbps	–
		Best Effort	150Mbps	–
		P1=FIXED/P2	100Mbps	1.5Mbps 26Mbps 50Mbps
		P1-2 Separated (Main+WS)	100Mbps	1.5Mbps (WS)

*Notes: *1: 1.5Mbps steps.*

3 When every setup has been completed, confirm all setup values.

TRP FREQ INFO

---TRP 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)

4 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.

4. 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)

---TRP---

	Package Name	Code No.	Serial No.	Date	H/W Version	F/W Version
No.1	TRP	NWA-034280-030	00004040	2008.10	4B0A	1.10
No.2	TRP	NWA-034280-030	00004041	2008.10	4B0A	1.10

---MDP---

	Package Name	Code No.	Serial No.	Date	H/W Version	F/W Version
MODEM No.1	MODEM	NWA-037060-004	00001171	2008.10	01.00	
MODEM No.2	MODEM	NWA-037060-004	00001172	2008.10	01.00	
MDP(CTRL)	CTRL	NWA-036102-002	00001063	2008.12	01.00	1.0.0
INTFC(1)	2P LAN INTFC	NWA-036103-001	00001031	2008.10	01.00	

---FPGA---

	Name	Code No.	Version
MODEM No.1	MODEM FPGA	NWZ-028710-001	01.00
MODEM No.2	MODEM FPGA	NWZ-028710-001	01.00
CTRL	CTRL FPGA	NWZ-028706-001	01.00
INTFC(1)	2P LAN FPGA	NWZ-029791-001	01.00

---Modem Parameter Version---

No.1	01
No.2	01

---Network Properties---

IP Address	172.18.0.1
Subnet Mask	255.255.255.192
Default Gateway	192.168.100.1
MAC Address	xx-xx-xx-xx-xx-xx

5. AUX. I/O

Six input (photocoupler) and six output (relay) are provided in the MDP 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	Open
Input2	Open
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 Cluster 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.

6. 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 is described in Chapter 6.1 Maintenance1.

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

Maintenance2 is described in Chapter 6.2 Maintenance2.

6.1 Maintenance1

Following control items are displayed in Maintenance1 menu (an example).

---Maintenance1---

Item	Value	Setting			
Maintenance	Off	● 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	0	dB	Set
ATPC Manual Control (No.2)	On	○ Off ● On	0	dB	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
IF Loopback (No.1)	Off	● Off ○ On			Set
IF Loopback (No.2)	Off	● Off ○ On			Set
Main CH Loopback (Near End)	Off				Set
Main CH Loopback (Far End)	Off				Set
LAN Device Reset	---	INTFC(1)-Port1 ▼			Set

--- Offline Maintenance ---

DADEAdjust	---	● 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

Note: Displayed items vary depending on system configuration. No. 1 and No. 2 are displayed only in 1+1 system.

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.

Modulation Mode	Frequency Band (GHz)	5.8	L6	U6	11	18	23	24	38
QPSK	ATPC Range	0 to 30 dB							0 to 25 dB
	MTPC Range	0 to 30 dB							0 to 25 dB
16QAM	ATPC Range	0 to 24 dB							
	MTPC Range	0 to 24 dB							
32QAM	ATPC Range	0 to 23 dB							
	MTPC Range	0 to 23 dB *1							0 to 23 dB
64QAM	ATPC Range	0 to 20 dB							
	MTPC Range	0 to 20 dB *1							0 to 20 dB
128QAM	ATPC Range	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 turns 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.

IF Loopback

7 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 affects the radio link connection.

---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 CH Loopback Control

8 Click on the "Select" button and click on the setting button "On" of the required CH#(s) to be loop back and click the "Execute" button.

For all DS1 channel loop back, click on the "Select" button "On" in All Setting menu and click on the "Set" button.

---Maintenance1---

Item	Value	Setting	
Maintenance	On	○ Off ● On	Set
Main CH Loopback (Near End)	Off		Select
Main CH Loopback (Far End)	Off		Select

Note: The control applies to loopback in each DS1 signal.

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

---Main CH Loopback (Near End)---

CH01	Off	● Off ○ On
CH02	Off	● Off ○ On
CH03	Off	● Off ○ On
CH04	Off	● Off ○ On
CH05	Off	● Off ○ On
CH06	Off	● Off ○ On
CH07	Off	● Off ○ On
CH08	Off	● Off ○ On
CH09	Off	● Off ○ On
CH10	Off	● Off ○ On
CH11	Off	● Off ○ On
CH12	Off	● Off ○ On
CH13	Off	● Off ○ On
CH14	Off	● Off ○ On
CH15	Off	● Off ○ On
CH16	Off	● Off ○ On

All Setting

○ Off ● On	Select	Set	Close

Note: The Control is available for DS1 channels set to used.

---Main CH Loopback (Far End)---

CH01	Off	● Off ○ On
CH02	Off	● Off ○ On
CH03	Off	● Off ○ On
CH04	Off	● Off ○ On
CH05	Off	● Off ○ On
CH06	Off	● Off ○ On
CH07	Off	● Off ○ On
CH08	Off	● Off ○ On
CH09	Off	● Off ○ On
CH10	Off	● Off ○ On
CH11	Off	● Off ○ On
CH12	Off	● Off ○ On
CH13	Off	● Off ○ On
CH14	Off	● Off ○ On
CH15	Off	● Off ○ On
CH16	Off	● Off ○ On

All Setting

○ Off ● On	Select	Set	Close

Note: The Control is available for DS1 channels set to used.

LAN Device Reset

9 Select corresponding LAN port is to be reset from pull-down menu, and click “Set” button.

---Maintenance1---

Item	Value	Setting		
Maintenance	On	○ Off ● On		Set
LAN Device Reset	---	INTFC(1)-Port1	▼	Set
		INTFC(1)-Port2		

DADE Adjust

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

---Offline Maintenance---

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 the 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 the 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.

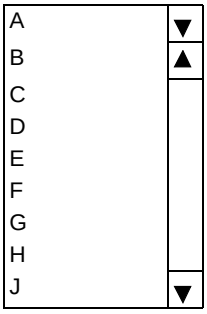
DADE off: Set when DADE function is not used.

RF SUB Band Select

11 Click on the menu button, select required RF Sub-band from pull-down menu, and click on the “Set” button.

---Offline Maintenance---

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



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

Antenna Alignment Mode

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

2. The Antenna Alignment Mode is used for extending the dynamic range of the OW/RX LEV MON 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.

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

---Offline Maintenance---

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

6.2 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

---Download---

Configuration File
Program File
Equipment Config. File

---Upload---

Configuration File
Equipment Config. File

---Date/Time---

Date/Time Setting

---Password---

Password Setting

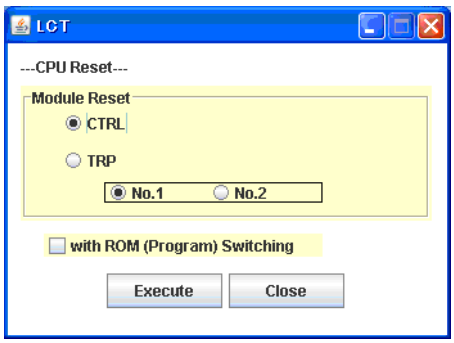
---PMON Clear---

PMON Clear

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 MDP or “TRP” and “No. 1 or No. 2” (in 1+1 TRP 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” 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.

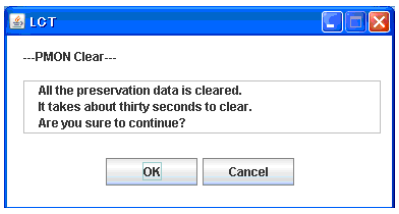
Access the LCT to the NLite N from the beginning.

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.

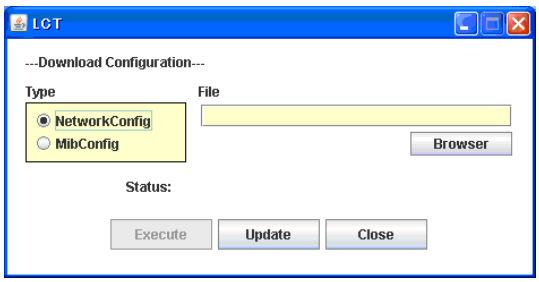


9 Click on the “Execute” button.

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.

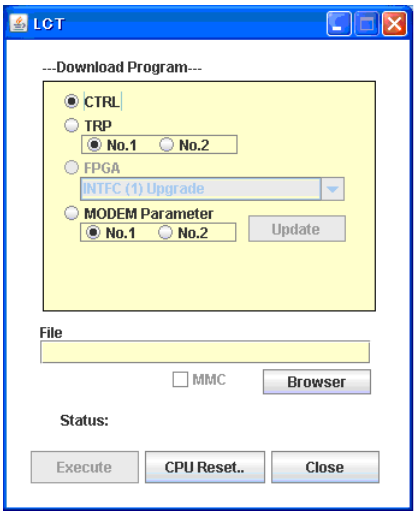
Caution: While data is being transmitted, do not remove the USB cable connecting the MDP with the PC.

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”, “TRP” or “MODEM Parameter” 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.

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 MDP with the PC.

21 After download of the CTRL Package has been completed, the CPU Reset dialog box appears, then click on the “CPU Reset” button.

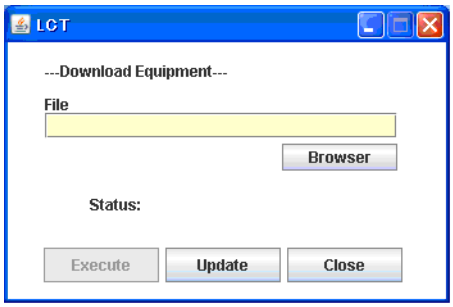
Caution: The control affects the radio link connection.

22 Select on the control button “CTRL” for MDP, check “with ROM (Program) Switching” check box 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 MDP with the PC.

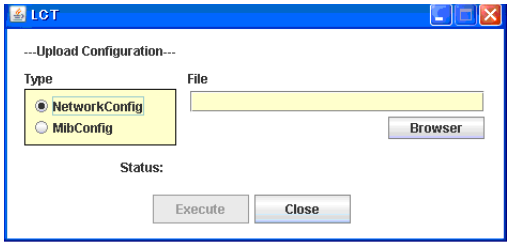
26 After download has been completed, click on the “Update” button for the CTRL will be operated with updated config file.

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.

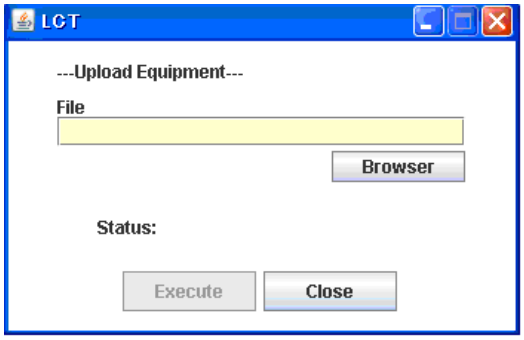
31 Click on the “Execute” button to start the uploading.

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

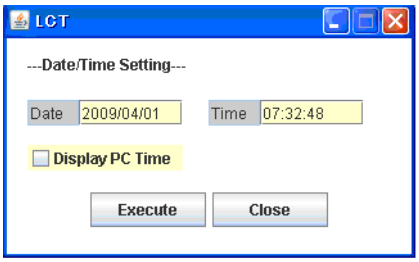
35 Click on the "Execute" button to start the uploading.

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



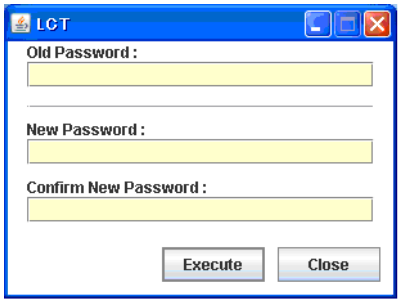
38 Click on the “Display PC Time” button, then the PC “Date”and “Time” are indicated in the fields.

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”.

7. 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.

Notes:1. 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.

2. When setting or changing Equipment Setup, check the setting values of all the Provisioning items.

1 Click on the "Provisioning" button in the "LCT Menu".

2 Continue to Chapter 7.1 Provisioning Setup.

7.1 Provisioning Setup

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

DS1 Setting

1 Click on the "DS1 Setting" button in Provisioning menu.

2 Select CH Usage, Line Length, Bipolar Code and Frame Format for each channel. Select the CH to be used by placing a check mark on the "CH Usage" check box.

---DS1 Setting---

CH Usage	Status	Line Length		Bipolar Code		Frame Format	
☐ CH01		0-133ft(0-40m)	▼	B8ZS	▼	Unframed	▼
☐ CH02		0-133ft(0-40m)	▼	B8ZS	▼	Unframed	▼
☐ CH03		0-133ft(0-40m)	▼	B8ZS	▼	Unframed	▼
☐ CH04		0-133ft(0-40m)	▼	B8ZS	▼	Unframed	▼
☐ CH05		0-133ft(0-40m)	▼	B8ZS	▼	Unframed	▼
☐ CH06		0-133ft(0-40m)	▼	B8ZS	▼	Unframed	▼
☐ CH07		0-133ft(0-40m)	▼	B8ZS	▼	Unframed	▼
☐ CH08		0-133ft(0-40m)	▼	B8ZS	▼	Unframed	▼
☐ CH09		0-133ft(0-40m)	▼	B8ZS	▼	Unframed	▼
☐ CH10		0-133ft(0-40m)	▼	B8ZS	▼	Unframed	▼
☐ CH11		0-133ft(0-40m)	▼	B8ZS	▼	Unframed	▼
☐ CH12		0-133ft(0-40m)	▼	B8ZS	▼	Unframed	▼
☐ CH13		0-133ft(0-40m)	▼	B8ZS	▼	Unframed	▼
☐ CH14		0-133ft(0-40m)	▼	B8ZS	▼	Unframed	▼
☐ CH15		0-133ft(0-40m)	▼	B8ZS	▼	Unframed	▼
☐ CH16		0-133ft(0-40m)	▼	B8ZS	▼	Unframed	▼

All Setting

CH Usage	☐ All Set		Select
Line Length	0-133ft(0-40m)	▼	Select
Bipolar Code	B8ZS	▼	Select
Frame Format	Unframed	▼	Select

Note: DS1 Channel numbers and LAN shares with DS1 vary depending on the Transmission Capacity and LAN Port1 Capacity and LAN Port2 Capacity which are set in "Equipment Setup".

