PATLITE

8169-B

NH Series
User's Manual

This book corresponds to the current firmware version 1.11.

PATLITE Corporation

Introduction

Thank you for purchasing the PATLITE "NH Series" (henceforth, written as "this product") Network Monitoring Signal Tower. Please read this NH Series instruction manual (henceforth, written as "this book") carefully before installation. In addition, please store this manual for future reference when performing maintenance, repairs or inspections. When performing maintenance and repairs, etc., please be sure to reread this book. After reading this book, if there are any questions regarding this product, please contact your PATLITE Sales Representative from the contact list indicated at the end of this book.

Notice

► Specifications, the design, and other contents written in this book may be changed for improvements without prior notice and may result in differences from the actual product purchased.

► This product meets severe quality control and inspection requirements prior to shipment, but if some failure or defect is found, please contact the place of purchase, or your PATLITE Sales Representative (indicated on the last page) to solve the issue.

► This product (software is included) is for the use of general office work, home and for personal use, it has been developed, designed and manufactured for general applications, such as for industry, and it is not designed for applications which demands high safety requirements, such as medical application equipment or systems used in connection directly, or indirectly, with human life.
Please understand prior to use that no responsibility is taken at our company for damages or other disadvantages, due to customers using this product beyond the scope of its general application, or from any claims from third parties.

- When using this product for applications in which equipment of higher reliability than the general application demands, such as a computer system, etc., please use suitable safety design countermeasures against system failure, etc.

► Please understand that our company does not take any responsibility for damage and other disadvantages this product (software is included) has caused due to the customer using this product, or any claims from third parties.

► Due to the characteristics of the LED's, variations in brightness and color of the indicating lamps may occur.

► This product (Body only) conforms to EN standards and shows the CE Markings.

► The AC Adaptor included does not conform to the EN standards, therefore does not show CE Markings

► To retain the UL certification for the main unit, it is required to use an AC adaptor with UL Listing. .

FCC Compliance

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

This device complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. The antenna used for this transmitter is built-in, therefore, the transmitter must provide separation of at least 20cm from all persons.

For safe application, observe the following:

The following symbols classifes the following into different catagories and explains the level of harm inflicted if the cautions are disregarded.

Warning	Indicates an imminently dangerous condition: Failure to follow the instructions may lead to death or serious injury.
Caution	Indicates a potentially dangerous condition: Failure to follow the instructions may lead to slight injury or property damage.
Prohibited	This symbol indicates “Prohibited”, which should not be carried out by all means.
Enforced	This symbol indicates “Enforced”, which should be observed and carried out by all means.
Please	Indicates something to observe before using this product.
Note	Notice regarding supplementary information or convenient explanation is indicated.

Cautionary Notes

Prior to installation, read all notes and use this product correctly.

⚠ Warning	
Prohibited	• Do not disassemble or alter the product. Failure to comply may result in fire, electric shock, or failure. • The power supply rating is AC 100-240V. Do not allow the voltage to exceed the specified voltage tolerance. Failure to comply will result in internal circuitry damage. Moreover, there is fear of fire.
Enforced	• When plugging the power cord into the power receptacle, be sure to check there is no dust accumulation on the plug, and insert into the power receptacle completely. By allowing dust to adhere to the power supply terminal, it can be the result of fire or failure from short-circuiting. • Since dust can accumulate after a long time, and with moisture, can cause the dust to become conductive, in order to prevent the phenomenon of ignition from dust accumulation, it is best to periodically wipe the transformer and socket terminal with a damp cloth. By allowing dust to adhere to the power supply terminal, it can be the result of fire or failure from short-circuiting. • When replacing LED units, etc., please be sure to turn off the power first to prevent electric shock. • When an unusual odor, sound or smoke comes out of the product, immediately disconnect the power, then contact your nearest PATLITE Sales Representative.

⚠ Caution	
Enforced	• When moving this product, please do not grasp by the Signal Tower portion of this product. Be sure to carry it from the base of the unit, to prevent any cause of failure or trouble. • Please place this product on a level surface, such as a desk etc. • When installing it in high places, such as on top of a shelf, please use the rubber feet provided as an accessory, along with adhesive tape, and a support base for the bottom of the body to prevent it from falling.
Prohibited	• Do not expose it to high temperatures, such as near a fire and do not use it in humid places. Moreover, do not use this machine in locations where corrosive or combustible gas is present. • If foreign substances, such as water, medicine; or metals, such as copper, low carbon steel wire, fall into this product, please do not use it. Possible cause of failure may occur. • Do not disassemble or attempt to repair this product by any means. Failure to comply will result in equipment damage or fire. • Do not bend the power supply cables or signal wires recklessly. Disconnection will result in this machine breaking down. • Do not install or run wiring near, or where equipment (such as solenoids, etc.) generate strong electric or magnetic fields, or near any power lines. Failure to comply may result in malfunction due to inductive noise. • Do not place any part of this product (Body, AC Adaptor, Rubber Feet) where infants can reach it. If it is swallowed accidentally, it could be detrimental. If it is suspected of being swallowed, please consult an emergency medical center immediately.

Regarding the Trademarks or Registered Trademarks

- Microsoft, Windows, and Internet Explorer are registered trademark of the Microsoft Corporation of America, Japan and other countries.
- Firefox is the trademark or registered trademark of the Mozilla Foundation of America and other countries.
- The company names and brand names written in this book are trademarks or registered trademarks of each company.

Handling Cautions

This product is for indoor use only. Do not use it outdoors.
When installing this product, please avoid installation in the following places:

- Where its exposed to direct sunlight
- Where high temperatures, such as near fire, or in a humid place
- Where drastic temperature and humidiy changes are present
- Where its exposed to an environment with poor ventillation
- Where its exposed to vibrations exceeding the specifications
- Where its exposed to corrosive gas
- Where its exposed to a salty air environment
- Where its exposed to dust, iron powder, etc.
- Where its exposed to high concentrations of chemicals or oil mist
- Where its exposed to rain, or other types of wet environments

Maintenance and Inspection

► Cleaning

- When cleaning, be sure to disconnect the power before doing so.
- The cleaning of this product should be with a soft cloth and a neutral detergent (such as dish soap), diluted with water and should be wiped lightly. Since it is easy to crack the surface of the product when wiping with too much strength, please be careful.
- Do not wipe this product with volatile chemicals, or chemically treated dustcloth containing benzine, thinner etc.
- Please do not wipe with a cloth containing too much moisture. If moisture gets inside the product, it can cause short circuiting, electric shock, or fire.
- Periodically remove dust from the electric socket to prevent a fire hazard. By allowing dust to adhere to the power supply terminal, it can be the result of fire or failure from short-circuiting.

► Inspection

- Please check the following contents when inspecting this product.

Inspection Checklist		Inspection Contents
Supplied Power Source	Power Supply Voltage Tolerance	Tolerable Voltage Range should be from AC 100 to 240V
Surrounding Environment	Ambient Temperature	Operating Temperature Range should be from 0 to 40°C
	Ambient Humidity	Operating Humidity Range should be 20 to 80% RH
	Presence of Dust	No dust should be accumulated

Product Checklist

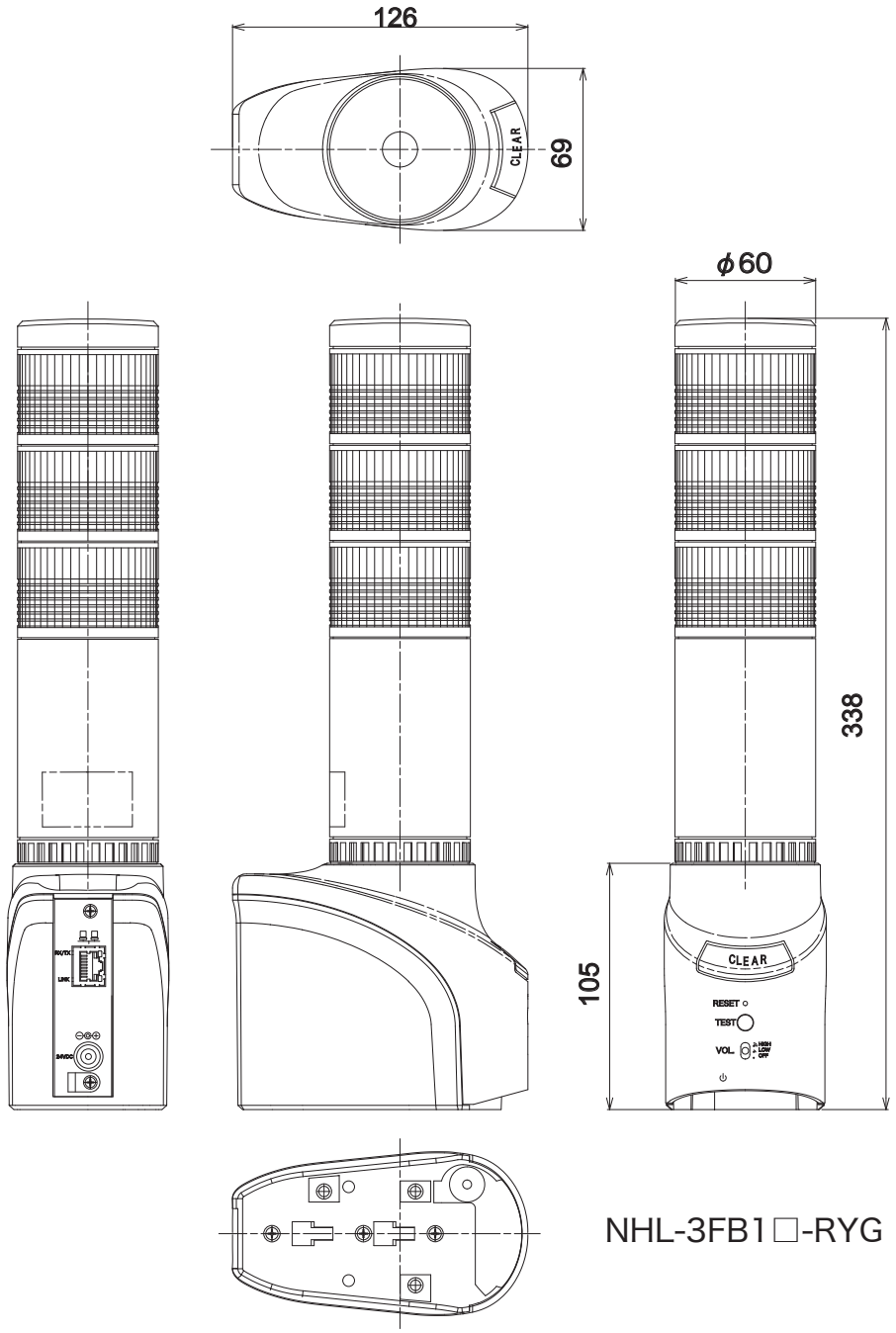
Although our company takes all possible quality control measures to ensure proper packing of this product, if there should be any missing items, please refer to the last page to contact your nearest PATLITE Sales Representative.

- NH Series Main Unit (1 Body and 1 Stand)
- Quick Start Operation Manual (1 Sheet)
- Adhesive Seal (8 Sheets)
- Rubber Feet (4 Pieces)
- Support Base (1 Piece)
- AC Adaptor (1 Unit)
  *The AC Adaptor for NHL-3FB1N-RYG is not enclosed.

Table of Contents

1 Product Outline

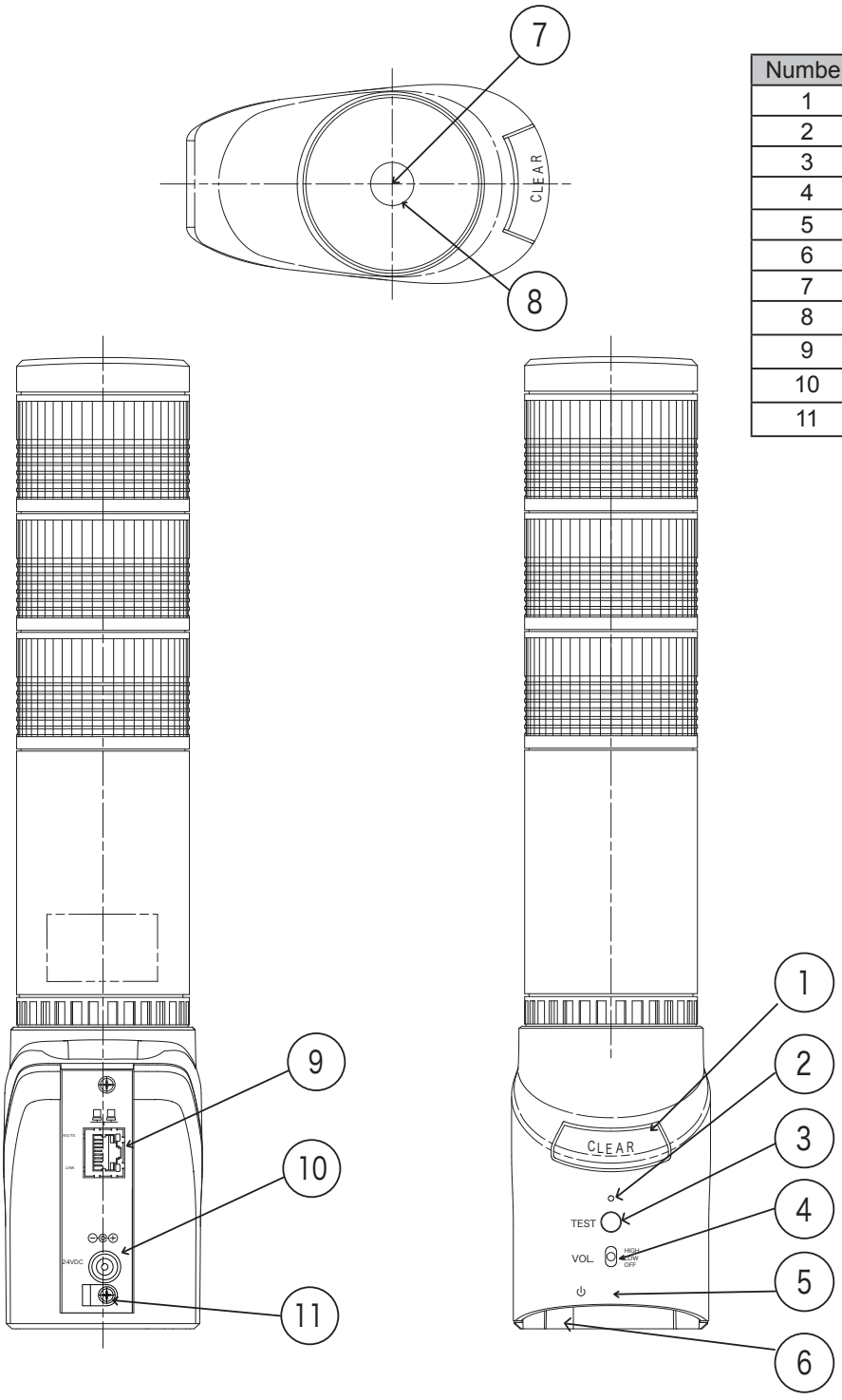
1.1 Outer Dimensional Drawing



NHL-3FB1□-RYG

Outer Dimensional Drawing

1.2 Part Names and Functions



Number	Name
1	CLEAR Switch
2	RESET Switch
3	TEST Switch
4	Volume Level Switch
5	Status LED
6	Buzzer Diaphram
7	Center Shaft
8	Cover Seal
9	LAN Connector
10	Power Outlet
11	Power Cable Clamp

1.3 Model Number Configuration

NHL - 3FB1 □ - RYG

RYG: LED units are in order from top to bottom of red, yellow, and green

U: AC Adaptor Included N: AC Adaptor not Included

1.4 General Specifications

Item		Specification						
Model		NHL-3FB1U-RYG				NHL-3FB1N-RYG		
Rated Voltage (Body)		DC24V						
AC Adaptor Rated Voltage		AC 100V to 240V				—		
AC Adaptor Operating Voltage Range		AC 90V to 264V				—		
Power Consumption		Body	Red	Amber	Green	Blue	White	Buzzer
		2.0W	1.5W	1.5W	0.8W	0.8W	0.8W	2.0W
Operating Temperature Range		0°C to 40°C (No Condensation)						
Storage Temperature Range		-10°C to 60°C (No Condensation)						
Relative Humidity		from 20 to 80% RH (No Condensation)						
Insulation Resistance		More than 1MΩ at DC500V between the terminals and the chassis						
Withstanding Voltage		AC1000V and less than 10mA applied for 1 minute between the terminals and chassis without breaking insulation						
EMI Noise Characteristics		AC1000Vp~p Pulse Width: 1μsec						
Vibration Resistance		19.6m/s^2						
Sound Level		HIGH: 80dB or more / LOW: 70dB or less (Distance from buzzer diaphram (Upright Position) of 1m and "A" balance)						
Buzzer Sound		Three-position adjustable switch for "HIGH", "LOW" and "OFF"						
Signal Tower		NHL：φ60 Type Clear Globe						
"CLEAR" Switch		Pushbutton Switch						
"RESET" Switch		Tact Switch						
"BUZZER" Switch		Slide Switch						
Communication Method	Ethernet	Physical Layer: 10BASE-T/100BASE-TX (Auto-negotiation/ Full Duplex/ Half Duplex)						
		Data Link Layer: CSMA/CD						
		Network Link Layer: IP・ARP・ICMP						
		Transport Layer: TCP・UDP						
		Application Layer: HTTP・RSH・SMTP・SNMP・POP・DNS・Socket・NTP・DHCP						
Mounting	Location	Indoors Only						
	Direction	Desktop or wall-mount in the upright position						
Mass (AC Adaptor not included)		800g						
Protection Rating		IP2x						
Accessories		AC Adaptor, Rubber Feet, Adhesive Seal, Support Base				Rubber Feet, Adhesive Seal, Support Base		

Please When there is no "Auto-negotiation" on the HUB side, sometimes communication is inoperable.

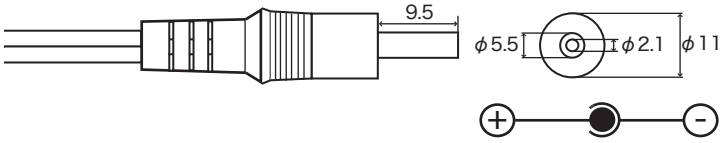
1.5 AC Adaptor Specifications

When ordering an AC Adaptor separately, use the following specifications. Since the voltage output of AC Adaptors drop when there is insufficient current (example: unregulated transformers, etc.), be sure to use an output current rating above the recommended rating. Failure to comply may result in failure of this product. Be sure to use AC Adaptors with built-in regulation systems to ensure a regulated output voltage (switching power supplies, etc.)

[Recommended AC Adaptor Specifications]

DC Secondary Output

Voltage : 24V DC ±5%
Current : 0.75A to 1A max
Plug Length : 9.5mm
Plastic Housing : 11mm dia.
Plug Connector Outer Diameter : 5.5mm dia.
Plug Connector Inner Diameter : 2.1mm dia.



1.6 Description of Functionality

The following explains the functionality featured in this product.

1.6.1 Monitoring Function

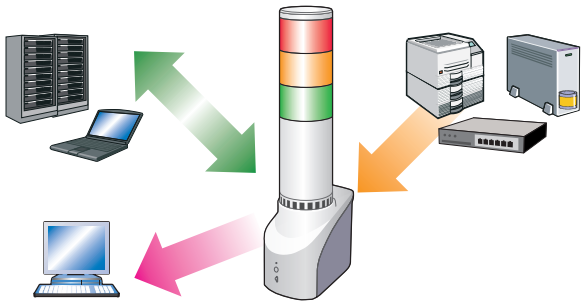
This product can monitor the connectivity of a network device.

PING MONITOR

Monitors "keepalive" Network/Device signals

The Ping Monitor can monitor the connectivity for a maximum of 24 nodes with this product. If the monitor cannot obtain a response due to an abnormality in the circuit or equipment in the node, it judges an abnormal state and the Signal Tower warns a supervisor with light and sound.

Among the 24 nodes, four nodes (21st to 24th) can be set up for more detailed monitoring parameters.



With a user's creation of adding an application utilizing the transmission command, monitoring of the operating circumstances is possible. (Maximum of 4 nodes)

SNMP v1 v2c

Low-cost Monitor networking equipment.

A network monitor Signal Tower can tell an administrator about generated abnormalities and hindrances promptly as an SNMP command to respond with light and sound to an SNMP TRAP from the equipment (UPS, a printer, a router, a switch, etc.) via the network.

- It can distinguish the variable bindings.
- The registration of 16 groups (4 nodes per group) is possible.

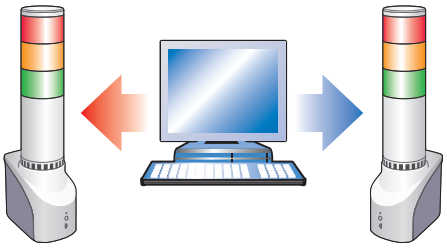
SELF DIAGNOSIS

It is possible without control from the network, to instead use the test switch on the front of the product to check the functions of the Signal Tower and buzzer.

1.6.2 Transmission Commands

RSH

It is controllable by the flexible RSH protocol.
With network integrated management software and various event monitoring tools, it is possible to trigger lighting, flashing, buzzer sound, and buzzer sound synchronized with the Signal Tower lights.



Event Occurance: Command Execution (Lighting Tier, Sounding Buzzer)
RSH Example: rsh 192.168.10.1 -l root alert 111001

SOCKET TRANSMISSION

Compatible with PHN Commands.

The Signal Tower and buzzer are controllable by a 2 byte command.

* Compatible with the NHE-3 FB, NHC-3 FB, NHM-3 FB and PHN-3FBE1.
* Some functions are limited.

Event Occurance: Command Execution (Flashing Tier Lights, Buzzer Sound)
PHN Example Code: 57H,17H

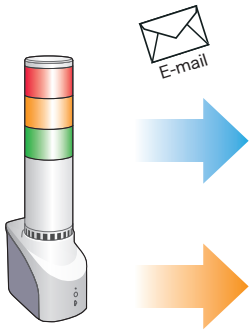
The commands are compatable with the new PNS.

The Signal Tower and buzzer are controllable through the PNS command. All the different patterns are controllable.

Event Occurance: Command Execution (Lighting Tier, Sounding Buzzer)
PNS Example Code: 58H,58H,53H,00H,00H,06H,01H,01H,01H,00H,00H,01H

1.6.3 Transmission Function Configuration

An E-mail and TRAP transmission can be sent at the time of an event occurance.



E-mail Transmission

Send to a maximum of 8 selectable addresses

A subject title and the text corresponding to the subject title can be created for the occured event.
It uses the authentication protocol for POP and SMTP.

SNMP v2c

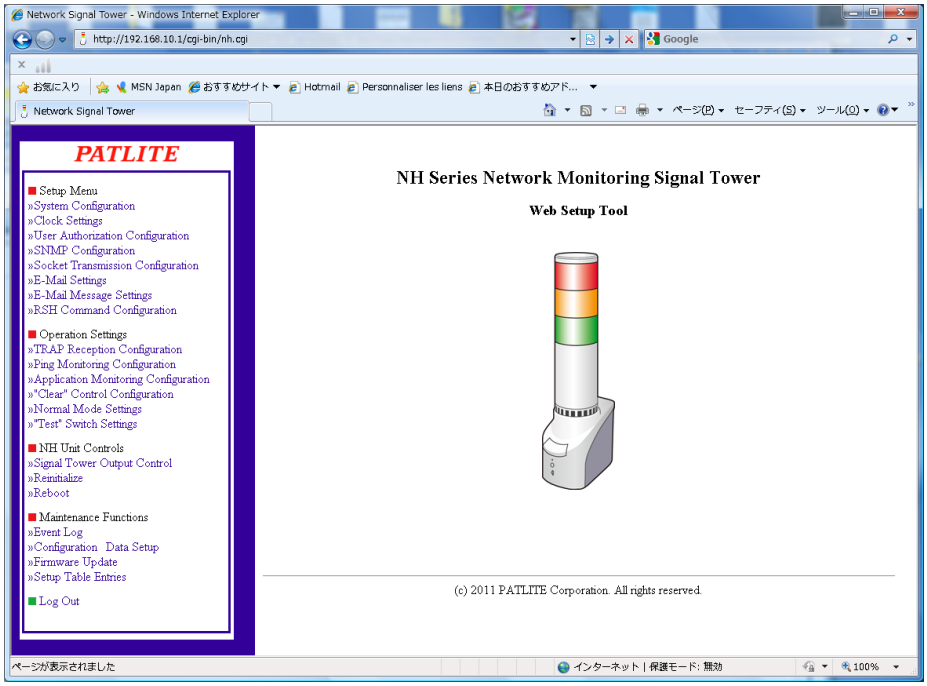
SNMP TRAP Transmission

The transmission can send an e-mail to a maximum of eight selectable addresses.

1.6.4 Setup and Updates

With a web setup tool, a detailed setup containing the IP Address of the product can be arranged. The firmware can also be upgraded remotely.

Fig. 1.6.1 Web Setup Tool Screen

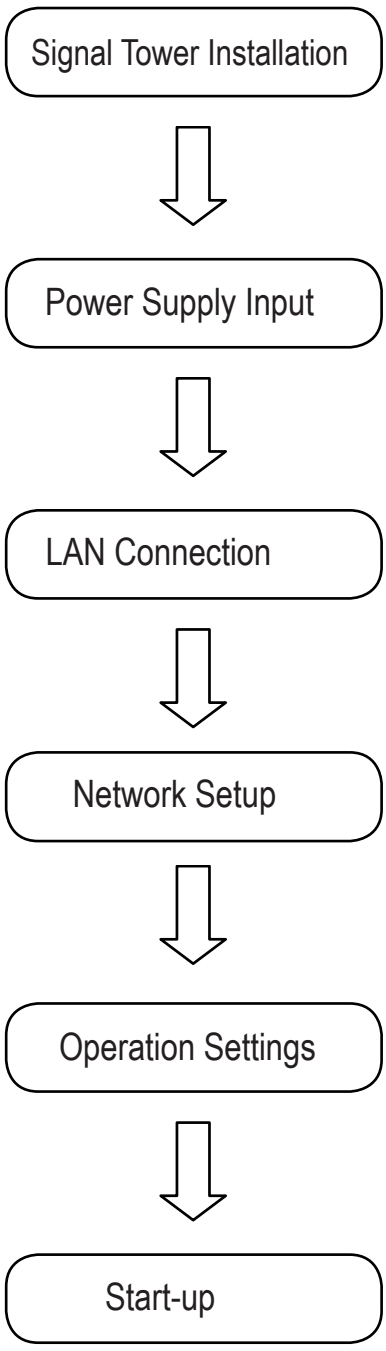


2 Installation Procedure and Flowchart

2.1 Network Signal Tower Flowchart

The Signal Tower offers two methods for configuring the network, "Manual Network Setup", and "Automatic Network Setup", which uses the DHCP server function.

2.1.1 Manually Setting Up Network



Please install this product on a level surface. If necessary, use the accessories (rubber foot, adhesive seal, support base) if needed when installing.

Connect the AC Adaptor to this product Using the cable clamp will prevent the power cord from being unintentionally pulled out. (Refer to 2.3 "Power Supply Input")

Connect the LAN cable to this product.

