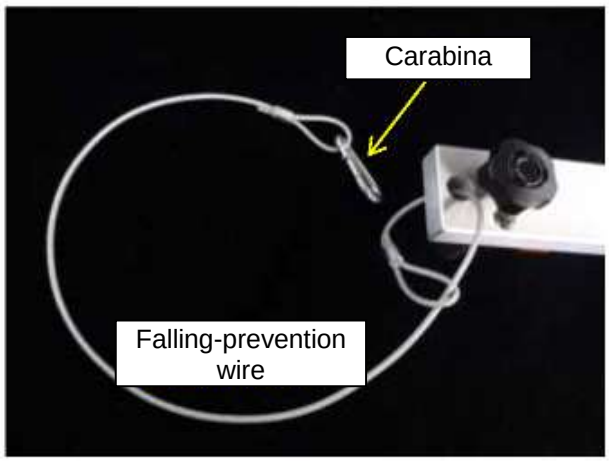
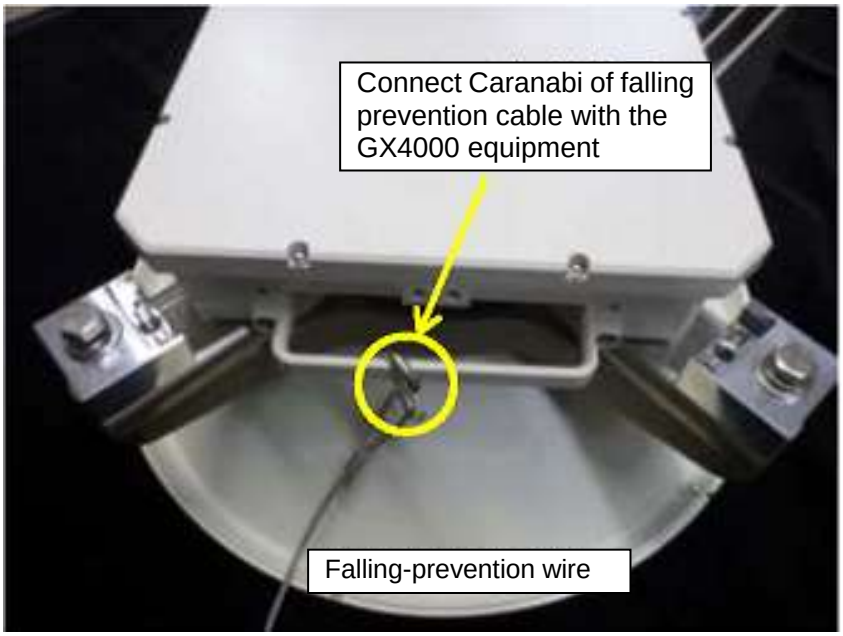
STEP-5: Fitting Falling-Prevention Wire

- Pass through the falling-prevention wire to the mounting material.

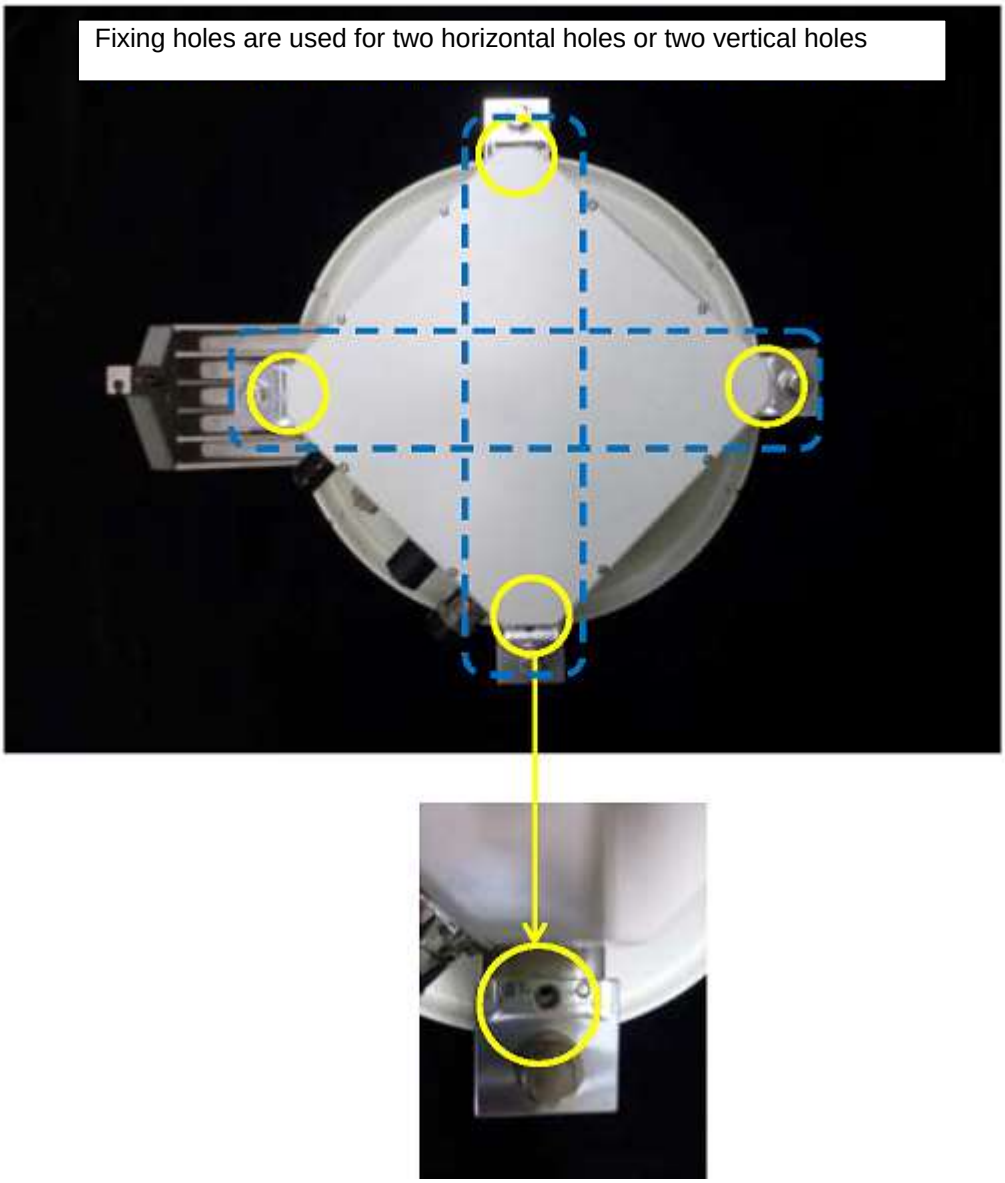


STEP-6: Install Telescope Mounting Material

- Pass through the falling-prevention wire to the mounting material.

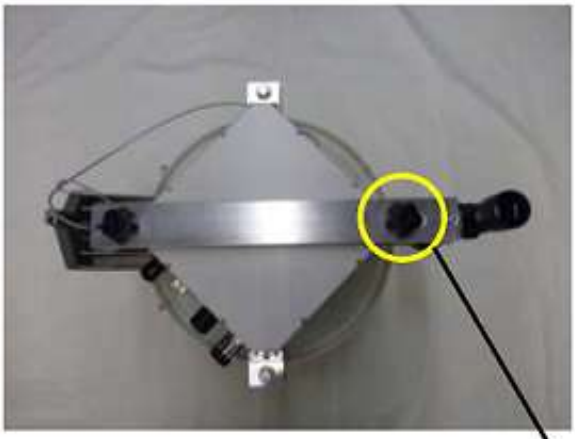


- Fix the telescope fixing material using two (2) holes of four (2) holes of connection material.

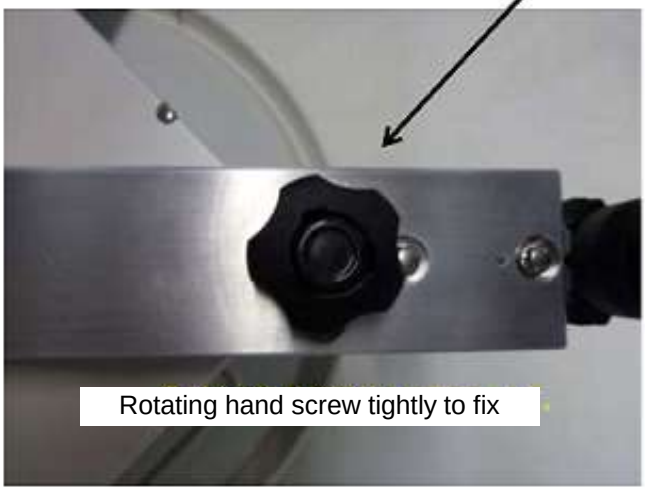


Installation Bottom

Installation Top

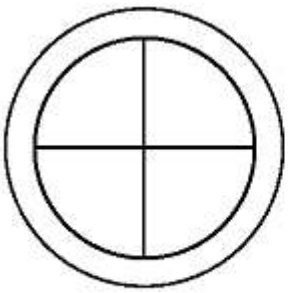


Installation Left or Right

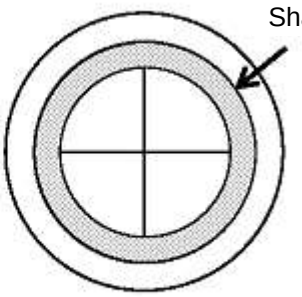


3.9.4 Instruction of Telescope

- Look through a telescope, right eye releaf is necessary.
  Right releaf is 7 to 10 cm.



Right eye releaf



Bad eye releaf

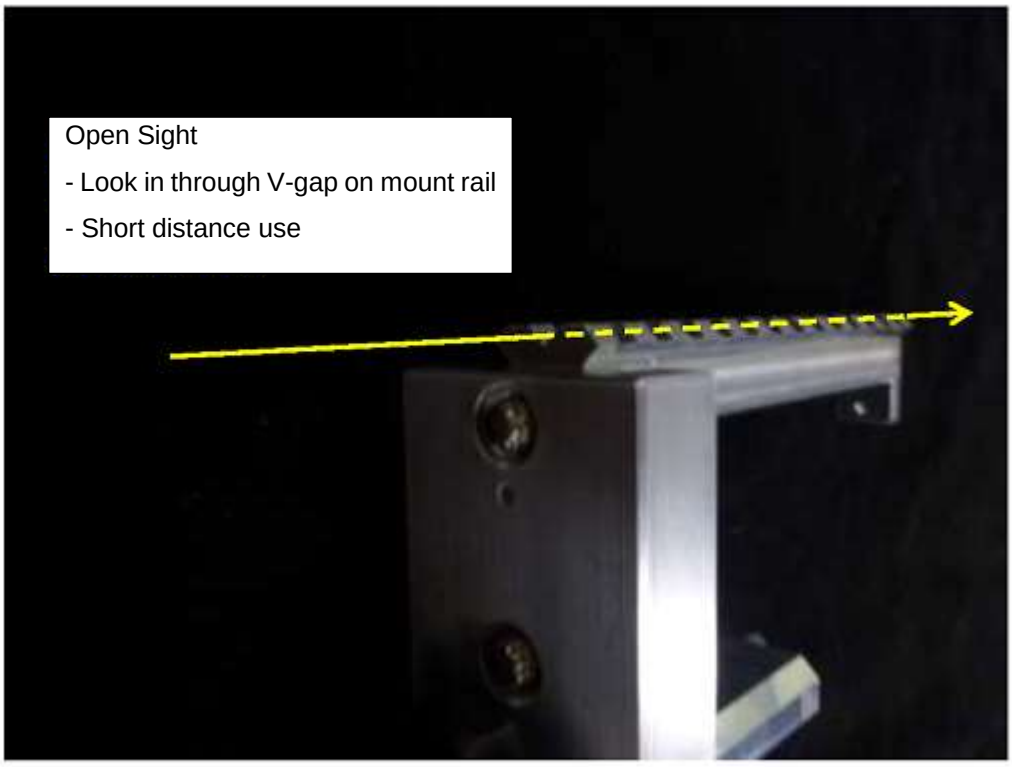
- For long distance target or enlargement of target, rotate the zoom ring.
- For blurred image, rotate forcus ring

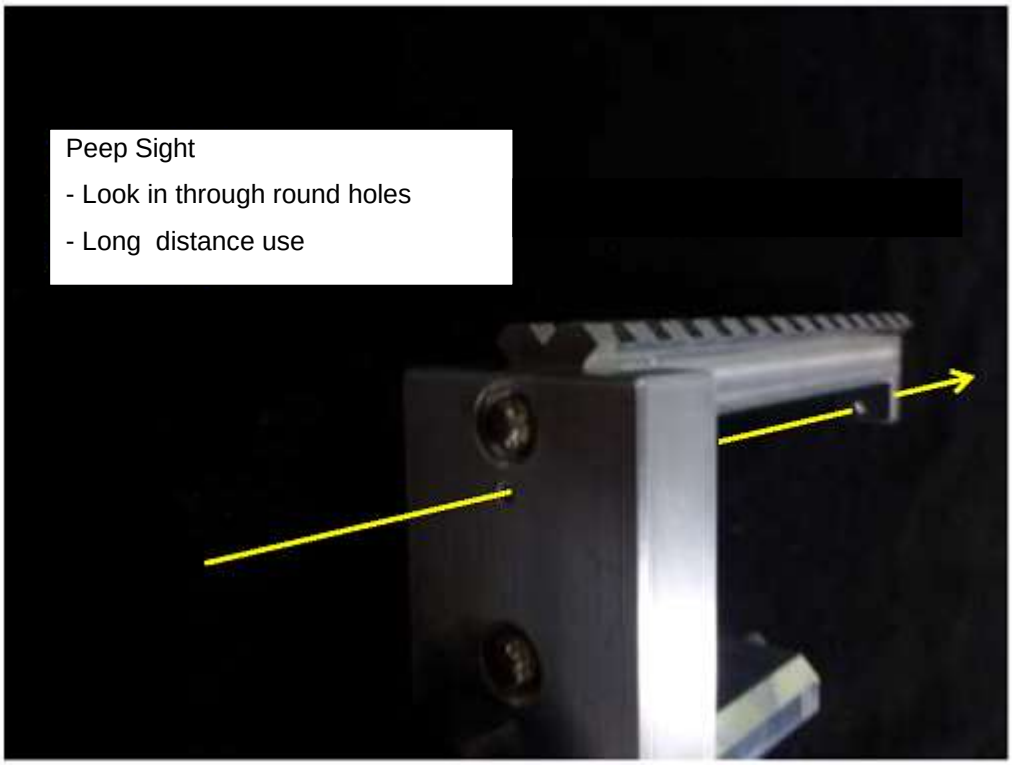
Forcus Ring (30-feet to infinite)

Zoom Ring (3 to 9)

3.9.5 Instrunction of Sighting Device

- Look through a telescope, right eye releaf is necessary.





4 Maintenance and Trouble Shooting

4.1 Overview

This chapter explains how to do the maintenance of GX4000 link. Main topics covered are;

- Routine Maintenance
- Loopback Function
- ODU Removal for replacement
- ODU replacement
- Firmware update
- Housekeeping
- Cleaning of optical connector

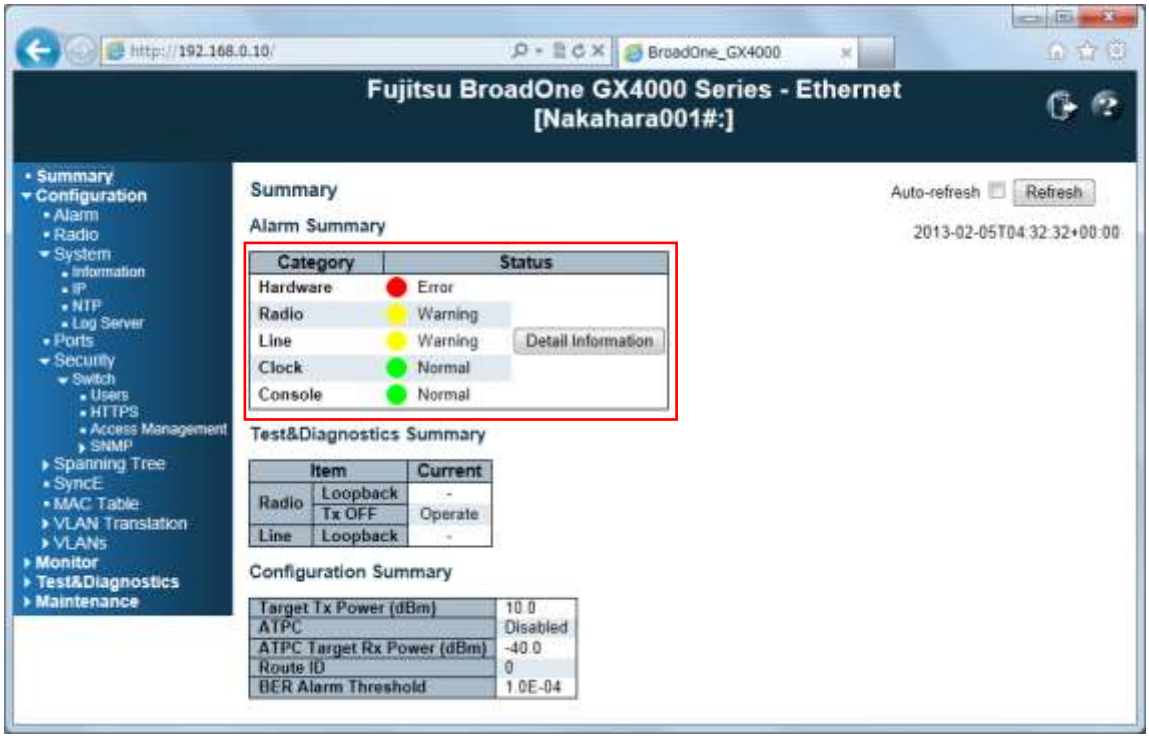
4.2 Routine Maintenance

Routine maintenance is carried out by WebLT regularly and monitoring items are as follows;

- Summary
- Radio Performance

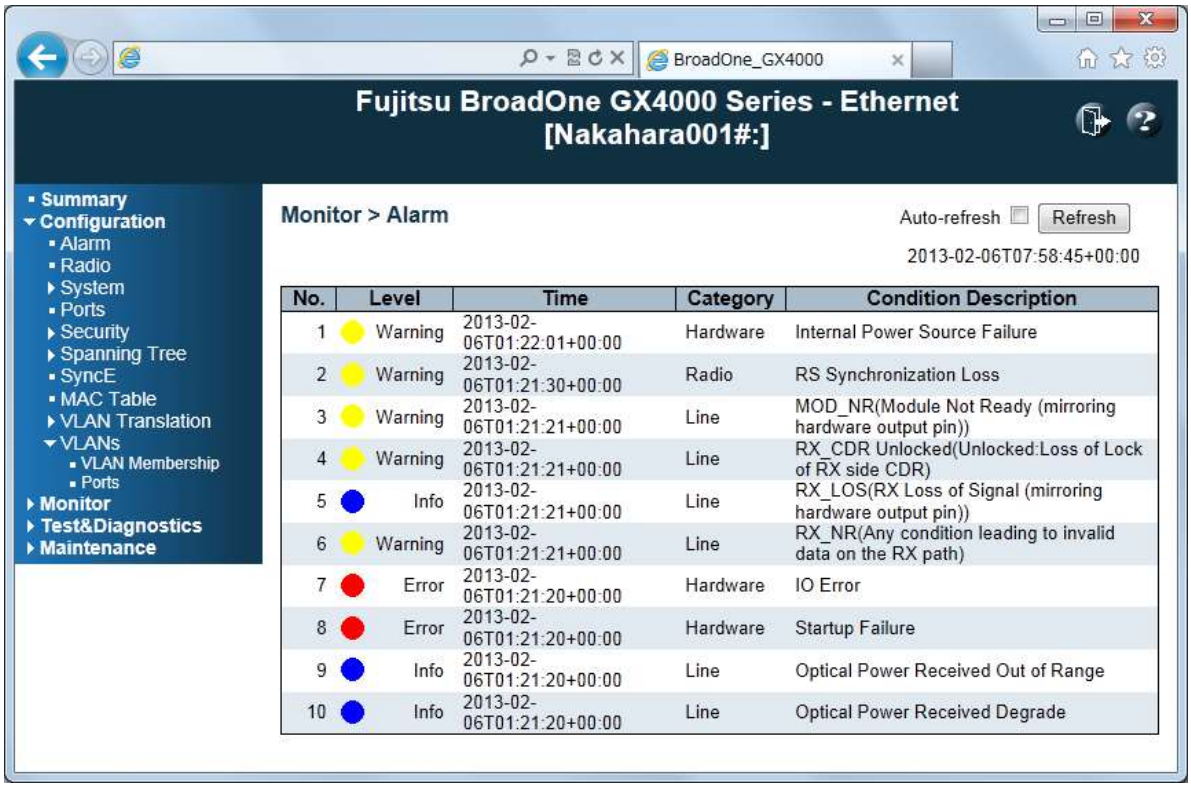
Summary

- Click Summary menu
- Confirm that all Categories are Normal



Alarm Summary Menu

- If Warning and/or Error is issued, click Detail Information button
- Identify the cause from alarm and description list



Monitor > Alarm Sub Menu

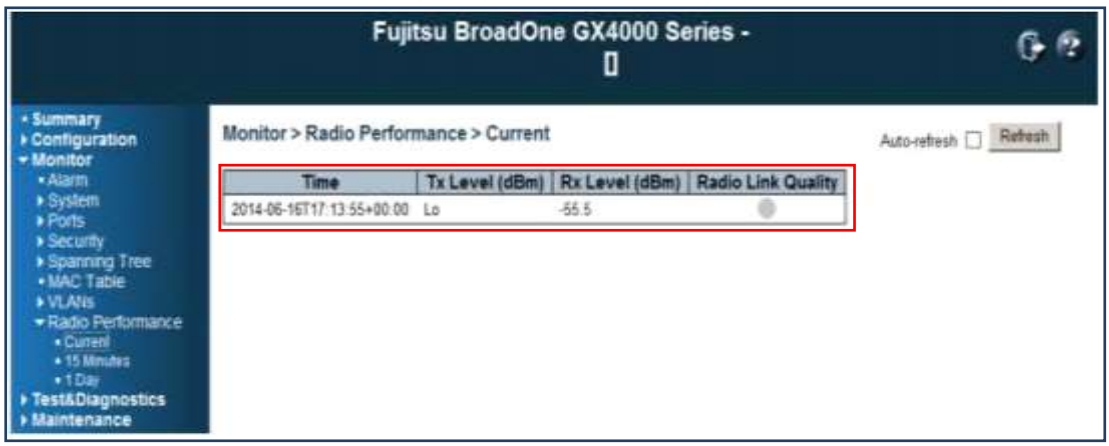
No	Category	Cause Factor	Status Description	Level
1	Hardware	EQPT	Processor Failure	E
2		EQPT	Start-up Failure	E
3		EQPT	Internal Heath Check Failure	E
4		EQPT	Internal Clock Failure	E
5		EQPT	PLL Failure	E
6		EQPT	TX Block Failure	E
7		EQPT	XFP Optical Module Absence	E
8		EQPT	XFP Optical TX Block Failure	E
9		EQPT	SFP Optical TX Block Failure	E
10		EQPT	10G PHY Failure	E
11		EQPT	1G PHY Failure	E
12		EQPT	Internal Data Failure	E
13		EQPT	IO Failure	E
14		EQPT	FPGA Upload NG	E
15		EQPT	Software Upload NG	E
16		EQPT	FPGA Image Select NG	E
17		EQPT	FPGA Config Invalid (nStatus/CONF_DONE Invalid)	E
18		EQPT	Internal Power Source Failure	E/W/I
19		EQPT/ENVR	High Temperature	E/I
20		ENVR/ENVR	Laser Temperature High	E/I
21		ENVR	Low Temperature	W/I
22		ENVR	Laser Temperature Low	W/I
23		(MON INFO)	L2SW Failure	W
24		(MON INFO)	FPGA Config RAM CRC Failure	I
25	Clock	EXT	Sync-E PLL DPLL0 UNLOCK	W
26		EXT	Sync-E PLL DPLL1 UNLOCK	W
27		EXT	Sync-E PLL DPLL0 HOLDOVER	W
28		EXT	Sync-E PLL DPLL1 HOLDOVER	W

No	Category	Cause Factor	Status Description	Level
29	LINE	EQPT	Optical Power Transmitted Out of Range	E
30		EXT	External Clock Degrade on Sync Ethernet Line	W
31		EXT	External Clock Degrade on Sync Ethernet CRPI	W
32		EXT	External Clock Degrade on Sync Ethernet L2SW	W
33		EXT	XFP RX_NR (Any condition leading to invalid data on the RX path)	W
34		EXT	XFP RX_LOSS (mirroring hardware output pin)	I
35		EXT	XFP RX_CDR Unlocked (Unlocked: Loss of Lock of RX side CDR)	W
36		EXT	XFP MOD_NR (Module Not Ready (mirroring hardware output pin)	W
37		EXT	10G PHY SIDE-MAC Transmit FIFO Underrun	W
38		EXT	10G PHY SIDE-Transmit Frame Abort	W
39		EXT	10G PHY SIDE-RX Symbol Error Count	W
40		EXT	10G PHY SIDE-RX Unsupported Opcode Count	W
41		EXT	10G PHY SIDE-RX CRC Error Count	W
42		EXT	10G PHY SIDE-RX Undersize Count	W
43		EXT	10G PHY SIDE-RX Undersize with CRC Error Count	W
44		EXT	10G PHY SIDE-RX MAC Client Data Length Mismatch Regal Length Field	W
45		EXT	10G PHY SIDE-RX Oversize Count	W
46		EXT	10G PHY SIDE-RX Oversize with CRC Error Count	W
47		EXT	Optical Power Received Degrade	W/I
48		EXT	Optical Power Received Out of Range	W/I
49		EXT	SFP RX_LOSS (RX Loss of Signal, mirroring hardware output pin)	I
50		MON INFO	LINE XAUI Packet Discard	W
51		MON INFO	LINE XAUI Packet Overflow	W
52		MON INFO	Optical Power Transmitted Degrade	W
53		MON INFO	Line Loopback Test	I
54	RADIO	EXT	External Clock Degrade on Sync Ethernet Radio	W
55		EXT	Radio Overhead Parity Error	W
56		EXT	RF XAUI Packet Discard	W
57		EXT	RF XAUI FCS Error	W
58		EXT	RF XAUI Abnormal Length Packet Discard	W
59		EXT	Radio BER Alarm	W
60		EXT	RS Synchronization Loss	W
61		EXT	RF Power Received Out of Range	W
62		EXT	RF Route ID Fail	W
63		(MON INFO)	RF Power Transmitted Out of Range	W
64		(MON INFO)	Auto Level Control Failure	W
65		(MON INFO)	Auto Gain Control Failure	W
66		(CONT INFO)	Radio Loopback test	I
67		(CONT INFO)	Radio TX OFF Test	I
68	Console	EXT	MII Status Auto-Negotiation Complete NG	W
69		EXT	MII Status Remote Fault	W
70		EXT	MII Status Link Status NG	W
71		EXT	MII Status Jabber Detect	W
72		EXT	1000BASE-T Status Master/Slave Configuration Fault	W
73		EXT	1000BASE-T Status Remote Receiver Staus NG	W
74		EXT	1G-PCS Synchronization Has Been Lost	W
75		EXT	1G-RX Symbol Error Count	W
76		EXT	1G-RX Unsupported Opcode Count	W
77		EXT	1G-RX CRC Error Count	W
78		EXT	1G-RX Undersize Count	W
79		EXT	1G-RX Undersize with CRC Error Count	W
80		EXT	1G-RX MAC Client Data Length Mismatch Regal Length Field	W
81		EXT	1G-RX Oversize Count	W
82		EXT	1G-RX Oversize with CRC Error Count	W

EQPT: Equipment, MON INFO: Monitoring Information, EXT: External
E: Error, W: Warning, I: Information

Radio Performance

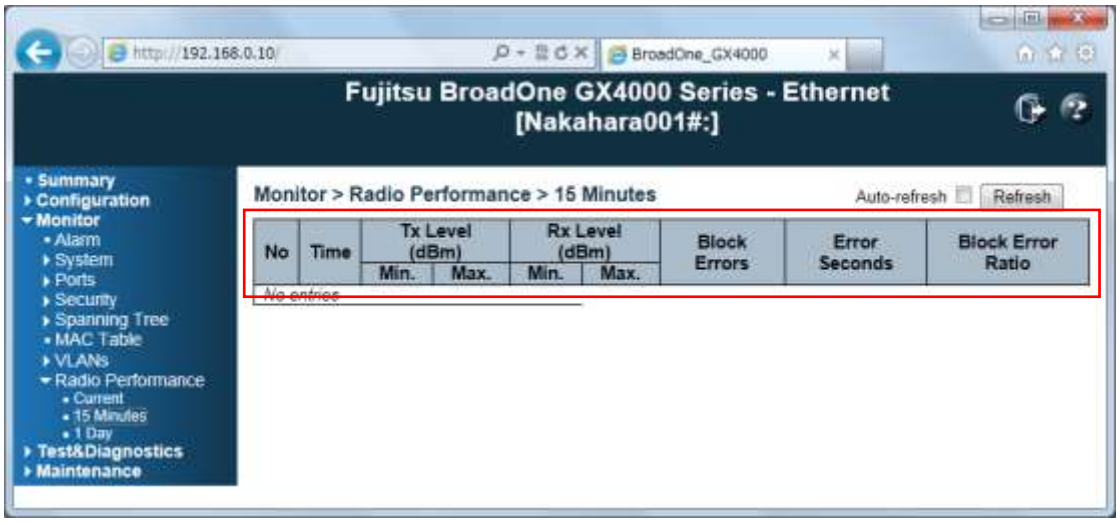
- Click Monitor > Radio Performance > Current
- Confirm that Tx Level and Rx Level is within specification



Radio Performance > Current

Item	Parameter	Specification
Tx Level (dBm)	TX output power	Setting value +/- 3 dB
Rx Level (dBm)	Received Signal Level	System design value +/- 3 dB

- Click Monitor > Radio Performance > 15 Minutes
- Confirm that 15 Minutes radio performance is within specification



Radio Performance > 15 Minutes

Item		Parameter (15min interval)	Specification
Tx Level (dBm)	Min.	TX power (Min.)	Setting value +/- 3 dB
	Max.	TX power (Max.)	Setting value +/- 3 dB
Rx Level (dBm)	Min.	RSL (Min.)	System design value +/- 3 dB
	Max.	RSL (Max.)	System design value +/- 3 dB
Block Error			0
Error Seconds			0
Block Error Ratio			0

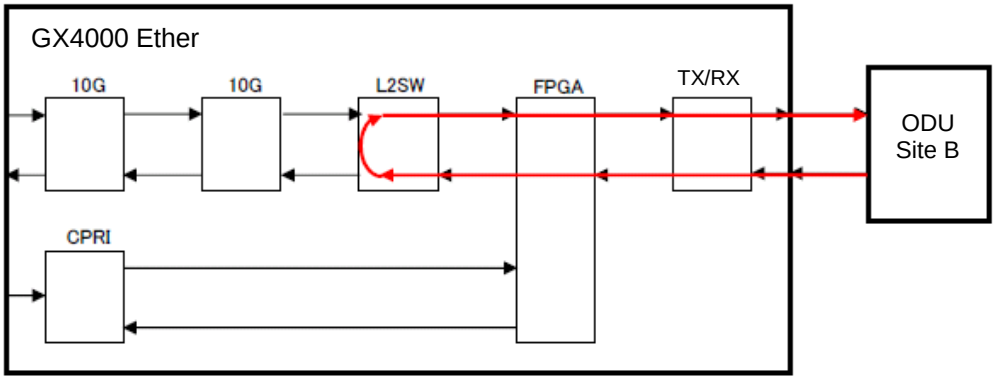
4.3 Loopback Function

Two types of loopback function are available:

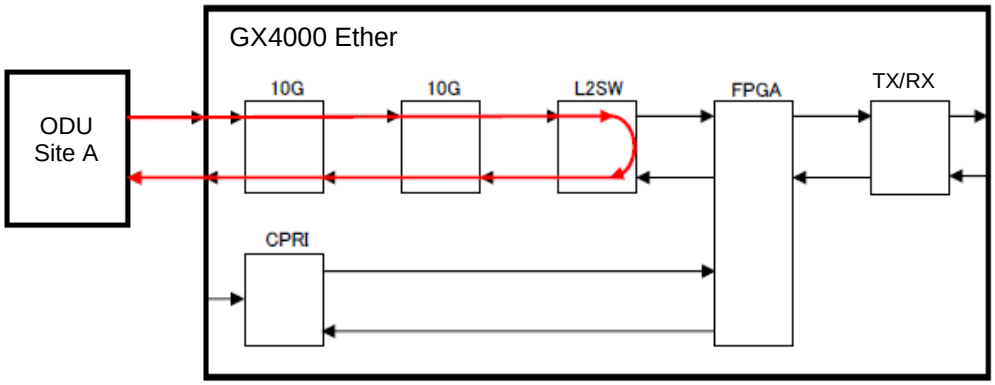
- Radio side loopback
- Line side loopback

Loopback Pont for Ether Interface

Loopback point of GX4000 for Ether interface is as follows;



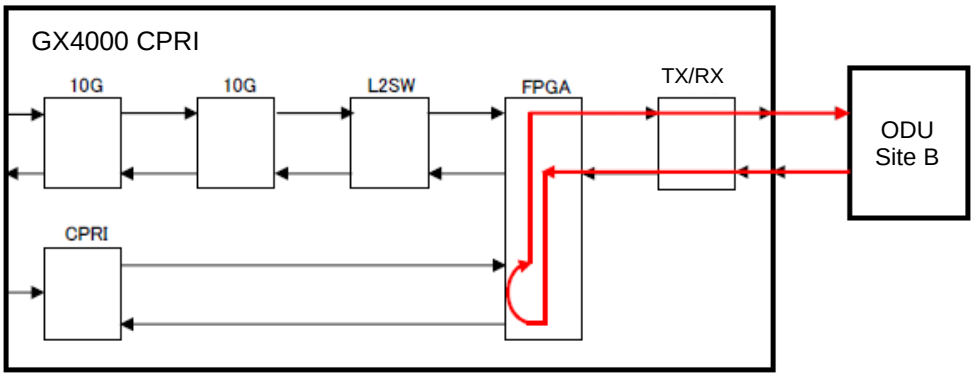
Radio Side Loopback



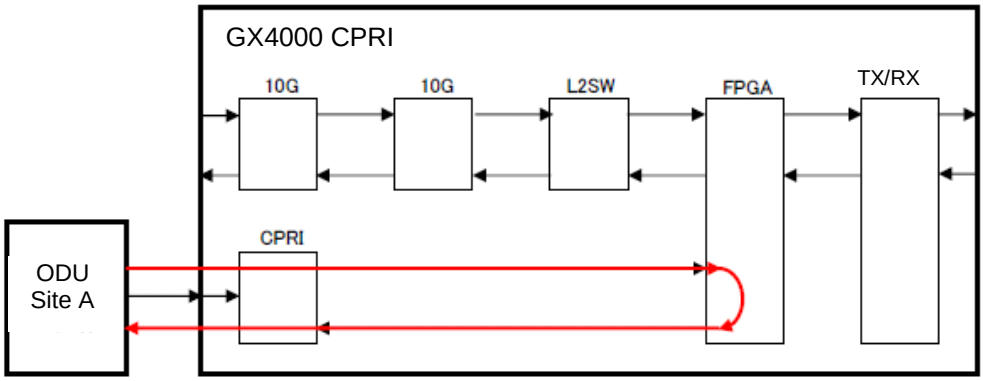
Line Side Loopback

Loopback Pont for CPRI Interface

Loopback point of GX4000 CPRI for Ether interface is as follows;