Note: 1. Line Length
Setting is based on the cable length of the DS1 signal.

2. Bipolar Code
Set the DS1 signal Line Code. Refer to the table below.

No.	Mode	Descriptions
1	AMI	Alternate mark inversion
2	B8ZS	Bipolar with eight zero substitution

3. Frame Format
Set the DS1 signal Frame Format. Refer to the table below.

No.	Mode	Descriptions
1	Unframed	Unframed Not applies frame structure.
2	SF	Superframe format A superframe consists of twelve consecutive frames.
3	ESF	Extended superframe format An extended superframe consists of twenty-four consecutive frames.

3 Click on the either setting button for every items shown below.

---Other Setting---

CH Usage Error Report	○ Not Report	● Report
AIS Activation Condition	● LOF+High BER	○ LOF
AIS Received Report	● Not Report	○ Report
AIS Received Condition	○ Alarm	● Status
AIS Generated Report	● Not Report	○ Report

Notes: 1. CH Usage Error Report:

Report:
When a DS1 signal is applied to a channel which is set as "not used", an alarm is displayed.

Not Report:
Even when a DS1 signal is applied to a channel which is set as "not used", an alarm is not displayed.

2. AIS Activation Condition

LOF + High BER:
When the LOF ALM or High BER has occurred, DS1 AIS signal is generated.

LOF:
When the LOF ALM has occurred, DS1 AIS signal is generated.

3. AIS Generated (Received) Report

AIS Generated (Received) Report sets whether AIS Generated (Received) for DS1 is reported or not reported.

WS Setting

4 Click on the "WS Setting" button in Provisioning menu.

5 Select CH Usage, Line Length and Bipolar Code for each channel. Select the CH to be used by placing a check mark on the "CH Usage" check box.

---WS Setting---

CH Usage	Status	Line Length		Bipolar Code	
☐ CH01		0-133ft(0-40m)	▼	B8ZS	▼

Note: DS1 Wayside Channel numbers and LAN shares with DS1 Wayside vary depending on the Transmission Capacity and LAN Port1 Capacity and LAN Port2 Capacity which are set in "Equipment Setup".

Note: 1. Line Length
etting depends on the cable length of the DS1 Wayside signal

2. Bipolar code
Set the DS1 wayside signal Line code. Refer to the table below.

No.	Mode	Descriptions
1	AMI	Alternate mark inversion
2	B8ZS	Bipolar with eight zero substitution

6 Click on the either setting button for every items shown below.

---Other Setting---

AIS Received Report	● Not Report	○ Report
AIS Generated Report	● Not Report	○ Report

Note: AIS Generated (Received) Report
AIS Generated (Received) Report sets whether AIS Generated (Received) for DS1 Wayside is reported or not reported.

BER Threshold

7 Click on the “BER Threshold Setting” sub-menu button in “Provisioning”.

8 Click on the control button of required BER threshold level for “High BER Threshold” and “LOW BER Threshold”.

---BER Threshold Setting---

High BER Threshold	●1E-3 ○1E-4 ○1E-5
Low BER Threshold	●1E-6 ○1E-7 ○1E-8 ○1E-9

SC Assignment

9 Click on the “SC Assignment” button in “Provisioning” menu particulars.

10 Click on the menu button of each RS-232C( ) and V-11-( ) and select item from pull down menu to assign a SC 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
SC1
SC2
SC3
SC4

LAN Port Setting

11 Click on the "LAN Port Setting" sub-menu button in "Provisioning".

12 Click on the setting button of Switching Function.

13 Click on the setting button of Port ( ) usage.

Note: For the details of setup item of the LAN PORT USAGE, refer to the LAN INTERFACE (10/ 100BASE T(X) Application and Setting in Section IV.

1. *Switching function:*

   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. *1.5M Framing:*

   When the bandwidth of LAN signal is set to 1.5M, simple 1.5M framing of ANSI T1.403 can be applied to the output data of the radio side. This function can be used when the LAN signal is to be connected via opposite radio in the DS1 network.

No.	Mode	Descriptions
1	Unframed	Unframed Not applies frame structure. Every 1.544Mbps data are treated in the LAN data domain.
2	SF	Superframe format A superframe consists of twelve consecutive frames. Applies frame structure is treated as LAN data domain.
3	ESF	Extended superframe format An extended superframe consists of twenty-four consecutive frames. Applies frame structure is treated as LAN data domain.

3. *Port Usage: Use of LAN Port or no use. (default value is Used)*

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 / **MDP 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.

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

--- LAN Port Setting ---

Switching Function	○ Disabled	● Enabled
1.5M Framing	Unframed	▼

--- 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

TX Power Control

14 Click on the "TX Power Control" sub-menu button in "Provisioning".

15 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			-80 to -30
Additional ATT [dB]	0			0 to 5
ATPC Range(MAX) [dB]	0			-30 to 0
ATPC Range(MIN) [dB]	-30			
ATPC Power Mode	○ Hold	○ MAX	○ MIN	
COMM Alarm Mode *6	● Mute	○ Hold		

(2) ATPC mode in Twinpath configuration

---TX Power Control---				Range
ATPC Threshold Level (No.1) [dBm]	-60			-80 to -30
ATPC Threshold Level (No.2) [dBm]	-60			-80 to -30
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			-30 to 0
ATPC Range(MIN) (No.1) [dB]	-30			
ATPC Range(MAX) (No.2) [dB]	0			-30 to 0
ATPC Range(MIN) (No.2) [dB]	-30			
ATPC Power Mode	○ Hold	○ MAX	○ MIN	
COMM Alarm Mode *6	● Mute	○ Hold		

(3) MTPC mode in Twinpath configuration

---TX Power Control---			Range
MTPC TX Power (No.1) [dB]	0		-30 to 0
MTPC TX Power (No.2) [dB]	0		-30 to 0
ATPC Threshold Level (No.1) [dBm]	-60		-80 to -30
ATPC Threshold Level (No.2) [dBm]	-60		-80 to -30
Additional ATT (No.1) [dB]	0		0 to 5
Additional ATT (No.2) [dB]	0		0 to 5
COMM Alarm Mode *6	● Mute	○ Hold	

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 TRPs.*
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: (output power when ATPC control signal fails)*
   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.

Recommend to set MAX mode when norminal receiving signal level is the out of ATPC range.

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

Never beyond –20 dBm of receiver input level in any settings.

6. *Select TRP output powermode when the communication fails between MDP and TRP due to some problems.*
   When Mute is set, the TRP output power will be muted.
   (Default)
   When Hold is set, the TRP output power will be hold.
   (Should consider neighboring system)

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

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

17 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
TX SW Lock in Usage	○ Not Used	● Used
TX SW Reverse Function Usage	○ Not Used	● Used
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-reverting operation when TX or RX alarm condition is restored.*
3. "*TX SW Lock in Usage*" *locks the TX switching to prevent frequent switching changes.*
4. "*Reverse function Usage*". *Carry out TX Switching upon receiving a request from the opposite MDP, when it detects abnormal receiving condition.*
   The TXSW request from own station has higher priority than above switching operation.
5. *Manual mode of RX SW Maintenance Mode disables the RX SW operation when either No. 1 or No. 2 RX route is in alarm status.*
6. *Forced mode of RX SW Maintenance Mode enables the RX SW operation even though either or both No.1 and No.2 RX route is in alarm status.*

7. *RX SW Condition_early warning: whether to consider early warning BER as a condition for RX switching or not.*

18 Click on the "Relay Setting" sub-menu button in "Provisioning".

19 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.

---Relay---

	RL01	RL02	RL03	RL04	RL05	RL06
HK Out1						HK
HK Out2					HK	
HK Out3				HK		
HK Out4			HK			
Cluster ALM Out1						Out
Cluster ALM Out2					Out	
Cluster ALM Out3				Out		
Cluster ALM Out4			Out			
MAINT	Out		Mask	Mask	Mask	Mask
MDP CPU ALM		Out				
PS ALM		Out				
TRP ALM			Out	Out	Out	Out
TRP CPU ALM			Out	Out	Out	Out
TX PWR ALM			Out	Out	Out	Out
TX Input ALM			Out	Out	Out	Out
APC ALM			Out	Out	Out	Out
RX Level ALM			Out	Out	Out	Out
TRP Fan ALM			Out	Out	Out	Out
MDP ALM			Out	Out	Out	Out
IF Cable Short ALM			Out	Out	Out	Out
MOD ALM			Out	Out	Out	Out
DEM ALM			Out	Out	Out	Out
High BER ALM			Out	Out	Out	Out
Low BER ALM			Out	Out	Out	Out

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 Relay output.

HK Out1
HK Out2
HK Out3
HK Out4
Cluster ALM Out1
Cluster ALM Out2
Cluster ALM Out3
Cluster ALM Out4
MAINT
MDP CPU ALM
PS ALM (No.1)
PS ALM (No.2)
TRP ALM (No.1)
TRP ALM (No.2)
TRP CPU ALM (No.1)
TRP CPU ALM (No.2)
TX PWR ALM (No.1)
TX PWR ALM (No.2)
TX Input ALM (No.1)
TX Input ALM (No.2)
APC ALM (No.1)
APC ALM (No.2)
RX Level ALM (No.1)
RX Level ALM (No.2)
MDP ALM
IF Cable Short ALM (No.1)
IF Cable Short ALM (No.2)
MOD ALM (No.1)
MOD ALM (No.2)
DEM ALM (No.1)
DEM ALM (No.2)
High BER ALM (No.1)
High BER ALM (No.2)
Low BER ALM (No.1)
Low BER ALM (No.2)
LOF (No.1)
LOF (No.2)
Input LOS 01-28
AIS Received 01-28
AIS Generated 01-28
CH Usage Error 01-28
LAN Link ALM
WS Input ALM
SC LAN Link ALM

TCN Threshold (15min 1day)

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

21 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)---

	Total		
	Occur	Recover	Range
OFS	900	90	0 to 900
UAS	900	90	0 to 900
ES	900	90	0 to 900
SES	900	90	0 to 900
BBE	2970	300	0 to 1031400
SEP	900	90	0 to 900

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

	Total		
	Occur	Recover	Range
OFS	65534	650	0 to 86400
UAS	65534	650	0 to 86400
ES	65534	650	0 to 86400
SES	65534	650	0 to 86400
BBE	285120	28520	0 to 99014400
SEP	65534	650	0 to 86400

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

--- CSU Threshold (15min) ---

	Frame Format	Incoming CV-L		Incoming CV-P		Outgoing CV-P		
		Occur	Recover	Occur	Recover	Occur	Recover	
CH01	SF	416880000	41688000	2160000	216000	2160000	216000	▲
CH02	SF	416880000	41688000	2160000	216000	2160000	216000	
CH03	SF	416880000	41688000	2160000	216000	2160000	216000	
CH04	SF	416880000	41688000	2160000	216000	2160000	216000	
CH05	SF	416880000	41688000	2160000	216000	2160000	216000	
CH06	ESF	416880000	41688000	630000	63000	630000	63000	
CH07	ESF	416880000	41688000	630000	63000	630000	63000	
CH08	ESF	416880000	41688000	630000	63000	630000	63000	
CH09	ESF	416880000	41688000	630000	63000	630000	63000	
CH10	ESF	416880000	41688000	630000	63000	630000	63000	
CH11		416880000	41688000					
CH12		416880000	41688000					
CH13		416880000	41688000					
CH14		416880000	41688000					
CH15		416880000	41688000					
CH16		416880000	41688000					
	Range	0 to 1389600000		SF: 0 to 7200000 ESF: 0 to 2100000				▼

--- CSU Threshold (1day) ---

	Frame Format	Incoming CV-L		Incoming CV-P		Outgoing CV-P		
		Occur	Recover	Occur	Recover	Occur	Recover	
CH01	SF	40020480000	4002048000	207360000	20736000	207360000	20736000	▲
CH02	SF	40020480000	4002048000	207360000	20736000	207360000	20736000	
CH03	SF	40020480000	4002048000	207360000	20736000	207360000	20736000	
CH04	SF	40020480000	4002048000	207360000	20736000	207360000	20736000	
CH05	SF	40020480000	4002048000	207360000	20736000	207360000	20736000	
CH06	ESF	40020480000	4002048000	60480000	6048000	60480000	6048000	
CH07	ESF	40020480000	4002048000	60480000	6048000	60480000	6048000	
CH08	ESF	40020480000	4002048000	60480000	6048000	60480000	6048000	
CH09	ESF	40020480000	4002048000	60480000	6048000	60480000	6048000	
CH10	ESF	40020480000	4002048000	60480000	6048000	60480000	6048000	
CH11		40020480000	4002048000					
CH12		40020480000	4002048000					
CH13		40020480000	4002048000					
CH14		40020480000	4002048000					
CH15		40020480000	4002048000					
CH16		40020480000	4002048000					
	Range	0 to 133401600000		SF: 0 to 691200000 ESF: 0 to 201600000				▼

Notes:1. CV-L: The number counted depends on the bipolar code setting.