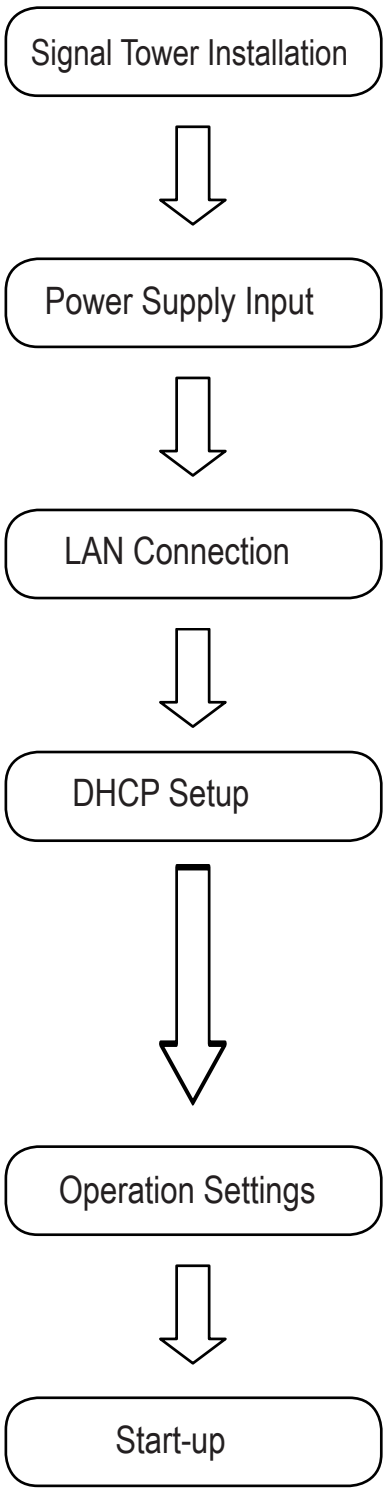
Set up the network environment configuration. Refer to on how to setup the network.

Set up the detailed settings after the network environment has been configured

Please After completing the desired setup configuration, reboot this product by pressing the "reset" button, or removing the power for a few seconds and reapplying it for the changes to take effect.

This product is now ready to be used.

2.1.2 Automtically Setting Up Network



Please install this product on a level surface. If necessary, use the accessories (rubber foot, adhesive seal, support base) if needed when installing.

Set the volume level switch to "LOW", then push the "TEST" switch while inserting the AC Adaptor plug into the power outlet. Use the cable clamp to prevent the power cord from being unintentionally pulled out. (Refer to 2.3 "Power Supply Input")

Connect the LAN cable to this product.

If this product is unable to connect with a DHCP Server, the Signal Tower status will start using the flashing pattern2 on all LED units, then will use the factory default network information set at the time of shipment. If that condition occurs, then either try again to connect with a DHCP Server, or manually set up the network. Refer to "2.5 Network Setup" on how to setup the network manually. If this product is able to connect to a DHCP Server, in order to know the network information, it is recommended to use Patlite's "PNS Manager" software for the NH Series.

Set up the detailed settings after the network environment has been configured

Please After completing the desired setup configuration, reboot this product by pressing the "reset" button, or removing the power for a few seconds and reapplying it for the changes to take effect.

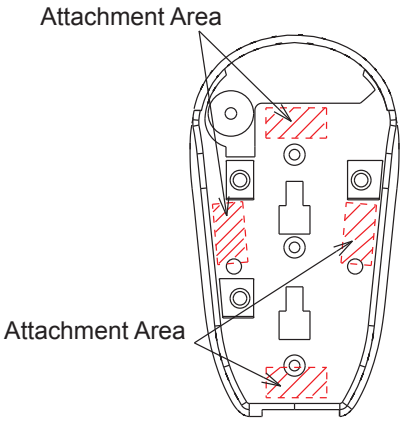
This product is now ready to be used.

Note Once the DHCP function is working, it will automatically start up the next time the product is turned on, or rebooted.

2.2 Signal Tower Installation

This product is to be intalled on a level surface. Also, use the included accessories (rubber feet, adhesive seal, support base) when needed during installation.

Installation Example 1: Rubber Feet to prevent from sliding on a flat and slippery surface

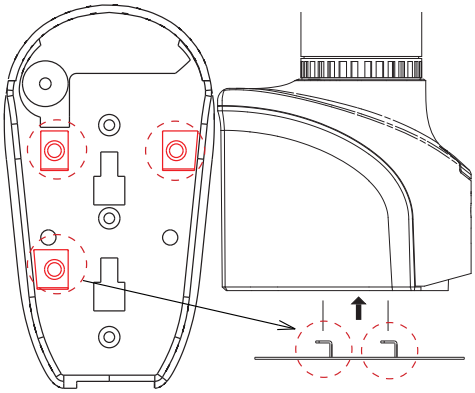


[Installation]

Strip off the adhesive backing and stick the adhesive seal or rubber feet in the shaded area, indicated on the figure to the left.

Adhesive seal or rubber feet attachment area

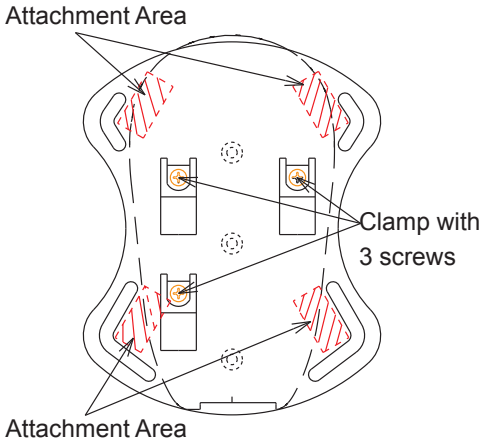
Installation Example 2: Increasing surface area for a sturdy surface (before adding adhesive seals or rubber feet)



[Installation]

1. Support Base is attached to the part indicated by the circle " ".

Support Base attachment area

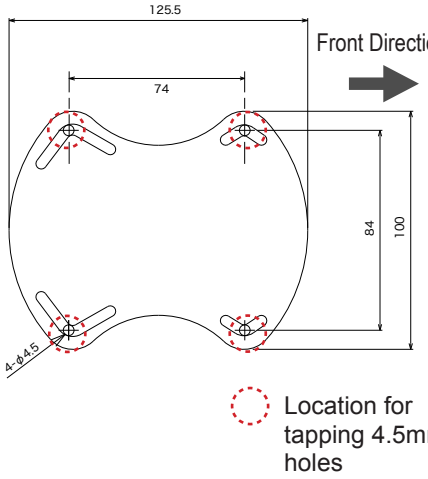


2. Secure the Support Base with screws.

3. Use an M4 screw (or M4 bolt, etc.) to attach the Support Base onto the installation surface and tighten it with M4 nuts.

Adhesive seal or rubber feet attachment area

Installation Example 3: Permanent Surface Installation (screw-support base)



[Installation]

1. Drill holes with a diameter of 4.5mm onto a flat surface to install.
2. Affix the Support Base accessory to this product.

※ Please do not attach the rubber feet or adhesive seals when clamping the Support Base with screws.

3. Use an M4 screw (or M4 bolt, etc.) to attach the Support Base onto the installation surface and tighten it with M4 nuts.

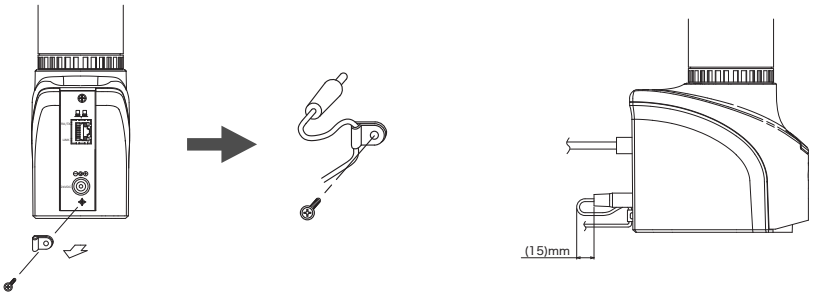
2.3 Power Supply Input

Attach the power plug for this product in accordance with the figure below. This product requires at least 30 seconds for the boot-up sequence to complete.

[Power Plug Mounting Instruction]

1. Remove the clamp for the power cable.
2. Pass the power cable through the clamp.
3. Insert the power plug into this product.
4. Screw the clamp down to tighten it, and ensure enough slack (about 15mm) has been given to the power cable.
5. When power is supplied to this product, the lights will all turn on for about 1 second.

Fig. 2.3.1 Power Cable Mounting Diagram



Warning

- Periodically check whether dust builds up on the electric socket and clean it if dust builds up. Ensure maintenance is performed to avoid dust build-up, because it may result in fire if too much dust is allowed to build up.
- Do not touch the electric socket with wet hands. Failure to comply will result in electric shock.

2.4 LAN Connection

Connect the LAN cable to this product. Use either a catagory 5 LAN cable, or twisted-pair cable (UTP or STP) for this application.

2.5 Network Setup

The IP address at the time of factory shipments for this product is 192.168.10.1.

To change the IP address, first log in from a personal computer (henceforth, written as “PC”) web browser to access the settings for it.

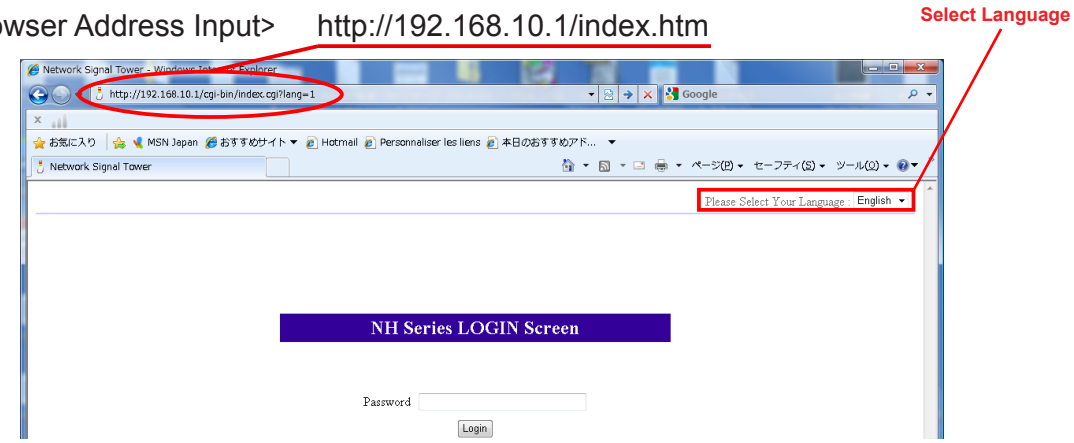
> **Note** The recommended browser should be equivalent to or higher than Internet Explorer 6 or Firefox 3.5.

2.5.1 Logging In

By logging in from a web browser, access can be made to various setups for this product.
In order to log in, the current IP address for this product needs to be entered into the address part of the web browser. (Refer to Fig. 2.5.1)

Fig. 2.5.1 Login Screen

<Web Browser Address Input> http://192.168.10.1/index.htm



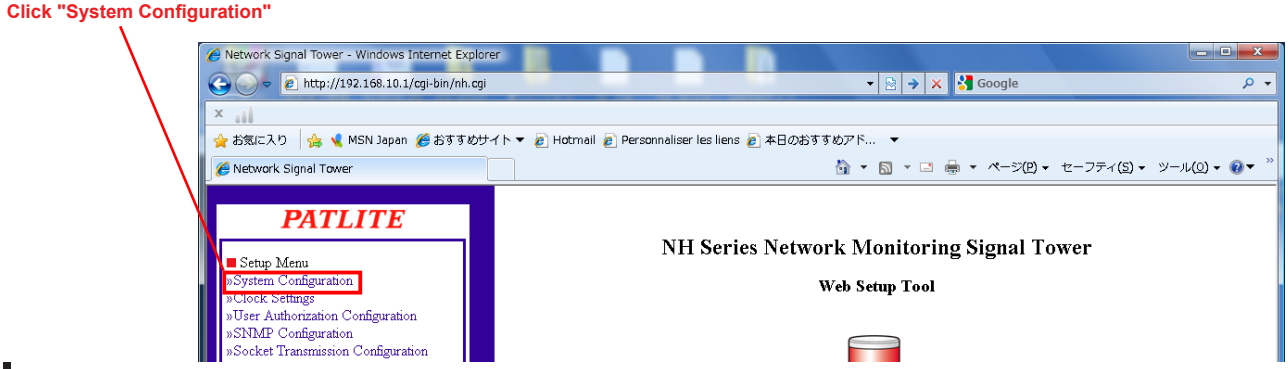
When the login screen is displayed, go to the upper right of the screen where "Please Select Your Language" is located to select the preferred language. Enter "patlite" in the password field, then click the "Logging In" button. The default password is set to “patlite.” Please be sure to change the password to prevent any security breaching.

> **Please**
> - If 10 minutes or more of no activity has elapsed after logging in, a time-out causes an automatic log out. When that occurs, please log in again.
> - If garbled characters occur and the screen is not displayed normally, change the character code for Unicode (UTF-8) to correct it.
> - To prevent from being setup in two or more places, this product does not support double-login capabilities. To log in from another location, be sure the last computer is logged out.

2.5.2 Setting the IP Address

After logging in, a web setup tool screen will be displayed (Refer to Fig. 2.5.2). The set up item list is displayed on the left-hand side of the screen.
Click "System Configuration" to display the system setup screen.

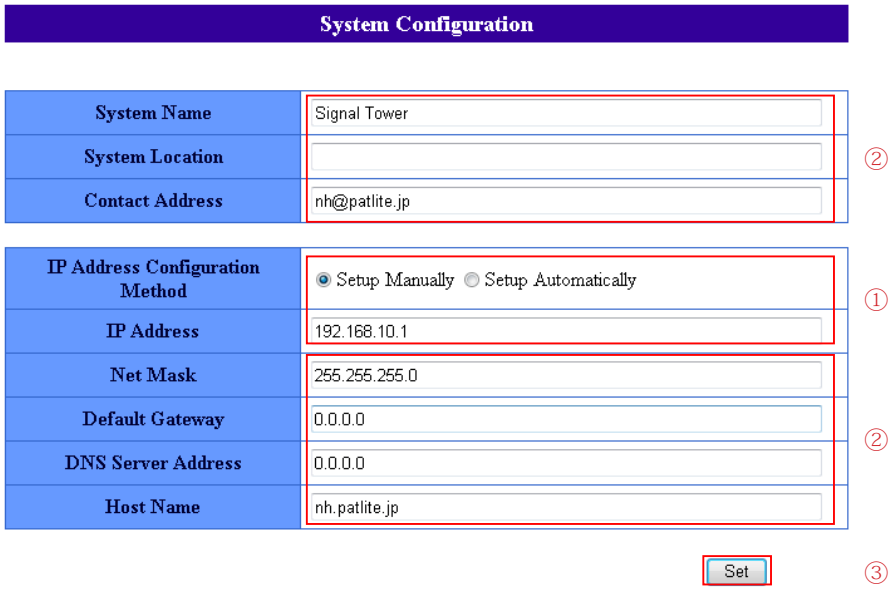
Fig. 2.5.2 Web Setup Tool Screen



The network protocol can be changed on the system setup screen.
[Setting Method]

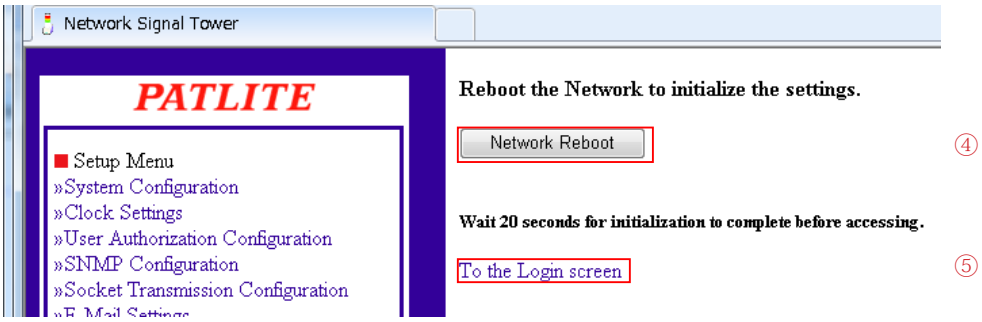
1. Please enter the new IP address for this product.
2. Set up the net mask, default gateway, etc. if needed.
3. After the changes are completed, click the "Set" button for the changes to take effect.

Fig. 2.5.3 System Setup Screen (for Manual Setup)



4. After the "Set" button has been clicked, then when the Network Reboot Screen is displayed, click the "Network Reboot" button for the changes to take effect (Refer to Fig. 2.5.4).
5. The execution of the network setup changes takes about 20 seconds. After the waiting time elapses, click "To the Login screen" to log back in (Refer to Fig. 2.5.1).

Fig. 2.5.4 Network Reboot Screen



2.5.3 Setup Verification

If the web browser address is reflecting the changed value of the IP address after clicking "To the Login screen", the setup of the new IP address has been successful. However, in cases where the preset value of other networks had been changed, be sure to enter the proper IP Address value where it was moved to in order to verify it in the system setup screen.

2.6 Network Setup with the DHCP Function

This product can access a DHCP Server to acquire network information.

2.6.1 Setup Method with the “TEST” Switch

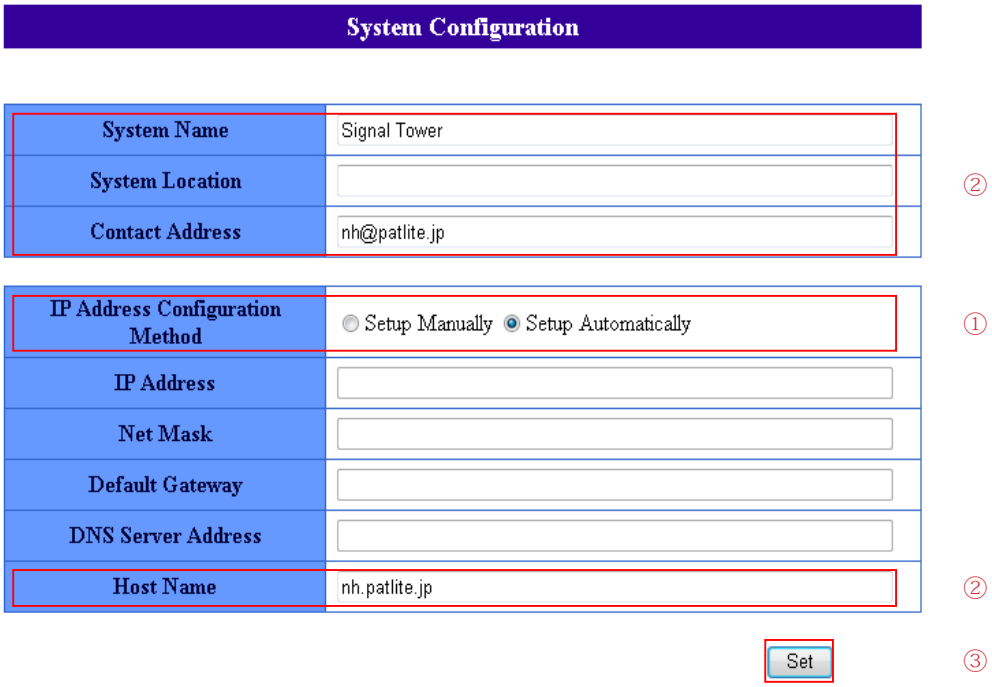
1. First, connect this product with the network environment to be used. (Refer to Fig. 2.5.3)
2. Set the volume level switch to "LOW" before applying power to this product.
3. Push the "TEST" Switch while inserting the power connector into the power outlet.
4. The DHCP function takes effect when this product starts up.

Please If this product is unable to access a DHCP Server, it will return to the factory default network information. When the DHCP function is used, any future connections are started after the DHCP function setup is activated. When it is necessary to use the manual settings, please use the Web Setup Tool and our PNS Manager software tool.

2.6.2 Setup Method with the Web Setup Tool

1. Select the IP Address Setup Method in the "System Configuration" screen as "Setup Automatically." (Refer to Fig. 2.6.1)
2. Setup the device and host name, etc. as needed.
3. Click the "Set" button to save all changes and to activate them.
4. After the "Set" button is clicked, the Web Setup Tool changes to another screen to reboot the product; click the "Network Reboot" icon to continue. (Refer back to Fig. 2.5.4)
5. Rebooting the network takes about 20 seconds.

Fig. 2.6.1 System Setup Screen (for DHCP Automatic Setup)



2.7 Operation Settings

2.7.1 Setting the Clock

The clock for this product can be set up. For setting the clock on this product, the following are two methods.

- ► Communicates with the PC clock to adjust the time when logging in.
- ► Communicates with an NTP server to adjust the time for this product.

Refer to "4.2 Time Setup Screen" for details on setting the time.

Please If the power supply is not applied for more than a day and a half, the generated time may be cleared or delayed, and the clock should be reset again.

2.7.2 Normal Mode Setup

The normal state of operation of this product can be displayed by using the "Normal Mode" setup. When this product is in its normal state of operation, the condition, such as the Green LED in the "ON" condtion, can be indicated on the Signal Tower, once the setup is complete.

Refer to "4.13 Normal Mode Setup Screen" for setting up the "Normal Mode" operating status of this product."

Note If the normal operating condition does not require any status lights to stay on, then there is no need to set this parameter up.

3 Functionality Details

This section explains the available functions of this product, and their differences by the timing charts indicated below.

3.1 Signal Tower Control Functions

Three kind of operating patterns for the LED Signal Tower is available, such as continuous lighting, flashing pattern1, and flashing pattern2.

Continuous “ON”

Flashing Pattern1 [Repetitive 500ms “ON”; 500ms “OFF”]

Flashing Pattern2 [Repetitive 80ms “ON”, 170ms “OFF”, 80ms “ON”, 170ms “OFF”; 500ms “OFF”]

3.2 Buzzer Control Functions

Four kind of buzzer sounds, such as; buzzer pattern1, buzzer pattern2, buzzer pattern3, and buzzer pattern4, are available to distinguish a variety of conditions with the use of audible and visual warnings.

Buzzer Pattern1 [Repetitive 250ms “ON”; 250ms “OFF”]

Buzzer Pattern2 [Repetitive 500ms “ON”; 500ms “OFF”]

Buzzer Pattern3 [Repetitive 200ms “ON”, 50ms “OFF”, 200ms “ON”; 550ms “OFF”]

Buzzer Pattern4 [Continuous “ON”]

3.3 Test Functions

The test function does a sequential check of the Signal Tower and buzzer, as well as checking other operations. The test operation lights up the tower lights and buzzer every second in steps; in the order of red, yellow, green, blue, white, and buzzer. When only a three-tiered Signal Tower is in use, a time delay between the third tier and buzzer sound will occur. Stopping the test operation can be performed 7 seconds after execution, when the buzzer test is complete (it takes about 1 second).

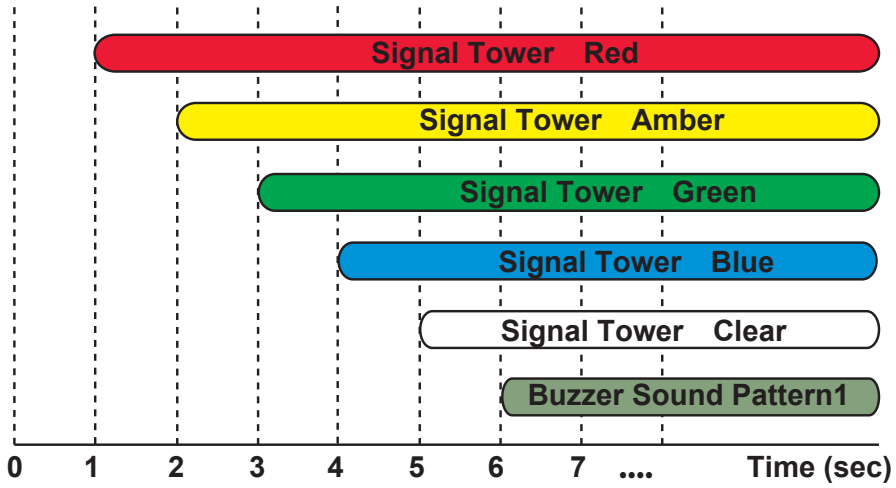
[Test Function Starting Method]

- When the Test Button is Depressed
- When the "test" or "dotest" Commands are Received by the RSH

[Test Function Stopping Method]

- When the CLEAR Switch is Depressed
- When the RSH receives a "Clear" or "Doclear" Command
- From an SNMP "Clear" Command
- From the Web Setup Tool of the Signal Tower Operation Screen
- From a PNS Command sending a Clear Command Transmission

Fig. 4.3.1 Detailed View of Test Operation



Please During the test operation, this product stops receiving everything else except the Ping monitoring application.

3.4 SNMP Function

This product can control the Signal Tower, and acquisition the status and TRAP reception using the SNMP functions. For customers who purchased this product, Please download the MIB file for use with the SNMP functions. Furthermore, for details on the setting method of this product, refer to “4.4 SNMP Setting Screen”.

3.4.1 SNMP SET Control Function for Signal-Tower

The Signal Tower and buzzer are controllable through the SNMPSET command.
The following is an example to control the “on” and ”off” for the Signal Tower lighting and buzzer.

[Application Example 1] Turning the red unit on. Set it up as followed:

Object	Object ID	Value
controlLightControlState	1.3.6.1.4.1.20440.4.1.5.1.2.1.2.1	2
controlLightControlTimer	1.3.6.1.4.1.20440.4.1.5.1.2.1.3.1	0

[Application Example 2] Operating the flashing pattern1 for the amber unit. Set it up as followed:

Object	Object ID	Value
controlLightControlState	1.3.6.1.4.1.20440.4.1.5.1.2.1.2.2	3
controlLightControlTimer	1.3.6.1.4.1.20440.4.1.5.1.2.1.3.2	0

[Application Example 3] With the red unit flashing pattern2, and amber flashing pattern1, after 5 seconds, the green turns on with the buzzer synchronized with light pattern2. Set it up as followed:

Object	Object ID	Value
controlLightControlState	1.3.6.1.4.1.20440.4.1.5.1.2.1.2.1	5
controlLightControlTimer	1.3.6.1.4.1.20440.4.1.5.1.2.1.3.1	0
controlLightControlState	1.3.6.1.4.1.20440.4.1.5.1.2.1.2.2	3
controlLightControlTimer	1.3.6.1.4.1.20440.4.1.5.1.2.1.3.2	0
controlLightControlState	1.3.6.1.4.1.20440.4.1.5.1.2.1.2.3	2
controlLightControlTimer	1.3.6.1.4.1.20440.4.1.5.1.2.1.3.3	5
controlLightControlState	1.3.6.1.4.1.20440.4.1.5.1.2.1.2.6	3
controlLightControlTimer	1.3.6.1.4.1.20440.4.1.5.1.2.1.3.6	0

3.4.2 SNMP GET Status Acquisition Function for Signal-Tower

The Signal Tower status is acquisitioned through the SNMP GET command. The following is an example of a Signal Tower status acquisition.