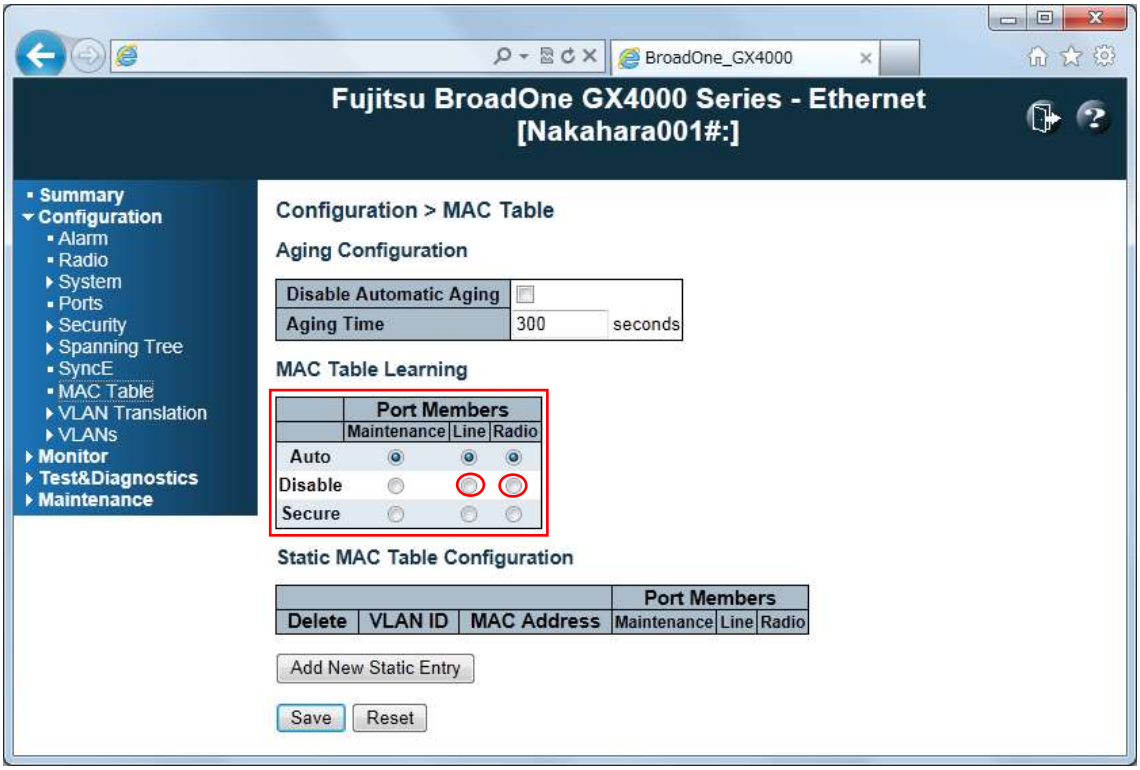
Radio Side Loopback



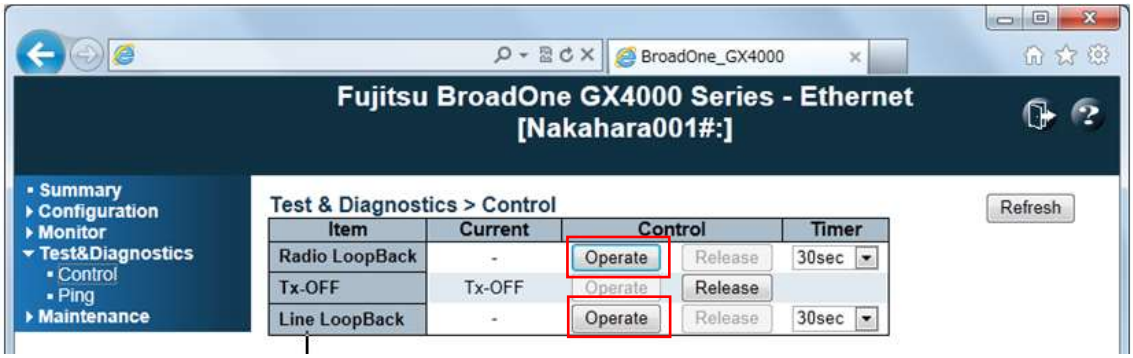
Line Side Loopback

Loopback Procedure

- Click Configuration > MAC Table and set Line and Radio to Disable
- Click Save button



- Click Test & Diagnostics > Control
- Click Operate button of Radio LoopBack or Line LoopBack



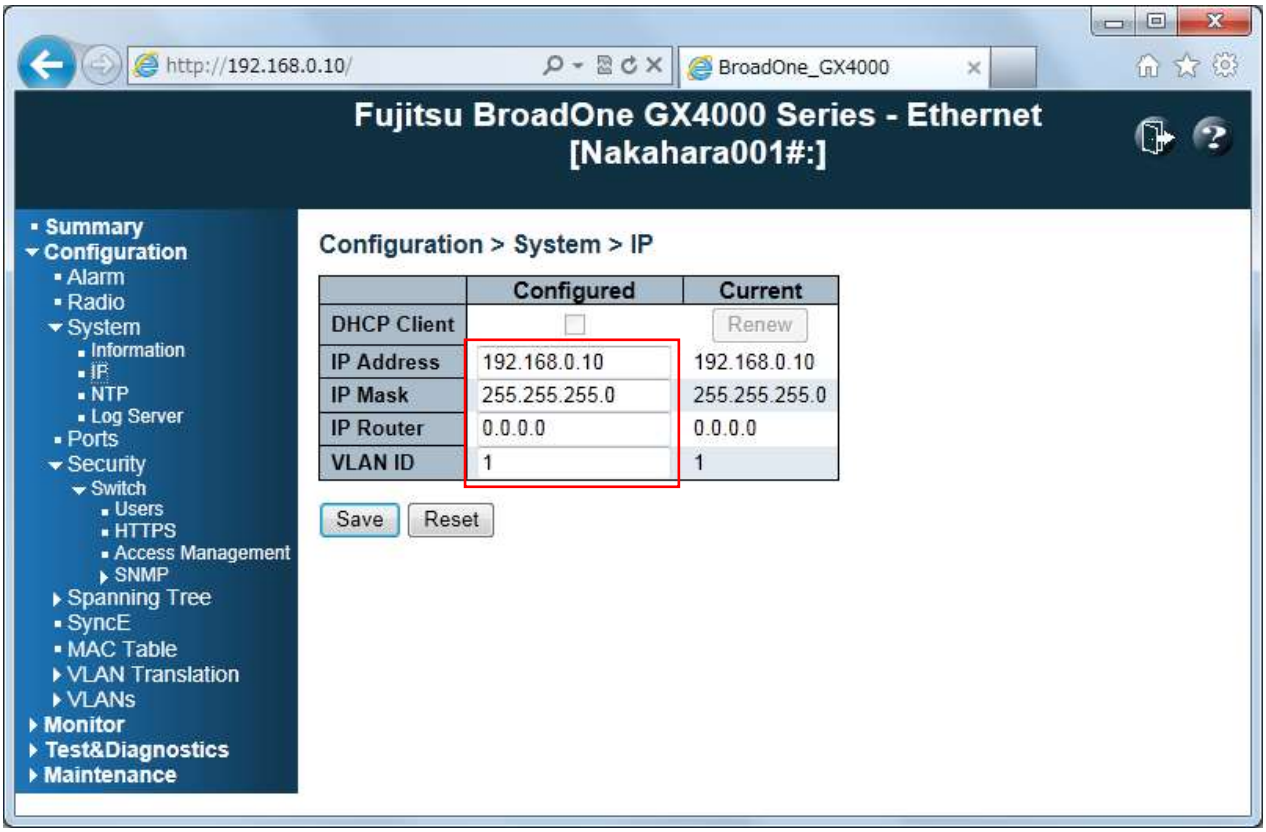
4.4 ODU Removal for Replacement

Prior to ODU removal, following actions should be taken:

- Record the IP Address information
- Save the Configuration Information to PC
- TX power OFF setting
- DC power supply OFF
- DDU replacement

Record the IP Address Information

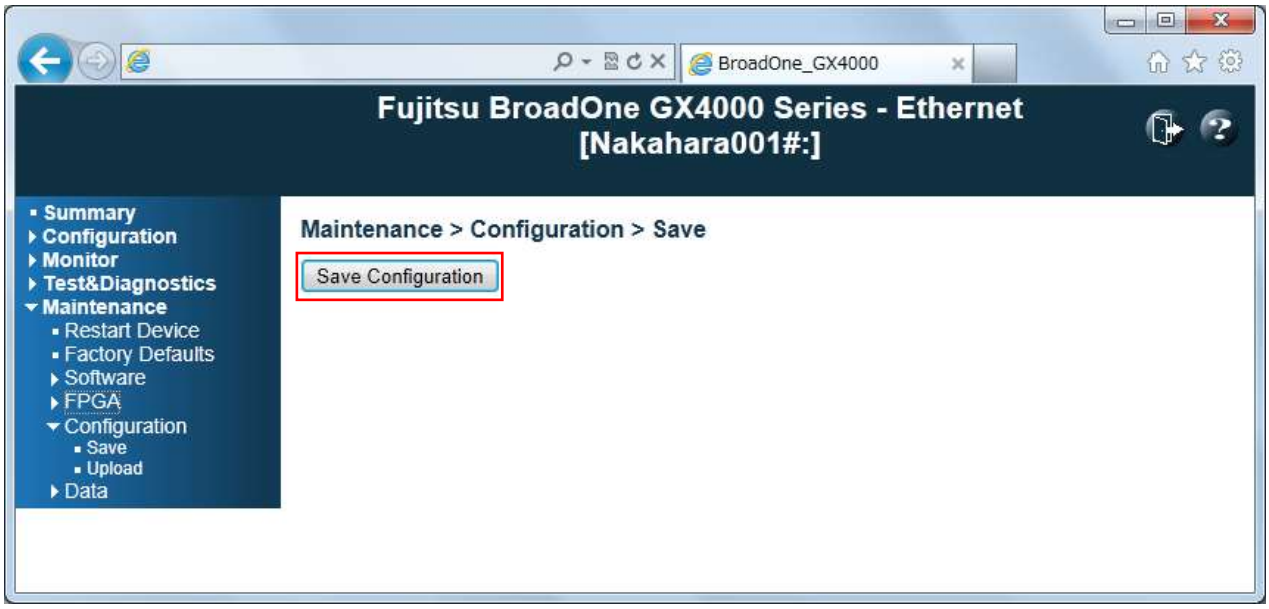
- Open WebLT and Click Configuration > IP
- Record IP Address, IP Mask, IP Router and VLAN ID



Configuration > System > IP

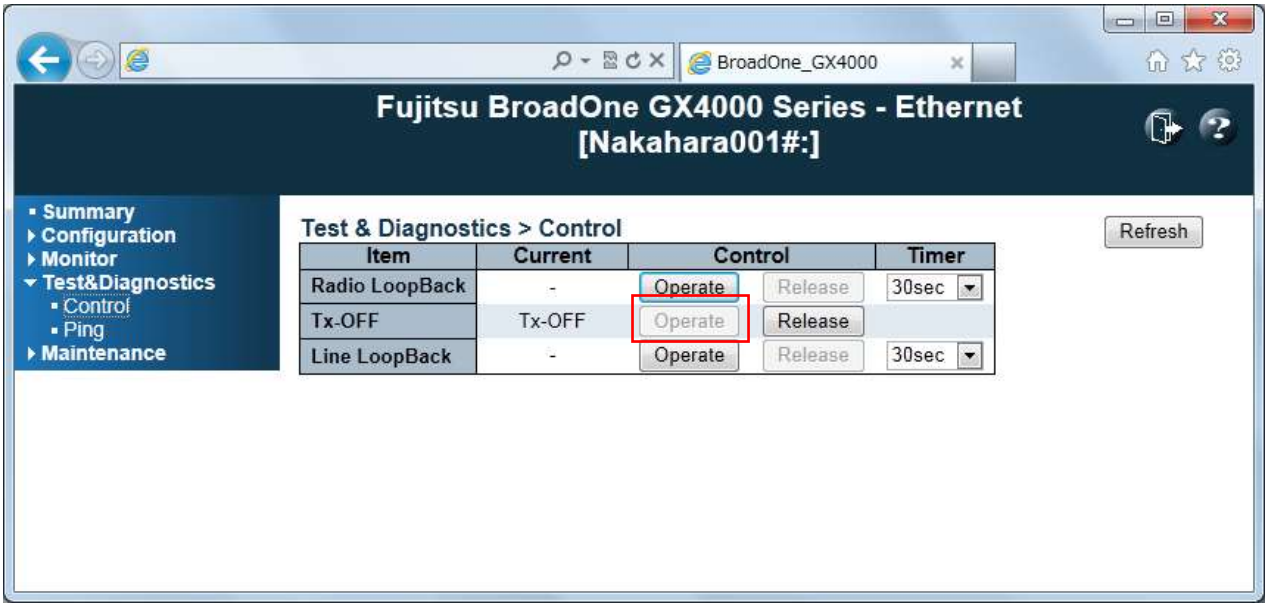
Save the Configuration Information to PC

- Click Maintenance > Configuration > Save
- Click Save Configuration and store to the PC folder.
- Record PC folder name: **config_yyyymmdd_hhmiss.xml**



TX Power OFF Setting

- Click Test & Diagnostics > Control
- Click Operate button of Tx-OFF item



Test & Diagnostics > Control

Cable Disconnection from ODU

- Remove PWR, OPT and LAN connectors from ODU

4.5 ODU Replacement

Prior to ODU replacement, following action should be taken in regular order:

- Removal/installation of ODU from/to antenna adaptor
- Cable connection
- DC power supply ON
- Download Configuration information to ODU
- TX power ON
- Confirmation of Signal Continuity
- ODU replacement form to Fujitsu Wireless Systems

ODU Removal/Installation Procedure

Please refer to Chapter 2 Site Survey & Installation, Section 2.6 ODU installation.

Cable Connection

- Connect PWR and LAN cables and OPT cable is connected after signal continuity test.

DC Power Supply ON

- Remove PWR connector on ODU
- Set circuit breaker switch for ODU to ON.
- Confirm that DC power supply voltage on PWR connector;

  Voltage between Pin-2 (-) and Pin-7 (GND) is -40.5 to -57.0 V

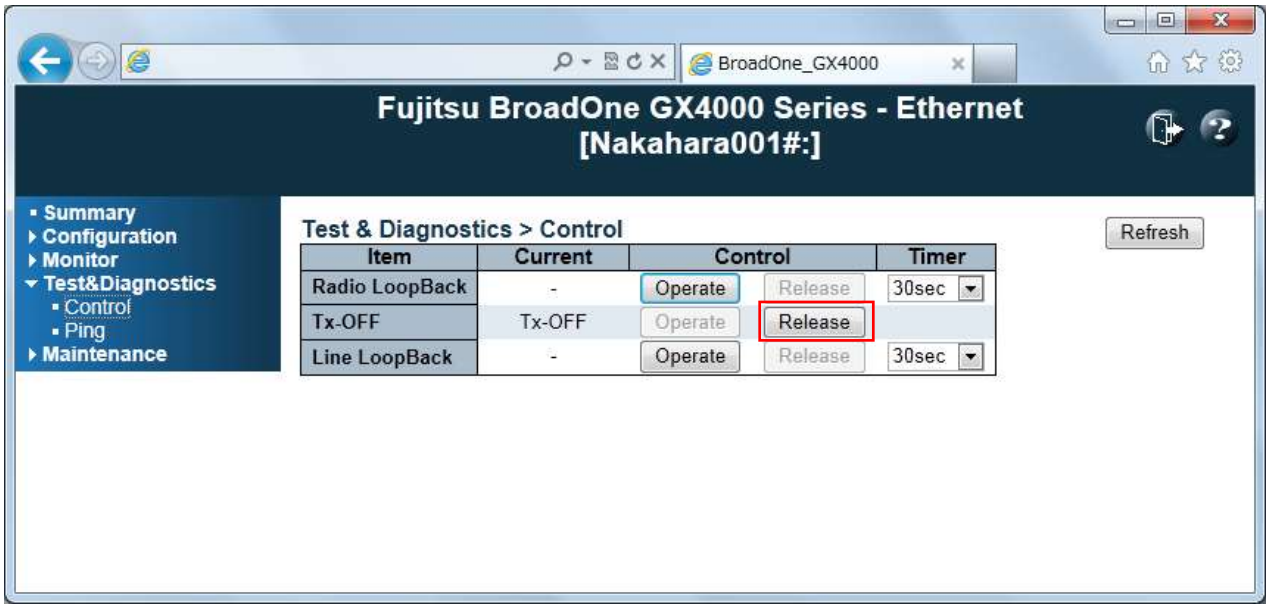
- Set circuit breaker to OFF.
- Connect PWR connector and set circuit breaker to ON

Download Configuration Information

- Open WebLT in accordance with Chapter 5, Section 5.2
- Recorded IP address information as stated Section 4.4 is input.
- Click Maintenance > Configuration > Upload
- Browse recorded save file name and click upload button

TX Power ON Setting

- Click Test & Diagnostics > Control
- Click Release button of Tx-OFF item



TX Power ON

Confirmation of Signal Continuity

- Confirm that Radio Performance is normal as shown in Section 4.2 Routine Maintenance, Radio Performance

Connection of Optical Cable

After completion of signal continuity test, connect optical cable.

ODU Replacement Form

After replacement of ODU, please send ODU to Fujitsu Wireless Systems.

For quick and adequate repair work, following information is essential to be attached to the ODU.

- Serial No.
- Station name and facing station name
- Frequency band
- Date and time alarm/abnormality detected
- Date and time the ODU replaced
- Detailed description of alarm/abnormality
- Detailed description after ODU replacement

Table 4.5 shows an example of “Faulty Report” format.

Table 4.5 Faulty ODU Report (Example)

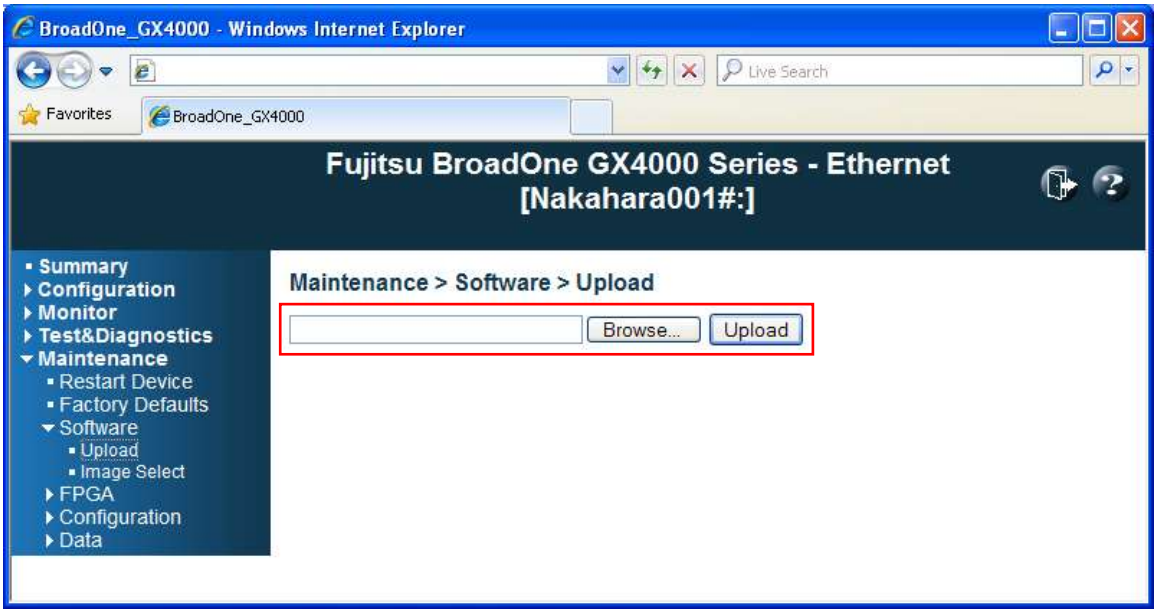
FAULTY ODU REPORT			
Name		Serial No.	
Station Name		Facing Station	
Freq. Band		TX Frequency	
System Configuration			
BB Interface	☐ Ether 10GbE ☐ CPRI RE ☐ CPRI REC	Optional IDU	☐ Yes ☐ No
If you are returning an ODU, please fill the below;--			
TX output level (setting) = dBm,		RSL (actual) = dBm	
Environmental condition:		Others:	
Date/time Alarm detected (mm/dd/yy. hh:mm)			
Date/time ODU replaced (mm/dd/yy. hh:mm)			
Details of alarm/status and other conditions before ODU replacement			
Details of alarm/status and other conditions after ODU replacement			
Other comments if any			
Compiled by		Date (mm/dd/yy)	
Checked by		Date (mm/dd/yy)	
Approved by		Date (mm/dd/yy)	

4.6 Firmware Update

Update of software firmware and FPGA data are available using on WebLT: For details, refer to Chapter 5 WebLT.

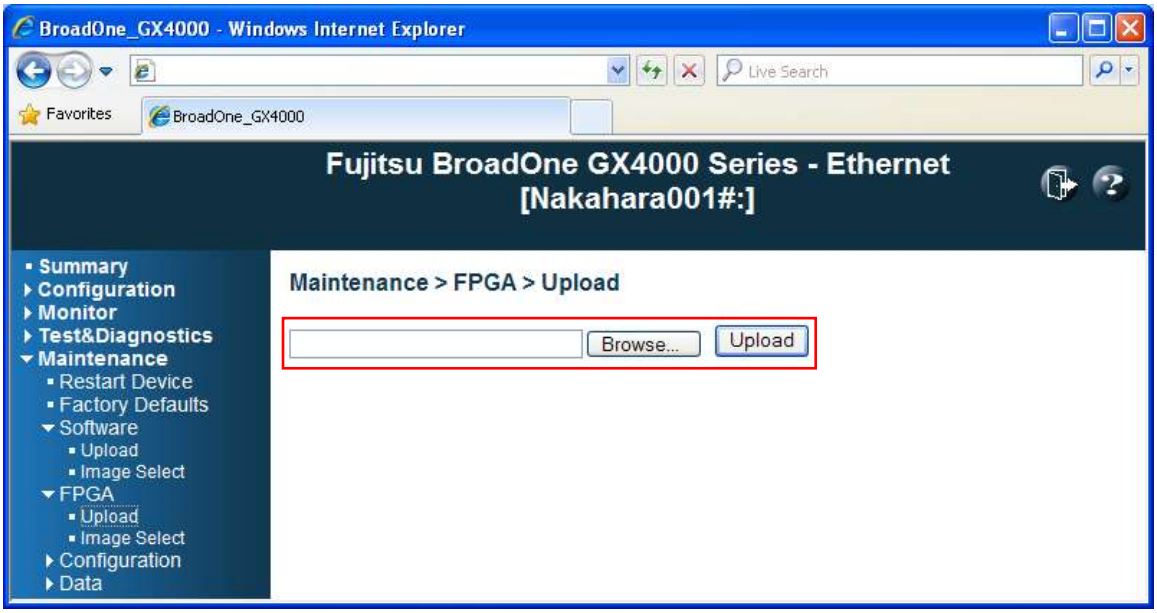
Firmware Update

- Click Maintenance > Software > Upload
- Browse PC folder and click Upload button



FPGA Update

- Click Maintenance > FPGA > Upload
- Browse PC folder and click Upload button



4.7 Housekeeping

Housekeeping items of supervisory and control information can be connected to the external equipment.

Monitor Cable (MON) Pin Assignment

Table 4.7 shows the pin assignment of MON cable.

Table 4.7 Pin Assignment of Connector (MON)

Item	GX4000 Side					Ext Equipment Side	
	Signal	Direction	Connector	Pin No.		Label	Connector
1	CLOSE ALM	-		1		TM1	M4 Crimp
2	OPEN ALM	-		2		TM2	M4 Crimp
3	COMMON	-		3		TM3	M4 Crimp
4	NC	-		4		-	-
5	NC	-		5		-	-
6	NC	-		6		-	-
7	EXT XRST	IN		7		TM5	M4 Crimp
8	SG	-		8		TM6	M4 Crimp

Supervisory (SV) Item Parameter

SV Item	Pin No.	Output device	Condition	Status
PS ALM	1	Photo MOS relay	60V/0.55A	Normal: Open ALM: Close
	4			
TOTAL ALM	2			
	5			

Control Item Parameter

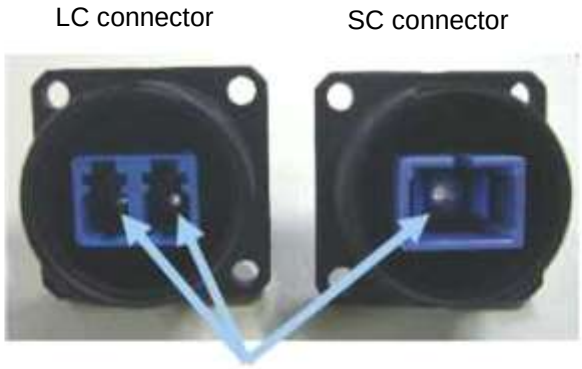
Detailed parameter of Control item is shown below;

CONT Item	Pin No.	Output device	Condition	Status
CPU Reset	7	Photo coupler	6.5 mA /+3.3 V	Normal: Open Reset: Close (*)
	8			

NOTICE: When short-circuited more than 10 seconds, CPU will be reset after restoring the factory default.

4.8 Cleaning of Optical Connector

Cleaning of optical connector is carried out below:



Cleaning stick inserts to the wary sleeve

Cleaning stick penetrates wary sleeve several times without rotation

When cleaning stick do not penetrate, rotates several times in a same direction and take care for wary sleeve damage.

5 Network Management Function

This chapter describes a procedure of network management function for BroadOne GX4000 Impulse radio equipment (Network Element). Two types of NMS functions are available, one is Web-based local terminal and the other is SNMP agent. A user should be familiar with a PC, an operating system, and an application software.

Table 5.1 SNMP Function

Network Management Function	Description
Web-based Local terminal (WebLT)	Status & Condition, Configuration setting & Performance Monitoring by Web Browser
SNMP Manager	SNMP agent function due to MIB II

5.1 Web-Based LT (WebLT)

Outline of Web LT

The Web LT is a local terminal that is the main human machine interface for operation, maintenance, system setup and tune-up. The Web LT is designed as an embedded web server using HTTP (Hyper Text Transfer Protocol) protocol and HTML (Hyper Text Markup Language) document format on an IP (Internet Protocol) network. An operator can manage the GX4000 NE by accessing with ordinary web browser client software. Table 5.2 shows the outline of Web LT major functions.

Table 5.2 Web LT Major Functions

Status & Condition	Display of alarms and conditions of card and system.
Configuration	Setting of system configurations, optional functions and NE parameters.
Monitor	Display of equipment and L2SW monitoring.
Test & Diagnostics	Display of radio performance and analogue monitoring.
Maintenance	Display of History of conditions, download and upload files

System Requirements

To use the Web LT, the PC hardware and software should meet or exceed the requirements listed in Table 2.3.

Table 5.3 System Requirements

Client Requirements	HTTP/1.0 or later
	JavaScript™ *1
	Cascade Style Sheet (CSS2)
	Least one working Ethernet port supporting 10/100Base-T
	1024x768 or 1280x768 XGA Display recommended
Recommended Browser	*Microsoft Internet Explorer* *2, *3, Version 8.0 or later
Recommended OS	*English version OS*

*1 *JavaScript is a trademark of Sun Microsystems, Inc., and refers to Sun's Java programming language.*

*2 *Microsoft Internet Explorer is a trademark of Microsoft Corporation in the United State and/or other countries.*

*3 *Set Zoom on View menu to 100% and Security of Internet Option on Tools menu to "Reset all zones to default level".*

Applicable Character

Table 5.4 Applicable Characters

ASCII Characters											
Char	HEX	Char	HEX	Char	HEX	Char	HEX	Char	HEX	Char	HEX
(space)	20	0	30	@	40	P	50	`	60	p	70
!	21	1	31	A	41	Q	51	a	61	q	71
N.A (“)	22	2	32	B	42	R	52	b	62	r	72
#	23	3	33	C	43	S	53	c	63	s	73
$	24	4	34	D	44	T	54	d	64	t	74
%	25	5	35	E	45	U	55	e	65	u	75
&	26	6	36	F	46	V	56	f	66	v	76
N.A (‘)	27	7	37	G	47	W	57	g	67	w	77
(	28	8	38	H	48	X	58	h	68	x	78
)	29	9	39	I	49	Y	59	i	69	y	79
*	2A	N.A (:)	3A	J	4A	Z	5A	j	6A	z	7A
+	2B	N.A (;)	3B	K	4B	[	5B	k	6B	{	7B
N.A (,)	2C	N.A (<)	3C	L	4C	N.A (¥)	5C	l	6C	|	7C
-	2D	=	3D	M	4D	]	5D	m	6D	}	7D
.	2E	N.A (>)	3E	N	4E	^	5E	n	6E	~	7E
/	2F	?	3F	O	4F	_	5F	o	6F	N.A (del)	7F

5.2 Getting Started with Web LT

Connecting PC and NE

Connect your PC to a LAN port on ODU of the target NE (Network Element). Normally, crossover cable should be used for the connection. Connection is 10Base-T and 100Base-TX Ethernet. It is recommended to use CAT5 (Category 5) UTP (Un-shielded Twisted Pair) crossover cable for the connection. Figure 5.1 shows the connection between the PC and the NE.

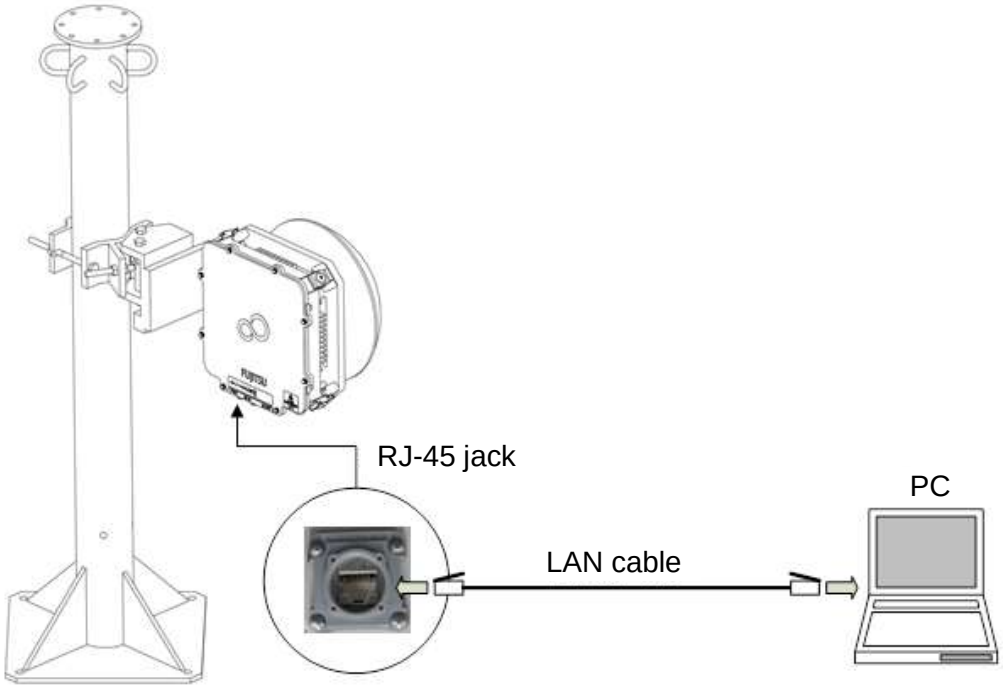
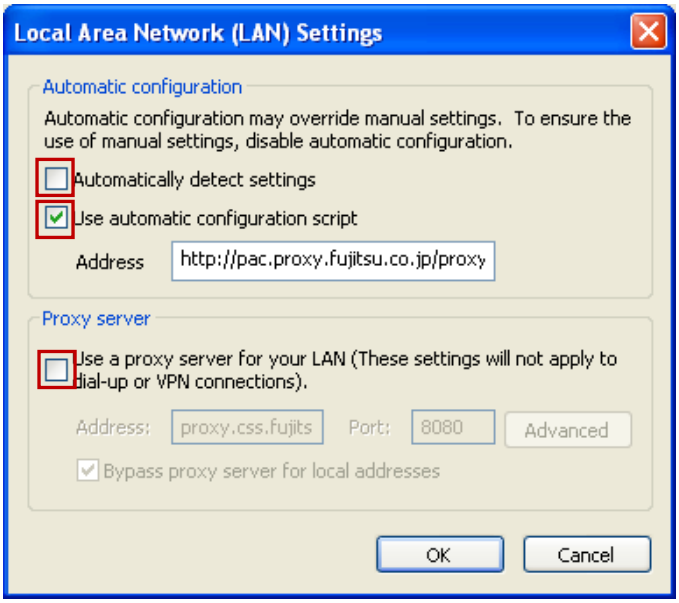


Figure 5.1 Connection between PC and NE

Web Browser Setting of PC

1. Open Internet Web browser, Tool Bar > Internet Option > Connections
2. Click LAN settings and all checkmarks will undo and click OK.



HTTPS Setting of PC

NOTICE: When you can apply HTTPS (Hypertext Transfer Protocol over Security Layer), minimum key length of Web Server Certificate should be changed to **512**. If not, you cannot open WebLT.

In case of **Windows 7**, key length setting is as follows;

Change of key length:
Execute the following command in the dos prompt screen:

Certutil –setreg chain¥minRSAPubKeyBitLength 512

Restoration of key length:
Execute the following command in the dos prompt screen.

Certutil –setreg chain¥minRSAPubKeyBitLength 1024

For details, refer to Microsoft Security Advisory URL;

http://support.microsoft.com/kb/2661254

Starting Web LT (*1)

After making appropriate cable connection to the NE (LAN jack on ODU), you can start Web LT:

1. Open your web browser.
2. Enter the IP address of the NE as a URL (Uniform Resource Locator) form.

   Default IP address of NE: **http://192.0.2.1**

   https://192.0.2.1 (when HTTPS = enable)
3. "Connect to 192.168.0.10" sub menu appears as an example.

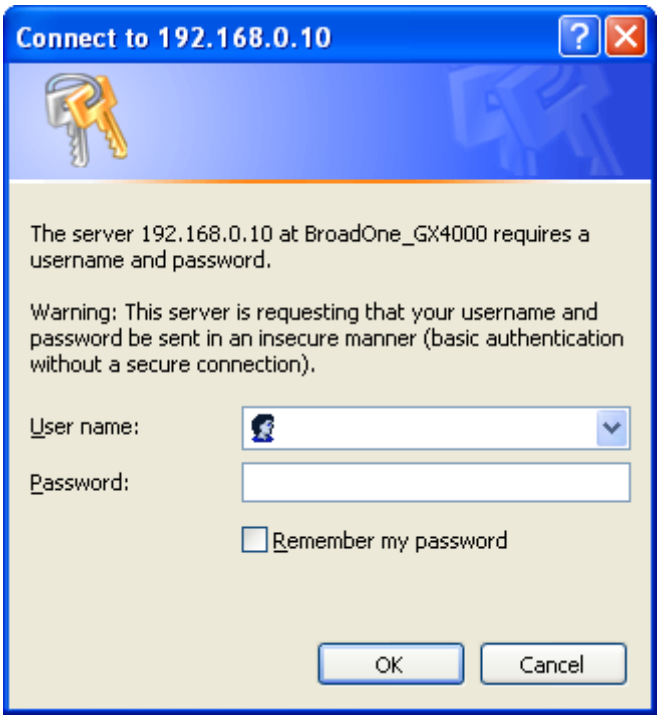


Figure 5.2 User name and Password sub menu

4. Input User ID and Password.

   Default User ID: Admin

   Default Password: null
5. When the Web LT successfully accesses to the NE, Web LT Start screen appears.

NOTE: IP address of NE and User ID/Password will be able to change in the Configuration Menu on WebLT after first login.

Start Screen

The Start Screen displays the NE ID (Network Element Identification) and menus for the NE connected to the Web LT.

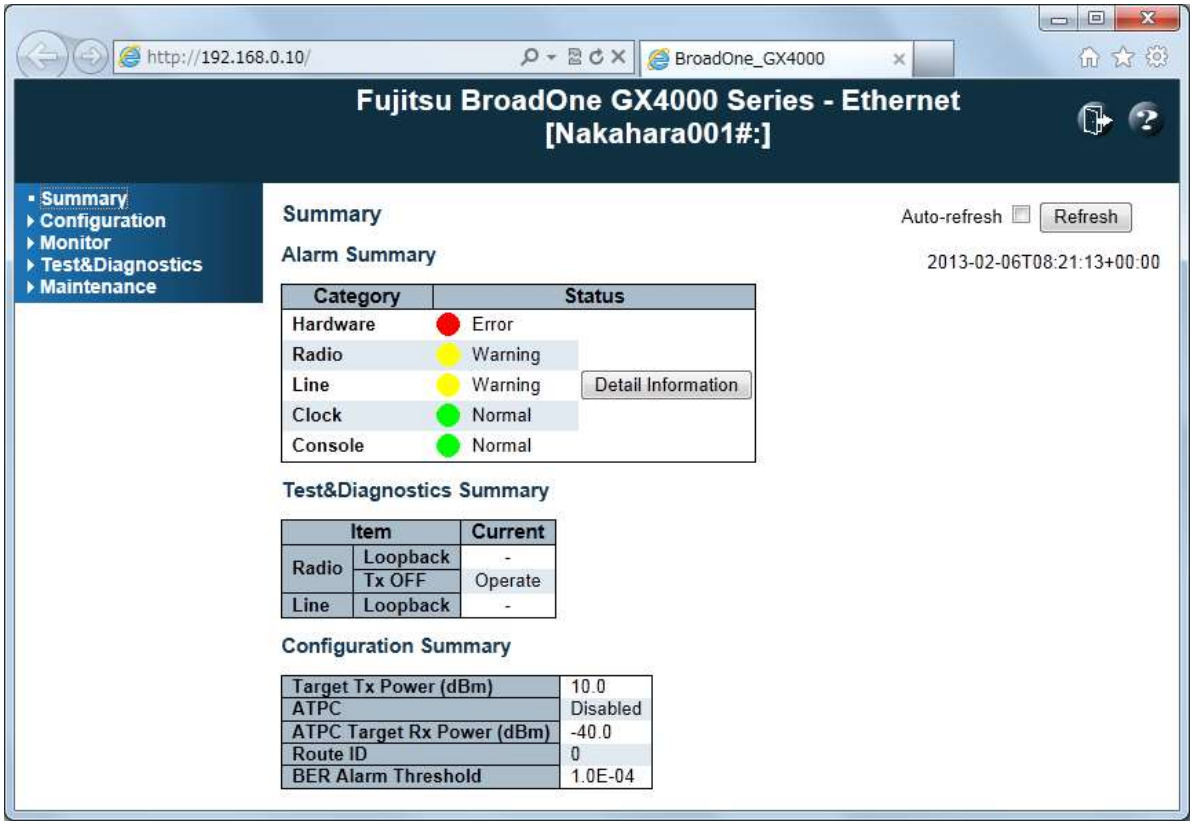


Figure 5.3 Web LT Start Screen

This screen is the first window displayed when the NE (ODU unit) is accessed through the Web browser. The window consists of three sections: (1) a banner frame and (2) a menu and main frame.

Banner Frame

The banner frame displays the NEID, the system name assigned to the NE as an item for the NE Physical Inventory.

Figure 5.4a Banner Frame for Ether interface

Figure 5.4b Banner Frame for CPRI interface

Menu Frame

The menu frame displays the menu links in order to access to the menu of current status (Summary), provisioning menu (Configuration), condition/status/performance (Monitor), maintenance (Test & Diagnostics) and History/Download/Upload a file (Maintenance). In some case, a sub menu will appear in the main frame when a link of the menu item is clicked

NOTICE: Two (2) menu frames are available, one is for GX4000 for Ether interface and the other is for GX4000 for CPRI interface as shown in Figure 5.5.