AMI: count and accumulate BPV (bipolar Violations)

B8ZS: count and accumulate both BPV (bipolar Violations) and EXZ (Excessive Zeros)

2. CV-P: The number counted depends on the Frame Format setting.

Unframed:
not counted

SF (Super Frame):
count and accumulate frame bit errors

ESF (Extended Super Frame) count and accumulate frame bit errors and CRC errors.

PMON Select

22 Click on the “PMON Select” sub-menu button in “Provisioning”.

23 Enter required “RX Level TCN Threshold” level in text field.

24 Click on the control button of “SES Activation Condition”.

---PMON Select---

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

In-band Loopback Setting

25 Click on the “In-band Loopback Setting” button in Provisioning menu.

26 Click on the either setting button for every items shown below.

--- Near End ---

Item	Value	Setting		
Mode	Disable	Disable ▼		
Activation Code	00001	5bit ▼	00001	
Deactivation Code	001	3bit ▼	001	
Activation Messages	11111111 01110000	11111111 0??????0		111000
Deactivation Messages	11111111 00011100	11111111 0??????0		001110

<< Direction of Transmission

Note: 1. Mode
Set the in-band loop back Mode.

Disable: Loopback Mode disabled

Enable(Code):
Execute Loopback when receiving the Activation code over (in) the DS1 signal and release the loopback when receiving the Deactivation code.

Enable (Messages):
Execute Loopback when receiving the Activate Message over (in) the DS1 signal, and release the loopback when receiving the deactivation message.

2. Activation code
When the selected Mode is Enable(code), set the length of the code in bits and its specific value to execute the loopback. Do not set the value of the code to all “0” or all “1”.

3. Deactivation code
When the selected Mode is Enable (Code), set the length of the code in bits and its specific value to release the Loopback. Do not set the value of the code to all “0” or all “1”.

4. Activation
messageWhen the selected Mode is Enable (messages), set the message to execute the Loopback. Do not set the value of the code to all “0” or all “1”.

5. Deactivation Message
When the selected Mode is Enable (messages), set the message to release the Loopback. Do not set the value of the code to all “0” or all “1”.

--- Far End ---

Item	Value	Setting	
Mode	Disable	Disable	▼
Activation Messages	11111111 00000100	11111111 0??????0	000010
Deactivation Messages	11111111 00111000	11111111 0??????0	011100

<< Direction of Transmission

Note: When the frame format is set to "ESF", Far End Loopback can be executed. Frame format is set from the provisioning "DS1 Setting".

Note: 1. Mode
Set the in-band loop back Mode.
Disable: Loopback Mode disabled

Enable(message):
Execute Loopback when receiving the Activation message over (in) the DS1 signal and release the loopback when receiving the Deactivation Message.

2. Activation code
When the selected Mode is Enable(messages), enter the 6bit value to be inserted in the place of "?" in the 16bit Activation Message to execute the loopback. Do not set the value of the code to all "0" or all "1".

3. Deactivation code
When the selected Mode is Enable (Message), enter the 6bit value to be inserted in the place of "?" in the 16bit Deactivation Message to release the loopback. Do not set the value of the message to all "0" or all "1".

--- Code/Messages Check Status ---

CH	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
STS			NG	NG		NG										

Note. When the Mode setting is Enable (Code), and the Activation code bit length and its value is the same as that set in the deactivation code, "NG" is indicated at "Code/Messages check status" display. Correct the values and Set again to clear the "NG" indication.

Note: When the Mode setting is Enable (Messages) and the Near End/ Far End Activation and deactivation message is the same, "NG" is indicated at "Code/Message check status" display. Correct the values and Set again to clear the "NG" indication.

Others

27 Click on the “Others” sub-menu button in “Provisioning”.

EOW2 External Setting

---EOW2 External Setting---

EOW2 External Setting	●Normal ○Invert

28 Click on the either “Normal” or “Invert” control button.

Alarm Correlation Capability

---Alarm Correlation Capability---

Alarm Correlation Capability	●Off ○On

29 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.

30 Click on the “Set” button in Common area to define the setting.

8. 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 TRP in Hot Standby configuration.*
4. Power Supply voltage of the TRP 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.

----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

9. PMON

9.1 PMON

9.1.1 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)
Total (24h/15min)
Total (7days/day)
CSU (24h/15min)
CSU (7days/day)
RMON (Line)(24h/15min)
RMON (Line)(7days/day)
RMON (DMR)(24h/15min)
RMON (DMR)(7days/day)

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

Total (24h/15min)

5 Click on the "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

Total (7days/day)

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

---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

CSU (24h/15min)

7 Click on the "CSU (24h/15min)" sub-menu button in "PMON (History)".

--- CSU (15min) --- [ ]:Maintenance Mode On [ ]:Current Time

CH01 ▼

Date	Time		Incoming CV-L		Incoming CV-P		Outgoing CV-P	
			Status	Count	Status	Count	Status	Count
2009/03/01	09:30-09:45			0		0		0
2009/03/01	09:45-10:00			0		0		0
2009/03/01	10:00-10:15			0		0		0
2009/03/01	10:15-10:30			0		0		0
2009/03/01	10:30-10:45			0		0		0
2009/03/01	10:45-11:00			0		0		0
2009/03/01	11:00-11:15			0		0		0

CSU (7day/1day)

8 Click on the "CSU (7day/day)" sub-menu button in "PMON (History)".

--- CSU (1day) --- [ ]:Maintenance Mode On

CH01 ▼

Date	Incoming CV-L		Incoming CV-P		Outgoing CV-P	
	Status	Count	Status	Count	Status	Count
2009/03/01		0		0		0
2009/03/02		0		0		0
2009/03/03		0		0		0
2009/03/04		0		0		0
2009/03/05		0		0		0
2009/03/06		0		0		0
2009/03/07		0		0		0

9.1.2 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

Port1 ▼

Date	Time	Status	1	2	3	4
2009/03/01	00:00-00:15					
2009/03/01	00:15-00:30					
2009/03/01	00:30-00:45					
2009/03/01	00:45-01:00					
2009/03/01	01:00-01:15					
2009/03/01	01:15-01:30					
2009/03/01	01:30-01:45					
2009/03/01	01:45-02:00					
2009/03/01	02:00-02:15					
2009/03/01	02:15-02:30					
2009/03/01	02:30-02:45					
2009/03/01	02:45-03:00					
2009/03/01	03:00-03:15					
2009/03/01	03:15-03:30					
2009/03/01	03:30-03:45					
2009/03/01	04:45-05:00					
2009/03/01	05:00-05:15					
2009/03/01	05:15-05:30					
2009/03/01	05:30-05:45					
2009/03/01	05:45-06:00					
2009/03/01	06:00-06:15					
2009/03/01	06:15-06:30					
2009/03/01	06:30-06:45					
2009/03/01	06:45-07:00					

1: RX Unicast PKTS
2: RX Broadcast PKTS
3: RX Multicast PKTS
4: RX Pause PKTS
5: RX CRC Errors
6: RX Align Errors
7: RX Symbol Errors
8: RX Undersize PKTS
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 PKTS
19: TX Broadcast PKTS
20: TX Multicast PKTS
21: TX Pause PKTS
22: TX Total Collisions

RMON (Line) (1day)

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

--- RMON (Line) (1day) --- :Maintenance Mode On

Port1 ▼

Date	Status	1	2	3	4	5
2009/03/01						
2009/03/02						
2009/03/03						
2009/03/04						
2009/03/05						
2009/03/06						
2009/03/07						

1: RX Unicast PKTS
2: RX Broadcast PKTS
3: RX Multicast PKTS
4: RX Pause PKTS
5: RX CRC Errors
6: RX Align Errors
7: RX Symbol Errors
8: RX Undersize PKTS
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 PKTS
19: TX Broadcast PKTS
20: TX Multicast PKTS
21: TX Pause PKTS
22: TX Total Collisions

RMON (DMR) (15min)

11 Click on the “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
2009/03/01	00:00-00:15					
2009/03/01	00:15-00:30					
2009/03/01	00:30-00:45					
2009/03/01	00:45-01:00					
2009/03/01	01:00-01:15					
2009/03/01	01:15-01:30					
2009/03/01	01:30-01:45					
2009/03/01	01:45-02:00					
2009/03/01	02:00-02:15					
2009/03/01	02:15-02:30					
2009/03/01	02:30-02:45					
2009/03/01	02:45-03:00					
2009/03/01	03:00-03:15					
2009/03/01	03:15-03:30					
2009/03/01	03:30-03:45					
2009/03/01	04:45-05:00					
2009/03/01	05:00-05:15					
2009/03/01	05:15-05:30					
2009/03/01	05:30-05:45					
2009/03/01	05:45-06:00					

1: RX Unicast PKTS
2: RX Broadcast PKTS
3: RX Multicast PKTS
4: RX Pause PKTS
5: RX CRC Errors
6: RX Fragments
7: RX PKTS 64
8: RX PKTS 65-127
9: RX PKTS 128-255
10: RX PKTS 256-511
11: RX PKTS 512-1023
12: RX PKTS 1024-1536
13: RX PKTS 1537-MAX
14: RX Jabbers
15: TX Unicast PKTS
16: TX Broadcast PKTS
17: TX Multicast PKTS
18: TX Pause PKTS

RMON (DMR) (1day)

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

--- RMON (DMR) (1day) --- :Maintenance Mode On

Port1 ▼

Date	Status	1	2	3	4	5
2009/03/01						
2009/03/02						
2009/03/03						
2009/03/04						
2009/03/05						
2009/03/06						
2009/03/07						

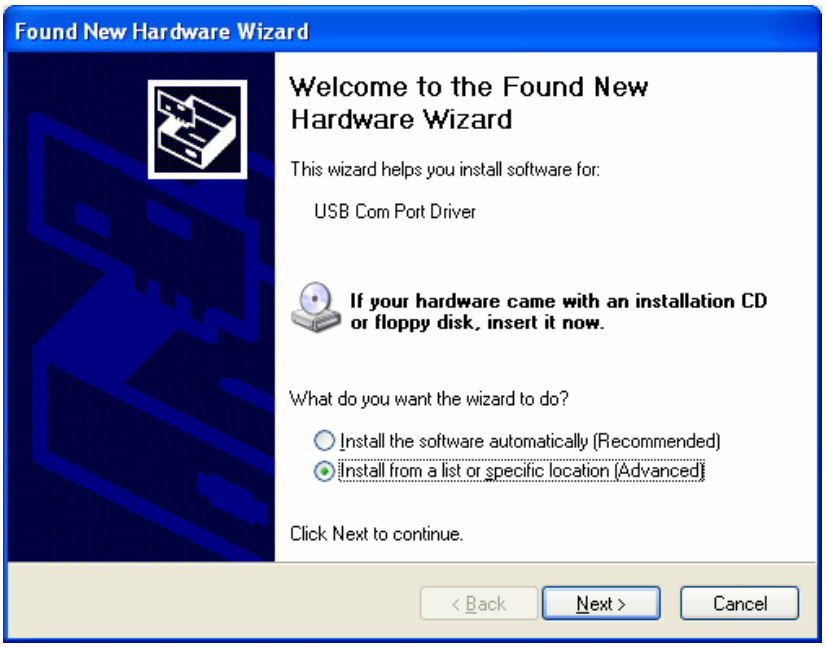
1: RX Unicast PKTS
2: RX Broadcast PKTS
3: RX Multicast PKTS
4: RX Pause PKTS
5: RX CRC Errors
6: RX Fragments
7: RX PKTS 64
8: RX PKTS 65-127
9: RX PKTS 128-255
10: RX PKTS 256-511
11: RX PKTS 512-1023
12: RX PKTS 1024-1536
13: RX PKTS 1537-MAX
14: RX Jabbers
15: TX Unicast PKTS
16: TX Broadcast PKTS
17: TX Multicast PKTS
18: TX Pause PKTS

10. INSTALLATION OF USB

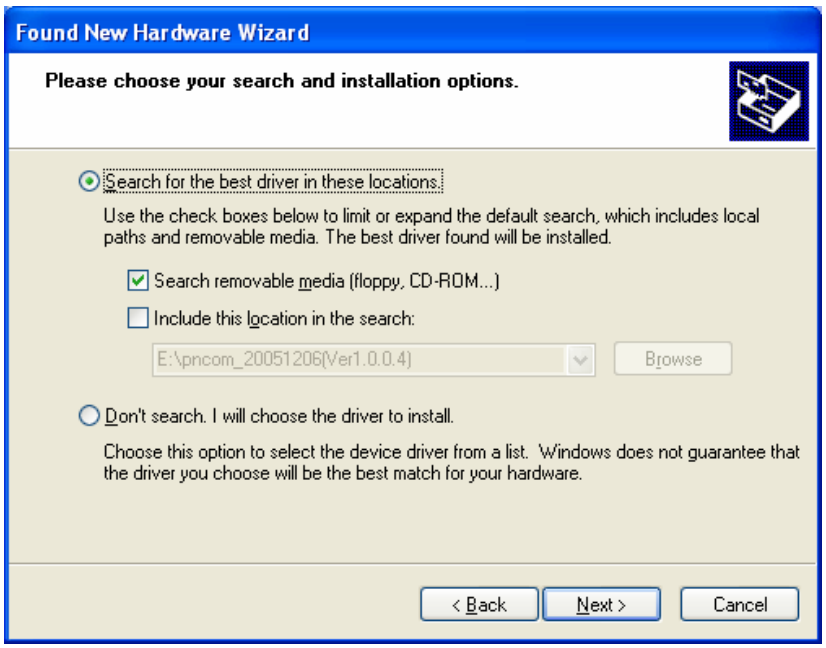
Following procedure explains how to install the USB modem driver to a windows XP PC.