[Application Example 1] The red is lighting, the amber is flashing pattern1, green is off, blue is flashing pattern2 and white is on. The buzzer sound pattern3 is an example of acquisitioning the Signal Tower status.

Object	Object ID	GET Value
controlLightCurrentState	1.3.6.1.4.1.20440.4.1.5.1.2.1.4.1	2
controlLightCurrentState	1.3.6.1.4.1.20440.4.1.5.1.2.1.4.2	3
controlLightCurrentState	1.3.6.1.4.1.20440.4.1.5.1.2.1.4.3	1
controlLightCurrentState	1.3.6.1.4.1.20440.4.1.5.1.2.1.4.4	4
controlLightCurrentState	1.3.6.1.4.1.20440.4.1.5.1.2.1.4.5	2
controlLightCurrentState	1.3.6.1.4.1.20440.4.1.5.1.2.1.4.6	4

3.4.3 TRAP Reception Function

With the set-up containing the designated sender or with the OID included, the TRAP is received. When the TRAP transmission is sent, the information, e-mail transmission and time of reception according to the Signal Tower can be included. For further details on the setting method, refer to “4.9 TRAP Reception Setting Screen”.

3.4.4 TRAP Transmission Function

The TRAP is sent to the designated sender when the TRAP Reception setup for this product is done. For further details on the setting method, refer to “4.4 The SNMP Configuration Screen”.

Please Set the community name for the TRAP transmission of this product to "public."

3.5 PHN Command Reception Function

The socket communication control protocol used with the PHN Series (ex. PHN-3FBE1) is being used to control this product. The socket communications protocol can be selected from either "TCP" or "UDP", and a port number from"10000" to "65535" can be set. The following explains the PHN commands used by the socket communication function. For further details of the setting method, refer to "4.5 Socket Communication Configuration Screen".

Writing Command

Transmitting the following data controls the Signal Tower and buzzer.

"W" (57H)								Operation Data 8 Bits
0	1	0	1	0	1	1	1	Reference of Operation Data Contents

Details of Operation Data

Signal Tower Flashing			Buzzer		Signal Tower Lighting		
Green	Amber	Red	Pattern2	Pattern1	Green	Amber	Red

[Example of sending the writing command transmission]

To operate the Signal Tower with a "red lighting, amber flashing, green lighting, and buzzer pattern2", enter into the operation data a "1" bit to make it turn ON and a "0" bit to make it turn OFF.

[Command]

"W" (57H)								Operation Data (55H)							
0	1	0	1	0	1	1	1	0	1	0	1	0	1	0	1

Response from this product

Normal response (output response)

“A” (41H)	"C" (43H)	"K" (4BH)
1 Byte	1 Byte	1 Byte

Response Error (output failed)

“N” (4EH)	“A” (41H)	"K" (4BH)
1 Byte	1 Byte	1 Byte

Please

In case lighting and flashing are simultaneously turned on by a PHN command, priority is given to the lighting command.

In case buzzer patterns are turned on simultaneously, priority is given to the pattern1 command.

For further details regarding the PHN Series, please contact your nearest PATLITE Sales Representative.

Reading Command

The current operating status of this product is requested.

"R" (52H) 8 Bit							
0	1	0	1	0	0	1	0

Response from this product

Signal Tower Flashing			Buzzer		Signal Tower Lighting		
Green	Amber	Red	Pattern2	Pattern1	Green	Amber	Red

[Example for a data acquisition response]

Signal Tower with Red/Amber Lighting: Response Data: 0000 0011 = 03H

Responding Data (03H) 8 bit							
0	0	0	0	0	0	1	1

Signal Tower with Green Flashing and Buzzer Pattern1 Response Data: 1000 1000 = 88H

Responding Data (88H) 8 bit							
1	0	0	0	1	0	0	0

Please The PHN command is not capable of controlling Flashing Pattern2, Buzzer Pattern3, or Buzzer Pattern4.

3.6 PNS Command Reception Function

The PNS command is an exclusive PATLITE command protocol, which controls the Patlite NHL Series Signal Tower and buzzer. The socket communications protocol can be selected between "TCP" and "UDP", and the communication ports are available from "10000" to "65535".

The following explains the PNS commands being used with a socket communication setup.

(*) This function is not available for the NHC/NHE/NHM-3FB Models.

Writing Command

The following is the protocol used to transmit data to control the Signal Tower and buzzer.
By entering the proper data, the buzzer and LED unit operation from the Signal Tower can be controlled.

Product Classification "XX"		Identifier "S"	(Empty)	Data Size		Data Control Bits 6 bit (Refer to table below)					
58H	58H	53H	00H	00H	06H	Signal Tower					Buzzer
						Red	Amber	Green	Blue	White	

Product Classification

Product classification of this product is fixed at "XX".

Identifier

"S" is used.

Data Size

Capacity of data control bits (data to transmit)

Data Transmission Configuration

Data Control Bits 6 bit					
Signal Tower					Buzzer
Red	Amber	Green	Blue	White	

[Signal Tower]

Non-flashing	00H
Flashing	01H
Flashing Pattern1	02H
Flashing Pattern2	03H
No Change	09H

[Buzzer]

Stop	00H
Buzzer Pattern1	01H
Buzzer Pattern2	02H
Buzzer Pattern3	03H
Buzzer Pattern4	04H
No Change	09H

[Example of sending the writing command transmission]

When writing a command for the Signal Tower to operate with "Red Lighting + Amber Flashing Pattern1+ Green Flashing Pattern2+ Buzzer Pattern4"

[Command]

Product Classification "XX"		Identifier "S"	(Empty)	Data Size		Data Control Bits 6 bit					
58H	58H	53H	00H	00H	06H	01H	02H	03H	00H	00H	04H

Response from this product

Normal response (output response)

ACK
06H

Response Error (output failed)

NAK
15H

Reading Command

Transmitting the following data will execute the status of the Signal Tower and buzzer.

Product Classification "XX"		Identifier "G"	(Empty)	Data Size	
58H	58H	47H	00H	00H	00H

Response from the Read Command

Data Control Bits 6 bit
Refer to "Capacity of Data Control Bits"

[Example for a data acquisition response]

Signal Tower "Red: Flashing Pattern1, Amber: Flashing Pattern2, Green: Lighting with no buzzer" is read, and the response from this product is indicated in the following table after the command transmission.

Data Control Bits 6 bit					
Red	Amber	Green	Blue	White	Buzzer
02H	03H	01H	00H	00H	00H

Status Condition "Clear" Command

The change in the operating state for this product is made when setting up the "Normal Mode Setup".

Product Classification "XX"		Identifier "C"	(Empty)	Data Size	
58H	58H	43H	00H	00H	00H

3.7 E-mail Sending Function

It can transmit up to eight registered e-mail addresses. The subject and message of the transmitting mail can be registered for 16 different situations per subject title to be transmitted via e-mail to the 8 registered addresses. The user authentication method during transmission can be selected from either "SMTP Authentication", "POP Authentication", or "No Authentication". Refer to "4.6 E-mail Sending Setup Screen" and "4.7 E-mail Message Setup Screen" for further details of the setting method.

3.7.1 E-mail Message Contents

The registration of 16 subjects and 16 messages for transmitting mail can be selected in combination when sending an alert message of up to 8 registered E-mail addresses. The e-mail text would include the equipment name, its location, the sender, the message, and supplementary information indicated in table 3.7.1 below. The contents of the registered subject is indicated.

If the 17th fixed e-mail subject title “NH-ORIGINAL” is selected, the equipment location, message transmission time stamp, and event contents is indicated. If the 17th e-mail subject text is selected as “None”, nothing is indicated in the text.

[Registered subject title when selecting No. 17 is "NH-ORIGINAL"]

System Location: YY/MM/DD hh:mm Contents of the event: Name

Table 3.7.1 Fixed Written Subject Contents

Generated Event	Indicated Event Contents	Indicated Name
TRAP Reception	Blank	TRAP Monitor Setup Registered Group Name
Execute "Clear" by pushbutton	“: CLEAR-Switch”	Blank
Execute "Clear SNMP"	“: CLEAR-SNMP”	Blank
Execute "Clear RSH"	“: CLEAR-RSH”	Blank
Ping Monitor Abnormality Detection	“: PING-Error”	The equipment name registered in the Ping Monitor setup
Ping Monitor Recovery Detection	“: PING-Recover”	The equipment name registered in the Ping Monitor setup
Application Monitor Abnormality Detection	“: APP-Error”	The equipment name registered in the Application Monitor setup
Application Monitor Recovery Detection	“: APP-Recover”	The equipment name registered in the Application Monitor setup
Execute “Clear RSH Command”	“: RSH-Executes”	Blank
“TEST” button pressed	“: TEST-Switch”	Blank

3.8 RSH Command Function

3.8.1 RSH Commands

RSH (remote shell) is a CUI program which executes a shell command from one computer to another computer via a computer network. The following explains how to control the Signal Tower via the RSH command.
The command syntax which this product can receive is indicated below. For the setting method of the "RSH Command Connection Authentication /Operation after Reception", refer to "4.8 RSH Command Reception Setup Screen".

Table 3.8.1 Receivable Commands

Command	Contents
alert	Controls Signal Tower/Buzzer
clear/doclear	Returns to Normal Mode
status	Acquisitions the Signal Tower Status
test/dotest	Executes a Self-test

Using the RSH Commands
Command Input Method
rsh␣IP address␣[-l␣Login Name]␣Command␣[Option]
Command Input Method (when the designated sender address is inactive)
rsh␣IP address␣-l␣Common login name when designated sender address is inactive␣Command␣[Option]

Note ␣: indicates a space. [ ]: indicates an option.
The use of login abbreviations for the login name is limited to when the account name and the PC are registered (in half-width alphanumeric characters) on the command reception screen which transmits the RSH command.

alert Command

Contents : To control the Signal Tower and buzzer.
Syntax : alert rygbcz [sec]
Return Value : Status after command is executed
Option : Refer to Table 3.8.2.

Table 3.8.2 RSH Command Option Explanation

Type	Explanation						
rygbc	Turning on and off of the Signal Tower LED Units and Buzzer Alarms						
r	r: Red	(0) Light Off	(1) Lighting	(2) Flashing Pattern1	(3) Flashing Pattern2		(9) No Change
y	y: Amber	(0) Light Off	(1) Lighting	(2) Flashing Pattern1	(3) Flashing Pattern2		(9) No Change
g	g: Green	(0) Light Off	(1) Lighting	(2) Flashing Pattern1	(3) Flashing Pattern2		(9) No Change
b	b: Blue	(0) Light Off	(1) Lighting	(2) Flashing Pattern1	(3) Flashing Pattern2		(9) No Change
c	c: White	(0) Light Off	(1) Lighting	(2) FlashingPattern1	(3) Flashing Pattern2		(9) No Change
z	z: Buzzer Alarm	(0) Buzzer Off	(1) Pattern1	(2) Pattern2	(3) Pattern3	(4) Pattern4	(9) No Change
sec	Restores the Signal Tower to its previous command status. When the time exceeds the set value, it returns to the previous Signal Tower condition. The time can be set from zero to 99. The status will not return if no input or a zero has been entered.						

[Command Transmission Example]

Ex. 1) A product with an IP address of [192.168.10.10] and designated sender user name of "root", with Red Lighting, Green Lighting and Buzzer Pattern2 On:

rsh 192.168.10.10 -l root alert 101002

Ex. 2) A product with an IP address of [192.168.10.10] and a common login name of "patlite", with Red Lighting and White Flashing Pattern2:

rsh 192.168.10.10 -l patlite alert 100020

[Command Transmission Example - cont.]

Ex. 3) A product with an IP address of [192.168.10.10] and a designated sender user name of "root", with the Red Lighting, Amber Flashing Pattern2, Green Lighting and Buzzer Pattern3, all on for 20 seconds:

rsh 192.168.10.10 -l root alert 131003 20

Ex. 4) A product with an IP address of [192.168.10.10] with Red Lighting, Amber Flashing Pattern2, Green Lighting, Buzzer Pattern3, all on for 20 seconds (no login name)

rsh 192.168.10.10 alert 131003 20

clear/doclear Command

Contents : To clear the Signal Tower and Buzzer, returning to the Normal Mode.
Syntax : clear [-p] [-z] , doclear [-p] [-z]
Return Value : Status after command is executed
Option : Refer to Table 3.8.3.

Table 3.8.3 clear/doclear Command Option Explanation

Type	Explanation
-p	Turn off all Signal Tower Lights
-z	Turn off Buzzer Alarm
None	Return to Normal Mode

[Command Transmission Example]

Ex. 1) A product with an IP address of [192.168.10.10] and a common login name of "patlite", with all the Signal Tower Lights turned off:

rsh 192.168.10.10 -l patlite clear -p

with all the Signal Tower Lights turned off (no login name):

rsh 192.168.10.10 clear -p

Ex. 2) A product with an IP address of [192.168.10.10] and a designated sender user name of "root", with the Buzzer alarm turned off:

rsh 192.168.10.10 -l root doclear -z

with the Buzzer alarm turned off (no login name):

rsh 192.168.10.10 clear -z

Ex. 3) A product with an IP address of [192.168.10.10] and a designated sender user name of "root", with all the Signal Tower Lights and Buzzer returned to the Normal Mode:

rsh 192.168.10.10 -l root clear

with all the Signal Tower Lights and Buzzer returned to the Normal Mode (no login name):

rsh 192.168.10.10 clear

status Command

Contents : Return the present status of the Signal Tower and buzzer to Normal Mode.
Syntax : status
Return Value : Current Condition rygbcz

[Command Transmission Example]

Ex. 1) A product with an IP address of [192.168.10.10] acquisitions the operating state of the Signal Tower. The designated sender user name for the Signal Tower status acquisition is "patlite".

rsh 192.168.10.10 -l patlite status

Response: 201003

The login name was omitted for status acquisition of the Signal Tower.

rsh 192.168.10.10 status

Response: 201003

test/dotest Command

Contents : Executes confirmation of the Signal Tower and buzzer operation in sequence order of Red, Amber, Green, Blue, White and Buzzer Pattern1.
Syntax : test , dotest
Return Value : None

[Command Transmission Example]
Ex. 1) A product with an IP address of [192.168.10.10] can verify operation of the Signal Tower.
The common login name for the Signal Tower status confirmation is "patlite".
rsh 192.168.10.10 -l patlite test
rsh 192.168.10.10 -l patlite dotest

Signal Tower status confirmation is executed (no Login Name):
rsh 192.168.10.10 test
rsh 192.168.10.10 dotest

Ex. 2) A product with an IP address of [192.168.10.100] can verify operation of the Signal Tower.
The designated sender user name for the Signal Tower status confirmation is "root"
rsh 192.168.10.100 -l root test
rsh 192.168.10.100-l root dotest

Signal Tower status confirmation is executed (no Login Name):
rsh 192.168.10.100 test
rsh 192.168.10.100 dotest

3.8.2 RSH Alert Timer Reset Function

The RSH alert timer reset function is capable of being selected for "Shared" or "Individual" when setting up the timer function for the Signal Tower lights and buzzer control.
(Refer to 3.8.2 "Timer Reset Function")

Shared : Each Signal Tower tier and buzzer are controlled by a common timer.
Individual : Each Signal Tower tier and buzzer are controlled by individual timers.

The following explains the difference in operation between the "Shared" and "Individual" selection for this product when setting up the alert timer reset function.

[Procedure]

Ex. 1) Transmit the command to the products IP address [192.168.10.10]. Use the login name [root], then execute the following commands of [Red Lighting; other colors no status change; no buzzer status change] for 10 seconds.

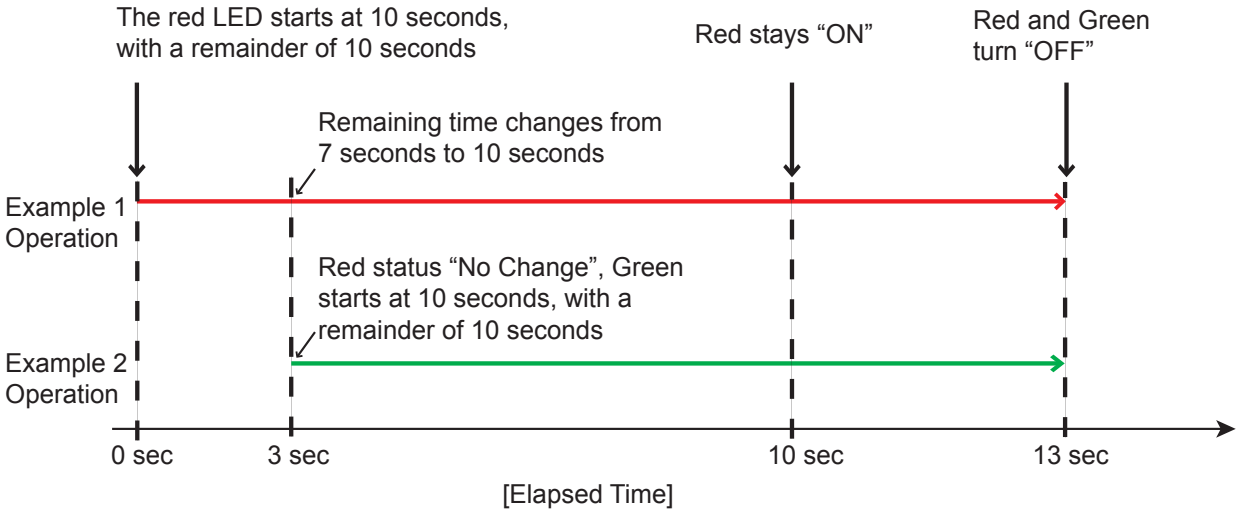
rsh 192.168.10.10 -l root alert 199999 10

Ex. 2) 3 seconds after "Ex.1)", transmit the command to the products IP address [192.168.10.10]. Use the login name [root], then execute the following commands of [Green Lighting; other colors no status change; no buzzer status change] for 10 seconds.

rsh 192.168.10.10 -l root alert 991999 10

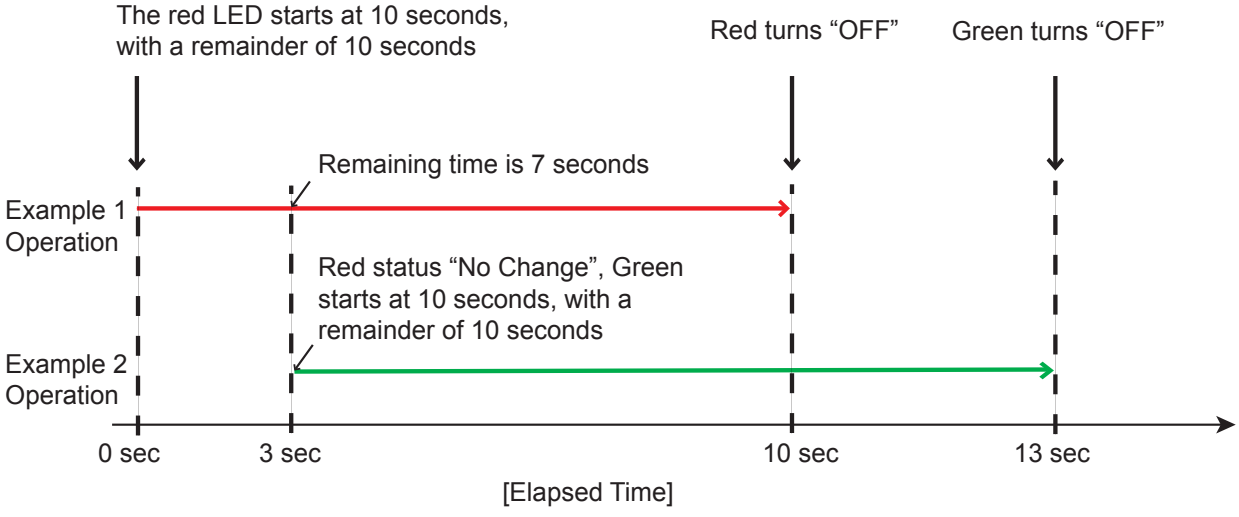
Alert Timer Reset Function set for "Shared"

The execution affects the influence of the timer when the command is sent.



Alert Timer Reset Function set for "Individual"

The execution does not affect the influence of the timer when the command is sent.



3.9 Ping Monitoring Function

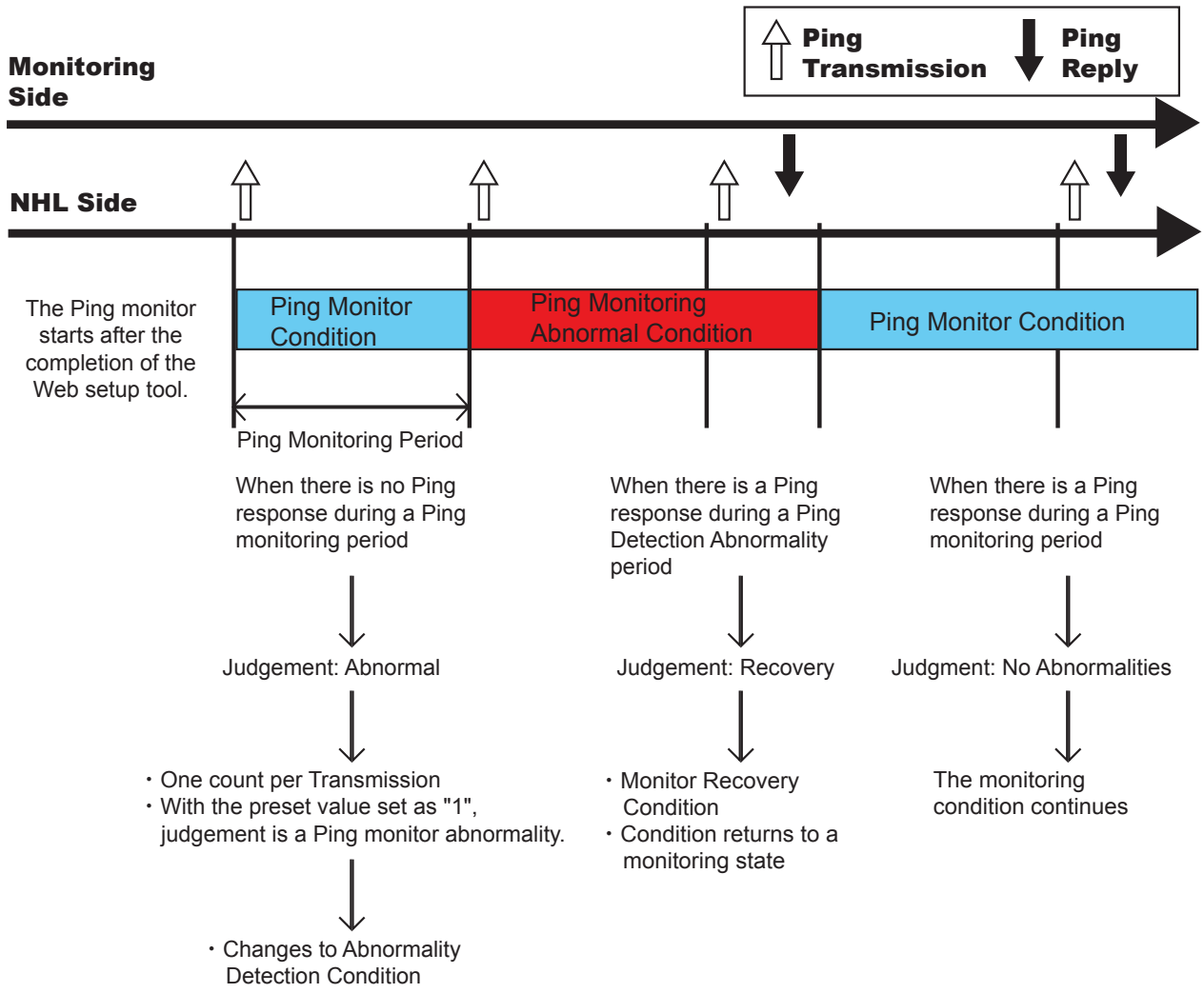
The Ping transmission is used to monitor the response of a device in a network. A maximum of 24 nodes can be monitored and the control of abnormality detection and abnormality recovery can be set up separately. The Ping monitor setup for No's. 21 to 24 has a few more adjustable parameters. Refer to "4.10 Ping Monitoring Setup Screen" for details on the setting method.

3.9.1 Ping Monitoring Function (Nodes 1 to 20)

The monitoring period is fixed at 60 seconds for numbers 1 through 20 of the Ping Monitor to transmit one Ping per device to monitor for every period. The Ping Monitor function starts soon after the completion of the Ping Monitor setting. When there is no Ping response during the monitoring period, a judgement for the number of times the abnormalities in a Ping response is counted, and when the number of times for transmission is compared with the setup value for judgment, the decision is made as to whether an abnormality has occured or not, and the result causes a status change based on the Ping Monitor Settings.

Example) When the number of times for transmission is set to "1".

Fig. 3.9.1 Ping Monitoring Function (For Ping Monitor Setting Screen No. 1 to 20)



Please

If a "Clear" operation (Refer to 3.11 "Clear Control Function") is executed when a monitoring detection is active, it will return to the monitoring condition from the abnormality detection status.
Even with the double-push clear setting, once the clear button is pressed, the status will return to the monitoring condition.
For other functions outside the "Clear" operation, because they do not control the abnormality detection condition, the Ping monitor abnormality status will remain uncleared. Any operations outside a “Clear command may be due to the Ping Monitoring Function which continues to remain active when it is in operation.