NOTICE: Built-in software for Ether or CPRI interface is dependent on GX4000 equipment code. In case that interface is changed Ether to CPRI or CPRI to Ether in future, software and FPGA firmware upload is needed on site.

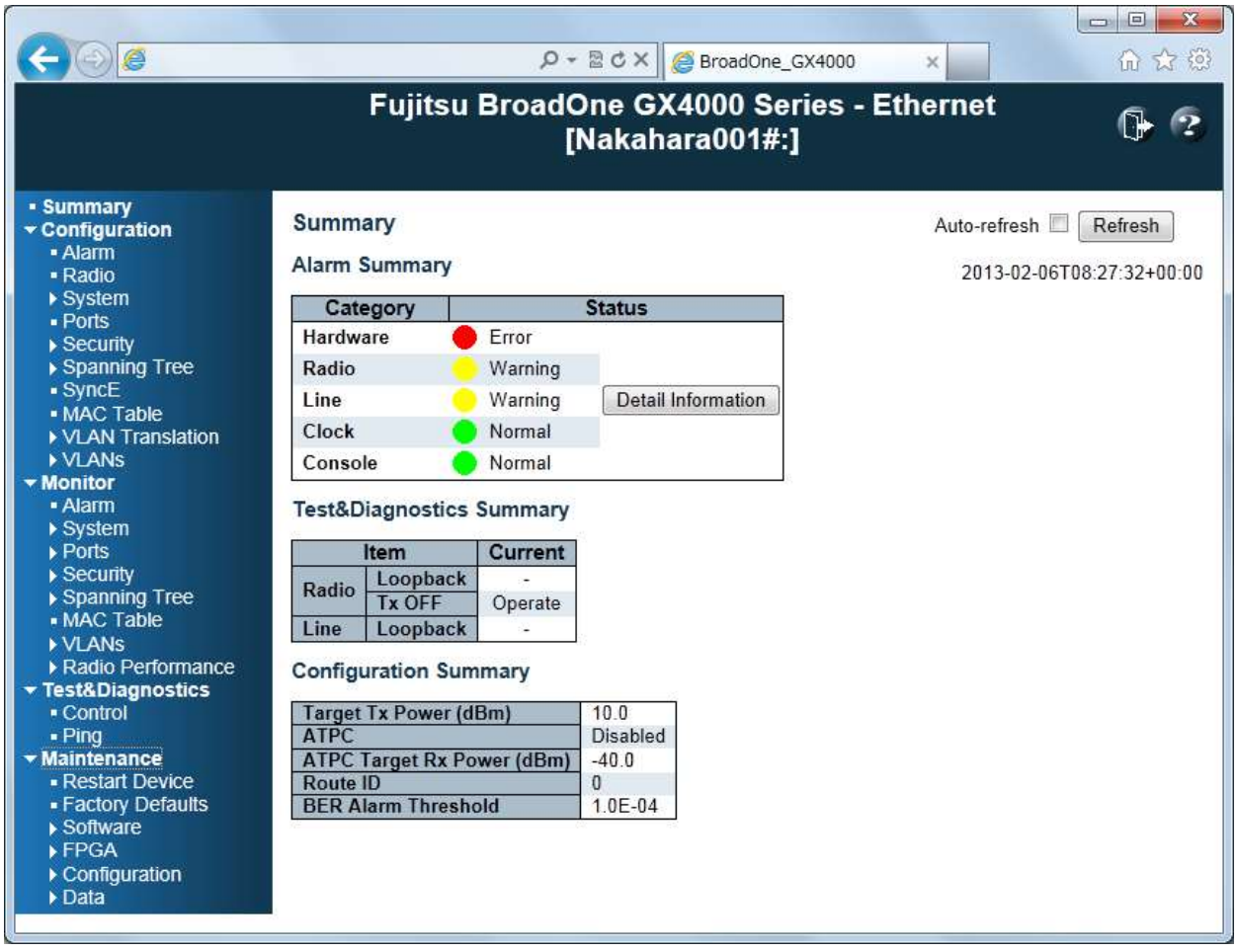


Figure 5.5a Menu Frame for **Ether interface**

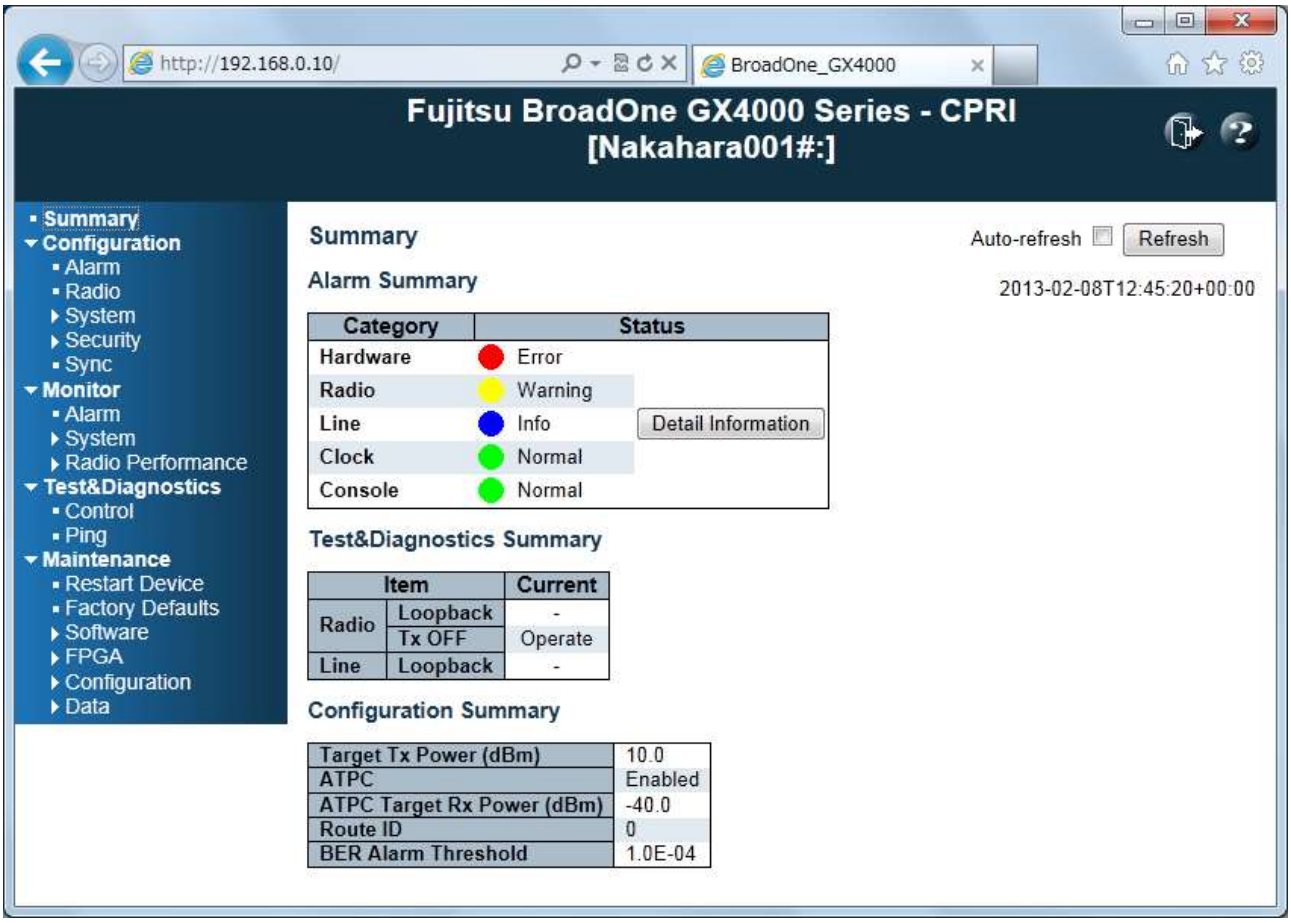


Figure 5.5b Menu Frame **for CPRI interface**

If you select a certain menu link, the menu appears in the main frame or subwindow. When you want to transfer to the next menu, you may select the new menu link in the menu frame.

Section 5.3 and 5.4 show the menu tree and menu description.

Help Icon

You can click Help button to know well about WebLT menu.

Exiting Web LT

You can exit the Web LT by clicking Logout icon or X. This terminates the session between your PC and the NE.

Figure 5.6 Exiting WebLT

5.3 Menu Tree & Menu Description for Ether Interface

Menu tree and menu description are shown in Figure 5.7 and Table 5-5.

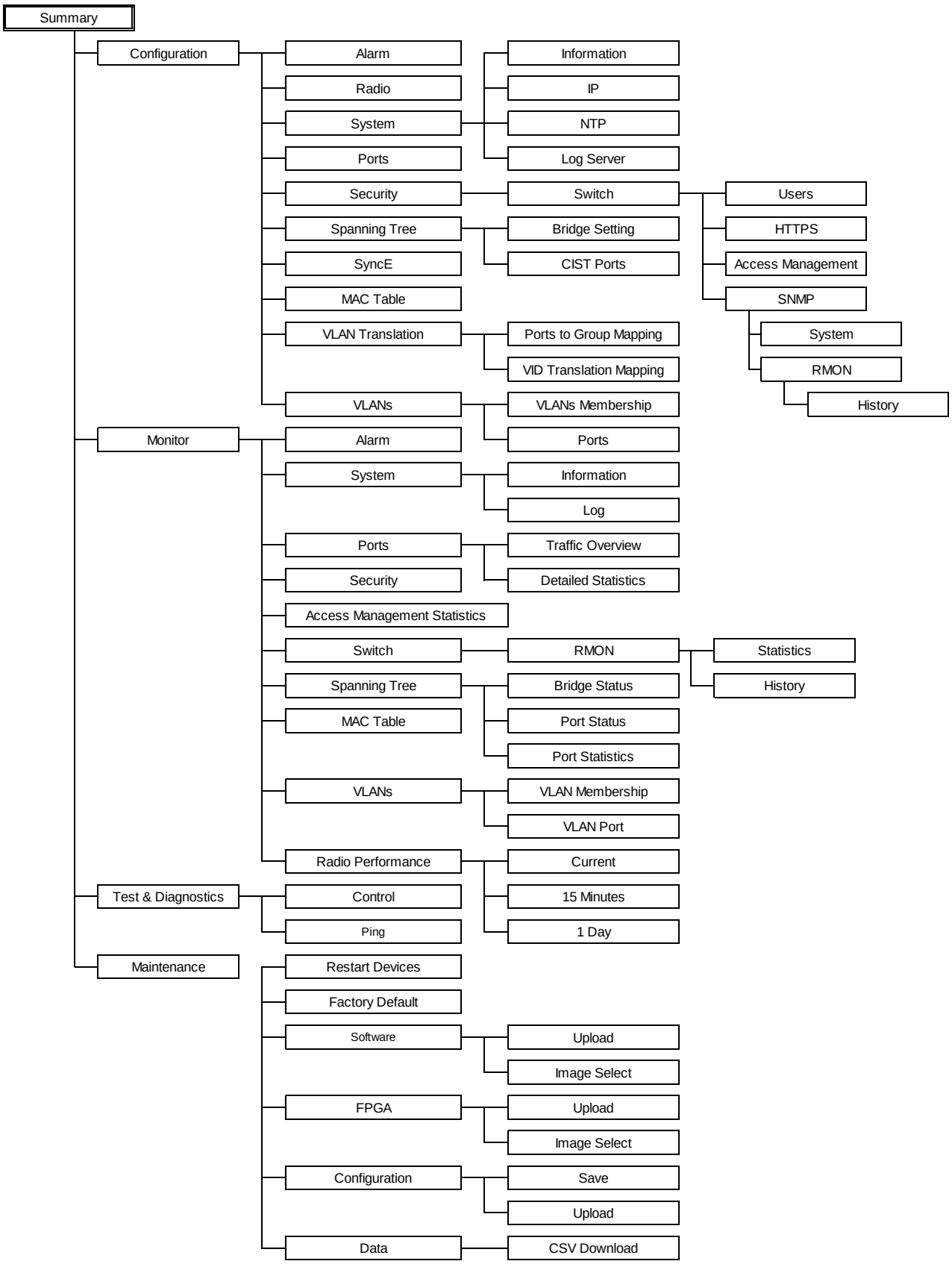


Figure 5.7 Menu Tree

Table 5.5 Menu Description for Ether Interface

Menu	Description
Summary	summary of current alarms
Configuration	Provisioning setting
Alarm	Optical pass through/Link shutdown: Enable/Disable
Radio	TX power/ATPC/ATPC RX threshold/Route ID/BER threshold
System	
Information	System information setting
IP	IP address setting
NTP	NTP configuration, RTC manual setting
Log Server	Server mode/Server address/Syslog level
Ports	Current port configuration
Security	
Switch	
Users	User name/User password/Privilege level
HTTPS	Mode/Automatic Redirect: Enable/Disable
Access Management	Mode: Enable/Disable, Add new entry
SNMP	
System	SNMP mode/Version/Community, SNMP trap configuration
RMON	
History	configure RMON History table
Spanning Tree	
Bridge Setting	configure STP system settings
CIST Ports	user to inspect the current STP CIST port configurations
SyncE	SyncE configuration setting
MAC Table	MAC table configuration setting
VLAN Translation	
Ports to Group Mapping	Configuration setting of “Port to Group Mapping”
VID Translation Mapping	Configuration setting of “VID Translation Mapping”
VLANs	
VLANs Membership	Configuration setting of VLANs membership
Ports	Configuration setting of VLAN ports
Monitor	
Alarm	Alarm monitoring item and item description
System	
Information	Current information of system/hardware/time/SW/FPGA
Log	Current information of system log
Ports	Current information of traffic packet
Traffic Overview	overview of general traffic statistics for all switch ports
Detailed Statistics Ratio	detailed traffic statistics for a specific switch port.
Security	
Access Management Statistics	Overview of access management statistics
Switch	
RMON	
Statistics	overview of RMON Statistics entries
History	Overview of RMON History entries
Spanning Tree	
Bridge Status	detailed information on a single STP bridge instance
Port Status	STP CIST port status for physical ports of the switch.
Port Statistics	STP port statistics counters of bridge ports in the switch
MAC Table	Entries in the MAC Table
VLANs	
VLAN Membership	Overview of membership status of VLAN users.
VLAN Port	Overview of VLAN port
Radio Performance	
Current	Current information of Time/Tx level/Rx level
15 Minutes	Historical radio performance data for 15 minutes interval
1 Day	Historical radio performance data for 1 day interval
Test & Diagnostics	
Control	Control of test and diagnosis
Ping	ICMP PING packets to troubleshoot IP connectivity issues.

Table 5.5 Menu Description (Cont'd)

Menu	Description
Maintenance	
Restart Devices	Restart Devices, Yes/No
Factory Default	Factory Default, Yes/No
Software	
Upload	Firmware Update
Image Select	Software Image Selection
FPGA	
Upload	FPGA upload
Image Select	FPGA image selection
Configuration	
Save	Configuration Save
Upload	Configuration Upload
Data	
CSV Download	CSV download

5.4 Menu Tree & Menu Description for CPRI Interface

Menu tree and menu description are shown in Figure 5.8 and Table 5-6.

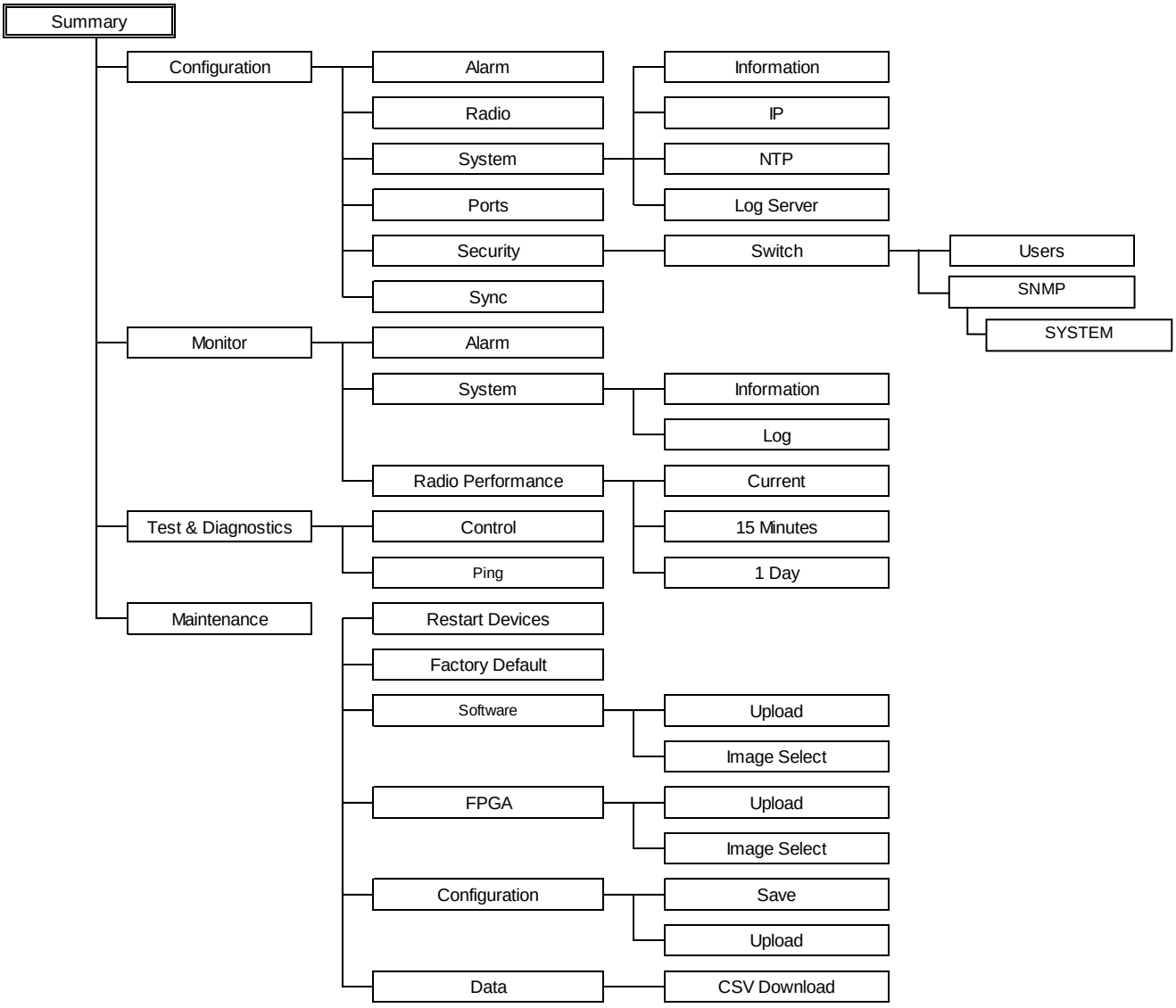


Figure 5.8 Menu Tree

Table 5.6 Menu Description for CPRI Interface

Menu	Description
Summary	summary of current alarms
Configuration	Provisioning setting
Alarm	Optical pass through/Link shutdown: Enable/Disable
Radio	TX power/ATPC/ATPC RX threshold/Route ID/BER threshold
System	
Information	System information setting
IP	IP address setting
NTP	NTP configuration, RTC manual setting
Log Service	Server mode/Server address/Syslog level
Ports	Current port configuration
Security	
Switch	
Users	User name/User password/Privilege level
SNMP	
System	SNMP mode/Version/Community, SNMP trap configuration
Sync	Synchronization configuration setting
Monitor	
Alarm	Alarm monitoring item and item description
System	
Information	Current information of system/hardware/time/SW/FPGA
Log	Current information of system log
Radio Performance	
Current	Current information of Time/Tx level/Rx level
15 Minutes	Historical radio performance data for 15 minutes interval
1 Day	Historical radio performance data for 1 day interval
Test & Diagnostics	
Control	Control of test and diagnosis
Ping	ICMP PING packets to troubleshoot IP connectivity issues.
Maintenance	
Restart Devices	Restart Devices, Yes/No
Factory Default	Factory Default, Yes/No
Software	
Upload	Firmware Update
Image Select	Software Image Selection
FPGA	
Upload	FPGA upload
Image Select	FPGA image selection
Configuration	
Save	Configuration Save
Upload	Configuration Upload
Data	
CSV Download	CSV download

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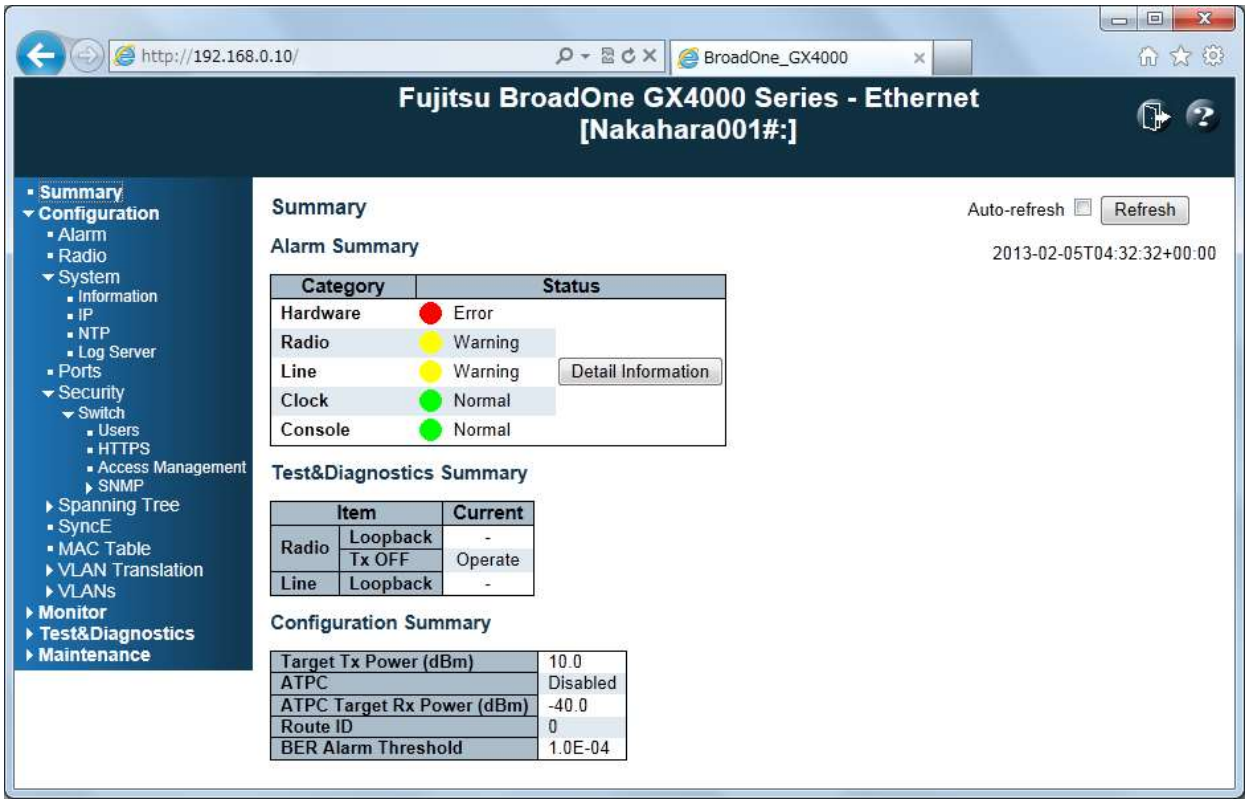
5.5 WebLT Menu and Description

Table of Contents

NOTICE: In this section, WebLT menu and screenshot is displayed for GX4000 Ethernet except for Sync menu of GX4000 CPRI.

Summary



Summary Main Frame

Alarm Summary: This menu shows the summary of current alarms.

Category : The category of alarms. The displayed categories are;
Hardware: Related to the hardware
Radio: Related to the Radio interface
Line: Related to the Line interface
Clock: Related to the clock synchronization
Console: Related to the Console interface

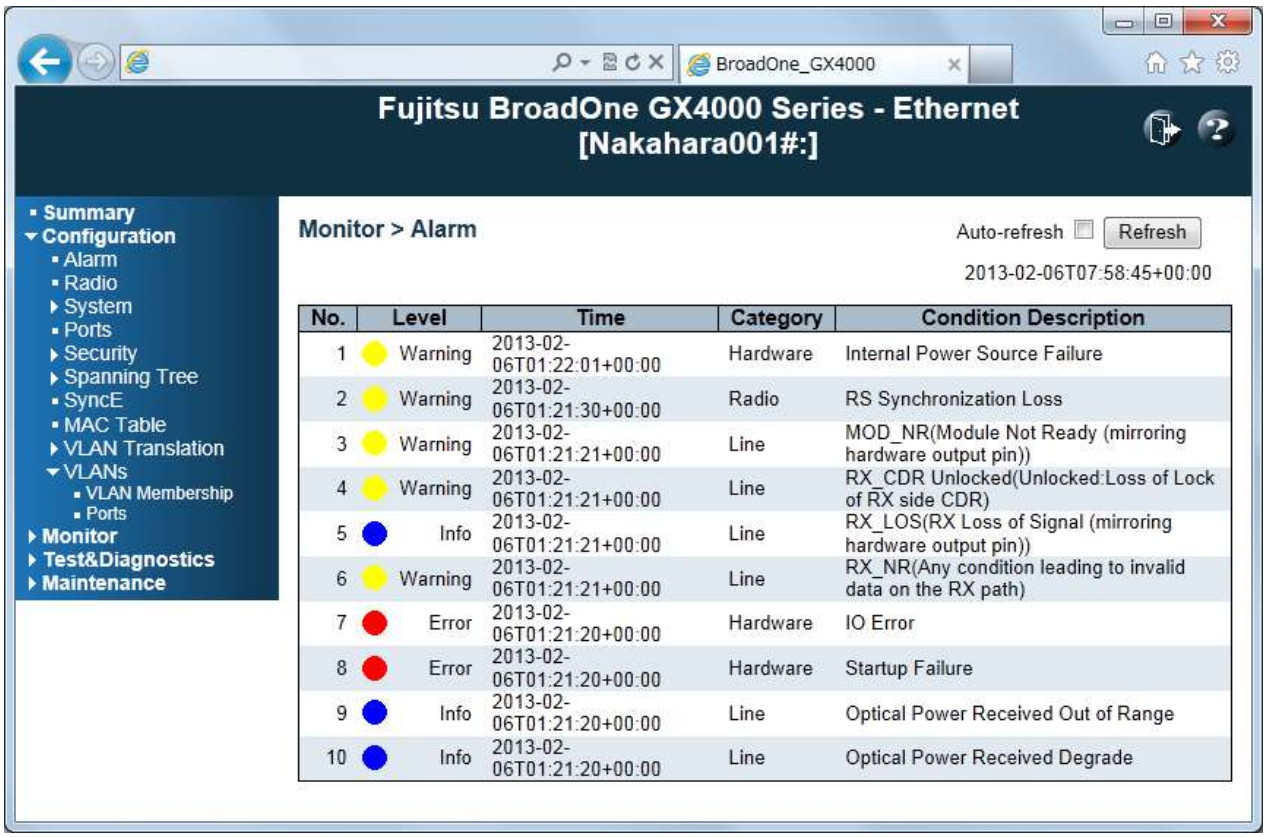
Status : The status of current alarms are displayed with 3 levels Error, Warning and info.
Error (indicated with red icon): High level problem. Equipment can not work correctly, under this condition. Fatal problem happens on internal device or process.
Warning (indicated with yellow icon): Low level problem. Equipment is working. However some problem happens on interface of Radio, Line Clock or Console, otherwise hardware has degradation.
Info (indicated with blue icon): Information except Error and Warning to be informed to the operator.
If there are no Error, Warning and Info, **Normal** (indicated with green icon) is displayed

Test & Diagnostics Summary: This menu shows the summary of current condition of Test and Diagnostics.

Radio loopback	:	Operation of Loopback for RADIO side.
Radio TX OFF	:	Operation of shut-off for TX output power.
Line loopback		Operation of Loopback for LINE side.
Current	:	Indicates current condition. The displayed conditions are; **Operate**: Operation is active -: Operation is inactive

Configuration Summary: This menu shows the summary of radio configuration

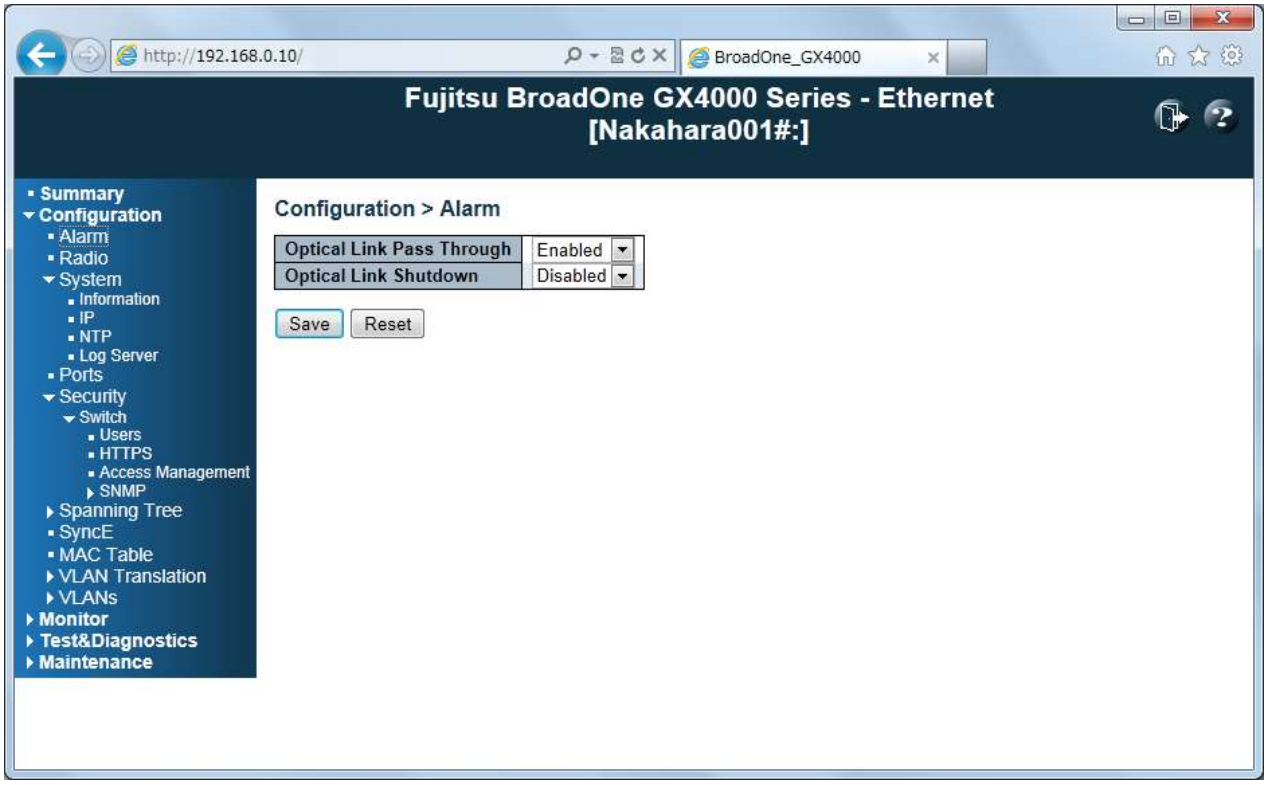
Target TX power	:	Current setting of target value for TX output power.
ATPC	:	Current setting of ATPC. The displayed settings are: **Enabled**: ATPC is enabled **Disabled**: ATPC is disabled
ATPC target RX power	:	Current setting of target value for receiving power upon ATPC. If ATPC is disabled, there is no value.
Route ID	:	Current setting of root identification number for radio link.
BER Alarm Threshold		Current setting of BER alarm threshold for radio link
Auto-refresh	:	Check this box to refresh the page automatically. Automatic refresh occurs every 3 seconds.
Refresh	:	Click to refresh the page
Detail Information	:	Click to open the detailed alarm list as shown in Figure 1a below.



Detailed Alarm List Screen

Configuration

Configuration > Alarm

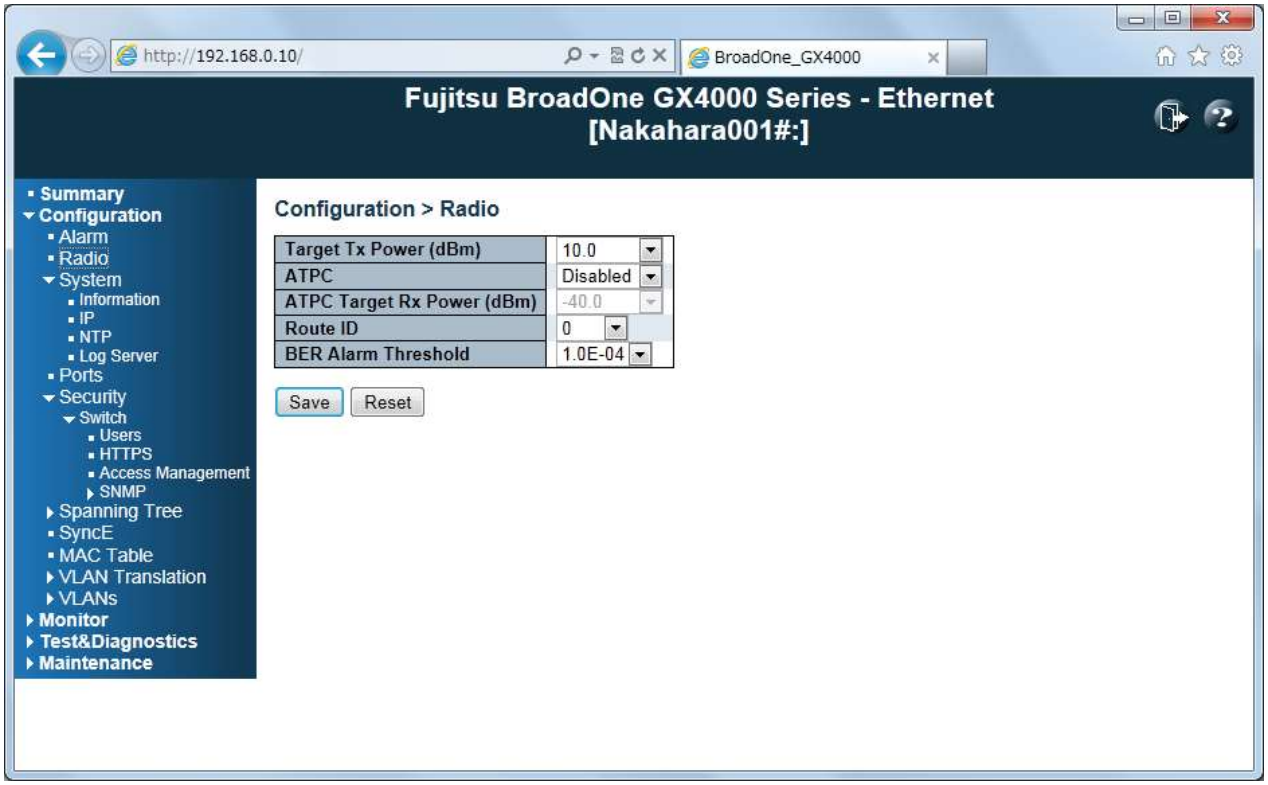


Configure > Alarm Menu Frame

Configuration > Alarm:

Optical Link Pass Through	:	The Optical Link Pass Through is the function that carry the condition of own optical link down to opposite side optical link through the radio link. Set the Optical Link Pass Through. Possible settings are: **Enabled**: Optical Link Pass Through is enabled **Disabled**: Optical Link Pass Through is disabled
Optical Link Shutdown	:	The Optical Link Shutdown is the function that automatically shuts off the optical output according to the loss of radio link. Set the Optical Link Shutdown. Possible settings are: **Enabled**: Optical Link Shutdown is enabled **Disabled**: Optical Link Shutdown is disabled
Save Button	**:**	Click to save changes
Reset Button	**:**	Click to undo any changes made locally and revert to previously saved values

Configuration > Radio



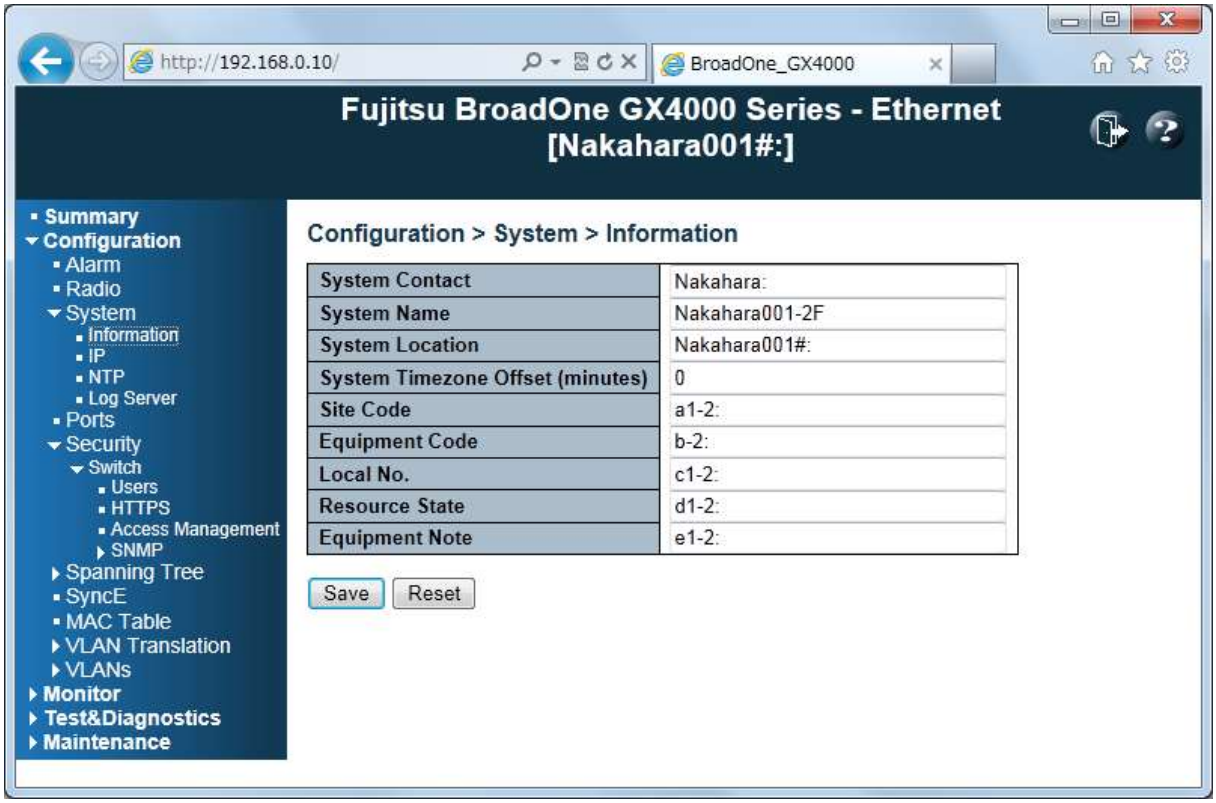
Configuration > Radio Menu Frame

Configuration > Radio:

Target Tx Power	:	The Target Tx Power is the target TX output power of transmitter. Set to **0.0** (0 dBm) to **10.0** (+10 dBm) with **0.5** step. The default value is 10.0 (+10 dBm).
ATPC	:	The Automatic Transmit Power Control is the function that adjust TX output power automatically by detecting far-end receiver signal level (RSL) threshold. Possible settings are: **Enabled**: ATPC is enabled **Disabled**: ATPC is disabled (default)
ATPC Target Rx power	:	The ATPC Target Rx Power is target value of far-end RSL threshold when ATPC is enabled. Set to **-30.0** (-30 dBm) or **-40.0** (-40 dBm). The default value is -40.0 (-40 dBm). If ATPC is disabled, it cannot activate. Default is -40.
Route ID	:	The Route ID is the function that identifies the number for radio link to detect the interference with undesired radio signals. Same Route ID must be set on both of equipment that connected by a radio link. If there is different Route ID, "RF Route ID Fail" happens. Set to **0** to **15**. The default value is 0
BER Alarm Threshold	:	The BER Alarm Threshold is defined the threshold to initiate "Radio BER Alarm". Set to **1.0E-03**, or **5.0E-04**, or **1.0E-04**, or **5.0E-05**, or **1.0E-05**, or **5.0E-06,** or **1.0E-06**. The default value is 1.0E-04.
Save Button	**:**	Click to save changes
Reset Button	**:**	Click to undo any changes made locally and revert to previously saved values

Configuration > System

Configuration > System > Information

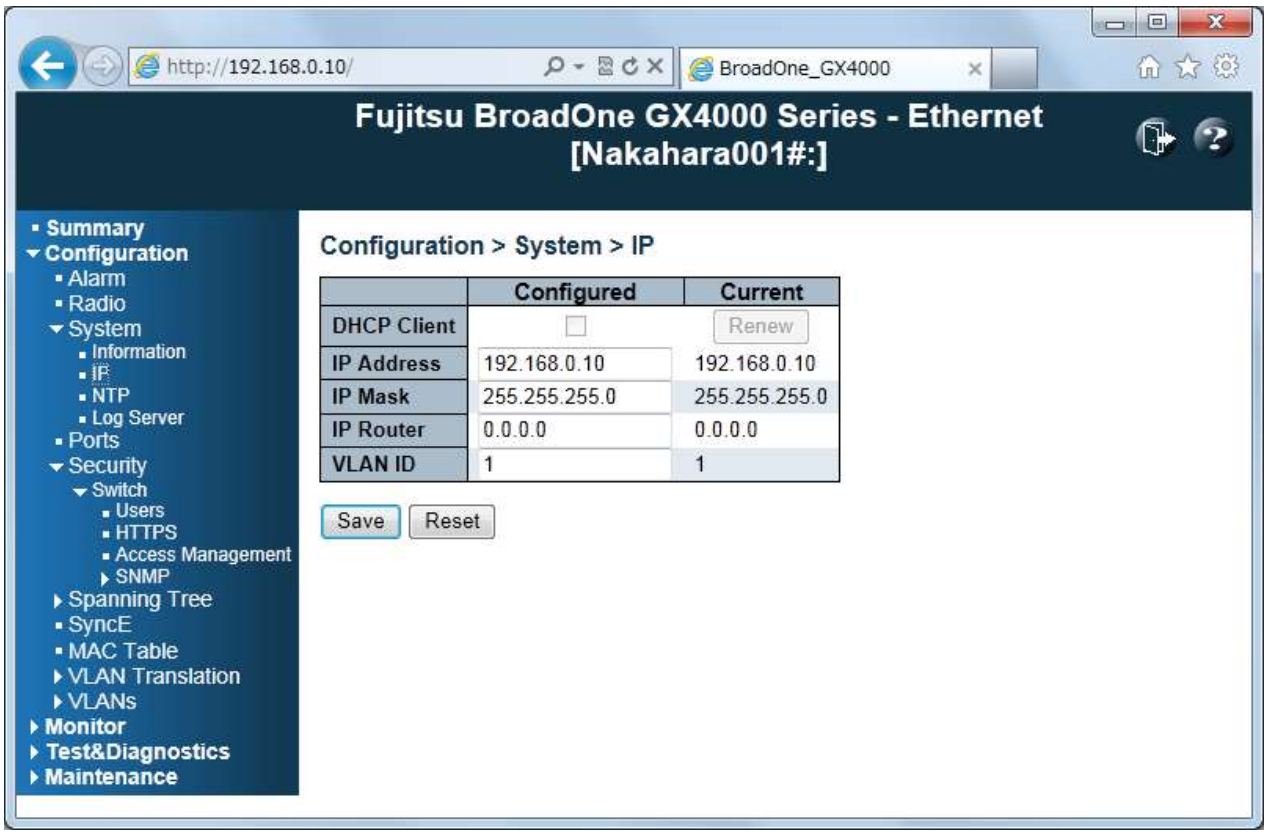


Configuration > System > Information

Configuration > System > Information:

System Contact	:	The textual identification of the contact person. The allowed string length is 0 to 255 and the allowed content is the ASCII characters from 32 to 126.
System Name	:	An administratively assigned name for this radio system. Allowable character is a text string drawn from the alphabet (A-Za-z), digits (0-9), minus sign (-). No space characters are permitted as part of a name. The first character must be an alpha character. And the first or last character must not be a minus sign. The allowed string length is 0 to 255.
System Location	:	The physical location of this site (e.g., telephone closet, 3rd floor). The allowed string length is 0 to 255, and the allowed content is the ASCII characters from 32 to 126
System Timezone offset	:	Provide the time zone offset relative to UTC/GMT. The offset is given in minutes east of GMT. The valid range is from -720 to 720 minutes.
Site Code	:	Site code where equipment is set up, max. 9 alphanumeric characters
Equipment Code	:	Equipment code, maximum 5 alphanumeric characters.
Local Number	:	User managed serial number, max. 6 alphanumerical characters
Resource State	:	NE release-build status, max. 6 alphanumerical characters
Equipment Note	:	Equipment note, max. 60 alphanumerical characters
Save Button	**:**	Click to save changes
Reset Button	**:**	Click to undo any changes made locally and revert to previously saved values

Configuration > System > IP



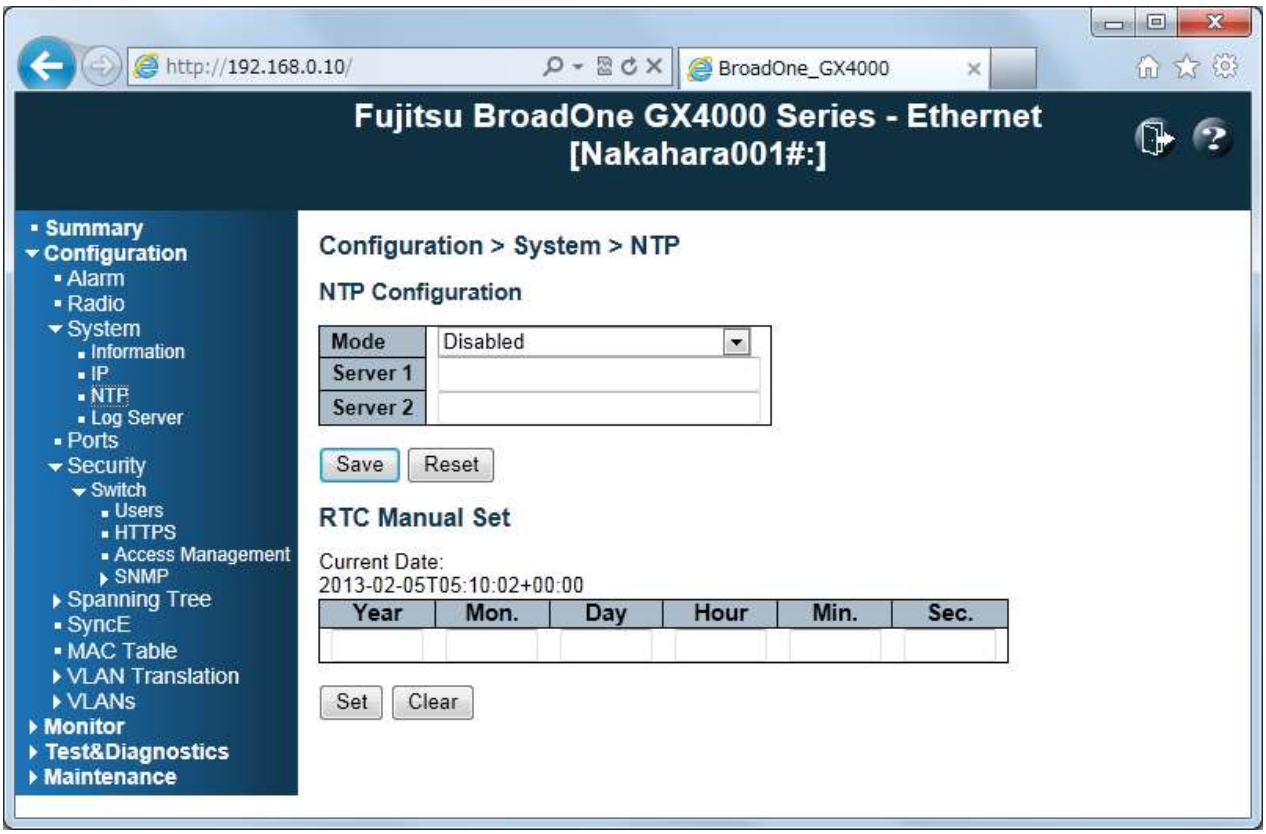
Configuration > System > IP

Configuration > System > IP:

Configure the switch-managed **IP** information on this page. The **Configured** column is used to view or change the IP configuration. The **Current** column is used to show the active IP configuration.

DHCP Client	:	Not supported. "Disable" is always set.
IP Address	:	Set the IP address of this switch in dotted decimal notation. Default is 192.0.2.1
IP Mask	:	Set the IP mask of this switch dotted decimal notation. Default is 255.255.255.0
IP Router	:	Set the IP address of the router in dotted decimal notation. Default is 0.0.0.0
VLAN ID	:	Provide the managed VLAN ID. The allowed range is 1 to 4095. Default is 1 Note: When functioning, CPRI is not displayed.
Save Button	**:**	Click to save changes
Reset Button	**:**	Click to undo any changes made locally and revert to previously saved values

Configuration > System > NTP



Configuration > System > NTP

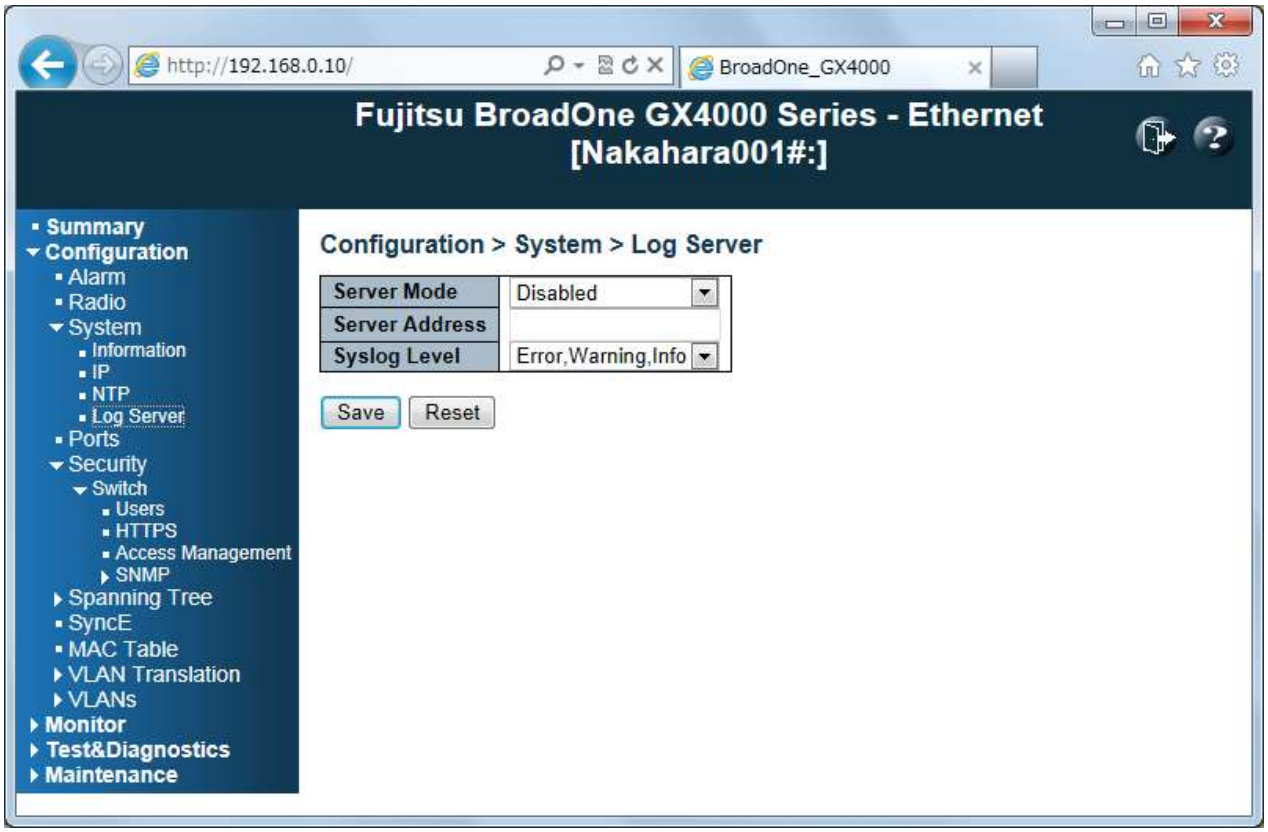
NTP Configuration:

Mode	:	Indicates the NTP mode operation. Possible modes are: **Enabled**: Enable NTP mode operation. When NTP mode operation is enabled, the agent forwards NTP messages between the clients and the server when they are not on the same subnet domain. **Disabled**: Disable NTP mode operation.
Server1/2	:	Provide the NTP IPv4 address of this switch. Default is null.
Save Button	**:**	Click to save changes
Reset Button	**:**	Click to undo any changes made locally and revert to previously saved values

RTC Manual Set:

Mode	:	Set the date and time. The input items are: Year: Input year. (allowed range: 2012-2037) Mon.: Input month. (allowed range: 1-12) Day: Input day. (allowed range: 1-31) Hour: Input hour. (allowed range: 0-23) Min.: Input minute. (allowed range: 0-59) Sec.: Input second. (allowed range: 0-59)
Set	**:**	Input date and time are set
Clear	**:**	The input items are emptied

Configuration > System > Log Server

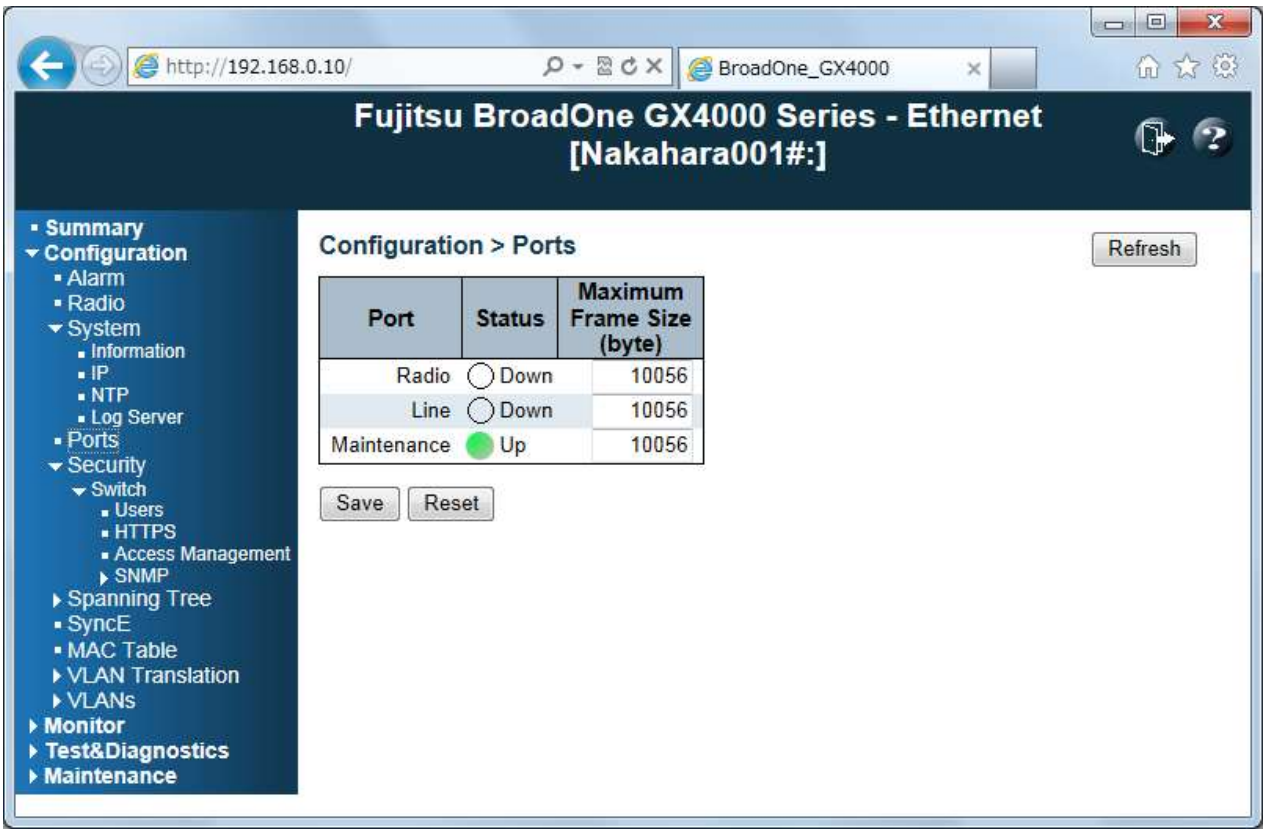


Configuration > System > Log Server

Configuration > System > Log Server:

Server Mode	:	Indicates the server mode operation. When the mode operation is enabled, the syslog message will send out to syslog server. The syslog protocol is based on UDP communication and received on UDP port 514 and the syslog server will not send acknowledgments back sender since UDP is a connectionless protocol and it does not provide acknowledgments. The syslog packet will always send out even if the syslog server does not exist. Possible modes are: **Enabled**: Enable server mode operation. **Disabled**: Disable server mode operation. (default)
Server Address	:	Indicates the IPv4 host address of syslog server. If the switch provide DNS feature, it also can be a host name. Default is null.
Syslog Level	:	Indicates what kind of message will send to syslog server. Possible modes are: **Error, Warning, Info**: Send information, warnings and errors. **Error, Warning**: Send warnings and errors. **Error**: Send errors.
Save Button	**:**	Click to save changes
Reset Button	**:**	Click to undo any changes made locally and revert to previously saved values

Configuration > Port (Only applicable for Ether)



Configuration > Port

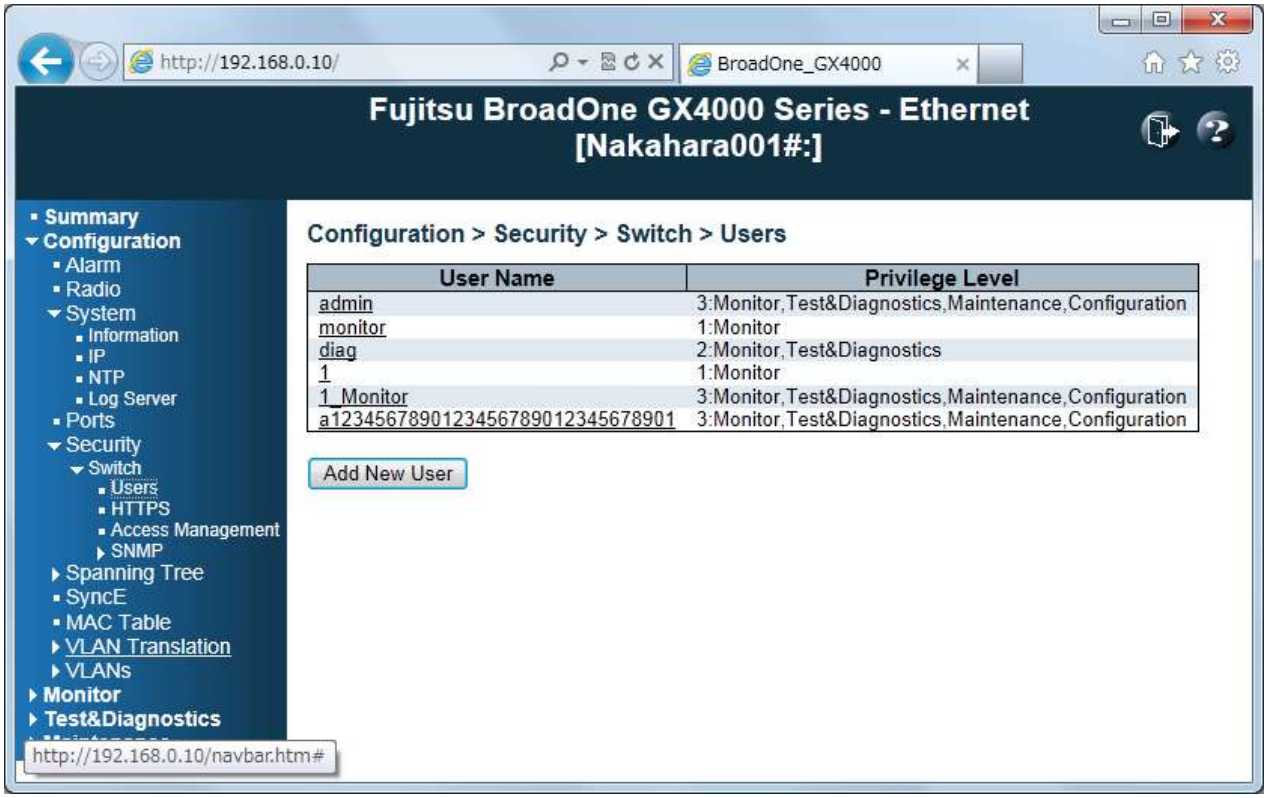
Configuration > Port:

This menu displays current port configurations. Ports can also be configured here.

Port	:	This is the port name for this row
Status	:	The current link state is displayed graphically. Green indicates the link is up and no colour that it is down.
Maximum Frame Size	:	Enter the maximum frame size allowed for the switch port, including FCS. Line port maximum frame size: 1518 to 10056, default is 10056 Radio port maximum frame size: 1518 to 10056, default is 10056 Maintenance port maximum frame size: 1518 to 10056, default is 10056
Save Button	:	Click to save changes
Reset Button	:	Click to undo any changes made locally and revert to previously saved values.
Refresh Button		Click to refresh the page. Any changes made locally will be undone

Configuration > Security

Configuration > Security > Switch > User

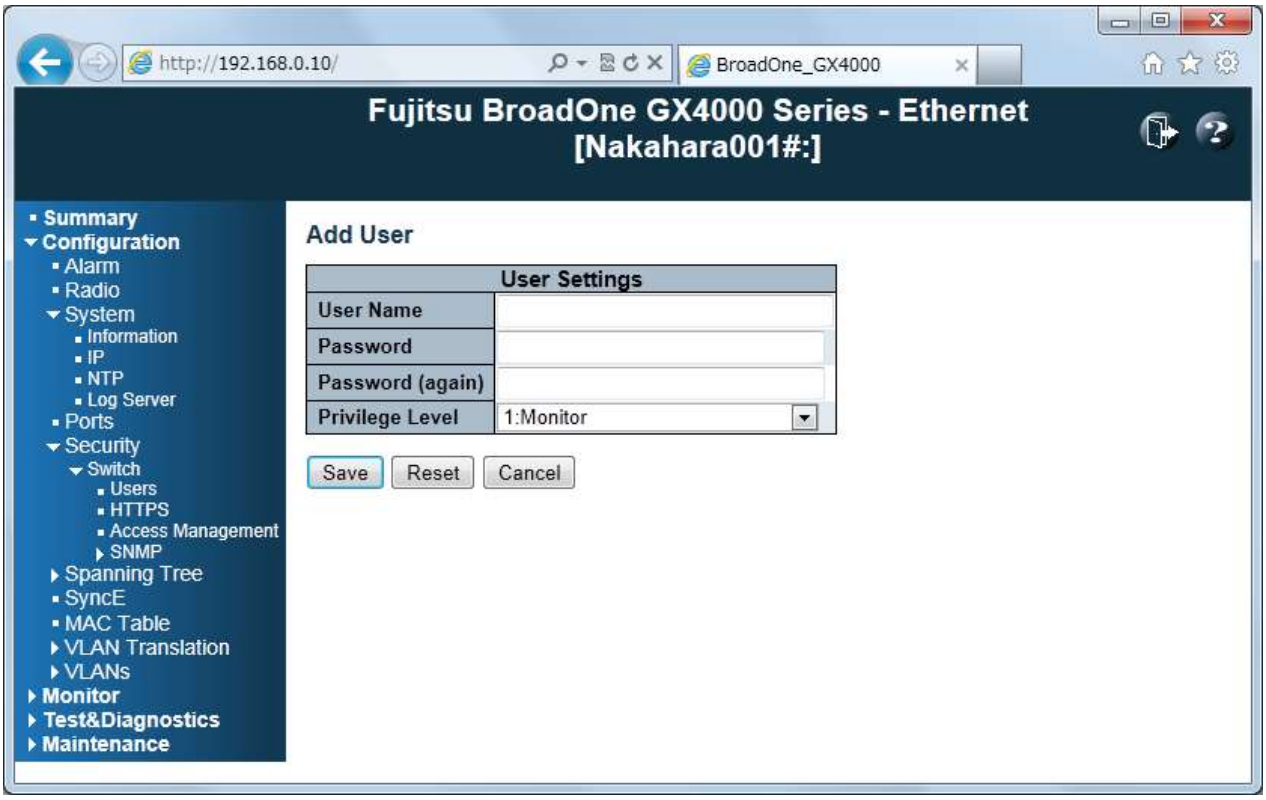


Configuration > Security > Switch > User main Frame

Configuration > Security > Switch > User:

This menu provides an overview of the current users. Currently the only way to login as another user on the web server is to close and reopen the browser. The displayed values for each user are:

User Name	:	The name identifying the user. This is also a link to Add/Edit User.
Privilege Level	:	The privilege level of the user. The allowed range is 1 to 4. The operation allowed at each privilege level is the following: 1: Monitor 2: Monitor, Test & Diagnostics 3: Monitor, Test & Diagnostics, Maintenance, Configuration 4: Monitor, Test & Diagnostics, Maintenance, Configuration, Telnet
Add New User	:	Click to add a new user and Add User frame will appear.

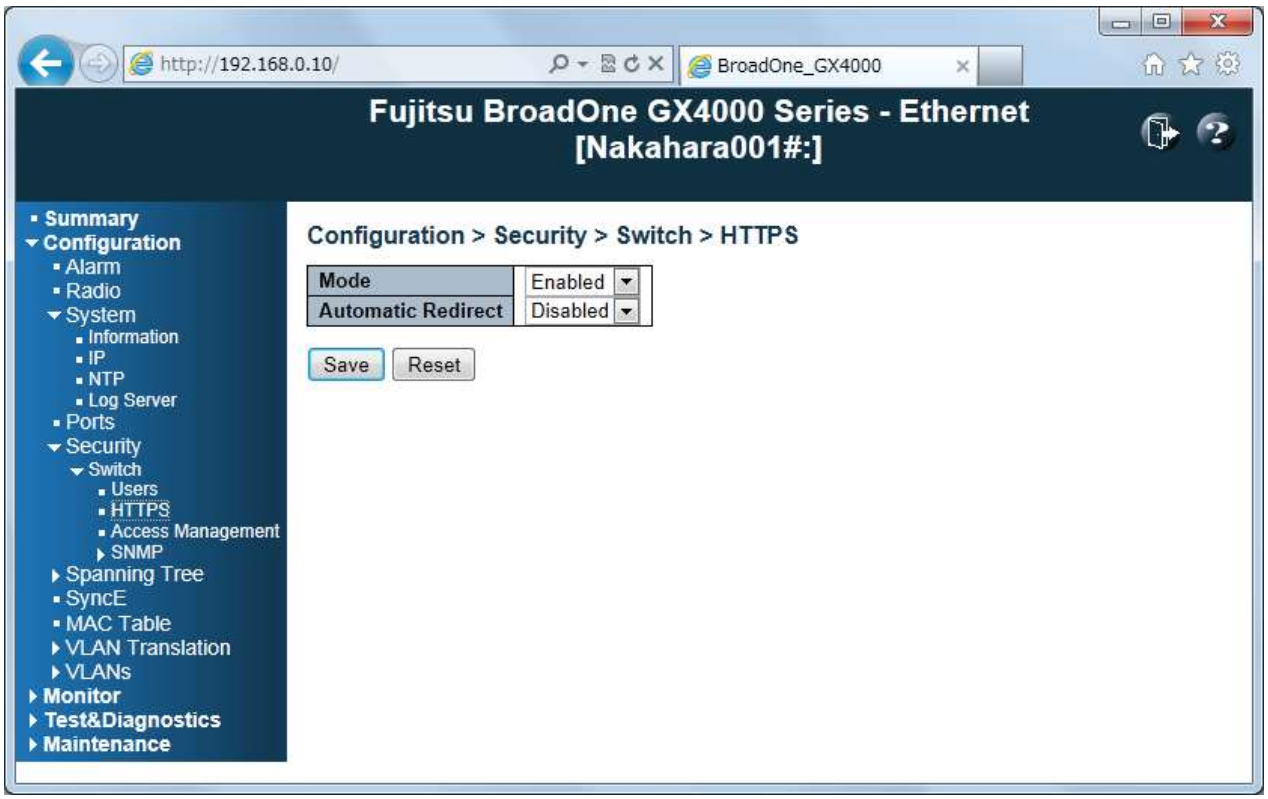


Add User Sub Frame

Add User:

User Name	:	A string identifying the user name that this entry should belong to. The allowed string length is 1 to 32. The valid user name is a combination of letters, numbers and underscores.
Password	:	The password of the user. The allowed string length is 0 to 32.
Password again	:	
Privilege Level	:	The privilege level of the user. The allowed range is 1 to 3. The operation allowed at each privilege level is the following: 1: Monitor 2: Monitor, Test & Diagnostics 3: Monitor, Test & Diagnostics, Maintenance, Configuration
Save button	:	Click to save changes
Reset button	:	Click to undo any changes made locally and revert to previously saved values
Cancel button	:	Click to undo any changes made locally and return to the Users.
Delete User		Delete the current user. This button is not available for new configurations (Add new user)

Configuration > Security > Switch > HTTPS (Only applicable for Ether)

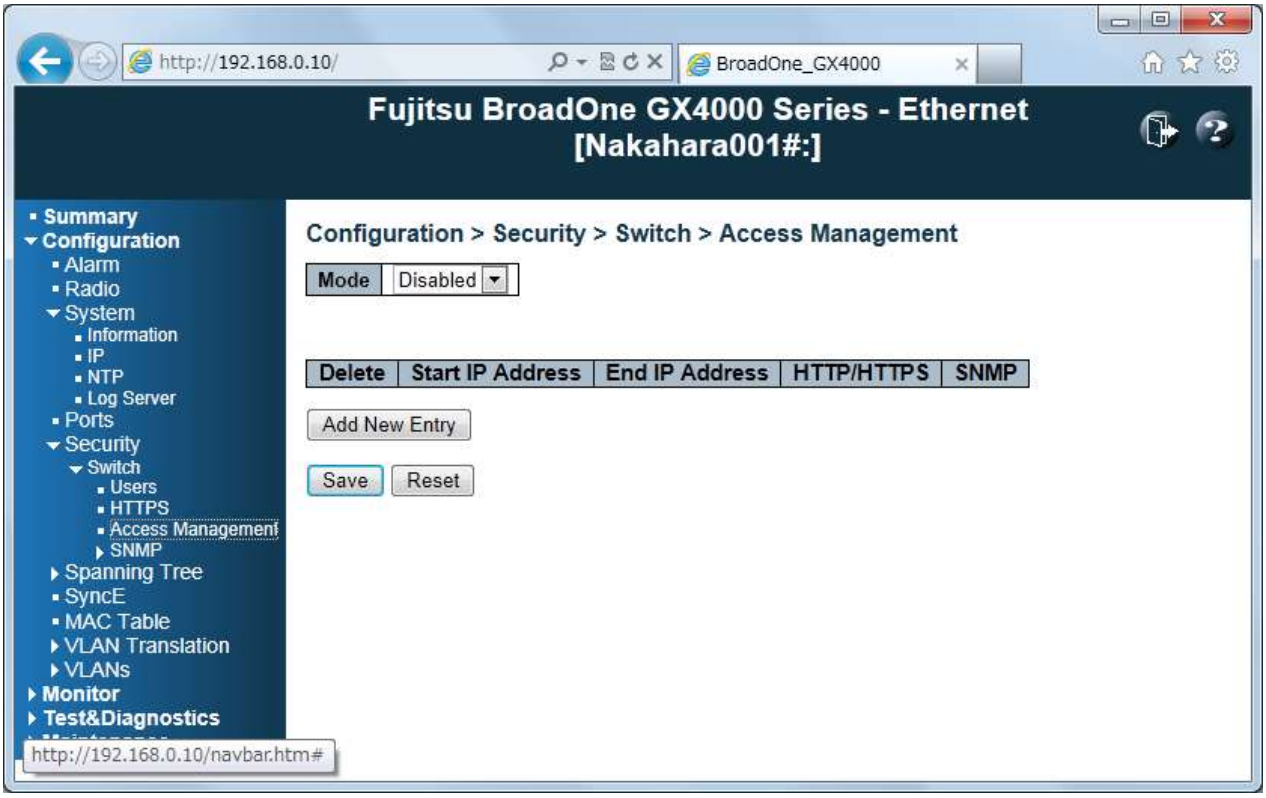


Configuration > Security > Switch > HTTPS Main Frame

Configuration > Security > Switch > HTTPS:

Mode	:	Indicates the HTTPS mode operation. When the current connection is HTTPS, to apply HTTPS disabled mode operation will automatically redirect web browser to an HTTP connection. Possible modes are: **Enabled**: Enable HTTPS mode operation. **Disabled**: Disable HTTPS mode operation.
Automatic Redirect	:	Indicates the HTTPS redirect mode operation. It only significant if HTTPS mode "Enabled" is selected. Automatically redirects web browser to an HTTPS connection when both HTTPS mode and Automatic Redirect are enabled or redirects web browser to an HTTP connection when both are disabled. Possible modes are: **Enabled**: Enable HTTPS redirect mode operation. **Disabled**: Disable HTTPS redirect mode operation.
Save button	:	Click to save changes
Reset button	:	Click to undo any changes made locally and revert to previously saved values

Configuration > Security > Switch > Access Management (only applicable for Ether)



Configuration > Security > Switch > Access Management Main Frame

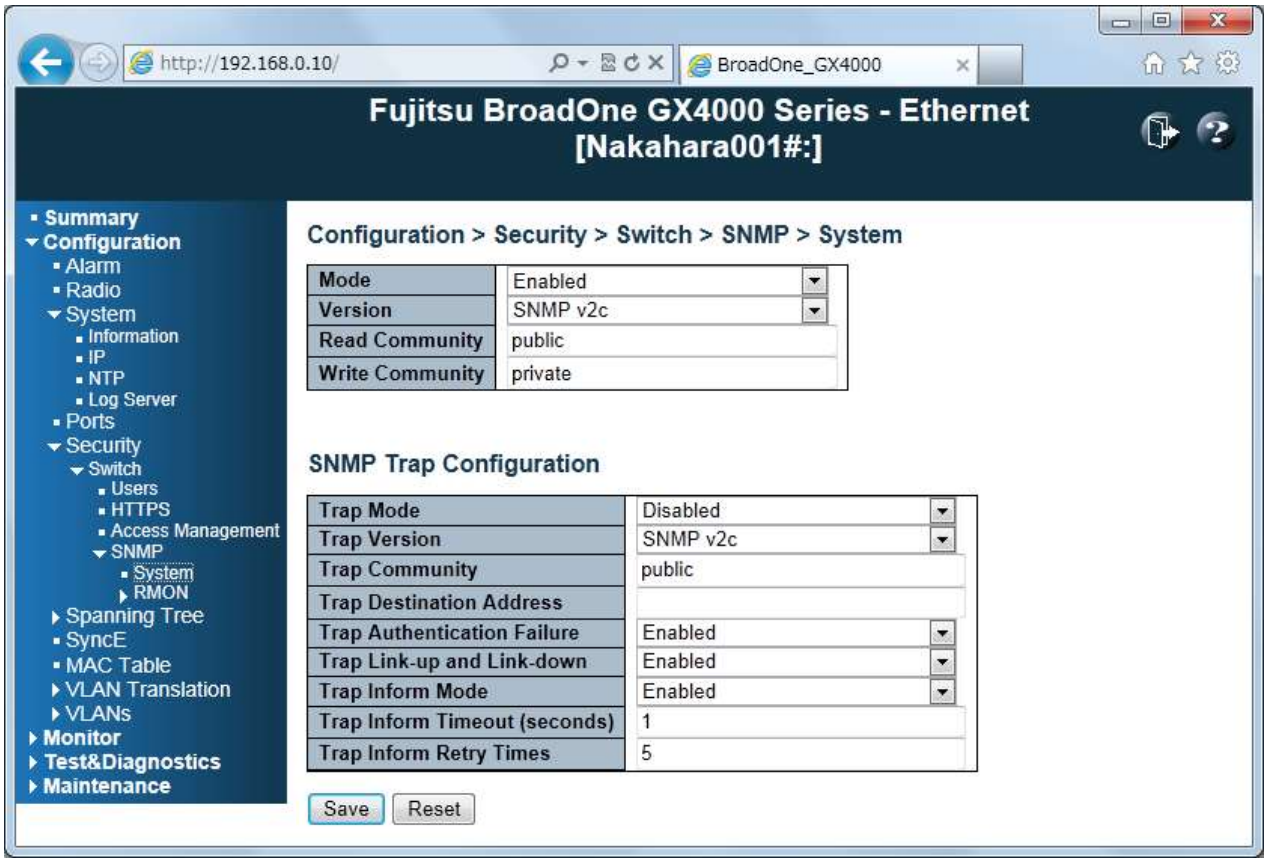
Access Management:

The maximum number of entries is 16. If the application's type match any one of the access management entries, it will allow access to the switch.