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

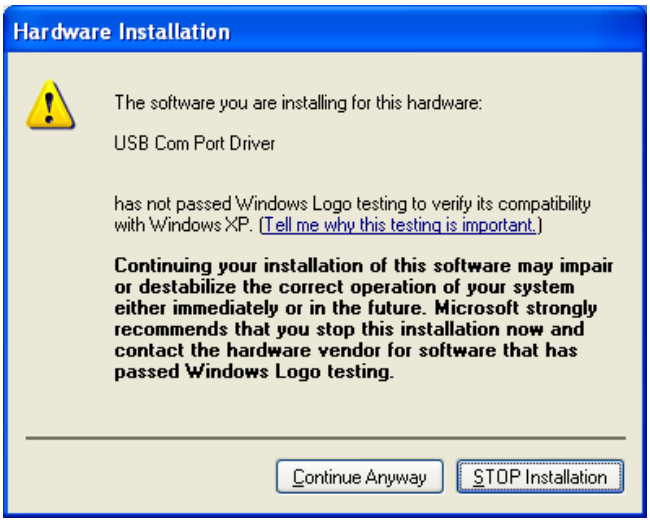
2 Select “Install from a list or specific location [Advanced]” and Click on the “Next” button.



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.

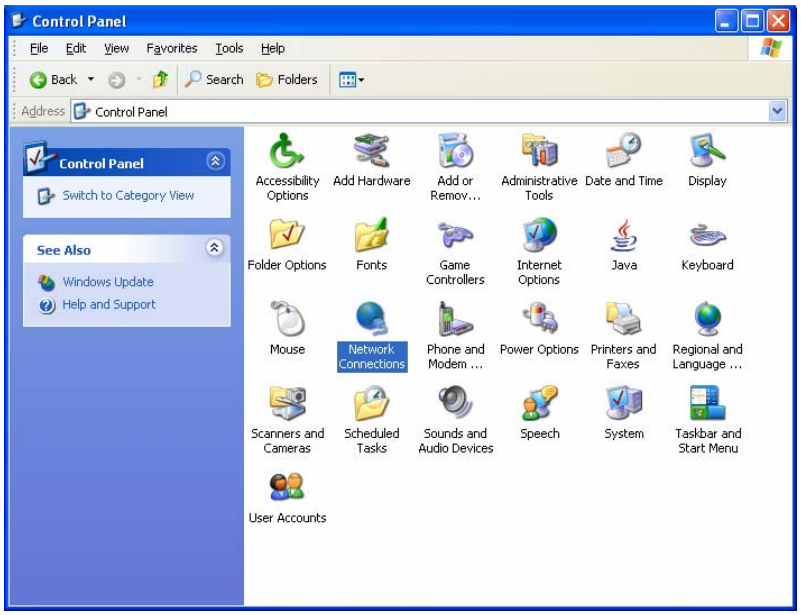
6 Click “Finish” button in the “Found New Hardware Wizard” after installation has been completed.

Note: There is a possibility that the USB connection is dropped during a long-duration operation depending on the device type of computer. In the case of a connection failure, please reconnect the dial-up connection.

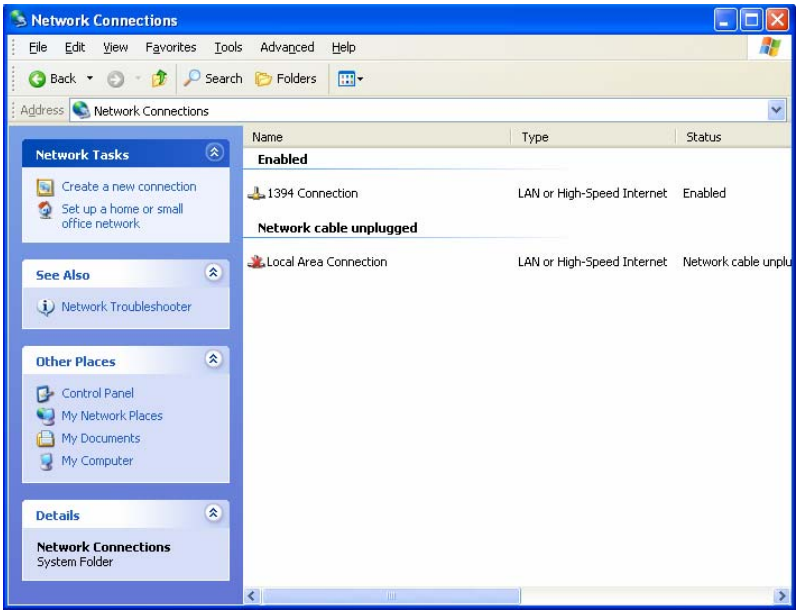
11. DIAL-UP SETTING

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.

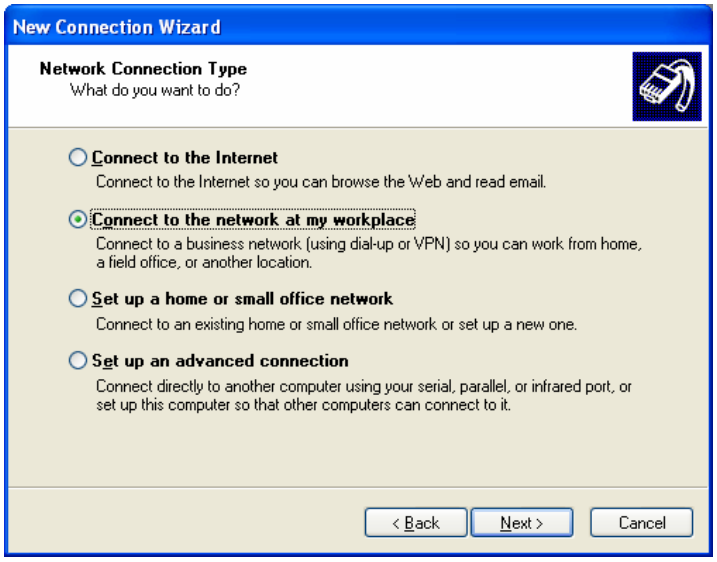


2 The "**Network Connections**" window appears. Click on the "**Create a new connection**" in the **Network Tasks** category.



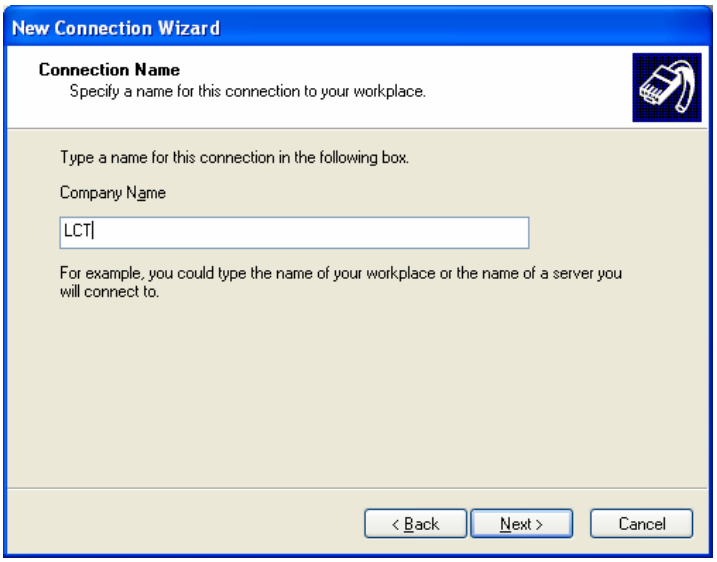
3 The "**Welcome to the New Connection Wizard**" window appears. Click on the "**Next**" button to continue.

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

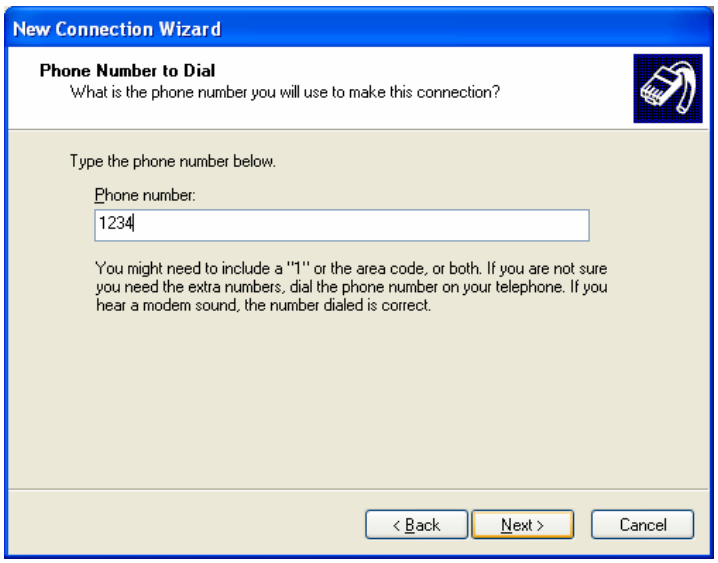


5 Select option "**Dial-up connection**" and Click on the "**Next**" button to continue.

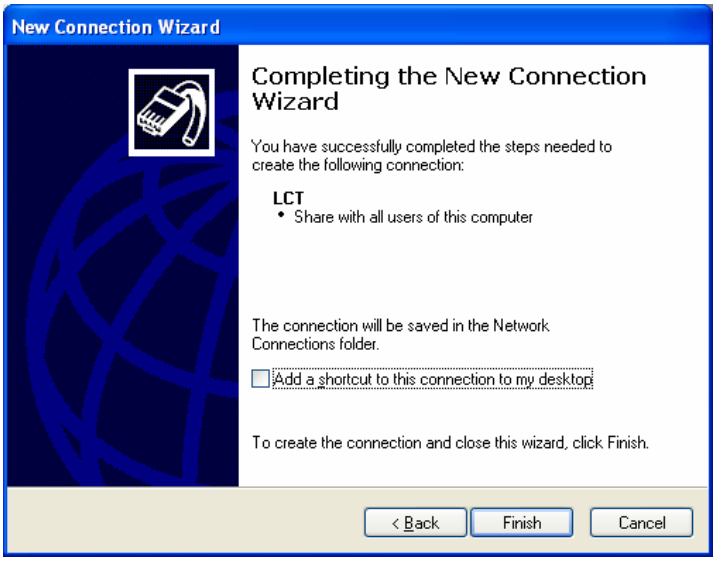
6 On the "**New Connection Wizard**" window, enter "**LCT**" in the "**Company Name**" entry field and Click on the "**Next**" button to continue.



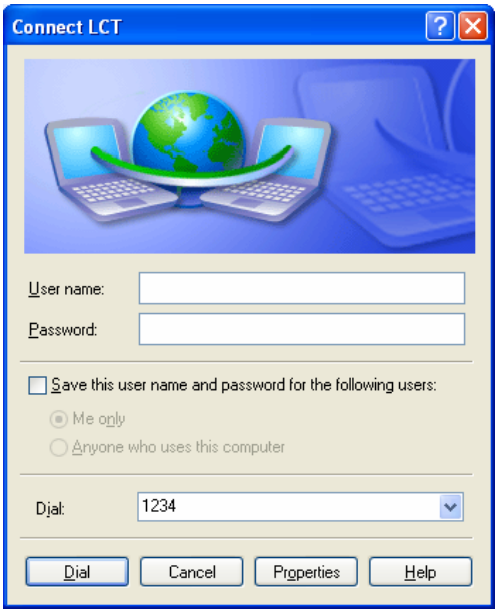
7 Enter phone number in the "**Phone number**" entry field and Click on the "**Next**" button to continue.



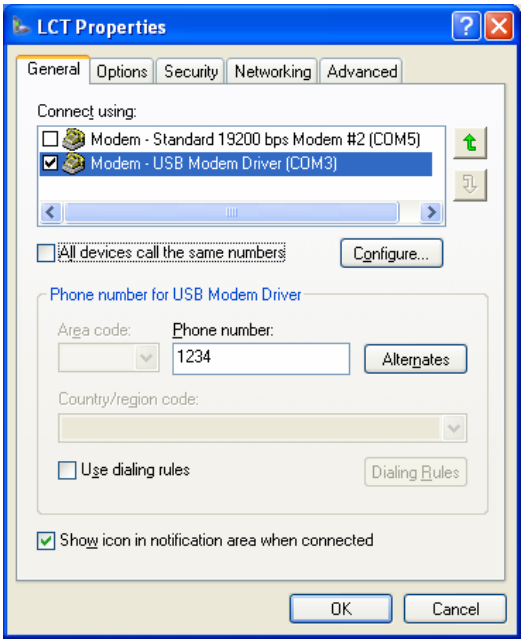
8 Verify that the connection "**LCT**" has displayed as the connection registered. You can also create a short-cut on your desktop if you need. Click on the "**Finish**" button.