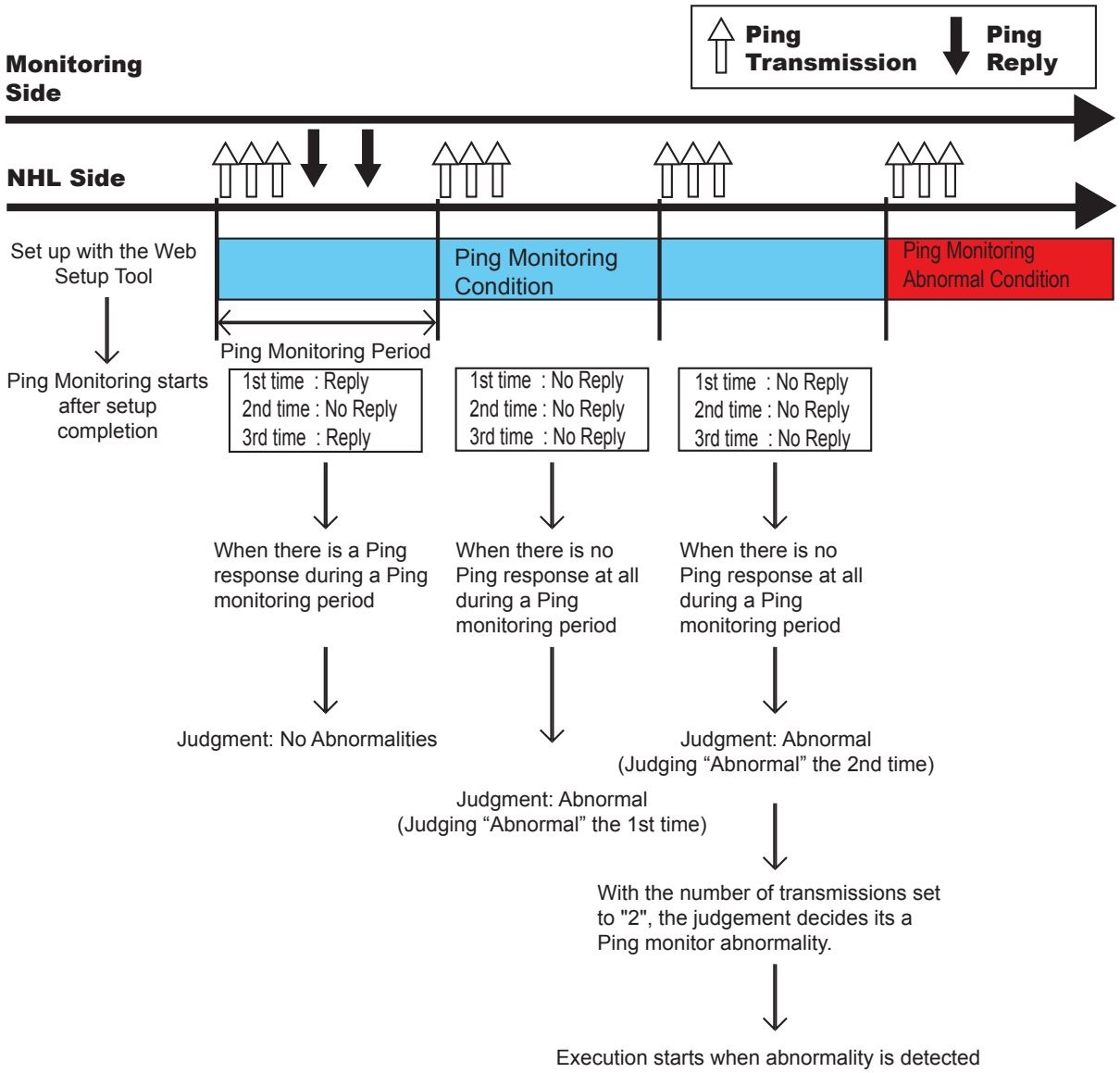
3.9.2 Ping Monitoring Function (Nodes 21 to 24)

The following explains the function of operation for setting up the frequency of transmissions and the number of transmissions within the frequency number. The monitor period can be set up from 1 to 600 seconds for the Ping monitor period.
The following is an example of setting the number of times to transmit with a value of "2" and "3".
With the number set for "2", the transmission will send two "packets", and if judgement of an abnormal condition continues to be generated twice, the Ping Monitor Condition detects an abnormality. If the transmission number is set to "3", then the transmission will send three "packets" during the Ping monitoring period. (Refer to the following figure)
A judgement of abnormality is detected at the time of the following monitoring periods.

1. If one ping response out of three "packets" is recieved, then judgement of no abnormality is detected.
2. If all three ping responses were not answered among the three "packets", it counts as one time for judging that an abnormality is occuring.
3. Even in the following time period, if there is no ping response, the number of times to count an abnormality is counted as one time. The total number of transmission times is set to "2", and the Ping Monitoring Abnormality Condition is executed.

Note When the Abnormality Judgement Value is set as a "1", if the next Ping Monitoring Abnormality Condition is judged as "no abnormality", then the number of judging abnormality is cleared (back to "0").

3.9.2 Ping Monitoring Function (For Ping Monitor Setting Screen No. 21 to 24)



Please If a "Clear" operation (Refer to 3.11 “Clear Control Function”) is executed when a monitoring detection is active, it will return to the monitoring condition. With the double-push clear setting, the status will return to the monitoring condition on the first press of the "CLEAR" button.

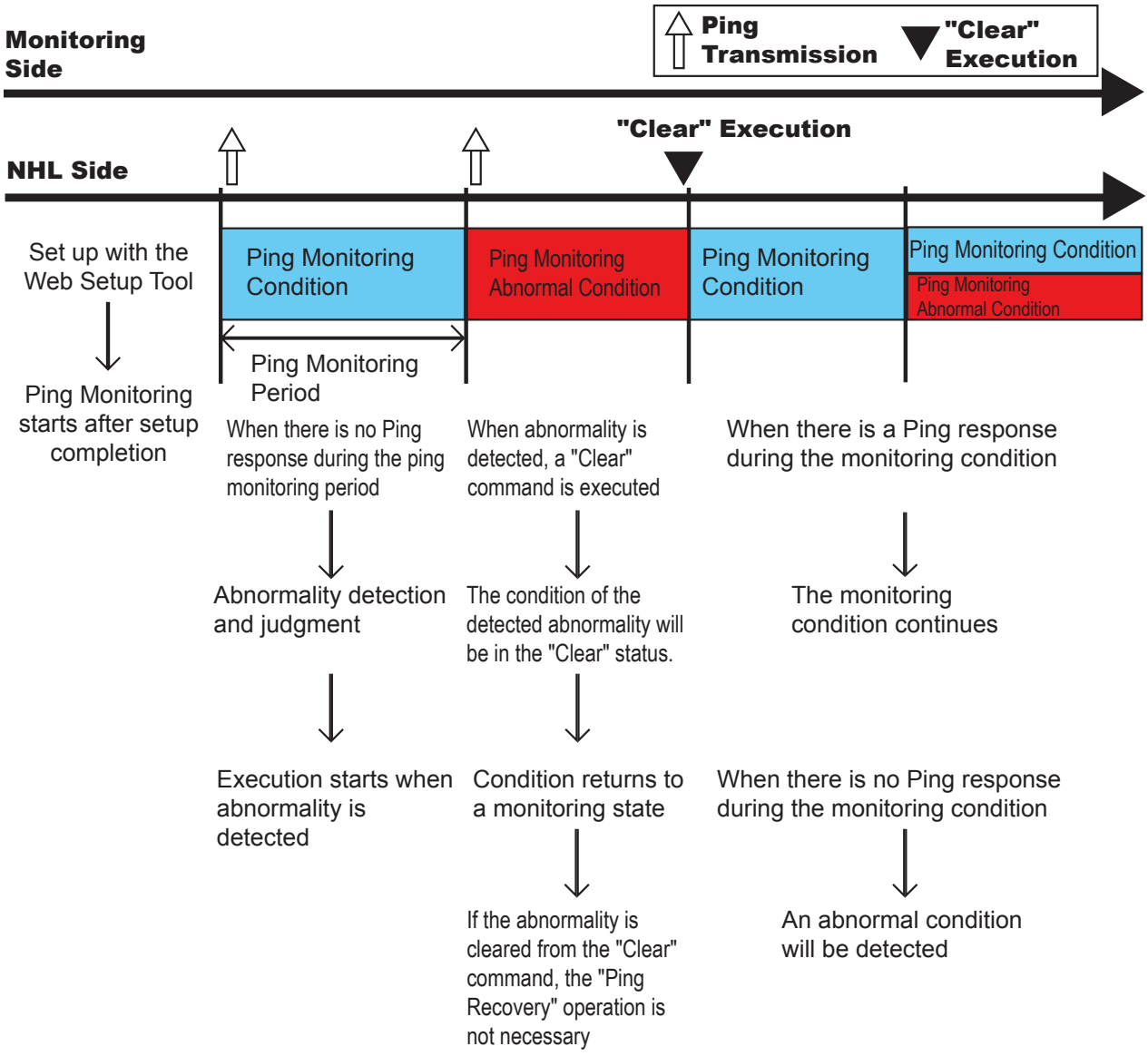
3.9.3 Ping Monitoring Function (“Clear” Command Outside Sources)

(When a "Clear" execution from an outside source is requested at the time of abnormality detection)
The following is an example for the procedure when an executed "Clear" command is received from an outside source while the Ping Monitoring function detects an abnormality ("Clear" command executed via the "Clear" switch, RSH "Clear" Command, PNS "Clear" command, SNMP "Clear" Command, or a "Clear" Command from the Web Setup Tool).

Example) When a "Clear" command is transmitted from an outside source at the time an abnormality is detected by the Ping Monitor.

1. From the monitoring condition, when a monitoring abnormality occurs, the condition of the Signal Tower changes at the time of detecting the abnormality.
2. If a "Clear" command is received during the abnormality detection, the status of abnormality detection will be cleared and it will return to its normal mode.
3. If there is a Ping response from the next Ping monitor execution, the monitoring condition will continue as normal. If there is no response, the condition will immediately return to the abnormality detection mode.

Fig. 3.9.3 Setting screen 21 to 24 operation flow-chart example



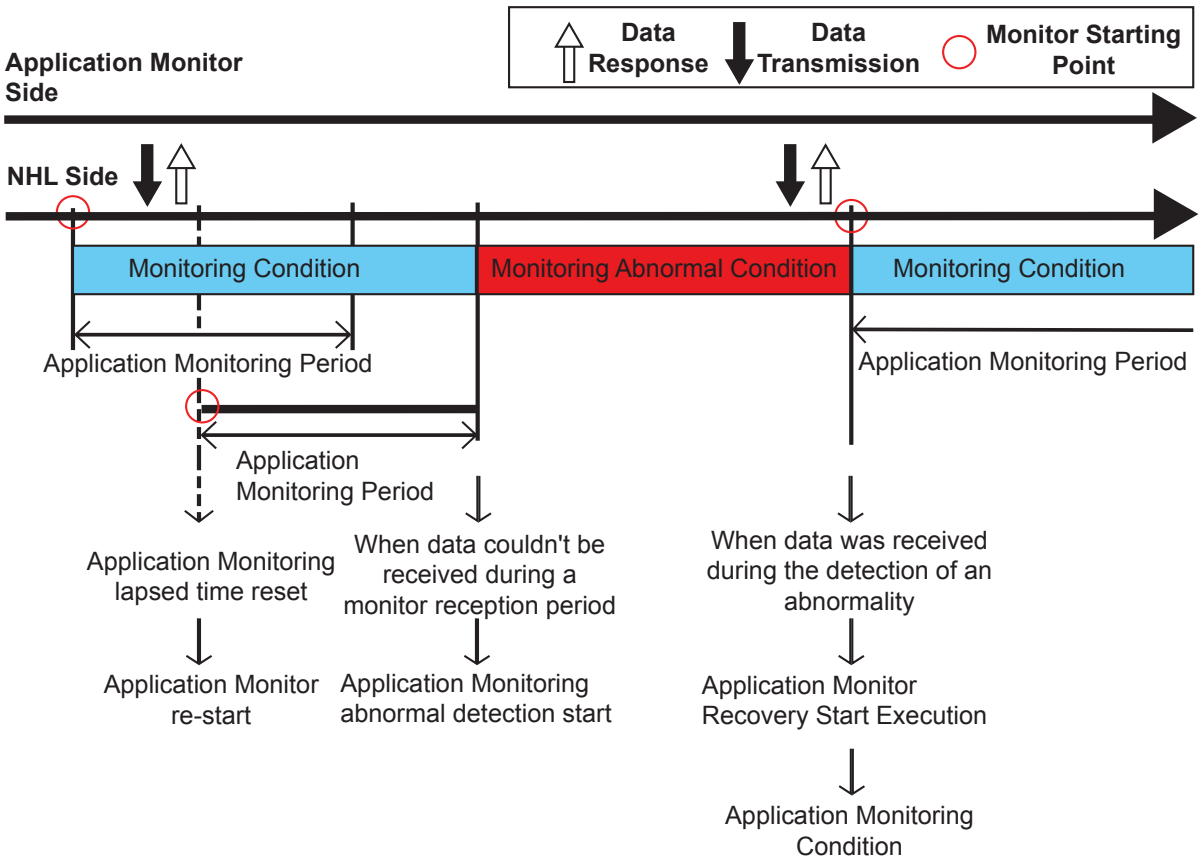
Please In cases where it returns to a monitoring condition from a "Clear" command, it will not branch to the "Ping Recovery" operation from an abnormal detection.

3.10 Application Monitoring Function

By creating an additional transmission command for a customer's application, this product can monitor the response of the application by receiving the data from it.
If data is not received within the monitoring period, it makes a judgement that the communication has become abnormal, and at the time of the abnormality, sends a status change to the Signal Tower. After a generated event, if data is received from the monitored candidate, it will detect a recovery from the abnormal operation.
Refer to "4.11 Application Monitoring Configuration Screen" for details on the setting method.
As an example, with a monitoring period of 30 seconds, the received data from the application is monitored.

1. After the setup is complete and it receives data from the address monitoring point, the monitoring will commence.
2. If data is received within the monitoring period of 30 seconds, it will be judged as having no abnormalities.
3. However, if the data is not able to be received within the allotted period (30 seconds in this example), it makes a judgment of abnormality.
   Once judged as abnormal, the operation at the time of the detected abnormality is carried out.
4. If data is received from the application after detecting a generated event of abnormality, it will detect a recovery from the abnormality.
   The operation at the time of recovery from the abnormal condition will return to its monitoring condition again.

Fig. 3.10.1 Detailed Example of Application Monitoring



Please Recovery from an abnormal operation can only occur if a monitored condition was detected as abnormal.

3.11 "Clear" Control Function

The "Clear" operation is accessible from the following commands; "Clear" command executed via the "Clear" switch, RSH "Clear" Command, PNS "Clear" command, SNMP "Clear" Command, or a "Clear" Command from the Web Setup Tool.
Refer to "4.12 "Clear' Control Setup Screen" for details on the setting method.

3.12 Normal Mode Settings

The Signal Tower can be set up to display its "normal state of operation", based on the user's preference for lights and buzzers to be on when no warning conditions occur. Refer to "4.13 Normal Mode Setup Screen" for details on setting it up via the Web Setup Tool.

3.13 Reinitialization Function

From the Web Setup Tool, this unit can be reinitialized to revert all settings back to the default (factory) settings, while leaving the network settings as is when resetting the other settings. Refer to "4.16 Reinitialization Setup Screen" for details on the setting method.
Also, it can initialize the network settings of this product to its default settings in addition to returning the other settings to their default settings.

【Method for full initialization, including the network setup】
1. Set the volume level switch to the "HIGH" position.
2. Turn on the power supply while simultaneously pushing the "TEST" switch.
3. After the Signal Tower does an all-point lighting test, the Signal Tower lights go out. Release the switch after all the Signal-Tower lights are out.
4. The Signal Tower will light up again about 1 minute after. The Signal Tower will then flash Pattern1 afterward to indicate the initialization is complete.
5. Push the clear button to stop the flashing.
   ※ If the Ping monitor etc. are set up, an abnormal operation detection may occur.

【Method for initialization to revert the network settings back to the factory default value】
1. Set the volume level switch to the "OFF" position.
2. Turn on the power supply while simultaneously pushing the "CLEAR" and "TEST" switch.
3. After the Signal Tower does an all-point lighting test, the buzzer will make an audible sound. Release the switch after the buzzer sounds.
4. When the Signal Tower goes out, it indicates the completion of initilization.

Please Do not overexert pressure to the "CLEAR" switch, "TEST" switch and volume level switch. Failure to comply may damage the unit.

3.14 Event Log Output Function

The Web Setup Tool displays an event log. Moreover, it is possible to download it as a text file. The following is the description of the recording mode labels for the event log.

Event Name	coldStart	Event Contents	No Display
Event Details	Records at the moment of start up.		

Event Name	ACCESS	Event Contents	No Display
Event Details	Records at the moment of authentication failure. Records at the moment of Web login failure.		

Event Name	MAIL	Event Contents	E-mail Transmission
Event Details	Records at the moment of an e-mail transmission.		

Event Name	PING	Event Contents	Ping monitor abnormalities and the IP address object Ping abnormality response and the IP address object
Event Details	It records when the Ping monitor status changes. "Ping Monitoring Error": When an abnormality event in the Ping monitor occurs, it records it with the target IP address. "Ping Recovery": When an abnormality in the Ping monitor is restored, it records it with the target IP address.		

Event Name	APL	Event Contents	Application Monitoring Error Applicaton Recovery
Event Details	It records when an abnormality in the application monitor is detected. "Application Monitoring Error": It records when the abnormalities in an application monitor occurs. "Applicaton Recovery": It records when the abnormality in the application monitor is restored.		

Event Name	TRAP	Event Contents	Trap reception IP address and the designated sender
Event Details	When a registered Trap is received, it is recorded with the IP address of the designated sender.		

Event Name	CLEAR	Event Contents	"RSH" IP address and designated sender Web Setup Tool "Clear" "PNS" Command	"CLEAR Switch" ”SNMP” Command
Event Details	The Signal Tower is returned to its normal operating status during operation. "CLEAR" Switch": It records when the clear switch to this product is pushed. "SNMP": It records when a "CLEAR" has been executed by the SNMP Command (controlLightSnmpClear). "RSH": It records when a "CLEAR" has been executed by the RSH Command, and displays the designated sender IP address. "PNS Command": It records when a "CLEAR" has been executed by the PNS Command.			

Event Name	RSH	Event Contents	IP address, command argument, and the "alert" designated sender.※ "Status" "Test"
Event Details	It records when the RSH Command is executed. (The "clear" execution is not included) "ALERT": When the alert command is executed, it records the argument and designated sender IP address. ※ An IP address is not written in cases where the designated sender address is inactivated. "Status": The status command is recorded at the time of execution. "Test": The test command records at the time of execution.		

Event Name	SNMP	Event Contents	”CONTROL”
Event Details	When this product is operated by the SNMP Set Commands, the Signal-Tower color and buzzer conditions are recorded. The applicable command is "controlLightControlState".		

3.15 Configuration Data Save/Load Setup

The setting menu for this product is read and can be saved as configuration data on the PC.
Also, configuration data which was read can be selected to be written in.
The config setup is done from the Web Setup Tool.
Refer to "4.19 Configuration Data Save/Load Setup Screen" for the setting method.

3.16 Firmware Update Function

The firmware for this product can be updated.
The firmware is updated via the Web Setup Tool.
Refer to "4.20 Firmware Update Screen" for the setting method.

4 Function Setup

The function setup is available in order to take advantage of the various functions. To access the settings, click the setup items on the left-hand side of the Web Setup Tool to open the set up screen for the various functions.

Setup Category	Setup Screen	Setup Contents
Setup Menu	System Configuration	Sets up the network parameters.
	Clock Setup	Sets up the time for this product.
	User Authorization Configuration	Sets up the login password for this product.
	SNMP Configuration	Sets up the functions for the SNMP SET/GET and TRAP transmission.
	Socket Transmission Configuration	Sets up the ports to control the PHN Command and PNS Command outputs.
	E-mail Settings	Setup for sending E-mail notifications.
	E-Mail Message Settings	Setup for writing the message contents to be transmitted by E-mail.
	RSH Command Configuration	Setup for receiving the rsh command and to send the E-mail when an rsh reception and TRAP transmission are executed.
Operation Settings	TRAP Reception Configuration	The setup which controls the status condition when a TRAP or TRAP reception is recieved.
	Ping Monitor Configuration	The setup of the address for the monitored equipment and the management when an abnormality is detected.
	Application Monitoring Configuration	The setup is to verify whether data can be received from the monitored object.
	“Clear” Control Configuration	The setup for sending an E-mail when the “Clear” switch is pressed, and for the TRAP transmission setup.
	Normal Mode Settings	A setting, such as turning on a Green LED Unit, to indicate a normal condition.
	“Test” Switch Settings	The setup for sending an E-mail when the “Test” switch is pressed, and for the TRAP transmission setup.
NH Unit Controls	Signal Tower Output Control	The Signal Tower status is controlled from the browser.
	Reinitialization	The settings return to factory default values.
	Reboot	Reboots this product after settings have been changed to put them into effect.
Maintenance Functions	Event Log	The event log is displayed and can be downloaded.
	Configuration Data Save/Load Setup	The setup items can be saved as config data and reloaded at any time.
	Firmware Update	The Firmware update function can be done from this screen.
	Setup Table Entries	The list of items, their setup and operation contents, and the current firmware version is displayed.

Please After the desired setup is completed, reboot this product by pressing the "reset" switch or by disconnecting the power and reconnecting it.

4.1 System Setup Screen

The network parameters for this product can be setup through a browser. The default IP address is "192.168.10.1".

The parameters can be setup from the System Setup Screen (Fig. 4.1.1 System Setup Screen) from the default values as shown in Table 4.1.1.

Fig. 4.1.1 System Setup Screen

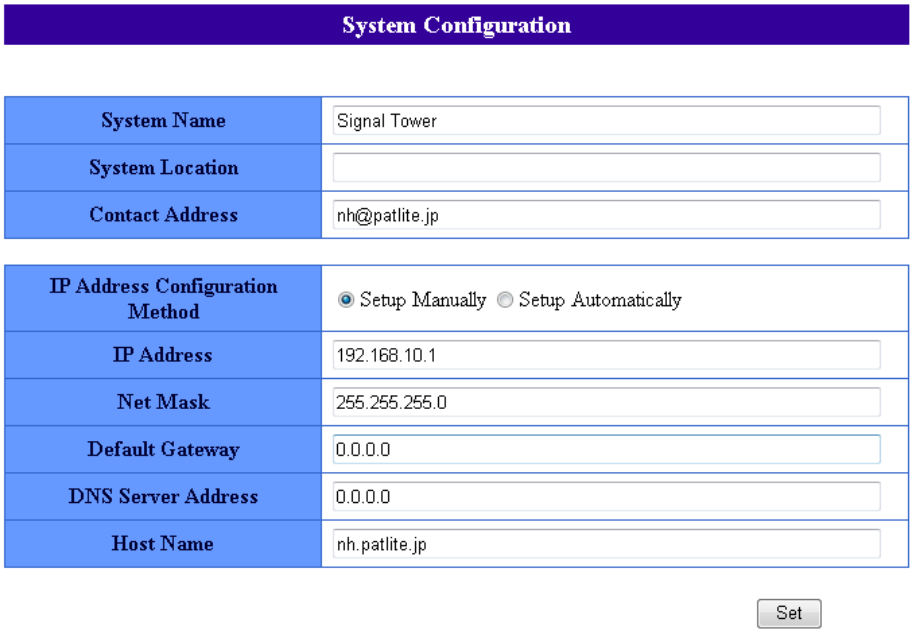


Table 4.1.1 System Setup Parameters

Item	Contents	Default Value	Input Parameter	Setting Option
System Name	The name for this product can be set.	Signal Tower	Full/Half-width Characters Maximum 31 Characters	O
System Location	The setup location of this product can be entered.	Blank	Half-width alphanumeric characters and underscore " _ " Maximum 31 Characters	O
Contact Address	Setup the contact address.	nh@patlite.jp	Mail address format Maximum 63 Characters	O
IP Address Configuration Method	Select between Manual or Automatic IP address configuration.	Setup Manually	Select Radio Button	X
IP Address	Setup the IP address of this product.	192.168.10.1	IP address format	X
Netmask	Setup the subnet mask of this product.	255.255.255.0	IP address format	X
Default Gateway	Setup the default gateway of this product.	0.0.0.0	IP address format	O
DNS Server Address	Setup the DNS server of this product.	0.0.0.0	IP address format	O
Host Name	Setup a host name	nh.patlite.jp	Enter a legitimate host name Maximum 63 Characters	—

Please

The values for "Setting Option" in this manual has to have a valid entry, or can be left blank.

- O Indicates the entry can be omissible, or any entry within the set parameters.
- X Indicates the entry cannot be omissible. Enter a valid parameter.
- – Indicates an entry which cannot be omitted, or abbreviated. The value has to be entered in accordance to the customer's environment.

4.2 Clock Setup Screen

The clock setup for this product can be done through a browser. The clock setup can be accessed through the System Setup Screen (Fig. 4.2.1 Clock Setup Screen) from the default values as shown in Table 4.2.1.

Fig. 4.2.1 "Clock Setup" Screen

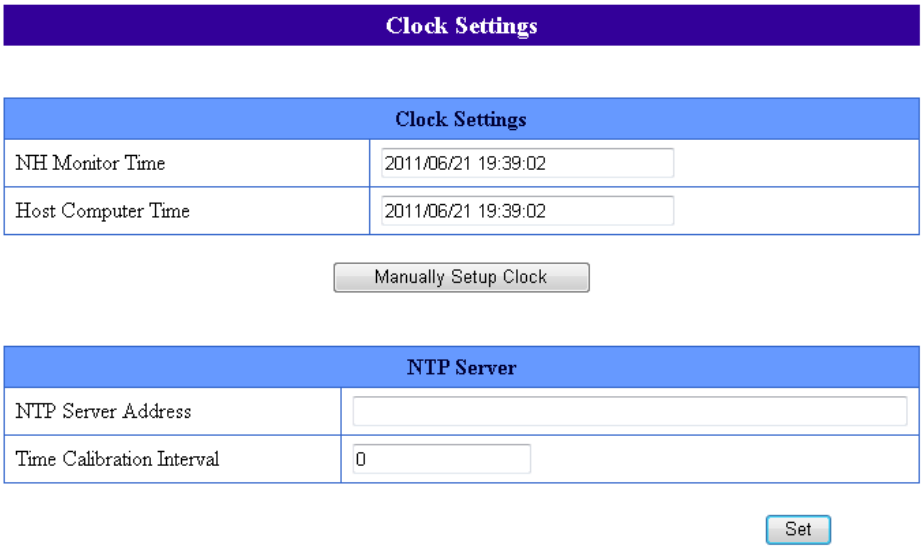


Table 4.2.1 Clock Setup Parameters

Item	Contents	Default Value	Input Parameter	Setting Option
NTP Server Address	Setup the NTP server address.	Blank	Server's Host Name or IP address Maximum of 63 characters	O
Time Calibration Interval	Setup the interval to communicate with an NTP server.	0	Half-width numbers from 0 to 1440 (minutes)	O

Two kind of clock setup methods are indicated below:

- Synchronizing with the PC clock time when logging in.
- Adjusting clock of this product when communicating with an NTP server.

4.2.1 Synchronizing with the PC clock

Clicking the "Manually Setup Clock" button will synchronize with the time on the PC which has been logged into this product.

[Setup Method]

1. Compare the columns between the "NH Monitor Time" and the "Host Computer Time".
2. Click the "Manually Setup Clock" button to synchronize the time with the PC which is logged in.

Please

Due to the reading delay in the software, this product may not reflect the exact time down to the second to match the PC, so there may be a few seconds of a delay.
When not using an NTP server, please check the time of this product periodically.
If power to this unit is disconnected for about a day and a half, it may result in an offset of the time, so it is highly recommended that the customer who uses this product to resynchronize the time.