Mode	:	Indicates the access management mode operation. Possible modes are: **Enabled**: Enable access management mode operation. **Disabled**: Disable access management mode operation.
Delete	:	Check to delete the entry. It will be deleted during the next save.
Start IP Address	:	Indicates the start IP address for the access management entry.
End IP Address	:	Indicates the end IP address for the access management entry.
HTTP/HTTPS	:	Indicates that the host can access the switch from HTTP/HTTPS interface if the host IP address matches the IP address range provided in the entry.
SNMP	:	Indicates that the host can access the switch from SNMP interface if the host IP address matches the IP address range provided in the entry.
Add New Entry	:	Click to add a new access management entry.
Save	:	Click to save changes
Reset	:	Click to undo any changes made locally and revert to previously saved values

Configuration > Security > Switch > SNMP

Configuration > Security > Switch > SNMP > System



Configuration > Security > Switch > SNMP > System Main Frame

Configuration > Security > Switch > SNMP > System:

Mode : Indicates the SNMP mode operation. Possible modes are:
Enabled: Enable SNMP mode operation.
Disabled: Disable SNMP mode operation.

Version : Indicates the SNMP supported version. Possible versions are:
SNMP v2c: Set SNMP supported version 2c.

Read Community : Indicates the community read access string to permit access to SNMP agent. The allowed string length is 0 to 255, and the allowed content is the ASCII characters from 33 to 126.

The field is applicable only when SNMP version is SNMPv2c. It provides more flexibility to configure security name than a SNMPv2c community string. In addition to community string, a particular range of source addresses can be used to restrict source subnet.

Write Community : Indicates the community write access string to permit access to SNMP agent. The allowed string length is 0 to 255, and the allowed content is the ASCII characters from 33 to 126.

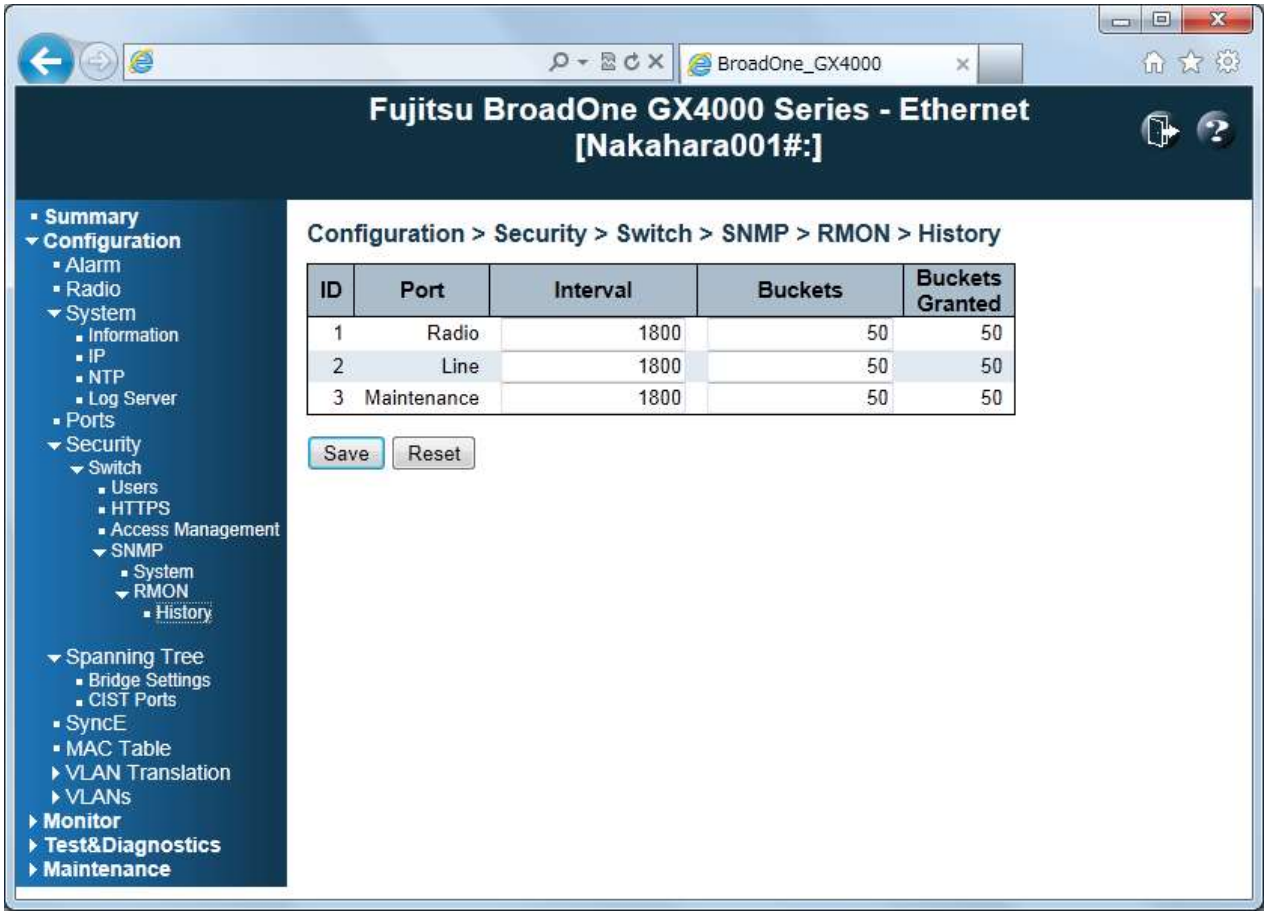
The field is applicable only when SNMP version is SNMPv2c. It provides more flexibility to configure security name than a SNMPv2c community string. In addition to community string, a particular range of source addresses can be used to restrict source subnet.

SNMP Trap Configuration:

Trap Mode	:	Indicates the SNMP trap mode operation. Possible modes are: **Enabled**: Enable SNMP trap mode operation. **Disabled**: Disable SNMP trap mode operation.
Trap Version	:	Indicates the SNMP trap supported version. Possible versions are: **SNMP v2c**: Set SNMP trap supported version 2c.
Trap Community	:	Indicates the community access string when sending SNMP trap packet. The allowed string length is 0 to 255, and the allowed content is ASCII characters from 33 to 126.
Trap Destination Address	:	Indicates the SNMP trap destination address. It allows a valid IP address in dotted decimal notation ('x. y. z. w').
Trap Authentication Failure	:	Indicates that the SNMP entity is permitted to generate authentication failure traps. Possible modes are: **Enabled**: Enable SNMP trap authentication failure. **Disabled**: Disable SNMP trap authentication failure.
Trap Link-up and Link-down	:	Indicates the SNMP trap link-up and link-down mode operation. Possible modes are: **Enabled**: Enable SNMP trap link-up and link-down mode operation. **Disabled**: Disable SNMP trap link-up and link-down mode operation.
Trap Inform Mode	:	Indicates the SNMP trap inform mode operation. Possible modes are: **Enabled**: Enable SNMP trap inform mode operation. **Disabled**: Disable SNMP trap inform mode operation.
Trap Inform Timeout (sec)	:	Indicates the SNMP trap inform timeout. The allowed range is **0** to **2147**.
Trap Inform Retry Times	:	Indicates the SNMP trap inform retry times. The allowed range is **0** to **255**.
Save	:	Click to save changes
Reset		Click to undo any changes made locally and revert to previously saved values

Configuration > Security > Switch > SNMP > RMON (Only applicable for Ether)

Configuration > Security > Switch > SNMP > RMON > History



Configuration > Security > Switch > SNMP > RMON > History Main Frame

Configuration > Security > Switch > RMON > History:

This menu is to configure RMON History table. The entry index key is `ID`.

ID	:	Indicates the index of the entry. The range is from 1 to 65535
Port	:	Indicates the port name which wants to be monitored
Interval	:	Indicates the interval in seconds for sampling the history statistics data. The range is from 1 to 3600, default value is 1800 seconds.
Buckets	:	Indicates the maximum data entries associated this History control entry stored in RMON. The range is from 1 to 3600, default value is 50.
Buckets Granted	:	The number of data shall be saved in the RMON
Save		Click to save changes
Reset		Click to undo any changes made locally and revert to previously saved values

Configuration > Spanning Tree (Only applicable for Ether)

Configuration > Spanning Tree > Bridge Setting

Configuration > Spanning Tree > Bridge Setting Main Frame

Configuration > Spanning Tree > Bridge Setting: This menu allows you to configure STP system settings. The settings are used by all STP Bridge instances in the Switch

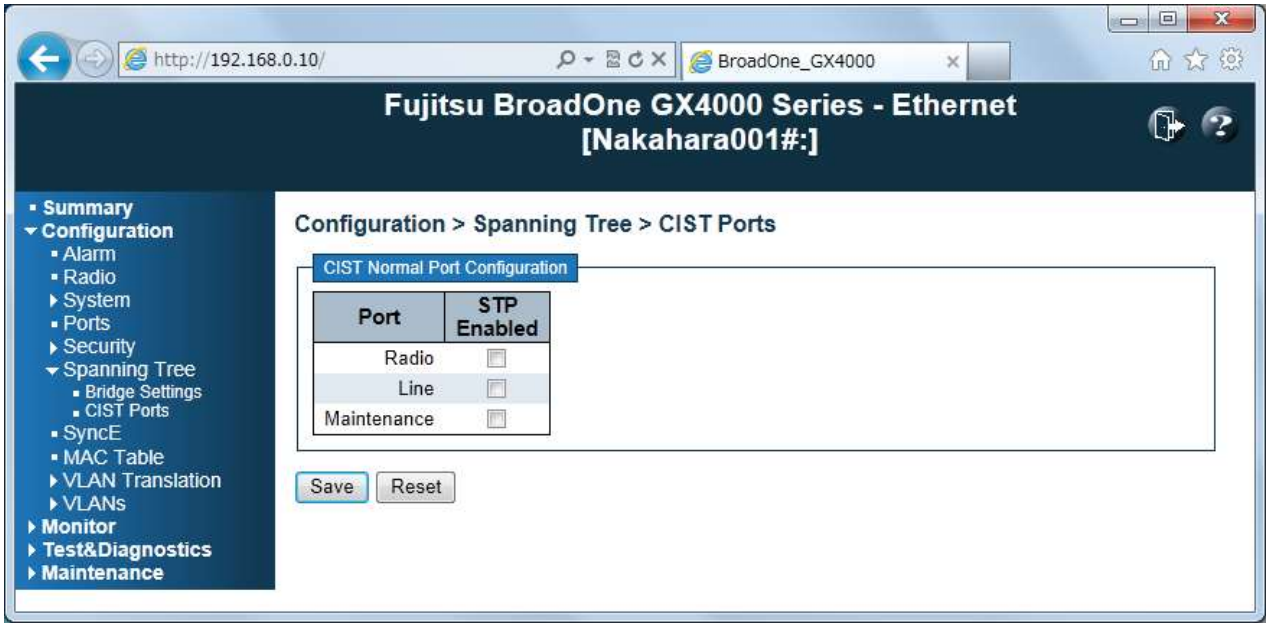
Basic Setting:

Protocol Version	:	The STP protocol version setting. Valid values are STP & RSTP Default is STP.
Bridge Priority	:	Controls the bridge priority. Lower numeric values have better priority. The bridge priority plus the MSTI instance number, concatenated with the 6-byte MAC address of the switch forms a *Bridge Identifier*.
Forward Delay	:	The delay used by STP Bridges to transit Root and Designated Ports to Forwarding (used in STP compatible mode). Valid values are in the range 4 to 30 seconds. Default is 15.
Max Age	:	The maximum age of the information transmitted by the Bridge when it is the Root Bridge. Valid values are in the range 6 to 40 seconds, *and* Max Age must be <= (FwdDelay-1)*2. Default is 20.
Maximum Hop Count	:	This defines the initial value of remaining Hops for MSTI information generated at the boundary of an MSTI region. It defines how many bridges a root bridge can distribute its BPDU information to. Valid values are in the range 6 to 40 hops. Default is 20.
Transmit Hold Count	:	The number of BPDU's a bridge port can send per second. When exceeded, transmission of the next BPDU will be delayed. Valid values are in the range 1 to 10 BPDU's per second. Default is 6.

Advanced Setting:

Edge Port BPDU Filtering	:	Control whether a port *explicitly* configured as **Edge** will transmit and receive BPDUs. Default is not clicking.
Edge Port BPDU Guard	:	Control whether a port *explicitly* configured as **Edge** will disable itself upon reception of a BPDU. The port will enter the *error-disabled* state, and will be removed from the active topology. Default is not clicking.
Port Error Recovery	:	Control whether a port in the *error-disabled* state automatically will be enabled after a certain time. If recovery is not enabled, ports have to be disabled and re-enabled for normal STP operation. The condition is also cleared by a system reboot. Default is not clicking.
Port Error Recovery Timeout	:	The time to pass before a port in the *error-disabled* state can be enabled. Valid values are between 30 and 86400 seconds (24 hours). Default is null.
Save		Click to save changes
Reset		Click to undo any changes made locally and revert to previously saved values

Configuration > Spanning Tree > CITS Ports

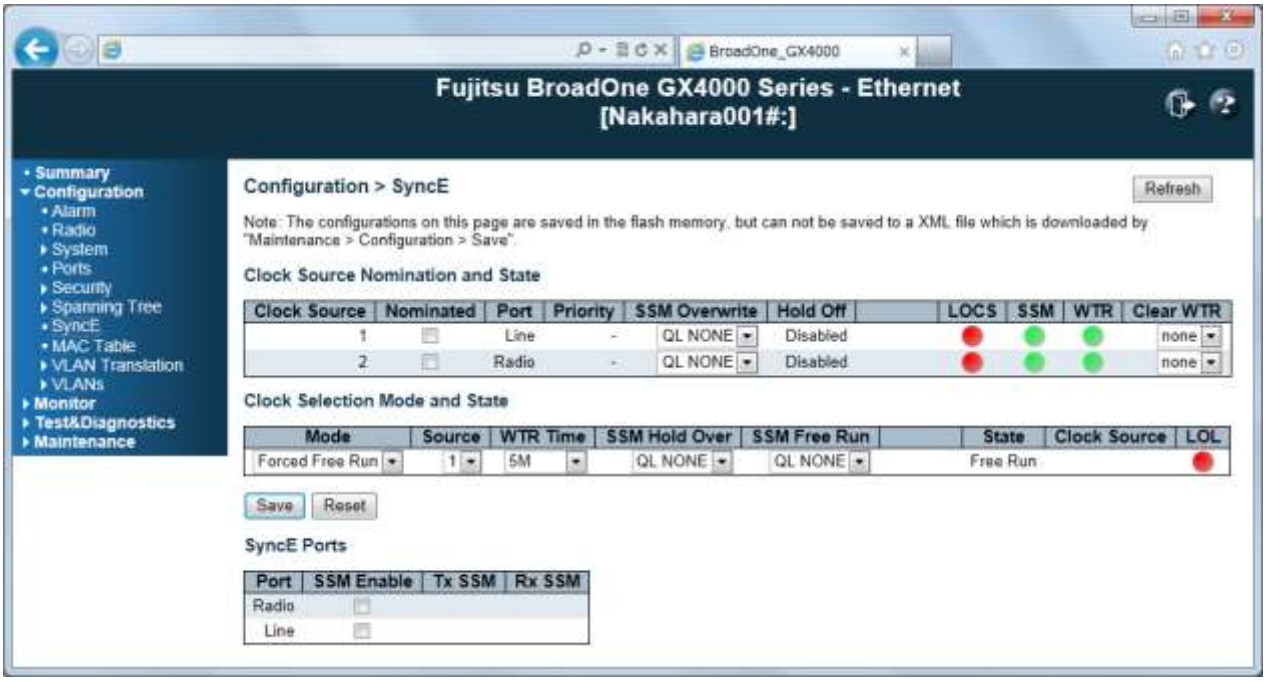


Configuration > Spanning Tree > CIST Ports Main Frame

Spanning Tree > CIST Ports: This menu allows the user to inspect the current STP CIST port configurations, and possibly change them as well. This menu contains settings for physical and aggregated ports.

Port	:	The port name of the logical STP port
STP Enables	:	Controls whether STP is enabled on this port
Save	:	Click to save changes
Reset		Click to undo any changes made locally and revert to previously saved values

Configuration > SyncE (Only applicable for Ether)



Configuration > SyncE Main Frame

Clock Source Nomination and Status:

Clock Source	:	This is the instance number of the clock source. This has to be referenced when selecting 'Manual' Mode
Nominated	:	When a clock source is nominated, the clock output from the related PHY (Port) is enabled against the clock controller. This makes it available as a possible source in the clock selection process.
Port	:	The ports that are possible to select for this clock source, is presented.
Priority	:	The priority for this clock source. Lowest number (0) is the highest priority. If two clock sources have the same priority, the lowest clock source number gets the highest priority in the clock selection process. (Future support)
SSM Overwrite	:	A selectable clock source Quality Level (QL) to overwrite any QL received in a SSM. If QL is not Received in a SSM (SSM is not enabled on this port), the SSM Overwrite QL is used as if received. The SSM Overwrite can be set to QL_NONE, indicating that the clock source is without any know quality (Lowest compared to clock source with known quality)
Hold Off	:	The Hold Off timer value. Active loss of clock Source will be delayed the selected amount of time. The clock selector will not change clock source if the loss of clock condition is cleared within this time (Future support)
LOCS	:	Signal is lost on this clock source
SSM	:	If SSM is enabled and not received properly. Type of SSM fail will be indicated in the 'Rx SSM' field
WTR	:	Wait To Restore timer is active.
Clear WTR	:	Clears the WTR timer and makes this clock source available to the clock selection process.

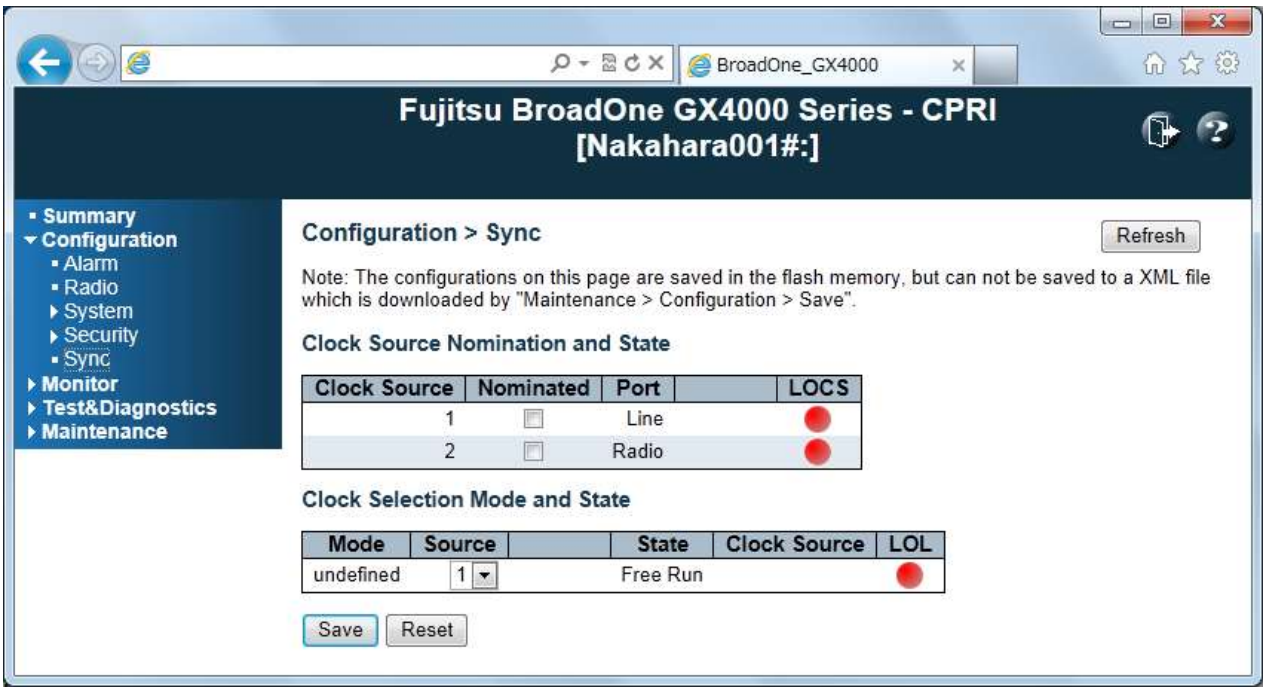
Clock Selection Mode and Status

Mode	:	The definition of the 'best' clock source is firstly the one with the highest (QL) and secondly (the ones with equal QL) the highest priority. Clock Selector can be in different modes: **Manual:** Clock selector will select the clock source stated in Source (see below). If this manually selected clock source is failing, the clock selector will go into holdover state. **Force Hold Over:** Clock Selector is forced to Free Run State. **Force Free Run:** Clock Selector is forced to Free Run State. The mode transition from "Force Free Run" to "Force Hold Over" is not allowed (The message of INVALID_PARAMETER is displayed). (Default is Force Free Run.)
Source	:	Only relevant if Manual mode is selected (see above). 1: Line and 2: Radio (default is 1.)
WTR Time	:	Wait To Restore timer value in minutes. The WTR time is activated on the falling edge of a clock source failure. This means that the clock source is first available for clock selection after WTR Time (can be cleared). Set WTR Time from Disable, 1M to 12M, 1 minute step.
SSM Holdover	:	Transmitted SSM QL value when clock selector is in Hold Over State. Set SSM Holdover from QL NONE, QL PRC, QL SSUA, QL SSUB, QL ECC2, QL ECC1, QL DNU and QL INV. (Default is QL NONE.)
SSM Free Run	:	This is the transmitted SSM QL value when clock selector is in Hold Over State. Set SSM Free Run from QL NONE, QL PRC, QL SSUA, QL SSUB, QL ECC2, QL ECC1, QL DNU and QL INV. (Default is QL NONE.)
Status	:	This is indicating the state of the clock selector. Possible states are: **Free Run:** There are no external clock sources to lock to (unlocked state). The Clock Selector has never been locked to a clock source long enough to calculate the hold over frequency offset to local oscillator. The frequency of this node is the frequency of the local oscillator. **Hold Over:** There are no external clock sources to lock to (unlocked state). The Clock Selector has calculated the holdover frequency offset to local oscillator. The frequency of this node is hold to the frequency of the clock source previous locked to. **Locked:** Clock selector is locked to the clock source indicated (See next).
Clock Source	:	The clock source locked to when clock selector is in locked state.
LOL	:	Clock selector has raised the Los Of Lock alarm

SyncE Port

Port	:	The port number to configure.
SSM Enabled	:	Enable and disable of SSM functionality on this port.
TX SSM	:	Monitoring of the transmitted SSM QL on this port. Transmitted QL should be the Quality Level of the clock generated by this node. This means the QL of the clock source this node is locked to
RX SSM	:	Monitoring of the received SSM QL on this port. If link is down on port, QL_LINK is indicated. If no SSM is received, QL_FAIL is indicated
Refresh		Click to refresh the page
Save		Click to save changes
Reset		Click to undo any changes made locally and revert to previously saved values

Configuration > Sync (Only applicable for CPRI)



Configuration > Sync Main Frame

Clock Source Nomination and Status:

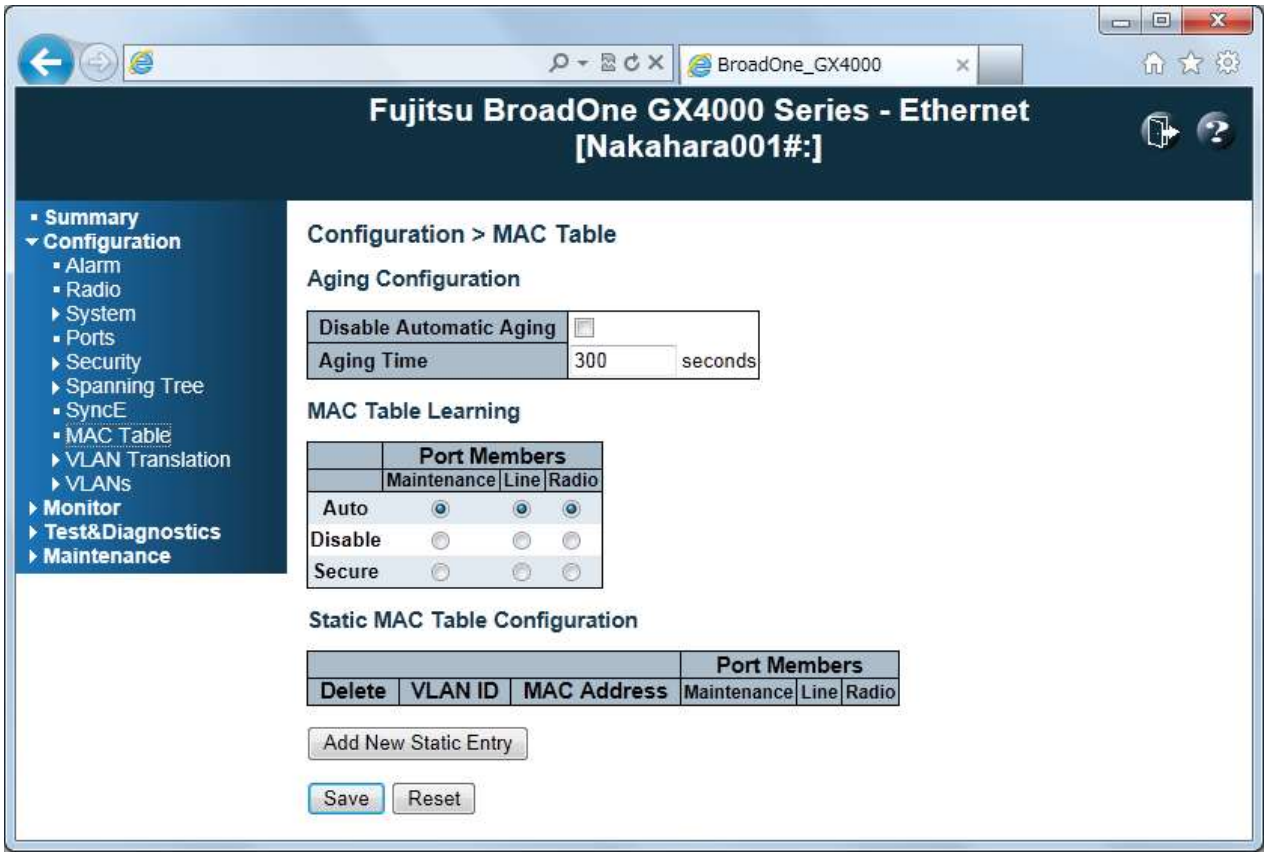
This menu allows the user to inspect and configure the current Sync port settings.

Clock Source	:	This is the instance number of the clock source. This has to be referenced when selecting 'Manual' Mode
Nominated	:	When a clock source is nominated, the clock output from the related PHY (Port) is enabled against the clock controller. This makes it available as a possible source in the clock selection process.
Port	:	The ports that are possible to select for this clock source, is presented.
LOCS	:	Signal is lost on this clock source

Clock Selection Mode and Status

Mode	:	The definition of the 'best' clock source is firstly the one with the highest (QL) and secondly (the ones with equal QL) the highest priority. Clock Selector can be in different modes: **Manual:** Clock selector will select the clock source stated in Source (see below). If this manually selected clock source is failing, the clock selector will go into holdover state.
Source	:	The clock source locked to when clock selector is in locked state
Clock Source	:	The clock source locked to when clock selector is in locked state.
LOL	:	Clock selector has raised the Los Of Lock alarm.
Refresh	:	Click to refresh the page immediately
Save	:	Click to save changes
Reset	:	Click to undo any changes made locally and revert to previously saved values.

Configuration > MAC Table (Only applicable for Ether)



Configuration > MAC Table Main Frame

Aging Configuration:

By default, dynamic entries are removed from the MAC table after 300 seconds. This removal is also called aging. Configure aging time by entering a value here in seconds:

Aging Time	:	Setting range is 10 to 1000000.
Disable Automatic Aging	:	Disable automatic aging of dynamic entries by checking. Default is not checking.

MAC Table Learning:

If the learning mode for a given port is grayed out, another module is in control of the mode, so that it cannot be changed by the user. An example of such a module is the MAC-Based Authentication under 802.1X. Each port can do learning based upon the following settings:

Auto	:	Learning is done automatically as soon as a frame with unknown SMAC is received. (default)
Disable	:	No learning is done
Secure	:	Only static MAC entries are learned, all other frames are dropped. **Note:** Make sure that the link used for managing the switch is added to the Static Mac Table before changing to secure learning mode, otherwise the management link is lost and can only be restored by using another non-secure port or by connecting to the switch via the serial interface.

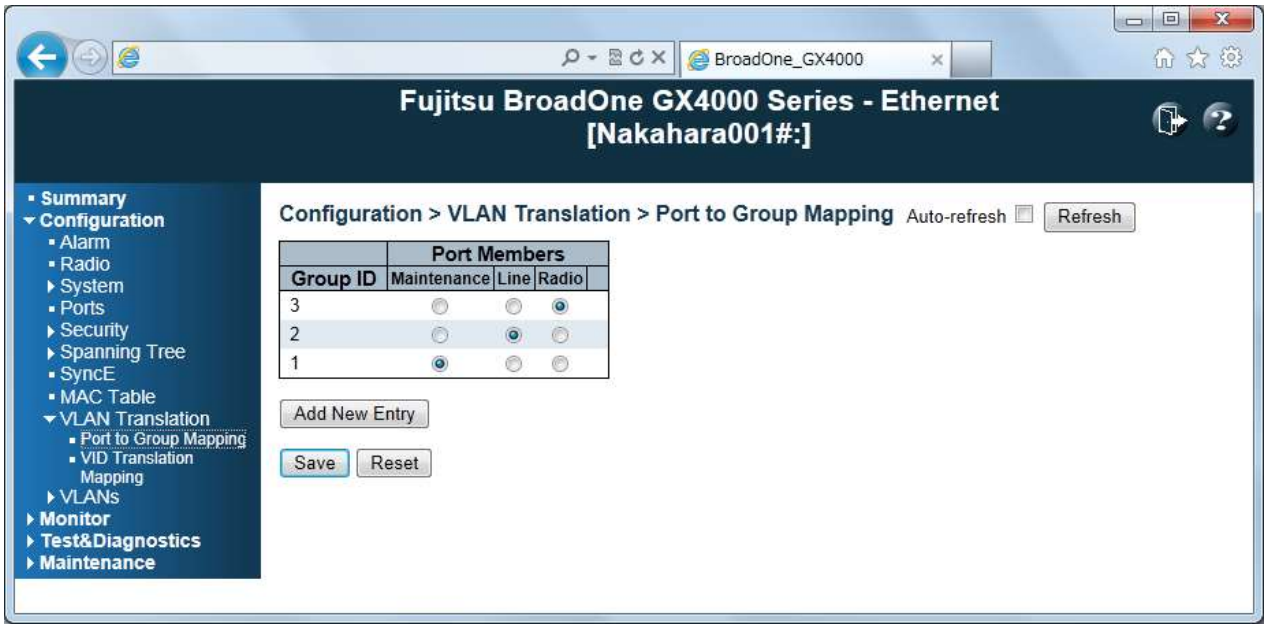
Static MAC Table Configuration:

The static entries in the MAC table are shown in this table. The static MAC table can contain 64 entries. The MAC table is sorted first by VLAN ID and then by MAC address.