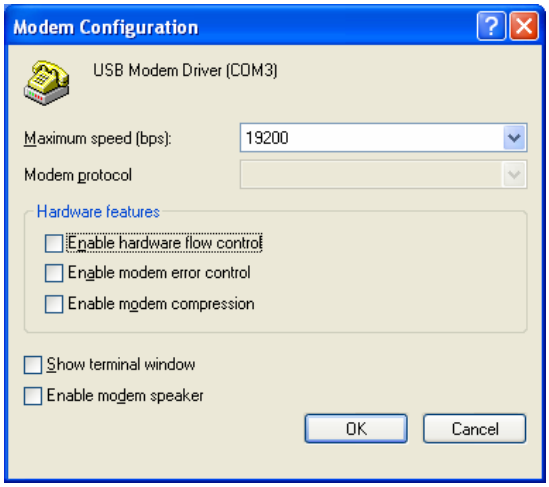
9 On **"**Connect LCT**"** dialog, click **"Properties"**.



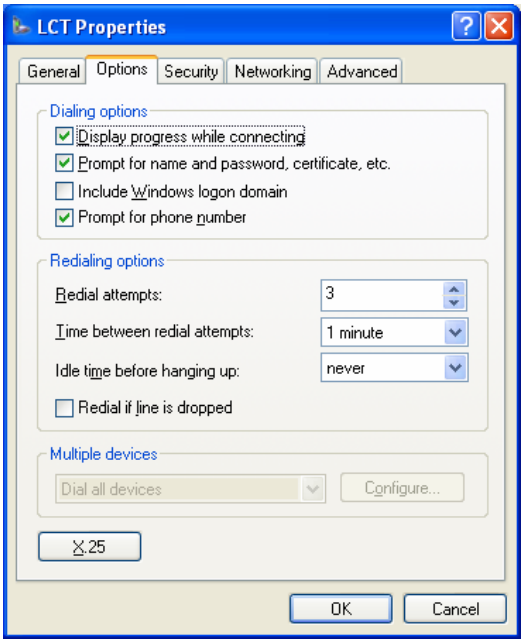
10 Verify that "**Modem-USB Modem Driver [COM(#)]**" is displayed on the General dialog box connect using check box, and select "**Show icon in notification area when connected**" in the LCT Properties dialog. Then, Click on the "**Configure**" button.



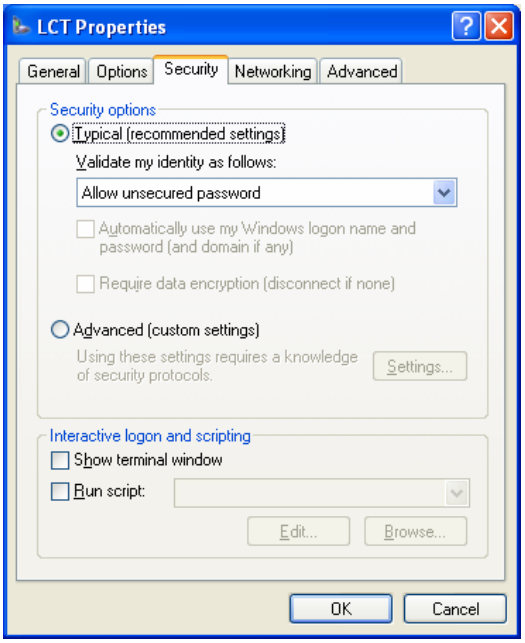
11 On "**Modem Configuration**" dialog, check that unchecked all five boxes, then Click on the "**OK**" button.



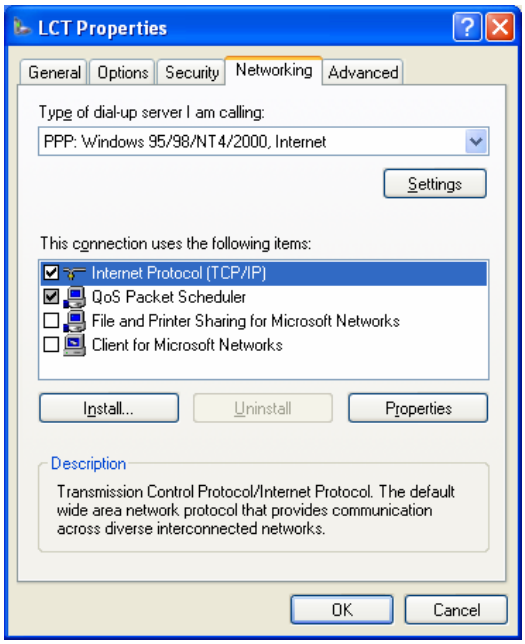
12 Retain the default setting on the "**Options**" tab, click the "**Security"** tab.



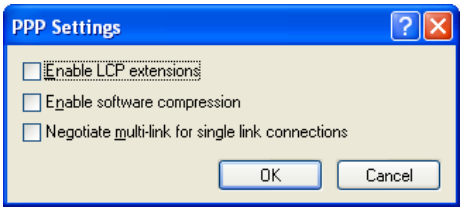
13 Retain the default setting on the "**Security**" tab, click the "**Networking**" tab.



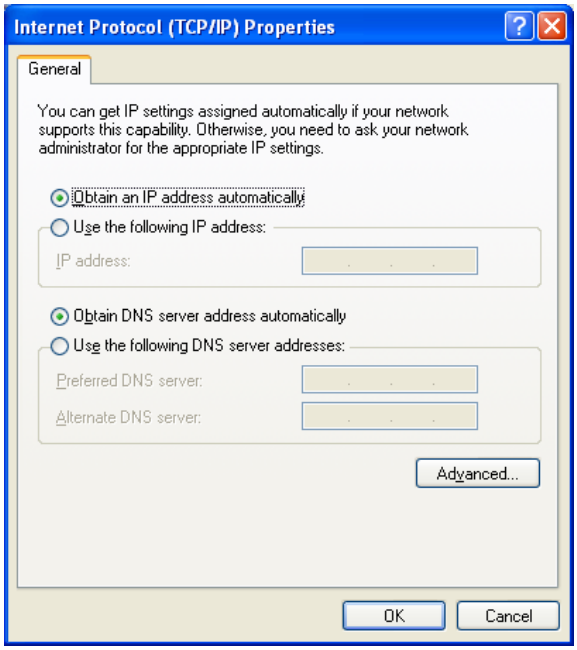
14 On the Networking tab, verify that PPP... is displayed in the "**Type of dial-up server I am calling**" setting field, unchecked "File and Printer... and Client for Microsoft....", "Client for Microsoft Networks".



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**".

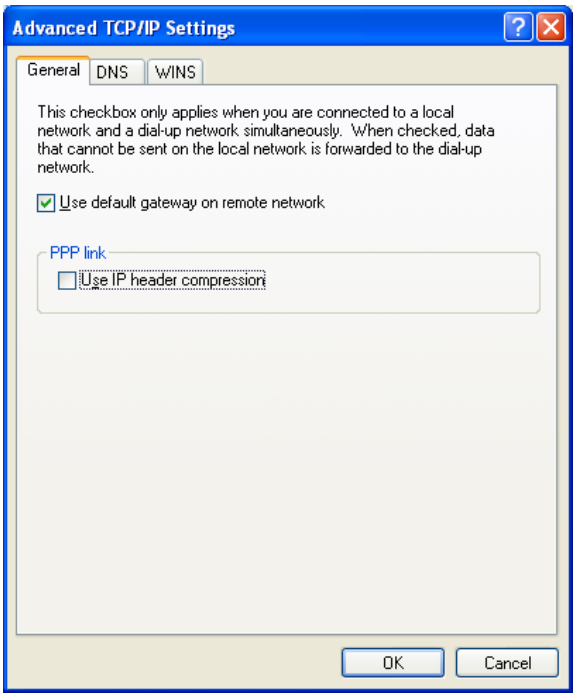


16 Verify that both "**Obtain an IP address automatically**" and "**Obtain DNS server address automatically**" are selected.

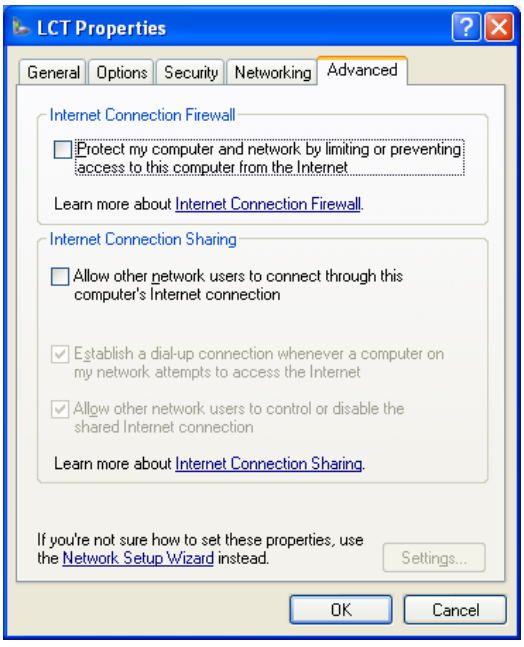


17 Click on the "**Advanced**" button,

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**".



12. LCT INSTALLATION

The LCT for NLite N is found in the CD-ROM which is attached to the MDP equipment.

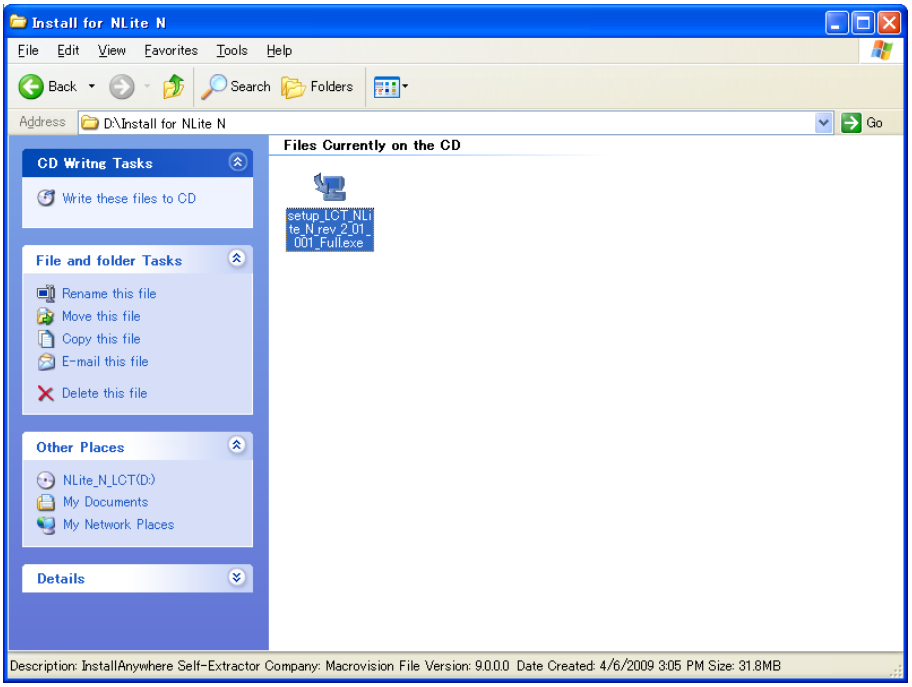
LCT Installation

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 Application has been installed, uninstall it and perform the re-installation.

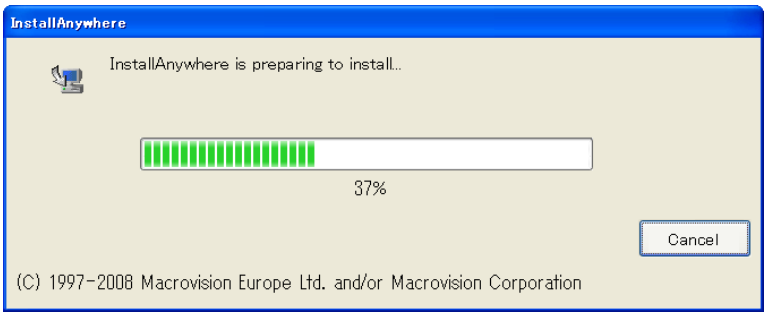
1 Insert the CD-ROM to the CD-ROM player of the PC used for LCT.

2 Double click on the "**setup_LCT_NLite_N_rev_2_xx_xxx_Full.exe**" icon, then the installer is started up and the installation of the LCT into the PC is executed.

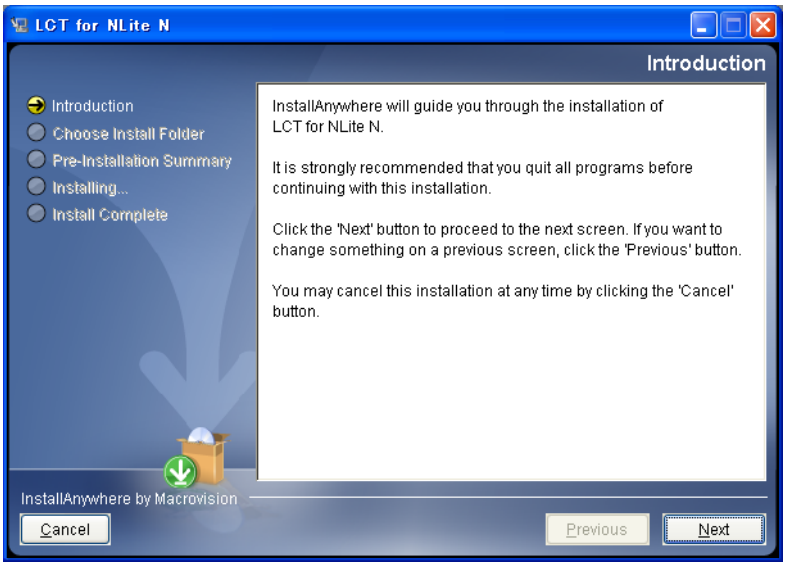


(When "setup_LCT_NLite_N_rev_2_01_001_Full.exe".)