Fig. 4.2.2 "Manually Setup Clock" Setup Screen Before

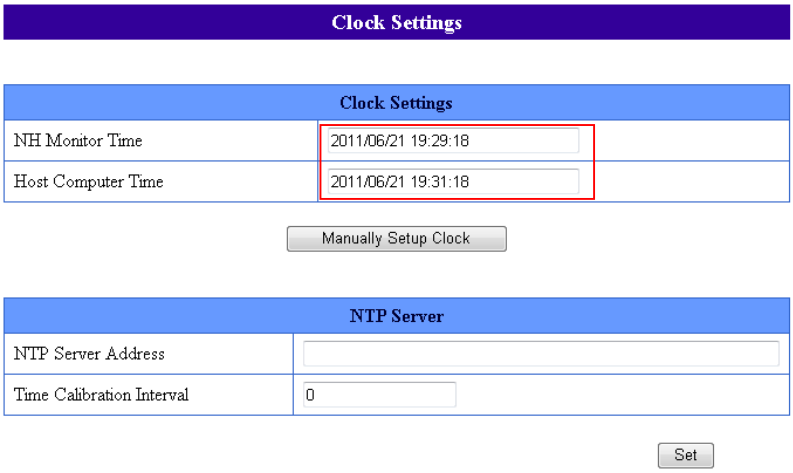
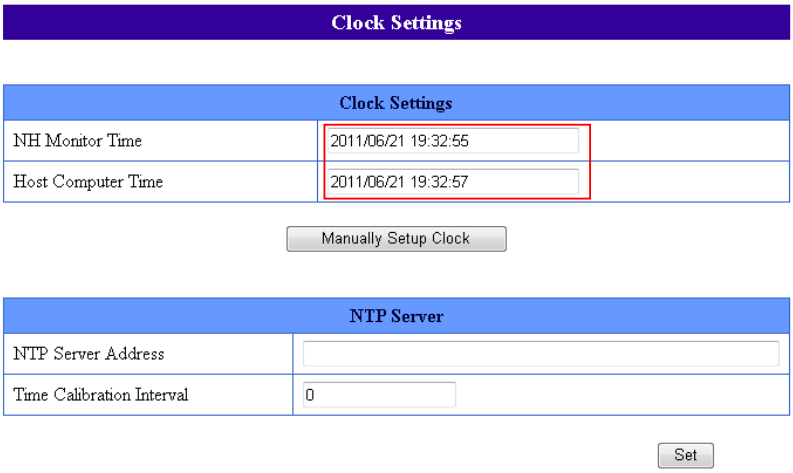


Fig. 4.2.3 "Manually Setup Clock" Setup Screen After



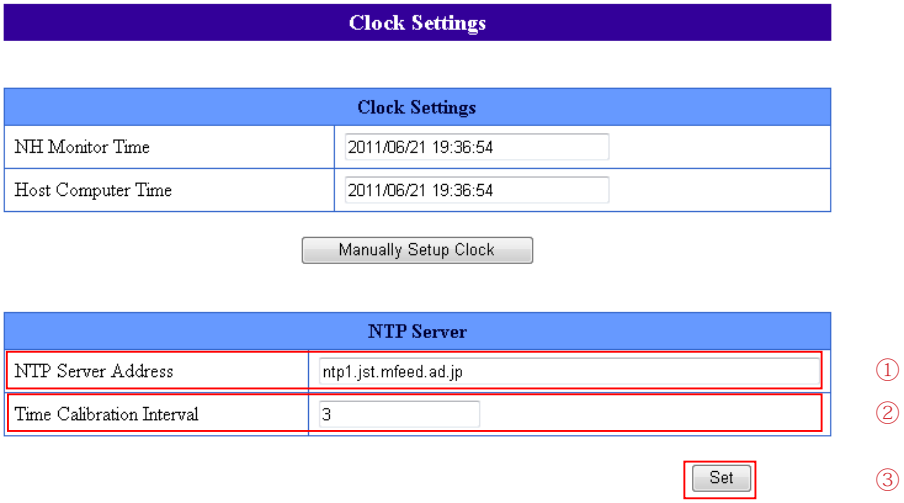
4.2.2 Synchronizing with an NTP server

An NTP server can be linked by entering the NTP server address to synchronize with the clock in this product, and the time updated by sending a request for time adjustment to that NTP server.

[Setup Method]

1. Enter the NTP server address in the "NTP Server Address" column.
2. Enter a value for the interval to communicate with the NTP server in the "Time Calibration Interval" column.
3. Click the "Set" button to activate the setup.

Fig. 4.2.4 NTP server Clock Setup Screen



Please

- Depending on the NTP server, too many requests within an alloted time may cause the server to disconnect for their security reasons.
- Some NTP servers may require the customer to submit an application to receive a password for access, which is beyond the scope of this product. It is the customer's responsibility to coordinate with that service.

4.3 User Authentication Configuration Screen

Setup a password to log into the Setup Screen for this product.
Enter a password, then re-enter the password to verify its entry, then click the "Set" button to activate it. The next time for logging in will ask for the new password. The password entry will allow up to 16 half-width alphanumeric characters and a period.

[Setup Method]

1. Enter the password to be changed into the "Password" column.
2. Enter the same password to be changed into the "Re-enter Password" column to verify the entry.
3. Click the "Set" button to activate the setup.

Log in with the new password the next time the login screen appears.

Fig. 4.3.1 User Authentication Setup Screen

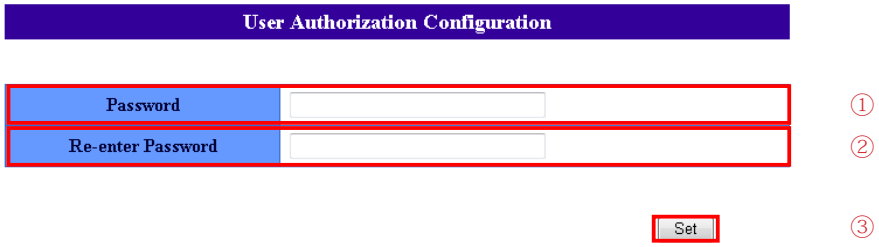


Table 4.3.1 User Authentication Setup Parameters

Item	Contents	Default Value	Input Parameter	Setting Option
Password	Setup a new password.	Blank	Half-width alphanumeric character and period “.” Maximum 16 Characters	X
Re-enter Password	Confirm the new password	Blank	Half-width alphanumeric character and period “.” Maximum 16 Characters	X

4.4 SNMP Setup Screen

With an SNMP, this product can communicate outside the community name for the notification of a TRAP, using the SNMP SET/GET in reference to each item for this product, and generate the event with this product.

4.4.1 SNMP SET/GET

An SNMP SET/GET can be setup.

[Setup Method]

1. Select the "Active" radio button to enable the SNMP function.
2. Enter the SET/GET community parameter.

4.4.2 SNMP TRAP Transmission

An SNMP TRAP Transmission can be setup.

[Setup Method]

3. Select the "Active" radio button to enable the TRAP transmission function.
4. Enter the TRAP Transmission community parameter and the TRAP transmission frequency.
5. Enter in the TRAP Address column, the IP address for sending the TRAP notification to.
6. Click the "Set" button to activate the setup.

TRAP command which is transmitted when the TRAP is active

OID: 1.3.6.1.4.1.20440.4.1.6.3
Name: trapPatliteTrapReceived

Fig. 4.4.1 SNMP Setup Screen

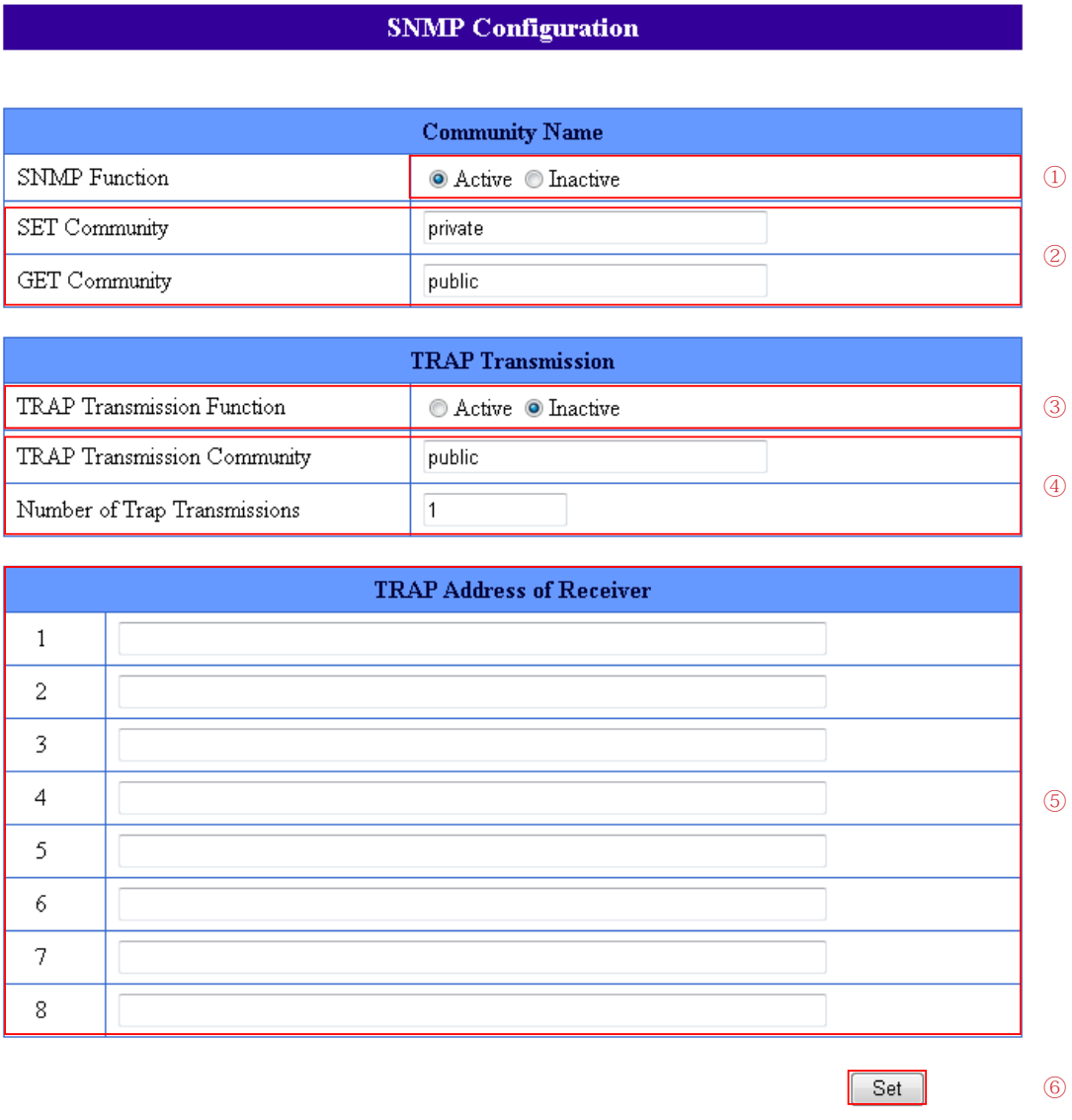


Table 4.4.1 SNMP Setup Parameters

Item	Contents	Default Value	Input Parameter	Setting Option
SNMP Function	Setup to Activate/Inactivate the SNMP function.	Active	—	—
SET Community Name	Setup the name to use when reading an SNMP setup value.	private	Half-width alphanumeric character and underscore “_” Maximum 32 Characters	—
GET Community Name	Setup the name to use when writing an SNMP setup value.	public	Half-width alphanumeric character and underscore “_” Maximum 32 Characters	—
TRAP Transmission Function	Setup to Activate/Inactivate the trap transmission function.	Inactive	—	—
TRAP Transmission Community Name	Setup the community name for the trap which is transmitting.	public	Half-width alphanumeric character and underscore “_” Maximum 32 Characters	—
TRAP Transmission Frequency	Setup for the number of times a trap can be transmitted	1	Half-width numbers from 1 to 10	—
TRAP IP Address to Receiver	IP address format for the destination of sending a TRAP transmission to.	Blank	Characters which can be used for a server address Maximum 63 Characters	O

4.5 Socket Communication Setup Screen

Set up for the use of the PHN Command and PNS Command with Socket Communication.

[Setup Method]

1. Select either "TCP" or "UDP" in the "Protocol" field for the communication method.
2. Enter the port to be used in the "Port Number" field.
3. Click the "Set" button to save all entries.

Fig. 4.5.1 Socket Communication Setup Screen

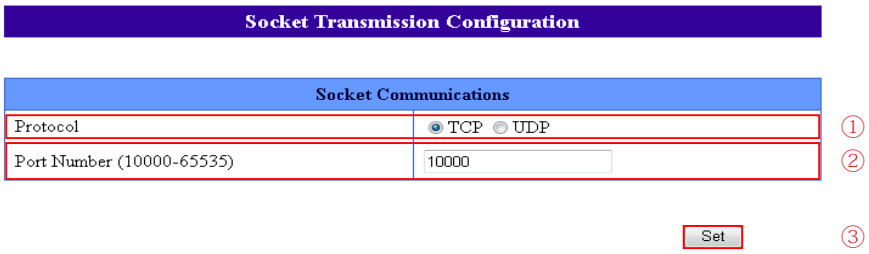


Table 4.5.1 Socket Communication Setup Parameters

Item	Contents	Default Value	Input Parameter	Setting Option
Protocol	Select from TCP or UDP	TCP	—	—
Port Number	Set the reception port number	10000	Half-width numbers from 10000 to 65535	—

Note Refer to 3.5 “PHN Command Reception Function” for PHN Commands.
Refer to 3.6 "PNS Command Reception Function" for PNS Commands.

4.6 Mail Transmission Setup Screen

This product can be set up to send E-mail messages. The following are events which will transmit E-mail messages.
When transmitting an E-mail, it is transmitted in sequence from the smaller address number to the larger address number of the recipient.

E-mail Transmitting Event

- At the time of an RSH command reception
- At the time of a TRAP reception
- At the time when the "CLEAR" button is pressed.
- At the time when a "Clear SNMP" command is executed.
- At the time of a Ping monitoring abnormality and Ping recovery event.
- At the time of an application monitoring abnormality and recovery event.

[Setup Method]

1. Set up the SMTP mail server address and port number.
2. When using the SMTP authentication, set up the account name and SMTP authentication password.
   When using the POP authentication, set up the POP account name and POP authentication password.
   Select "None" for when authentication is not necessary.
3. Set up in the designated sender address column the E-mail address of the designated sender.
4. Set up the address of the recipient.
5. Click the "Set" button to save all settings.

Fig. 4.6.1 Mail Transmission Setup Screen

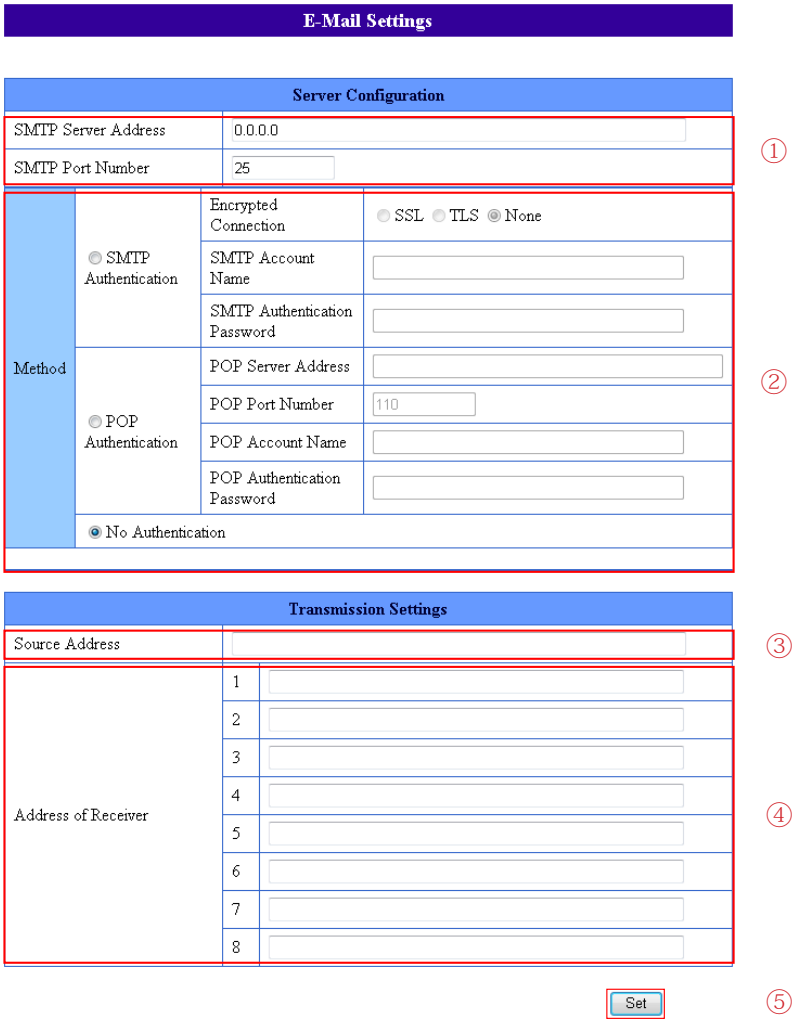


Table 4.6.1 E-mail Transmission Setup Protocol

Item	Contents	Default Value	Input Parameter	Setting Option
SMTP Server Address	Set the IP Address of the SMTP Server	0.0.0.0	Characters which can be used for a server address Maximum 63 Characters	—
SMTP Port Number	Set the port number of the SMTP Server	25	Half-width numbers from 1 to 65535	—
Authentication Protocol	Select among “SMTP Authentication/POP Authentication/No Authentication”.	No Authentication	—	—
Encrypted Connection	Select between “SSL”, “TLS” or “None”.	None	—	—
SMTP Account Name	Set the user name for SMTP Authentication.	Blank	Half-width alphanumeric characters, characters which can be used for E-mail addresses Maximum 32 characters	O
SMTP Authentication Password	Set up the password for SMTP Authentication.	Blank	Half-width alphanumeric characters Maximum 32 characters	O
POP3 Server Address	Set up the POP3 server IP Address.	Blank	Characters which can be used for a server address Maximum 63 Characters	O
POP3 Port Number	Set up the port number for the POP3 server.	110	Half-width numbers from 1 to 65535	—
Account Name	Set up the user name of the POP Authentication.	Blank	Half-width alphanumeric characters, characters which can be used for E-mail addresses Maximum 32 characters	O
Password	Set up the password for POP Authentication	Blank	Half-width alphanumeric characters Maximum 32 characters	O
Source Address	Set up the E-mail address for the designated sender.	Blank	Characters which can be used for an E-mail address Maximum 63 Characters	O
Destination Addresses 1 through 8	Set up the destination addresses for the E-mail to be sent to.	Blank	Characters which can be used for an E-mail address Maximum 63 Characters	O

4.7 Message Contents Setup Screen

The following is the setup of E-mail subject titles and message contents for E-mail Sending. When sending E-mails, the contents can be personalized to match the coinciding mail notifications by entering a subject title and message content to transmit.

[Setup Method]

1. Enter in the "Subject" field a subject title to transmit by e-mail.
   (Use full or half-width alphanumeric characters of up to 31 characters)
2. Enter in the "Message" field a text message to transmit by e-mail.
   (Use full or half-width alphanumeric characters of up to 63 characters)
3. Click the "Set" icon button to save all entries.

Fig. 4.7.1 Message Contents Setup Screen

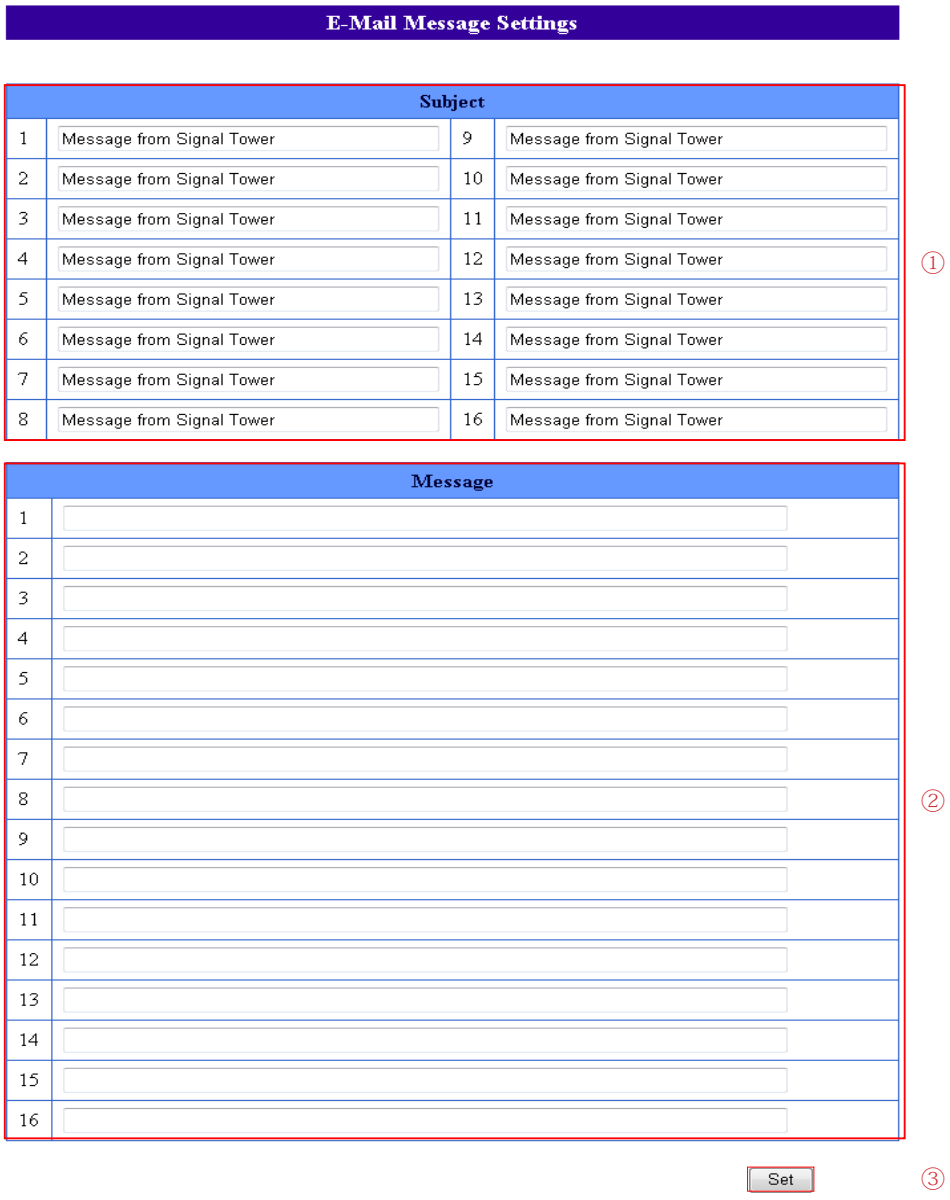


Table 4.7.1 Message Contents Setup Protocol

Item	Contents	Default Value	Input Parameter	Setting Option
Subject 1 through 16	Subject titles from 1 to 16 can be entered	Message from Signal Tower	Full or half-width alphanumeric characters Maximum 31 Characters	O
Message 1 through 16	Messages from 1 to 16 can be entered	Blank	Full or half-width alphanumeric characters Maximum 63 Characters	O

4.8 RSH Command Setup Screen

RSH (remote shell) Commands can control the Signal Tower and buzzer on this product.
The following explains the setup to be able to receive the RSH Commands.

[Setup Method]

RSH Server Function

1. When receiving the RSH Commands, first turn on the RSH Server function by selecting "Active."

RSH Alert Timer Reset Function

2. A timer can be implemented to control the operating timing of each tier and the buzzer with an RSH command sent to the Signal Tower.
   If the "Shared" function is selected, the timing control for each color can be in common.
   If the "Separate" function is selected, the timing control for each color is controlled individually.

E-mail Transmission

3. To have E-mail Sending when an RSH Command has been received, and for it to make a report, select "Active".
   Select "Inactive" to prevent any E-mail Sending.

When E-mail Sending is selected for "Active"

4. Select the desired E-mail contents to transmit from the registered subject titles and the text messages after the E-mail Sending is activated.
   After the E-mail contents are selected, choose the E-mail recipients.

TRAP Transmission

5. To have a trap transmission sent after an RSH Command, select "Active" for TRAP transmission to transmit the TRAP.
   If the TRAP Transmission is not utilized, select "Inactive".

The "TRAP Command" for this product to receive when the TRAP condition occurs

OID: 1.3.6.1.4.1.20440.4.1.6.5
Name: trapPatliteRshExecuted

Designated E-mail Sender Address Setup

6. If address restrictions are made for sending an RSH Command to a designated recipient, select "Active" for the designated sender address.
   If no restrictions have been made, select "Inactive".

When "Inactive" is selected for designated sender addressing

7. Enter a common login name while the designated sender IP address is invalid.
   Click the "Set" button on the lower right side of the screen for the settings to be saved.

When "Active" is selected for designated sender addressing

8. Enter the IP address into the designated sender IP address column to allow command execution. A maximum of 16 accounts can be registered.
   To allow activation for command execution, enter a login name.
9. Click the "Set" icon button to initiate the setup.

Please When using this product with the internal timer function, if the RSH Alert Timer Reset Function is changed, the timers for all the LEDs and buzzer is canceled.

Fig. 4.8.1 RSH Command Setup Screen

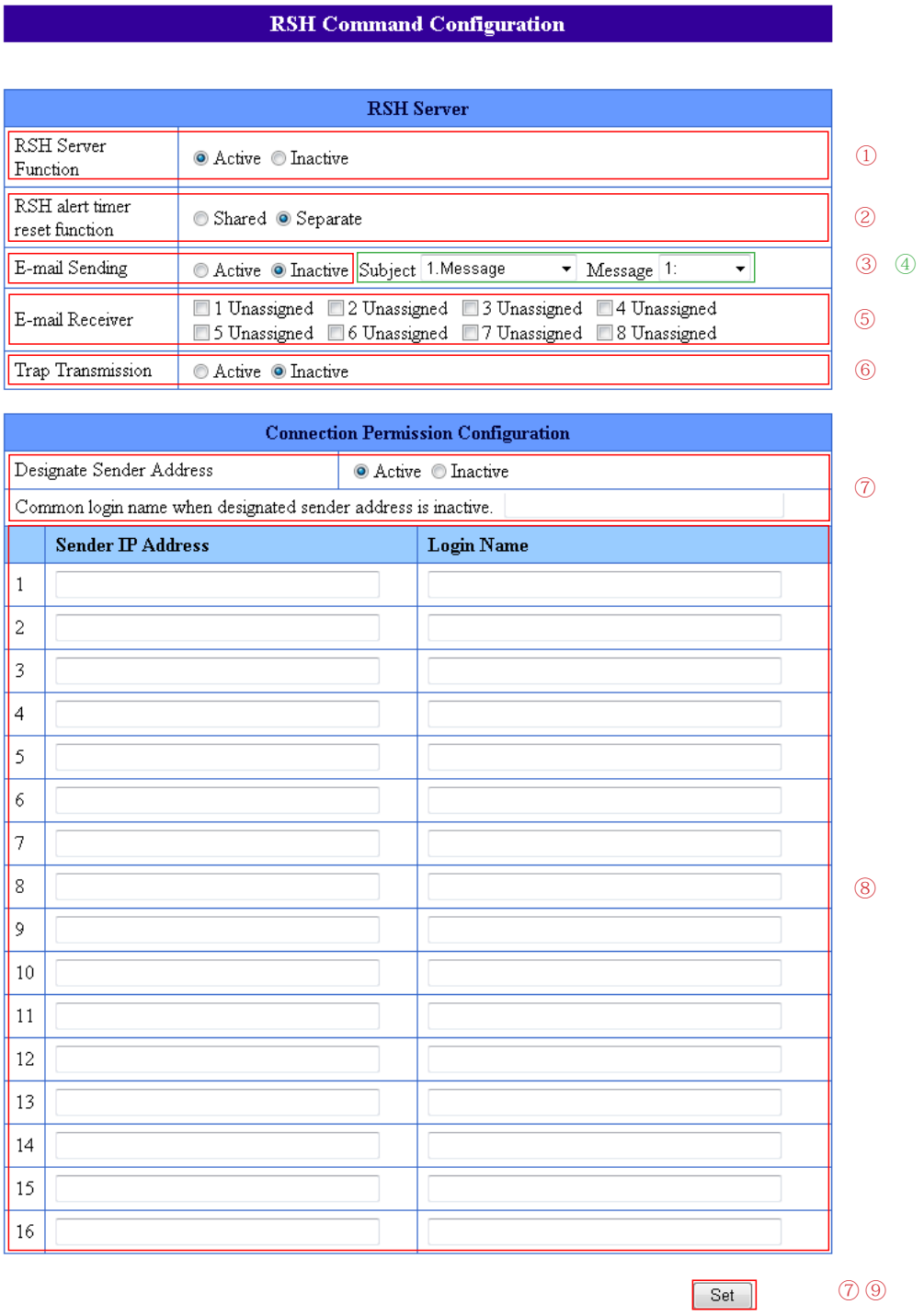


Table 4.8.1 RSH Command Setup Parameters

Item	Contents	Default Value	Input Parameter	Setting Option
RSH Server Function	Select Active/Inactive for the RSH server function.	Active	—	—
RSH Alert Timer Reset Function	Select “Shared” or “Separate” to control the Signal Tower lights and buzzer		—	—
E-mail Transmission	Select Active/Inactive for sending an E-mail when a command is received.	Inactive	—	—
Subject	Select the subject title for the mail to be transmitted.	1. Message	—	—
Message	Select the message text for the mail to be transmitted.	1:	—	—
E-mail Receiver	Select the recipient to send E-mail to.	Undefined	—	—
TRAP Transmission	Select Active/Inactive for the TRAP transmission when an RSH Command is received.	Inactive	—	—
Designated Sender Address	Setup a designated address for a sender when an RSH Command is recieved.	Active	—	—
Invalid Designated Sender Address/ Common Login Name IP Address	When the designated sender address setup is not active, up to 16 accounts can be used to notify senders when an RSH Command is received.	Blank	IP Address Format	O
Sender IP Address	The designated IP address used when a command is executed.	Blank	Half-width alphanumeric character, period “.”, hyphen “-” Maximum 16 Characters	O
Login Name	The login name used is entered to allow command execution.	Blank	Half-width alphanumeric character, period “.”, hyphen “-” Maximum 16 Characters	O

4.9 TRAP Reception Setup Screen

Setup for permitting a TRAP reception and its operation after the TRAP communication is received.