Delete	:	Check to delete the entry. It will be deleted during the next save.
VLAN ID	:	The VLAN ID of the entry.
MAC Address	:	The MAC address of the entry.
Port Member	:	Checkmarks indicate which ports are members of the entry. Check or uncheck as needed to modify the entry.
Adding a New Static Entry		Click to add a new entry to the static MAC table. Specify the VLAN ID, MAC address, and port members for the new entry. Click "Save".
Save	:	Click to save changes
Reset	:	Click to undo any changes made locally and revert to previously saved values

Configuration > VLAN Translation (Only applicable for Ether)

Configuration > VLAN Translation > Port to Group Mapping

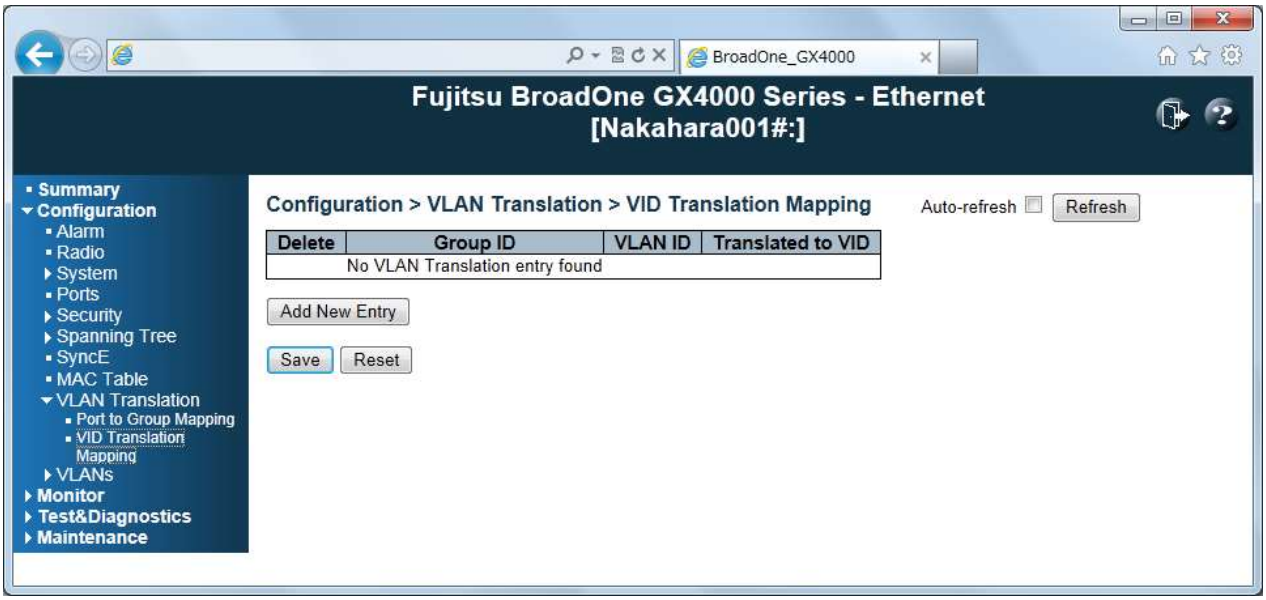


Configuration > VLAN Translation > Port to Group Mapping Main Frame

Port to Group Mapping:

Group ID	:	A valid Group ID is an integer value from 1 to 29. A set of VLAN Translations are mapped to a group Id. This way a port is mapped to a list of VLAN Translations easily by mapping it to a group. Number of groups in this switch is equal to the number of ports (29) present in this switch. A port can be mapped to any of the groups. Multiple ports can also be mapped to a group with same group Id. Note**:** By default, each port is mapped to a group with a group Id equal to the port number. For example, port 1 is mapped to the group with ID=1.
Port Member	:	A row of radio buttons, one radio button for each port is displayed for each Group ID. To include a port in a Group, click the radio button. A port must belong to at least one group.
Adding a New Entry	:	Click **Add New Entry** to add a new entry in Port to Group Mapping Table. An empty row is added to the table with the Group ID and array of radio buttons, one radio button for each port (click corresponding radio button to make port to be member of a particular Group). Legal values for a VLAN ID are **1** through **4095**. The **Delete** button can be used to undo the addition of new entry.
Save	:	Click to save changes
Reset	:	Click to undo any changes made locally and revert to previously saved values
Auto-refresh	:	Check this box to refresh the page automatically. Automatic refresh occurs every 3 seconds

Configuration > VLAN Translation > VID Translation Mapping



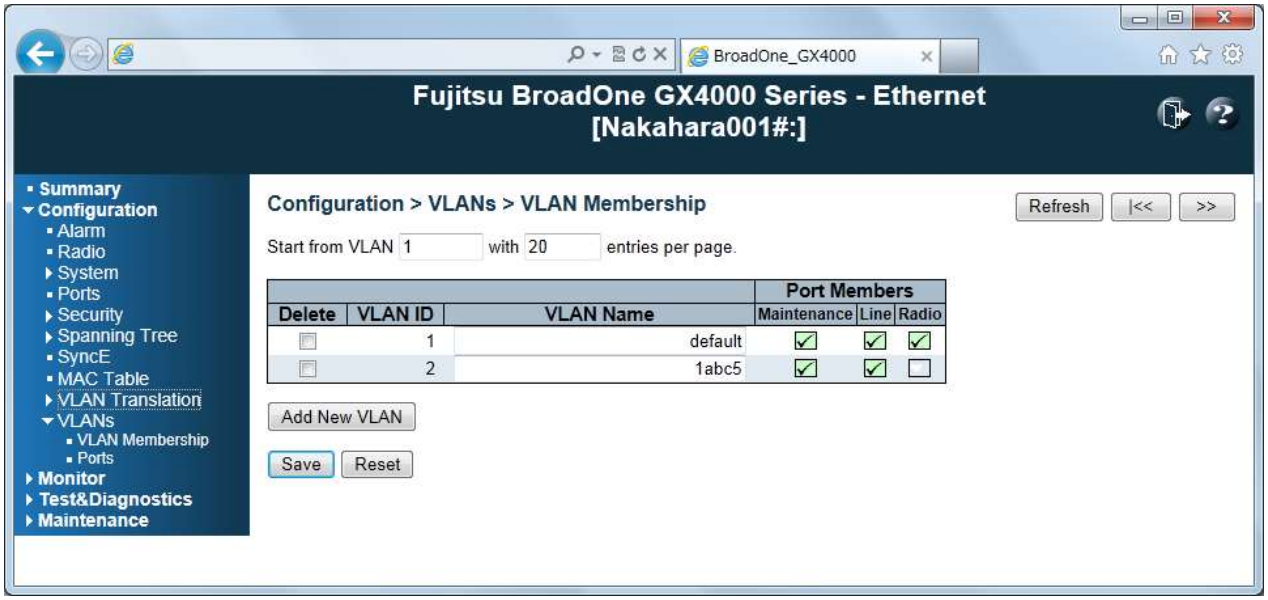
Configuration > VLAN Translation > VID Translation Mapping Main Frame

VID Translation Mapping: This menu allows you to map VLAN ID to other VLAN ID for a particular Group ID Globally

Delete	:	To delete a VLAN Translation Group database entry, check this box. The entry will be deleted on the switch during the next Save
Group ID	:	A valid Group ID is an integer value from 1 to 29. A set of VLAN Translations are mapped to a group Id. This way a port is mapped to a list of VLAN Translations easily by mapping it to a group. Number of groups in a switch is equal to the number of ports present in this switch. A port can be mapped to any of the groups. Multiple ports can also be mapped to a group with same group Id. Note: By default, each port is mapped to a group with a group Id equal to the port number. For example, port 1 is mapped to the group with ID=1.
VLAN ID	:	Indicates the ID to which Group ID will be mapped. A valid VLAN ID ranges from 1-4095.
Translated to VID	:	Indicates the VID to which VLAN ID of ingress frames will be changed, if VID in incoming frames if same as configured in VLAN ID field preceded by this field on member ports of a particular group to which this entry belongs. Setting range is 1 to 4095 and default is null.
Adding a new VID Translation entry	:	Click **Add New Entry** to add a new entry in VLAN Translation table. An empty row is added to the table, the Group ID, VLAN ID and Translated to VID fields can be configured as needed. Legal values for a VLAN ID are **1** through **4095**. The **Delete** button can be used to undo the addition of new entry.
Auto-refresh	:	Check this box to refresh the page automatically. Automatic refresh occurs every 3 seconds
Refresh	:	Click to refresh the page immediately
Save	:	Click to save changes
Rest	:	Click to undo any changes made locally and revert to previously saved values

Configuration > VLANs (Only applicable for Ether)

Configuration > VLANs > VLAN Membership



Configuration > VLANs > VLAN Membership Main Frame

VLANs Membership:

The VLAN membership configuration for the switch can be monitored and modified here. Up to 4096 VLANs are supported. This page allows for adding and deleting VLANs as well as adding and deleting port members of each VLAN.

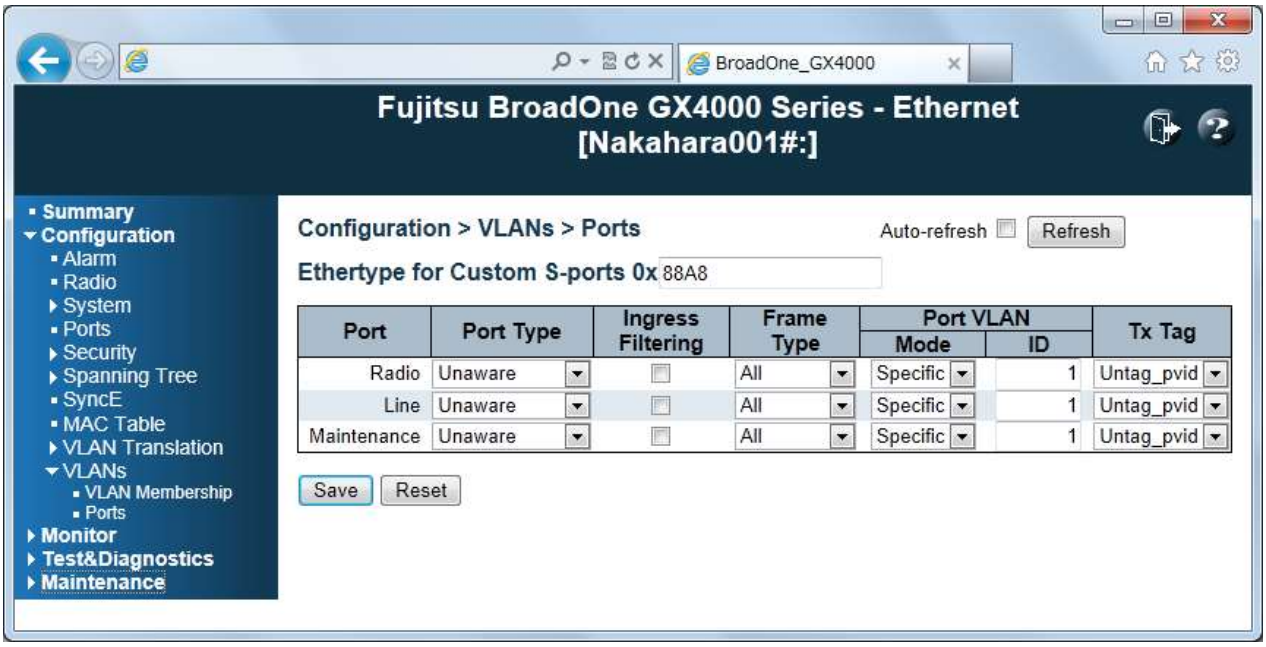
Navigating the VLAN Table:

Each page shows up to 99 entries from the VLAN table, default being 20, selected through the "entries per page" input field. When first visited, the web page will show the first 20 entries from the beginning of the VLAN Table. The first displayed will be the one with the lowest VLAN ID found in the VLAN Table.
The "VLAN" input fields allow the user to select the starting point in the VLAN Table. Clicking the **Refresh** button will update the displayed table starting from that or the closest next VLAN Table match. The **>>** will use the last entry of the currently displayed VLAN entry as a basis for the next lookup. When the end is reached the text "No more entries" is shown in the displayed table. Use the **I<<** button to start over.

Delete	:	To delete a VLAN entry, check this box. The entry will be deleted during the next Save
VLAN ID	:	Indicates the ID of this particular VLAN
VLAN Name	:	Indicates the name of the VLAN. Maximum length of the VLAN Name String is 32 and default is null. VLAN Name can only contain alphabets or numbers. VLAN name should contain at least one alphabet. VLAN name can be edited for the existing VLAN entries or it can be added to the new entries. But maximum number of VLANs which can have Names is 64.
Port Members	:	A row of check boxes for each port is displayed for each VLAN ID. To include a port in a VLAN, check the box as ✓. To include a port in a forbidden port list, check the box as shown ✗. To remove or exclude the port from the VLAN, make sure the box is unchecked as shown ☐ . By default, no ports are members, and for every new VLAN entry all boxes are unchecked.

Adding a New VLAN	:	Click **Add New VLAN** to add a new VLAN ID. An empty row is added to the table, and the VLAN can be configured as needed. Legal values for a VLAN ID are **1** through **4095**. The VLAN is enabled when you click on "Save". The **Delete** button can be used to undo the addition of new VLANs.
Save	:	Click to save changes
Reset	:	Click to undo any changes made locally and revert to previously saved values
Refresh	:	Refreshes the displayed table starting from the "VLAN ID" input fields
I<<	:	Updates the table starting from the first entry in the VLAN Table, i.e. the entry with the lowest VLAN ID
>>	:	Updates the table, starting with the entry after the last entry currently displayed

Configuration > VLANs > Port



Configuration > VLANs > Port Main Frame

Configuration > VLANs > Ports: This menu is used for configuring the switch port VLAN

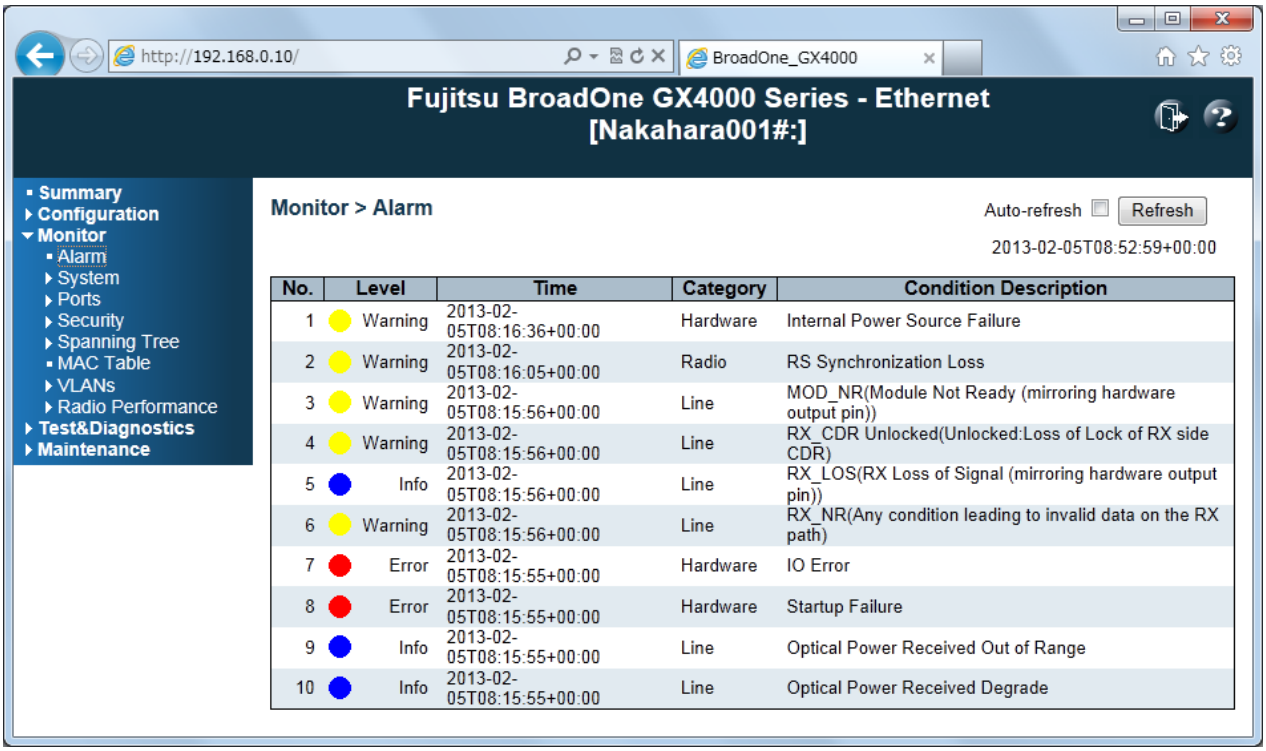
Ethertype for Custom S-port 0x…: This field specifies the ether type used for Custom S-ports. This is a global setting for all the Custom S-ports

Port	:	The port name in the same row.
Port Type	:	Port can be one of the following types: Unaware, Customer port (C-port), Service port(S-port), Custom Service port(S-custom-port). If Port Type is Unaware, all frames are classified to the Port VLAN ID and tags are not removed. Default is Unaware.

Ingress Filtering	:	Enable ingress filtering on a port by checking the box. This parameter affects VLAN ingress processing. If ingress filtering is enabled and the ingress port is not a member of the classified VLAN of the frame, the frame is discarded. By default, ingress filtering is disabled (no checkmark). Default is no checkmark.
Frame Type	:	Determines whether the port accepts all frames or only tagged/untagged frames. This parameter affects VLAN ingress processing. If the port only accepts tagged frames, untagged frames received on the port are discarded. By default, the field is set to **All**. Default is All.
Port VLAN Mode	:	Configures the Port VLAN Mode. The allowed values are **None** or **Specific**. This parameter affects VLAN ingress and egress processing. If **None** is selected, a VLAN tag with the classified VLAN ID is inserted in frames transmitted on the port. This mode is normally used for ports connected to VLAN aware switches. If **Specific** (default value) is selected, a Port VLAN ID can be configured (see below). Untagged frames received on the port are classified to the Port VLAN ID. If VLAN awareness is disabled, all frames received on the port are classified to the Port VLAN ID. If the classified VLAN ID of a frame transmitted on the port is different from the Port VLAN ID, a VLAN tag with the classified VLAN ID is inserted in the frame.
Port VLAN ID	:	Configures the VLAN identifier for the port. The allowed values are **1** through **4095**. Default value is 1. Note**:** The port must be a member of the same VLAN as the Port VLAN ID.
Tx Tag	:	Determines egress tagging of a port. Untag_pvid - All VLANs except the configured PVID will be tagged. Tag_all - All VLANs are tagged. Untag_all - All VLANs are untagged. Default is Untag_pvid.
Auto-refresh	:	Check this box to refresh the page automatically. Automatic refresh occurs every 3 seconds
Save	:	Click to save changes
Rest	:	Click to undo any changes made locally and revert to previously saved values

Monitor

Monitor > Alarm



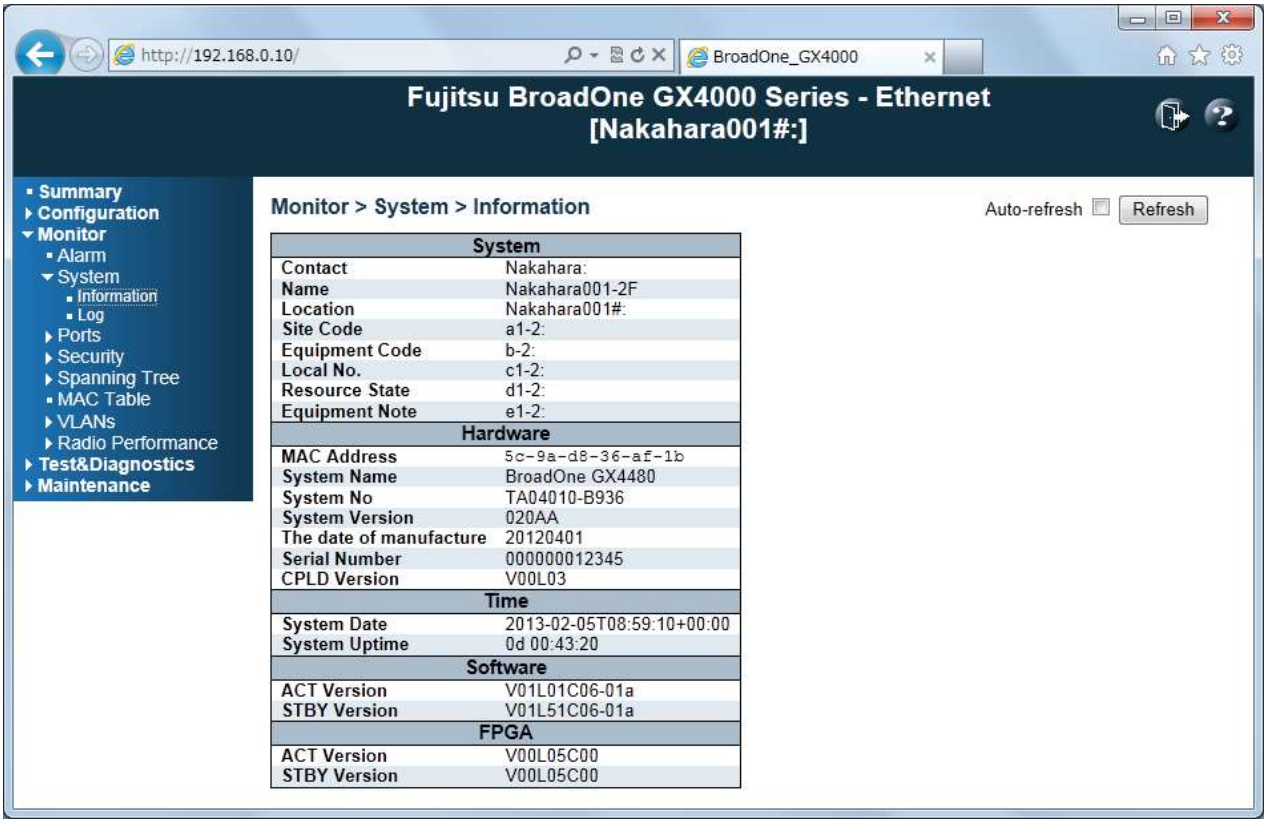
Monitor > Alarm Menu Frame

Monitor > Alarm:

No.	:	The line number of the table.
Level	:	The level of the severity of the alarm. **Error** (indicated with red icon): High level problem. Equipment can not work correctly, under this condition. Fatal problem happens on internal device or process. **Warning** (indicated with yellow icon): Low level problem. Equipment is working. However some problem happens on interface of Radio, Line Clock or Console, otherwise hardware has degradation. **Info** (indicated with blue icon): Information except Error and Warning to be informed to the operator.
Time	:	The occurrence time of the alarm.
Category	:	The category of alarms. The displayed categories are: **Hardware**: Related to the hardware. **Radio**: Related to the Radio interface. **Line**: Related to the Line interface. **Clock**: Related to the Line interface. **Console**: Related to the Console interface.
Condition Description	:	Indicates the description of the alarm.
Auto-refresh	:	Check this box to refresh the page automatically. Automatic refresh occurs every 3 seconds.
Refresh Button	:	Click to refresh the page

Monitor > System

Monitor > System > Information



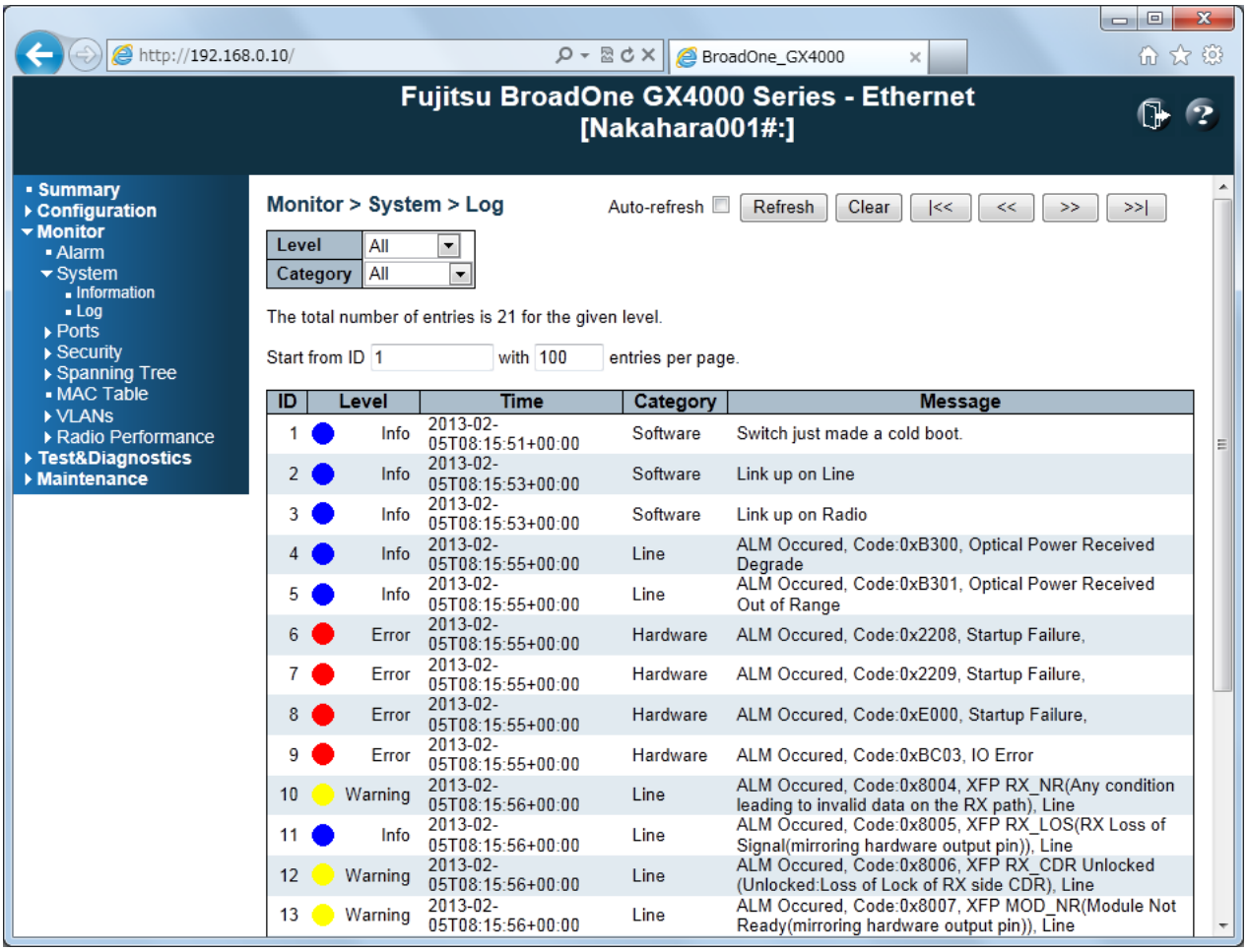
Monitor > System > Information Menu Frame

Monitor > System > Information:

Contact	:	The system contact configured in Configuration | System | Information | System Contact.
Name	:	The system name configured in Configuration | System | Information | System Name.
Location	:	The system location configured in Configuration | System | Information | System Location
Site Code	:	The site code configured in Configuration | System | Information | Site Code.
Equipment Code	:	The equipment code configured in Configuration | System | Information | Equipment Code.
Local No.	:	The local number configured in Configuration | System | Information | Local No.
Resource State	:	The local number configured in Configuration | System | Information | Resource State.
Equipment Note	:	The equipment note configured in Configuration | System | Information | Equipment Note.
MAC Address	:	The MAC Address of this switch.
System Name	:	It is a name of the system.
System No.	:	It is a chart number of the system.

System Version	:	It is a version of the system.
Date of Manufacture	:	It is date of manufacture
Serial Number	:	It is a serial number of manufacturing
CPLD Version	:	It is a version of CPLD.
System Date	:	The current (GMT) system time and date. The system time is obtained through the Timing server running on the switch, if any.
System Uptime	:	The period of time the device has been operational.
Software ACT Version	:	It is a version of Software on the ACT side.
Software STBY Version	:	It is a version of Software on the STBY side.
FPGA ACT Version	:	It is a version of FPGA on the ACT side.
FPGA STBY Version	:	It is a version of FPGA on the STBY side.
Auto-refresh	:	Check this box to refresh the page automatically. Automatic refresh occurs every 3 seconds.
Refresh Button	:	Click to refresh the page

Monitor > System > Log



Monitor > System > Log Menu Frame

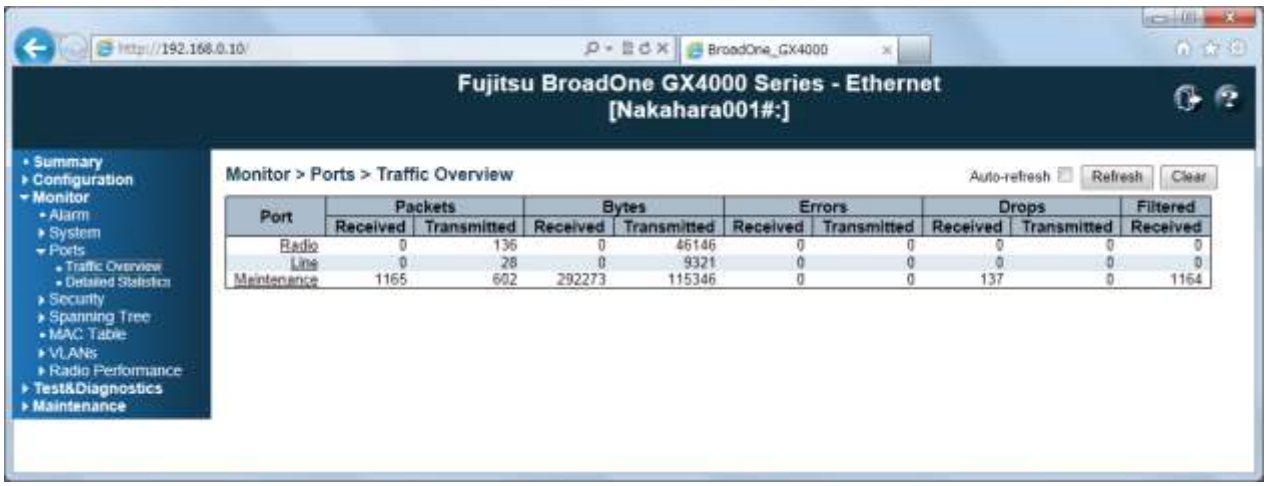
Monitor > System > Log:

ID	:	The ID (>= 1) of the system log entry.
Level	:	The level of the system log entry. The following level types are supported: **Info**: Information level of the system log. **Warning**: Warning level of the system log. **Error**: Error level of the system log. **All**: All levels.
Time	:	The time of the system log entry.
Category	:	The category of the system log. The following kind of categories are supported: Software Hardware Radio Line Clock Console All
Message	:	The message of the system log entry

Auto-refresh	:	Check the box to refresh the page automatically. Automatic refresh occurs every 3 seconds.
Refresh	:	Update the system log entries, starting from the current entry ID.
Clear	:	Flushes the selected log entries.
I<<	:	Update the system log entries, starting from the first available entry ID.
<<	:	Update the system log entries, starting from the last entry currently displayed.
>>	:	Updates the system log entries, starting from the last entry currently displayed.
>>I	:	Updates the system log entries, starting from the last available entry ID

Monitor > Port (Only applicable for Ether)

Monitor > Port > Traffic Overview

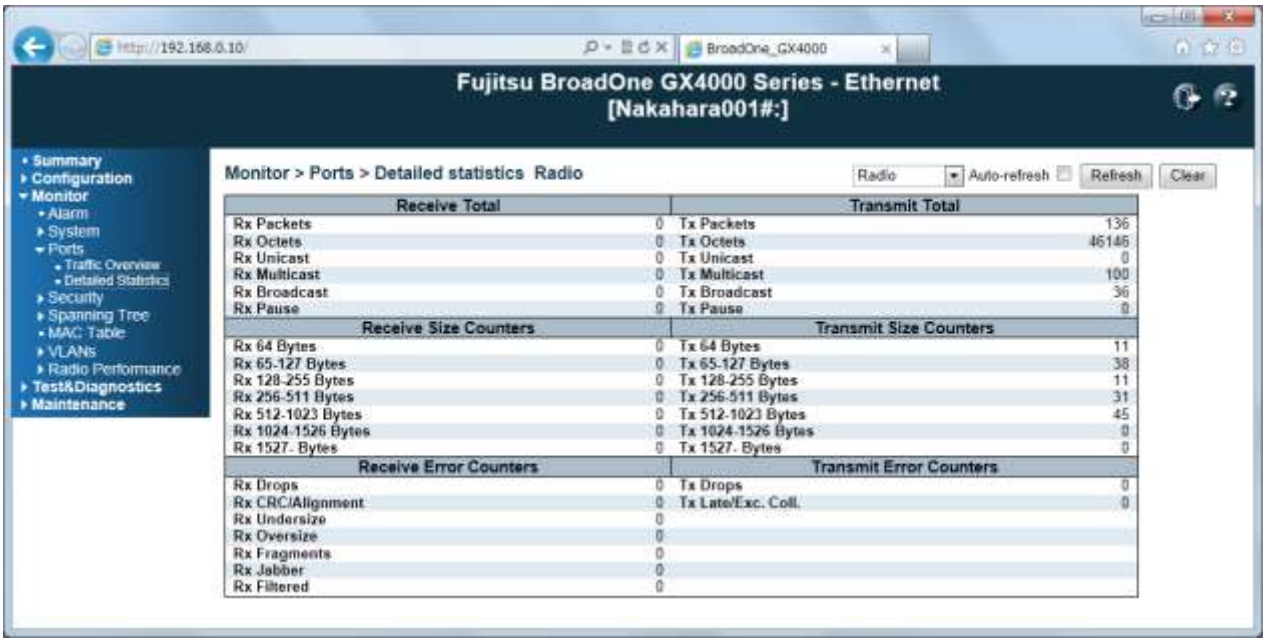


Monitor > Port > Traffic Overview Menu Frame

Monitor > Ports > Traffic Overview: This menu provides an overview of general traffic statistics for all switch ports

Port	:	The port for the settings contained in the same row.
Packets	:	The number of received and transmitted packets per port.
Bytes	:	The number of received and transmitted bytes per port.
Errors	:	The number of frames received in error and the number of incomplete transmissions per port.
Drops	:	The number of frames discarded due to ingress or egress congestion.
Filtered	:	The number of received frames filtered by the forwarding process.
Refresh	:	Click to refresh the page immediately
Clear	:	Clears the counters for all ports
Auto-refresh	:	Check this box to enable an automatic refresh of the page at regular intervals

Monitor > Port > Detailed Statistics Ratio



Monitor > Port > Detailed Statistics Ratio Menu Frame

Rx and Tx Total:

This menu provides detailed traffic statistics for a specific switch port. Use the port select box to select which switch port details to display. The displayed counters are the totals for receive and transmit, the size counters for receive and transmit, and the error counters for receive and transmit.

Rx and Tx Packets	:	The number of received and transmitted (good and bad) packets.
RX and Tx Octets	:	The number of received and transmitted (good and bad) bytes. Includes FCS, but excludes framing bits.
Rx and Tx Unicast	:	The number of received and transmitted (good and bad) unicast packets.
Rx and Tx Multicast	:	The number of received and transmitted (good and bad) multicast packets.
Rx and Tx Broadcast	:	The number of received and transmitted (good and bad) broadcast packets.
Rx and Tx Pause	:	A count of the MAC Control frames received or transmitted on this port that have an opcode indicating a PAUSE operation.

Rx Error Counters:

The number of received and transmitted (good and bad) packets split into categories based on their respective frame sizes.

Rx Drops	:	The number of frames are dropped due to lack of receive buffers or egress congestion.
RX CRC/Alignment	:	The number of frames received with CRC or alignment errors
RX Undersize	:	The number of short [1] frames received with valid CRC.
Rx Oversize	:	The number of long [2] frames received with valid CRC.

Rx Error Counters: (Cont'd)

The number of received and transmitted (good and bad) packets split into categories based on their respective frame sizes.

Rx Fragment	:	The number of short [1] frame received with invalid CRC.
Rx Jabber	:	The number of long [2] frames received with invalid CRC
Rx Filtered	:	The number of received frames filtered by the forwarding process.

[1] Short frames are frames that are smaller than 64 bytes.

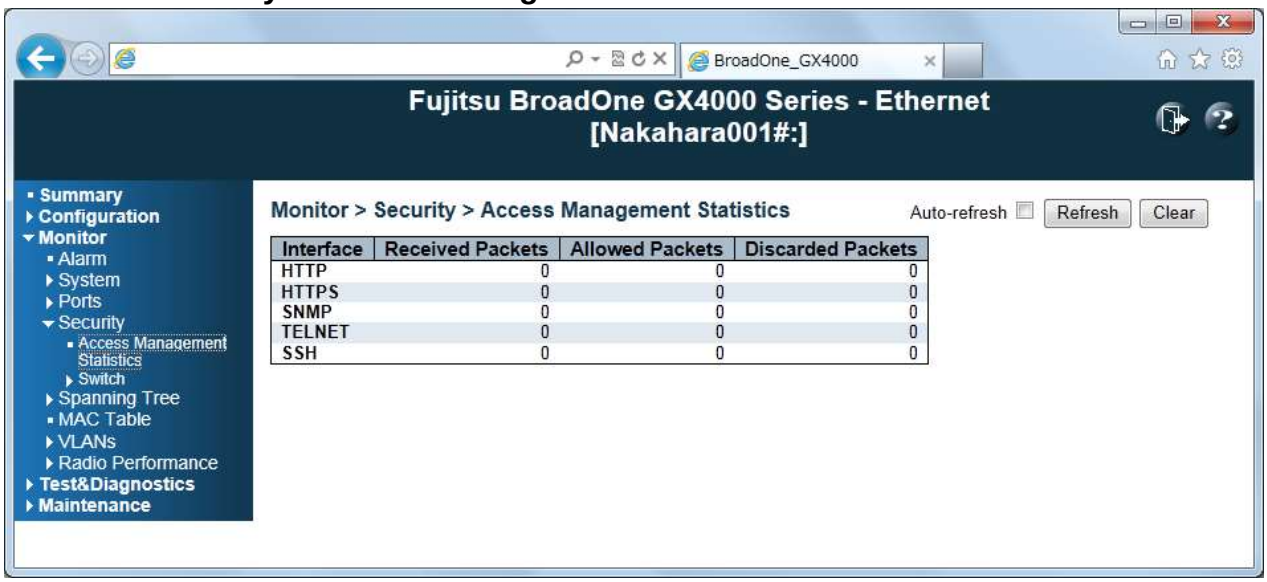
[2] Long frames are frames that are longer than the configured maximum frame length for this port.