3 The installer progress screen appears, wait for a while.

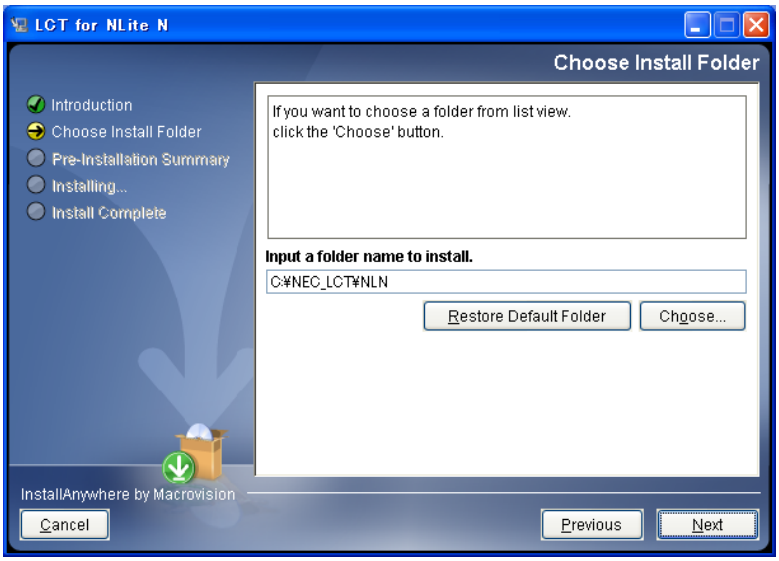


4 "**Introduction**" appears.



5 Read "**Introduction**" and click on the "**Next**" button to continue.

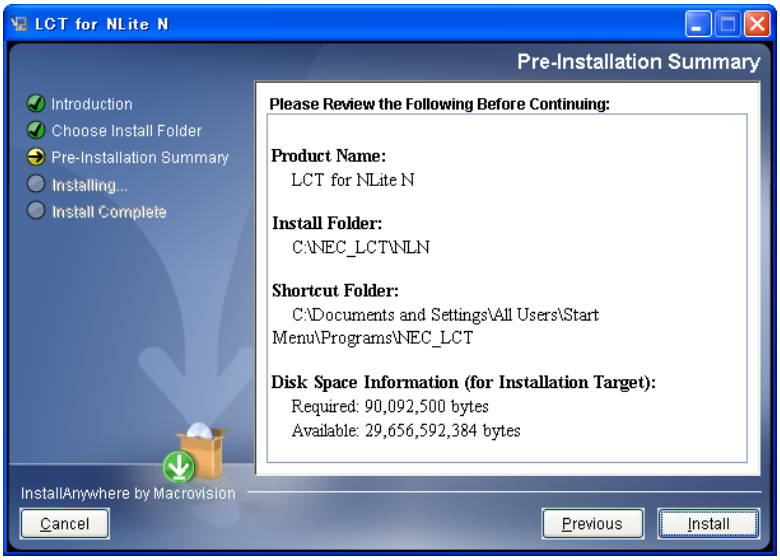
6 "**Choose Installer Folde**r" appears.



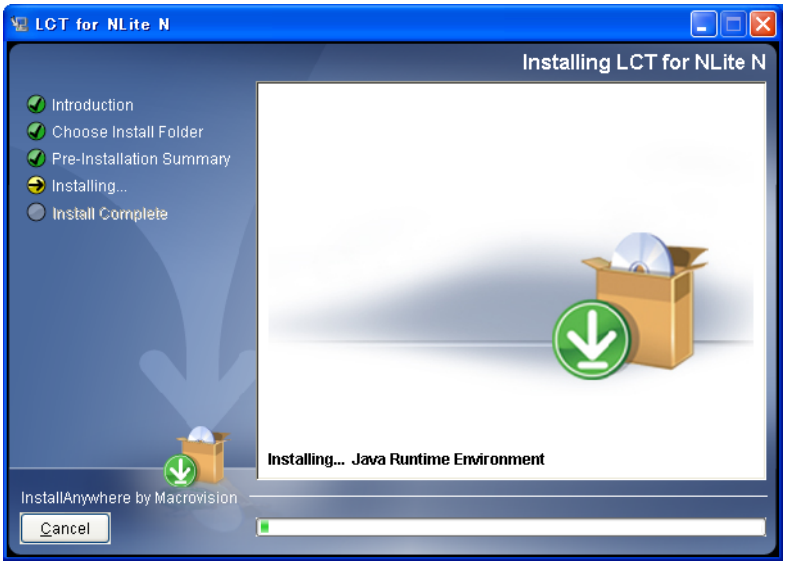
7 Click on the "**Next**" button when default directory (recommended) is used or enter the folder name for installing directory.

Note: When the folder name is creating, do not enter space between letters of the directory name.

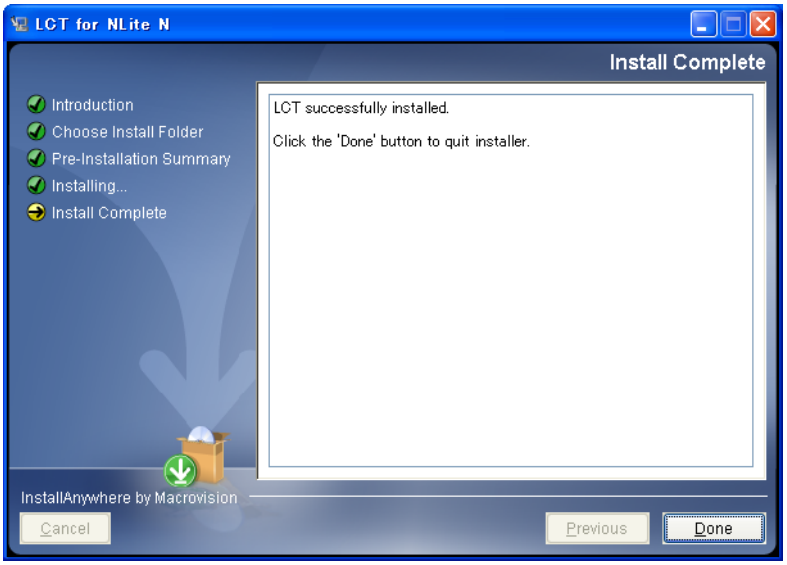
8 When the folder name has been decided, click on the "**Next**" button to continue.



9 Make sure that the installing folder name and empty capacity of the hard disk are properly decided, then, click on the "**Next**" button to continue.

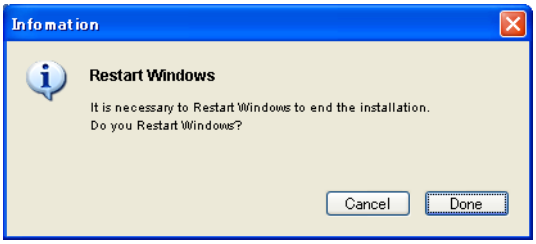


10 Wait for a while until installation finishes.



11 When the installation has been completed, click on the "**Done**" button.

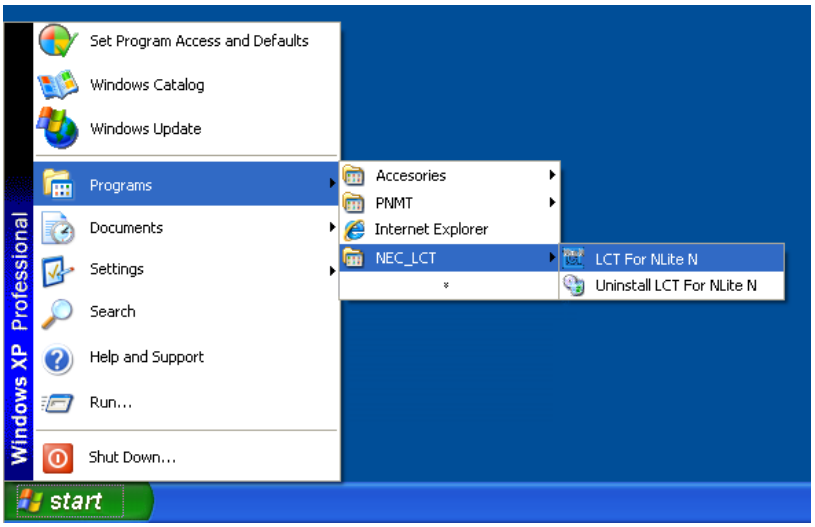
12 "**Information**" dialog appears.



13 Click on the "**Done**" button to restart the PC.

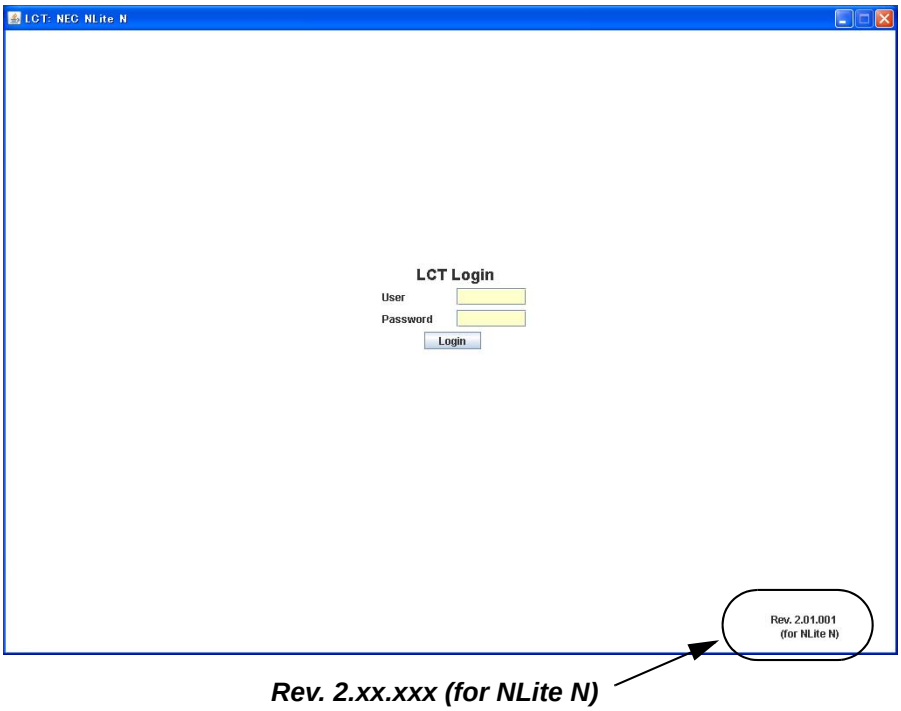
14 Then, following short-cut icon is made on the restarted desktop.

15 Click on the short-cut icon or select the "**Programs**" → "**NEC_LCT**" → "**LCT For NLite N**" from the "**start**" menu.



16 The LCT is started up and "**Login**" dialog appears.

17 Confirm that the LCT Version is "**Rev. 2.xx.xxx (for NLite N)**".

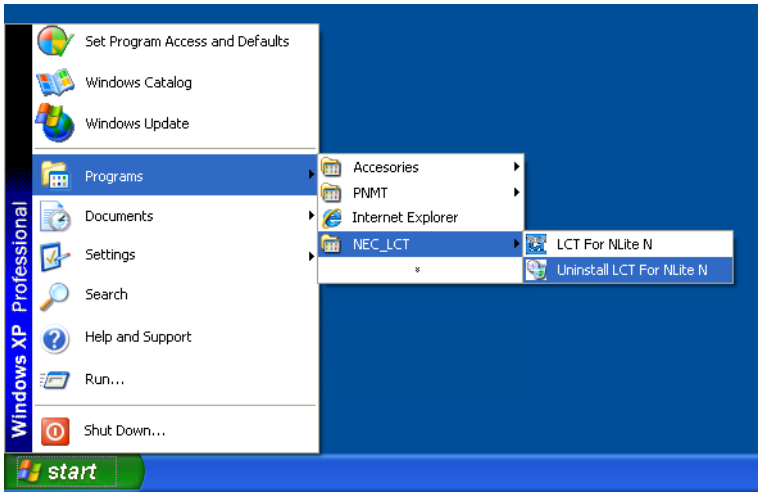


18 Perform Dial-up access and login to the MDP.

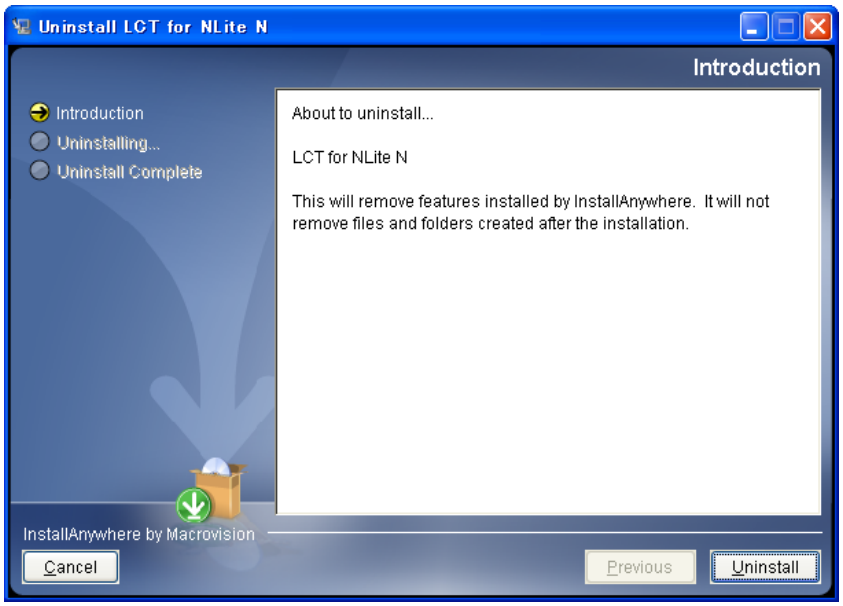
LCT Uninstallation

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.)