[Setup Method]

1. Enter a group name.
2. Enter an address name for the TRAP designated sender*.
3. Enter the OID of the TRAP received in the TRAP number column.
4. Enter the OID into the variable-bindings column*.

* Refer to the following **Please** **Note** below:

5. Set up the operation for the Signal Tower when a TRAP is received.
6. Select the E-mail Sending configuration when receiving a TRAP.

When the E-mail Sending is "Active"

Select the subject title and message after the E-mail Sending is activated.

7. Select "Active" when using the TRAP transmission.

"TRAP Command" received when a TRAP condition occurs

OID: 1.3.6.1.4.1.20440.4.1.6.3
Name:. trapPatliteTrapReceived

8. Click the "Set" button to save the settings.

Please A TRAP number cannot be omitted if a TRAP designated sender address name is omitted. When a TRAP number has been duplicated and is registered into the group, the least significant setup number in the group is used. The following group number after that number is not used.

Note

- If the TRAP designated address is entered, then the TRAP number column and variable bindings can be omitted. When the TRAP number column and variable bindings are omitted, then all operations will be received by the TRAP transmission address which was setup for the TRAP designated sender.
- When a TRAP designated sender address name is omitted, the operation is determined only by the TRAP number.
- Among two existing variable binding registrations, the first registration is also possible.
- If the TRAP designated sender address name and TRAP number is omitted, it will not operate, even with variable bindings registered.

Fig. 4.9.1 TRAP Reception Setup Screen

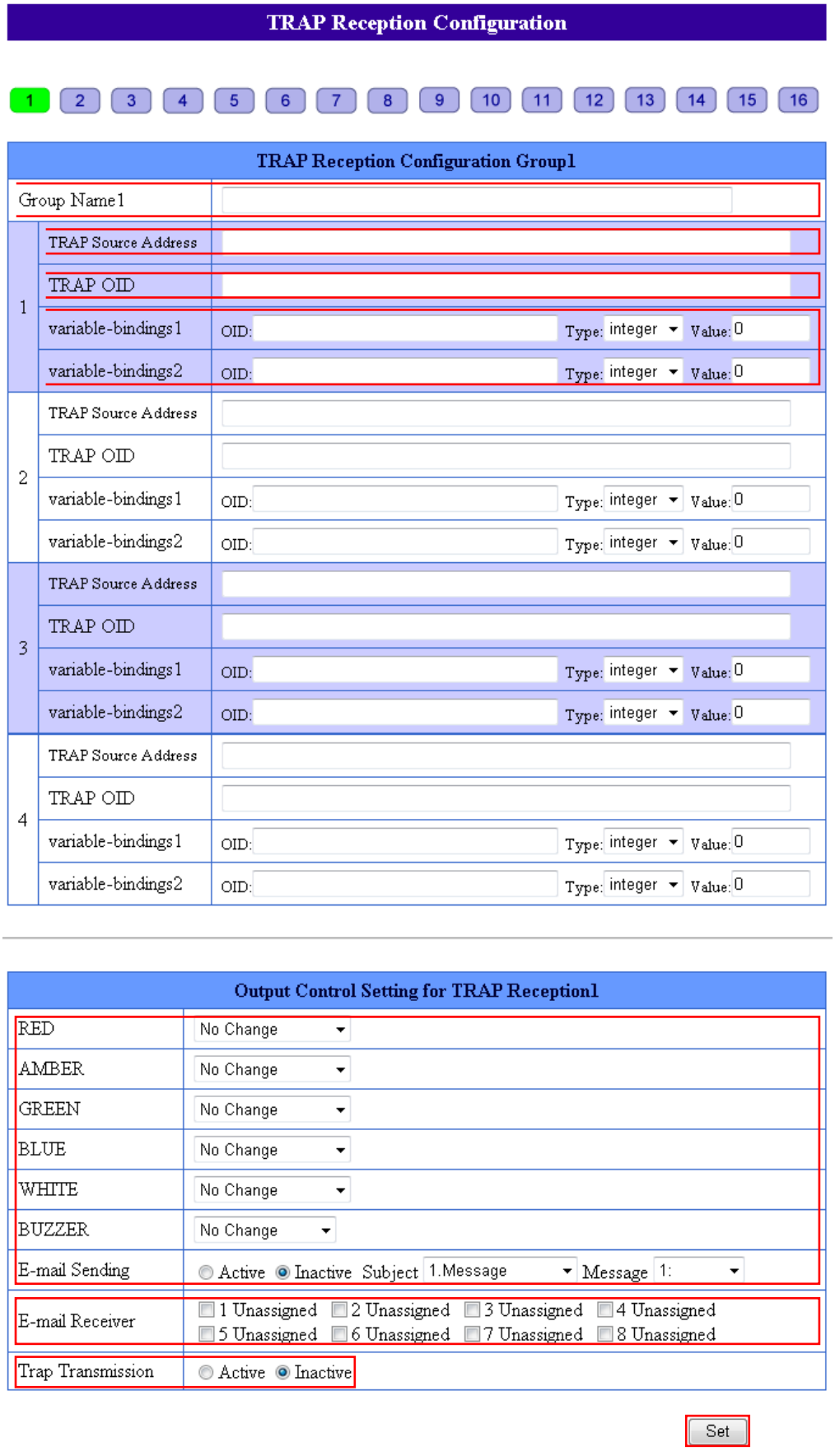


Table 4.9.1 TRAP Reception Setup Parameters

Item	Contents	Default Value	Input Parameter	Setting Option
Group Name	Setup a group name	Blank	Full/Half-size Characters Maximum 32 Characters	O
Trap Designated Sender Addresses 1 to 4	Setup the designated TRAP sender addresses from 1 to 4 for a group	Blank	IP Address Format	O
Trap Number Items 1 to 4	Setup the Object ID TRAP numbers to receive trap commands from 1 to 4 for the group	Blank	Integers and Period "." Maximum 127 Characters	O
OID Items 1 to 4 (variable bindings)	Setup the TRAP command object ID with variable bindings for items 1 to 4	Blank	Integers and Period "." Maximum 127 Characters	O
Model Items 1 to 4 (variable bindings)	Setup the variable bindings object ID model to receive TRAP commands. Only integer types can be selected	Integer	—	—
Value Items 1 to 4 (variable bindings)	Setup the variable binding's object ID to receive traps.	0	Integer (0 to 65535)	—
Red	Select from: OFF- ON- Lighting- Flashing1- Flashing2- No Flashing- No Change	No Change	—	—
Amber	Select from: OFF- ON- Lighting- Flashing1- Flashing2- No Flashing- No Change	No Change	—	—
Green	Select from: OFF- ON- Lighting- Flashing1- Flashing2- No Flashing- No Change	No Change	—	—
Blue	Select from: OFF- ON- Lighting- Flashing1- Flashing2- No Flashing- No Change	No Change	—	—
White	Select from: OFF- ON- Lighting- Flashing1- Flashing2- No Flashing- No Change	No Change	—	—
Buzzer	Select from: Pattern1- Pattern2- Pattern3- Pattern4- Stop- No Change	No Change	—	—
E-mail Transmission	Select the Active/Inactive condition for the E-mail Sending.	Inactive	—	—
Subject	Select the E-mail subject title	1. Message	—	—
Message	Select the E-mail message to text	1:	—	—
TRAP Transmission	Select the Active/Inactive condition for the trap transmission.	Inactive	—	—

4.10 Ping Monitor setup Screen

By setting an IP address or a host name to the address column, the Ping monitor can be used.
When the Ping monitor detects an abnormality, it generates a monitor abnormality condition as a result. After a monitor abnormality is generated, if there is a response from a Ping request, it will then determine a recovery from the abnormal condition, and will continue its normal operation after restoration.
A maximum number of 24 Ping monitors can be registered. Although, screen numbers from 1 to 20 have a fixed Ping monitoring period of 60 seconds, screen numbers 21 to 24 have adjustable Ping monitoring periods.

4.10.1 Ping Monitor Configuration (Screen Numbers 1 to 20)

[Setup Method]

1. Select the screen number (No. 1-20) to setup the Ping monitoring parameters.
2. Enter the IP address for a target to monitor.
3. Enter the device name for a target to monitor.
4. Set up the number of transmission times (number of times a Ping request is sent to determine a Ping abnormality).
5. Setup the status change for the Signal Tower when a monitor abnormality is detected.
6. To send an E-mail when a monitor abnormality occurs, set the E-mail Sending to "Active".
   When the E-mail Sending is activated:
   Register the subject and the message text to transmit.

When the E-mail Sending is activated

Register the subject and the message text to transmit. Then, select the recipient for the E-mail Sending.

7. When using the TRAP transmission, set to "Active".

TRAP command transmitted when the TRAP is active

OID: 1.3.6.1.4.1.20440.4.1.6.1
Name: trapPatliteAlarmAdded

Fig. 4.10.1 Ping Monitor Setup Screen

[Setup Method Continued]

8. Setup for Signal-Tower operation when a recovery from a monitor abnormality occurs.
9. To send an E-mail when a monitor abnormality recovery occurs, set the E-mail Sending to "Active".

When the E-mail Sending is activated

Register the subject and the message text to transmit. Then, select the recipient for the E-mail Sending.

10. When using the TRAP transmission, set to "Active".
11. Click the "Set" button to activate the setup.

TRAP Command received when TRAP condition occurs

OID: 1.3.6.1.4.1.20440.4.1.6.2
Name: trapPatliteAlarmRemoved

Fig. 4.10.2 Ping Monitor Setup Screen 2

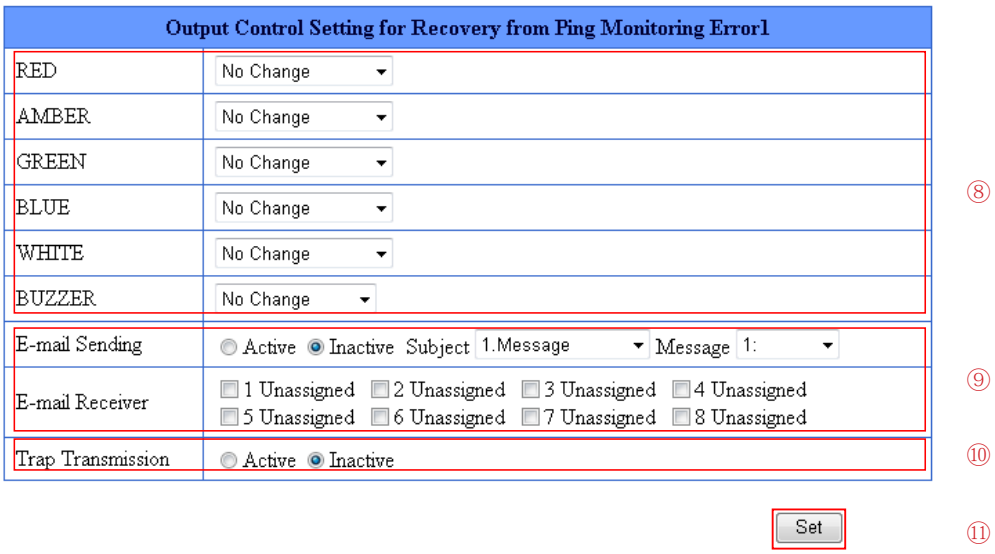


Table 4.10.1 Ping Monitor Setup Parameters

Item	Contents	Default Value	Input Parameter	Setting Option
Monitoring Target Address	Setup the IP address or host name for ping monitoring.	Blank	IP Address or Host Name Maximum 63 Characters	O
Equipment Name	Setup the name for the Ping transmission monitoring.	Blank	Full/Half-size Characters Maximum 32 Characters	O
TRAP Transmission Frequency	Setup the number of Ping requests.	0	Half-size Integers 0 to 30	—
Red	Select from: OFF- ON- Lighting- Flashing1- Flashing2- No Flashing- No Change	No Change	—	—
Amber	Select from: OFF- ON- Lighting- Flashing1- Flashing2- No Flashing- No Change	No Change	—	—
Green	Select from: OFF- ON- Lighting- Flashing1- Flashing2- No Flashing- No Change	No Change	—	—
Blue	Select from: OFF- ON- Lighting- Flashing1- Flashing2- No Flashing- No Change	No Change	—	—
White	Select from: OFF- ON- Lighting- Flashing1- Flashing2- No Flashing- No Change	No Change	—	—
Buzzer	Select from: Pattern1- Pattern2- Pattern3- Pattern4- Stop- No Change	No Change	—	—
Email Transmission	Select the Active/Inactive condition for the E-mail Sending.	Inactive	—	—
Subject	Select the E-mail subject title	1. Message	—	—
Message	Select the E-mail message to text	1:	—	—
TRAP Transmission	Select the Active/Inactive condition for the trap transmission.	Inactive	—	—

4.10.2 Ping Monitor Configuration (Screen Numbers 21 to 24)

The following explains the Ping monitor setting method. A maximum number of 24 Ping monitors can be registered.
Although the monitoring periods for screen numbers 1 through 20 is fixed at 60 seconds, the transmission number in columns 21 through 24 can be changed (1 to 600 seconds).

[Setup Method]

1. Select the screen number between 21 to 24 to setup the Ping monitoring parameters.
2. Enter the IP address for a target to monitor.
3. Enter the device name for a target to monitor.
4. Set up the number of transmission times.
5. Set up the monitoring duration.
6. Set up the number of Ping requests within the duration.
7. Setup the condition for the Signal Tower when a monitor abnormality is detected.
8. To send an E-mail when a monitor abnormality occurs, set the E-mail Sending to "Active".

When the E-mail Sending is activated

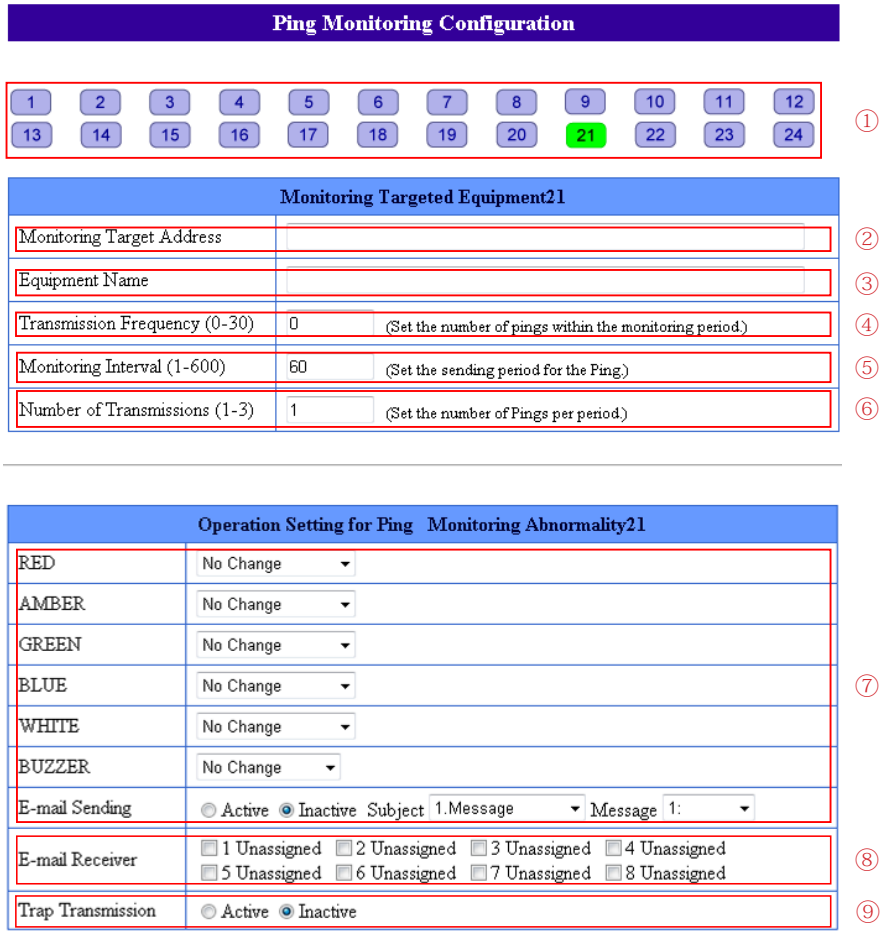
Register the subject and the message text to transmit. Then, select the recipient for the E-mail Sending.

9. When using the TRAP transmission, set to "Active".

TRAP command transmitted when the TRAP is active

OID: 1.3.6.1.4.1.20440.4.1.6.1
Name: trapPatliteAlarmAdded

Fig. 4.10.3 Ping Monitor Setup Screen (Screen Number No. 21)



10. Setup the condition for the Signal Tower when a monitor abnormality recovery is detected.
11. To send an E-mail when a monitor abnormality recovery occurs, set the E-mail Sending to "Active".

When the E-mail Sending is activated

Register the subject and the message text to transmit. Then, select the recipient for the E-mail Sending.

12. When using the TRAP transmission, set to "Active".

TRAP Command received when TRAP condition occurs

OID: 1.3.6.1.4.1.20440.4.1.6.2
Name: trapPatliteAlarmRemoved

13. Click the "Set" button to save the settings.

Fig. 4.10.4 Ping Monitor Setup Screen 2 (Screen Numbers 21 through 24)

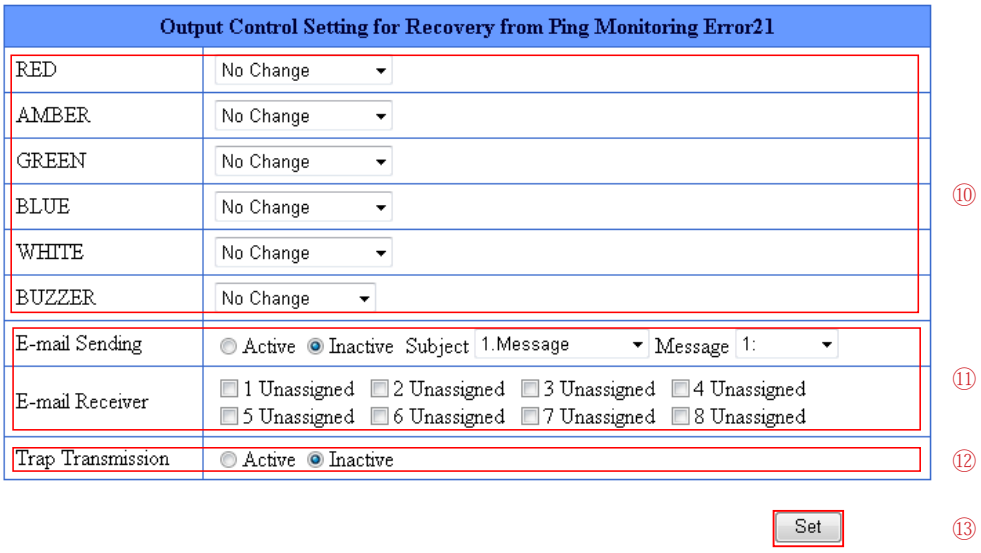


Table 4.10.2 Ping Monitor Setup Parameters (Screen Numbers 21 to 24)

Item	Contents	Default Value	Input Parameter	Setting Option
Monitoring Duration	Setup the duration for sending a Ping response.	60	1 to 600 (sec)	—
Transmission Frequency	The number of Pings to transmit within the monitoring duration	1	1 to 30 (times)	—

4.11 Application Monitor Setup Screen

Setup for monitoring an application. The data reception of the target is monitored.
If data is not received within the monitoring period, it detects the communication as being abnormal, and generates an abnormality event. After a generated event, if data is received from the monitored candidate, it will detect a recovery from the abnormal operation.

[Setup Method]

1. Select from screen number 1 to 4 to setup an application monitor.
2. Enter the address for the targeted monitor.
3. Enter the receiving port number.
4. Enter a device name.
5. Set up the monitoring period.

Operation Setting for Monitoring Abnormality

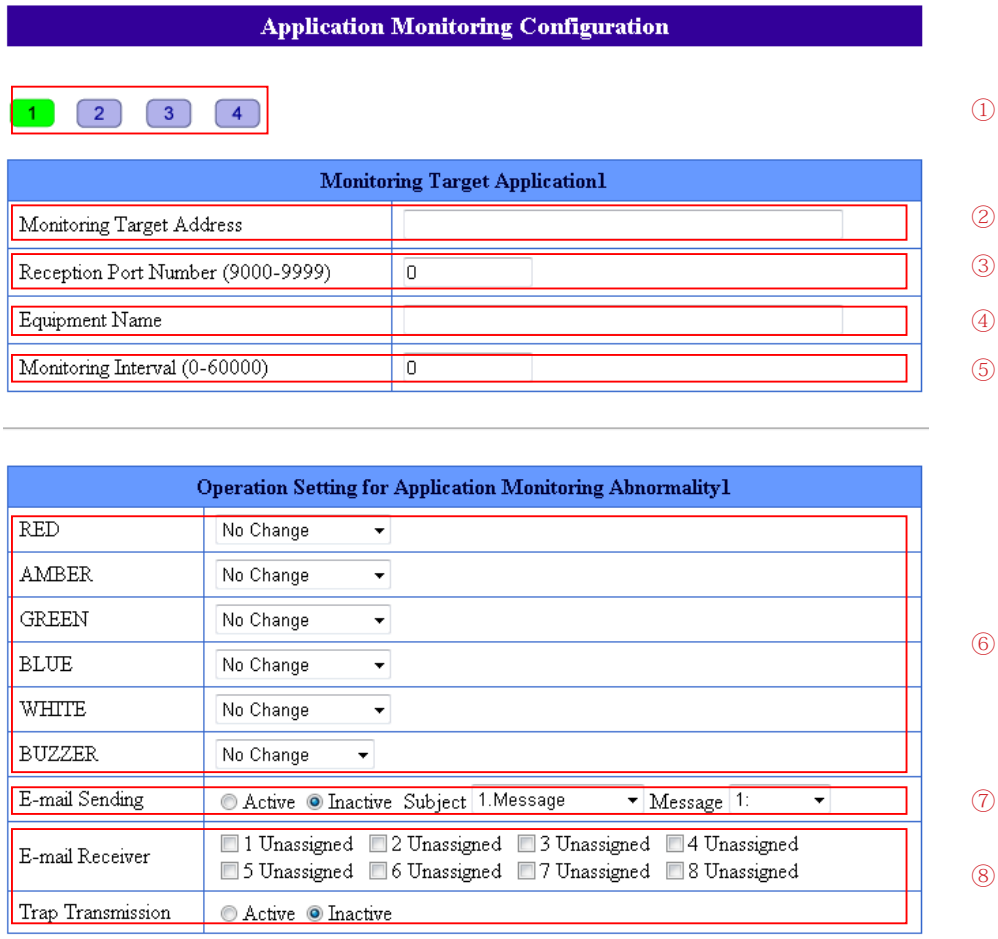
6. Setup the condition for the Signal Tower when a monitor abnormality is detected.
7. To send an E-mail when a monitor abnormality occurs, set the E-mail Sending to "Active".

When the E-mail Sending is activated

Register the subject and the message text to transmit. Then, select the recipient for the E-mail Sending.

8. When using the TRAP transmission, set to "Active".

Fig. 4.11.1 Application Monitor Setup Screen



TRAP Command received when TRAP condition occurs

OID: 1.3.6.1.4.1.20440.4.1.6.6
Name: trapPatliteMonitorAppAlarmAdded

Output Control Setting for Monitoring Error Recovery

9. Setup the condition for the Signal Tower when a monitor abnormality recovery is detected.
10. To send an E-mail when a monitor abnormality recovery occurs, set the E-mail Sending to "Active".

When the E-mail Sending is activated

Register the subject and the message text to transmit. Then, select the recipient for the E-mail Sending.