Tx Error Counter:

Tx Drops	:	The number of frames dropped due to output buffer congestion.
Tx Late/Exc. Coll.	:	The number of frames dropped due to excessive or late collisions

Monitor > Security (Only applicable for Ether)

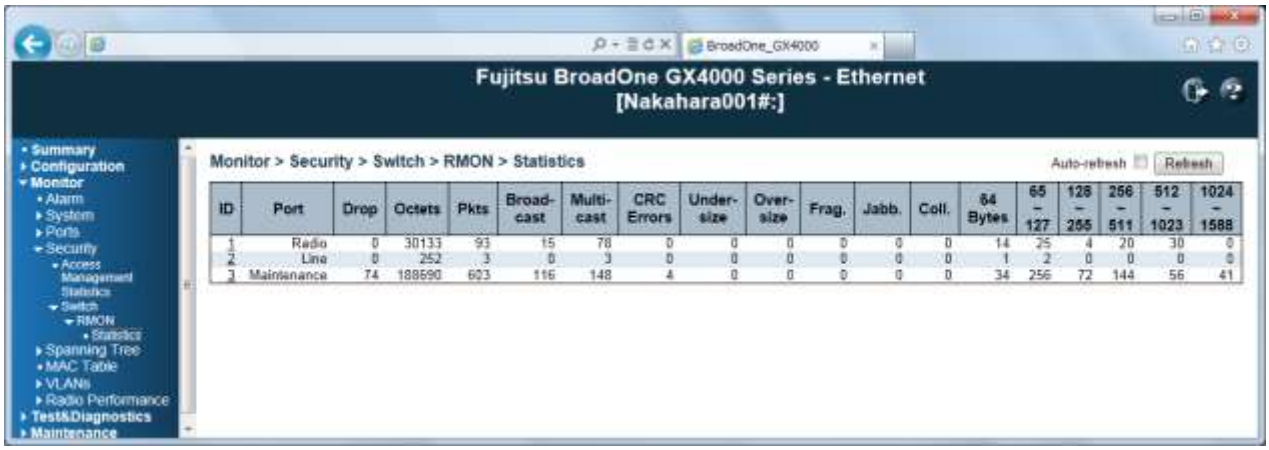
Monitor > Security > Access Management Statistics



Monitor > Security > Access Management Statistics Menu Frame

Interface	:	The interface type through which the remote host can access the switch.
Received Packets	:	Number of received packets from the interface when access management mode is enabled.
Allowed Packets	:	Number of allowed packets from the interface when access management mode is enabled.
Discarded Packets	:	Number of discarded packets from the interface when access management mode is enabled.
Auto-refresh	:	Check this box to refresh the page automatically. Automatic refresh occurs every 3 seconds
Refresh	:	Click to refresh the page immediately
Clear	:	Clear all statistics

Monitor > Security > Switch > RMON > Statistics



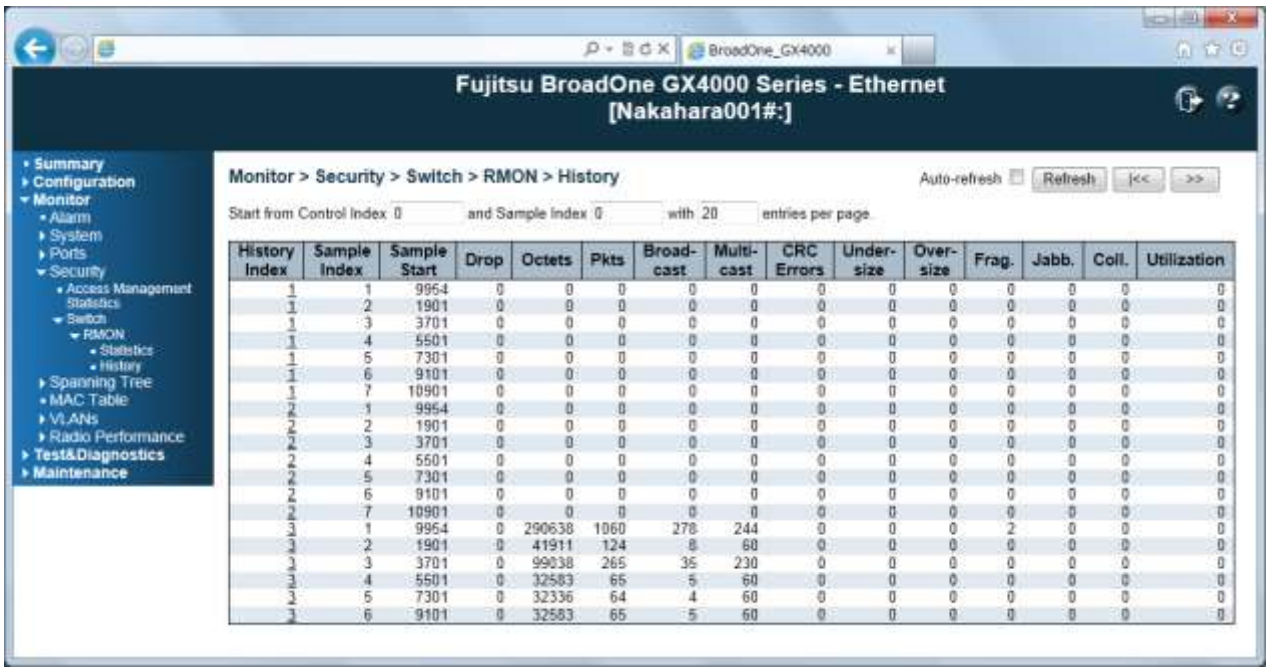
Monitor > Security > Switch > RMON > Statistics Menu Frame

This menu provides an overview of RMON Statistics entries. Each page shows up to 99 entries from the Statistics table, default being 20, selected through the "entries per page" input field. When first visited, the web page will show the first 20 entries from the beginning of the Statistics table. The first displayed will be the one with the lowest ID found in the Statistics table.
The "Start from Control Index" allows the user to select the starting point in the Statistics table. Clicking the **Refresh** button will update the displayed table starting from that or the next closest Statistics table match. The **>>** will use the last entry of the currently displayed entry as a basis for the next lookup. When the end is reached the text "No more entries" is shown in the displayed table. Use the **I<<** button to start over

ID	:	Indicates the index of Statistics entry.
Port	:	The port ID which wants to be monitored.
Drop	:	The total number of events in which packets were dropped by the probe due to lack of resources.
Octets	:	The total number of octets of data (including those in bad packets) received on the network.
Pkts	:	The total number of packets (including bad packets, broadcast packets, and multicast packets) received.
Broad-cast	:	The total number of good packets received that were directed to the broadcast address.
Multi-cast	:	The total number of good packets received that were directed to a multicast address.
CRC Errors	:	The total number of packets received that had a length (excluding framing bits, but including FCS octets) of between 64 and 1518 octets.
Under-size	:	The total number of packets received that were less than 64 octets.
Over-size	:	The total number of packets received that were longer than 1518 octets.
Frag.	:	The number of frames which size is less than 64 octets received with invalid CRC
Jabb.	:	The number of frames which size is larger than 64 octets received with invalid CRC
Coll.	:	The best estimate of the total number of collisions on this Ethernet segment.

64	:	The total number of packets (including bad packets) received that were 64 octets in length
65-127	:	The total number of packets (including bad packets) received that were between 65 to 127 octets in length.
128-255	:	The total number of packets (including bad packets) received that were from 128 to 255 octets in length.
256-512	:	The total number of packets (including bad packets) received that were from 256 to 511 octets in length.
513-1023	:	The total number of packets (including bad packets) received that were from 512 to 1023 octets in length
1024-1588	:	The total number of packets (including bad packets) received that were from 1024 to 1588 octets in length.
Auto-refresh	:	Check this box to refresh the page automatically. Automatic refresh occurs every 3 seconds
Refresh	:	Click to refresh the page immediately
I<<	:	Updates the table starting from the first entry in the Statistics table, i.e. the entry with the lowest ID
>>	:	Updates the table, starting with the entry after the last entry currently displayed

Monitor > Security > Switch > RMON > History



Monitor > Security > Switch > RMON > History Menu Frame

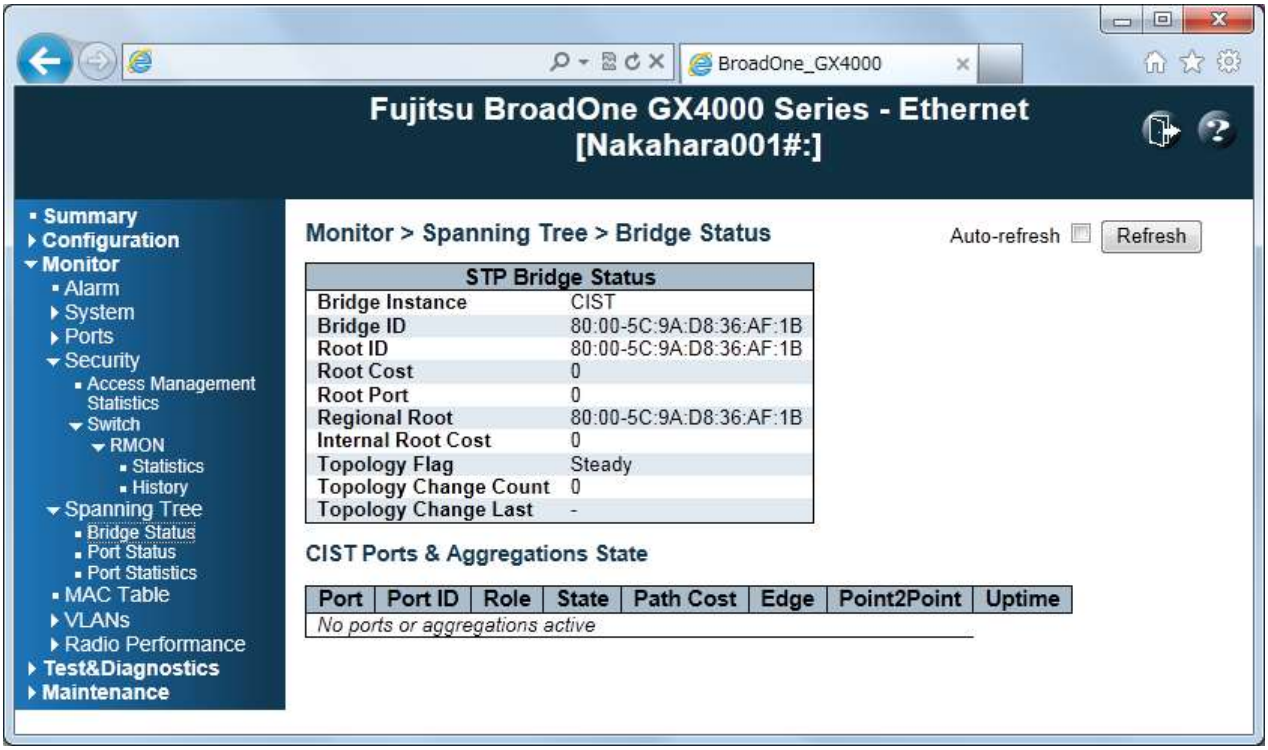
This menu provides an overview of RMON History entries. Each page shows up to 99 entries from the Statistics table, default being 20, selected through the "entries per page" input field. When first visited, the web page will show the first 20 entries from the beginning of the Statistics table. The first displayed will be the one with the lowest ID found in the Statistics table.
The "Start from Control Index" allows the user to select the starting point in the Statistics table. Clicking the **Refresh** button will update the displayed table starting from that or the next closest Statistics table match. The **>>** will use the last entry of the currently displayed entry as a basis for the next lookup. When the end is reached the text "No more entries" is shown in the displayed table. Use the **I<<** button to start over

History Index	:	Indicates the index of History control entry.
Sample Index	:	Indicates the index of the data entry associated with the control entry
Sample Start	:	The total number of events in which packets were dropped by the probe due to lack of resources.
Drop	:	The total number of events in which packets were dropped by the probe due to lack of resources
Octets	:	The total number of octets of data (including those in bad packets) received on the network.
Pkts	:	The total number of packets (including bad packets, broadcast packets, and multicast packets) received.
Broadcast	:	e total number of good packets received that were directed to the broadcast address
Multicast	:	The total number of good packets received that were directed to a multicast address
CRCError	:	The total number of packets received that had a length (excluding framing bits, but including FCS octets) of between 64 and 1518 octets
Undersize	:	The total number of packets received that were less than 64 octets.

Oversize	:	The total number of packets received that were longer than 1518 octets.
Frag.	:	The number of frames which size is less than 64 octets received with invalid CRC.
Jabb.	:	The number of frames which size is larger than 64 octets received with invalid CRC.
Coll.	:	The best estimate of the total number of collisions on this Ethernet segment.
Utilization	:	The best estimate of the mean physical layer network utilization on this interface during this sampling interval, in hundredths of a percent.
Auto-refresh	:	Check this box to refresh the page automatically. Automatic refresh occurs every 3 seconds
Refresh	:	Click to refresh the page immediately
I<<	:	Updates the table starting from the first entry in the History table, i.e., the entry with the lowest History Index and Sample Index
>>	:	Updates the table, starting with the entry after the last entry currently displayed

Monitor > Spanning Tree (Only applicable for Ether)

Monitor > Spanning Tree > Bridge Status



Monitor > Spanning Tree > Bridge Status Menu Frame

This menu provides detailed information on a single STP bridge instance, along with port state for all active ports associated.

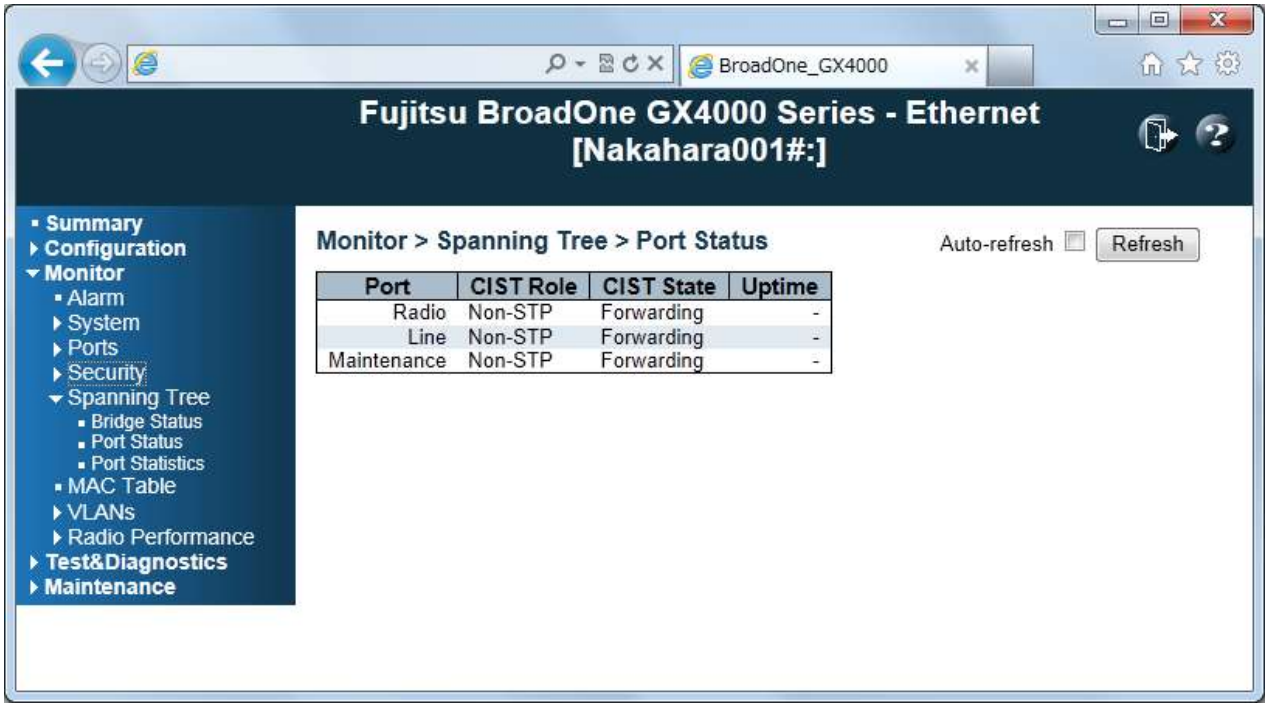
STP Bridge Status:

Bridge Instance	:	The Bridge instance - **CIST**, **MST1**, ...
Bridge ID	:	The Bridge ID of this Bridge instance.
Rout ID	:	The Bridge ID of the currently elected root bridge
Root Cost	:	The switch port currently assigned the *root* port role.
Root Port	:	Root Path Cost. For the Root Bridge this is zero. For all other Bridges, it is the sum of the Port Path Costs on the least cost path to the Root Bridge.
Regional Root	:	The Bridge ID of the currently elected regional root bridge, inside the MSTP region of this bridge. *(For the CIST instance only)*. MSTP:not available.
Internal Root Cost	:	The Regional Root Path Cost. For the Regional Root Bridge this is zero. For all other CIST instances in the same MSTP region, it is the sum of the Internal Port Path Costs on the least cost path to the Internal Root Bridge. *(For the CIST instance only)*. MSTP:not available.
Topology Flag	:	The current state of the Topology Change Flag of this Bridge instance.
Topology Change Count	:	The number of times where the topology change flag has been set (during a one-second interval).
Topology Change Last	:	The time passed since the Topology Flag was last set.

CIST Port & Aggregation State

Port	:	The switch port number of the logical STP port.
Port ID	:	The port id as used by the STP protocol. This is the priority part and the logical port index of the bridge port
Role	:	The current STP port role. The port role can be one of the following values: **Alternate Port, Backup Port, Root Port and Designated Port**.
State	:	The current STP port state. The port state can be one of the following values: **Discarding, Learning, Forwarding**.
Path Cost	:	The current STP port path cost. This will either be a value computed from the **Auto** setting, or any explicitly configured value.
Edge	:	The current STP port (operational) Edge Flag. An Edge Port is a switch port to which no Bridges are attached. The flag may be automatically computed or explicitly configured. Each Edge Port transits directly to the Forwarding Port State, since there is no possibility of it participating in a loop.
Point-to-Point	:	The current STP port point-to-point flag. A point-to-point port connects to a non-shared LAN media. The flag may be automatically computed or explicitly configured. The point-to-point properties of a port affect how fast it can transit to STP state.
Uptime	:	The time since the bridge port was last initialized
Auto-refresh	:	Check this box to refresh the page automatically. Automatic refresh occurs every 3 seconds
Refresh	:	Click to refresh the page immediately

Monitor > Spanning Tree > Port Status

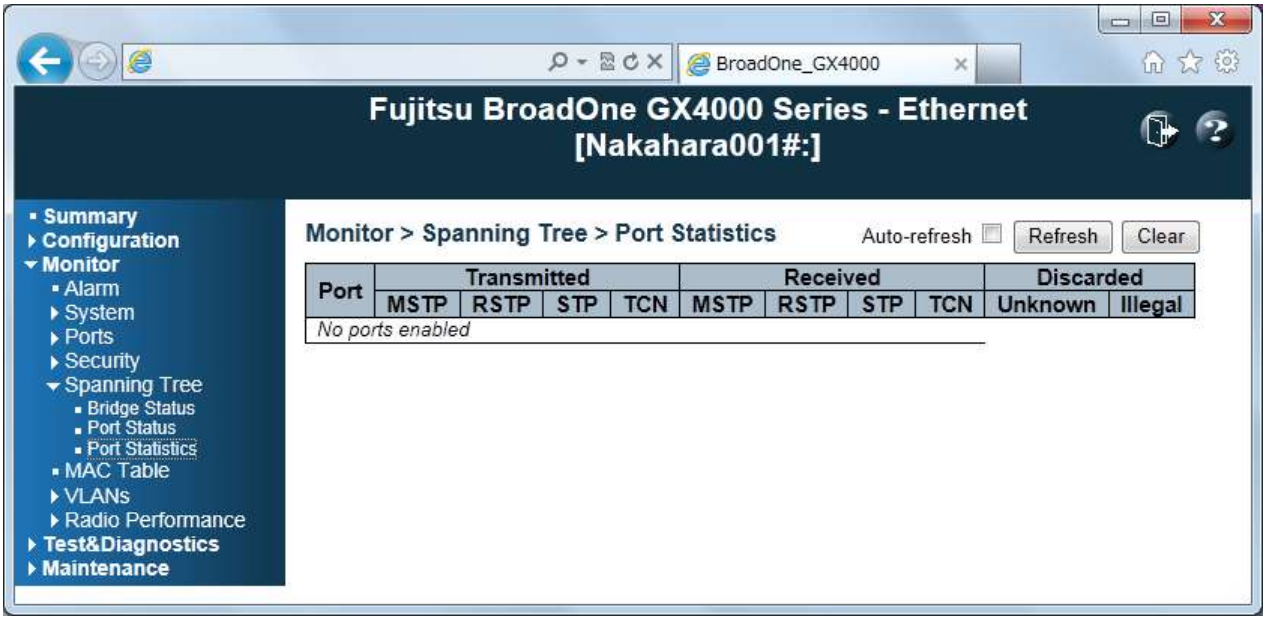


Monitor > Spanning Tree > Port Status Menu Frame

This menu displays the STP CIST port status for physical ports of the switch.

Port	:	The switch port name of the logical STP port
CIST Role	:	The current STP port role of the CIST port. The port role can be one of the following values: **Alternate Port, Backup Port, Root Port, Designated Port** and **Disabled**.
CIST State	:	The current STP port state of the CIST port. The port state can be one of the following values: **Discarding, Learning** and **Forwarding**.
Uptime	:	The time since the bridge port was last initialized.
Auto-refresh		Check this box to refresh the page automatically. Automatic refresh occurs every 3 seconds
Refresh		Click to refresh the page immediately

Monitor > Spanning Tree > Port Statistics

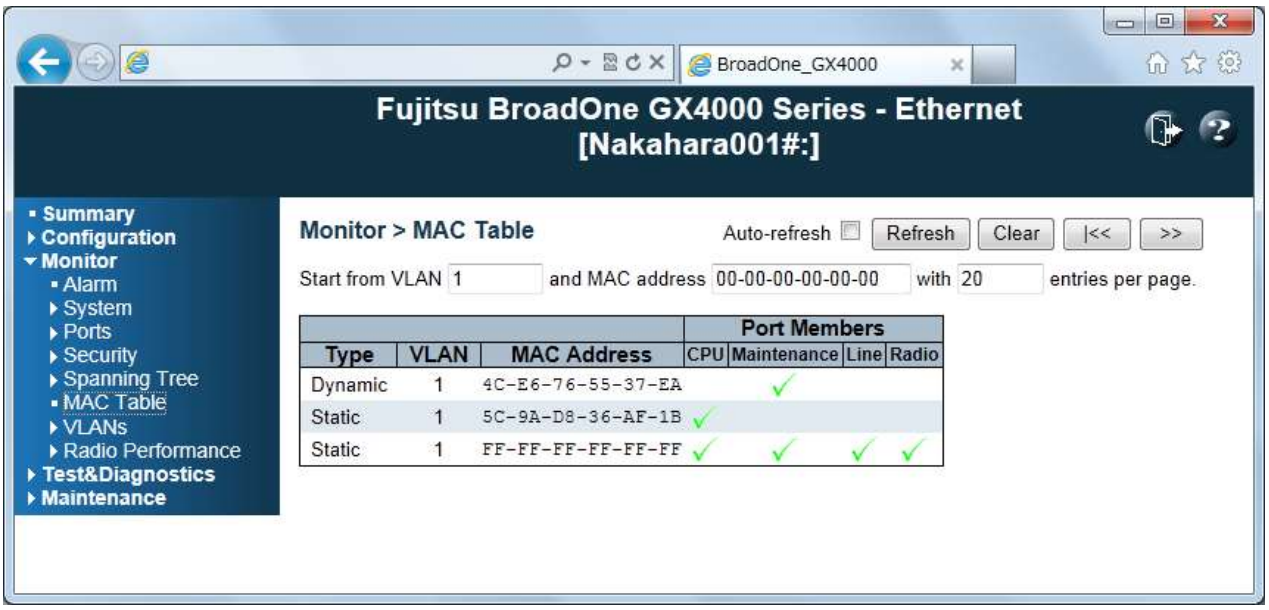


Monitor > Spanning Tree > Port Statistics Menu Frame

This menu displays the STP port statistics counters of bridge ports in the switch

Port	:	The switch port number of the logical STP port.
MSTP	:	The number of MSTP Configuration BPDU's received/transmitted on the port MSTP:not available.
RSTP	:	The number of RSTP Configuration BPDU's received/transmitted on the port
STP	:	The number of legacy STP Configuration BPDU's received/transmitted on the port.
TCN	:	The number of (legacy) Topology Change Notification BPDU's received/transmitted on the port.
Discarded Unknown	:	The number of unknown Spanning Tree BPDU's received (and discarded) on the port.
Discarded Illegal	:	The number of illegal Spanning Tree BPDU's received (and discarded) on the port.
Auto-refresh	:	Check this box to refresh the page automatically. Automatic refresh occurs every 3 seconds
Refresh	:	Click to refresh the page immediately
Clear	:	Click to reset the counters

Monitor > MAC Table (Only applicable for Ether)



Monitor > MAC Table Menu Frame

Entries in the MAC Table are shown on this page. The MAC Table contains up to 8192 entries, and is sorted first by VLAN ID, then by MAC address

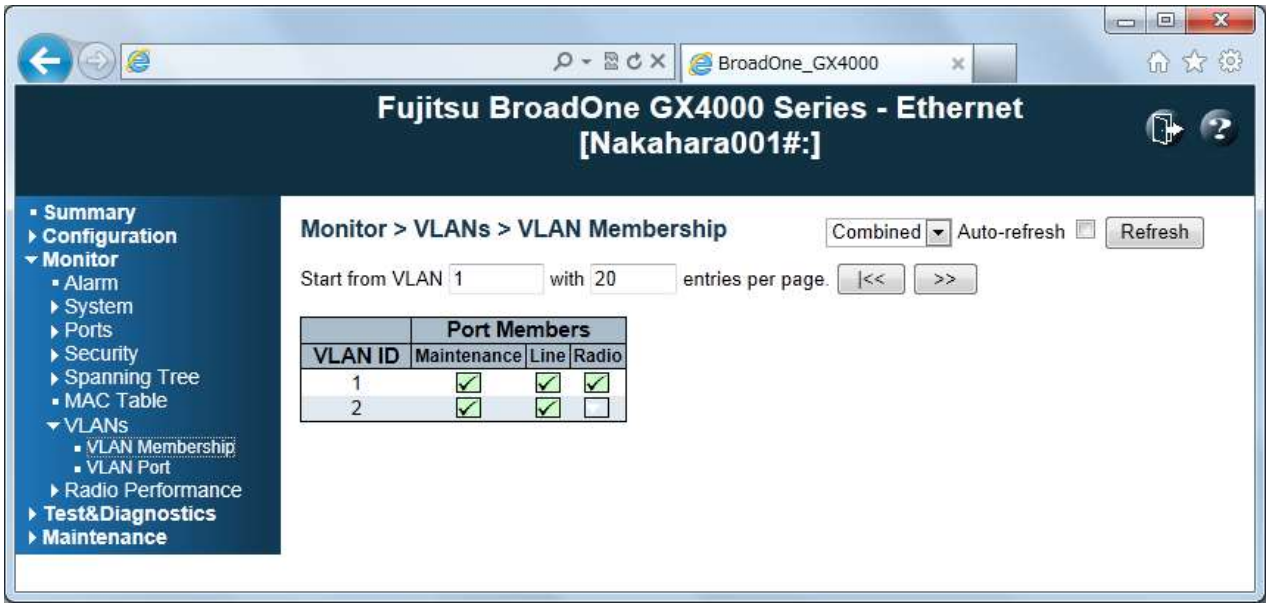
Navigating the MAC Table

Each page shows up to 999 entries from the MAC table, default being 20, selected through the "entries per page" input field. When first visited, the web page will show the first 20 entries from the beginning of the MAC Table. The first displayed will be the one with the lowest VLAN ID and the lowest MAC address found in the MAC Table.
The "Start from MAC address" and "VLAN" input fields allow the user to select the starting point in the MAC Table. Clicking the **Refresh** button will update the displayed table starting from that or the closest next MAC Table match. In addition, the two input fields will - upon a **Refresh** button click - assume the value of the first displayed entry, allowing for continuous refresh with the same start address.
The **>>** will use the last entry of the currently displayed VLAN/MAC address pairs as a basis for the next lookup. When the end is reached the text "No more entries" is shown in the displayed table. Use the **I<<** button to start over.

Switch (stack only)	:	The switch port number of the logical STP port.
Type	:	The stack unit where the entry is learned
VLAN	:	The VLAN ID of the entry.
MAC Address	:	The MAC address of the entry
Port Member	:	The ports that are members of the entry
Auto-refresh	:	Automatic refresh occurs every 3 seconds
Refresh	:	Refreshes the displayed table starting from the "Start from MAC address" and "VLAN" input fields
Clear	:	Flushes all dynamic entries
I<<	:	Updates the table starting from the first entry in the MAC Table, i.e. the entry with the lowest VLAN ID and MAC address
>>	:	Updates the table, starting with the entry after the last entry currently displayed.

Monitor > VLANs (Only applicable for Ether)

Monitor > VLANs > VLAN Membership



Monitor > VLANs > VLAN Membership Menu Frame

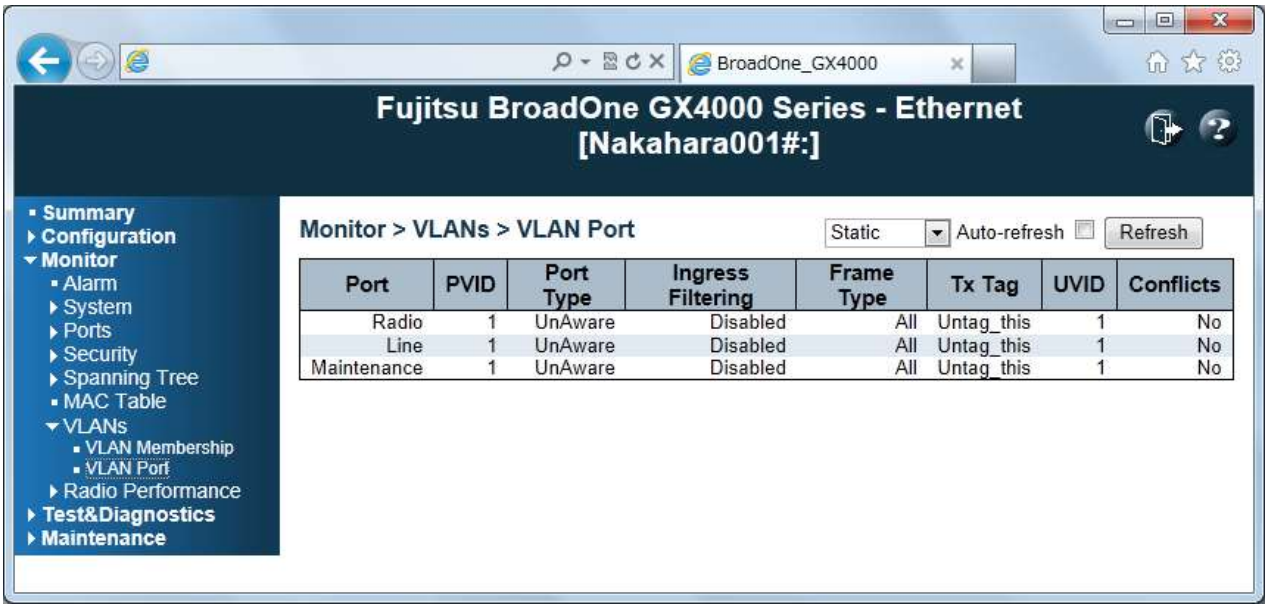
This menu provides an overview of membership status of VLAN users.

VLAN User	:	VLAN User module uses services of the VLAN management functionality to configure VLAN memberships and VLAN port configurations such as PVID and UVID. Currently we support the following VLAN user types: Web/SNMP: These are referred to as static. MSTP : The 802.1s Multiple Spanning Tree protocol (MSTP) uses VLANs to create multiple spanning trees in a network, which significantly improves network resource utilization while maintaining a loop-free environment. MSTP:not available.
Port Membership	:	A row of check boxes for each port is displayed for each VLAN ID. If a port is included in a VLAN, an image ✓ will be displayed. If a port is included in a Forbidden port list, an image ✗ will be displayed. If a port is included in a Forbidden port list and dynamic VLAN user register VLAN on same Forbidden port, then conflict port will be displayed as ✗.
VLAN Membership	:	The VLAN Membership Status Page shall show the current VLAN port members for all VLANs configured by a selected VLAN User (selection shall be allowed by a Combo Box). When ALL VLAN Users are selected, it shall show this information for all the VLAN Users, and this is by default. VLAN membership allows the frames classified to the VLAN ID to be forwarded on the respective VLAN member ports.
Button	:	Select VLAN Users from **Static**, **MSTP** and **Combined**. MSTP:not available.
Auto-refresh	:	Check this box to refresh the page automatically. Automatic refresh occurs every 3 seconds
Refresh	:	Click to refresh the page immediately

Navigating the VLAN Monitor page

Each page shows up to 99 entries from the VLAN table, default being 20, selected through the "entries per page" input field. When first visited, the web page will show the first 20 entries from the beginning of the VLAN Table. The first displayed will be the one with the lowest VLAN ID found in the VLAN Table.
The "VLAN" input fields allow the user to select the starting point in the VLAN Table. Clicking the **Refresh** button will update the displayed table starting from that or the closest next VLAN Table match. The **>>** will use the last entry of the currently displayed VLAN entry as a basis for the next lookup. When the end is reached the text "No more entries" is shown in the displayed table. Use the **I<<** button to start over.

Monitor > VLANs > VLAN Port



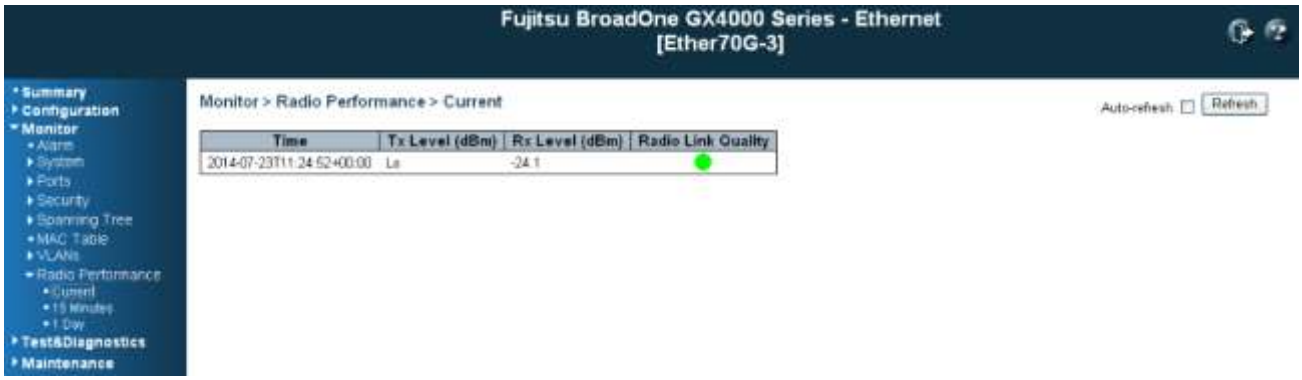
Monitor > VLANs > VLAN Port Menu Frame

VLAN User	:	VLAN User module uses services of the VLAN management functionality to configure VLAN memberships and VLAN port configurations such as PVID and UVID. Currently we support the following VLAN user types: Web/SNMP : These are referred to as static. MSTP: The 802.1s Multiple Spanning Tree protocol (MSTP) uses VLANs to create multiple spanning trees in a network, which significantly improves network resource utilization while maintaining a loop-free environment. MSTP:not available.
Port	:	The port name in the same row.
PVID	:	Shows the VLAN identifier for that port. The allowed values are **1** through **4095**. The default value is **1**.
Port Type	:	Shows the Port Type. Port type can be any of Unaware, C-port, S-port, Custom S-port. If Port Type is Unaware, all frames are classified to the Port VLAN ID and tags are not removed. C-port is Customer Port. S-port is Service port. Custom S-port is S-port with Custom TPID.
Ingress Filtering	:	Shows the ingress filtering on a port. This parameter affects VLAN ingress processing. If ingress filtering is enabled and the ingress port is not a member of the classified VLAN, the frame is discarded.

Frame Type	:	Shows whether the port accepts all frames or only tagged frames. This parameter affects VLAN ingress processing. If the port only accepts tagged frames, untagged frames received on that port are discarded.
Tx Tag	:	Shows egress filtering frame status whether tagged or untagged.
UVID	:	Shows UVID (untagged VLAN ID). Port's UVID determines the packet's behaviour at the egress side
Conflicts	:	Shows status of Conflicts whether exists or not. When a Volatile VLAN User requests to set VLAN membership or VLAN port configuration, the following conflicts can occur: Functional Conflicts between features. Conflicts due to hardware limitation. Direct conflict between user modules.
Button	:	Select VLAN Users from **Static**, **MSTP** and **Combined**.
Auto-refresh	:	Check this box to refresh the page automatically. Automatic refresh occurs every 3 seconds
Refresh	:	Click to refresh the page immediately

Monitor > Radio Performance

Monitor > Radio Performance > Current



Monitor > Radio Parameter > Current Menu Frame

Radio Performance > Current:

Time	:	The time that measured performance data.
Tx Level (dBm)	:	The signal level of radio transmitting.
Rx Level (dBm)	:	The signal level of radio receiving.
Radio Link Quality	:	Display radio link quality Green: Radio link quality high Yellow: Radio link quality middle Red: Radio link quality low Grey: Radio link quality is Loss of Frame
Auto-refresh	:	Check this box to refresh the page automatically. Automatic refresh occurs every 3 seconds.
Refresh	:	Click to refresh the page

Monitor > Radio Performance > 15 Minutes

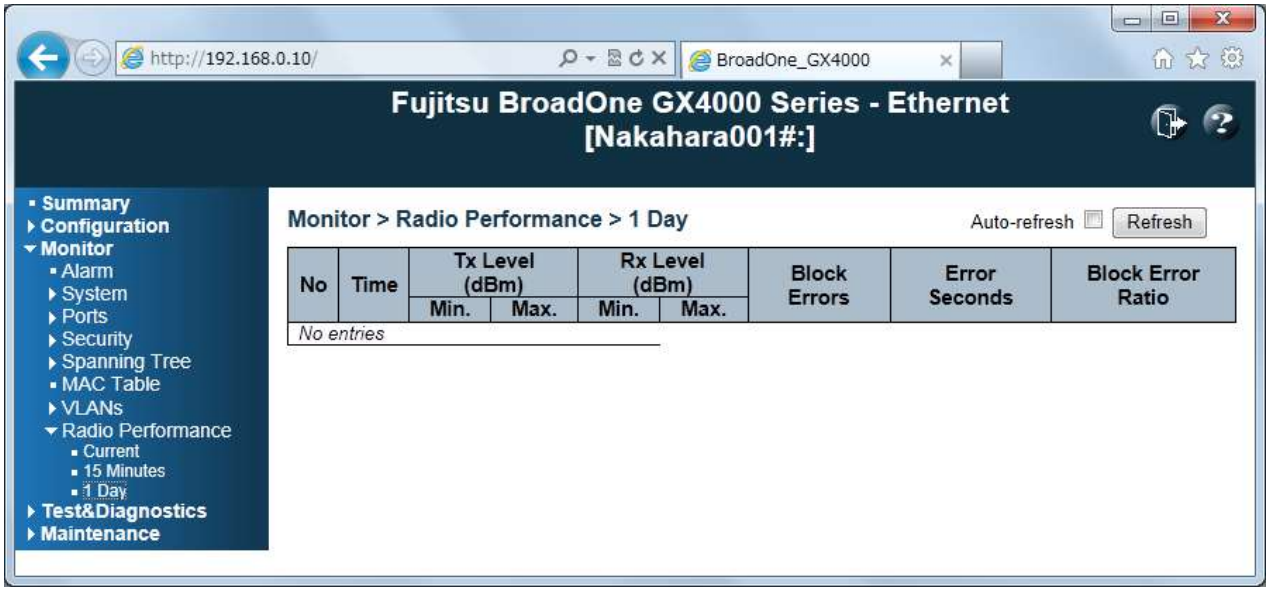
Monitor > Radio Parameter > 15 Minutes Menu Frame

Monitor > Radio Performance > 15 Minutes:

This page provides historical radio performance data measured with 15 minutes window. As maximum, latest 72 hours of historical performance data can be seen.