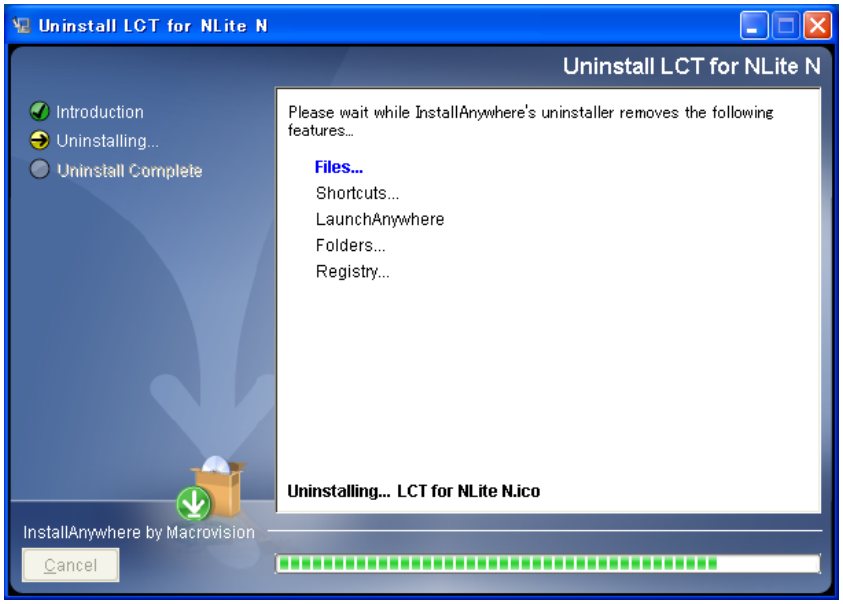
1 Select the "**Programs**" → "**NEC_LCT**" → "**Uninstall LCT For NLite N**" from the "**start**" menu for uninstalling LCT.

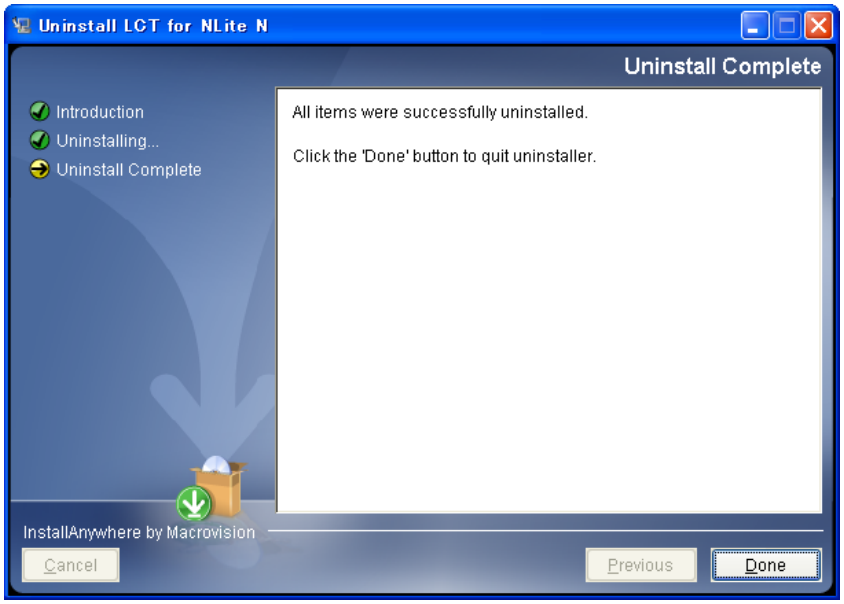


2 Read “**Introduction**” and click on the “**Uninstall**” button, then, the uninstalling program is started up.



3 Wait for a while until uninstallation finishes.





4 When the program has been uninstalled, click on the "**Done**" button.

5 Uninstallation finishes.

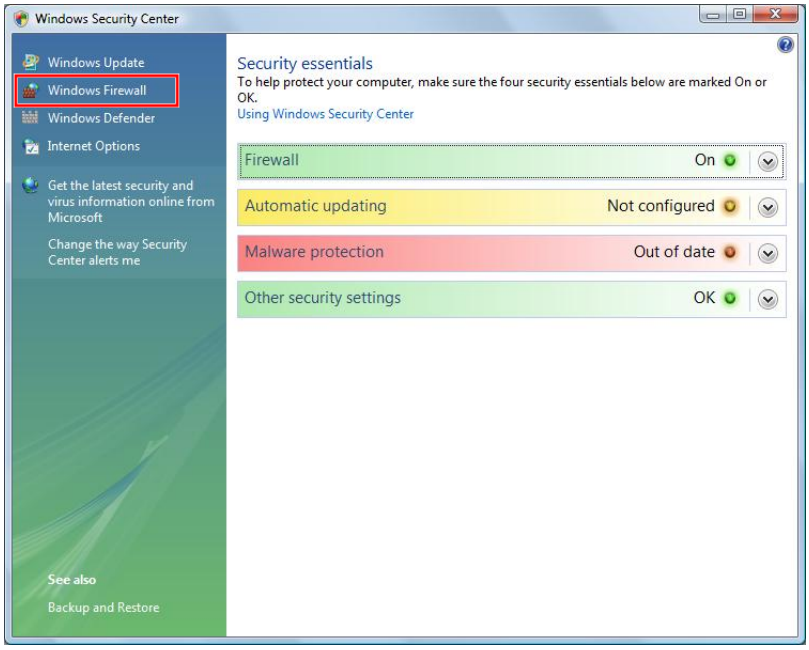
13. FIREWALL SETUP FOR WINDOWS VISTA

For operating LCT for NLite N with Windows Vista, setup the windows firewall by the following procedure.

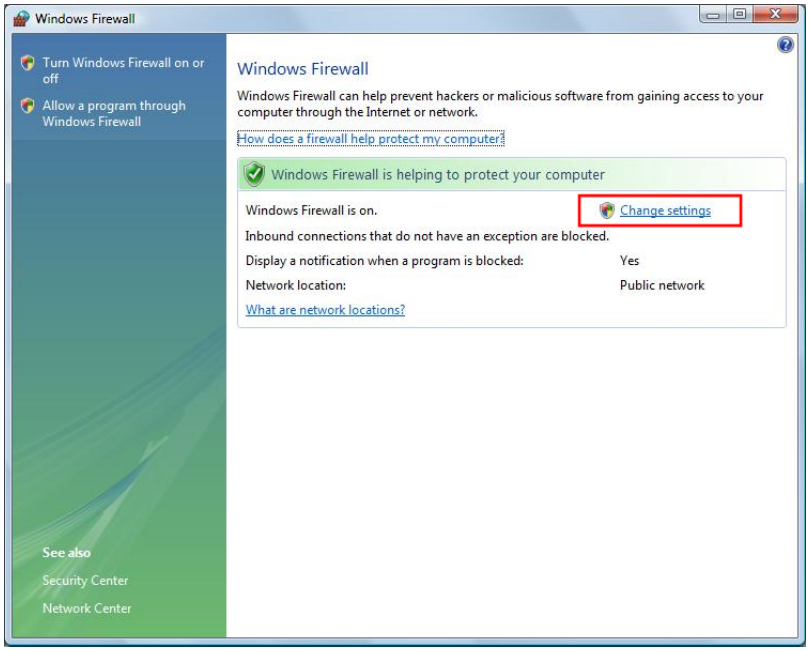
13.1 Firewall Setup

1 Go to Control Panel. => Windows Security Center.

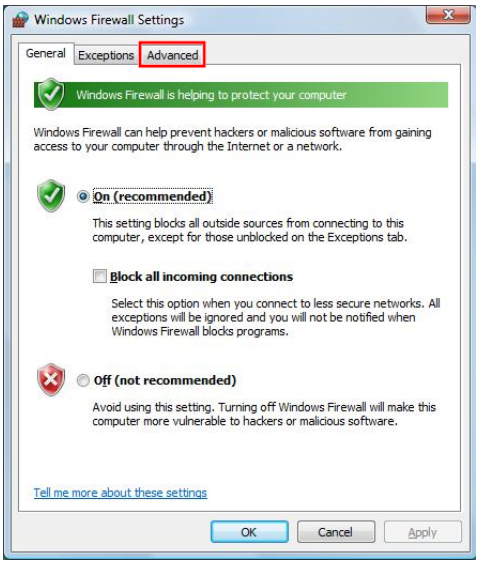
2 Click Windows Firewall.



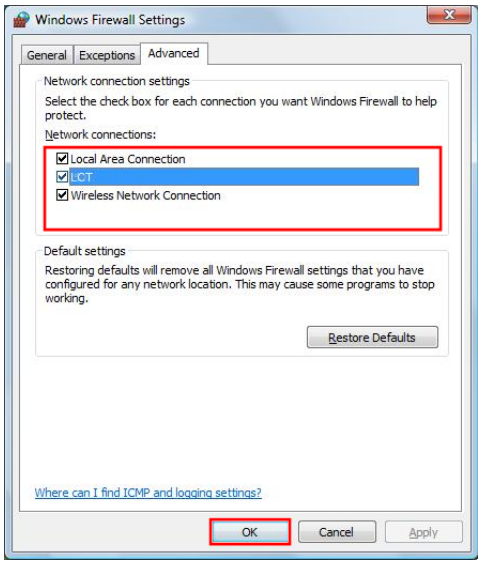
3 Select Change Settings.



4 Select Advanced tab.



5 Remove check mark on connection name.

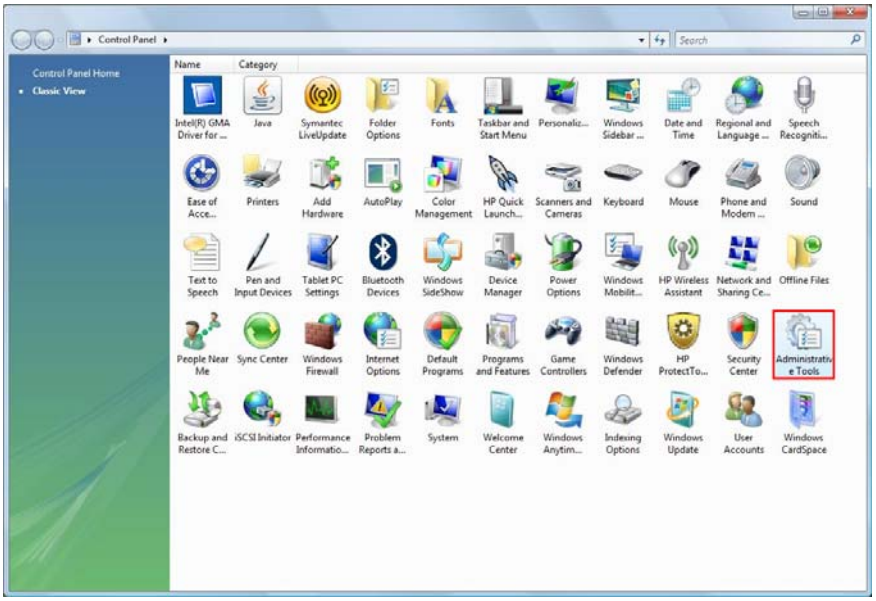


NOTE: Configuring the firewall as above, a security warning icon will appear on the task tray. After terminating LCT, please check mark on connection name. You will need to re-configure the firewall each time you startup LCT.

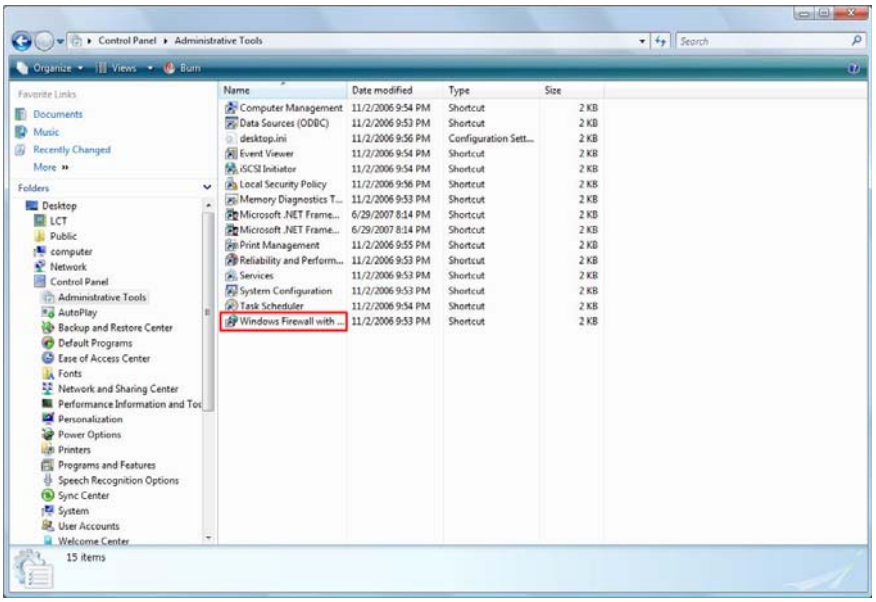
13.2 Firewall Setup (with Advanced Security)

This procedure enables Run LCT with Firewall.