11. When using the TRAP transmission, set to "Active".

TRAP Command received when TRAP Transmission condition occurs

OID: 1.3.6.1.4.1.20440.4.1.6.7
Name: trapPatliteMonitorAppAlarmRemoved

12. Click the "Set" icon button to initiate the setup.

Fig. 4.11.2 Application Monitor Setup Screen

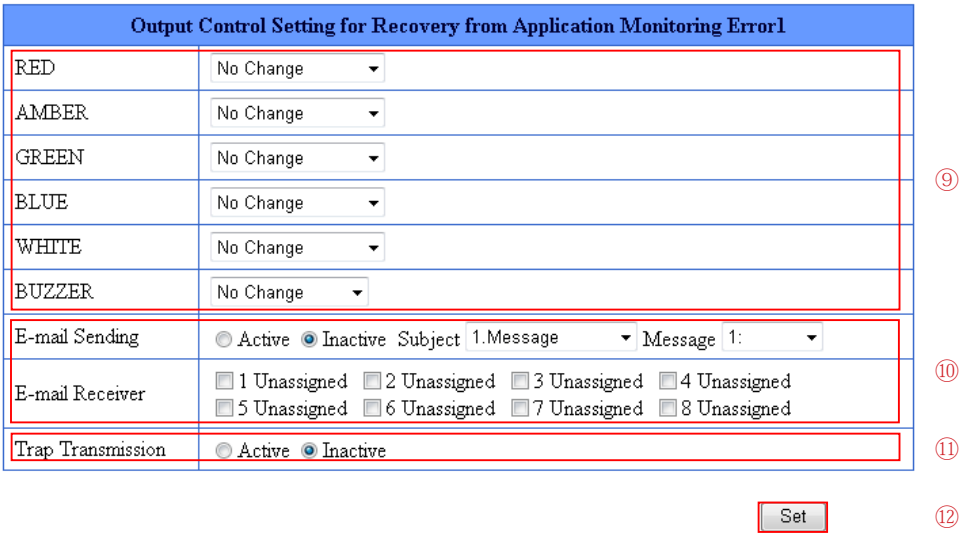


Table 4.11.1 Application Monitor Setup Parameters

Item	Contents	Default Value	Input Parameter	Setting Option
Monitoring Target Address	Setup the IP address for transmission monitoring.	Blank	IP Address Format	O
Reception Port Number	Set up the reception port used for the application monitoring.	0	Half-width numbers 9000-9999 (When the address column for the monitor is blank, it is 0)	—
Equipment Name	Setup the name for the Ping transmission monitoring.	Blank	Full/Half-width Characters Maximum 31 Characters	O
Monitoring Duration	Setup the duration for monitoring the application software.	0	Half-width alphanumeric 1 through 60000(sec)	O
Red	Select from: OFF- ON- Lighting- Flashing1- Flashing2- No Flashing- No Change	No Change	—	—
Amber	Select from: OFF- ON- Lighting- Flashing1- Flashing2- No Flashing- No Change	No Change	—	—
Green	Select from: OFF- ON- Lighting- Flashing1- Flashing2- No Flashing- No Change	No Change	—	—
Blue	Select from: OFF- ON- Lighting- Flashing1- Flashing2- No Flashing- No Change	No Change	—	—
White	Select from: OFF- ON- Lighting- Flashing1- Flashing2- No Flashing- No Change	No Change	—	—
Buzzer	Select from: Pattern1- Pattern2- Pattern3- Pattern4- Stop- No Change	No Change	—	—
Email Transmission	Select the Active/Inactive condition for the E-mail Sending.	Inactive	—	—
Subject	Select the E-mail subject title	1. Message	—	—
Message	Select the E-mail message to text	1:	—	—
TRAP Transmission	Select the Active/Inactive condition for the trap transmission.	Inactive	—	—

4.12 "Clear" Control Setup Screen

Setup the operation to clear the status with the "CLEAR" button, or to combine with other commands to clear the Signal Tower status.

Clear All : A function to clear both the Signal Tower and buzzer status and return to its normal mode of operation.

Depress twice to clear all : One press of the "CLEAR" button to stop the buzzer sound. Pressing the "CLEAR" button a second time returns it to its normal mode of operation.

[Setup Method]

1. When using the "CLEAR" button to return to its normal mode after an E-mail Sending and TRAP transmission are received, select the "Active" radio button.
2. When using the "CLEAR" command from an SNMP clear execution to return to its normal mode after an E-mail Sending and TRAP transmission are received, select the "Active" radio button.
3. When using the "CLEAR" from an RSH command execution to return to its normal mode after an E-mail Sending and TRAP transmission are received, select the "Active" radio button.

When selecting "Active" for E-mail Sending

Select the preferred E-mail subject title and text.
Select the Receiver for the E-mail to be sent to.

4. Select the clear switch setup for either "Clear All" or "Depress twice to clear all".
5. Click the "Set" button to save the settings.

"TRAP Command" received when a TRAP condition occurs

OID: 1.3.6.1.4.1.20440.4.1.6.4

Name: trapPatliteClearExecuted

Fig. 4.12.1 "Clear" Control Setup Screen

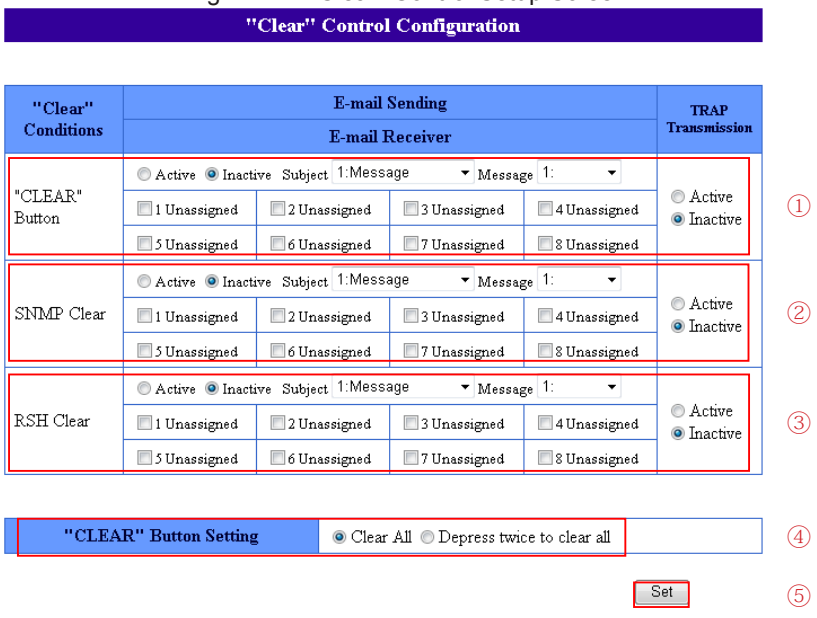


Table 4.12.1 "Clear" Control Setup Parameters

Item	Contents	Default Value	Input Parameter	Setting Option
E-mail Sending	Select the Active/Inactive condition for the E-mail Sending.	Inactive	—	—
Subject	Select the E-mail subject title	1. Message	—	—
Message	Select the E-mail message to text	1:	—	—
Unassigned 1 to 8	Select from 1 to 8 Addresses to send E-mail to.	Unassigned	—	—
TRAP Transmission	Select the Active/Inactive condition for the TRAP Transmission.	Inactive	—	—
“CLEAR” Button Setting	Select the setup conditions for when the “CLEAR” button is pressed.	Clear All	—	—

4.13 Normal Mode Setup Screen

Set up the status of the Signal Tower for its normal operating condition.

[Setup Method]

1. Select the desired status for the Signal Tower to be at its normal operating condition.
2. Click the "Set" icon button to initiate the setup.
3. After the setup is complete, press the "Clear" switch on the body for the normal operating condition to be displayed.

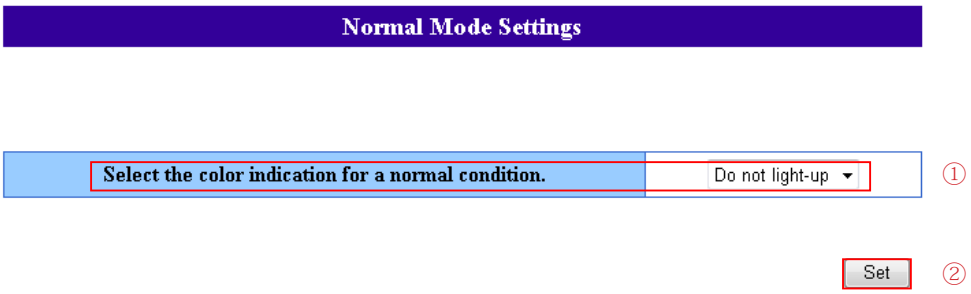


Table 4.13.1 Normal Mode Setup Parameters

Item	Contents						Default Value	Input Parameter	Setting Option
Signal Tower	Select from:	Red Lighting	Amber Lighting	Green Lighting	Blue Lighting	White Lighting	Do not light-up	—	—

4.14 Test Button Setup Screen

The following settings can be used to output an operation when the "TEST" button is pressed.

[Setup Method]

To output an E-mail Sending and TRAP transmission when the "TEST" button is pressed, select the "Active" radio button.

When sending an E-mail, select the "Active" radio button

1. Select the preferred E-mail subject title and text.
   Select the Receiver for the E-mail to be sent to.

The "TRAP Command" for this product to receive when the TRAP condition occurs

OID: 1.3.6.1.4.1.20440.4.1.6.8
Name: trapPatliteTestSwExecuted

2. Click the "Set" button to activate the setup.

Fig. 4.14.1 Test Switch Setup Screen

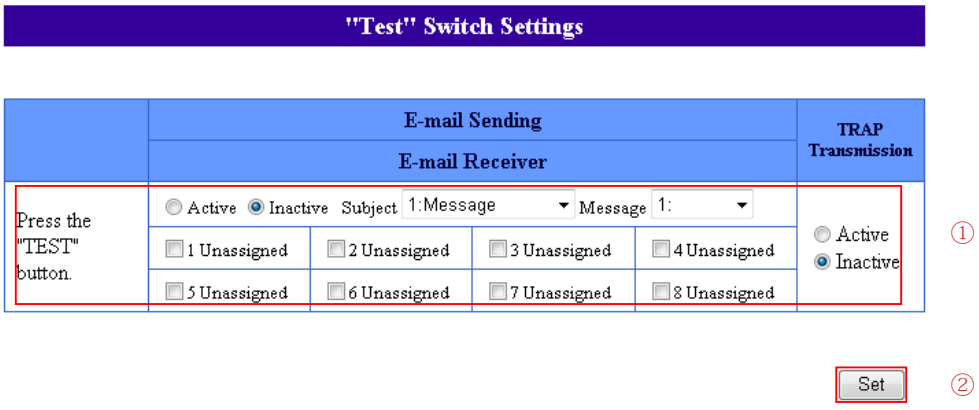


Table 4.14.1 Test Switch Setup Parameters

Item	Contents	Default Value	Input Parameter	Setting Option
E-mail Sending	Select the Active/Inactive condition for the E-mail Sending.	Inactive	—	—
Subject	Select the E-mail subject title	1: Message	—	—
Message	Select the E-mail message to text	1:	—	—
Unassigned 1 to 8	Select from 1 to 8 Addresses to send E-mail to.	Unassigned	—	—
Receiver	Select the Address to send E-mail to	Unused	—	—
TRAP Transmission	Select the Active/Inactive condition for the TRAP Transmission	Inactive	—	—

Note Refer to "3.3 Test Functions" for more information on the test operation.

4.15 Output Control Setting for Signal Tower Screen

Verify the current operating status, and output a condition status for the Signal Tower.

[Setup Method]

1. Check the current operating condition of the Signal Tower.
2. Select the desired outputs for the Signal Tower status in the "Output Control" column to operate it.
3. Click the "Execute Output" button. The Signal Tower output will reflect the setup performed in (2).
4. If the "Execute Clear" button is clicked, it will return to the "Normal Mode" status.

Fig. 4.15.1 Signal Tower Output Control Screen

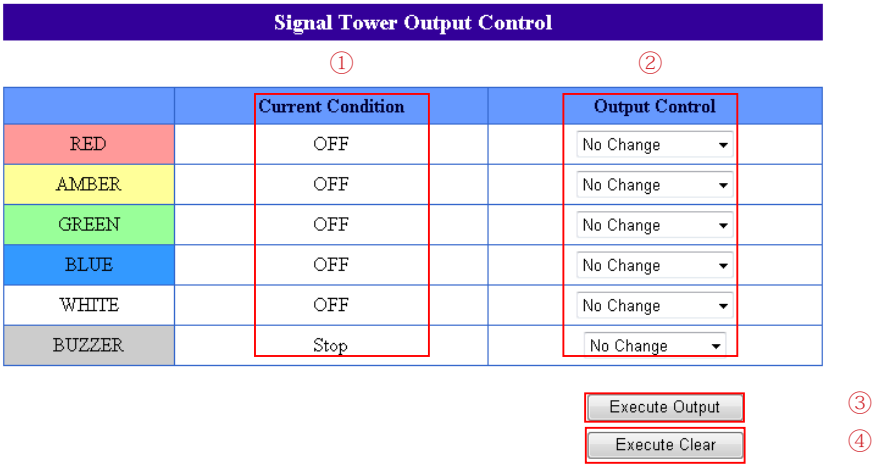


Table 4.15.1 Signal Tower Output Control Setup Parameters

Item	Contents	Default Value	Input Parameter	Setting Option
Red	Select from: OFF- ON- Lighting- Flashing1- Flashing2- No Flashing- No Change	—	—	—
Amber	Select from: OFF- ON- Lighting- Flashing1- Flashing2- No Flashing- No Change	—	—	—
Green	Select from: OFF- ON- Lighting- Flashing1- Flashing2- No Flashing- No Change	—	—	—
Blue	Select from: OFF- ON- Lighting- Flashing1- Flashing2- No Flashing- No Change	—	—	—
White	Select from: OFF- ON- Lighting- Flashing1- Flashing2- No Flashing- No Change	—	—	—
Buzzer	Select from:Pattern1- Pattern2- Pattern3- Pattern4- Stop	—	—	—

4.16 Reinitialization Setup Screen

The setup parameters can be reset to their default values by initializing this product. The network setup can be selected to be excluded from initialization.

If the network setup is also required to be reset to its factory defaults, it can be selected to be initialized with the rest of the setup parameters.

If the "Reinitialize Network Settings" is not checked, all but the network setup is initialized.

> **Note** "Network Setup" refers to the "IP address for this product, Net Mask, Default Gateway, DNS server address and Host Name" parameters in the System Setup Screen.

[Setup Method]

When the initialization does not require the network setup to be included

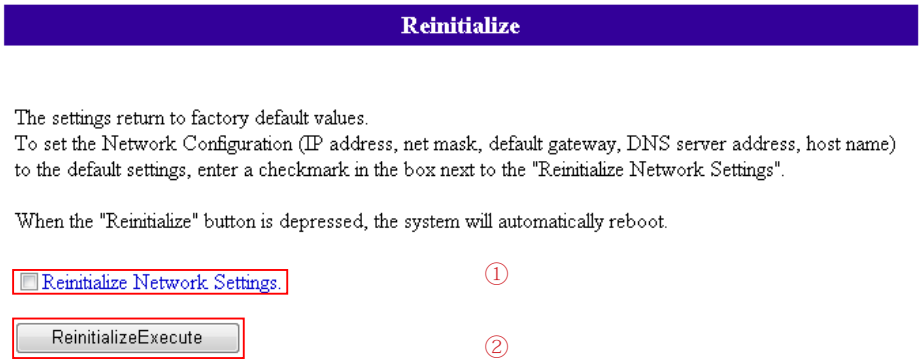
1. Put a "Check" in the box for "Network Reboot".
2. Click the "Reinitialize Execute" button.

When the network setup also needs to be reinitialized

2. Just click the "Reinitialize Execute" button.

> **Please** If the network setup is also initialized, since the IP address will return to its factory default value of “192.168.10.1”, the network has to be setup again.

Fig. 4.16.1 Reinitialization Screen



4.17 Reboot Screen

This product can be rebooted just by clicking the "Reboot" button.

1. Once the "Reboot" button is clicked, a new screen will display a message indicating it is rebooting.
2. Click "To the Login screen" on the new screen to log back in.

Please If this product is rebooted, because all of the event log data will be erased, it is recommended to download the event log prior to rebooting, for reloading afterwards.

Fig. 4.17.1 Reboot Screen

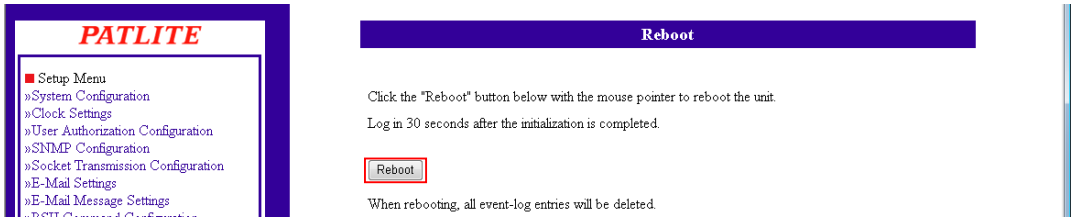
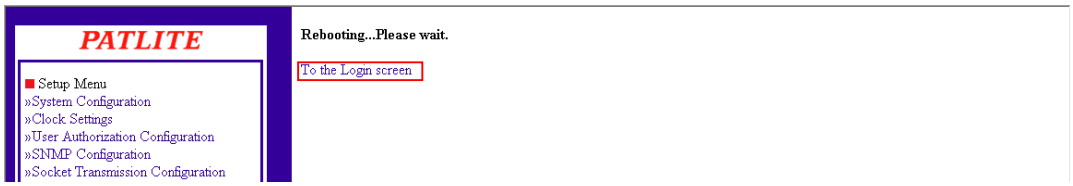


Fig. 4.17.2 Login after Reboot Screen



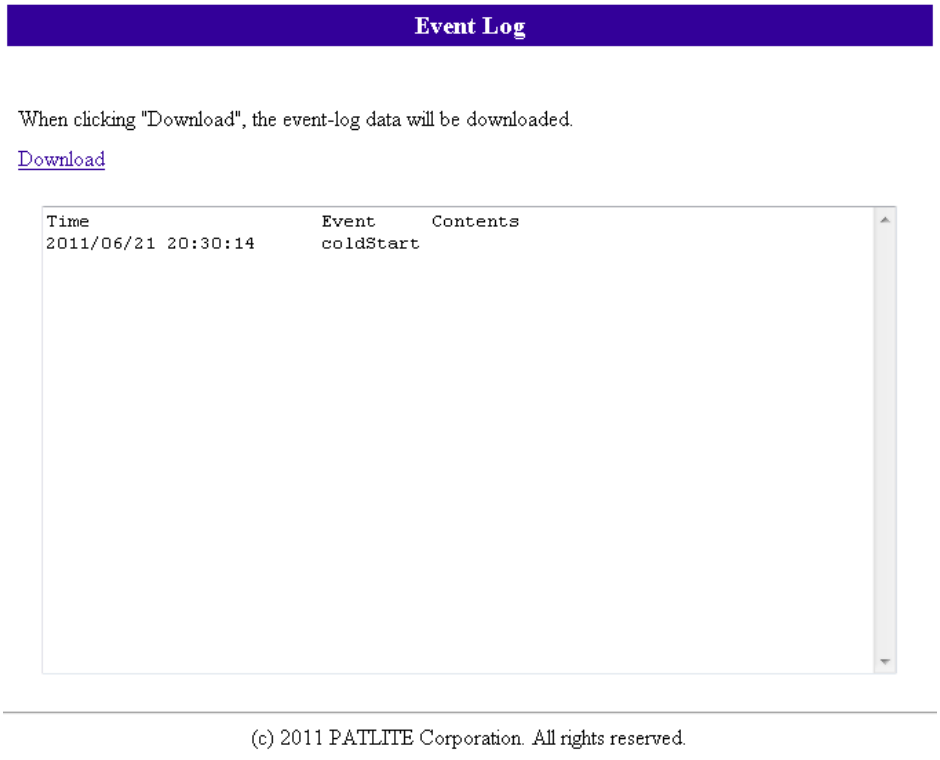
4.18 Event Log Screen

Events from this product are logged and is shown in the event log.
By clicking the "Event Log Download", an event log file can be downloaded.
A maximum of 255 logged events are acquirable.

Please

The event log data will be erased if either of the following operations are executed.
- Turning the power supply "OFF"
- Reinitializing this product from the initialization screen.
- Rebooting this product from the “Reboot Screen”.
- Updating the firmware.

Fig. 4.18.1 Event Log Screen



4.19 Configuration Save/Load Setup Screen

The configuration for this product can be read, and saved as config data on the PC.
Moreover, the configuration file read off of this product can be selected and uploaded.

Please The network setup and user information is not included in the config data.

[Setup Method]

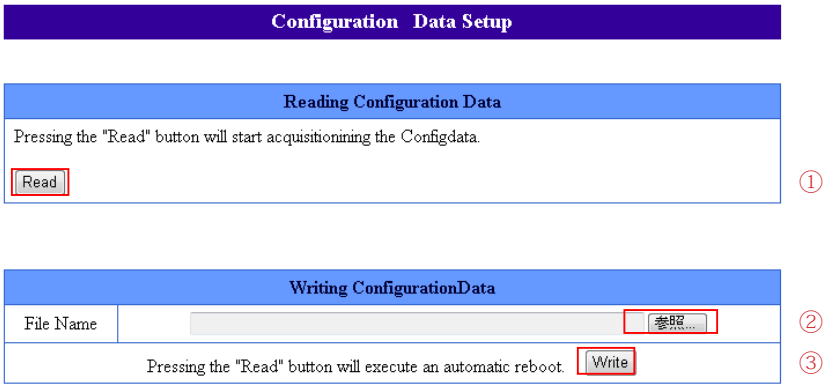
Reading Configuration Data

1. Click the "Read" button to save the config data onto the logged in PC.

Writing Configuration Data

2. Click the "Browse..." button to select the config data to write into this product.
3. Click the "Write" button to start the uploading of the config data.
4. After the config data is uploaded, this product will automatically reboot.

Fig. 4.19.1 Configuration Save/Load Setup Screen



4.20 Firmware Update Screen

The firmware for this product can be updated.
After the firmware has been updated, this product automatically reboots.

[Setup Method]

1. Click the "reference" button to designate the firmware to rewrite for this product.
2. Clicking the "update" button will start the firmware update.

Please

Do not disconnect the power cable or LAN cable during the update.
Possible cause of failure may occur.
Updating the firmware does not affect the current setup parameters, however, it does affect the Event Log. Therefore, it is recommended to backup the “Event Log” prior to updating the firmware.

Fig. 4.20.1 Firmware Update Setup Screen

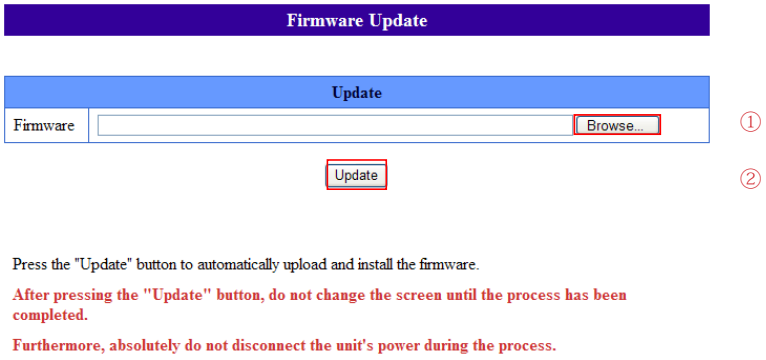
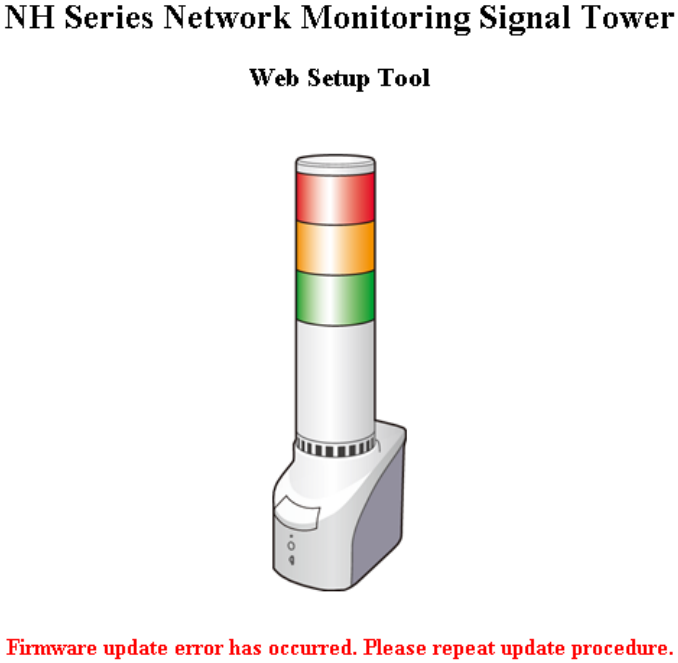


Fig. 4.20.2 Firmware Update Failure Screen



Please

Fig. 4.20.2 shows the type of screen in case an error occurs during the firmware update.
If an error occurs during the firmware update, please try again.

If an error repeatedly occurs during the firmware update process, please contact your nearest Patlite Sales Representative.

4.21 Setup Table Entry Screen

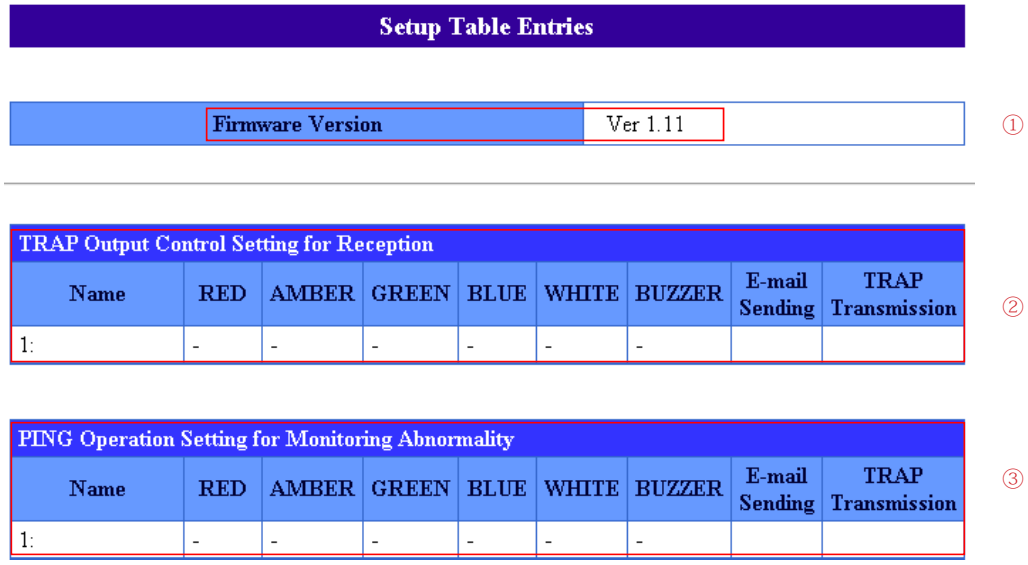
The "Setup Table Entry" screen lists and displays the contents of settings, operation functions, such as application monitor abnormality and abnormality restoration; Ping monitor abnormality and abnormality restoration; TRAP reception setup operations, as well as the firmware version of this product.

The solid circle indicates when the E-mail Sending and TRAP transmission are activated. The dash lines display where items selected are not changed.

[Display]

1. Current firmware version.
2. "TRAP Output Control Setting for Reception" table entries (1-16) to indicate setup conditions.
3. "PING Operation Setting for Monitoring Abnormality" table entries (1-16) to indicate setup conditions.