Time	:	The starting time of the 15 minutes window. The minute is fixed with 0, 15 30 and 45 on every hour.
Tx Level (dBm) Min.	:	Indicates the minimum signal level of radio transmitting in 15 minutes window.
TX Level (dBm) Max.	:	Indicates the maximum signal level of radio transmitting in 15 minutes window.
Rx Level (dBm) Min.	:	Indicates the minimum signal level of radio receiving in 15 minutes window.
Rx Level (dBm) Max.	:	Indicates the maximum signal level of radio receiving in 15 minutes window.
Block Errors	:	Indicates the number of block error in 15 minutes window
Error Seconds	:	Indicates the number of the second that have block error in 15 minutes window.
Block Error Ratio	:	Indicates the ratio of the number of block error in the total number of block in 15 minutes window.
Auto-refresh	:	Check this box to refresh the page automatically. Automatic refresh occurs every 3 seconds.
Refresh	:	Click to refresh the page

Monitor > Radio Performance > 1 Day



Monitor > Radio Parameter > 1 Day Menu Frame

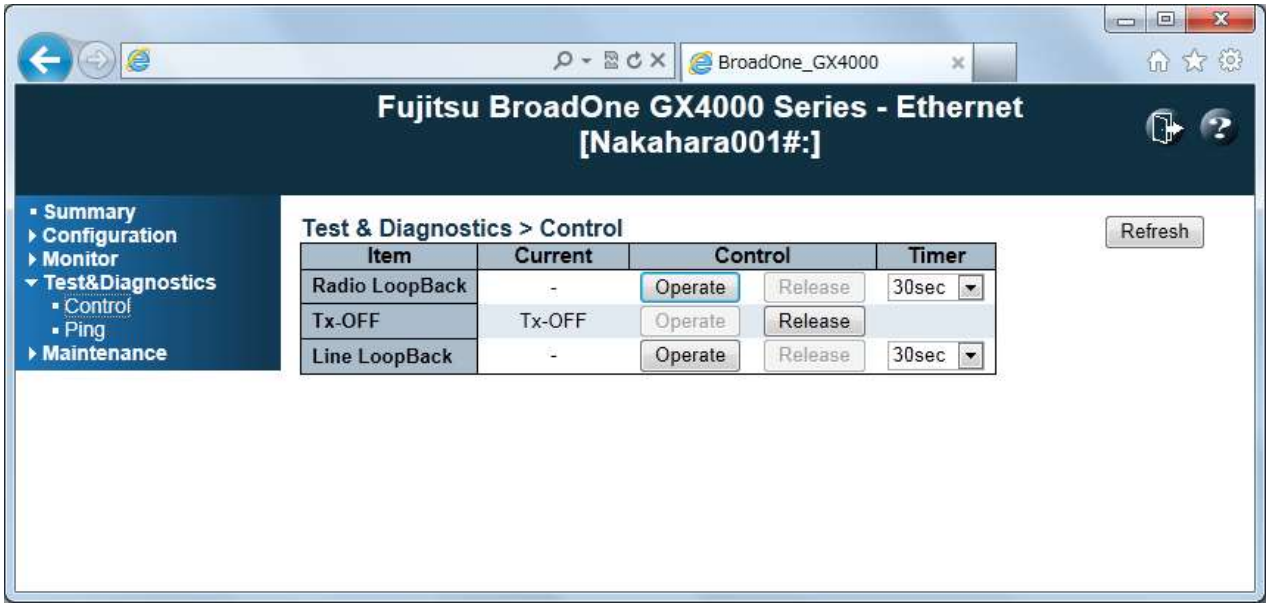
Monitor > Radio Performance > 1 Day:

This page provides historical radio performance data measured with 1 day window. As maximum, latest 2 days of historical performance data can be seen.

Time	:	The starting time of the 1 day window. The time is fixed with 0:00 in every day.
Tx Level (dBm) Min.	:	Indicates the minimum signal level of radio transmitting in 1 day window.
TX Level (dBm) Max.	:	Indicates the maximum signal level of radio transmitting in 1 day window
Rx Level (dBm) Min.	:	Indicates the minimum signal level of radio receiving in 1 day window.
Rx Level (dBm) Max.	:	Indicates the maximum signal level of radio receiving in 1 day window.
Block Errors	:	Indicates the number of block error in 1 day window
Error Seconds	:	Indicates the number of the second that have block error in 1 day window.
Block Error Ratio	:	Indicates the ratio of the number of block error on the total number of block in 1 day window.
Auto-refresh	:	Check this box to refresh the page automatically. Automatic refresh occurs every 3 seconds.
Refresh	:	Click to refresh the page

Test & Diagnostics

Test & Diagnostics > Control

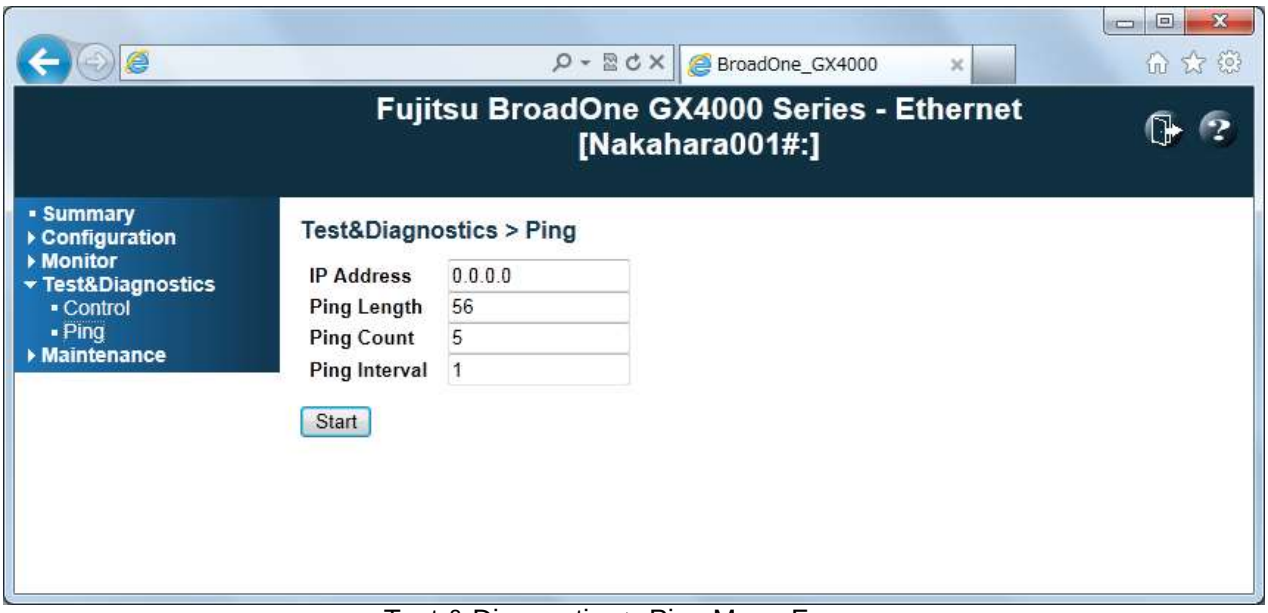


Test & Diagnostics > Control Menu Frame

This menu allows you to control of test and diagnosis

Item	:	**Radio LoopBack**: Operation of Loopback for Radio side. **Tx-OFF**: Operation of shut-off for radio transmitting. **Line LoopBack**: Operation of Loopback for Line side.
Current	:	Indicates current condition. The displayed conditions are; **Operate**: Operation is active. **-**: Operation is inactive.
Control	:	**Operate**: Click to operate the item. **Release**: Click to release the item
Timer	:	Set the remaining time. The Radio LoopBack and the Line LoopBack is released automatically if the time is up. The allowed range is 10 seconds 20 seconds 30 seconds 1 minute 10 minutes 30 minutes 1 hour 3 hours 12 hours 24 hours None (Non auto-release) The default value is 30 seconds.
Refresh	:	Click to refresh the page

Test & Diagnostics > Ping



Test & Diagnostics > Ping Menu Frame

This menu allows you to issue ICMP PING packets to troubleshoot IP connectivity issues.

After you press , ICMP packets are transmitted, and the sequence number and round trip time are displayed upon reception of a reply. The amount of data received inside of an IP packet of type ICMP ECHO_REPLY will always be 8 bytes more than the requested data space(the ICMP header). The page refreshes automatically until responses to all packets are received, or until a timeout occurs.

PING server 10.10.132.20, 56 bytes of data.

64 bytes from 10.10.132.20: icmp_seq=0, time=0ms

64 bytes from 10.10.132.20: icmp_seq=1, time=0ms

64 bytes from 10.10.132.20: icmp_seq=2, time=0ms

64 bytes from 10.10.132.20: icmp_seq=3, time=0ms

64 bytes from 10.10.132.20: icmp_seq=4, time=0ms

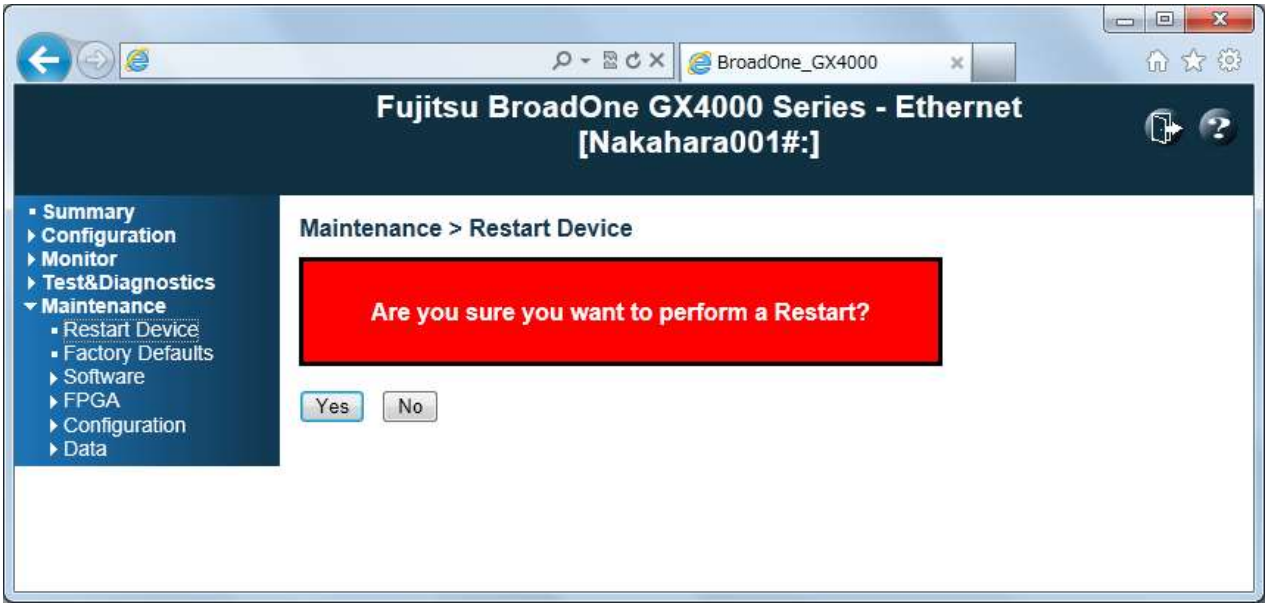
Sent 5 packets, received 5 OK, 0 bad

You can configure the following properties of the issued ICMP packets

IP Address	:	The destination IP Address
Ping Length	:	The payload size of the ICMP packet. Values range from 2 bytes to 1452 bytes.
Ping Count	:	The count of the ICMP packet. Values range from 1 time to 60 times.
Ping Interval	:	The interval of the ICMP packet. Values range from 1 second to 30 seconds
Start	:	Click to start transmitting ICMP packets
New Ping	:	Click to re-start diagnostics with PING

Maintenance

Maintenance > Restart Devices

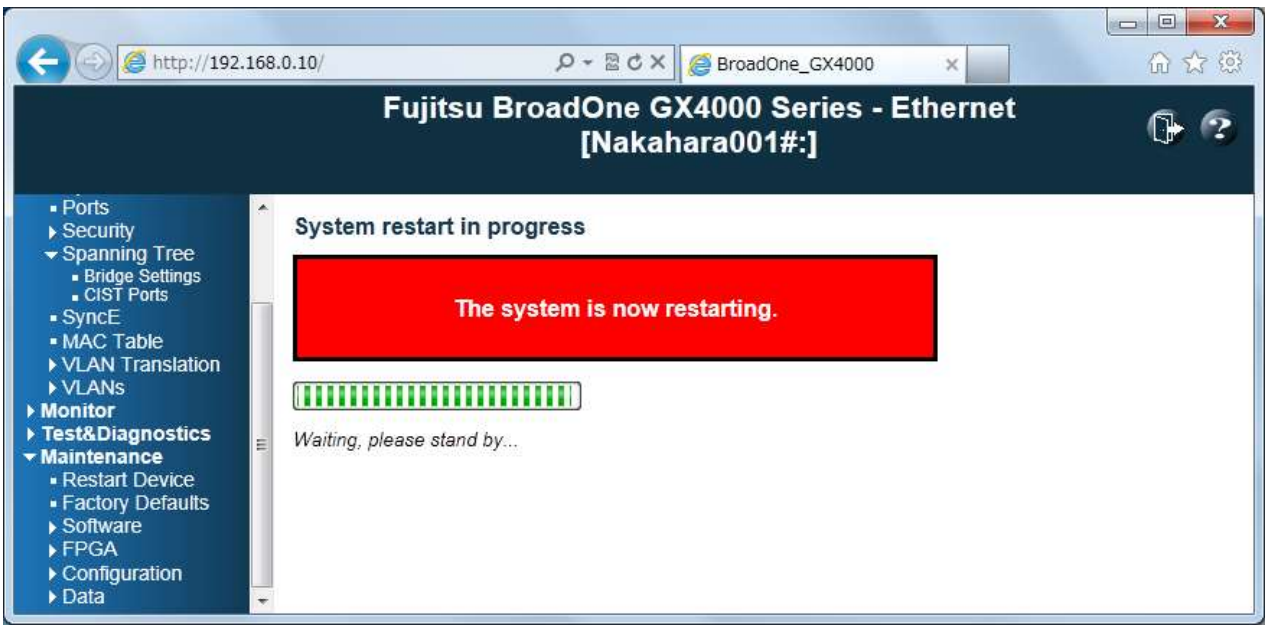


Maintenance > Restart Devices Menu Frame

You can restart the switch on this page. After restart, the switch will boot normally

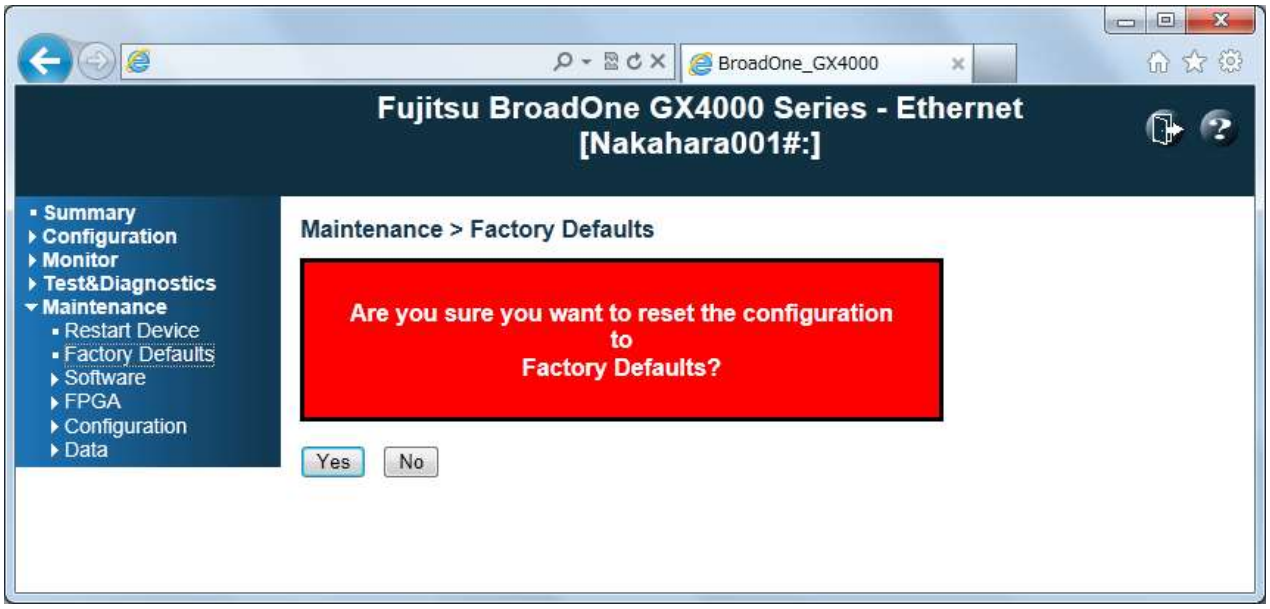
Yes : Click to restart device

No : Click to return to the Port State page without restarting



When click Yes, Restarting display will appear.

Maintenance > Factory Defaults



Maintenance > Factory Defaults Menu Frame

You can reset the configuration of the switch on this page. Only the IP configuration is retained. The new configuration is available immediately, which means that no restart is necessary

Yes : Click to reset the configuration to Factory Defaults

No : Click to return to the Port State page without resetting the configuration

Note: Restoring factory default can also be performed by making a physical loopback between port 1 and port 2 within the first minute from switch reboot. In the first minute after boot, 'loopback' packets will be transmitted at port 1. If a 'loopback' packet is received at port 2 the switch will do a restore to default

Maintenance > Software

Maintenance > Software > Upload

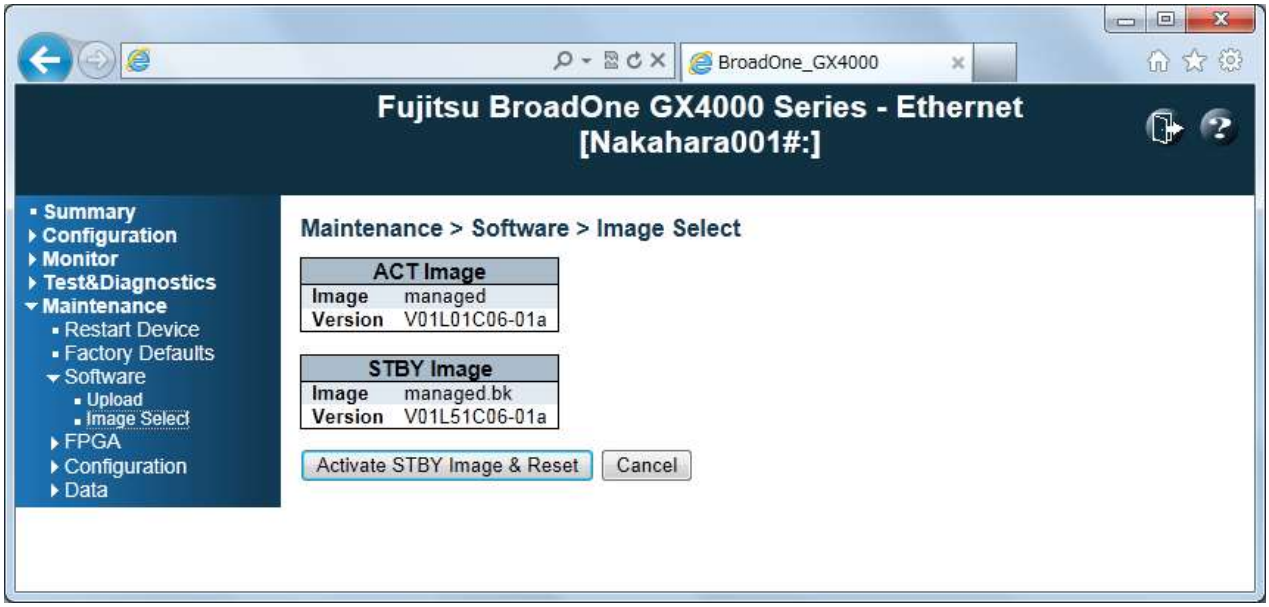
Maintenance > Software > Upload Menu Frame

This page is used to update the software to the latest version.
The versions of software images are displayed, and the alert message to confirm it is displayed.
Up-loading begins after clicking OK.
The up-loaded image is stored on the STBY side, and after a few minutes, up-loading is completed.

NOTICE: *Do not restart or power off the device at this time or the device may fail to function afterwards.*

Browse	:	Click to the location of software image
Upload	:	Click to upload the software image

Maintenance > Software > Image Select



Maintenance > Software > Image Select Menu Frame

This page provides information about the ACT software image and the STBY software image in the device, and allows you to select to the STBY software image.
Reset operates when switching.
The web page displays two tables with information about the ACT software image and the STBY software image.

Note: 1.In case the ACT image is alternate image, only the "ACT Image" table is shown. In this case, the "Activate STBY Image & Reset" button is also disabled.

Image	:	The flash index name of the software image. The name of primary image is **managed**, the alternate image is named **managed.bk**.
Version	:	The version of the software image, and the date where the software was produced.
Activate STBY Image & Reset	:	Activate STBY Image & Reset: Click to use the STBY image. This button may be disabled depending on system state.
Cancel	:	Cancel activating the STBY image. Navigates away from this page.

Maintenance > FPGA

Maintenance > FPGA > Upload

Maintenance > FPGA > Upload Menu Frame

This page is used to update the FPGA data to the latest version.

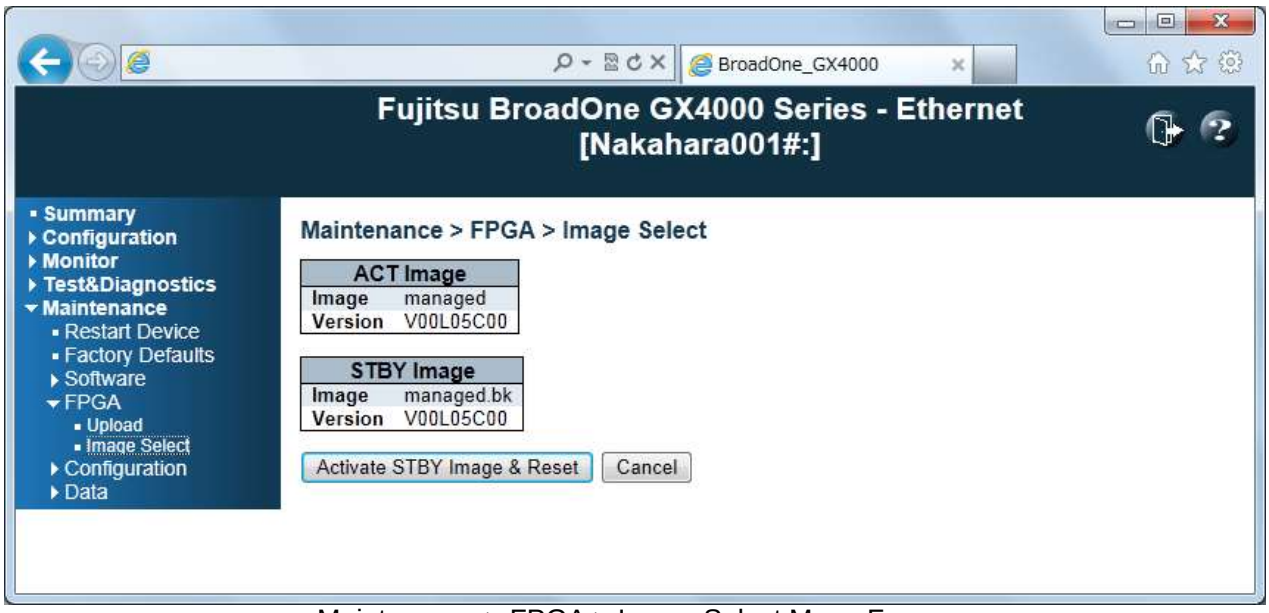
The versions of FPGA data images is displayed, and the alert message to confirm it is displayed. Up-loading begins after clicking OK.

The up-loaded image is stored on the STBY side, and after a few minutes, up-loading is completed.

NOTICE: Do not restart or power off the device at this time or the device may fail to function afterwards.

Browse	:	Click to the location of FPGA image
Upload	:	Click to upload the FPGA image

Maintenance > FPGA > Image Select



Maintenance > FPGA > Image Select Menu Frame

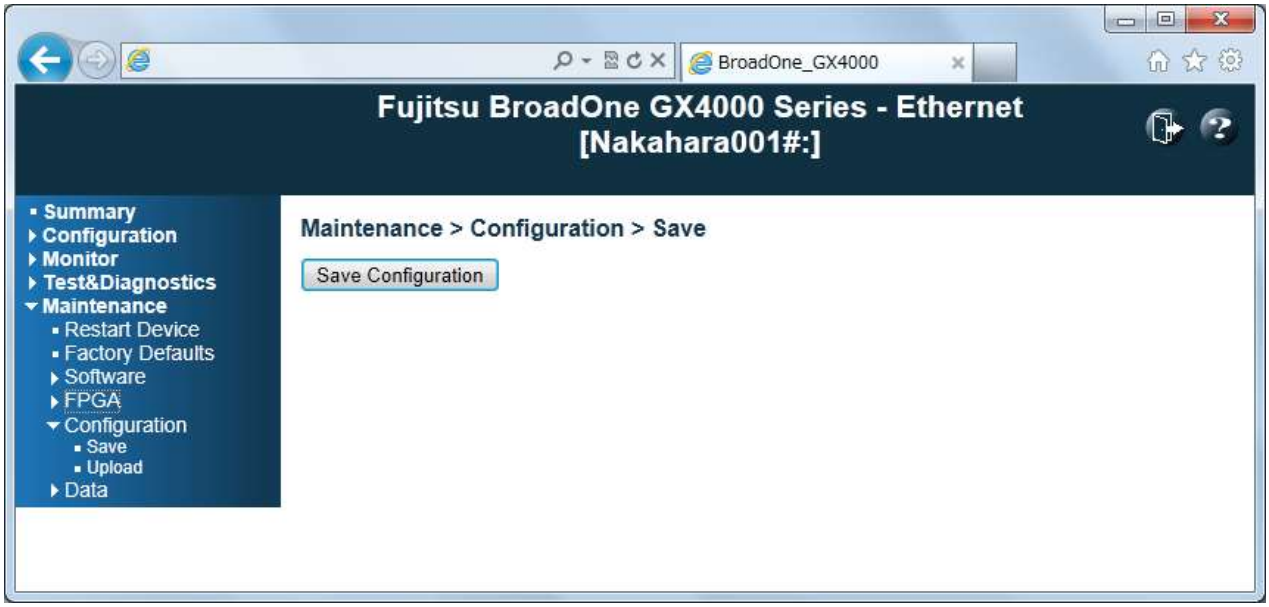
This page provides information about the ACT FPGA data image and the STBY FPGA data image in the device, and allows you to select to the STBY FPGA data image. Reset operates when switching. The web page displays two tables with information about the ACT FPGA data image and the STBY FPGA data image.

Note: 1.In case the ACT image is alternate image, only the "ACT Image" table is shown. In this case, the "Activate STBY Image & Reset" button is also disabled.

Image	:	The flash index name of the FPGA data image. The name of primary image is **managed**, the alternate image is named **managed.bk**.
Version	:	The version of the FPGA data image.
Activate STBY Image & Reset	:	Activate STBY Image & Reset: Click to use the STBY image. This button may be disabled depending on system state.
Cancel	:	Cancel activating the STBY image. Navigates away from this page.

Maintenance > Configuration

Maintenance > Configuration > Save



Maintenance > Configuration > Save Menu Frame

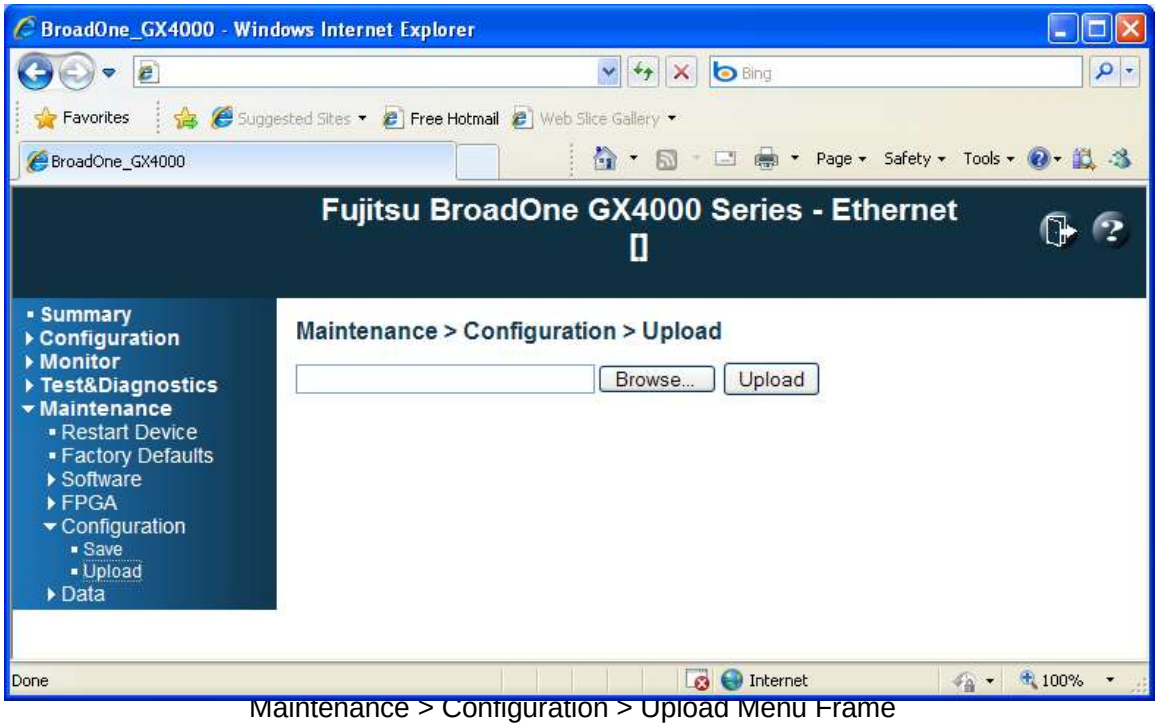
You can save/view the device configuration. The configuration file is XML format.
When the Save Configuration button is clicked, the file of the name of config_yyyymmdd_hhmiss.xml is saved.

The example of the file name) config_20120624_160745_.xml
yyyy: year
mm: month
dd: day
hh: hour
mi: minute
ss: second

NOTICE: *Do not edit the XML file. The up-loading of the edited XML file is unsupported. The device might malfunction even if up-loading is normally completed*

Save Configuration : Click to save the configuration file

Maintenance > Configuration > Upload



Maintenance > Configuration > Upload Menu Frame

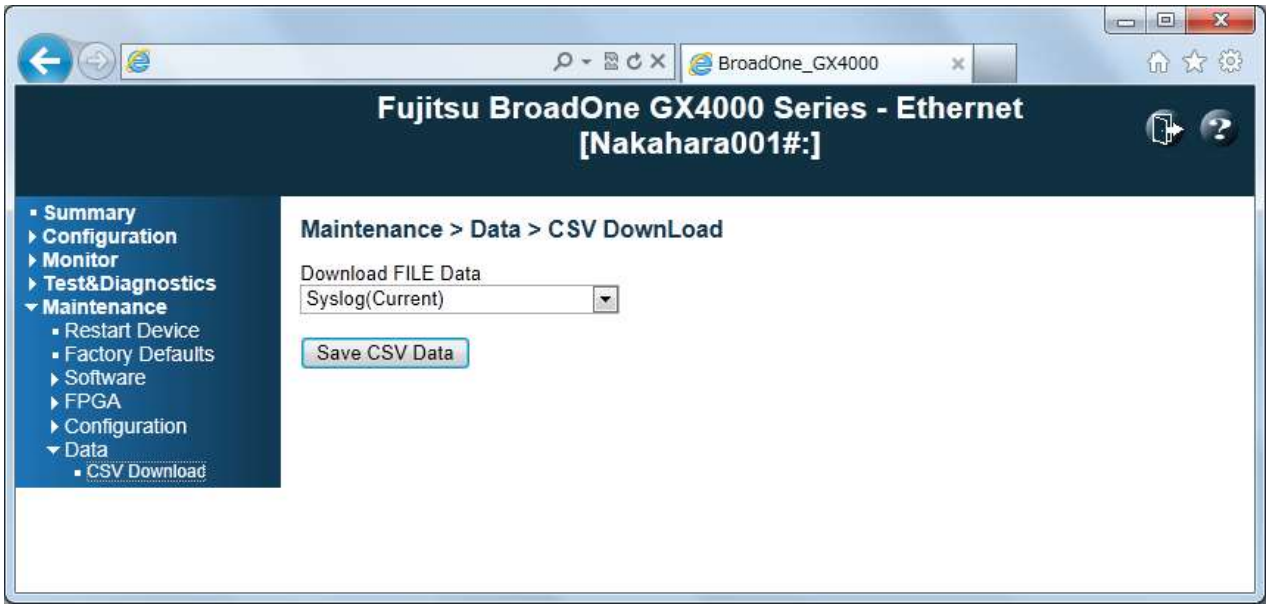
You can upload the device configuration. The configuration file is XML format. When the Upload button is clicked, the file of the configuration is up-loaded.
The example of the file name) config_20120624_160745_.xml
yyyy: year
mm: month
dd: day
hh: hour
mi: minute
ss: second

NOTICE: *Do not edit the XML file. The up-loading of the edited XML file is unsupported. The device might malfunction even if up-loading is normally completed*

Browse	:	Click to save the configuration file
Upload	:	Click to upload the configuration file

Maintenance > Data

Maintenance > Data > CSV Download



Maintenance > Data > CSV Download Menu Frame

You can download information selected with Download FILE Data. The data file is CSV file format. When the Save CSV Data button is clicked, the file of the name of kkkk_yyyymmdd_hhmiss.csv is saved.

Download File Data	:	Syslog: Data of Syslog is downloaded. (Data including the old information is downloaded when there is an old information.) Radio Performance Data (15min): Radio Performance Data of 15min is downloaded. Radio Performance Data (1Day): Radio Performance Data of 1Day is downloaded. The example of the file name) syslog_20120624_160745_.xml kkkk: syslog/15minpm/1daypm yyyy: year mm: month dd: day hh: hour mi: minute ss: second
Save CSV Data		Click to start CSV download

5.6 SNMP Agent Function

BroadOne GX4000 Impulse radio equipment has the SNMP agent function in addition to Web-based local terminal (WebLT) function. SNMP agent function supports SNMP v1 and SNMP v2c.

Table 5.3 shows the MIB II support list.

Table 5.3 MIB II Support List

No.	Group	Remarks
1	System (1.3.6.1.2.1.)	
2	Interfaces (1.3.6.1.2.1.2)	
3	Ip (1.3.6.1.2.1.4)	ipForwarding is NOT supported.
4	Icmp (1.3.6.1.2.1.6)	
5	Tcp (1.3.6.1.2.1.6)	
6	Udp (1.3.6.1.2.1.7)	
7	Snmp (1.3.6.1.2.1.11)	
8	Rmon (1.3.6.1.2.1.16)	Only three groups are supported; rmonEthernetStatistics group rmonHistoryControl group rmonEthernetHistory group
9	ifMIB (1.3.6.1.2.1.31)	Only ifTable group is supported

Appendix-A Notice for Licensing

This system contains source code from the following Open-Source components. Some code has been altered to work with the embodying system.

- Dropbear: SSH Server
- MD5: MD5 hash implementation
- MooTools: JavaScript Framework
- NET-SNMP: SNMP Agent
- NET-SNMP RMON: NET-SNMP RMON utilities
- NTP - Network Time Protocol: NTP Protocol
- OpenSSL: Toolkit implementing SSL v2/v3 and TLS protocols
- avltree: Self-balancing binary search tree
- eCos RTOS: Real-time OS for embedded applications

==========

Name : Dropbear

Description : SSH Server

License type : MIT, BSD, OpenSSL

Dropbear contains a number of components from different sources, hence there are a few licenses and authors involved. All licenses are fairly non-restrictive.

The majority of code is written by Matt Johnston, under the license below.

Portions of the client-mode work are (c) 2004 Mihnea Stoenescu, under the same license:

Copyright (c) 2002-2006 Matt Johnston Portions copyright (c) 2004 Mihnea Stoenescu

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=====

LibTomCrypt and LibTomMath are written by Tom St Denis, and are Public Domain.

=====

sshpty.c is taken from OpenSSH 3.5p1,

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=====

loginrec.c

loginrec.h

atomicio.h

atomicio.c

and strlcat() (included in util.c) are from OpenSSH 3.6.1p2, and are licensed under the 2 point BSD license.

loginrec is written primarily by Andre Lucas, atomicio.c by Theo de Raadt.

strlcat() is (c) Todd C. Miller

=====

Import code in keyimport.c is modified from PuTTY's import.c, licensed as follows:

PuTTY is copyright 1997-2003 Simon Tatham.

Portions copyright Robert de Bath, Joris van Rantwijk, Delian Delchev, Andreas Schultz, Jeroen Massar, Wez Furlong, Nicolas Barry, Justin Bradford, and CORE SDI S.A.

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==========

Name : MD5

Description : MD5 hash implementation

License type : BSD

Copyright (c) 2003-2005, Jouni Malinen <j@w1.fi>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License version 2 as published by the Free Software Foundation.

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==========

Name : MooTools

Description : JavaScript Framework

License type : MIT

The MIT License

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==========

Name : NET-SNMP

Description : SNMP Agent

License type : NET-SNMP (BSD-Style)

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==========

Name : NET-SNMP RMON

Description : NET-SNMP RMON utilities

License type : Alex Rozin, Optical Access

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==========

Name : NTP - Network Time Protocol

Description : NTP Protocol

License type : NTP

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Name : OpenSSL

Description : Toolkit implementing SSL v2/v3 and TLS protocols

License type : OpenSSL

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This product includes cryptographic software written by Eric Young (eay@cryptsoft.com).

This product includes software written by Tim Hudson (tjh@cryptsoft.com).

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Name : avltree

Description : Self-balancing binary search tree

License type : MIT

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Name : eCos RTOS

Description : Real-time OS for embedded applications

License type : Modified GPL

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