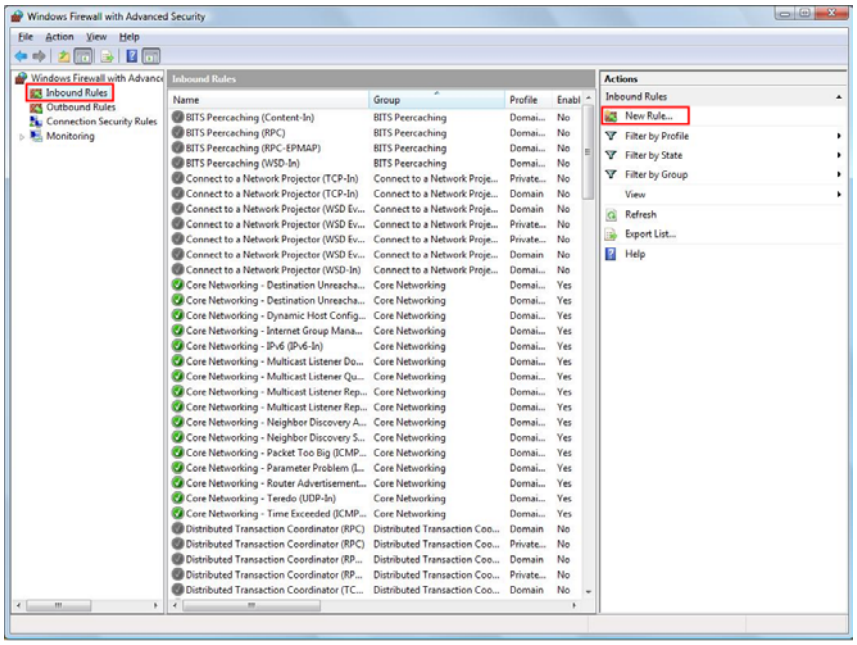
1 Click Start => **Control Panel** and the **Administrative Tools** icon to start configuring Firewall.



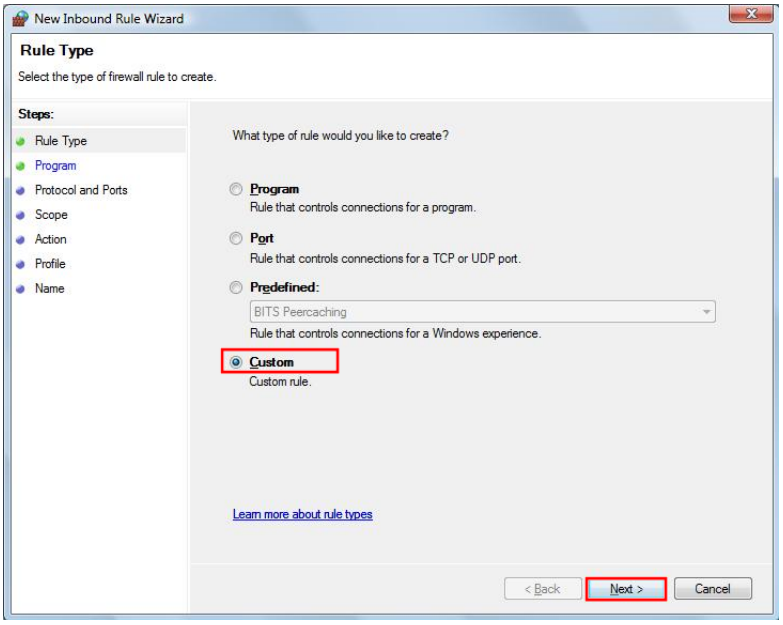
2 Click Windows Firewall with Advanced Security.



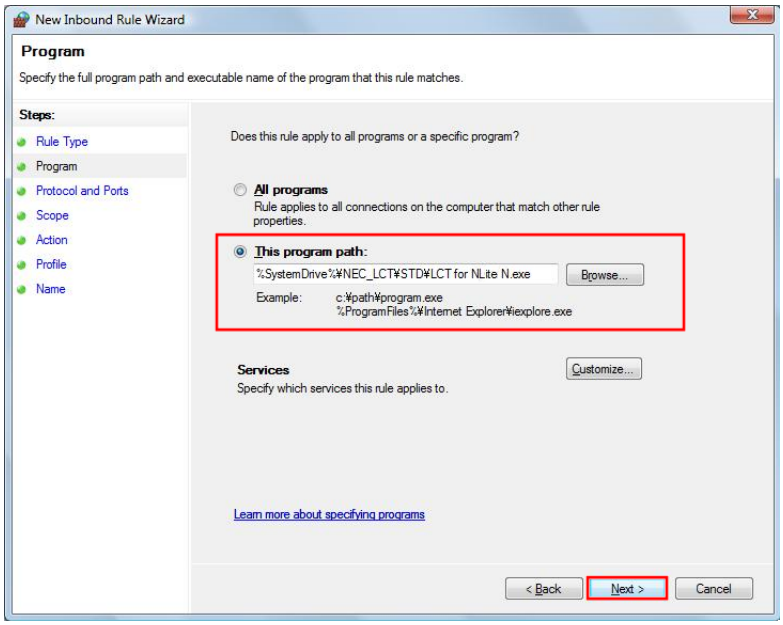
3 In the Windows Firewall with Advanced Security. Window appears Click Inbound Rules and New Rules... on Actions.



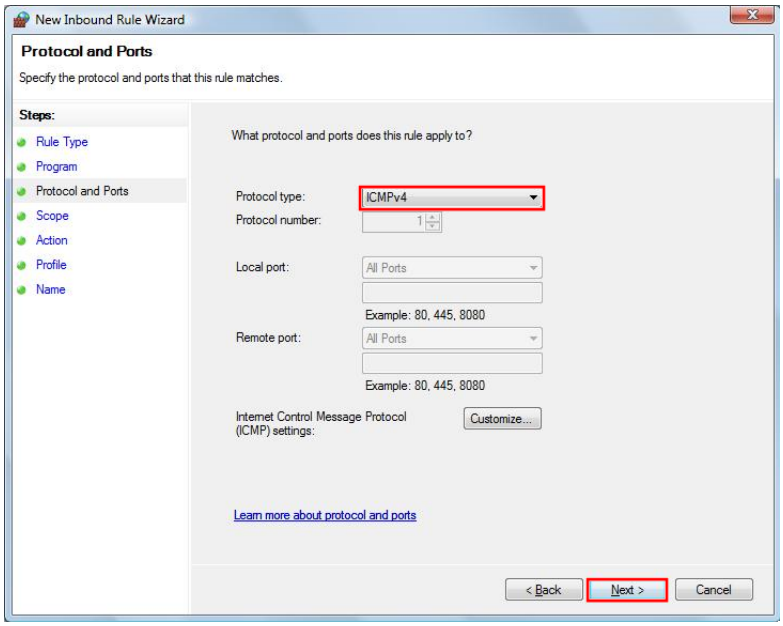
4 In the Window appears select **Custom.** And click Next.



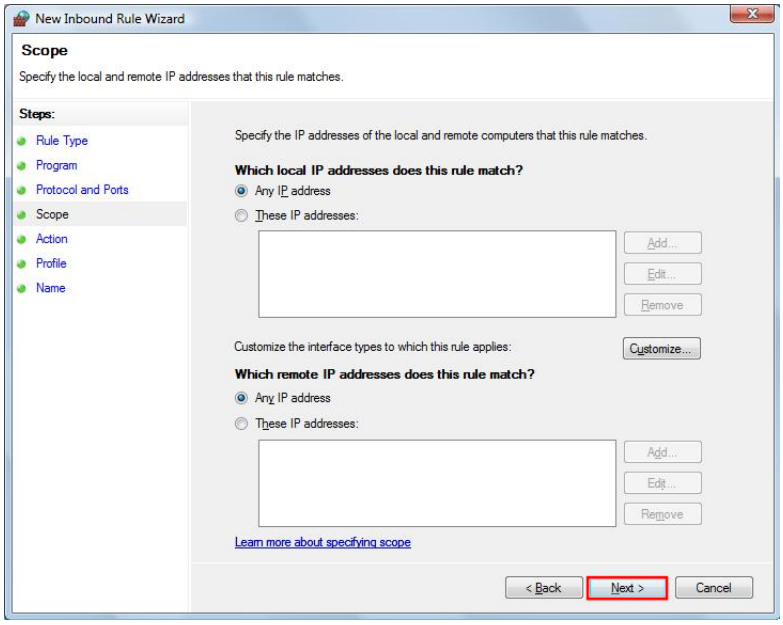
5 Select This program path and Click Browse. Select the LCT on “LCT Install PATH\LCT for NLite N.exe” Click Next.



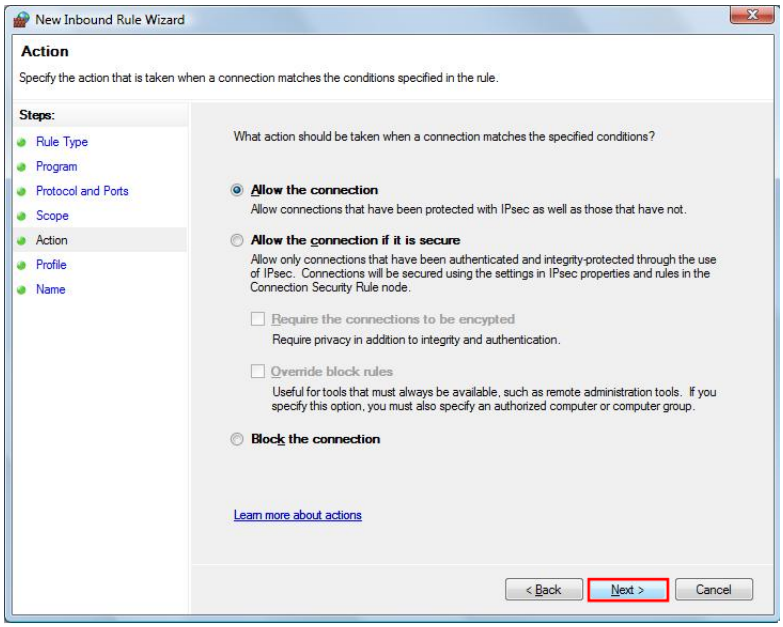
6 Select Protocol type ICMPv4 and Click Next.



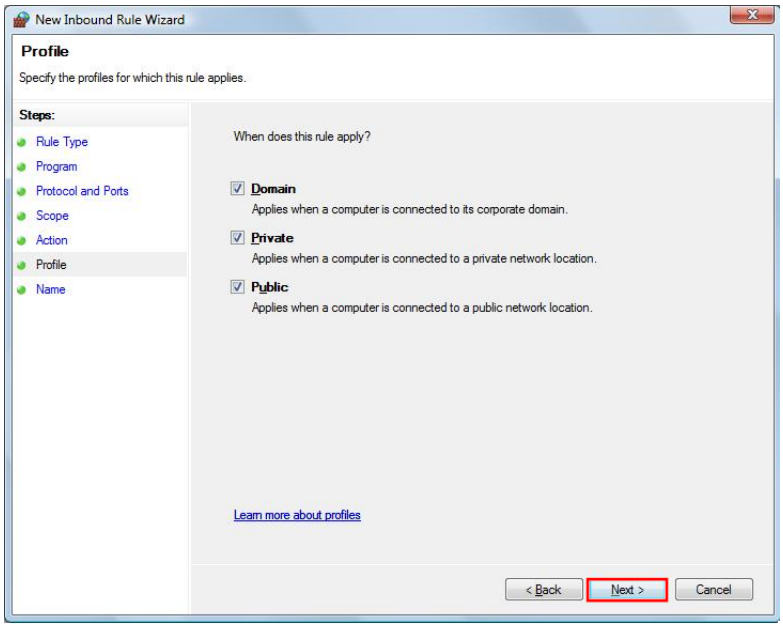
7 Retain the default setting Click Next



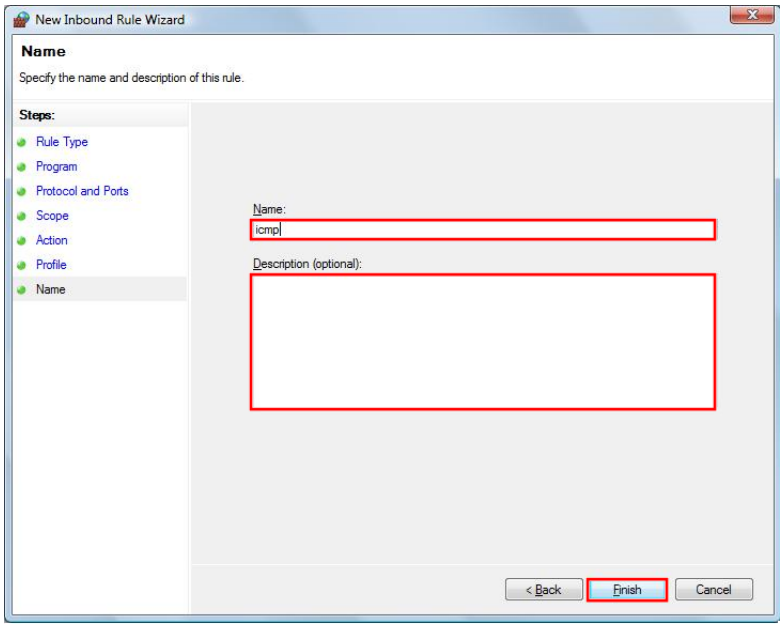
8 Retain the default setting Click Next.



9 Retain the default setting. Click Next.



10 Input Name filed and Description field and Click Finish.



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