Fig. 4.21 Setup Table Entry Screen



Setup Table Entries

Firmware Version	Ver 1.11

①

TRAP Output Control Setting for Reception

Name	RED	AMBER	GREEN	BLUE	WHITE	BUZZER	E-mail Sending	TRAP Transmission
1:	-	-	-	-	-	-		

②

PING Operation Setting for Monitoring Abnormality

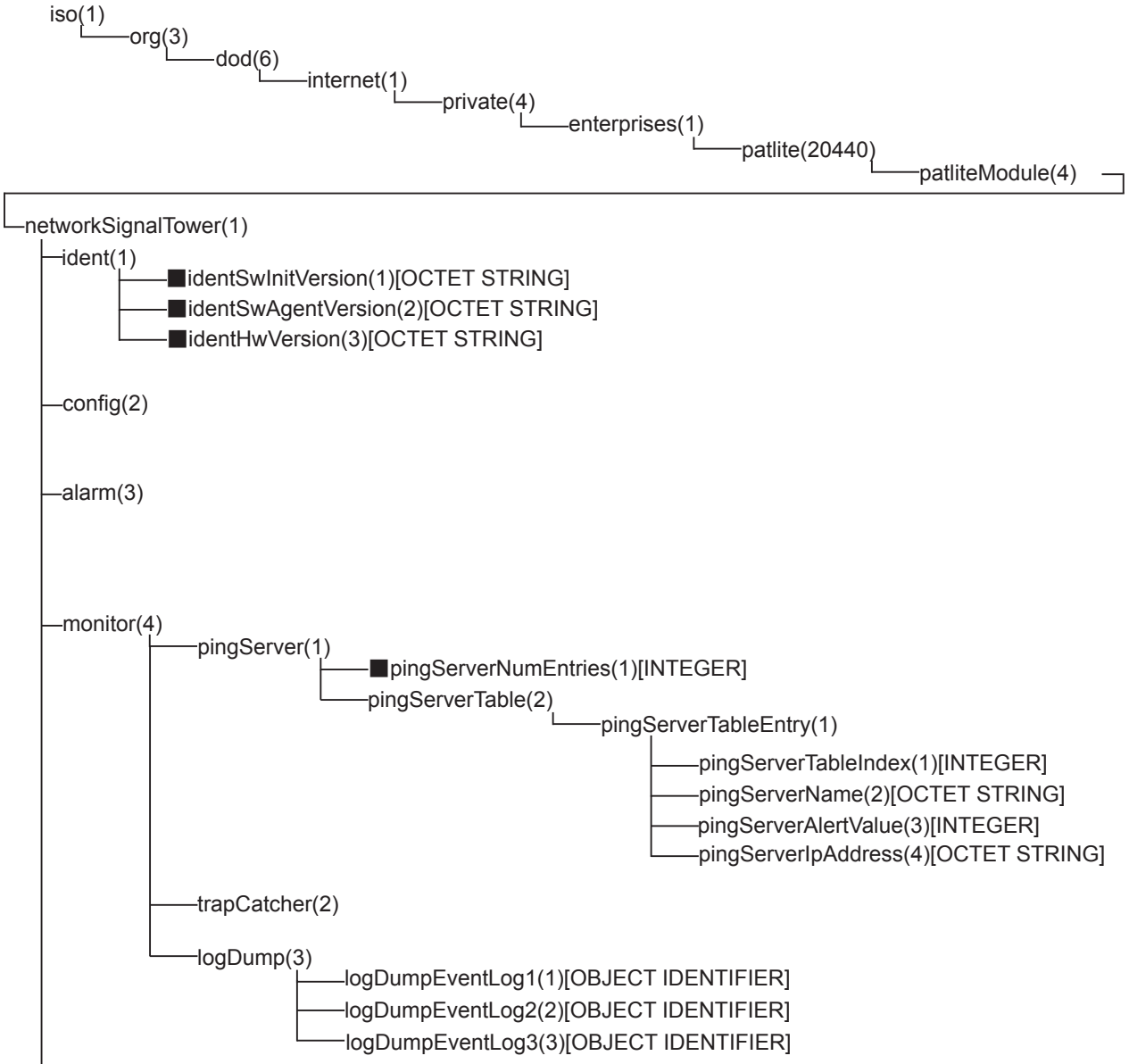
Name	RED	AMBER	GREEN	BLUE	WHITE	BUZZER	E-mail Sending	TRAP Transmission
1:	-	-	-	-	-	-		

③

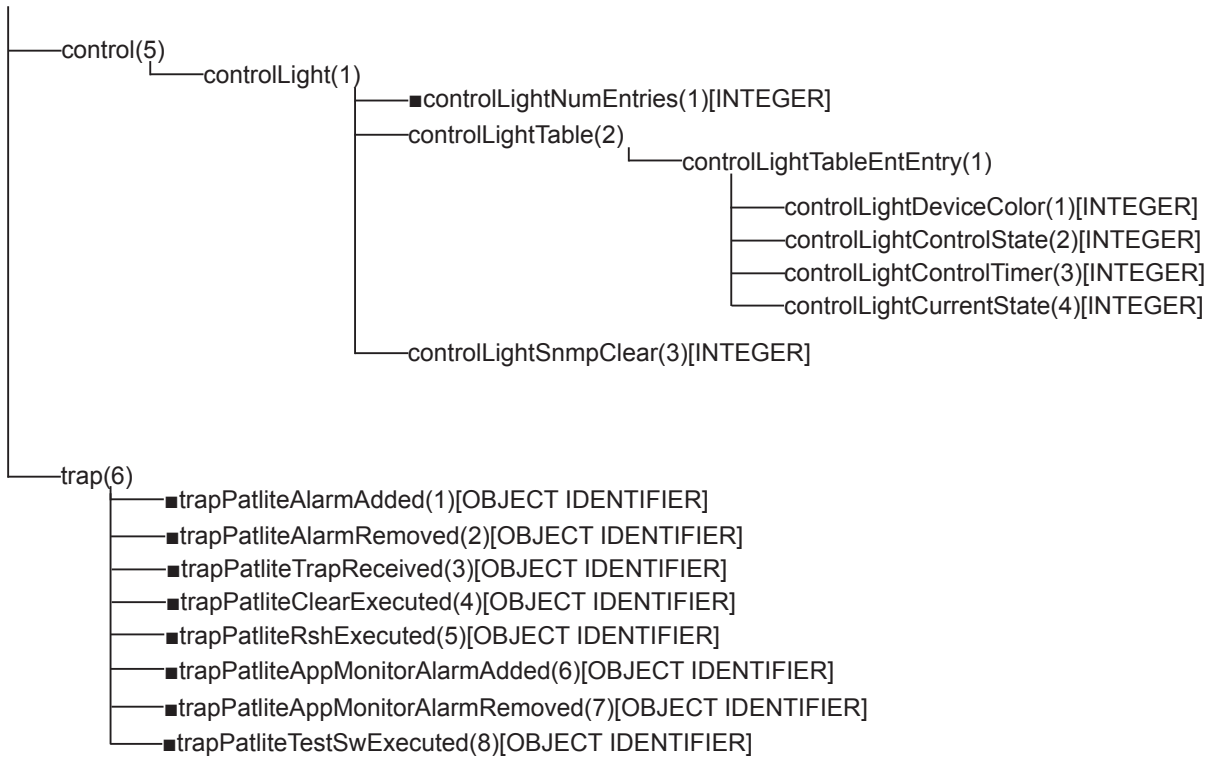
5 MIB

With this product, there is an exclusive MIB (Management Information Base) for the NH Series, and the monitor controls can be operated by the SNMP manager, etc.

5.1 MIB Definition List



Note Please use the PRHS when acquisitioning a SNMP data log dump.



5.2 PATLITE MIB SPECIFICATIONS

The following explains the MIB Specification for the NH Series Monitoring Tower.

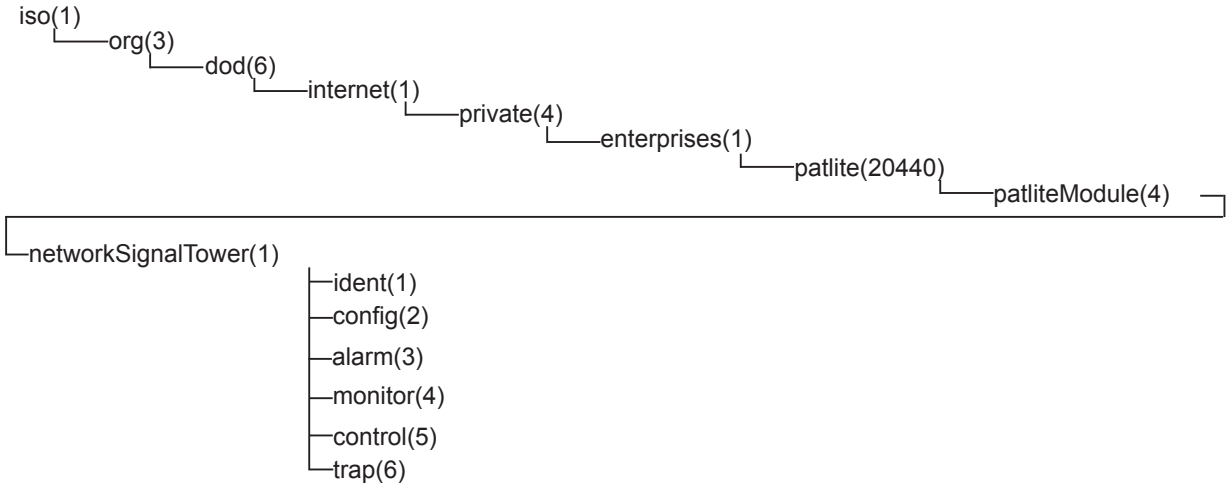


Table 6.2.1 MIB Specifications

OID	Name	Model	MAX-ACCESS	Comment
1	ident			ID Group
1.1.0	identSWinitVersion	String(2)	read-only	OS Version
1.2.0	identSWAgentVersion	String(3)	read-only	Application Version
1.3.0	idensHWVersion	String(3)	read-only	Hardware Version
4	monitor			Monitor Group
4.1	pingServer			ping monitoring setting
4.1.1.0	pingServerNumEntries	INTEGER	read-only	Ping monitoring count
4.1.2.0	pingServerTable		not-accessible	ping monitoring table
4.1.2.1.0	pingServerTableEntry		not-accessible	
4.1.2.1.1.(index)	pingServerTableIndex	INTEGER	read-only	ping monitoring index
4.1.2.1.2.(index)	pingServerName	STRING(31)	read-only	ping monitor name
4.1.2.1.3.(index)	pingServerAlertValue	INTEGER{ normal(1), occurred(2) }	read-only	ping monitor condition normal(1), event occurred(2)
4.1.2.1.4.(index)	pingServerIpAddress	STRING(63)	read-only	ping monitoring address
4.3	logDump			log setting
4.3.1.0	logDumpEventlog1	OBJECT IDENTFIER	read-only	event log from 1 to 85
4.3.2.0	logDumpEventlog2	OBJECT IDENTFIER	read-only	event log from 86 to 170
4.3.3.0	logDumpEventlog3	OBJECT IDENTFIER	read-only	event log from 171 to 255
5.1	controlLight			signal tower control
5.1.1.0	controlLightNumEntries	INTEGER	read-only	count of control entries
5.1.2.0	controlLightTable		not-accessible	signal tower table
5.1.2.1.0	controlLightTableEntry		not-accessible	
5.1.2.1.1.(index)	controlLightDeviceColor	INTEGER {red(1), amber(2), green(3), blue(4), clear(5), buzzer(6) }	read-only	signal tower color R(1)/Y(2)/G(3)/B(4)/C(5)/Buz(6)
5.1.2.1.2.(index)	controlLightControlState	INTEGER {turn-off(1), turn-ON(2), blinking-pattern(3), nop(4), blinking-patern2(5), sound-pattern4(6) }	read-write	Signal Tower Status: lights and buzzer off(1)/lighting and buzzer synchronized with light pattern1(2)/flashing pattern1 and buzzer synchronized with light pattern2(3)/no change(4)/flashing pattern2 and buzzer synchronized with light pattern3(5)/buzzer synchronized with light pattern 4(6). controlLightControlTimer is set by entering values above zero.
5.1.2.1.3.(index)	controlLightControlTimer	INTEGER(-1,99)	read-write	A preset value is decremented for every second until it is 0, then it changes to the status designated by the controlLightControlState.
5.1.2.1.4.(index)	controlLightCurrentState	INTEGER { off(1), on(2), blinking-pattern1(3), blinking-pattern2(4), sound-pattern4(5) }	read-only	The present status is displayed. lights and buzzer off(1)/lighting and buzzer synchronized with light pattern1(2)/flashing pattern1 and buzzer synchronized with light pattern2(3)/flashing pattern2 and buzzer synchronized with light pattern3(4)/buzzer synchronized with light pattern4(5)
5.1.3.0	controlLightSnmpClear	INTEGER{ execute(1), nop(0) }	read-write	execute(1) setup will clear the Signal Tower operation.
6	Trap			
6.1	trapPatliteAlarmAdded	OBJECT-IDENTIFIER	not-accessible	When an abnormality in the PING occurs
6.2	trapPatliteAlarmRemoved	OBJECT-IDENTIFIER	not-accessible	When an abnormality in the PING is restored
6.3	trapPatliteTrapReceived	OBJECT-IDENTIFIER	not-accessible	When a trap is received
6.4	trapPatliteClearExecuted	OBJECT-IDENTIFIER	not-accessible	When the clear button is pushed
6.5	trapPatliteRshExecuted	OBJECT-IDENTIFIER	not-accessible	When an RSH command is executed
6.6	trapPatliteAppMonitorAlarmAdded	OBJECT-IDENTIFIER	not-accessible	When an abnormality in the application occurs
6.7	trapPatliteAppMonitorAlarmRemoved	OBJECT-IDENTIFIER	not-accessible	When an abnormality in the application is restored
6.8	trapPatliteTestSwExecuted	OBJECT-IDENTIFIER	not-accessible	When the test switch is pushed

6 Replacement and Option Parts

The following explains the repair and maintenance parts of this product. Signal Tower tiers can be increased or decreased by the customer by purchasing the necessary parts.

6.1 Replacement Parts

The following is the replacement part list for the NHL, NHP and NHS Series. When inquiring, please ask the store where you purchased this product. Rubber feet, AC Adaptor, and adhesive seal are common accessories.

Table 6.1.1 NH Series Replacement Parts

Model Name	Part Name	Part Number
NHL (φ60 Type)	Head Cover	B32310027-1F1
	Center Shaft 5 Tier	S33552120-04225F1
	Center Shaft 4 Tier	S33552120-04180F1
	Center Shaft 3 Tier	S33552120-04140F1
	Center Shaft 2 Tier	S33552120-04100F1
	Center Shaft 1 Tier	S33552120-0455F1
	LED Unit Red	B72100168-1F1
	LED Unit Amber	B72100168-2F1
	LED Unit Green	B72100168-3F1
	LED Unit Blue	B72100168-4F1
	LED Unit White	B72100167-7F1

Table 6.1.2 Compatable Replacement Parts

Part Name	Part Number
Cover Seal	T93190007-1F1
Rubber Feet	T81800007-F1
Bottom Seal	T93130009-F1
Support Base (Screws Included)	T81800019-F1

6.2 Signal Tower Unit Color Arrangement

The following explains the method when rearranging or repairing the LED units from customer purchased parts.

6.2.1 NHL Signal Tower Unit (Color) Rearrangement Method

1. Turn the power off before changing the color sequence.
2. Carefully peel off the cover sticker, then loosen the center shaft and remove the head cover and shaft. Because the upper and lower LED units are secured to each other by two snaps, carefully remove the LED unit by gently pushing the snaps inward.
3. When increasing or decreasing tiers, be sure to replace the center shaft with the proper length to match the number of tiers when changing.
4. After the center shaft is properly fixed, place the static-free cover sticker back on.

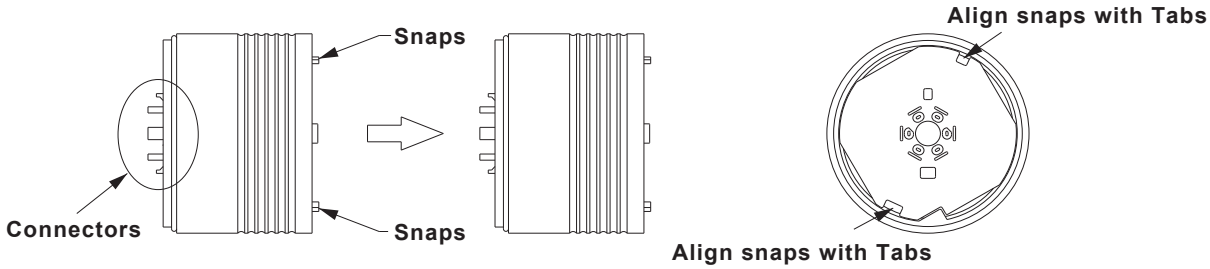


Fig. 6.2.1 NHL Signal Tower Unit (Color) Rearrangement Figure

Please

- Do not attempt to forcibly detach an LED unit. Failure to comply may damage the unit.
- The LED unit falling and breaking may result if the center shaft is not properly tightened.
- Overtightening the center shaft may cause damage to the threads or tapping hole, causing possible malfunction or damage to the LED units.
- Be sure to torque the center screw no more than 0.68 N-m. Failure to do so may cause damage to the unit
- Be careful of the contact pins when handling the LED unit, they may be sharp.

6.3 Option Parts

The following explains the mounting instructions of this product for the option parts available that customers had purchased.

6.3.1 Wall Mount Bracket

This product can be attached to a wall with the wall mount bracket. One wall mount bracket can be used to attach this product on either the left-side or right-side of the wall.

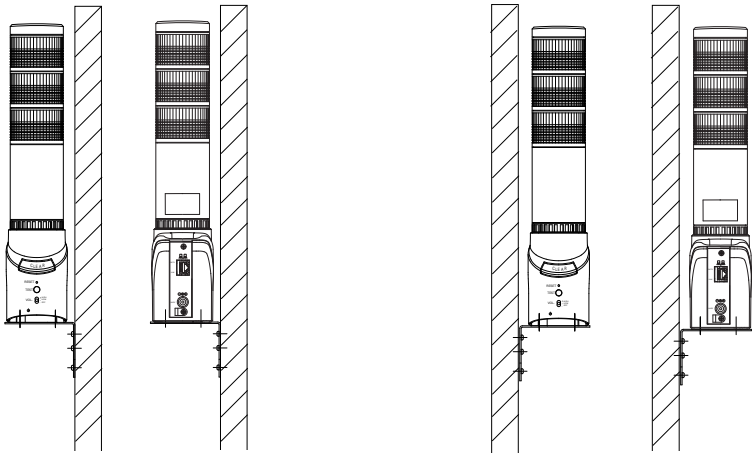


Fig. 6.3.1 Wall Mount Surface Bracket Figure
(Figure to the left indicates the left-sided attachment; figure to the right indicates the right-sided attachment)

Please The installation direction for this product is only for the front attachment direction.

[Installation Method]

1. After deciding on the attachment direction of the wall mount bracket, assemble this product to the bracket. (Use the same installation screw enclosed for assembling the Support Base).

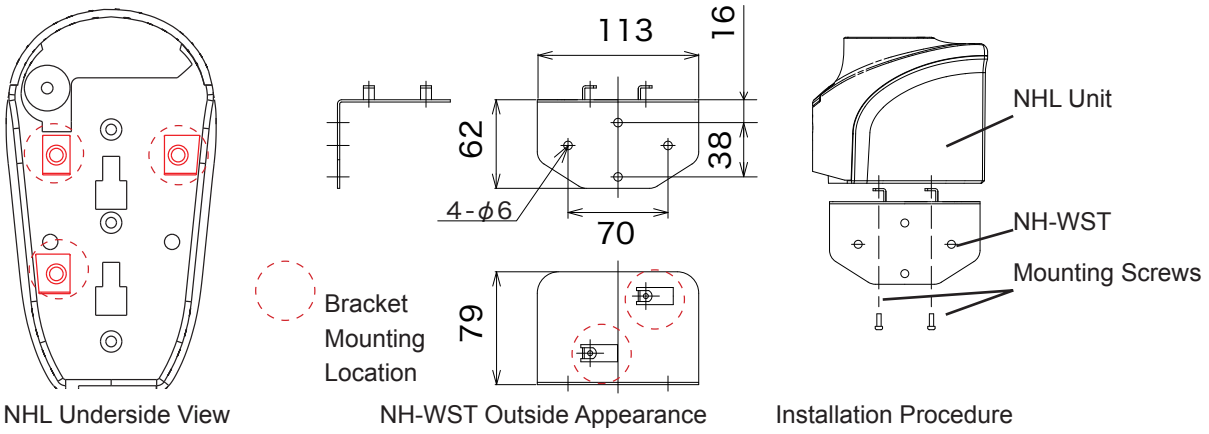


Fig. 6.3.2 Wall Mount Bracket Installation Diagram

2. Fix the wall mount bracket to the wall surface. Please select the proper screw when installing the wall mount bracket to the customer's wall in accordance to the quality of the wall material to be mounted upon.

Please

Tighten the screws between this product and the bracket with a torque of about 0.39 N-m.
Failure to do so may cause damage to the unit.
Verify the installation is securely clamped to ensure there is no fear of detachment and falling after installation. Apply the power after checking that it has been installed correctly.

6

Option Name	Part Number
Wall Mounting Bracket	NH-WST

6.3.2 Partition Mounting Bracket

The partition mounting bracket is an optional item for attaching to partition walls in environments which cannot be attached to walls or other positions. The partition mounting bracket is designed to be attached with the front of this product facing to the right or left when fastening it to the partition.

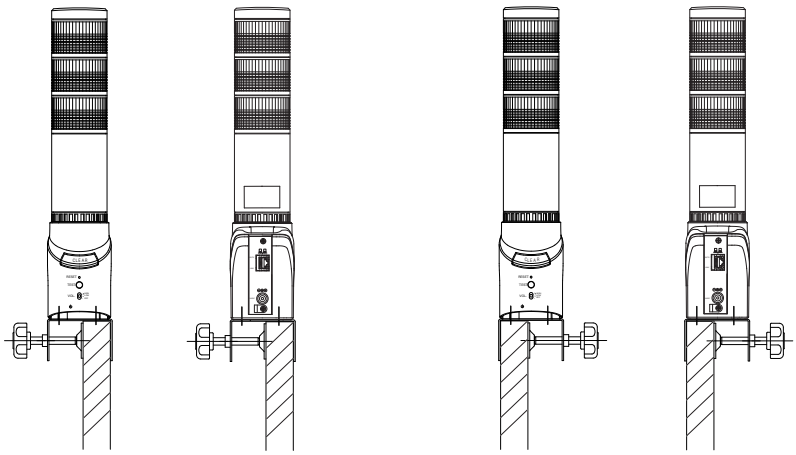


Fig. 6.3.3 Partition mounting bracket installation example
(Left image is for the left-side and the right image is for the right-side installations)

Please The installation direction for this product is only for the front attachment direction.

[Installation Method]

1. After deciding on the attachment direction of the partition mounting bracket, assemble this product to the bracket. (Use the screws include when assembling).

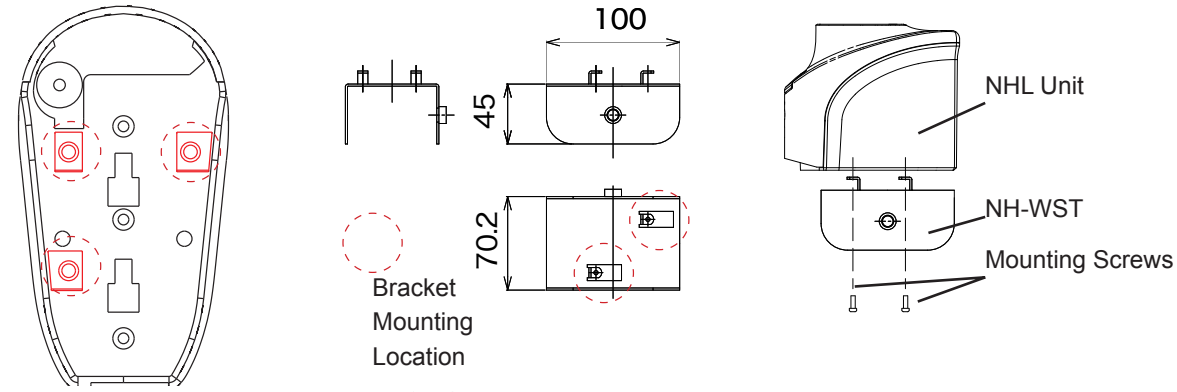


Fig. 6.3.4 Partition mounting bracket installation method

Please Tighten the screws between this product and the partition mounting bracket with a torque of about 0.39 N-m. Failure to do so may cause damage to the unit.

2. Check the width of the partition, then select the proper clamping screw to thread through the bracket. Attach the pressure plate and fittings.

Fig. 6.3.5 Installation Method 1

3. Turn the clamping screw clockwise to tighten.

Fig. 6.3.6 Installation Method 2

Option Name	Part Number
Partition Mounting Bracket	NH-PST

Please The partition mounting bracket may break if too much torque is applied.

7 Troubleshooting

Problem	Check the following
The power does not turn on.	• Check whether the AC Adaptor is connected correctly.
The Web setup tool does not display.	• Check whether the LAN connector is connected correctly. • Check the setup for the IP address on this product. • Check the setup for the IP address on the PC side. • Refer to 2.5 "Network Setup" for the IP address set up procedure.
The Web setup tool does not display correctly.	• Make sure the browser information has been recently updated.
The Signal Tower does not turn on.	• Check whether the AC Adaptor is connected correctly. • Check the setup of the Signal Tower operation with the Web setup tool. Refer to "4.13 Normal Mode Setting Screen" for the procedure to set up for the normal operation mode. • After any recombination of tiers to the Signal Tower has been done, check whether the Signal Tower lights up by accessing the Signal-Tower Output Control screen. If the light does not turn on, it may not be installed correctly. Refer to "4.15 Signal-Tower Output Control Screen" for the procedure to control the Signal-Tower output.
The buzzer does not sound.	• Check whether the volume switch has been set in the "OFF" position. • After each setup, check the buzzer operation. Refer to "4.15 Signal-Tower Output Control Screen" for the procedure to setup the buzzer output.
Socket communication does not work.	• Check whether the correct communication port has been set. Refer to "4.5 Socket Communication Configuration Screen" for the setup procedure of the Socket Communication. • Check whether the data had been sent correctly. For data transmitted by the Socket Communication, refer to "3.5 PHN Command Reception Function" and "3.6 PNS Command Reception Function".
The RSH command data is unreceivable.	• Check the command reception setup. Refer to "4.8 Command Reception Configuration Screen" for the setup procedure of the command reception. • Check whether the security settings for the PC has granted permission.
I want to return it to the factory settings.,	• Refer to "3.13 Reinitialization".
The E-mail transmission cannot be sent.	• Check whether the setup for the server is correct.
The SNMP SET/GET does not work.	• Check the SET Community name and GET Community name.
The status LED is flashing.	• It may be in the factory-shipment inspection mode. Please reboot this product.

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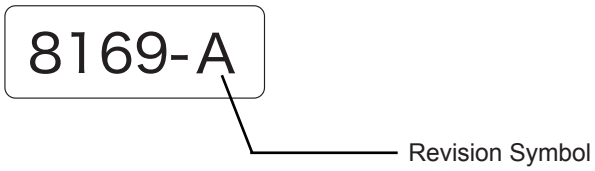

Revision Symbol	Revision Date	Contents of Revision
A	June, 2011	First Publishing
B	Sep, 2011	Added text to the UL standards

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